International Society for Photogrammetry and Remote Sensing
Société Internationale de Photogrammétrie et de Télédétection
Internationale Gesellschaft für Photogrammetrie und Fernerkundung

XXIVth Congress
XXIV^{e} Congrès
XXIV. Kongress

ISSN 1682-1750

THE INTERNATIONAL ARCHIVES OF THE PHOTOGRAMMETRY, REMOTE SENSING AND SPATIAL INFORMATION SCIENCES
ARCHIVES INTERNATIONALES DE PHOTOGRAMMÉTRIE, DE LA TÉLÉDÉTECTION ET DE L'INFORMATION SPATIALE
INTERNATIONALES ARCHIV FÜR PHOTOGRAMMETRIE, FERNERKUNDUNG UND RAUMBEZOGENE INFORMATIONSWISSENSCHAFTEN

PROCEEDINGS AND RESULTS

VOLUME
VOLUME
BAND
XLIII

PART
TOME
TEIL
A



Edited by:
Nicolas PAPARODITIS, Christian HEIPKE, Annette RADTKE, Inez BURGER

Published by International Society for Photogrammetry and Remote Sensing
Publié par la Société Internationale de Photogrammétrie et de Télédétection
Herausgegeben von der Internationalen Gesellschaft für Photogrammetrie und Fernerkundung

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International Archives of Photogrammetry, Remote Sensing and Spatial Information Sciences (IAPRS&SIS)
Founded by Eduard Doležal (Austria) in 1913

Volume XLIII, Part A
Proceedings and Results

Editorial Team

Editor, Design and Layout	Nicolas Paparoditis	France
	Christian Heipke	Germany
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WELCOME TO THE XXIV ISPRS CONGRESS

Welcome from Congress Director,
Nicolas Paparoditis

Welcome from the Congress Director

Dear Presidents, dear directors, dear officers, dear colleagues, dear ladies and gentlemen,

I am, together with the XXIV Congress executive committee and the programme chairs of this XXIV Congress, very proud to host you and quite relieved to meet you in-person at last after 6 long years of preparation.

As you may have noticed, this Nice event is the third edition of the XXIV ISPRS Congress after the 2020 and 2021 digital events. We have done everything possible to ensure a scientific continuity during the pandemic, enabling our researchers and especially our PhD and master students to disseminate new knowledge, and get some feedback from discussions with experienced colleagues. To encourage this continuity, we have kept each registration alive for the 3 editions, thus one single registration giving access to up to 3 editions. We also wanted this event to be inclusive. Indeed, we have offered very early bird rates and quite a number of fee waivers to allow many colleagues and especially young colleagues from across the World to attend the Congress.

For this 2022 physical meeting we have built a rich programme with, of course, Science at the center but not just limited to science. Indeed, one main missions of ISPRS beyond extending the frontier of knowledge, is to address both Science and Technology together and to keep a strong link between academia, organisations and Industry. This is why we have an industry exhibition and why we have also introduced a technology track and also a very exciting forum track with ten sessions over the 6 days of the Congress. Hot topics for our community will be discussed, to be able to better respond to the challenges that our world is currently facing. I encourage you to also attend these tracks.

Now some quick numbers about this Congress: 3 editions, 3400 submitted contributions from over 120 countries, over 7k reviews performed, 2500+ oral or poster presentations and over 2500 papers plagiarism-checked and published in the Annals and Archives which are reference by WoS, Scopus and EI. We have experienced along these 3 editions, a new media complementary to the papers which are the 10-minute pre-recorded videos. These are made Open Access on the ISPRS media library after the Congress. For the 3 editions, we have collected over 1500 videos. I believe they are going to be very useful and valuable for researchers to have a quick overview of the papers but also for education purposes. A survey carried out in 2021, with nearly 500 responses already showed that they were much appreciated by the community.

With the experience we have now acquired, one question remains on the future shape and flavour of our large ISPRS events. Hybrid or not hybrid, that is the question? These big and non-annual events are already very complex to organize. The additional complexity and costs of a hybrid format led to a real organizational difficulty and overload, and a necessary change of the economic model. Beyond research dissemination, ISPRS is all about networking and sharing our cultures, and I believe, and I don't think I am the only one to believe this, that this can only be done in physical meetings. In any case, this will be a challenge that the future ISPRS Council with the future event organisers will have to tackle with the consent of the community.

At last, I would like to warmly acknowledge our institutional sponsors IGN, CNES, IRD, CNRS, INRIA and the Order of French Surveyors which have all been very supportive, but also and above all our industry sponsors for their fidelity to ISPRS and to this XXIV Congress throughout these 3 Congress editions.

Enjoy the Congress and of course also enjoy the weather, the sea, Nice and its surroundings.

Long live Photogrammetry, remote sensing, and spatial information sciences!





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President
CHRISTIAN HEIPKE
Leibniz University Hannover
Institute of Photogrammetry and GeoInformation
Nienburger Str. 1
D-30167 Hannover
Germany
Tel.: +49 511 762 2482
isprs-pr@isprs.org



Secretary General
LENA HALOUNOVÁ
Czech Technical University
Faculty of Civil Engineering
Department of Geomatics
Thákurova 7, 166 29 Prague 6
Czech Republic
Tel.: +420 22435 4952
isprs-sg@isprs.org



Congress Director
NICOLAS PAPARODITIS
IGN – ENSG
6-8 Avenue Blaise Pascal
77420 Champs-sur-Marne
France
Tel.: +331 4398 8392 (IGN)
isprs-cd@isprs.org



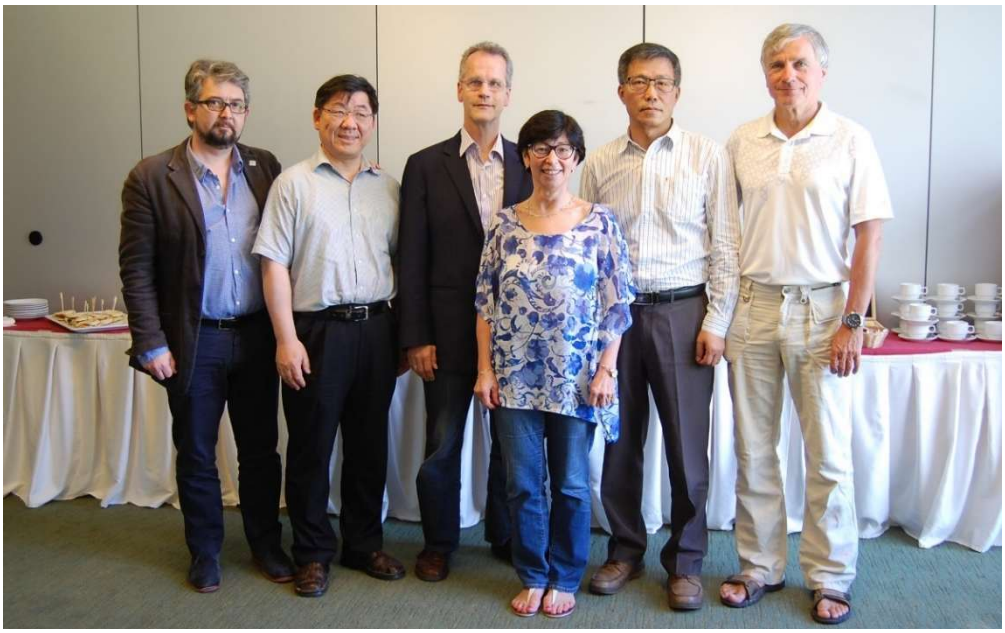
Past President
CHEN JUN
National Geomatics Centre of China
28 Lianhuachixi Road
Haidian District
Beijing 100830
China
Tel.: +86 10 63881102
isprs-1st-vp@isprs.org



Vice President
CHARLES TOTH
Department of Civil, Environmental and Geodetic Engineering
The Ohio State University
470 Hitchcock Hall2070 Neil Avenue
Columbus, OH 43210-1275
USA
Tel.: +1 614 292 7681
isprs-2nd-vp@isprs.org



Treasurer
SONGNIAN LI
Geomatics Engineering
Department of Civil Engineering
Ryerson University
350 Victoria Street
Toronto, Ontario, M5B 2K3
Canada
Tel.: +1 416 979 5000 ext 6450
isprs-tr@isprs.org



Technical Commission Presidents and Vice Presidents 2016-2022



Commission I President
STEFAN HINZ
KIT – Campus South
Institute of Photogrammetry and Remote Sensing (IPF)
76128 Karlsruhe
Germany
Tel.: +49 721 608 42314
Stefan.hinz@kit.edu



Commission II President
FABIO REMONDINO
3D Optical Metrology unit (3DOM)
Bruno Kessler Foundation (FBK)
via Sommarive 18
38123 Trento, Italy
Tel.: +39 0461 314 914
remondino@fbk.eu



Commission III President
JIANG JIE
National Geomatics Center of China
28 Lianhuachi West Road
Beijing 100830
China
Tel.: +86 10 6388 1215
jiangjie_263@263.net



Commission IV President
SISI ZLATANOVA
UNSW Built Environment
University of New South Wales
Red Centre Building
Kensington Campus
Sydney NSW 2052
Australia
Tel.: +61 4 2449 2894
s.zlatanova@unsw.edu.au



Commission VI President
A. SENTHIL KUMAR
Indian Institute of Remote Sensing, Indian Space Research Organisation
4 Kalidas Road, Dehradun
Uttarakhand, Pin - 248 001
India
Tel.: +91 135 274 4583
askumar.nrsc@gmail.com



Vice President TC I
RAUL QUEIROZ FEITOSA
Pontifical Catholic University of Rio de Janeiro
Department of Electrical Engineering
r. Marquês de São Vicente, 225, 22451-900
Rio de Janeiro - RJ, Brazil
Tel.: +55 21 3527 1212
raul@ele.puc-rio.br



Vice President TC II
TAKASHI FUSE
University of Tokyo
Department of Civil Engineering
Hongo7-3-1, Bunkyo-ku
Tokyo
Japan, 113-8656
Tel.: +81 3 5841 6129
fuse@civil.t.u-tokyo.ac.jp



Vice President TC III
AHMED SHAKER
Department of Civil Engineering
Faculty of Engineering and Architecture Science
Ryerson University
350 Victoria Street,
Toronto, Ontario, M5B 2K3
Canada
Tel.: +1 416 831 9874
ahmed.shaker@ryerson.ca



Vice President TC IV
SUZANA DRAGICEVIC
Spatial Analysis and Modeling Laboratory
Department of Geography,
Simon Fraser University
8888 University Drive,
Burnaby, BC, V5A1S6,
Canada
Tel.: +1 778 782 4621
suzanad@sfu.ca



Vice President TC V
P.L.N. RAJU
North Eastern Space Applications Centre
Department of Space,
Government of India,
Umiam, Shillong, Meghalaya
India – 793103
Tel.: +91 364 2570140/141
director@nesac.gov.in

New Technical Commission Presidents and Vice Presidents 2020-2022



Commission II President:
ALPER YILMAZ
470 Hitchcock Hall
2070 Neil. Ave
Columbus OH 43210
USA
Tel.: +1 614 2474323
yilmaz.15@osu.edu



Commission II Vice President:
JAN DIRK WEGNER
Universität Zürich
Institute for Computational Science
Winterthurerstrasse 190, 8057 Zürich
Switzerland
Tel.: +41 44 633 68 08
jan.wegner@geod.baug.ethz.ch



Commission IV Vice President:
GEORGE SITHOLE
Spatial Data and Spatial Analysis Consultant
GeoVariant
332 Upper Eastside, Brickfield Road
Woodstock, 7925 Cape Town
South Africa
georgesithole@geovariant.com

Financial Commission 2016-2022



Chairperson 2021-22
Member 2016-2021
GEORGE VOSSELMAN
University of Twente
Faculty of Geo-Information Science and Earth Observation (ITC)
Hengelosestraat 99
7514 AE Enschede
The Netherlands
Tel.: +31 53 487 4344
george.vosselman@utwente.nl



Member 2021-22
FULVIO DE RINAUDO
Politecnico di Torino
Dept. of Architecture & Design
Viale P.A. Mattioli 39
10125 Torino
Italy
Tel.: +39 331 6714787
fulvio.rinaudo@polito.it



Member 2021-22
PETRI RÖNNHOLM
Department of Built Environment
Aalto University
P.O. Box 15800
00076 Aalto
Finland
Tel.: +358 50 593 0534
petri.ronnholm@aalto.fi



Chairperson 2016-21
JON MILLS
School of Civil Engineering and Geosciences
Newcastle University
Newcastle upon Tyne
NE1 7RU
Unıted Kıngdom
Tel.: +44 191 208 5393
jon.mills@ncl.ac.uk



Member 2016-21
EMMANUEL BALTSAVIAS
Institute of Geodesy and Photogrammetry
ETH Zurich
Stefano-Franscini-Platz 5
CH-8093 Zürich
Swıtzerland
Tel.: +41 44 633 30 42

ISPRS Regional Representatives 2016-2022



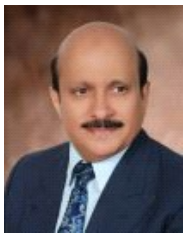
Africa
HUSSEIN FARAH
International Society for Photogrammetry and Remote Sensing (ISPRS)
P.O. Box 103840-00101,
Nairobi, Kenya
Tel.: +254 722872639
husseinfarah49@yahoo.com



Latin America
MARIO HERNANDEZ
11 Route de la Gare
1295 Mies
SWITZERLAND
Tel.: +33 1456 84052
mariohernandezvaldes@gmail.com



South-East Asia
SHAILESH NAYAK
National Institute of Advanced Studies
Indian Institute of Science Campus
Bengaluru - 560 012,
India
Tel.: +91 80 23601969
shailesh@nias.res.in



Arab States 2016-21
Reg. Coordinator
MUHAMED ALRAJHI
Ministry of Municipal and Rural Affairs (MOMRA)
P.O. Box 89936
11692 Riyadh
Saudi Arabia
Tel.: +966 1 456 9999
alrajhi@momra.gov.sa



Arab States 2022
Reg. Coordinator
MOHAMMED YAHYA AL SAYEL
General Authority for Survey and Geospatial Information
Saudi Arabia
alsayel@gasgi.gov.sa

Editors of ISPRS Publications 2016-2022



ISPRS Journal of Photogrammetry and Remote Sensing Editor-in-Chief 2016-21
DEREK D. LICHTI
Department of Geomatics Engineering
The University of Calgary
2500 University Dr NW
Calgary AB
Canada T2N 1N4
Tel.: +1 403 210 9495
ddlichti@ucalgary.ca



ISPRS Journal of Photogrammetry and Remote Sensing Editor-in-Chief
QIHAO WENG
Center for Urban and Environmental Change
Indiana State University
Terre Haute, IN 47809,
USA
Tel.: +1 812 237 2255/2290
qweng@indstate.edu



ISPRS Journal of Photogrammetry and Remote Sensing Editor-in-Chief
CLÉMENT MALLET
Univ. Gustave Eiffel,
IGN-ENSG LaSTIG laboratory
73 avenue de Paris
94160 Saint-Mandé
France
clement.mallet@ign.fr



ISPRS Open Journal of Photogrammetry and Remote Sensing (Est. 2021)
Editor-in-Chief
GEORGE VOSSELMAN
Faculty of Geo-Information Science and Earth Observation
University of Twente
Hengelosestraat 99
7514 AE Enschede
The Netherlands
Tel.: +31 53 487 4344
george.vosselman@utwente.nl



ISPRS International Journal of Geo-Information Editor-in-Chief
WOLFGANG KAINZ
Institut für Geographie und Regionalforschung
Universität Wien
Universitätsstr. 7/5
A-1010 Wien, Austria
Tel.: +43 1 4277 48640
wolfgang.kainz@univie.ac.at



ISPRS eBulletin Editor
LENA HALOUNOVÁ
Czech Technical University
Faculty of Civil Engineering
RS Laboratory
Thákurova 7
166 29 Prague 6
Czech Republic
Tel.: +420 22435 4952
lena.halounova@fsv.cvut.cz



ISPRS Webmaster
MARKUS ENGLICH
Geschwister-Scholl-Str. 24D
Institute for Photogrammetry
Universitaet Stuttgart
70174 Stuttgart
Germany
Tel.: +49 711 685 83385
markus.englich@ifp.uni-stuttgart.de



ISPRS Book Series Editor 2016-20
ZHILIN LI
Dept. of Land Surveying and Geo-Informatics
Hong Kong Polytechnic University
Hong Kong
Tel.: +852 2766 5960
isprsbook@gmail.com

Associate Editors of ISPRS Journal of Photogrammetry and Remote Sensing 2016-2022



CLÁUDIA MARIA DE ALMEIDA
Division Remote Sensing
National Institute for RS
Av. dos Astronautas
1758 - SERE I, 12227-010
Sao Jose dos Campos SP – Brazil
Tel.: +55 12 3208 6428
almeida@dsr.inpe.br



MARIANA BELGIU
University of Twente,
Enschede
The Netherlands
m.belgiu@utwente.nl



GANG CHEN
Department of Geography and Earth Sciences, University of North Carolina at Charlotte,
9201 University City Blvd
Charlotte, NC 28223, USA
Tel.: +1 704 687 5973
Gang.Chen@uncc.edu



MICHELE CROSETTO
Geomatics Research Unit
Centre Tecnològic de Telecomunicacions de Catalunya (CTTC)
Geomatics Research Unit
Av. Gauss, 7 E-08860
Castelldefels, Spain
Tel.: +34 93 6452900
mcrosetto@cttc.cat



JAY GAO
School of Environment
The University of Auckland
Private Bag 92019
Auckland
New Zealand
Tel.: 64 9 373 7599
jg.gao@auckland.ac.nz



MARKUS GERKE
Technische Universität Braunschweig
Institute of Geodesy and Photogrammetry
Bienroder Weg 81
38106 Braunschweig
Germany
Tel.: +49 531 / 391-945 70
m.gerke@tu-braunschweig.de



EBERHARD GUELCH
Hochschule für Technik Stuttgart
Schellingstr. 24
70174 Stuttgart
Germany
Tel.: +49 711 8926 2610
eberhard.guelch@hft-stuttgart.de



OLAF HELLWICH
Technische Universität Berlin
Sekr. MAR 6-5
Marchstr. 23
D-10587 Berlin
Germany
Tel.: +49 30 314 22796
olaf.hellwich@tu-berlin.de



JUNGHO IM
Jungho Im
Department of Urban and Environmental Engineering
Ulsan National Institute of Science and Technology
UNIST-gil 50, Ulju-gun, Ulsan
Republic of Korea 44919
Tel.: +82 52 217 2824
ersgis@unist.ac.kr



SAANA KAASALAINEN
Finnish Geospatial Research Institute - FGI
Department of Navigation and Positioning
Geodeetinrinne 2
02431 Masala
Finland
Tel.: +358 50 369 6806
Sanna.Kaasalainen@nls.fi



MINHO KIM
Assistant Professor
Department of Geography
Sangmyung University
20 Hongjmun 2 Gil
Jongno-gu, Seoul
Republic of Korea 03016
Tel.: +82 2 781 7563
mhkim@smu.ac.kr



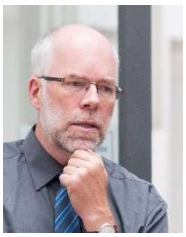
LALIT KUMAR
Natural Resources Building
University of New England
Armidale
NSW 2351
Australia
Tel.: + 61 2 6773 2323
lkumar@une.edu.au



DEBRA LAEFER
New York University
370 Jay Street
13th Floor, 1301C
Brooklyn, NY 11201
USA
debra.laefer@nyu.edu



RODERIK LINDENBERGH
Dept. of Geoscience and Remote Sensing
Delft University of Technology
Stevinweg 1
2628 CN Delft
The Netherlands
Tel.: + 31 15 278 7649
r.c.lindenbergh@tudelft.nl



HANS-GERD MAAS
Institute of Photogrammetry and Remote Sensing
Dresden University of Technology, Helmholtzstr. 10
01069 Dresden
Germany
Tel.: + 49 351 463 32859
hans-gerd.maas@tu-dresden.de



CLÉMENT MALLET
Univ. Gustave Eiffel, IGN-ENSG
LaSTIG lab.
73 avenue de Paris
94160 Saint-Mandé
FRANCE
clement.mallet@ign.fr



XIN MIAO
Associate Professor
Department of Geography, Geology and Planning
Missouri State University
Springfield
MO 65897,
USA
Tel.: +1 417 836 5173
xinmiao@missouristate.edu



GIORGOS MOUNTRAKIS
Intelligent Geocomputing Laboratory
Dept. of Environmental Resources Engineering
State University of New York
College of Environmental Science and Forestry
419 Baker Lab, 1 Forestry Dr.
Syracuse, NY 13210
USA
Tel.: +1 315 470 4824
gm@esf.edu



ONISIMO MUTANGA
University of KwaZulu Natal
Dept of Environ. Sci., Pietermaritzburg Campus, King George V Ave., 3031, Berea,
South Africa
Tel.: +27 31 260 5779
MutangaO@ukzn.ac.za



VASIT SAGAN
Geospatial Science
Saint Louis University
Des Peres Hall, Room 209D
3694 West Pine Mall
Saint Louis, Missouri 63108
USA
vasit.sagan@slu.edu



MARCO SCAIONI
Politecnico Milano
Dept. of Architecture, Built Environment and Construction Engineering
Via Bonardi 31 - Bdg. 15
20133 Milano
Italy
Tel.: +39 02 23996515
marco.scaioni@polimi.it



KONRAD SCHINDLER
Photogrammetry and Remote Sensing, ETH Zurich, Wolfgang-Pauli-Strasse 15
CH-8093 Zurich
Switzerland
Tel.: +41 44 633 3004
schindler@geod.baug.ethz.ch



UWE SÖRGEL
Institut für Photogrammetrie
Universität Stuttgart
Geschwister-Scholl-Str. 24D
70174 Stuttgart
Germany
Tel.: +49 711 685 83336
soergel@ifp.uni-stuttgart.de



DEVIS TUIA
EPFL ENAC
Environmental Computational Science and Earth Observation Laboratory (ECEO)
Rue des Ronquos 86
CH-1951 Sion
Switzerland
devis.tuia@epfl.ch



JAN DIRK WEGNER
University of Zürich
Zürich
Switzerland
jan.wegner@geod.baug.ethz.ch



MICHAEL YING YANG
Faculty of Geo-Information Science and Earth Observation (ITC), University of Twente,
HALLENWEG 8
7522 NH Enschede
The Netherlands
Tel.: +31 53 489 2916
michael.yang@utwente.nl

Associate Editors of ISPRS Open Journal of Photogrammetry and Remote Sensing 2021-2022



EIJA HONKAVAARA
Finnish Geospatial Research Institute – FGI
Department of Remote Sensing and Photogrammetry
Vuorimiehentie 5
02150 Espoo
Finland
Tel.: +358 40 192 0835
Eija.Honkavaara@nls.fi



MICHELE VOLPI
Swiss Data Science Center
Andreasturm
ETH Zurich
Andreasstrasse 5
CH-8050 Zurich
Switzerland
michele.volpi@sdsc.ethz.ch

Associate Editors of ISPRS International Journal of Geo-Information 2016-2022



JAMAL JOKAR ARSANJANI
Geoinformatics and Earth Observation (GEO) Research Group,
Department of Planning,
Aalborg University
A.C. Meyers Vænge 15
Copenhagen
Denmark
jja@plan.aau.dk



MARIA ANTONIA BROVELLI
Department of Civil and Environmental Engineering
Politecnico di Milano
P.zza Leonardo da Vinci 32
20133 Milan
Italy
Tel.: +39 02 2399624
maria.brovelli@polimi.it



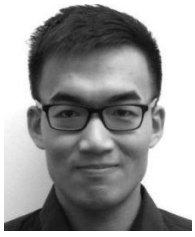
HARTWIG H. HOCHMAIR
School of Forest, Fisheries, and Geomatics Sciences
Fort Lauderdale Research and Education Center
University of Florida
3205 College Avenue
Fort Lauderdale, FL 33314
Tel.: +1 954 577 6317
hhhochmair@ufl.edu



FLORIAN HRUBY
Berliner Hochschule Für Technik (BHT)
Bau-und Geoinformationswesen
Haus Bauwesen Raum 144
Luxemburger Straße 10
13353 Berlin
Germany
florian.hruby@bht-berlin.de



WEI HUANG
College of Surveying and Geo-Informatics, Tongji University
Shanghai
China
wei_huang@tongji.edu.cn



MINGSHU WANG
Dr. Mingshu Wang
School of Geographical & Earth Sciences
University of Glasgow
United Kingdom
mingshu.wang@glasgow.ac.uk



DEV RAJ PAUDYAL
School of Civil Engineering and Surveying
University of Southern Queensland
West Street
Toowoomba, Queensland
Australia
DevRaj.Paudyal@usq.edu.au



HUAYI WU
LIESMARS, Wuhan University,
129 Luoyu Road, Wuhan, China, 430079
Tel.: +86 27 6877 8311
wuhuayi@whu.edu.cn



GODWIN YEBOAH
Information and Digital Group (IDG)
IDG Technology for Research
University of Warwick,
Coventry, CV4 7AL
United Kingdom
G.Yeboah@warwick.ac.uk



SISI ZLATANOVA
UNSW Built Environment
University of NSW
Red Centre Building
Kensington Campus
Sydney NSW 2052
Australia
Tel.: +61 4 2449 2894
s.zlatanova@unsw.edu.au

ISPRS Honorary Members 2016-2022



AINO SAVOLAINEN
(1988) Finland (✝2017)



FRIEDRICH ACKERMANN
(1996) Germany (2021 ✝)



LAWRENCE W. FRITZ
(2004) USA



JOHN C. TRINDER
(2008) Australia



GOTTFRIED KONECNY
(1992) Germany



SHUNJI MURAI
(2000) Japan



ARMIN GRÜN
(2008) Switzerland



IAN DOWMAN
(2012) United Kingdom



LI DEREN
(2012) China



ORHAN ALTAN
(2016) Turkey



CHEN JUN
(2020) China

ISPRS Fellows 2016-2022



IVAN ANTIPOV
(2010) Russia
(✝2018)



COSTAS ARMENAKIS
(2010) Canada



MANOS BALTSAVIAS
(2010) Switzerland



MARCIO BARBOSA
(2010) Brazil



KLAAS JAN BEEK
(2010) Netherlands
(✝2019)



WOLFGANG FÖRSTNER
(2010) Germany



STAN MORAIN
(2010) USA



ROY WELCH
(2010) USA



MARTIEN MOLENAAR
(2012) Netherlands



PAUL NEWBY
(2012) UK



LI DEREN
(2010) China



KLAUS SZANGOLIES
(2010) Germany



DIETER FRITSCH
(2012) Germany



SHAILESH NAYAK
(2012) India



HEINZ RUETHER
(2012) South Africa



ALAIN BAUDOIN
(2016) France



JIANG JIE
(2016) China



FRANZ LEBERL
(2016) Austria



PETROS PATIAS
(2016) Greece



AMMATZIA PELED
(2016) Israel



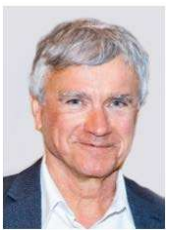
KOHEI CHO
(2020) Japan



SONGNIAN LI
(2020) Canada



MARGUERITE MADDEN
(2020) USA



CHARLES K. TOTH
(2020) USA



GEORGE VOSSELMAN
(2020) Netherlands

2016-2022 ISPRS Technical Commissions and Working Groups

Technical Commission I - Sensor Systems

President
Stefan Hinz
KIT – Campus South
Institute of Photogrammetry and Remote Sensing (IPF)
76128 Karlsruhe
GERMANY
Tel.: +49 721 608 42314
isprs-pr-c1@isprs.org
Stefan.hinz@kit.edu

Vice President
Raul Queiroz Feitosa
Pontifical Catholic University of Rio de Janeiro
Department of Electrical Engineering
r. Marquês de São Vicente, 225
22451-900 - Rio de Janeiro - RJ
BRAZIL
Tel.: +55 21 3527 1212
isprs-pr-c1@isprs.org
raul@ele.puc-rio.br

Secretary
Boris Jutzi
KIT – Campus South
Institute of Photogrammetry and Remote Sensing (IPF)
76128 Karlsruhe
GERMANY
Tel.: +49 721 608 46993
isprs-pr-c1@isprs.org
boris.jutzi@kit.edu

Terms of Reference

- Innovative and integrated UAS-oriented sensor and (small) platform concepts
- Systems and methods for terrestrial and mobile mapping in complex indoor and outdoor environments
- Small and low-cost active sensing (micro-LIDAR and -RADAR sensors)
- Design and realization of sensors and constellations for digital aerial and spaceborne missions for Earth observation
- Geometric and radiometric properties, quality standards, and factors affecting data quality
- Benchmark definition, calibration and evaluation of imaging and non-optical imaging sensors
- Integrated platform guidance, navigation, direct georeferencing (positioning and orientation) and integrated sensor orientation
- On-board (pre-)processing and concepts for embedded systems

WG I/1 - Multi- and Hyperspectral Sensing

Chair
Rupert Müller
German Aerospace Center (DLR)
Remote Sensing Technology Institute
Münchener Str. 20
82234 Weßling
Germany
Tel.: +49 8153 28 2758
rupert.mueller@dlr.de

Co-Chair
Helge Aasen
Agroscope
Swiss centre of excellence for agricultural research
Switzerland
helge.aasen@agroscope.admin.ch

Co-Chair
Jean-Baptiste Féret
National Research Institute of Science and Technology
for Environment and Agriculture (Irstea)
Maison de la Télédétection
500 rue Jean-François Breton
34093 Montpellier
France
Tel.: +334 67 54 87 49
jb.feret@teledetection.fr

Secretary
Daniele Cerra
German Aerospace Center (DLR)
Remote Sensing Technology Institute
Münchener Str. 20
82234 Weßling
Germany
Tel.: +49 8153 28 1496
daniele.cerra@dlr.de

Key Support Personnel
Jorge Centeno
Federal University of Parana, Brazil
Setor de Ciências da Terra
Avenida Coronel Francisco Heráclito dos Santos, 210
Jardim das Américas
Curitiba, Paraná
Brasil
Tel.: +55 41 3361 3153
centeno@ufpr.br

Key Support Personnel
Jakub Bieniarz
German Aerospace Center (DLR)
Remote Sensing Technology Institute
Münchener Str. 20
82234 Weßling
Germany
Tel.: +49 8153 28 2790
jakub.bieniarz@dlr.de

WG I/1 Terms of Reference

- Design, calibration, simulation and physical modelling of hyperspectral and multispectral sensors
- Imaging spectroscopy based on snapshot frame- and line-based camera systems in the VNIR, SWIR and LWIR spectral ranges
- Sensor-oriented / physically-motivated hyperspectral data processing for performance analysis
- Feasibility study for the integration of emerging technologies such as smartphone spectrometers for validation purposes
- System performance investigations based on multi-sensor data fusion and multi- and hyperspectral applications

WG I/2 - LiDAR, Air- and Spaceborne Optical Sensing

Chair
Jonathan Li
Mobile Sensing and Geodata Science Lab
Faculty of Environment
University of Waterloo
200 University Avenue West,
Waterloo
Ontario N2L 3G1
Canada
Tel.: +1 519 8884567, ext. 34504
junli@uwaterloo.ca

Co-Chair
José Alberto Gonçalves
Department of Geosciences, Environment and Land Planning
University of Porto
687 Rua do Campo Alegre
4169-007 Porto
Portugal
jagoncal@fc.up.pt

Co-Chair
Daniela Poli
Terra Messflug GmbH
Eichenweg 42
6460 Imst, Austria
Tel.: +43 5412 6930
danipolix@gmail.com
d.poli@terra-messflug.at

Secretary
Yi Lin
College of Surveying and Geoinformatics
Tongji University
1239 Spring Road
Shanghai 200092
China
Tel.: +86 21 65981867
linyi@tongji.edu.cn

Key Support Personnel
Antonio M. G. Tommaselli
São Paulo State University
Brazil
tomaseli@fct.unesp.br

Key Support Personnel
Hussein Abdulmuttalib
Dubai Municipality
UAE
Hussein.m.abdulmuttalib@gmail.com

Key Support Personnel
Mahmoud Reza Delavar
University of Tehran
Iran
mdelavar@ut.ac.ir

Key Support Personnel
Haiyan Guan
Nanjing University of Information Science and Technology
China
guanhy.nj@nuist.edu.cn

Key Support Personnel
Samsung Lim
University of New South Wales
Australia
s.lim@unsw.edu.au

WG I/2 Terms of Reference

- Design and assessment of topographic and bathymetric LiDAR sensor systems (e.g., multi-pulse, full-waveform, multi-/hyper-spectral, single-photon) mounted on airborne and spaceborne platforms
- Geometric and radiometric evaluation of optical sensor systems mounted on airborne and spaceborne platforms
- Data quality and performance validation of LiDAR and optical systems for digital surface modelling and 3D feature reconstruction
- Development and evaluation of innovative algorithms and software tools towards real-time LiDAR and optical data processing onboard airborne and spaceborne platforms
- Investigation and evaluation of systems integrating LiDAR and optical sensors

WG I/3 - SAR and Microwave Sensing

Chair
Timo Balz
Wuhan University
LIESMARS
129 Luoyu Road
430079 Wuhan
China
Tel.: +86 27 6877 9960
balz@whu.edu.cn

Co-Chair
Michael Schmitt
Technical University of Munich
Signal Processing in Earth Observation
Arcisstr. 21
80333 Munich
Germany
Tel.: +49 89-289-22643
m.schmitt@tum.de

Co-Chair
Rafael Rosa
Visiona Tecnologia Espacial S.A.
Estrada Dr. Altino Bondensan, 500
São José dos Campos
Brazil 12247-016
Tel.: +55 12 2138-5801
rafael.rosa@visionaespacial.com.br

Secretary
Teng Wang
Nanyang Technological University
Earth Observatory of Singapore
50 Nanyang Avenue
Singapore 639798
Tel.: +65 83 49 49 24
wang.teng@ntu.edu.sg

WG I/3 Terms of Reference

- Investigations on recent and upcoming spaceborne SAR sensors
- SAR big data and global coverage from Sentinel1 mission
- Investigations on new airborne SAR systems
- Evaluation of advanced SAR sensor modes and SAR constellations (e.g., bi-static, multi-baseline, multi--aspect, multi-frequency, polarimetry etc.)
- Fusion of SAR data and complementary data (e.g. optical imagery)
- Liaison with other groups and societies, mainly TCIII-2, TCIII-3, as well as IEEE-GRSS

WG I/4 - Calibration and Validation of Satellite Sensors

Chair
Xinming Tang
Satellite Surveying and Mapping Application Center
National Administration of Surveying, Mapping and Geoinformation
No.1 Baishengcun, Zizhuyuan
Haidian District
Beijing 100048
China
Tel.: +86 10 68412138
tangxinming99@qq.com
txm@lasac.cn

Co-Chair
Karsten Jacobsen
Institute of Photogrammetry and Geoinformation
Leibniz University Hannover
Nienburger Str. 1
30167 Hannover
Germany
Tel.: +49 511 762 2485
jacobsen@ipi.uni-hannover.de

Co-Chair
Wang Mi
State Key LAB of Information Engineering in Surveying, Mapping and Remote Sensing
Wuhan University
No. 129, Luoyu Rd
Wuhan
Hubei Province
China
Tel.: +86 27 68778969
wangmi@whu.edu.cn

WG I/4 Terms of Reference

- Parameter design and simulation of space borne optical system
- Geometric/radiometric calibration and validation including laboratory and in-flight calibration of space borne optical sensors
- Geometric imaging modeling of space borne optical sensors and/or LiDAR systems
- Analysis of direct sensor orientation accuracy and changes during the lifetime of sensors
- Evaluation of space borne sensors for DEM/DSM and DOM generation (cooperation with one working group of Commission II)

WG I/5 - New 3D Sensors for Metrology and Industrial Vision

Chair
Petri Rönnholm

Department of Built Environment
Aalto University
P.O. Box 15800
00076 AALTO
Finland
Tel.: +358 50 593 0534
petri.ronnholm@aalto.fi

Co-Chair
Marcos Sirota
SigmaSpace Corp
4600 Forbes Blvd
Lanham, MD,20706
USA
Tel.: +1 301 552 6000
marcos.sirota@sigmaspace.com

Secretary
Anttoni Jaakkola
Finnish Geospatial Research Institute FGI
National Land Survey of Finland
Geodeetinrinne 2
02430 Masala
Finland
Tel.: +358 50 349 8108
anttoni.jaakkola@gmail.com

WG I/5 Terms of Reference

- Developments and investigations on modern active sensing techniques (single photon detection, amplifying, statistics, etc.)
- Metric quality and (self-)calibration of low-cost 3D sensors (structured light cameras, time-of-flight cameras, etc.)
- Analysis of low-cost / micro-LIDAR and micro-RADAR systems
- Advances in industrial applications of 3D sensors (metric measurements, hand-eye-calibration, real-time object identification/recognition)

WG I/6 - Multi-sensor Integration and Fusion

Chair
Cheng Wang
Department of Computer Science
School of Info. Sci. and Eng.
Xiamen University
422 Siming Rd. Xiamen
Fujian, 361005
China
Tel.: +86 592 258 0003
cwang@xmu.edu.cn

Co-Chair
Andrea Lingua
Department of Environment, Land and Infrastructure Engineering
Polytechnic of Turin
C.so Duca degli Abruzzi
2410129 Torino (TO)
Italy
Tel.: +39 0 11 090 7700
andrea.lingua@polito.it

Co-Chair
Julian Smit
Division of Geomatics
University of Cape Town
Private Bag Rondebosch
Cape Town 7701
South Africa
Tel.: +27 2 16 50 35 73
julian.smit@uct.ac.za

Secretary
Chenglu Wen
Department of Cognitive Science
School of Info. Sci. and Eng.
Xiamen University
422 Siming Rd. Xiamen
Fujian 361005
China
Tel.: +86 592 258 0168
clwen@xmu.edu.cn

Key Support Personnel
Sherin Youssef
Department of Computer Engineering
Arab Academy for Science and Technology
Alexandria
Egypt
Tel.: +20 3 56 22 366
sherin.youssef@gmail.com

Key Support Personnel
Xiaoji Niu
GNSS Research Center
Wuhan University
129 Luoyu Road
Wuhan 430079
China
Tel.: +86 27 68 77 85 95
xjniu@whu.edu.cn

Key Support Personnel
Harri Kaartinen
Department of Remote Sensing and Photogrammetry
Finnish Geospatial Research Institute, Finland
00521 Helsinki
Finland
Tel.: +358 29 531 4756
Harri.Kaartinen@nls.fi

Key Support Personnel
Marco Piras
Department of Environment, Land and Infrastructure Engineering
Polytechnic of Turin
C.so Duca degli Abruzzi 24
10129 Torino (TO)
Italy
Tel.: +39 0 11 090 7661
marco.piras@polito.it

Key Support Personnel
Yangbin Lin
Jimei University
Computer Engineering College
183 YinJiang Road
Jimei District
Xiamen
China 361021
Tel.: +86 15060786995
yblin@jmu.edu.cn

WG I/6 Terms of Reference

- Multi-sensor system design and on-board processing;
- Cross-platform sensing with land-, air-, and space-borne platforms;
- Data quality control/assurance and enhancement for multi-sensor multi-platform solutions;
- Ubiquitous sensing solutions with non-conventional low cost sensors in mobile devices;
- GNSS/IMU/image/ranging sensor integration and fusion for positioning and navigation (for indoor and outdoor);
- Inter-sensor synchronization and In-situ stability analysis of system calibration parameters.

WG I/7 - Mobile Mapping Technology

Chair
Naser El-Sheimy
Canada Research Chair – Tier I in Geomatics Multi-Sensor Systems
Department of Geomatics Engineering
The University of Calgary
2500 University Dr. N.W. Calgary, Alberta
Canada T2N 1N4
Tel.: +1 403 220 7587
elsheimy@ucalgary.ca

Co-Chair
Kai-Wei Cheng
Department of Geomatics
National Cheng Kung University
No.1 Ta-Hsueh Road
Tainan 701
Taiwan
Tel.: +886 6 237 0876 ext. 829
kwchiang@mail.ncku.edu.tw

Co-Chair
Sherin Youssef
Department of Computer Engineering
Arab Academy for Science, Technology and Maritime Transport

(AASTMT)
Alexandria, Egypt
Tel.: +20 3 56 22 366
sherin@aast.edu

Secretary
Andrea Masiero
CIRGEO - Interdepartmental Research Center of Geomatics
University of Padova
Viale dell'Università 16
35020 Legnaro - Padova
Italy
Tel.: +39 049 827 2522
masiero@dei.unipd.it

Key Support Personnel
Antonio Vettore
CIRGEO - Interdepartmental Research Center of Geomatics
University of Padova
Viale dell'Università 16
35020 Legnaro - Padova
Italy
Tel.: +39 049 827 2688
antonio.vettore@unipd.it

Key Support Personnel
Xiaoji Niu
GNSS Research Center
Wuhan University
Wuhan 430079
China
xjniu@whu.edu.cn

Key Support Personnel
Aboelmagd Noureldin
Department of Electrical and Computer Engineering
Royal Military College of Canada
PO Box 17000, Station Forces,
Kingston, Ontario
Canada K7K 7B4
Tel.: +1 613 541 6000 ext. 6366
Aboelmagd.Noureldin@rmc.ca

Key Support Personnel
Marco Piras
Department of Environment, Land and Infrastructure Engineering (DIATI)
Politecnico di Torino
C.so Duca degli Abruzzi 24
10129 Torino
Italy
Tel.: +39 011 090 7661
marco.piras@polito.it

Key Support Personnel
Sudhagar Nagarajan
Department of Civil, Environmental and Geomatics Engineering
Florida Atlantic University
777 Glades Road, EW 222
Boca Raton, FL 33431-0991
Florida, USA
Tel.: +1 561 297 3104
snagarajan@fau.edu

Key Support Personnel
You Li
Department of Geomatics Engineering
The University of Calgary
2500 University Dr. N.W. Calgary, Alberta
Canada T2N 1N4
Tel.: +1 403 473 1779
liyou331@gmail.com

WG I/7 Terms of Reference

- Design, development and evaluation of mobile mapping systems
- Design and development of real-time data processing algorithms for mobile mapping systems
- Automation of information extraction from land-based mobile imaging and ranging sensor data
- Development of novel applications in virtual reality, GIS, transportation infrastructure mapping and assessment, including pavement and asset mapping, emergency response
- Cooperation with ICA, IAG, FIG, and other ISPRS WGs on 3D mobile mapping; image indexing and retrieval; 3D object reconstruction and city modelling; sensor integration and multiple sensing solutions; and applications in LBS and disaster management.

WG I/8 - Satellite Constellations for Remote Sensing

Chair
Rongjun Qin
The Ohio State University
2036 Neil Avenue
Columbus, Ohio
USA
Tel.: +1 614 292 4356
qin.324@osu.edu

Co-Chair
Peter Reinartz
Department Photogrammetry and Image Analysis
Remote Sensing Technology Institute
German Aerospace Centre (DLR)
Muenchnerstr. 20
82234 Wessling
Germany
Tel.: +49 8153 28-2757
peter.reinartz@dlr.de

Co-Chair
Joseph Mascaro
Planet
346 9th Street
San Francisco, CA 94103
USA
Tel.: +1 734 612 7656
joe.mascaro@planet.com

Secretary
Min Chen
Purdue University
550 Stadium Mall Drive
West Lafayette, IN 47907
USA
Tel.: +1 765 2501979
minchen@home.swjtu.edu.cn

WG I/8 Terms of Reference

- Geometric and radiometric characterization of satellite constellations data (e.g. Planet, RapidEye, DMCII, etc.), spectral interpretability analysis.
- Comparison of constellations and with monolithic systems in algorithms and applications
- Data quality, usability, availability and timeliness; geometric, radiometric characterization of data from satellite constellations, spectral interpretability through remote sensing studies
- Advancements in image time series analysis through satellite constellations
- Evaluation of new applications with single or multiple satellite constellations, e.g. traffic monitoring using video from the space, time series 3D mapping with data from satellite constellations
- Development and evaluation of new algorithms and software tools of processing high temporal and spatial resolution data
- Collaborate with ISPRS WGs and other societies, including AGU, IEEE-GRSS, CV and other communities (Civil, Environmental, hydrology, etc.), to promote the use of satellite constellations for remote sensing applications.

WG I/9 - Integrated Sensor Orientation, Calibration, Navigation and Mapping

Chair
Jan Skaloud
Swiss Federal Institute of Technology EPFL
EPFL-TOPO Station 18
CH-1015 Lausanne
Switzerland
Tel.: +41 21 693 2753
jan.skaloud@epfl.ch

Co-Chair
Ismael Colomina
GeoNumerics
Parc Mediterrani de la Tecnologia
Avda. del Canal Olímpic, s/n
E-08860 Castelldefels
Spain
Tel.: +34 93 1700 047
ismael.colomina@geonumerics.com

Co-Chair
Michael Cramer
Institut für Photogrammetrie
Universität Stuttgart
Geschwister-Scholl-Str.24D
70174 Stuttgart
Germany
Tel.: +49 711 685 84118
michael.cramer@ifp.uni-stuttgart.de

Secretary
Craig Glennie
University of Houston
N107 Engineering Building 1
Houston, TX, USA 77204-4003
Tel.: +1 832 842 8861
clglennie@uh.edu

WG I/9 Terms of Reference

- General rigorous modeling of positioning and attitude sensors.
- Spatial absolute, relative and temporal modeling of non-standard sensors (low-cost, new-geometry, combined-geometry configurations).
- Use of Stochastic Differential Equations in orientation and calibration for photogrammetric applications.
- Orientation/calibration with UAV and micro aerial vehicles.
- Photogrammetric/LiDAR orientation and calibration: measurement techniques and models.

WG I/10 - Sensor Systems Verification, Benchmarks, Evaluation

Chair
Ralf Reulke
German Aerospace Center
Institute of Optical SensorSystems
2 Rutherfordstrasse
12489 Berlin
Germany
Tel.: +49 30 67055518
ralf.reulke@dlr.de

Co-Chair
Dorota Iwaszczuk
Technische Universität Darmstadt
Remote Sensing and Image Analysis
Department of Civil and Environmental Engineering Sciences
Franziska-Braun-Str.7
64287 Darmstadt
Germany
Tel.: +49 6151 16-22570
iwaszczuk@geod.tu-darmstadt.de

Co-Chair
Petra Helmholz
CurtinUniversity
Western AustralianSchool of Mines
Faculty of Science and Engineering
Kent Street, Bentley, Perth
Western Australia 6102
Australia
Tel.: +618 9266 3369
petra.helmholz@curtin.edu.au

Secretary
Krzysztof Bakuła
Warsaw University of Technology
Faculty of Geodesy and Cartography
1 PlacPolitechniki
00-661 WarsawPoland
Tel.: +48 22 234 7694
kbakula@gik.pw.edu.pl

Key Support Personnel
Jakub Kolecki
AGH University of Technology
Faculty of Mining Surveying and Environmental Engineering
Poland
Tel.: +48 12 617 2302
kolecki@agh.edu.pl

Key Support Personnel
David Belton
School of Earth and Planetary Sciences
Curtin University
Perth
Western Australia
Australia
Tel.: +61 8 9266 2691
d.belton@curtin.edu.au

WG I/10 Terms of Reference

- Characterisation of sensor behaviour from UV to LWIR, RADAR
- Traceability
- Image (data) quality (PSF & SNR)
- Prerequisites (Lab equipment): Radiation sources, collimators, integrating spheres
- Spatial, radiometric, etc. characterization on sensor level
- Linearity, PTC, PRNU, DSNU, CTE, …
- MTF, keyston, smile, etc.
- Algorithms and data evaluation, Usability

ICWG I/II - UAS & Small Multi-sensor Platforms: Concepts & Applications

Chair
Francesco Nex
Dept. of Earth Observation Science (EOS)
ITC Faculty - University of Twente
Hengelosestraat 99 7511 AE
Enschede
The Netherlands
Tel.: +31 (0)53 489 6639
f.nex@utwente.nl

Co-Chair
Görres Grenzdörffer
Institute of Geodesy
Rostock University
J.-Liebig Weg
618051 Rostock
Germany
Tel.: +49 381 498 3206
goerres.grenzdoerffer@uni-rostock.de

Co-Chair
Costas Armenakis
Dept. of Earth & Space Science & Engineering
York University
4700 Keele Str.
Toronto, Ontario
Canada
Tel.: +1 416 736 2100, ext 55221
armenc@yorku.ca

Secretary
Filliberto Chiabrando
Dept. of Architecture and Design
Politecnico di Torino
Viale Mattioli 39,
10125 Torino
Italy
Tel.: +39 011 0904380
filiberto.chiabrando@polito.it

Industrial Representative
Jakub Karas
Upvision s.r.o
Klikatá 18158 00
Praha 5 - Jinonice
Czech Republic
Tel.: +420 601 373 937
Jakub.karas@upvision.cz

Industrial Representative
Bastien Mancini
Delair-Tech
676 Rue Max Planck
31670 Toulouse – Labège
France
Tel.: +33 5 82 95 44 06
bastien.mancini@delair-tech.com

Industrial Representative
Christof Strecha
Pix4D SA
EPFL Innovation Park - Building F
1015 Lausanne
Switzerland

Tel.: +41 21 552 05 90
christoph.strecha@pix4d.com

Industrial Representative
Tautvydas Juskauskas
DJI GmbH
Platz der Einheit 1
D-60327 Frankfurt am Main
Germany
Tel.: +49 176 1800 5668
tautvydas.juskauskas@dji.com

Regional Representative (East Asia)
Taejung Kim
College of Geoinformatic Engineering
INHA UNIVERSITY, 100 Inharo,
Nam-gu, Incheon 22212
KOREA
Tel.: +82 32 860 7114
tezid@inha.ac.kr

Regional Representative (North Africa)
Mourad Bouziani
Dept. of Geodesy and Surveying
IAV Hassan II
B.P 6202 Madinat Al Irfane
Rabat, Morocco
Tel.: +212 537 77 17 59
m.bouziani@iav.ac.ma

Regional Representative (East Europe)
Václav Šafář
Research Institute of geodesy, topography
and cartography
Ústecká 98, 250 66 Zdiby
Czech Republic
Tel.: +420 724 020 478
vaclav.safar@vugtk.cz

ICWG I/II Terms of Reference

- UAS navigation and positioning in outdoor and indoor environments
- UAS data processing and analysis for Photogrammetry and Remote Sensing applications (Scientific Research, Commercial, Defense)
- UAS platforms, payloads, instruments and their on board integration for Photogrammetry and Remote Sensing (LIDAR, Multi and hyperspectral, Thermal, SAR, gas detectors, etc.)
- Integration of UAS data with information acquired by different platforms (satellite, airborne and terrestrial) and sensors (active and passive)
- Documentation and comparison of innovative UAS systems and sensors in Photogrammetry and Remote Sensing
- Comparison of UAS regulations and contribution to new regulations in different countries
- Dissemination of learning and teaching material on the use of UAS in Academia
- Collaboration with other scientific communities and associations involved in UAS applications (EuroSDR, robotics, computer vision, electronics, etc.)
- Cooperation and involvement of industrial partners in ISPRS activities

ICWG I/IV - Robotics for Mapping and Modelling

Chair
Stephan Nebiker
Institute of Geomatics Engineering
FHNW University of Applied Sciences and Arts Northwestern Switzerland
4132 Muttenz
Switzerland
Tel.: +41 61 467 43 36
stephan.nebiker@fhnw.ch

Co-Chair
Ville V. Lehtola
University of Twente
Faculty of Geo-Information Science and Earth Observation
Hengelosestraat 99
7514AE Enschede
The Netherlands
Tel.: +31 534898190
v.v.lehtola@utwente.nl

Co-Chair
Nora Tilly
Institute of Geography
University of Cologne
Albertus-Magnus-Platz
50923 Cologne
Germany
Tel.: +49 0221 470 89653
nora.tilly@uni-koeln.de

Secretary
Wissam Wahbeh
Institute of Virtual Design and Construction
FHNW University of Applied Sciences and Arts Northwestern Switzerland
4132 Muttenz
Switzerland
Tel.: +41 61 228 55 47
wissam.wahbeh@fhnw.ch

Key Support Personnel
Edward Verbree
Delft University of Technology
The Netherlands
e.verbree@tudelft.nl

Key Support Personnel
John Shi Wen-zhong
Department of Land Surveying and Geo-Informatics
The Hong Kong Polytechnic University
Hong Kong
Tel.: +852 2766-5975
lswzshi@polyu.edu.hk

ICWG I/IV Terms of Reference

- Address challenges in employing robotics for mapping and challenges in map representations for robotics and autonomous vehicle navigation
- Assess robotic mapping platforms for indoor and outdoor environments
- Evaluate localisation and mapping sensors for indoor and outdoor robotics
- Investigate the use of on-board sensors of autonomous vehicles for mapping and map updating purposes
- Research and apply spatial representations, data structures and database technologies for large scale mapping and map updating
- Address the derivation and updating of sustainable urban and building models
- Investigate the semantic enrichment of urban and indoor models, specifically for analysis and autonomous navigation purposes
- Exploit synergies between indoor mobile mapping and building information modelling (BIM)
- Investigate new robotic and indoor mobile mapping applications
- Develop and implement indoor mobile mapping benchmarks
- Establish and strengthen contacts with the robotics community

Technical Commission II - Photogrammetry

President 2021-22
Alper Yilmaz
470 Hitchcock Hall
2070 Neil. Ave
Columbus OH 43210
USA
Tel.: +1 614 2474323
isprs-pr-c2@isprs.org
yilmaz.15@osu.edu

Vice-President
Jan Dirk Wegner
Universität Zürich
Institute for Computational Science
Winterthurerstrasse 190
8057 Zürich
SWITZERLAND
Tel.: +41 44 633 68 08
isprs-pr-c2@isprs.org
jan.wegner@geod.baug.ethz.ch

Secretary
Rongjun Qin
The Ohio State University
2070 Neil Avenue
Columbus 43210, Ohio
USA
Tel.: +1 614 292 6648
isprs-pr-c2@isprs.org
qin.324@osu.edu

President 2016-21
Fabio Remondino
3D Optical Metrology unit (3DOM)
Bruno Kessler Foundation (FBK)
via Sommarive 18
38123 Trento
ITALY
Tel.: +39 0461 314914
remondino@fbk.eu

Vice-President 2016-21
Takashi Fuse
University of Tokyo
Department of Civil Engineering
Hongo7-3-1, Bunkyo-ku
Tokyo
JAPAN, 113-8656
Tel.: +81 3 5841 6129
fuse@civil.t.u-tokyo.ac.jp

Secretary 2016-21
Isabella Toschi
nFrames GmbH
Kornbergstraße 36
D-70176 Stuttgart
GERMANY
itoschi@esri.com

Terms of Reference

- Sensor pose estimation and autonomous navigation
- Multi-image geometry, DEM and 3D model generation
- Spatial, spectral and temporal analysis of image and range data, including pattern analysis and machine learning methods for object detection and recognition, image classification and point cloud processing
- Integration and fusion of multiple data sources for advanced object detection, scene understanding and 3D modeling
- Upscaling of photogrammetric processing methods, big data and cloud computing
- Image-based and range-based systems and methods for mapping, industrial, heritage, space, underwater and environmental applications
- Liaison with Commission I on sensors and platforms for photogrammetric applications
- Liaison with Commission III on photogrammetric methods for remotely sensed data
- Liaison with Commission IV on geometric content creation for GIS and mapping applications
- Liaison with Commission V on knowledge transfer and outreach

WG II/1 - Image Orientation

Chair
Cyrill Stachniss
Photogrammetry, IGG
University of Bonn
Bonn, Germany
Tel.: +49 - 228 - 73 - 27 13
cyrill.stachniss@igg.uni-bonn.de

Co-Chair
Andrea Fusiello
Dipartimento Politecnico di Ingegneria e Architettura
Università degli Studi di Udine
Udine
Italy
Tel.: +39 0432 558327
andrea.fusiello@uniud.it

Co-Chair
Ronny Hänsch
SAR Technology
German Aerospace Center
Wessling
Germany
Tel.: +49 8153 - 28 3975
rww.haensch@gmail.com

Secretary
Mozhdeh Shahbazi
Department of Geomatics Engineering
University of Calgary and Centre de géomatique du Québec
Calgary and Saguenay
Canada
Tel.: +1 403 210 7710
mozhdeh.shahbazi@ucalgary.ca

Industrial Representative
Michael Gruber
Vexcel Imaging GmbH
Graz
Austria
Tel.: +43 664 882 388 08
michael.gruber@vexcel-imaging.com

Key Member
Yongjun Zhang
School of Remote Sensing and Information Engineering
Wuhan University
China
zhangyj@whu.edu.cn

WG II/1 Terms of Reference

- Orientation of non-conventional image sources, i.e., oblique images, cameras with rolling shutter, crowd-sourced images
- Feature extraction and stereo/multi-view sparse matching
- Image alignment and applications such as mosaicking, denoising, deblurring, super resolution, etc.
- Direct and indirect geo-referencing
- Intrinsic/extrinsic camera calibration including methods based on single images, online approaches, or handling ambiguous and degenerate configurations
- Structure from Motion and SLAM
- Geometric/algebraic computer vision, multi-image geometry, and modern approaches to Bundle Adjustment, e.g., large-scale or structureless BA
- Evaluation of performance, reliability, robustness and generality of methods

WG II/2 - Point Cloud Generation

Chair
Norbert Haala
Institute for Photogrammetry
University of Stuttgart
Stuttgart
Germany
Tel.: +61 3 9925 9628
norbert.haala@ifp.uni-stuttgart.de

Co-Chair
Mathias Rothermel
nFrames GmbH
Kornbergstraße 36
70176 Stuttgart
Germany
Tel.: +49 711 99788728
mathias.rothermel@nframes.com

Co-Chair
Pablo d'Angelo
German Aerospace Center (DLR)
Remote Sensing Technology Institute
Oberpfaffenhofen
Germany
Tel.: +49 08153 28 3593
pablo.angelo@dlr.de

Industrial Representative
Chritoph.Strecha
Pix4D SA
Lausanne
Switzerland
Tel.: +41 21 552 05 96
christoph.strecha@pix4d.com

WG II/2 Terms of Reference

- Stereo and Multi-View-Stereo approaches for terrestrial / UAV / aerial / spaceborne imagery
- Methods for mesh generation
- Filtering, fusion and integration of point clouds from different data sources or sensors for surface reconstruction
- Quality and performance evaluation of point cloud generation with respect to computational complexity, precision, robustness and scalability of methods

WG II/3 - Point Cloud Processing

Chair
Jan Boehm
Department of Civil, Environmental and Geomatic Engineering
University College London
United Kingdom
Tel.: +44 (0)20 3108 1036
j.boehm@ucl.ac.uk

Co-Chair
Bisheng Yang
State Key Laboratory of Information Engineering in Surveying, Mapping and Remote Sensing (LIESMARS)
Wuhan University
China
Tel.: +86 27 6877 9699
bshyang@whu.edu.cn

Co-Chair
Mathieu Brédif
MATIS Laboratory
Institut Géographique National (IGN)
Saint-Mandé CEDEX
France
Tel.: +33 1 43 98 83 19
mathieu.bredif@ign.fr

Secretary
Martin Kada
Institut für Geodäsie und Geoinformationstechnik
TU Berlin
Germany
Tel.: +49 30 314 23274
martin.kada@tu-berlin.de

WG II/3 Terms of Reference

- Development of new methodologies, algorithms and applications for point cloud processing
- Information extraction from point clouds, including low-level feature extraction, segmentation and classification
- Point cloud registration and fusion
- Cloud Computing and high-performance computing for massive point cloud processing
- Geospatial Big Data processing for point clouds
- Point cloud rendering and streaming for massive point clouds
- Point cloud processing for building information modelling (BIM)
- Ubiquitous point cloud sensing

WG II/4 - 3D Scene Reconstruction and Analysis

Chair
Franz Rottensteiner
Institute of Photogrammetry and GeoInformation
Leibniz Universität Hannover
30167 Hannover
Germany
Tel.: +49 511 762 3893
rottensteiner@ipi.uni-hannover.de

Co-Chair
Bruno Vallet
MATIS Laboratory
Institut Géographique National (IGN)
Saint-Mandé CEDEX
France
Tel.: +33 1 4398 8081
bruno.vallet@ign.fr

Co-Chair
Markus Gerke
Institute of Geodesy and Photogrammetry
Technische Universität Braunschweig
Pockelsstraße 3
DE-38106 Braunschweig
Germany
Tel.: +49 531/ 391–945 70
m.gerke@tu-bs.de

Secretary
Martin Weinmann
Institute of Photogrammetry and Remote Sensing
Karlsruhe Institute of Technology (KIT)
Englerstraße 7
76131 Karlsruhe
Germany
Tel.: +49 721 608 47302
martin.weinmann@kit.edu

WG II/4 Terms of Reference

- Models and techniques for extracting features, geometrical primitives and objects from data acquired by airborne and/or terrestrial sensors, including object recognition and 3D object reconstruction, and possibly integrating information about multiple object classes and their relations within complex scenes.
- Classification and semantic segmentation of point clouds and surface meshes with or without radiometric information.
- Generation and update of high-resolution 3D city models and road databases, including mesh based, polyhedral, parametric and multiscale representations possibly with level-of-detail (LOD) and (semantic) attributes, and texturing of the resultant 3D models.
- Object detection, recognition and 3D reconstruction in the context of robotics or autonomous driving.
- Multimodal data fusion: performing any of the tasks mentioned above by exploiting the complementarity of using different viewpoints (space-borne, nadir/oblique aerial, UAV, fixed/mobile terrestrial), different sensor types (monoscopic/stereoscopic images, LiDAR, (In)SAR), and existing data (traditional cartographic products, CAD models, urban GIS).
- Assessment of efficiency and quality and of their dependence on the quality of the input data, including uncertainty analysis and uncertainty propagation, for any of the tasks mentioned above.

WG II/5 - Dynamic Scene Analysis

Chair
Alper Yilmaz
Photogrammetric Computer Vision Lab
The Ohio State University
Columbus
USA
Tel.: +1 614-247-4323
yilmaz.15@osu.edu

Co-Chair
Michael Ying Yang
ITC - Faculty of Geo-Information Science and Earth Observation
University of Twente
Enschede
Netherlands
Tel.: +31 53 489 2916
michael.yang@utwente.nl

Co-Chair
Yury Vizilter
GosNIIAS - The Federal State Unitary Enterprise
"State Research Institute of Aviation Systems"
Moscow Viktorenko 7
Russia
Tel.: +7 499-157-9498
viz@gosniias.ru

Secretary
Siavash Hosseinyalamdary
ITC - Faculty of Geo-Information Science and Earth Observation
University of Twente
Enschede
Netherlands
Tel.: +31 53 489 3921
siavash.hosseinyalamdary@gmail.com

Industrial Representative
Kent Kahle
Engineering & Business Development
Trimble Navigation Inc.
USA
Kent_Kahle@Trimble.com

WG II/5 Terms of Reference

- Videogrammetry
- Dynamic scene understanding from image sequences.
- Models and methods to determine ego-motion for photogrammetric and computer vision applications including but not limited to navigation, geo-referencing and object reconstruction.
- Detection, reconstruction, classification and tracking of single and multiple objects in image sequences
- Event reconstruction and scene analysis from single and multiple image streams.
- Offline and real-time 3D processing of image sequences (MOCAP system, mobile mapping, etc.)
- Quality assessment techniques for calibration, orientation and object detection from image sequences
- Benchmarking of object detection and semantic segmentation from image sequences
- Change detection in image time-series and/or 3D point clouds

WG II/6 - Large-scale Machine Learning for Geospatial Data Analysis

Chair
Jan Dirk Wegner
Universität Zürich
Institute for Computational Science
Winterthurerstrasse 190
8057 Zürich
Switzerland
Tel.: +41 44 633 68 08
jan.wegner@geod.baug.ethz.ch

Co-Chair
Ribana Roscher
Remote Sensing
University of Bonn
Bonn
Germany
Tel.: +49 228 73 2716
ribana.roscher@uni-bonn.de

Co-Chair
Michele Volpi
Swiss Data Science Center
ETH Zurich
Switzerland
Tel.: +41 44 632 80 45
michele.volpi@sdsc.ethz.ch

Secretary
Clément Mallet
Univ. Paris Est
IGN-ENSG
Saint-Mandé
France
Tel.: +33 1 43 98 84 36
clement.mallet@ign.fr

Industrial Representative
Wolfgang Steinborn
Geo-Info-Systems
Rudolf-Hahn-Str. 152
53227 Bonn
Germany
Tel.: +49 228 4339581
Tel.: +49 228 461256
steinbornw@gmx.de
wsteinborn@euspaceimaging.com

Industrial Representative
Michaela Neumann
European Space Imaging
Arnulfstrasse 199
80634 Munich
Germany
Tel.: +49 89 130142 0
Tel.: +49 89 130142 22
mneumann@euspaceimaging.com

WG II/6 Terms of Reference

- Large-scale image classification,
- Machine learning, deep learning,
- Pixel-wise semantic segmentation at large-scale,
- Supervised, weakly supervised, transfer, and human-in-the-loop learning
- Multi-view, multi-temporal, multi-modal image interpretation
- Change detection and environmental / urban monitoring

WG II/7 - Vision Metrology

Chair
Stephen Kyle
Department of Civil, Environmental and Geomatic Engineering
University College London
London
UK
Tel.: +44 1481 253057
s.kyle@ucl.ac.uk

Co-Chair
Stuart Robson
Department of Civil, Environmental and Geomatic Engineering
University College London
London
UK
Tel.: +44 207 679 2726
s.robson@ucl.ac.uk

Co-Chair
Thomas Luhmann
Institute for Applied Photogrammetry and Geoinformatics
Jade University of Applied Sciences
Oldenburg
Germany
Tel.: +49 441 7708 3172
luhmann@jade-hs.de

Secretary
Erica Nocerino
Department of Humanities and Social Sciences
University of Sassari
Via Roma, 151
07100 Sassari
Italy
enocerino@uniss.it

Key Support Personnel
Max Hödel
Photogrammetry and Remote Sensing
TU Munich
Innovations - BMW Group
Germany
max.hoedel@tum.de

Key Support Personnel
Jónatas Valença
CERIS
IST-ID
University of Lisbon
Lisbon
Portugal
jonatas.valenca@tecnico.ulisboa.pt

WG II/7 Terms of Reference

- Performance evaluation of active and passive systems
- Definition of accuracy and best practice
- Contribution to international standards
- System developments and industrial applications
- Very close range and large volume measurement applications
- Camera-controlled robot and machine guidance
- Measurement of dynamic processes
- Structural deformation analysis
- Medical systems and applications
- Greater involvement of industrial partners in ISPRS activities

WG II/8 - Data Acquisition and Processing in Cultural Heritage

Chair
Fulvio Rinaudo
Department of Architecture & Design
Politecnico di Torino
Viale A. Mattioli, 39
Torino
Italy
Tel.: +39 331 6714787
fulvio.rinaudo@polito.it

Co-Chair
Diego Gonzalez-Aguilera
TIDOP Research Unit
Higher Polytechnic School of Avila
University of Salamanca
Avila
Spain
Tel.: +34 920 353500
daguilera@usal.es

Co-Chair
Geert Verhoeven
LBI ArchPro
Ludwig Boltzmann Gesellschaft GmbH
Franz-Klein-Gasse 1/III
Wien
Austria
Tel.: +43 699 1520 6509
geert.verhoeven@archpro.lbg.ac.at

Secretary
Francesco Fassi
3DsurveyGroup
ABC Department
Politecnico di Milano
Milano
Italy
Tel.: +39 02 2399 6532
francesco.fassi@polimi.it

WG II/8 Terms of Reference

- Development and promotion of data acquisition strategies, data processing techniques and data management solutions (such as the spatial information systems GIS and BIM) applicable to all subjects that can be categorized as cultural heritage.
- Integration of data and measurement techniques supporting metric and remote sensing surveys, and monitoring actions for the valorization, conservation, restoration and archiving of archeological, architectural, urban and natural landscape heritage.
- Development and dissemination of best practice protocols to aid appropriate application across related cultural heritage fields.
- Development and promotion of low-cost, rapid, innovative, automated, commercial and open-source approaches for metric and remote sensing survey of heritage assets.
- Development of both virtual and augmented reality as well as online applications and advanced visualization systems to promote the dissemination and the correct use of 3D metric surveys.
- Close co-operation with related disciplines, national / international groups (e.g., CIPA, EAA, ICOMOS etc.) and other ISPRS working groups

WG II/9 - Underwater Data Acquisition and Processing
Chair
Fabio Menna
3DOM - 3D Optical Metrology Unit
FBK - Bruno Kessler Foundation
via Sommarive 18
38123 Povo-Trento
Italy
Tel.: +39 0461 314446
fmenna@fbk.eu

Co-Chair
Mark Shortis
School of Science
RMIT University
Melbourne
Australia
Tel.: +61 3 9925 9628
mark.shortis@rmit.edu.au

Co-Chair
Dimitrios Skarlatos
Dept. of Civil Eng. & Geomatics
Cyprus University of Technology
Limassol
Cyprus
Tel.: +357 25002360
dimitrios.skarlatos@cut.ac.cy

Secretary
Panagiotis Agrafiotis
Lab. of Photogrammetry
School of Rural and Surveying Engineering
National Technical University of Athens
Athens
Greece
Tel.: +30 2107722687
pagraf@central.ntua.gr

Key Support Personnel
Higinio González Jorge
Department of Natural Resources and Environmental Engineering
University of Vigo
Vigo
Spain
34 986818752
higiniog@uvigo.es

Key Support Personnel
Patrick Westfeld
Federal Maritime and Hydrographic Agency (BSH)
Section Marine Geodesy, Automation, Bathymetry
Rostock
Germany
Tel.: +49 381 4563-603
patrick.westfeld@bsh.de

Industrial Representative
Rustom Jehangir
Blue Robotics
4030 Spencer St.
Torrance, CA 90503
USA
rusty@bluerobotics.com

WG II/9 Terms of Reference

- Definition of best practice for geometric calibration, color correction and validation of systems for underwater 3D measurements

- Geometric and stochastic modeling of multimedia geometry for underwater image and range measurements
- Lidar bathymetry for seafloor and water surface measurement
- Algorithms and methods for underwater localization and navigation used in ROVs, AUVs and augmented and virtual reality applications
- Combined above water, through water and underwater techniques for 3D modeling of artefacts and mapping of coastal areas
- Integration and performance evaluation of platforms such as ROVs, AUVs, towed bodies and diver controlled systems
- Underwater applications and techniques in archaeology, 3D/2D mapping, modeling and visualization, biomass estimation, habitat monitoring, metrology, inspections and volumetric reconstruction for flow tracking

WG II/10 - 3D Mapping for Environmental & Infrastructure Monitoring

Chair
Roderik Lindenbergh
Delft University of Technology
Department of Geoscience & Remote Sensing
Delft
The Netherlands
Tel.: +31 15 27 87649
r.c.lindenbergh@tudelft.nl

Co-Chair
Martin Rutzinger
Institute of Geography
University of Innsbruck
Innrain 52f
A-6020 Innsbruck
Austria
Tel.: +43 512 507 54050
martin.rutzinger@uibk.ac.at

Co-Chair
Vladimir Knyaz
Machine vision department
State research Institute of Aviation Systems
Moscow
Russia
Tel.: +7 499 157 3127
knyaz@gosniias.ru

Secretary
Belén Riveiro
Applied Geotechnologies group
Dept. Materials Engineering, Applied Mechanics and Construction
University of Vigo
Vigo
Spain
Tel.: +34 986 130 151
belenriveiro@uvigo.es

Key Support Personnel
Daniel Wujanz
Institute of Geodesy and Geoinformation Science
Technische Universität Berlin
Berlin
Germany
Tel.: +49 30 314 22374
daniel.wujanz@tu-berlin.de

Industrial Representative
Christoph Held
Zoller & Fröhlich GmbH
Simoniusstrasse 22
88239 Wangen im Allgäu
Germany
Tel.: +49 (0) 7522 9308-548
c.held@zf-laser.com

WG II/10 Terms of Reference

- Improve methodology for 3D mapping and monitoring of geohazards, geomorphology and vegetation
- Study and promote the use of 3D photogrammetric techniques for inspection and life cycle monitoring of infrastructures like bridges, buildings, dikes, and to improve on the integration with structural component analysis
- Analyse, share and promote best 3D approaches and results in biomedical applications in collaboration with the biomedical society
- Study techniques for near-continuous spatio-temporal 3D monitoring of environmental, infrastructural and biomedical processes.
- Evaluation and integration of new 3D and 2D imaging sensors for the purpose of 3D mapping for environmental and infrastructure monitoring

ICWG II/III - Pattern Analysis in Remote Sensing

Chair
Uwe Stilla
Technische Universitaet Muenchen
Photogrammetry & Remote Sensing
Muenchen
Germany
Tel.: +49 89 289 22670
stilla@tum.de

Co-Chair
Jie Shan
Purdue University
School of Civil Engineering
550 Stadium Mall Drive
West Lafayette, IN
USA
Tel.: +1 765 494 2168
jshan@ecn.purdue.edu

Co-Chair
Devis Tuia
EPFL Valais Wallis
Rue de l'Industrie 17
Case postale 440
CH-1951 Sion
Switzerland
Tel.: +41 21 693 00 11
devis.tuia@epfl.ch

Secretary
Ludwig Hoegner
Technische Universitaet Muenchen
Photogrammetry & Remote Sensing
Muenchen
Germany
Tel.: +49 89 289 22680
ludwig.hoegner@tum.de

ICWG II/III Terms of Reference

- Automatic identification and learning of 2D and 3D patterns in uni-modal and multi-modal remote sensing data, e.g., multi-scale aerial and satellite data; multi- and hyperspectral data; SAR-, radargrammetric and SAR-tomography data
- Automatic identification and learning of temporal patterns in remote sensing data, e.g., image-based flow estimation and learning from InSAR data (traffic, glaciers, currents, etc.); analysis-by-synthesis approaches for motion and deformation modeling with passive and active sensors
- Integration of radiometry and radiometric models into pattern recognition; radiometrically enhanced object models for range-intensity images and sequences; integration of SAR-simulation into SAR-image and analysis
- Recognition of 2D and 3D patterns in remote sensing data exploiting 3d and 4d models (GIS / CAD / BIM)

Technical Commission III - Remote Sensing

President
Jie Jiang
School of Geomatics and Urban Spatial Informatics
Beijing University of Civil Engineering and Architecture
No.1 Zhanlanguan Road
Xicheng District
Beijing, 100044
CHINA
Tel.: +86 13910602658
isprs-pr-c3@isprs.org
jiangjie_263@263.net

Vice-President
Ahmed Shaker
Department of Civil Engineering
Faculty of Engineering and Architecture Science
Ryerson University
350 Victoria Street,
Toronto, Ontario, M5B 2K3
CANADA
Tel.: +1 416-831-9874
Tel.: +1 416-979-5122
isprs-pr-c3@isprs.org
ahmed.shaker@ryerson.ca

Secretary
Hongping ZHANG
National Geomatics Center of China
28 Lianhuachi West Road
Beijing 100830
CHINA
Tel.: +86 10 63881266
Tel.: +86 10 63881219
isprs-pr-c3@isprs.org
zhp7260@gmail.com

Terms of Reference

- Focus on physical modelling of electromagnetic radiation, the analysis of spectral signatures, image classification, data fusion, pattern recognition, and quality control;
- Enhance the applications in monitoring and assessing environment, landuse/landcover, nature resources, weather/atmosphere and climate, cryosphere, coastal and ocean, forestry/agricultural and ecosystems/biodiversity
- Integrate the global efforts by effective out-reach through data/algorithms sharing and capacity building, cooperates intensively with national space agencies, alliance with the International Committee on Remote Sensing of Environment (ICORSE)

WG III/1 - Thematic Information Extraction

Chair
Xianlian Liang
State Key Laboratory of Information Engineering in Surveying, Mapping and Remote Sensing
Wuhan University
Luoyulu 129
430079 Wuhan
China
xinlian.liang@whu.edu.cn

Co-Chair
Maria Teresa Melis
TeleGIS Laboratory, Department of Chemical and Geological Sciences
University of Cagliari
51 Trentino St
09127, Cagliari
Italy
0039 0706757788
titimelis@unica.it

Co-Chair
Brigitte Leblon
University of New Brunswick
Room NF 210, P.O. Box 4400,
Fredericton
New Brunswick, E3B 5A3
Canada
Tel.: +1 506-453-4924
Tel.: +1 506-453-3538
bleblon@unb.ca

Secretary
Serkan Ural
Geomatics Engineering
Hacettepe University
06800 Beytepe
Ankara
Turkey
Tel.: +90 312-780-5785
ural@hacettepe.edu.tr
serkan.ural@gmail.com

WG III/1 Terms of Reference

- Promote scientific studies of new technologies and methodologies of thematic information extraction with emphases on the diachronic, multi-scale and multi-sensor approaches.
- Develop data architecture tackling with big data and crowd sourcing data for thematic information and its dynamics
- Virtual reality for thematic information demonstration
- Promote the technique transfers through collaboration and networking between universities, research organizations, national space/mapping agencies, and policy makers
- Promote the education, communication and collaborations through courses, articles and workshops
- Collaborate with RS National and International forums and organization (GEO, GEOSS, CEOS, etc) and interact with international agencies of environmental research and protection (IPCC, WMO, UNEP, IMD, Mountain Partnership, GLISPA, etc.).

WG III/2 - Microwave Remote Sensing

Chair
Batuhan Osmanoglu
Biospheric Sciences Laboratory
NASA Goddard Space Flight Center
8800 Greenbelt Rd.
Bldg 33 G426
Greenbelt, MD 20771, USA
Tel.: + 1 301 614 6690
batuhan.osmanoglu@nasa.gov

Co-Chair
Susaki Junichi
Geoinformatics Lab.
Graduate School of Engineering
Kyoto University
C1-1-206, Kyotodaigaku-katsura,
Nishikyo-ku, Kyoto
615-8540, JAPAN
Tel.: + 81 75 383 3300
Tel.: + 81 75 383 3300
susaki.junichi.3r@kyoto-u.ac.jp

Co-Chair
Zhenhong Li
College of Geological Engineering and Geomatics
Chang'an University
Xi'an 710054
China
Tel.: +86 (0)29-82339036
Zhenhong.Li@chd.edu.cn

Secretary
Saygin Abdikan
Geomatics Engineering Department
Hacettepe University
Beytepe 06800 Ankara
Turkey
Tel.: +90 312 297 69 90/125

Tel.: +90 312 297 61 67
sayginabdikan@hacettepe.edu.tr

Key Support Personnel
Fusun Balik Sanli
YTÜ Davutpaşa Kampüsü
Harita Mühendiskiği Bölümü 34220-Esenler İstanbul
Turkey
Tel.: +90 212 383 5331
fbalik@yildiz.edu.tr

Key Support Personnel
Fabiana Calò
IREA-CNR Diocleziano, 328
80124 Napoli
Italy
Tel.: +39 081-76206 33
calo.f@irea.cnr.it

Key Support Personnel
Antonio Pepe
Adress: IREA-CNR Diocleziano, 328
80124 Napoli
Italy
Tel.: +39 081 76206 17
pepe.a@irea.cnr.it

Key Support Personnel
Mahmut Arıkan
2628 VG
Delft
The Netherlands
Tel.: +31 6 413 65 412
m.arikan@beesense.nl

WG III/2 Terms of Reference

- Promote advanced research, engineering development, and operational use of theories, methods, systems for the analysis of remotely sensed microwave observations of the Earth from air-, space- and ground-borne sensors;
- Focus on physical modelling of microwave radiation, the analysis of spectral signatures, radar image classification, data fusion, pattern recognition, and quality control;
- Enhance the applications in monitoring and assessing environment, geohazards, landuse/landcover, nature resources, weather/atmosphere and climate, cryosphere, coastal and ocean, forestry/agricultural and ecosystems/biodiversity;
- Integrate the global efforts by effective out-reach through data/algorithms sharing and capacity building, cooperates intensively with international professional societies, national space agencies, and alliance with the International Committee On Remote Sensing of Environment (ICORSE).

WG III/3 - SAR-based Surface Generation and Deformation Monitoring

Chair
Uwe Soergel
Institute for Photogrammetry
University Stuttgart
Geschwister-Scholl-Str. 24D
D-70174 Stuttgart
Germany
Tel.: +49 711-685-83336
soergel@ifp.uni-stuttgart.de

Co-Chair
Mattia Crespi
Geodesy and Geomatics Division
Department of Civil, Building, and Environmental Engineering
University of Rome "La Sapienza"
Palazzina di Construzioni Idrauliche e Geodesia - 3° piano, via Eudossiana, 18
00184 Roma
Italy
Tel.: +39 0644585097
mattia.crespi@uniroma1.it

Co-Chair
Michele Crosetto
Geomatics Division
Centre Tecnològic de Telecomunicacions de Catalunya (CTTC)
Avinguda Gauss 7
E-08860 – Castelldefels, Barcelona
Spain
Tel.: +34 93 6452900
mcrosetto@cttc.cat

Secretary
Bahram Salehi
College of Environmental Science and Forestry (ESF)
State University of New York (SUNY)
416 Baker Lab
1 Forestry Dr
Syracuse NY 13210
USA
Tel.: +1 315-470-6550
bsalehi@esf.edu

WG III/3 Terms of Reference

- Generation and accuracy assessment of DEM from SAR imagery
- Object extraction from InSAR data
- Differential SAR Interferometry and Persistent Scatterer Interferometry
- Ground based SAR Interferometry

WG III/4 - Hyperspectral Image Processing

Chair
Eija Honkavaara
Finnish Geospatial Research Institute in National Land Survey of Finland
P.O. Box 84
FI-00521 Helsinki
Finland
Tel.: +358 40-1920835
eija.honkavaara@nls.fi

Co-Chair
Konstantinos Karantzalos
National Technical University of Athens
Heroon Polytechniou 9
Zographos, 15780
Greece
Tel.: +30 2107721673
Tel.: +30 2107722594
karank@central.ntua.gr

Co-Chair
Baoxin Hu
Department of Earth and Space Science and Engineering
Petrie 121
York University
4700 Keele St.
Toronto ON M3J 1P3
Canada
Tel.: +416 736-2100 ext. 20557
Tel.: +416 736-5817
baoxin@yorku.ca

Secretary
Ilkka Pölönen
University of Jyväskylä
Department of Mathematical Information Technology
P.O. Box 35
FI-40014, University of Jyväskylä
Finland
Tel.: +358 400 248 140
ilkka.polonen@jyu.fi

WG III/4 Terms of Reference

- Visible, Ultraviolet, NIR, SWIR and thermal imaging spectroscopy from satellite, aerial, UAV and ground platforms
- Processing and analysis of 1D signals, 2D images, 3D hypercubes and 4D hyperspectral video datasets
- Radiometric, atmospheric and geometric calibration/corrections of hyperspectral data
- Efficient hyperspectral image classification and analysis for the consistent estimation of geo- and bio-physical parameters, mapping, vegetation analysis in agriculture,

forestry and others, and environmental remote sensing
- Fusion of hyperspectral data, other sensor data (e.g., Lidar, SAR) and a priori information
- Processing and interpretation of hyperspectral image data from low-cost, miniaturized sensors from UAV and other platforms
- Detection, classification and tracking of moving objects/phenomena in hyperspectral video sequences
- Efficient hyperspectral data processing through parallel programming, graphic card implementation and FPGAs

WG III/5 - Information Extraction from LiDAR Intensity Data

Chair
Marco Scaioni
Dept. of Architecture, Built Environment, and Construction Engineering
Politecnico Milano
Via Ponzio 31
20133 Milano
Italy
Tel.: +39 02 2399 6515
marco.scaioni@polimi.it

Co-Chair
Guoqing ZHOU
Guilin University of Technology
12 Jiangan Road
Guilin, Guanxi 541004
China
Tel.: + 86 773 5896073
Tel.: + 86 773 589 2786
glitezhou@yahoo.com
gzhou@glut.edu.cn

Co-Chair
Ana Paula Baungarten Kersting
Teledyne Optech
300 Interchange Way
Vaughan ON
L4K 5Z9 Canada
Tel.: + 1 905 660 0808
ana.kersting@teledyneoptech.com

Secretary
Luigi Barazzetti
Dept. of Architecture, Built Environment, and Construction Engineering
Politecnico Milano
Polo Territoriale di Lecco
23900 Lecco
Italy
Tel.: +39 02 2399 8779
luigi.barazzetti@polimi.it

Key Support Personnel
Mattia Previtali
Dept. of Architecture, Built Environment, and Construction Engineering
Politecnico Milano
Polo Territoriale di Lecco
23900 Lecco
Italy
Tel.: +39 02 2399 8767
mattia.previtali@polimi.it

WG III/5 Terms of Reference
- Development and research of non-topographic LiDAR data applications for surface condition assessment
- Geophysical parameters retrieval from LiDAR intensity data
- Development and evaluation of new methods and algorithms of laser intensity-based classification and segmentation
- Integration and performance evaluation of LiDAR data intensity and other data types for synergy of new information
- Data processing and application of multi-wavelength and full-waveform LiDAR
- Development and dissemination of new methodic and technology of exploiting intensity data from terrestrial laser scanning sensors for surface condition assessment
- Processing of intensity data from bathymetric LiDAR for quality assessment of underwater conditions
- Promoting applications based on LiDAR intensity data, also integrated with other data sources, to cope with societal challenges

WG III/6 - Remote Sensing Data Fusion

Chair
Jixian Zhang
National Quality Inspection and Testing Center for Surveying and Mapping Products
International Journal of Image and Data Fusion
Chinese Academy of Surveying and Mapping
No.28, Lianhuachi West Road,
Haidian District
Beijing 100830
P.R. CHINA
Tel.: + 86 10 63881816
Tel.: + 86 10 63881809
zhangjx@sbsm.gov.cn

Co-Chair
Wei Yao
The Department of Land Surveying and Geo-Informatics,
The Hong Kong Polytechnic University,
181 Chatham Road South,
Hung Hom, Kowloon, Hong Kong
Hong Kong
Tel.: +852 2766-4304
Tel.: +852 2330-2994
wei.hn.yao@polyu.edu.hk

Co-Chair
Anna Brook
University of Haifa
Department of Geography and Environmental Studies
Center for Spatial Analysis Research (UHCSISR)
Spectroscopy and Remote Sensing Laboratory
Abba Khoushy Ave 199
3498838, Haifa
Israel
Tel.: +972 (0)4 824 96 12 (Office)
abrook@geo.haifa.ac.il
anna.brook@gmail.com

Secretary
Xiangguo Lin
Institute of Photogrammetry and Remote Sensing
Chinese Academy of Surveying and Mapping
No.28, Lianhuachi West Road,
Haidian District
Beijing 100830
P.R. CHINA
Tel.: + 86 10 6388 0605
Tel.: + 86 10 6388 0535
linxiangguo@casm.ac.cn
linxiangguo@gmail.com

WG III/6 Terms of Reference
- Pixel, feature and decision level fusion algorithms and methodologies
- Automatic geometric registration for fusing images with different spatial, spectral, temporal resolutions; phase information; or acquired in different modes
- Data assimilation
- Multi-source data fusion-based classification and information extraction
- Multi-modal sensor data fusion
- Multi-temporal data fusion
- Image and data mining from multi-platform, multi-source, multi-scale, multi-temporal data sets
- Data fusion applications in geographic-related fields such as

topographic mapping, GIS, forest mapping and natural hazard monitoring, etc.

WG III/7 - Landuse and Landcover Change Detection

Chair
Ammatzia Peled
University of Haifa, Center for Spatial Information Systems Research (UHCSISR)
Department of Geography and Environmental Studies
Haifa, 31905
Israel
Tel.: + 972 48 240148 (o)
peled@geo.haifa.ac.il

Co-Chair
Yongnian Zeng
Central South University,
School of Geosciences and Info-Physics
Center for Spatial Information Technology and Sustainable Development Research
Changsha 410000
China
Tel.: +86 13787795922
ynzeng@mail.csu.edu.cn

Secretary
Md. Surabuddin Mondal
Dept. of Surveying Engineering
Wollega University
Nekemte
Ethiopia
msk.iit@gmail.com

WG III/7 Terms of Reference

- To investigate and enhance algorithms and methodologies for land-use and land-cover change-detection
- To suggest advanced solutions for monitoring land –cover changes
- To further the study of the dynamics of land-use and land-cover change in different regions of the world
- To further the research and investigations into predicting land-use changes
- To study urban land-use development cycles and changes in rural land-cover and land-use (e.g., Agriculture, forestry, recreation), based on data and information fusion
- To further the research into automatic updating of spatial data bases
- To foster investigations and research toward autonomous updating of core spatial data bases using spectral and non-spectral remotely sensed data fused with data and information acquired by other sources.
- To cooperate with other Geospatial Information societies such as ICA and FIG on Change detection based on remotely sensed data and updating of spatial data bases.

WG III/8 - Remote Sensing of Atmospheric Environment

Chair
Lixin WU
School of Geoscience and Info-Physics
Central South University
Lushan South Road 932
Changsha, 410083, Hunan
P.R. China
Tel.: + 86 0731-88830573
awulixin@263.net

Co-Chair
Diego Loyola
German Aerospace Center (DLR)
Remote Sensing Technology Institute
Oberpfaffenhofen
82234 Wessling
Germany
Diego.Loyola@dlr.de

Co-Chair
Pradeep Khatri
Center for Oceanic and Atmospheric Studies
Tohoku University
Sendai
Japan
Tel.: +81 22-795-6743
pradeep.nep@gmail.com
pradeep.khatri.a3@tohoku.ac.jp

Secretary
Kai Qin
School of Environment Science and Spatial Informatics,
China University of Mining & Technology
Nanhu Campus
Xuzhou, 221116, Jiangsu
P.R. China
Tel.: + 86 516 83591306
qinkai20071014@163.com

WG III/8 Terms of Reference

- Development of satellite observations on atmospheric environment including air pollutants, aerosol and its dynamic process
- Development of new models for estimating atmospheric aerosol optical depth, characteristics and particulate matters (PMs) concentration
- Development of new models for extracting atmospheric parameters through sounders/GPS/LiDAR/radio occultation, etc.
- Development of spatio-temporal methodologies and GIS-based systems for atmospheric environment analysis
- Evaluation and validation of satellite observations on atmospheric components and PMs concentration
- Assessment of the impact of urbanization and fossil energy on atmosphere environment
- Collaborate with GEO to serve for public affairs and human health with data and maps

WG III/9 - Cryosphere and Hydrosphere

Chair
Rongxing (Ron) Li
College of Surveying and Geoinformation
Tongji University
1239 Siping Road
Shanghai
CHINA 200092
Tel.: + 86 21 65980773
Tel.: + 86 21 65985123
rli@tongji.edu.cn

Co-Chair
Beata Csatho
Department of Geology
University at Buffalo, SUNY
126 Cooke Hall
Buffalo, NY, 14260-1350
USA
Tel.: +1 716-645-4325
Tel.: + 1 716-645-3999
bcsatho@buffalo.edu

Co-Chair
Vittorio Barale
European Commission
DG Joint Research Centre
Directorate D – Sustainable Resources
Unit D.02 Water and Marine Resources
Office 27 00/32 – T.P. 270, Via E. Fermi 2749, I-21027 Ispra (VA)
Italy

Tel.: +39 0332 789274
Tel.: +39 0332 789034
vittorio.barale@jrc.ec.europa.eu

Secretary
Gang Qiao
College of Surveying and Geoinformation
Tongji University
1239 Siping Road
Shanghai, 200092
China
Tel.: + 86 21 6598640
Tel.: + 86 21 65985123
qiaogang@tongji.edu.cn

WG III/9 Terms of Reference

- Develop remote sensing data for assimilation in cryospheric and hydrological models
- Conduct assessment of errors in the retrieval of satellite cryospheric and hydrological parameters
- Assemble historical records of consistently derived geophysical parameters for studies of changes and trends in the cryosphere and hydrosphere
- Assess glacier and ice sheet mass loss and relationships to sea level rise with consideration of thermal expansion, tectonic causes and other factors.
- Investigate the asymmetry in the changes of sea ice in the Arctic and Antarctic regions
- Study trends and changes in albedo at high latitudes and relationships with changes in snow cover and melt patterns
- Monitor variability and trends in surface temperature and how they affect snow cover, sea ice extent, glaciers and ice sheet volume, soil moisture and the permafrost regions
- Measure, characterize, understand, and predict the storage and transport of momentum, heat, water (salinity), and greenhouse gases in the ocean and the surface signatures (temperature, salinity, dynamic topography) of the ocean's response to surface forcing (wind stress, fresh water, turbulent and radiative heat flux) from diurnal to decadal time scales, and from coastal to open oceans
- Understand the oceans' role in the changes and interactions amongst the biological, chemical, and energy/water cycles in the oceans and their influence on terrestrial and cryospheric changes
- Help coordinate present and future remote sensing missions especially those related to ocean, snow/ice, and terrestrial hydrological observations, and provide expertise in the calibration, validation, and dissemination of the resulting data
- Develop early warning systems for natural disasters like droughts and floods

WG III/10 - Agriculture and Natural Ecosystems Modelling and Monitoring

Chair
Mitsunori Yoshimura
Center for Spatial Information Science
the University of Tokyo
As-208
4-6-1, Komaba, Meguro-ku
Tokyo 153-8505
Japan
Tel.: + 81 3 3715 4011
Tel.: +81-3-5452-6414
mitsu_yoshimura@csis.u-tokyo.ac.jp

Co-Chair
Francesco Pirotti
Interdepartmental Research Center in Geomatics
Department of Land, Environment, Agriculture and Forestry
University of Padova
Via dell'Università, 16
35020 - Legnaro (PD)
Italy
Tel.: +39 049 827 2710
Tel.: +39 049 827 2750
francesco.pirotti@unipd.it

Secretary
Jaime Hernández Palma
Laboratorio de Geomática y Ecología del Paisaje
Facultad de Cs. Forestales y de la Conservación de la Naturaleza
Universidad de Chile
Santa Rosa 11315
La Pintana, Santiago, Chile
Tel.: +56 2 9785873
Tel.: +56 2 5414952
jhernand@uchile.cl

WG III/10 Terms of Reference

- Development of new methodologies and algorithms for improving the contribution of remote sensing towards knowledges related to agriculture and natural ecosystems
- Test and assess new remote sensing algorithms for monitoring natural and anthropogenic ecosystems
- Apply remote sensing for supporting precision agriculture by spectral signature in crops for smart farm management
- Support climate change studies through remote sensing applications for global and regional scales dynamics monitoring and modelling
- Collaborate with related academia, researchers, industry and other stakeholders

ICWG III/II - Planetary Remote Sensing and Mapping

Chair
Kaichang DI
Institute of Remote Sensing and Digital Earth
Chinese Academy of Sciences
PO.Box 9718, Datun Road, Chaoyang District
Beijing 100101
P.R. China
Tel.: + 86 10 64868229
dikc@radi.ac.cn

Co-Chair
Jürgen Oberst
German Aerospace Center
Institute for Planetary Research
Planetary Geodesy
Rutherfordstrasse 2
D-12489 Berlin
Germany
Tel.: + 49 30 67055 336
Tel.: + 49 30 67055 402
juergen.oberst@dlr.de

Co-Chair
Irina Karachevtseva
Moscow University of Geodesy and Cartography (MIIGAiK)
MIIGAiK Extraterrestrial Laboratory (MExLab)
Gorokhovsky pereulok, 4
105064, Moscow
Russia
Tel.: +7 499 267-35-13
Tel.: +7 499 267-35-13
i_karachevtseva@miigaik.ru

Secretary
Bo Wu
Department of Land Surveying & Geo-Informatics
The Hong Kong Polytechnic University

Hung Hom, Kowloon
Hong Kong
Tel.: +852 2766 4335
Tel.: +852 2330 2994
bo.wu@polyu.edu.hk

ICWG III/II Terms of Reference

- Development of new methodologies and algorithms for sensor calibration, data fusion and information extraction from planetary remote sensing data
- Development of advanced techniques in planetary photogrammetry and robotic vision for the mapping of celestial bodies
- Evaluation and refinement of reference systems, coordinate systems, control networks, map sheet definitions, etc. and their standardization
- Development of spatial information systems to support extra-terrestrial exploration and science
- Cooperation with related planetary exploration working groups in space agencies and organizations, and liaisons with the ICA Commission on Planetary Cartography

ICWG III/IVa - Disaster Assessment, Monitoring and Management

Chair
Tullio Joseph TANZI
Institut Mines-Telecom - Telecom ParisTech.
Télécom ParisTech - LabSoC, c/o EURECOM
Campus SophiaTech Les Templiers
450 route des Chappes
06410 Biot
France
Tel.: +33 (0)4 93 00 84 11
tullio.tanzi@telecom-paristech.fr

Co-Chair
Orhan ALTAN
Istanbul Technical University
Department of Geomatics
34469 Ayazaga-Istanbul
Turkey
Tel.: +(90) 532 446 4409
oaltan@itu.edu.tr

Co-Chair
Madhu CHANDRA
Chemnitz University of Technology, Head of Microwave Eng. and Electromagnetics
Chemnitz
Germany
Tel.: +49 37153133168
madhu.chandra@etit.tu-chemnitz.de

Secretary
Jana VIESSMANN
Chemnitz University of Technology
Microwave Eng. and Electromagnetics
Chemnitz
Germany
Tel.: +49 37153133164
jana.viessmann@etit.tu-chemnitz.de

ICWG III/IVa Terms of Reference

- Generation of vulnerability and hazard zone maps for different type of disasters, such as forest fire, cyclone, floods, drought, volcano eruptions, earthquakes, landslides etc. and identification & assessment of potential risk zones
- Integrate remotely sensed observations and communication strategies with enhanced predictive modelling capabilities for disaster detection, early warning, monitoring, damage assessment and response
- Development of disaster management plans for pre, during and post disaster situations and enhance support for early warning systems, emergency events mitigation and decision making.
- Collaborate with international bodies such as GEO, JBGIS, ICSU GeoUnions, IRDR
- Continue to organize Gi4DM Conference series and ISPRS-URSI Special Sessions on Disaster Management during URSI GA's and ISPRS Congresses.
- Organise, develop and conduct supporting educational activities (training courses, workshops, webinars, etc.) in the interdisciplinary area of remote sensing and disaster management. The educational activities will contribute to further education and professional development of both experienced and early-stage remote sensing scientists and engineers.

ICWG III/IVb - Remote Sensing Data Quality

Chair
Hussein M. Abdulmuttalib
GIS Department, Dubai Municipality
Baniyas Road
Deira, Dubai
UAE
Tel.: + 971 555500451
husseinma@dm.gov.ae

Co-Chair
Guoman HUANG
Chinese Academy of Surveying and Mapping
No. 28 Lianhuachixi Road
Haidian District
Beijing 100830
P.R. China
Tel.: +86 10 63880615
Tel.: +86 10 63880804
huang.guoman@casm.ac.cn

Co-Chair
Thomas Blaschke
Department of Geoinformatics - Z_GIS
University of Salzburg
Schillerstraße 30
5020 Salzburg
Austria
Tel.: +43 662 8044 7525
Tel.: +43 662 8044 7589
thomas.blaschke@sbg.ac.at

Secretary
Árpád Barsi
Department of Photogrammetry and Geoinformatics
Budapest University of Technology and Economics
Budapest 1111
Műegyetem rkp. 3
Hungary
Tel.: +36 1 463 1186
Tel.: +36 1 463 3084
barsi.arpad@epito.bme.hu
home page

Key Support Personnel
Anna Zih
Dubai Municipality GIS Department
Baniyas Road
Deira
Dubai
UAE
Tel.: + 971 56 4898599
grasf@dm.gov.ae

ICWG III/IVb Terms of Reference

- Assess the current status of scientific development and applied practices, related to Remote Sensing Data Quality, and suggest development plans, researches, activities and projects for the improvements and advent of the same.
- Liaison with sister commissions and WGs involved partially with

data quality, and also with other international organizations to assist the development and improvement of Remote Sensing Data Quality Standards and Protocols, and promote their implementations worldwide.

- Inventory and classify the elements of Remote Sensing Data Quality, and relate it to the quality of other disciplines, the usage and fitness of purpose, and to the simulated world model of data and information.
- Encourage and support scientific works that deal with the improvement of remote sensing data quality processes and management steps, also that clarify and regulate the effects of error propagation due to acquisition, referencing, storing and archiving, processing, analysing, reporting and other operations related to remotely sensed data.
- Clarify the quality aspects of Remote Sensing data, resulting and inherited from raster or vector-raster operations, such as but not limited to pixel processing, segmentation, classification, object base image analysis, image sensitivity analysis, etc.
- Study the reliability and quality measures of Remote Sensing data, in relation to the different application areas that encounter remote sensing, such as environmental monitoring and sustainability, urban planning, city smartness and quality of life, also humanitarian projects for the developing world among other areas of application.
- Assess Remote Sensing Data Quality with respect to the usage of automated major signatures of the electromagnetic spectral different phases, as much as the relations of the type to the sensors used and the area of application, coverage, visits. Sensor positions, sky clearness, etc.

ICWG III/IVc - Environment and Health

Chair
Fazlay S. Faruque
Department of Preventive Medicine,
GIS & Remote Sensing Program
University of Mississippi Medical Ctr
2500 North State Street
Jackson, MS 39215
USA
Tel.: +1 601 814 4993
FFaruque@umc.edu

Co-Chair
Yves M. Tourre
Anewworld and CNES
21 Bd. Lazare Carnot
31000 Toulouse
France
Tel.: +33 53161 7200
yvestourre@aol.com

Co-Chair
Muralikrishna V. Iyyanki
Defence Research and Development Organization (DRDO)
Flat 201, Block 4, SMR Acropolis Apt, White field
Kothaguda, Hyderabad 500082
India
Tel.: +91 984 804 9624
Iyyanki@gmail.com

Secretary
John B. Malone
College of Veterinary Medicine
Pathobiological Sciences
Louisiana State University
Baton Rouge, LA 70803
USA
Tel.: +1 225 578 9692
malone@vetmed.lsu.edu

ICWG III/IVc Terms of Reference

- Review the United Nations Office for Outer Space Affairs (UNOOSA) mandate, activities and plan that relate to human health.
- Advance knowledge in Remote Sensing and other geospatial technologies for applications in Tele-epidemiology.
- Develop a white paper for clinicians documenting the capability of Remote Sensing and other geospatial technologies in capturing environmental variables to incorporate into clinical practices as a disease risk factor.
- Bridge the geospatial science, Earth science and health science communities to explore interdisciplinary collaborations to improve our overall health and well-being.
- Develop two expert groups: 1) Remote Sensing and geospatial technology applications in estimating environmental exposure risk factor for clinical practices and 2) Remote Sensing and geospatial technology applications in ecosystem, climate change and variability, and public health studies.
- Advance knowledge in estimating allergen abundance.
- Review current applications of tools, such as, machine learning, in estimating air pollutants using remotely sensed and other data.
- Contribute to the GEOSS open access public health data resource.

Technical Commission IV - Spatial Information Science

President
Sisi Zlatanova
UNSW Built Environment
University of New South Wales
Red Centre Building
Kensington Campus
Sydney NSW 2052
AUSTRALIA
isprs-pr-c4@isprs.org
s.zlatanova@unsw.edu.au

Vice President 2021-22
Secretary 2016-21
George Sithole
Spatial Data and Spatial Analysis Consultant
GeoVariant
332 Upper Eastside, Brickfield Road
Woodstock
7925 Cape Town
SOUTH AFRICA
isprs-pr-c4@isprs.org
georgesithole@geovariant.com
Secretary 2021-22
Jack Barton
University of New South Wales
Red Centre Building
Kensington Campus
Sydney NSW 2052
AUSTRALIA
isprs-pr-c4@isprs.org
Jack.barton@unsw.edu.au

Vice-President 2016-2021
Suzana Dragicevic
Spatial Analysis and Modeling Laboratory
Department of Geography, Simon Fraser University
8888 University Drive, Burnaby, BC, V5A1S6,
CANADA
suzanad@sfu.ca

Terms of Reference

Considering the state of the art in Spatial Information Science and the ISPRS TC IV 2012-2016 resolution, we define the following ToF:

- Strengthen the work on multidimensional spatial model and representations towards seamless data fusion (WG1)
- Advance the semantic modelling, development and linking of ontologies (WG2)
- Intensify the research data interpretation, quality and uncertainty modeling (WG3)
- Strengthen the research on crowdsourced data and public participation, towards community-driven and participatory applications, collaborative mapping and use/usability of maps (WG 4)
- Stringent the research on seamless indoor/outdoor location-based services, navigation and tracking, and analysis of human movement (WG5)
- Advance interoperable Internet of Things, Sensor web, SDI and linked data (WG6)
- Advance the research on spatial data types, indexing methods and analysis to further contribute to development of spatial DBMS for management and analysis of multi-dimensional data (WG7)
- Encourage the use of functional programming and streaming algorithms in development of demos and applications as well as parallel and distributed processing paradigms. (WG8)
- Advance visual analytics, online multi-dimensional visualization on mobile and desktop devices, considering human-centered applications, privacy and security issues (WG9)
- Advance knowledge on use of spatial information (BIM/GIS) for urban modelling (WG10)

WG IV/1 - Multi-dimensional Modelling

Chair
Eric Guilbert
Department of geomatics science
Université Laval
Québec QC G1V 0A6
Canada
Tel.: +1 418 656-2131 ext. 3863
eric.guilbert@scg.ulaval.ca

Co-Chair
Pawel Boguslawski
Wroclaw University of Environmental and Life Sciences
Institute of Geodesy and Geoinformatics
Grunwaldzka 53, 50-357 Wroclaw
Poland
pawel.boguslawski@upwr.edu.pl

Co-Chair
Umit Isikdag
Department of informatics
Mimar Sinan Fine Arts University
Istanbul
Turkey
uisikdag@gmail.com
umit.isikdag@msgsu.edu.tr

Secretary
Ken Arroyo Ohori
3D Geoinformation
Department of Urbanism
Delft University of Technology
Netherlands
g.a.k.arroyoohori@tudelft.nl

WG IV/1 Terms of Reference

- Reviewing conceptual models for spatial, temporal and spatiotemporal data
- Encourage the development of new models integrating time and scale dimensions with the spatial dimensions
- Investigating new algorithms and data structures taking advantage of multiple dimensions
- Investigating multidimensional models for multiple representation of data for data enrichment
- Promoting the use of these models in geospatial applications
- Facilitating exchanges between researchers on conceptual modelling and actors in GIS applications
- Integrating multisource data into open formats and encouraging the use of standards for sharing geospatial data and resources
- Promoting the use of multidimensional models in geospatial applications in collaboration with WGI/IV and ICWGIV/II

WG IV/2 - Ontologies, Semantics, and Knowledge Representation for Geospatial Information

Chair
Margarita Kokla
School of Rural and Surveying Engineering
National Technical University of Athens
9 Iroon Politechniou str.
15780, Zografos Campus, Athens
Greece
Tel.: +30 210 7722637
Tel.: +30 210 7722734
mkokla@survey.ntua.gr

Co-Chair
Mir Abolfazl Mostafavi
Centre for research in Geomatics
Department of Geomatics Sciences

Université Laval
Quebec, Qc,
G1 K 7P4
Canada
Tel.: +1-418 656-2131- 2750
Tel.: +1-418 656-7411
Mir-Abolfazl.Mostafavi@scg.ulaval.ca

Co-Chair
Antonia Spanò
Department of Architecture and Design (DAD)
Politecnico di Torino
Viale Mattioli, 39
10125 Torino
Italy
Tel.: +39 011 090 4369
antonia.spano@polito.it

Secretary
Francesca Noardo
Open Geospatial Consortium Europe,
Technologielaan 3
B - 3001 Heverlee
Belgium
fnoardo@ogc.org

WG IV/2 Terms of Reference
In order to describe the scope and limitations of the activities of WG IV/2 the following terms of reference have been defined:

- Explore recent advances in geospatial ontologies, semantics, and knowledge representation.
- Explore ontologies and semantics of cutting-edge research topics such as semantic web, big data, linked data, and Volunteered Geographic Information.
- Work on spatial ontologies and semantics data quality and standards.
- Study the development, integration, and evolution of domain geospatial ontologies, classifications, nomenclatures, etc. (land use / land cover, hydrography, etc.).
- Investigate new applications of ontologies in domains such as disaster management, urban modeling, mobility, and architecture.
- Research formalisms, methods, and tools for semantic information representation, extraction, and visualization related to geospatial entities and events.
- Explore topics related to semantic interoperability, semantic similarity, semantic enrichments and semantic annotation, etc.

WG IV/3 - Spatial Data Analysis, Statistics and Uncertainty Modelling

Chair
Mahmoud R. Delavar
Centre of Excellence in Geomatic Eng. in Disaster Management
School of Surveying and Geospatial Eng.
College of Eng.
University of Tehran
P.O. Box: 11155-4563, Tehran
Iran
Tel.: +98 21-61114257
Tel.: +98 21-88008837
mdelavar@ut.ac.ir

Co-Chair
Gerhard Navratil
Dept. of Geodesy and Geoinformation
Technical University Wien
Gußhausstr. 25-29 / E120 (CD0342)
Wien, 1040
Austria
navratil@geoinfo.tuwien.ac.at

Co-Chair
Jamal Jokar Arsanjani
Department of Planning and Development
Aalborg University Copenhagen
A.C. Meyers Vænge 15
DK-2450 Copenhagen
Denmark
jja@plan.aau.dk

Secretary
Ana-Maria Olteanu-Raimond
GIS COGIT Laboratory
French Mapping Agency
France
Tel.: +33 1 43 98 62 36
ana-maria.raimond@ign.fr

WG IV/3 Terms of Reference

- Review data mining methods applicable to spatial data
- Review methods for spatial data quality assessment for the several types of spatial data
- Develop new algorithms and/or combination of methodologies to integrate different types of spatial data
- Develop methods to assess quality of information resulting from data integration
- Advance knowledge in assessing spatial data fitness for use
- Performance assessment of spatial data optimization methods
- Development and evaluation of innovative algorithms and software tools of interoperability in GIScience
- Evaluation of various multi-criteria decision making methods
- Review crowd sourced data and VGI
- Address challenges in big spatial data on GISciences
- Investigation and evaluation of spatial data fusion/integration methods
- Review spatial statistics methods and their uncertainty assessment
- Review interoperability in spatial data bases

WG IV/4 - Collaborative Crowdsourced Cloud Mapping (C^3M)

Chair
Maria Antonia Brovelli
Department of Civil and Environmental Engineering
Politecnico di Milano
P.zza Leonardo da Vinci 32
20133 Milan
Italy
Tel.: +39 031 332 7517
maria.brovelli@polimi.it

Co-Chair
Cidália Costa Fonte
Department of Mathematics
University of Coimbra
Institute for Systems Engineering and Computers at Coimbra
Apartado 3008
EC Santa Cruz
3001 – 501 Coimbra
Portugal
cfonte@mat.uc.pt

Co-Chair
XiaoGuang Zhou
School of Geosciences and Info-Physics
Central South University
Changsha, Hunan
PR. China, 410083
Tel.: +86 731 88877984
Tel.: +86 731 88836153
zxgcsu@foxmail.com

Secretary
Marco Minghini
European Commission - Joint Research Centre
B.06 - Digital Economy Unit
Via Enrico Fermi 2749
21027 Ispra
Italy
Tel.: +39 0332 783651
marco.minghini@ec.europa.eu

WG IV/4 Terms of Reference

- Design and develop collaborative geospatial environments and services for managing crowdsourced spatiotemporal data (acquiring, storing, publishing, sharing).
- Design and develop methods (and guidelines) for assessing/improving the quality and usability of crowdsourced data (validation and verification).
- Design and develop data and metadata models for crowdsourced data.
- Design and develop methods (and guidelines) for integrating crowdsourced data and
  - in situ/UAV/aerial/satellite sensor data;
  - authoritative geospatial information.
- Investigate social and organizational issues related to crowdsourcing, cloud-based geo-services, collaborative systems, participative platforms.
- Provide guidelines and support to connect the ISPRS network to humanitarian and SDG agendas.
- Review the scientific and technological state of art in Human-Machine Interaction.
- Advance knowledge in Human-Machine Interaction for Participative Mapping.
- Promote cooperation with related working groups and organizations including ISPRS WG IV/5; International Federation of Surveyors (FIG) - Commission of Spatial Information Management; GeoForAll; Humanitarian OpenStreetMap Team (HOT); International Cartographic Association (ICA) - Commission on Sensor-driven mapping, Commission on Maps and the Internet, Commission on Open Source Geospatial Technologies; Missing Maps; Open Geospatial Consortium (OGC); Open Source Geospatial Foundation (OSGeo); OpenStreetMap (OSM) communities; crisismappers network, digital humanitarian network and Open Forum on Participatory Geographic Information Systems and Technologies.
- Promote special issues with the ISPRS International Journal of Geo-Information and other related journals as well as books and reports.
- Involve master and PhD students and young researchers in a flagship initiative related to crowdsourcing (network of young volunteer mappers), coordinating this initiative with the HOT YouthMappers one.

WG IV/5 - Indoor/Outdoor Seamless Modelling, LBS and Mobility

Chair
Zhizhong Kang
Department of Remote Sensing and Geo-Information Engineering
School of Land Science and Technology
China University of Geosciences
Xueyuan Road 29, Haidian District
100083 Beijing
China
Tel.: +86 10 8232 2291
Tel.: +86 10 8232 1807
zzkang@cugb.edu.cn

Co-Chair
Kourosh Khoshelham
Department of Infrastructure Engineering
University of Melbourne
Parkville 3010
Australia
Tel.: +61 383444050
k.khoshelham@unimelb.edu.au

Co-Chair
Lucía Díaz Vilariño
Department of Natural Resources and Environmental Engineering
University of Vigo
Maxwell s/n, 36210, Vigo,
Spain
Tel.: +34 986 813 499
lucia@uvigo.es
home page

Secretary
Sagi Dalyot
Faculty of Civil and Environmental Engineering
Rabin Bldg., Room 727
Technion - Israel Institute of Technology
Haifa 3200003
Israel
Tel.: +972 4-8295991
Tel.: +972 4-8295708
dalyot@technion.ac.il

WG IV/5 Terms of Reference

- Stimulate the development of algorithms, standards for semantic modelling of indoor/outdoor seamless environments
- Promote integrated processing of semantic and spatial data for location-based services and disaster management in indoor/outdoor (including underground) seamless environments (in collaboration with WG IV/1, WG IV/4, WG I/6, WG I/7, WG II/3, ICWG I/IV and ICWG III/IVa).
- Advance knowledge in location-based big data and pedestrian movement in indoor/outdoor seamless environments.
- Benchmark the quality and practicality of semantic modelling methods, standards and mobility analysis algorithms.
- Seek co-operation and involvement in the BIM and GML domains (in collaboration with OGC)

WG IV/6 - SDI: Internet of Things and Spatial Decision Support

Chair
Marguerite Madden
Center for Geospatial Research
Department of Geography
University of Georgia
Athens, Georgia 30602
USA
Tel.: +1 706-542-2379 (office)
Tel.: +1 706-542-2388
mmadden@uga.edu

Co-Chair
Giuseppina Vacca
DICAAR - Dep. of Civil and Environmental Engineering and Architecture
University of Cagliari
P.zza D'Armi
09123 Cagliari
Italy
Tel.: +39 070 6755442
Tel.: +39 070 6755405
vaccag@unica.it

Co-Chair
Dev Raj Paudyal
School of Civil Engineering and Surveying
University of Southern Queensland
West Street
Toowoomba, Queensland
Australia
Tel.: +617 4631 2291 / Tel.: +61405848065
Tel.: +617 4631 2526
paudyal@usq.edu.au

Secretary
Mingshu Wang
School of Geographical & Earth Sciences
University of Glasgow
East Quadrangle
G12 8QQ
United Kingdom
Mingshu.Wang@glasgow.ac.uk

WG IV/6 Terms of Reference

- Advance interoperable spatial data infrastructure (SDI), Internet of Things (IoT), Sensor Web, and spatial decision support system (SDSS) standards, algorithms, and system architecture
- Investigate efficient ways to connect, access, and task resource-constrained IoT and Sensor Web devices and sensors
- Develop and manage multi-level (national, regional and global) geospatial databases
- Advance knowledge in spatial data infrastructure and cyber infrastructure
- Promote spatial enablement of government and community
- Promote innovations in geospatial data access, integration, sharing and use
- Promote highly efficient data acquisition and processing from multiple sources including field surveying, remote sensing, real-time sensors and crowdsourcing
- Synchronize disparate geospatial resources to provide useful and usable frameworks that can be integrated with environmental and socio-economic data for research, discovery and web services
- Advance sensor data stream processing algorithms and architecture
- Design, develop, and evaluate innovative SDI, IoT, Sensor Web and SDSS applications
- Design, develop and benchmark implementation interfaces for the abstract ISO standards
- Collaborate with private sector industry to develop and evaluate data format definitions, meta data and software libraries
- Attend and cooperate with the related groups such as OGC working groups (e.g., SWE DWG, SensorThings API SWG, etc.), open source communities (e.g., FOSS4G, Eclipse LocationTech, etc.), ISO/TC-211 meetings, international efforts (GEOSS, Digital Earth, UNSDI, INSPIRE and GMES) and organizations (GSDI, WGISS, ICA, W3C, and EuroSDR)
- Work closely with ISPRS WGs IV/4, IV/5, IV/7, IV/8 and IV/11

WG IV/7 - Geo-Data Management

Chair
Martin Breunig
Geodetic Institute
Chair of Geoinformatics
Karlsruhe Institute of Technology
Englerstr. 7
76131 Karlsruhe
Germany
Tel.: +49 721 608 Ext. 42302
martin.breunig@kit.edu

Co-Chair
Mulhim Al Doori
Roads and Transport Authority
118899, Dubai
U.A.E.
Tel.: +97 1507549151
mulhim.aldoori@rta.ae

Co-Chair
Emmanuel Stefanakis
Department of Geomatics Engineering
University of Calgary
I2500 University Drive NW, Calgary, Alberta
Canada T2N 1N4
Tel.: +1 403 220 4113
emmanuel.stefanakis@ucalgary.ca

Secretary
Paul Vincent Kuper
Geodetic Institute
Chair of Geoinformatics
Karlsruhe Institute of Technology
Englerstr. 7
76131 Karlsruhe
Germany
Tel.: +49 721 608 Ext. 46787
paul.kuper@kit.edu

WG IV/7 Terms of Reference

The working group investigates new ways to manage n-dimensional geometric, topological, and semantic data handled by DBMS from a broad range of sources such as sensors, BIM, GIS, mobile devices, and others. By doing so it advances the enhancement of standards for metadata, data, and services as well as data integration from different disciplines.
The working group advances interfaces to other commissions and working groups such as WG II/3 on Point Cloud Processing, WG IV/1 on Multi-Dimensional Modelling, WG IV/2 on Ontology, Semantics and Knowledge Representation, as well as to WG IV/8 on GeoComputation and WG IV/9 on GeoVisualization.

- Review technical progress and OGC standards for Geo-Data Management.
- Develop new concepts to store and retrieve Big Geo-Data for knowledge discovery.
- Advance knowledge in geo-data access methods, geometric and topological relations, geo-data aggregation, integration and scalability.

WG IV/8 - GeoComputation and GeoSimulation

Chair
Yaolin Liu
School of Resource and Environmental Sciences
Wuhan University
No. 129 Luoyu Rd.
Wuhan 430079
China
Tel.: +86 27 68778650
Tel.: +86 27 68778893
yaolin610@163.com

Co-Chair
James Haworth
SpaceTimeLab
Department of Civil, Environmental & Geomatic Engineering
University College London
Gower St., WC1E
6BT London
United Kingdom
Tel.: +44 20 76 79 72 22
j.haworth@ucl.ac.uk

Co-Chair
Sarah Wise
Centre for Advanced Spatial Analysis
University College London
Gower St., WC1E
6BT London
United Kingdom
Tel.: +44 79 83 28 02 60
s.wise@ucl.ac.uk

Secretary
Jianhua He
School of Resource and Environmental Sciences
Wuhan University
No. 129 Luoyu Rd.
Wuhan 430079
China

Tel.: +86 27 68778861
Tel.: +86 27 68778893
hjianh@126.com

WG IV/8 Terms of Reference

- Promote the development and application of geocomputational (e.g., geostatistical, econometric, machine learning) methods and algorithms for processing spatio-temporal data.
- Explore the use of spatio-temporal data for large scale predictive analytics.
- Explore and promote the use of machine learning methods (Neural networks, Genetic algorithms, and Evolutionary computing, etc.) in the GISciences.
- Explore and promote the use of agent-based simulation and cellular automata in modelling geospatial processes and human behaviour, and study their validation.
- Promote the development of geocomputational algorithms for large-scale network data analysis.
- Explore the potential of using high performance computing (cloud computing and grid computation) for modelling large scale spatio-temporal processes.
- Encourage applications in urban studies of geodemographics, health, criminology and transport; in environmental, ecological and biological modeling and analysis; and in modeling mobile, wireless, and location-based service networks, amongst others.
- Educate the ISPRS community and the next generation of GIScientists on tools and techniques of GeoComputation and GeoSimulation.

WG IV/9 - Geovisualization, Augmented and Virtual Reality

Chair
Arzu Coltekin
University of Applied Sciences and Arts Northwestern Switzerland
FHNW School of Engineering
Institute for Interactive Technologies IIT
Bahnhofstrasse 6
5210 Windisch
Switzerland
arzu.coltekin@fhnw.ch

Co-Chair
Sidonie Christophe
COGIT Lab
IGN-France
Paris
France
sidonie.christophe@ign.fr

Secretary
Victoria Rautenbach
Centre for Geoinformation Science
University of Pretoria
Pretoria
South Africa
victoria.rautenbach@up.ac.za

Co-Chair 2016-2022
Chris Pettit
Faculty of Built Environment
City Futures Research Centre
UNSW
Australia
c.pettit@unsw.edu.au

WG IV/9 Terms of Reference

- Enhanced communication of geographic information and knowledge
- Geovisual analytics for (small and) big data exploration
- Usability testing and empirical experiments related to spatial cognition and visualization
- Geographic visualisation of multi-dimensional data
- Novel methods and tools for exploring and visualizing geographic decision spaces
- Platforms supporting geographical visualisation including the web and mobile devices
- Geographic visualisation of crowd sourced, social media, and government databases
- Development, application and evaluations of immersive and semi-immersive virtual reality visualization environments
- Virtual and augmented reality representations of space, place and time

WG IV/10 - Advanced Geospatial Applications for Smart Cities and Regions

Chair
Giorgio Agugiaro
3D Geoinformation
Delft University of Technology
Delft
The Netherlands
g.agugiaro@tudelft.nl

Co-Chair
Mila N. Koeva
University of Twente
ITC Faculty - Department of Urban and Regional Planning
and Geo-information Management Department
Enschede
The Netherlands
m.n.koeva@utwente.nl

Co-Chair
Wei Tu
Shenzhen Key Laboratory of Spatial-temporal Smart Sensing and Services
College of Civil Engineering
Shenzhen University
R.R. China
tuwei@szu.edu.cn

Secretary
Filip Biljecki
Urban Analytics Lab
School of Design and Environment
National University of Singapore
Singapore
filip@nus.edu.sg

WG IV/10 Terms of Reference

- Review optimum methodologies for the integration of spatial data with heterogeneous data sources in order to achieve harmonized, possibly standard-based data repositories to be used as integrated data source.
- Advance knowledge about how to help urban models profit from Building Information Models (BIM), in that the gap between GIS and BIM is reduced.
- Develop innovative geospatial applications for digital cities and regions, based on integrated semantic regional or city models (possibly 3D).
- Promote testing, adoption and further development of standardized data models in order to overcome single-domain lock-ins and facilitate implementation of inter-domain applications.
- Foster communication among scientists and practitioners from heterogeneous applications domains, in order to facilitate understanding of common problems and reduce the gap – whenever possible – between homologous, sometimes incompatible, solutions.
- Disseminate new technical and methodological advances, innovations and research

outcomes in the field of both academic audiences (e.g. publications, seminars, workshops) and public (e.g. blog posts, exhibitions, public talks).

- Establish strong links between relevant international and regional organizations in order to achieve fruitful collaboration.

ICWG IV/III - Global Mapping: Updating, Verification and Interoperability

Chair
Hao WU
National Geomatics Center of China
28 Lianhuachi West Road
Haidian District
Beijing 100830
China
Tel.: +86 010 63881216
wuhao@ngcc.cn

Co-Chair
Ivana Ivánová
School of Earth and Planetary Sciences
Curtin University
Kent Street
Bentley, Perth
Australia
Tel.: +61 8 9266 2286
ivana.ivanova@curtin.edu.au

Secretary
Dongyang Hou
School of Geography and Environment
Shandong Normal University
No. 88 East Wenhua Road
Lixia District, Ji'nan
China
Tel.: +86 0 18954104091
houdongyang1986@cumt.edu.cn

ICWG IV/III Terms of Reference

- Advance knowledge on the global status of mapping and it's updating in databases. This is of particular importance for countries with large areas for which imagery has provided interim information.
- Investigate the update and verification of topographic vector datasets, digital terrain models, ortho-images and thematic (land cover) datasets from remotely sensed data with an emphasis on mapping in a production environment.
- Assess links between high resolution images and mapping tools developed through research and their implementation in mapping agencies and commercial organisations.
- Investigate synergy potentials between the various sensors for topographic and thematic mapping.
- Determine optimum methodologies for the integration of mapping data with heterogeneous data sources including the results of area frame sampling methods like LUCAS for Europe or GMFS for Africa.
- Review technical progress on global DEM data fusion methods and outcomes
- Evaluate semi-automated and automated algorithms for change detection, update and quality control of spatial databases.
- Evaluate web services for GLC data sharing, processing and validation
- Identify best practise applications of geospatial datasets and promote pathways leading from interoperability via uniformity towards standardization
- Collaborate with UN-GGIM and GEO tasks related to GLC (e.g., SB-02)
- Strengthen the cooperation and knowledge exchange between regional clusters according to the UN-GGIM groups, especially between Europe and Africa
- Promote the incorporation of administrations and industries in the development of application products of global and regional geospatial data sets

Technical Commission V - Education and Outreach

President
A. Senthil Kumar
Indian Institute of Remote Sensing
Indian Space Research Organisation
4 Kalidas Road, Dehradun
Uttarakhand, Pin - 248 001
INDIA
Tel.: +91 135 274 4583
Tel.: +91 135 274 1987
isprs-pr-c5@isprs.org
askumar.nrsc@gmail.com

Vice-President
P.L.N. Raju
North Eastern Space Applications Centre
Department of Space, Government of India,
Umiam, Shillong, Meghalaya
INDIA – 793103
Tel.: +91 364 2570140/141
Tel.: +91 364 2570139
isprs-pr-c5@isprs.org
director@nesac.gov.in

Secretary
S.P. Aggarwal
Indian Institute of Remote Sensing
ISRO | Dept. of Space | Govt. of India
4, Kalidas Road, Dehradun
INDIA
Tel.: + 91 135 2524162 (O)
Tel.: + 91 135 2741987
isprs-pr-c5@isprs.org
spa@iirs.gov.in

Terms of Reference

Support, promote, and motivate

- Curricula Development at basic, professional and decision making levels for Geospatial information science;
- Cost-effective digital class teaching/training approaches and web-based sharing of resources for mass awareness programs;
- Regional/International cooperation in capacity building, citizen science and geospatial technology;
- Engaging tutors/trainers and preparing educational material and support, including open-source software education;
- Young people on Basic and advances in Photogrammetry, RS & Geoinformation Sciences through Students Consortium;
- Innovative Geospatial technologies for infrastructure planning and assets mapping.
- organizing regional and international summer students schools, seminars, workshops and tutorials, and cooperation with industry.

WG V/1 - Framework for Multi-level Education & Training – Curriculum Development and Methodology

Chair
Anjana Vyas
M Tech. Geomatics
Faculty of Technology
CEPT University
Ahmedabad – 380009
India
Tel.: +91 9825522844
anjanavyas@yahoo.com

Co-Chair
Peter Tian-Yuan Shih
Department of Civil Engineering
National Chiao Tung University
1001 Ta-Hsueh Road, Hsinchu
Taiwan, 30010
Tel.: +886 35712121 ext 54940
tyshih@mail.nctu.edu.tw

Co-Chair
Grazia Tucci
Civil and Environmental Engineering Dep. (DICEA)
University of Florence
GECO Laboratory
Via Pier Antonio Micheli, 8
50121 Firenze
Italy
Tel.: +39 335 6687162
grazia.tucci@unifi.it

Secretary
Vikram Sorathia
Kensemble Tech Labs
315/1, Sector 7A
Gandhinagar, Gujarat
India, 382007
Tel.: +91 9327652651
vsorathia@gmail.com

WG V/1 Terms of Reference

- Support and promote the development of national and international geospatial-information curricula and educational modules;
- Promote and organize seminars, workshops and summer schools at different levels of education and different levels of governance; i.e., academics and professional, and public and private sectors;
- Strengthen cooperation with the user of spatial data in order to build educational modules in specific application sectors (such as cultural heritage, environment and risk management, urban planning, structural monitoring etc.)
- Organize activities through cooperation with other Technical Commissions;
- Compile and incorporate best practices for multi-level education and training;
- Cooperate in particular with WG 4/6/7 for the testing of the most technologically advanced tools for education (e-learning, web-based resources, innovative technologies)
- Cooperating with other national or international geospatial and related societies.
- Organise CATCON

WG V/2 - Promotion of International Collaborative Education Programs

Chair
Maria Grazia D'Urso
University of Bergamo, Department of Engineering and Applied Sciences (DISA)
Viale G.Marconi, 5
24044 Dalmine (BG)
Italy
Tel.: +39 035 2052024
Tel.: +39 035 2052095
mariagrazia.durso@unibg.it

Co-Chair
Valentyn Tolpekin
University of Twente
Faculty of Geo-Information Science and Earth Observation
Hengelosestraat 99
7514AE Enschede
The Netherlands
31 534874355
v.a.tolpekin@utwente.nl

Secretary
Ekaterina Makhina
Moscow State University of Geodesy and Cartography
Faculty of Applied Astronautics and Photogrammetry
Russian Federation
Tel.: +7 915 139 6706
Tel.: +7 499 261 9081
katcatherine1@rambler.ru

Regional Coordinator
Giannina Sanna
University of Cagliari
Facolta' di Ingegneria
Dept. of Civil and Environmental Engineering and Architecture
Piazza D'Armi
09123 Cagliari
Italy
070/6755437
070/6755405
topoca@unica.it

Regional Coordinator
Rao Divi
Department of Earth & Environmental Science
Faculty of Science
Kuwait University
Kuwait - 13060
Kuwait
Tel.: +965 24985952
srdivi2006@gmail.com
rao.divi@ku.edu.kw

WG V/2 Terms of Reference

- Further support of existing ISPRS initiated projects collaborative education programs in the fields of Photogrammetry, Remote Sensing, Spatial Information, Mapping at Universities;
- Support, promote, stimulate and initiate international collaborative education programs dissemination efforts such as: seminars, tutorials, workshops, symposia, e-bulletins and other mechanisms & tools, in various levels aimed at: Researchers, PhD, MA, Undergraduate, Engineers, Technicians and other professionals;
- Cooperate with other working groups within Commission V and other ISPRS commissions, on how to synchronize the efforts and how to cooperate in launching seminars and workshops;
- Initiate and support: e-learning and remote teaching activities; development and integration of high-tech elements and tools in teaching and training;
- Cooperating with other Geo-societies on issues of: common themes and goals; mobilizing lecturers; adopting efficient ways for planning and running the seminars; and how to share and cut expenses;
- Cooperate with regional universities, organizations, and societies in order to stimulate them to cooperate, provide facilities, share local know how and offer a base for future further cooperation;
- Search for universities and individuals that will reiterate the WG Seminars and collaborative education programs dissemination in other regions;
- Dissemination of methodical recommendations, management of educational seminars and summer schools for the sharing of knowledge and experience of young professionals in the fields related to geo-sciences (photogrammetry, remote sensing, spatial information etc.);
- Dissemination of innovative courses and techniques for writing Master and PhD's thesis proposal, and academic writing;
- Dissemination of innovative educational courses on teaching and aimed at young university teachers working in the field of photogrammetry, remote sensing and spatial information.

WG V/3 - Promotion of Regional Collaboration in Citizen Science and Geospatial Technology

Chair
Sultan Kocaman
Hacettepe University
Dept. of Geomatics Engineering
Ankara
Turkey
Tel.: +90 (312) 780 5792
Tel.: +90 (312) 297 6167
sukocaman@gmail.com
sultankocaman@hacettepe.edu.tr

Co-Chair
Magsad Gojamanov
Baku State University
Dept. of Geodesy and Cartography
Baku
Azerbaijan
Tel.: +994 (12) 538 01 70
Tel.: +994 (12) 598 33 76
mgodja@yandex.ru
mgodja@mail.ru

Co-Chair
Sameer Saran
Geoinformatics Department
Remote Sensing and Geoinformatics Group
Indian Institute of Remote Sensing (IIRS)
Indian Space Research Organisation (ISRO)
Dehradun
INDIA
Tel.: +91 (135) 2524123
Tel.: +91 (135) 2741987
saran.iirs@gmail.com
sameer@iirs.gov.in

Secretary
Nusret Demir
Faculty of Science
Dept. of Space Science and Tech.
Chair of Remote Sensing
Antalya
Turkey
Tel.: +90 (242) 227 44 00/3826
nusretdemir@akdeniz.edu.tr

Regional Coordinator
Nazmi Saleous
Department of Geography and Urban Planning
United Arab Emirates University
P.O. Box 15551
Al Ain
United Arab Emirates
Tel.: +971 3 713 5031
Tel.: +971 2 6672449
nazmi@saleous.com
nazmi.saleous@uaeu.ac.ae

Regional Coordinator
Julian Smit
University of Cape Town
Geomatics Division
Cape Town
South Africa
Tel.: +27 (21) 650 3573
drjlsmit@gmail.com
Julian.Smit@uct.ac.za

WG V/3 Terms of Reference

- Citizen Science approaches in geoinformatics – from hypothesis generation to communicating results
- Geo-processing tools and technologies in citizen science
- Data quality assurance and data verification
- Integration of Web 2.0 / mobile technologies and citizen science
- Data, metadata and ownership within citizen science projects
- Investigation of data fusion and mashup algorithms
- Incorporation of game design elements in citizen science – towards geo-gamification
- Geodata enrichment and learning through citizen science
- Promoting open data, standards, interoperability and FOSS4G in citizen science

- Improvement of regional collaboration and community capacity building through citizen science projects

WG V/4 - Web-based Resource Sharing for Education and Research

Chair
Ansgar Brunn
Faculty for Plastics Engineering and Surveying
University of applied sciences
Germany
ansgar.brunn@fhws.de

Co-Chair
Zhipeng Gui
School of Remote Sensing and Information Engineering
Wuhan University
China
zhipeng.gui@whu.edu.cn

Co-Chair
Berk Anbaroglu
Dept. of Geomatics Engineering
Hacettepe University
Ankara
Turkey
banbar@gmail.com

Secretary
Harish Karnatak
Indian Institute of Remote Sensing, Indian Space Research Organisation (ISRO)
Department of Space
Govt. of India
Dehradun
India
harish@iirs.gov.in

WG V/4 Terms of Reference

- Promotion of web-based resources with free access for Remote Sensing, Photogrammetry and GIS
- Cooperation with WG V/8 for joint events and other WGs in TC I to IV for data sharing
- Establishment of an online platform for discovery, sharing and geoprocessing
- Collaboration with academic partners to introduce more use cases for teaching and education and industrial partners to adopt and propagate new technologies.
- Increasing the motivation of students and researchers in a web-based resource sharing environment.
- Mass awareness through web based resource sharing and webinars.

WG V/5 - Promotion of the Profession to Young People

Chair
Krzysztof Sterenczak
Department of Modelling and Information Technology
Forest Research Institute
Braci Lesnej 3 Street
05-090 Raszyn
Poland
Tel.: +48 22 59 38 217
Tel.: +48 22 59 38 239
K.Sterenczak@ibles.waw.pl

Co-Chair
Ivan Detchev
Department of Geomatics Engineering
University of Calgary
2500 University Drive NW
Calgary, Alberta T2N 1N4
Canada
Tel.: +1-403-220-4978
Tel.: +1-403-284-1980
i.detchev@ucalgary.ca

Co-Chair
Cemal Özgür Kivilcim
Istanbul Metropolitan Municipality
Directorate of Superstructure Projects
IBB Yeniyol Sk. Kagithane
Istanbul
Turkey
Tel.: +90 212 449 99 89
cemal.kivilcim@ibb.gov.tr

Secretary
Ayda Akkartal Aktaş
Istanbul Technical University (ITU)
Informatics Institute
ITU Ayazağa Campus 34469
Maslak-İstanbul
Turkey
Tel.: +90 212 2857194 ext.126
Tel.: +90 212 2857073
akkartala@itu.edu.tr

WG V/5 Terms of Reference

- Provide guidance for Student Consortium activities and maintain the Student Consortium budget
- Advocate for support for Student Consortium activities from the ISPRS Foundation (TIF) and the ISPRS Council
- Harmonize all summer schools associated with the ISPRS under the Student Consortium brand
- Increase world wide networking to establish local branches of the ISPRS SC
- Link all ISPRS technical commission executives with the youth
- Support networking with international and regional societies relevant to ISPRS
- Arrange for Youth Forum sessions during the Commission V midterm symposium and the next congress
- Conduct regular meetings and document working group activities

WG V/6 - Distance Learning - Education and Training Services

Chair
Ana I. Prados
NASA Applied Remote Sensing Training (ARSET)
Joint Center for Earth Systems Technology
University of Maryland Baltimore County
Atmospheric Chemistry and Dynamics Laboratory
NASA Goddard Space Flight Center
Greenbelt, MD 20771
USA
Tel.: +1-301-614-5494
aprados@umbc.edu

Co-Chair
S.K. Srivastav
Remote Sensing & Geoinformatics Group
Indian Institute of Remote Sensing
Indian Space Research Organisation
Department of Space, Government of India
4, Kalidas Road
Dehradun-248001
India
Tel.: +91-135-2524131
sksrivastav@iirs.gov.in

Co-Chair
Hilcea Ferreira
National Institute for Space Research (INPE)
Earth Observation General Coordination
Av. dos Astronautas 1758
Sao Jose dos Campos SP, 12227-010
Brazil
Tel.: +55-12-3208- 6482
hilcea@dpi.inpe.br

Secretary
Pawan Gupta
ARSET Air Quality Team Lead
Universities Space Research Association Atmospheric Chemistry and Dynamic Branch
NASA Goddard Space Flight Center
Greenbelt MD 20771
USA
301-614-5229
pawan.gupta@nasa.gov

Regional Coordinator
H. Farah
Regional Centre for Mapping of Resources for Development (RCMRD)
Kasarani Road
P.O.Box 632-00618
Nairobi
Kenya
farah@rcmrd.org

WG V/6 Terms of Reference

- Disseminate knowledge on "Distance-Learning Best Practices" through: 1) conference sessions, 2) "train the trainers" webinar(s) and/or workshop(s), and 3) peer-reviewed articles in ISPRS journals.
- Develop and deliver distance-learning courses on access and use of spatial information.
- Collaborate with Working Groups II, III, IV and V of the TC to develop the content of the distance learning courses and methodologies for sharing with the geospatial community.
- Collaborate with other international organizations engaged in geospatial capacity building activities.

WG V/7 - Innovative Technologies in Training Civil Engineers and Architects

Chair
Vladimir A. Seredovich
Siberian State University of Architecture and Civil Engineering
113, Leningradskaya Str.
Novosibirsk, 630108
Russian Federation
7 (383) 266 81 51
v.seredovich@list.ru

Co-Chair
Gottfried Konecny
Leibniz Universitaet Hannover
Nienburger Str. 1
D-30167 Hannover
GERMANY
Tel.: +49 511 762 2487
Tel.: +49 511 762 2483
konecny@ipi.uni-hannover.de

Co-Chair
Karel Vach
EuroGV
Smichovska 944/9c
155 00 Praha 5
Czech Republic
Tel.: +42 0251615987
vach@eurogv.cz

Secretary
Argina Novitskaya
Novosibirsk
Russian Federation
Tel.: +7 913 936 04 56 (Mobile)
argina@mail.ru

Regional Coordinator
Roman Shults
Kyiv National University of Construction and Architecture
31, Povitroflokskyj Ave
Kyiv, 03037
Ukraine
Tel.: +38 067 230 70 09
r-schultz@mail.ru
shults.rv@knuba.edu.ua

Regional Coordinator
Eugene Levin
Michigan Technological University
School of Technology
426 EERC Building
1400 Townsend Drive
Houghton, MI 49931- 1295
USA
Tel.: +1 906/487-2446
Tel.: +1 906/487-2583
elevin@mtu.edu

Regional Coordinator
Laxmi Thapa
Survey Department
Ministry of Land Reform and Management
Min Bhawan, Kathmandu
P.O. Box: 9435
Nepal
Tel.: +977(1)4620849
thapalaxmi278@gmail.com

Regional Coordinator
Jurate Visockiene
Vilnius Gediminas Technical University
Department of Geodesy and Cadastre
Sauletekio av. 11
LT-10223 Vilnius
Lithuania
Tel.: +37 060607799
jurate.visockiene@vgtu.lt

Regional Coordinator
Egle Tumeliene
Vilnius Gediminas Technical University
Department of Geodesy and Cadastre
Sauletekio av. 11
LT-10223 Vilnius
Lithuania
Tel.: +37 062083286
egle.tumeliene@vgtu.lt

Regional Coordinator
Reiner Jäger
Hochschule Karlsruhe - Technik und Wirtschaft (HSKA) – University of Applied Sciences
Faculty of Information Management and Media (IMM)
Moltkestrasse 30
Germany
Tel.: + 49 721 925 2620
reiner.jaeger@web.de

Regional Coordinator
Aikaterini Karagianni
Aristotle University of Thessaloniki
School of Civil Engineering
Faculty of Engineering
Thessaloniki, 541 24
Greece
Tel.: +30 6996720533
aikateck@civil.auth.gr

WG V/7 Terms of Reference

- Promotion of cooperation and knowledge exchange between ISPRS and the International Association of Educational Civil Engineering Institutions
- Methodical guidance, management of educational seminars and summer schools for the sharing of knowledge and experience of young professionals in photogrammetry, remote sensing, civil engineering and architecture, geomatics engineering, and GIS
- Provide assistance in submitting projects on integrated educational programs financing by various organizations and those of under EU auspices
- Innovative techniques and technologies in photogrammetry and remote sensing for Bachelor's and Master's degree curricula and postgraduate studies in architecture, town planning and civil engineering
- Development and implementation of innovative educational modules on photogrammetry and remote sensing for Bachelor's and Master's degree curricula in civil engineering and architecture
- Development and implementation of the integrated educational modules using the techniques and DEM creation for the purposes of construction design
- Development of educational programs for introduction in BIM and computer modelling
- Development of educational programs on applying photogrammetry, remote sensing

and GIS for solving problems of town-planning and spatial territorial management
- Teaching innovative photogrammetry and remote sensing technologies for getting learning skills in the assessment of environmental impact of construction
- Teaching innovative photogrammetry and remote sensing technologies for structure inventory and certification
- Outreach the concept of Smart cities among civil engineers and architects with aim to develop a new approach to town-planning and management

WG V/8 - Promotion of Open Source on Geospatial Technology

Chair
Chao-Hung Lin
Department of Geomatics
National Cheng Kung University
Taiwan
Tel.: +886-6-2757575 ext. 63836
linhung@mail.ncku.edu.tw

Co-Chair
Helena Mitasova
Department of Marine
Earth and Atmospheric Sciences
North Carolina State University
USA
Tel.: +1 919-513-1327
hmitaso@ncsu.edu

Co-Chair
Lalu Muhamad Jaelani
Dept. of Geomatics Engineering
Institut Teknologi Sepuluh Nopember
Indonesia
Tel.: +6231-5994251-54
lmjaelani@geodesy.its.ac.id

Secretary
Chi-Kuei Wang
Department of Geomatics
National Cheng Kung University
Taiwan
Tel.: +881-6-2757575 ext. 63725
chikuei@mail.ncku.edu.tw

Regional Coordinator
Krishnan Sundara Rajan
International Institute of Information Technology
Deemed University
India
Tel.: +91-40-66531276
rajan@iiit.ac.in

WG V/8 Terms of Reference
- Open-source software promotion.
- Cooperation with Working Group V/4, working groups in Commission II, III and IV, and OSGeo for joint events and data sharing.
- Organize joint sessions on open-source, and invite authors of latest and popular open-source software to provide tutorials for open source promotion.
- Co-organize webinar to help people learn and use geospatial technologies with the aid of open sources.

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Council 2022-2026



President
LENA HALOUNOVÁ
Czech Technical University
Faculty of Civil Engineering
Department of Geomatics
Thákurova 7, 166 29 Prague 6
Czech Republic
Tel: +420 22435 4952
lena.halounova@fsv.cvut.cz



Vice President
NICOLAS PAPARODITIS
IGN – ENSG
6-8 Avenue Blaise Pascal
77420 Champs-sur-Marne
France
Tel.: +331 4398 8392 (IGN)
nicolas.paparoditis@ign.fr



Secretary General
JIANG JIE
School of Geomatics and Urban Spatial Informatics,
Beijing University of Civil Engineering and Architecture
No.1 Zhanlanguan Road, Xicheng District
Beijing, 100044, CHINA
Tel.: +86 10 68324024
jiangjie_263@263.net



Past President
CHRISTIAN HEIPKE
Leibniz University Hannover
Institute of Photogrammetry and GeoInformation
Nienburger Str. 1
D-30167 Hannover, Germany
Tel.: +49 511 762 2482
heipke@ipi.uni-hannover.de



Treasurer
STEWART WALKER
photogrammetry4u llc
P O Box 27420
San Diego, CA 92198-1420
USA
isprs-tr@isprs.org
Tel.: +1 858 829 3079
stewart@photogrammetrist.us



Congress Director
DEREK LICHTI
Department of Geomatics Engineering
University of Calgary
2500 University Drive NW
Calgary, Alberta T2N 1N4
Canada
Tel.: +1 403 210 9495
ddlichti@ucalgary.ca

Technical Commission Presidents 2022-2026



Commission I
President:
TANG Xinming
Land Satellite Remote Sensing Application Center
Ministry of Natural Resources of China
No.1 Baishengcun
Zizhuyuan Road
Haidian District, Beijing
China
Tel.: +86 10 6841 2138
tangxinming99@qq.com



Commission II
President:
ALPER YILMAZ
470 Hitchcock Hall
2070 Neil. Ave
Columbus OH 43210
USA
Tel.: +1 614 247 4323
yilmaz.15@osu.edu



Commission III
President:
LAURENT POLIDORI
Universidade Federal do Pará (UFPA)
Rua Augusto Corrêa 01
Guamá, Belém (PA), 66075-110
Brazil
Tel.: +55 91 98167 4648
laurent.polidori@ird.fr



Commission IV
President:
SISI ZLATANOV
GRID, School of Built Environment, A.D.A.
Anita B. Lawrence Centre
West Wing, Kensington
UNSW Sydney, NSW 2052
Australia
M: +61 4 2449 2894
s.zlatanova@unsw.edu.au



Commission VI
President:
GAY JANE PEREZ
Office of the Deputy Director General for Space Science and Technology
Philippine Space Agency
Velasquez St. UP
Diliman Quezon City 1101
Philippines
Tel.: +63 939 933 2915
gay.perez@philsa.gov.ph

Technical Commission Vice Presidents 2022-2026



Commission I
Vice President:
ANTONIO MARIA GARCIA TOMMASELLI
São Paulo State University
Rua Roberto Simonsen, 305
19060-900 Presidente Prudente, São Paulo
Brazil
Tel.: +55 18 229 5510
a.tommaselli@unesp.br



Commission II
Vice President:
JAN DIRK WEGNER
Universität Zürich
Institute for Computational Science
Winterthurerstrasse 190
8057 Zürich
Switzerland
Tel.: +41 44 633 68 08
jandirk.wegner@uzh.ch



Commission III
Vice President:
ALESSANDRA GOMES
Coordenação Espacial da Amazônia (COEAM / INPE)Av. Perimetral, 2651Parque de Ciência e Tecnologia Guamá, Lote nº 50Bairro: Guamá, CEP. 66077-830, Belém (PA)
Brazil
Tel.: +55 12 99719 0053
alessandra.gomes@inpe.br



Commission IV
Vice President:
MARIA ANTONIA BROVELLI
Department of Civil and Environmental Engineering
Politecnico di Milano
P.zza Leonardo da Vinci 32
20133 Milan
Italy
Tel.: +39 02 2399624
maria.brovelli@polimi.it



Commission VI
Vice President:
JOSEFINO COMISO
Earth Sciences Division
NASA Goddard Space Flight Center
Greenbelt, 20771 Maryland
USA
Tel.: +1 240 893 3298
josefino.c.comiso@nasa

.

Financial Commission 2022-2026



Chairperson
A SENTHIL KUMAR
Indian Institute of Remote Sensing
Dept. of Space
Govt. of India
4, Kalidas Road
Dehradun - 248 001
India
Tel.: +91 135 2524399
askumar.nrsc@gmail.com



Member
PETRI RÖNNHOLM
Department of Built Environment
Aalto University
P.O. Box 15800
00076 AALTO
Finland
Tel.: +358 50 593 0534
petri.ronnholm@aalto.fi



Member
ANDREA MASIERO
CIRGEO - Interdepartmental Research Center of Geomatics
Agripolis - Viale dell'Università 16
35020 Legnaro
Italy
Tel.: +39 055 275 8853
andrea.masiero@unifi.it.nl

ISPRS Regional Representatives 2022-2026



Regional Representative Africa
ANDRE NONGUIERMA
UN Economic Commission for Africa, Addis Ababa
Ethiopia
nonguierma@un.org



Regional Representative Latin America
RAUL QUEIROZ FEITOSA
Pontifical Catholic University of Rio de Janeiro
Department of Electrical Engineering
r. Marquês de São Vicente, 225
22451-900 - Rio de Janeiro - RJ, Brazil
Tel.: +55 21 3527 1212
raul@ele.puc-rio.br
http://www.ele.puc-rio.br



Regional Representative Asia
SHAILESH NAYAK
National Institute of Advanced Studies
Indian Institute of Science Campus
Bengaluru - 560 012
India
Tel.: +91 80 2360 1969
shailesh@nias.res.in

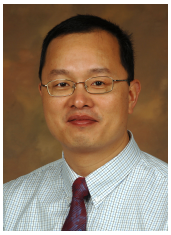


Regional Representative Arab States
MOHAMMED YAHYA AL SAYEL
President of General Authority for Survey and Geospatial Information
Saudi Arabia
alsayel@gasgi.gov.sa

Editors of ISPRS Publications 2022-2026



ISPRS Journal of Photogrammetry and Remote Sensing
Editor-in-Chief
CLÉMENT MALLET
Univ. Gustave Eiffel, IGN-ENSG
LaSTIG lab.
73 avenue de Paris
94160 Saint-Mandé
France
clement.mallet@ign.fr



ISPRS Journal of Photogrammetry and Remote Sensing
Editor-in-Chief
QIHAO WENG
Center for Urban and Environmental Change
Indiana State University
Terre Haute, IN 47809
USA
Tel.: +1 812 237 2255/2290
qweng@indstate.edu



ISPRS Open Journal of Photogrammetry and Remote Sensing
Editor-in-Chief
GEORGE VOSSELMAN
Faculty of Geo-Information Science and Earth Observation
University of Twente
Hengelosestraat 99
7514 AE Enschede
The Netherlands
Tel.: +31 53 487 4344
george.vosselman@utwente.nl



ISPRS International Journal of Geo-Information
Editor-in-Chief
WOLFGANG KAINZ
Institut für Geographie und Regionalforschung
Universität Wien
Universitätsstr. 7/5
A-1010 Wien
Austria
Tel: +43 1 4277 48640
wolfgang.kainz@univie.ac.at



ISPRS eBulletin
Editor
JIANG JIE
School of Geomatics and Urban Spatial Informatics,
Beijing University of Civil Engineering and Architecture
No.1 Zhanlanguan Road, Xicheng District
Beijing, 100044
China
Tel.: +86 10 6832 4024
jiangjie_263@263.net



ISPRS Webmaster
MARKUS ENGLICH
Geschwister-Scholl-Str. 24D
Institute for Photogrammetry
Universitaet Stuttgart
70174 Stuttgart
Germany
Tel: +49 711 685 83385
markus.englich@ifp.uni-stuttgart.de

Associate Editors of ISPRS Journal of Photogrammetry and Remote Sensing 2022-2026



CLÁUDIA MARIA DE ALMEIDA
Division for Remote Sensing
National Institute for Remote Sensing
Av. dos Astronautas
1758 - SERE I, 12227-010
Sao Jose dos Campos
SP - Brazil
Tel: +55 12 3208 6428
almeida@dsr.inpe.br



MARIANA BELGIU
University of Twente,
Enschede
The Netherlands
m.belgiu@utwente.nl



GANG CHEN
Department of Geography and Earth Sciences,
University of North Carolina at Charlotte,
9201 University City Blvd
Charlotte, NC 28223,
USA
Tel.: +1 704 687 5973
Gang.Chen@uncc.edu



MICHELE CROSETTO
Geomatics Research Unit
Centre Tecnològic de Telecomunicacions de Catalunya (CTTC)
Geomatics Research Unit
Av. Gauss, 7 E-08860
Castelldefels,
Spain
Tel: +34 93 645 2900
mcrosetto@cttc.cat



RONNY HÄNSCH
German Aerospace Center (DLR)
Microwaves and Radar Institute
Department SAR Technology
Münchener Str. 20
82234 Wessling
Germany
Tel.: +49 8153 28 3975
ronny.haensch@dlr.de



YUHONG HE
University of Toronto Mississauga, Mississauga Ontario
Canada
Yuhong.he@utoronto.ca
Tel.: +1 905 569 4679
yuhong.he@utoronto.ca



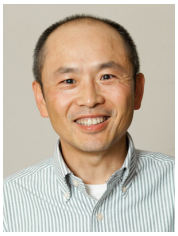
JUNGHO IM
Department of Urban and Environmental Engineering
Ulsan National Institute of Science & Technology
UNIST-gil 50, Ulju-gun
Ulsan
Republic of Korea 44919
Tel: +82 52 217 2824
ersgis@unist.ac.kr



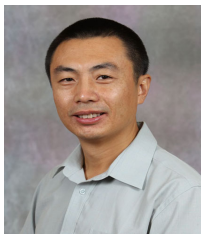
FLORENT LAFARGE
Inria Sophia Antipolis Mediterranean Research Centre, Sophia Antipolis
France
florent.lafarge@inria.fr



RODERIK LINDENBERGH
Dept. of Geoscience and Remote Sensing
Delft University of Technology
Stevinweg 1
2628 CN Delft
The Netherlands
Tel: + 31 15 278 7649
r.c.lindenbergh@tudelft.nl



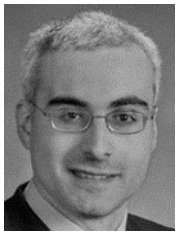
BUNKEI MATSUSHITA
University of Tsukuba
Tsukuba, Japan
Tennoudai 1-1-1, Tsukuba
Ibaraki, 305-8572
Japan
Tel.: +81 29 853 7190
matsushita.bunkei.gn@u.tsukuba.ac.jp



XIN MIAO
Department of Geography, Geology and Planning
Missouri State University
Springfield
MO 65897
USA
Tel: +1 417 836 5173
xinmiao@missouristate.edu



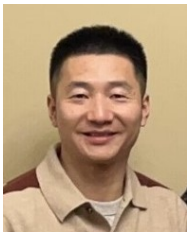
DEEPAK MISHRA
Small Satellite Research Lab
Department of Geography
University of Georgia
210 Field Street
Room 204
Athens, GA 30602
USA
Tel: +1 706 542 8927
dmishra@uga.edu



GİORGOS MOUNTRAKİS
Dept. of Environmental Resources Engineering
State University of New York College of Environmental Science and Forestry
Syracuse, NY 13210
Tel.: +1 315 470 4824
gm@esf.edu



ONI MUTANGA
University of KwaZulu Natal
Dept of Environ. Sci.,
Pietermaritzburg Campus
King George V Ave. 3031
Berea
South Africa
Tel: +27 31 260 5779
MutangaO@ukzn.ac.za



RONGJUN QİN
The Ohio State University
Columbus, Ohio
USA
Tel.: +1 614 292 4356
qin.324@osu.edu



VASIT SAGAN
Geospatial Science
Saint Louis University
Des Peres Hall, Room 209D
3694 West Pine Mall
Saint Louis, Missouri 63108
USA
vasit.sagan@slu.edu



MARCO SCAIONI
Politecnico Milano
Dept. of Architecture, Built Environment and Construction Engineering
Via Bonardi 31 - Bdg. 15
20133 Milano
Italy
Tel: +39 02 2399 6515
marco.scaioni@polimi.it



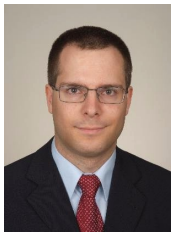
DEVIS TUIA
EPFL ENAC
Environmental Computational Science and Earth Observation Laboratory (ECEO)
Rue des Ronquos 86
CH-1951 Sion
Switzerland
devis.tuia@epfl.ch



LARS WASER
Remote Sensing group
Swiss Federal Institute for Forest Snow and Landscape Research WSL,
Birmensdorf, Switzerland
Zuercherstrasse 111
8903 Birmensdorf
Switzerland
Tel: +41 739 22 92
lars.waser@wsl.ch



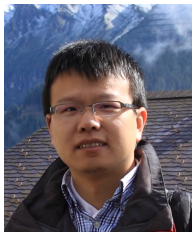
JAN DIRK WEGNER
Universität Zürich
Institute for Computational Science
Winterthurerstrasse 190,
8057 Zürich
Switzerland
Tel.: +41 44 633 68 08
jan.wegner@geod.baug.ethz.ch



MARTIN WEINMANN
Karlsruher Institute of Technology, Institute for Photogrammetry and Remote Sensing,
Englerstr. 7
76131 Karlsruhe
Germany
Tel.: +49 721 608 47302
martin weinmann@kit edu



GUI-SONG XIA
Wuhan University
Wuhan
China
guisong.xia@whu.edu.cn



MICHAEL YING YANG
Faculty of Geo-Information Science and Earth Observation (ITC),
University of Twente,
HALLENWEG 8
7522 NH Enschede
The Netherlands
Tel: +31 53 489 2916
michael.yang@utwente.nl

Associate Editors of ISPRS Open Journal of Photogrammetry and Remote Sensing 2022-2026



EIJA HONKAVAARA
Finnish Geospatial Research Institute - FGI
Department of Remote Sensing abd Photogrammetry
Vuorimiehentie 5
02150 Espoo
Finland
Tel: +358 40 192 0835
Eija.Honkavaara@nls.fi



MICHELE VOLPI
Swiss Data Science Center
ETH Zürich
Turnerstrasse 1, CH-8092
Switzerland
Tel: +41 79 371 8373
michele.volpi@sdsc.ethz.ch

Associate Editors of ISPRS International Journal of Geo-Information 2022-2026



JAMAL JOKAR ARSANJANI
Geoinformatics and Earth Observation (GEO) Research Group,
Department of Planning
Aalborg University
A.C. Meyers Vænge 15
Copenhagen
Denmark
jja@plan.aau.dk



MARIA ANTONIA BROVELLI
Department of Civil and Environmental Engineering
Politecnico di Milano
P.zza Leonardo da Vinci 32
20133 Milan
Italy
Tel.: +39 02 2399624
maria.brovelli@polimi.it



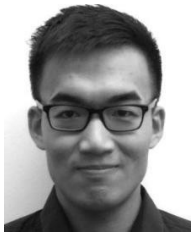
HARTWIG H. HOCHMAIR
School of Forest, Fisheries, and Geomatics Sciences
Fort Lauderdale Research and Education Center
University of Florida
3205 College Avenue
Fort Lauderdale, FL 33314
USA
Tel: +1 954 577 6317
hhhochmair@ufl.edu



FLORIAN HRUBY
Berliner Hochschule Für Technik (BHT)
Bau-und Geoinformations Wesen
Luxemburger Straße 10,
13353 Berlin
Germany
florian.hruby@bht-berlin.de



WEI HUANG
College of Surveying and Geo-Informatics
Tongji University
Shanghai
China
wei_huang@tongji.edu.cn



MINGSHU WANG
School of Geographical & Earth Sciences
University of Glasgow
United Kingdom
mingshu.wang@glasgow.ac.uk



DEV RAJ PAUDYAL
School of Civil Engineering and Surveying
University of Southern Queensland
West Street
Toowoomba, Queensland
Australia
DevRaj.Paudyal@usq.edu.au



HUAYI WU
LIESMARS, Wuhan University,
129 Luoyu Road
Wuhan
China, 430079
Tel: +86 27 6877 8311
wuhuayi@whu.edu.cn



GODWIN YEBOAH
Information and Digital Group (IDG)
IDG Technology for Research
University of Warwick,
Coventry, CV4 7AL
United Kingdom
G.Yeboah@warwick.ac.uk



SISI ZLATANOVA
UNSW Built Environment
University of NSW
Red Centre Building
Kensington Campus
Sydney NSW 2052
Australia
Tel.: +61 4 2449 2894
s.zlatanova@unsw.edu.au

ISPRS Honorary Members 2022-2026



GOTTFRIED KONECNY
(1992) Germany



SHUNJI MURAI
(2000) Japan



LAWRENCE W. FRITZ
(2004) USA



ARMIN GRÜN
(2008) Switzerland



JOHN C. TRINDER
(2008) Australia



IAN DOWMAN
(2012) United Kingdom



LI DEREN
(2012) China



ORHAN ALTAN
(2016) Turkey



CHEN JUN
(2020) China

ISPRS Fellows 2022-2026



COSTAS ARMENAKIS
(2010) Canada



MANOS BALTSAVIAS
(2010) Switzerland



MARCIO BARBOSA
(2010) Brazil



WOLFGANG FÖRSTNER
(2010) Germany



LI DEREN
(2010) China



STAN MORAIN
(2010) USA



KLAUS SZANGOLIES
(2010) Germany



ROY WELCH
(2010) USA



DIETER FRITSCH
(2012) Germany



MARTIEN MOLENAAR
(2012)
The Netherlands



SHAILESH NAYAK
(2012) India



PAUL NEWBY
(2012) UK



HEINZ RUETHER
(2012) South Africa



ALAIN BAUDOIN
(2016) France



JIANG JIE
(2016) China



FRANZ LEBERL
(2016) Austria



PETROS PATIAS
(2016) Greece



AMMATZIA PELED
(2016) Israel



KOHEI CHO
(2020) Japan



SONGNIAN LI
(2020) Canada



MARGUERITE MADDEN
(2020) USA



CHARLES TOTH
(2020) USA



GEORGE VOSSELMAN
(2020) The Netherlands



JON MILLS
(2022) UK



SISI ZLATANOVA
(2022) Australia

Ordinary Members (91*)

Country	Category	Member Name
Algeria	3	Institut National de Cartographie et de Teledetection
Argentina	2	Instituto Geográfico Nacional
Australia	5	Surveying and Spatial Sciences Institute
Austria	4	Österreichische Gesellschaft für Vermessung & GeoInformation
Azerbaijan	2	Azerbaijan representation of ISPRS - Baku State University
Bangladesh	1	Center for Environmental and Geographic Information Services
Belgium	3	VITO N.V.
Botswana	1	Ministry of Land Management, Water and Sanitation Services
Brazil	4	SELPER Capítulo Brasil (Sociedad Latinoamericana en Percepción Remota y Sistemas de Información Espacial)
Brunei Darussalam	1	Survey Department, Ministry of Development
Bulgaria	2	Union of Surveyors & Land Managers in Bulgaria
Burkina Faso	1	Institut Geographique du Burkina
Cameroon	1	La Cameroon Geomat
Canada	5	Canadian Remote Sensing Society
Chile	1	Sociedad Chilena de Fotogrametría y Sensores Remotos
China	8	Chinese Society for Geodesy, Photogrammetry & Cartography
China Taipei	4	Chinese Taipei Society of Photogrammetry & Remote Sensing
Colombia	2	Sociedad Latinoamericana de Especialistas Percepción Remota y Sistemas de Información Espacial
Cote D'Ivoire	1	Côte d'Ivoire Géomatique
Croatia	2	Croatian Geodetic Society - Sec. for Photogrammetry, RS and Geoinformations
Cuba	1	GEOCUBA
Cyprus	2	Department of Lands and Surveys
Czech Republic	2	Society for Photogrammetry and Remote Sensing
Denmark	3	Geoforum Danmark

Country	Category	Member Name
Egypt	2	Egyptian Committee of Surveying & Mapping
El Salvador	3	Instituto Geográfico y del Catastro Nacional
Ethiopia	1	Space Science and Geospatial Institute
Finland	3	The Finnish Society of Geodesy and Photogrammetry
France	6	Société Française de Photogrammétrie et de Télédétection
Germany	8	Deutsche Gesellschaft für Photogrammetrie, Fernerkundung und Geoinformation e.V.
Ghana	1	The Society for Photogrammetry & Remote Sensing
Greece	2	Hellenic Society for Photogrammetry & Remote Sensing
Hong Kong	2	Hong Kong Institute of Surveyors
Hungary	3	Hungarian Society of Surveying, Mapping and Remote Sensing
India	8	Indian Society of Remote Sensing
Indonesia	1	Indonesian Surveyors Association
Iran	3	National Cartographic Center of Iran
Iraq	1	State Commission of Survey
Ireland	2	Ordnance Survey Ireland
Israel	2	Israeli Society of Photogrammetry & Remote Sensing
Italy	6	Societa' Italiana di Fotogrammetria e Topografia
Japan	7	Japan Society of Photogrammetry & Remote Sensing
Jordan	4	Royal Jordanian Geographic Centre
Kenya	1	Survey of Kenya
Korea	6	Korean Society of Surveying, Geodesy, Photogrammetry and Cartography
Kuwait	2	Directorate of Survey Department - Kuwait Municipality
Latvia	1	Latvian Society of Geodesy & Photogrammetry
Libya	1	Surveying Department of Libya
Lithuania	1	Lithuanian Committee for Photogrammetry & Remote Sensing
Malawi	2	Surveys Department Malawi

Country	Category	Member Name
Malaysia	2	Department of Survey & Mapping Malaysia (JUPEM)
Mexico	2	Instituto Nacional de Estadística y Geografía (INEGI)
Mongolia	1	Mongolian Nat'l Society for Photogrammetry & Remote Sensing
Morocco	3	Agence Nationale de la Conservation fonciere de Cadastre et de la Cartographie
Myanmar	2	Myanmar Survey Department
Namibia	1	Directorate of Survey & Mapping, Ministry of Lands and Resettlement
Nepal	1	Nepal Remote Sensing and Photogrammetric Society
Netherlands	4	Geo-Information Netherlands
New Zealand	2	Land Information New Zealand
Nigeria	1	Geoinformation Society of Nigeria
Norway	3	GeoForum
Oman	1	National Survey Authority, Ministry of Defence
Pakistan	1	Survey of Pakistan
Peru	1	Direccion General de Aerofotografia
Philippines	1	Philippine Geosciences and Remote Sensing Society
Poland	3	Polish Society for Photogrammetry and Remote Sensing
Portugal	2	Direção Geral do Território
Qatar	1	Qatar Center for GIS
Romania	2	Romanian Society for Photogrammetry & Remote Sensing
Russian Federation	8	Federal Service of State Registration, Cadastre and Cartography (Rosreestr)
Saudi Arabia	6	General Authority for Survey & Geospatial Information
Senegal	1	Centre de Suivi Ecologique
Slovak Republic	2	Slovak Society for Photogrammetry and Remote Sensing
Slovenia	1	Association of Slovenia Surveyors - Section of Photogrammetry & Remote Sensing
South Africa	3	South African Society for Photogrammetry and Remote Sensing
Spain	3	Spanish Society of Cartography, Photogrammetry & Remote Sensing (SECFT)

Country	Category	Member Name
Sri Lanka	3	Survey Department of Sri Lanka
Sweden	5	Kartografiska Sällskapet - Swedish Cartographic Society
Switzerland	4	Swiss Society of Photogrammetry and Remote Sensing
Tanzania	1	Ministry of Lands & Human Settlements Development
Thailand	2	Royal Thai Survey Department
Turkey	4	Turkish National Society of Photogrammetry and Remote Sensing
Ukraine	3	Ukrainian Society of Photogrammetry and Remote Sensing
United Arab Emirates	6	Federal Geographic Information Center
United Kingdom	6	Remote Sensing and Photogrammetry Society
Uruguay	1	Instituto Geográfico Militar
USA	8	American Society for Photogrammetry & Remote Sensing
Uzbekistan	2	Center of Remote Sensing and GIS Technologies
Venezuela	2	Instituto Geografico de Venezuela Simon Bolivar
Vietnam	1	Vietnam Academy of Science and Technology, Institute of Geography
Zimbabwe	1	Survey Institute of Zimbabwe

* Detailed and current information can be accessed on http://www.isprs.org/members/OrdinaryFull.aspx

Associate Members (13*)

Country		Category	Member Name
Azerbaijan	1	Azercosmos OJSCo.	
Azerbaijan	2	State Comittee for Land and Cartography, State Aerogeodesy Corporation	
Brazil	1	IEEE/GRSS Brazil Chapter	
Colombia	1	Agustin Codazzi Geographic Institute - Research and Developement Center in Geographic Information	
Cote D'Ivoire	1	Centre de Cartographie et de Teledetection	
Cyprus	1	Eratosthenes Centre of Excellence	
Iran	1	Iranian Space Center	
Italy	1	Associazione Italiana di Telerilevamento – AIT	
Korea	1	Korean Society of Remote Sensing	
Myanmar	1	Myanmar Peacebuilding and Dialogue Center	
Pakistan	1	Pakistan Space & Upper Atmosphere Research Commission	
Peru	1	Directorate of Hydrography and Navigation	
Thailand	1	Geo-Informatics and Space Technology Development Agency	
Azerbaijan	1	Azercosmos OJSCo.	
Azerbaijan	2	State Comittee for Land and Cartography, State Aerogeodesy Corporation	
Brazil	1	IEEE/GRSS Brazil Chapter	

* Detailed and current information can be accessed on http://www.isprs.org/members/AssociateFull.aspx

Regional Members (13*)

	Member Name	Country
AARS	Asian Association on Remote Sensing	Japan
AARSE	AARSE - African Association of Remote Sensing of the Environment	Nigeria
ARCSSTE-E	African Regional Centre for Space Science and Technology Education – English	Nigeria
CRTEAN	Centre Régional de Télédétection des États de l'Afrique du Nord (CRTEAN)	Tunisia
CSSTEAP	Centre for Space Science and Technology Education in Asia and the Pacific	India
EARSeL	European Association of Remote Sensing Laborataries	Germany
EIS Africa	EIS Africa	South Africa
EuroSDR	EuroSDR	Belgium
PAIGH	Cartography Commission, Pan American Institute for Geography and History	Uruguay
PGRSC	Pacific GIS and Remote Sensing Council	Fiji
RCMRD	Regional Centre for Mapping of Resources for Development	Kenya
RECTAS	Regional Centre for Training in Aerospace Surveys (RECTAS)	Nigeria
SELPER	Sociedad Latinoamericana de Especialistas Percepción Remota y Sistemas de Información Espacial	Argentina

* Detailed and current information can be accessed on http://www.isprs.org/members/RegionalFull.aspx

Sustaining Members (59*)

Country	Category	Member Name
Japan	B	Aero Asahi Corporation
France	B	Airbus Defence and Space Geo SA
Canada	D	Applanix Corporation
Japan	B	Asia Air Survey Co. Ltd
Iran	E	BASIR Remote Sensing Institute
United Arab Emirates	B	Bayanat for Mapping and Surveying Services LLC
China	B	Beijing GEOWAY Info-Tech Co., Ltd.
China	E	Beijing University of Civil Engineering & Architecture, School of Geomatics and Urban Spatial Informatics
Egypt	E	Brilliant Remote Sensing Labs
China	D	China International Geo-Information Co. Ltd.
Netherlands	C	CycloMedia Technology B.V.
Nigeria	D	DGLinks Limited
Germany	C	DLR - German Aerospace Centre - Oberpfaffenhofen
United Kingdom	D	DSM Geodata Limited
United Arab Emirates	C	Dubai Municipality - GIS Department
USA	A	esri
Switzerland	E	ETH Zurich - Institute of Geodesy & Photogrammetry
Bulgaria	C	GeoCad 93 Ltdi.
Hong Kong	D	Geocarto International Centre Ltd.
Israel	D	GeoCloud Ltd.
USA	D	GeoCue Corporation
Egypt	D	Geomakani
Netherlands	D	Geomares Publishing
Malaysia	E	Geoscience and Digital Earth Centre
Germany	D	Geotechnik, Geoinformatik & Service GmbH

Country	Category	Member Name
Peru	D	Global Mapping
Palestine	D	Good Shepherd Engineering
Norway	D	HySpex, Norsk Elektro Optikk
USA	D	ICRSE - International Center for Remote Sensing of Environment
Germany	D	IGI Ingenieur-Gesellschaft für Interfaces mbH
United Kingdom	D	IIC Technologies Ltd
Japan	A	Kokusai Kogyo Co. Ltd
China	C	Leador Spatial Information Technology Corporation
Switzerland	A	Leica Geosystems AG
Saudi Arabia	C	Ministry of Municipal and Rural Affairs
United Arab Emirates	C	Mohammed Bin Rashid Space Centre
Russian Federation	E	Moscow State University of Geodesy and Cartography
India	D	Nagaland Science & Technology Council
USA	A	NASA Goddard Space Flight Center
India	D	NRSC - National Remote Sensing Centre
USA	D	Open Geospatial Consortium
Japan	A	PASCO Corporation
Denmark	C	Phase One Industrial
USA	D	PhotoGAUGE Inc.
China	C	PIESAT Information Technology Co., Ltd.
Italy	E	Politecnico di Milano, DICA -sez. Geodesy and Geomatics
Russian Federation	C	RACURS
China	C	Shaanxi TIRAIN Science &Technology Co., LTD
Russian Federation	E	Siberian State University of Geosystems and Technologies, Novosibirsk
Botswana	D	Survey World
USA	B	Trimble

Country	Category	Member Name
Turkey	D	TÜBİTAK UZAY - Space Technologies Research Institute
Bulgaria	E	University of Architecture, Civil Engineering and Geodesy, Fac. of Geodesy, Sofia
Canada	E	University of Calgary, Department of Geomatics Engineering
United Kingdom	E	University of Nottingham
Serbia	E	University of Novi Sad, Faculty of Technical Science, Geoinformatics Laboratory
Germany	E	University of Stuttgart, Institute for Photogrammetry
Netherlands	B	University of Twente, ITC
Austria	C	Vexcel Imaging GmbH

* Detailed and current information can be accessed on http://www.isprs.org/members/SustainingFull.aspx

OPENING CEREMONY

Opening Address by Nicolas Paparoditis, Congress Director

Welcome Address by Christian Heipke, ISPRS President

Awards presented at the Opening Ceremony

Keynote Speakers

Opening of the XXIII Congress

Opening Ceremony

Program

- Introductory Remarks and Welcome
- Opening Address by Congress Director, Nicolas Paparoditis
- Welcome Address by ISPRS President, Christian Heipke
- Welcome message from SFPT President, Aurélie Sand
- Welcome message from IGN Deputy General Director, Magali Stoll
- Welcome message from CNES Director of Orbital Systems and Applications, Caroline Laurent
- Presentation: Pléiades Neo, the most advanced Optical Constellation for sophisticated Applications
  François Lombard, AIRBUS, Toulouse, France
- Presentation: Exploring Human Heritage
  Yves Ubelman, ICONEM, Paris, France
- Presentation of Awards
  Presentation of Brock Gold Medal Award
  Proposal for ISPRS Honorary Membership
- Film projection, “A propos de Nice” by Jean Vigo
- Opening of the XXIV Congress
- Welcome Reception

Opening Address by Nicolas Paparoditis

Dear officials, dear colleagues, dear friends,

Welcome to my home town, Nice, and to this opening ceremony, the first plenary session of the XXIV ISPRS Congress that I have the huge honour and pleasure to chair. It is good to see you in person after so many years after our last Congress in Prague in 2016 and the Geospatial Week in 2019.

It it always a very special moment for a Greek, even by origin, to speak from the Acropolis to the community and the people. And it reminds me how much democracy and peace are important and that Science should be at the center of these.

We are going to start this opening ceremony not with a traditional “dance from Provence” which I used to practice when I was a kid (you can ask my mother sitting at the front row :)) but with a movie, a very special movie for cinema lovers, a black and white film of the 1930s from the director Jean Vigo.

But why does the Congress Director want to show us an old black and white film here at the opening?

Well ISPRS, and in particular, the ISPRS Congress beyond the Science and the networking is all about sharing our culture with others and helping your colleagues discover yours. This is definitely one of the things I wanted to share with you beyond all that you will discover throughout the week: the weather, the landscapes, the gastronomy, the baroque architecture and some more.

So why a film and why this film? Well, we are in the birth country of cinema with the Freres Lumieres. Every year in May-June, the French Riviera is also the center of the world of Cinema with the Cannes Film Festival which finished just a few days ago. Tertio, this film is called a « A propos de Nice ». It means “about Nice”. This film depicts life in Nice in the 1930’s. Well this is how Nice was when France hosted the last Congress in 1934!

Jean Vigo actually died in 1934 aged 29. His cinematographic production, although very small, has had a very strong influence on the development of Cinema in France but also worldwide.

This film is originally a silent movie. But we will have what we call a cine-concert, with an original live soundtrack by a group of excellent professional musicians highly inspired by the Mediterranean Culture and Jazz.

Indeed, Nice is also a historical city of Jazz with its international Jazz Festival created in 1948, one of the first international jazz festivals. The musicians and other artists in France have a specific working statute in France called the “Intermittents du spectacle” that you would translate as “Show intermittents”. This statute enables artists to make a decent living out of their art and this is a part of what we call the French cultural exception.

But now enough talking, I will let you enjoy the film.

With this film projection I declare this XXIVth ceremony open.

Welcome Address by Christian Heipke, ISPRS President

Chère Mme Sand, Présidente de la Société Française de Photogrammétrie et de Télédétection (SFPT), dear Aurélie,

Chère Mme Stoll, Directrice Générale Adjointe de l'Institut National de l'Information Géographique et Forestière (IGN),

Chère Mme Laurent, Directrice des Systèmes Orbitaux et membre du Comité Exécutif du Centre National d'Études Spatiales (CNES),

Cher Directeur du XXIV Congrès ISPRS, dear Nicolas,

Your excellencies from the world of science and from our host country France,

Dear presidents and representatives of our sister societies,

Distinguished Congress participants here in the room and from remote,

Dear Friends,

Thank you all for coming and a very warm welcome to the XXIV ISPRS Congress. I am so glad to see you after those long months of not being able to mingle and discuss photogrammetry, remote sensing and spatial information science face-to-face. Nevertheless, let's not forget that for many of our friends, travelling is still not possible – let's send a special welcome to everybody remotely connected to this opening ceremony.

As we have also experienced in the preparation of the Congress, in times of disruptive change, planning, even when it is based on sound scientific grounds, may be of limited value. However, it is still the best thing we, as humans, can do to make this world a better place. It is our common responsibility as scientists and as citizens to search for and to find solutions which make sure that we will leave the planet in a sustained state for future generations. And remember - we must get it right now, we only have this one world, we don't have a plan(et) B.

Here, our disciplines come into play. Whether we are concerned with global earth observation to contribute to the United Nations Sustainable Development Goals, with autonomous driving to increase traffic safety and comfort, or with virtual entertainment shows (as we recently saw in *Abba Voyage* with their avatars called *abbatars*) – imagery, visualisation and spatial questions play a major role. We can and should contribute to these developments, and of course to many more.

"Common responsibility" obviously includes communication and cooperation. While this can be extremely difficult at times in politics, we should not forget that there is only one science in the world. Therefore, in my view science must withstand political pressure to cut off ties and relationships between scientists and must strive to keep communication channels open. After all, at some point in time, even the worst crisis will be over. Also, environmental challenges and disasters do not know national or cultural borders.

I want to close on a happier note. I am looking forward to a full week of exciting presentations and inspiring discussions of photogrammetry, remote sensing and spatial information science. I am looking forward to chatting with old friends, to making new friends and to learning about the latest development of our field. I am also looking forward to seeing a new group of ISPRS leaders being elected and taking over the steering wheel of ISPRS. In short, I am looking forward to a fascinating week full of science, industry relationships and global education, the three pillars of ISPRS.

Finally, I would like to take this opportunity to thank my fellow Council members, Technical Commission Presidents and ISPRS officers for the collaborative management of the Society, all sister societies for their support and all participants for being here.

Merci beaucoup aussi à l'équipe française pour avoir préparé ce congrès pour nous malgré toutes les difficultés que vous avez rencontré pendant les six dernières années !

Thank you very much for your attention and have a great week!



Welcome from SFPT



Aurélie Sand, SFPT President

Welcome from IGN



Magali Stoll, Deputy General Director, IGN

Welcome from CNES



Caroline Laurent, Director of Orbital Systems, and Applications, CNE

Awards presented at the Opening Ceremony

ISPRS Honorary Member

Chen Jun received his Honorary membership in a virtual handover from ISPRS President, Christian Heipke.





The Brock Gold Medal

Li Deren received the Brock Gold Medal award virtually presented by Charles Toth, ISPRS Vice-President and representative of the sponsor, ASPRS.





Keynote Speakers

Pléiades Neo, the most advanced Optical Constellation for sophisticated Applications

François Lombard, AIRBUS, Toulouse, France



Exploring Human Heritage

Yves Ubelman, ICONEM, Paris, France



Opening of the XXIII Congress



Nicolas Paparoditis and Christian Heipke officially opening the Congress,
with the help of Ava Paparoditis and Matthias Heipke



ISPRS Awards 2022

ISPRS Honorary Member

ISPRS Fellowships

The Brock Gold Medal Award

The Otto von Gruber Award

The U.V. Helava Award

The Jack Dangermond Award

The Samuel Gamble Award

The Willem Schermerhorn Award

The Schwidefsky Medal

The Eduard Doležal Award

The Wang Zhizhuo Award

The Karl Kraus Medal

The Frederick J. Doyle Award

The Giuseppe Inghilleri Award

ISPRS Best Young Author Award

The President's Honorary Citation

Best Reviewers of the ISPRS XXIV Congress

Student Consortium Service Award

CATCON Award

Best Poster Papers

Youth Forum Awards

Certificates of Recognition for Excellence in Service to ISPRS

The ISPRS Foundation and Congress Travel Grants

ISPRS HONORARY MEMBER

An individual is elected as an ISPRS Honorary Member in recognition of distinguished services to the ISPRS and its aims. Honorary Members shall be nominated by a committee composed of members from the current and three previous Councils, and elected by the Congress. There may not be more than ten living Honorary Members of the Society at any given time. The Committee has nominated Chen Jun for election as Honorary Members of ISPRS in 2020.



Chen Jun had first contacts with ISPRS as early as 1982, when he participated in the Technical from 2008 - 2012, leading the society as president from 2012 - 2016, a period which included the reorganization of the ISPRS Technical Commissions, in which he had a major share; and as Past President since 2016. He initiated the ISPRS research agenda which was published in the ISPRS Journal of Photogrammetry and Remote Sensing in 2016; initiated financial support for authors of open access papers who cannot afford the related Author Processing Charges; has represented ISPRS at the level of international geospatial societies such as those grouped in the Joint Board of Geospatial Societies (JBGIS) - now renamed to UN GGIM Geospatial Societies; has represented ISPRS at numerous UN and GEO meetings, e.g. the yearly UN GGIM meetings in New York and the various GEO plenaries around the world; has represented ISPRS in the International Science Council (ISC) and has made sure ISPRS keeps its reputation of a respectable scientific society.

With his charming and diplomatic personality and his dedication to the aims and the activities of the society, Chen Jun truly deserves to be elected an ISPRS Honorary Member.

Commission VII Symposium in Toulouse, France, where he spent time as a young scientist with IGN and CNES. Later Chen Jun was elected president of Technical Commission II, entitled “Systems for Data Processing, Analysis and Representation” at the time, and was responsible for the Symposium in Xian in 2002.

During the 2004 Congress in Istanbul China was elected to host the XXI Congress, and Chen Jun became Congress Director, organising a very successful ISPRS Congress in Beijing in 2008 and has since served on ISPRS Council, as Secretary General

ISPRS FELLOWSHIPS

An ISPRS Fellow is elected by the Society in recognition of sustained, excellent service to the ISPRS and its aims. Five persons have been nominated to receive the ISPRS 2020 Fellowship, and an additional two persons to receive the 2022.



Kohei Cho (2020)

Kohei is a professor at the Tokai University in Tokyo, Japan. As the vice president of the Japanese Society for Photogrammetry and Remote Sensing since 2005, he has significantly contributed to streng-then the relationship of JSPRS with ISPRS.

He is also an important leader in the field of Remote Sensing in Asia. Since 2009, and as successor of Shunji Murai, he is serving as the General Secretary of the Asian Association of Remote Sensing (AARS), a Regional Member of ISPRS. In 2019, he successfully organized the 40th Asian Conference of Remote Sensing (ACRS). During his ten years in office, he succeeded in continuing the tradition of ACRS, "friendship first and money after'.

In ISPRS, Kohei has served as International Science Advisory Committee (ISAC) member (2012-2021), as ISPRS Commission VIII "Remote Sensing Application" Scientific Secretary (2008-2012), as ISPRS Commission VI "Education and Outreach" President (2004-2008), and as ISPRS WG VI/2 "Computer Assisted Teaching” working group chair (1992-2000).

Kohei initiated the CATCON (the educational software contest) in 1996, to activate educational research works within ISPRS. The CATCON has continuously been organized as one of the official events at lSPRS Congresses. He also helped initiate the ISPRS Student Consortium in 2004, under Commission VI, to promote student activities in ISPRS. Success in an education commission in the engineering field is generally not easy to gain at conferences and workshops. However, Kohei has significantly improved the research community of education in ISPRS during his Commission VI "Education and Outreach" presidency. Thanks to Kohei, the Midterm Symposium in Tokyo in 2006 was successful, with many papers and participants.

As a researcher, Kohei has been involved in various activities on remote sensing. He was the leader of JAXA AMSR2 sea ice team for years. For the past eight years, he was involved in a project monitoring the recovery of Tsunami damaged areas in Japan for

environmental education. He has published more than 100 papers on remote sensing and is co-author of 15 books on remote sensing and image processing.

It should be emphasized, that Kohei has been promoting Remote Sensing in Asia for years through exchange of information, mutual cooperation, and international understanding and goodwill among the member countries of Asia. His smile encourages many young researchers to be involved in research communities and to contribute not only to AARS but also to ISPRS from Asia.



Songnian Li (2020)

Songnian Li received a B.Eng. degree in Surveying Engineering from Wuhan Technical University of Surveying and Mapping, China, in 1983 and the Ph.D. degree in Geodesy and Geomatics Engineering from the University of New Brunswick, Canada, in 2002. From 1983 to 1997, he was a Lecturer, Associate Professor and Visiting Scholar in universities in China and Canada. Since 2001, he has been an Assistant Professor, Associate Professor and Professor in Geomatics Engineering in the Department of Civil Engineering, Ryerson University, Canada. Currently, he is the Associate Chair for Graduate Studies and the leader of the GIS and Geo-Collaboration Lab at Ryerson University. He is a licensed professional engineer and registered land surveyor in Ontario, Canada. He was an invited Research Fellow by the Japan Society for the Promotion of Science in 2009 and 2012, and a recipient of both the nomination for the ISPRS U. V. Helava Best Paper Award 2016-19, and the 2015/2016 Canadian Institute of Geomatics President's Citation. His current research interests include geospatial big data, spatio-temporal analysis, moving object and location-based services, geo-collaboration and geospatial web and web services. He has been appointed as Adjunct Professor or Member at over 10 universities in Canada, Japan, and China.

Songnian served as chair of two Working Groups, as President of ISPRS TC II (2012-2016) and as Council Member (Treasurer, since 2016). He is TIF Trustee and Chair of the TIF Grants Evaluation Committee (since 2016) and has represented ISPRS in various roles in UNGGIM, IGU, OGC and GEO.

He has also served as Chair of the Canadian National Committee for ISPRS, Council Member of the Canadian Institute of Geomatics (former Canadian Ordinary Member of ISPRS), and Executive Member of the Canadian Society for Remote Sensing (current Canadian Ordinary Member of ISPRS).

Songnian Li has been involved in the organization of over 90 scientific conferences/workshops; many of them ISPRS or ISPRS-sponsored events, such as the ISPRS TC II Symposium in 2014, in Toronto. He has played a leading role in establishing the workshop series on "Web-based Mapping, Geo-Processing and Services", which has been held six times since 2010, as well as an important role in organizing ISPRS workshops on global land cover and SDGs, and also served as a member of International Programme Committees for the 2016 ISPRS Congress, and the ISPRS Geospatial Week in 2017 and 2019.

Among other ISPRS editorial roles, he has served as an Editorial Advisory Board member of the ISPRS Journal of Photogrammetry and Remote Sensing since 2016, and received a Certificate of Outstanding Contribution in Reviewing in 2017.



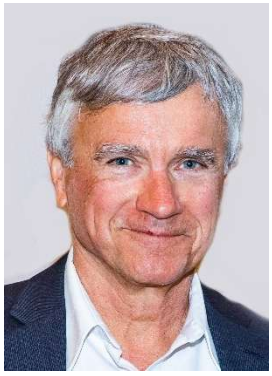
Marguerite Madden (2020)

Marguerite Madden is a Professor in the University of Georgia, Department of Geography and Director of the Center for Geospatial Research where she has collaborated on environmental research projects using remote sensing and geographic information systems (GIS) since the mid-1980s. Her research focus includes the generation of original geospatial data (e.g. detailed vegetation databases of vegetation in National Park units, animal tracking/behaviour and 3D landscape models from drone imagery), and integration of these data into GIS databases for analysis and modelling of human-environment interactions over broad scales.

A Fellow, Past GIS Division Director and Past President of the American Society for Photogrammetry and Remote Sensing (ASPRS) and Editor of the ASPRS Manual of GIS (2009), she has served in the International Society for Photogrammetry and Remote Sensing (ISPRS) Working Group and Technical Commission positions continuously since 1988, including ISPRS Technical Commission President for Commission IV, "Digital Mapping and Geodatabases" (2008-2012) and ISPRS Second Vice President (2012-2016). She has served as The ISPRS Foundation Finance Officer since 2010, and the Lead Science Advisor for the Georgia Node of the NASA DEVELOP National Program since 2012. She was awarded the ISPRS Willem Schermerhorn

Award (2004), the ASPRS SAIC Estes Memorial Teaching Award (2011) and the NASA Silver Achievement Medal (2018).

Marguerite has served as major advisor to 25 Ph.D. and 21 M.S./M.A. students. She has over 65 publications in peer-reviewed journals, 11 book chapters, five edited books and proceedings, and 12 guest-edited special journal issues and serves on the Editorial Boards of five peer-review journals in geospatial science.



Charles K. Toth (2020)

Charles Toth is a Research Professor in the Department of Civil, Environmental and Geodetic Engineering, at The Ohio State University (OSU). He received a M.Sc. in Electrical Engineering and two Ph.D.s, one in Electrical Engineering and one in Geoinformation Sciences, both from the Technical University of Budapest, Hungary.

His research interest and expertise cover broad areas of spatial information sciences and systems, including photogrammetry, multi-sensor geospatial data acquisition systems, LiDAR, high-resolution imaging, surface extraction, modelling, integrating and calibrating multi-sensor systems, georeferencing and navigation, 2D/3D signal processing, and mobile mapping technologies.

He has published over 300 scientific papers, and is the recipient of numerous awards, including the 2009 APSRS Photogrammetric Award and the United States Geospatial Intelligence Foundation (USGIF) Academic Achievement Award 2015. In 2016, he was awarded the ISPRS Schwidefsky Medal for his significant contributions to the field of photogrammetric theory and practice in the last three decades.

Acknowledged internationally for his visionary contributions to mobile mapping, he was a key architect of the concept development, and conducted significant research in areas of sensor georeferencing and digital imaging technologies. He is credited with the introduction of the term “direct and indirect georeferencing” in the photogrammetric community. He is very devoted to education and mentoring the next generation of the photogrammetric professionals, and has been a major contributor to annual Summer Schools on mobile mapping, held internationally.

Charles is highly respected across the international mapping community and has held many senior leadership positions in national and international societies, among them that of President of the American Society of Photogrammetry and Remote Sensing. His service to ISPRS started in 1996, when he became co-chair of a working group. He continued in this position during the 2000-2004 term, and then took over the chair position for 2004-2008. He stayed on as co-chair for the next period, before becoming the ISPRS Commission I President from 2012 to 2016. Currently he serves as ISPRS Vice President.



George Vosselman (2020)

George Vosselman is professor in Geo-Information Extraction with Sensor Systems. He graduated with honours from the Delft University of Technology in Geodetic Engineering in 1986, then worked at the Institute of Photogrammetry of the University of Stuttgart, Germany, until 1992. In 1991, he obtained his PhD degree with honours from the Rheinische Friedrich Wilhelms University of Bonn, Germany. After a year as visiting scientist at the University of Washington, Seattle, USA, he was appointed professor of Photogrammetry and Remote Sensing at the Delft University of Technology in 1993. In 2004 he joined ITC, now a faculty of the University of Twente.

He is recipient of the Hansa Luftbild Award, the ISPRS Otto von Gruber Award, the Schwidefsky Medal, and the Karl Kraus Medal. He is a board member of the Netherlands Geodetic Commission and corresponding member of the German Geodetic Commission. As of 2012, he is head of the Department of Earth Observation Science of the University of Twente.

George has been playing an active and often central role in the ISPRS community for over 20 years. He has been instrumental in adapting the society to the rise of laser scanning, including roles as WG chair (2000-2004) on reconstruction from airborne LiDAR and InSAR, WG co-chair (2008-2012) on point processing, and editor of a well-known standard book (with Hans-Geerd Maas).

Moreover, he has made a massive contribution to scientific standards, quality control, and reviewing: he was editor-in-chief of the flagship ISPRS Journal of Photogrammetry and Remote Sensing (2004-2012) and has been a member of the journal’s Editorial Advisory Board (since 2012), a member of the International Science Advisory Committee (ISAC), and chair of the International Program Committee for the Congress 2016, and has written over 250 publications, many of which have been

cited numerous times. He was also the Director of the ISPRS Geospatial Week, organised in Enschede in 2019.



Jon Mills (2022)

Jon Mills is Professor of Geomatic Engineering at The University of Newcastle upon Tyne. He is Deputy Head of the Geospatial Engineering group, within which he leads the Newcastle Earth Observation research laboratory (NEOlab).

Jon has been a loyal and dedicated supporter of ISPRS since 1996. He has exhibited sustained, excellent service to the ISPRS and its aims and therefore is an ideal candidate for the Fellowship.

Since attending his first ISPRS event to present his research as a PhD student at the 1996 Vienna Congress, age 24, Jon Mills has attended every quadrennial ISPRS Congress, as well as every Geospatial Week, and is a regular participant in ISPRS Symposia and Workshops. He has convened / co-convened five ISPRS Technical meetings, including the scientifically, socially and financially successful 2010 Technical Commission V workshop held in Newcastle upon Tyne, and has served on Scientific Programme Committees of a further 17 ISPRS technical meetings. As Treasurer of ISPRS (2012-16), he took on roles overseeing the development of the ISPRS Scientific Initiatives programme and, notably, renegotiating the ISPRS Journal contract with Elsevier, turning what was a loss-making endeavour for the Society into a significant surplus generating one from financial year 2016 onwards, with a generated revenue of CHF 88k in FY 2018 alone.

In addition to his roles in Council and ISPRS Commissions Jon was co-author of the research vision paper in 2016 and was a joint PI, ISPRS Scientific Initiative project on SDGs, 2017. He has published 11 papers in ISPRS Journal of Photogrammetry and Remote Sensing and one paper in ISPRS International Journal of Geo-information. He was Theme Issue Guest Editor of the ISPRS Journal of Photogrammetry and Remote Sensing in September 2006 and has edited two ISPRS Archives volumes, 2010 and 2012.



Sisi Zlatanova (2022)

Sisi Zlatanova is a Professor at The University of New South Wales (Australia) in the Faculty of the Built Environment. She has a long record of contributing to ISPRS and is now President of Technical Commission IV, Spatial Information Science. She has previously chaired WG IV/8 (2004-12) and WG IV/7 (2012-6). Sisi has been instrumental in the organisation of the GI4DM, 3DGeoInfo and Indoor3D international conference series regarding the very important topics of risk and crisis management, 3D geoinformation and indoor modeling, resulting in important related publications. She also contributed to the geomatics community at large through her research and publications and teaching activities at academic institutions in various countries. Sisi Zlatanova studied in Bulgaria, the Netherlands and Graz, Austria (PhD) and has been active professionally in Bulgaria and held academic positions at the University of Architecture Civil Engineering and Geodesy, (Bulgaria), ITC (The Netherlands) and Graz Univ. of Technology (Austria), Delft Univ. of Technology (the Netherlands), Siberian State University of Geosystems and Technologies (Russia) and Beijing University of Civil Engineering and Architecture (China).

Sisi has organised more than 40 ISPRS events including workshops and summer schools, and published widely in ISPRS journals including several hundred articles in peer-reviewed journals, conference proceedings. She has participated in large EU and Australian projects and led seven projects on emergency response and 3D BIM/GIS data.

THE BROCK GOLD MEDAL AWARD

The Brock Gold Medal Award, donated by the American Society for Photogrammetry and Remote Sensing, is awarded for an outstanding landmark contribution in the evolution of the photogrammetry, remote sensing and spatial information sciences, which is a proven contribution to these sciences and technologies of whatever form, whether a major completed project or program, some fundamentally new equipment, system or fundamentally new technique, or other new departure.

The 2020 awardee is **Li Deren**, for his outstanding scientific achievements in the photogrammetry, remote sensing and geospatial information sciences.



Li Deren is a professor at the Laboratory of Information Engineering in Surveying, Mapping and Remote Sensing (LIESMARS) and the Director of the Collaborative Innovation Center of Geospatial Technology, both at Wuhan University of China. He enjoys dual membership of both, the Chinese Academy of Sciences and the Chinese Academy of Engineering. In 1985, he received his doctoral degree from the University of Stuttgart, Germany.

Li Deren is a renowned pioneer and leader of civilian space mapping in China. Starting around 2005 he proposed to the central government to establish a high-resolution satellite Earth observation system. As a result of his visionary and strategic suggestion, a dozen high resolution Chinese satellites are now in operation, fulfilling the routine national needs in social and economic developments. Today, about 80% of satellite images in China's market are collected by these satellites.

Li Deren was also among the key individuals who proposed and designed the technical specifications of this along-track civilian stereo mapping satellite series ZY-3. Since its first successful deployment in 2012, he led his team to design and develop the ground receiving and processing systems to automatically produce standard topographic products, including digital elevation models and orthophotos based on the specification of the 1:50,000 topographic map. This was achieved for the first time in China's history of civilian mapping; the nationwide mapping revision cycle has been reduced from approximately 5 years to 5 months, empowering the country to be able to map about 30 million square kilometres per year at the scale of 1:50,000.

More recently, Dr. Li re-focused on the development and utilization of small- and nano-mapping satellites. He led the design of three unique, non-traditional mapping satellites, Luojia-1, 2 and 3. Being the first in China and launched in 2018, Luojia-1 is a nightlight remote sensing satellite with 130 m resolution, which pioneers the utilization of high-resolution nightlight imagery for population distribution, urban sprawl, and regional studies. As a free and open data source, more than 26,000 Luojia-1 scenes were downloaded by over 3,000 international users.

Li Deren is also recognized as the key designer of the very first mobile mapping system in China. Today, enhanced with home-made sophisticated algorithms, such mobile systems can ensure a fast acquisition of street-view geospatial data at an accuracy of a few centimetres. More than 300 sets of such systems were sold to various government agencies, research institutes, higher education colleges, and private companies in China; the system has been used to create 3D street views and models for over 600 cities and towns in the country.

Li Deren has served as the President of ISPRS, Technical Commission III (Photogrammetry) and VI (Education). He received an Honorary Doctorate from ETH Zürich, Switzerland in 2008 and was awarded Honorary Member by ISPRS in 2012.

THE OTTO VON GRUBER AWARD

The Otto Von Gruber Award is donated by the Netherlands Center of Geodesy and GeoInformation (NCG). It consists of a medal and a monetary grant, and is presented to the author, under 40 years of age, of a paper of outstanding merit in the field of photogrammetry, remote sensing, and spatial information sciences published during the four years prior to the Congress. The recipient of the award is **Chenglu Wen** from Xiamen University, China, for her pioneering work in learning-based LiDAR point cloud processing.



Chenglu Wen has been actively involved in research in LiDAR point cloud processing with major focus on applications of 3D LiDAR data in Smart Cities, Autonomous Driving, and Building Information Model (BIM). She has made significant contributions on mobile laser scanning point cloud processing, and published several patents and over eighty papers in academic

journals, conference and workshop proceedings. She has also developed object extraction algorithms for Mobile Laser Scanned (MLS) point clouds which have been used by the industry, in particular in the field of autonomous driving. Thus, her highly cited research work on LiDAR mobile mapping and indoor modeling has a strong impact on both academic society and industry.

Chenglu Wen was born in the fourth quarter of 1982 and received a Ph. D degree of Mechanical engineering in 2009. She is an Associate Professor and former Vice Head of the Department of Artificial Intelligence, Xiamen University, China. Chenglu Wen has been actively involved in several ISPRS working groups in the past. Her research has been sponsored by several Chinese and foreign groups, including Natural Science Foundation of China programs (e.g., she received the Discovery Grant twice, one Youth grant), National Key R&D Program of China, Department of Education, Fujian Province Natural Science Grant and an ISPRS initiative.

The papers for which Chenglu Wen received the award are the following:

C Wen, X Sun, J Li, C Wang, Y Guo, A Habib, A deep learning framework for road marking extraction, classification and completion from mobile laser scanning point clouds, ISPRS journal of photogrammetry and remote sensing 147, 178-192, 2019.

C Wen, C You, H Wu, C Wang, X Fan, J Li, Recovery of urban 3D road boundary via multi-source data, ISPRS Journal of Photogrammetry and Remote Sensing 156, 184-201, 2019.

C Wang, S Hou, **C Wen**, Z Gong, Q Li, X Sun, J Li, Semantic line framework-based indoor building modeling using backpacked laser scanning point cloud, ISPRS journal of photogrammetry and remote sensing 143, 150-166, 2018.

THE U.V. HELAVA AWARD

The U.V. Helava Award is a prestigious ISPRS Award, which was established in 1998 to encourage and stimulate submission of high-quality scientific papers by individual authors or groups to the ISPRS Journal of Photogrammetry and Remote Sensing, to promote and advertise the journal, and to honour the outstanding contributions of Dr. Uuno V. Helava to research and development in photogrammetry and remote sensing. The Award is normally presented to authors of the best paper, written in English and published exclusively in the ISPRS Journal during the four-year period from January of a Congress year, to December of the year prior to the next Congress.

The award consists of a monetary grant of 10,000 SFr., certificates and a silver plaque. It is sponsored by Elsevier B.V. and Leica Geosystems. The plaque was designed by the 1980-88 ISPRS Technical Commission III President, Einari Kilpelä, previously professor at the now Aalto University. A five-member Jury evaluates the papers. For each year of the four-year evaluation period, the best paper is selected, and among these four papers, the one to receive the U.V. Helava Award. Due to the pandemic and the resulting postponement of the Congress, in 2022 two awards are given, one for the 2016-2021 period and one for the 2020-2021 period.

The award-winning paper for 2016 -2019:

"Bundle adjustment with raw inertial observations in UAV applications" by Davide Antonio Cucci, Martin Rehak and Jan Skaloud

from École Polytechnique Fédérale de Lausanne, Switzerland, published in volume 130, August 2017, pp. 1-12,

https://www.sciencedirect.com/science/article/pii/S0924271617301387



Davide Antonio Cucci



Martin Rehak



Jan Skaloud

Jury's rationale for the paper selection

This paper presents a new contribution to integrated sensor orientation. It overcomes problems encountered with the traditional, Kalman filter approach for deriving exterior orientation parameter estimates from integrated GNSS/IMU systems used for bundle adjustment. The authors' novel approach incorporates raw inertial observations into the bundle solution as a dynamic network adjustment. Their tight fusion method allows rigorous propagation of error models and properly treats correlations between observations. The success of their approach is experimentally demonstrated with real UAV data and is shown to be superior to the conventional approach for incorporating GNSS/IMU observations. The jurors felt this is a highly significant work that presents a practical solution to a technically challenging problem. Moreover, they were impressed with large-scale applicability given the increasing utilization of UAVs for spatial data capture. They felt

this well-written contribution represents a genuine scientific advance to photogrammetry and, therefore, very deserving of the U.V. Helava Award for 2016-2019.

The award-winning paper for 2020 -2021:
"Cloud removal in Sentinel-2 imagery using a deep residual neural network and SAR-optical data fusion", by Andrea Meraner, Patrick Ebel, Xiao Xiang Zhu and Michael Schmitt
from Technical University Munich and DLR, Oberpfaffenhofen, Germany, published in Volume 166, August 2020, Pages 333-346.

https://www.sciencedirect.com/science/article/pii/S0924271620301398



Andrea Meraner



Patrick Ebel



Xiao Xiang Zhu



Michael Schmitt

Jury's rationale for the paper selection

This paper developed a cloud-removal model based on a deep residual neural network using SAR data and fusion of SAR and optical data. The methodology was tested by using the data across the globe and the seasons. The Jury thinks that the work is truly innovative and has been impactful since its publication. The developed methodology tackled a common problem in optical remote sensing and has a wide application potential. Therefore, it is very deserving of the U.V. Helava Award for 2020-2021.

The seventh U.V. Helava Award will be presented at the XXIV ISPRS Congress in Nice, France, 6-11 June 2022 by Christian Heipke, ISPRS President, and representatives of the sponsors.

On behalf of the ISPRS and the U.V. Helava Award Jury, we would like to congratulate the authors for this distinction and thank them for their contribution. We would also like to thank the sponsors of the Award and the Jury members for their thorough evaluations and dedication to this important process.

THE JACK DANGERMOND AWARD

The Jack Dangermond Award was established in 2017 to encourage and stimulate submission of high-quality scientific papers by individual authors or groups to the ISPRS International Journal of Geo-Information, to promote and advertise the journal, and to honour the outstanding contributions of Jack Dangermond, founder and CEO of ESRI, to research and development in Geospatial Information Sciences. The Award is normally presented to authors of the best paper, written in English and published exclusively in the ISPRS Journal during the four-year period from January of a Congress year, to December of the year prior to the next Congress.

The award consists of a monetary grant of 10,000 USD and certificates, it is sponsored by MDPI and ESRI. A five-member Jury evaluates the papers. For each year of the four-year evaluation period, the best paper is selected, and among these four papers, the one to receive the Jack Dangermond Award. Due to the pandemic and the resulting postponement of the Congress, in 2022 two awards are given, one for the 2016-2021 period and one for the 2020-2021 period.

The award-winning paper 2017 – 2019:

"Voxel-based 3D Point Cloud Semantic Segmentation: Unsupervised Geometric and Relationship Featuring vs Deep Learning Methods" by Florent Poux and Roland Billen

from the Geomatics Unit, University of Liège, Belgium, published in Vol. 8, (5), 2019,

https://doi.org/10.3390/ijgi8050213



Florent Poux



Roland Billen

Jury's rationale for the paper selection

The winning paper addresses the problem of voxel-based 3D point cloud semantic segmentation. The authors propose a workflow that uses voxelization, a two-step feature extraction for low-level shape-based features as well as connectivity and relationship features, and finally a knowledge-based decision tree for feature classification. This paper has potential to greatly influence the

processing of 3D point cloud data sets that fulfil the definition of Big Data in volume and velocity of data collection. It progresses the trajectory of geospatial analysis toward true 3D functionality. The use of a knowledge-based decision tree for feature classification also leverages the wealth of existing information that can contribute to classification in many application areas. The jury felt this well-written contribution represents a genuine scientific advance in voxel-based semantic segmentation and, therefore, very deserving of the Jack Dangermond Award for 2017-2019.

The award-winning paper for 2020-2021:



Analysis of OpenStreetMap Data Quality at Different Stages of a Participatory Mapping Process: Evidence from Slums in Africa and Asia by Yeboah G, Porto de Albuquerque J, Troilo R, Tregonning G, Perera S, Ahmed Saks, Ajisola M, Alam O, Aujla N, Azam SI, Azeem K, Bakibinga P, Chen Y-F, Choudhury NN, Diggle PJ, Fayehun O, Gill P, Griffiths F, Harris B, Iqbal R, Kabaria C, Ziraba AK, Khan AZ, Kibe P, Kisia L, Kyobutungi C, Lilford RJ, Madan JJ, Mbaya N, Mberu B, Mohamed SF, Muir H, Nazish A, Njeri A, Odubanjo O, Omigbodun A, Osuh ME, Owoaje E, Oyebode O, Pitidis V, Rahman O, Rizvi N, Sartori J, Smith S, Taiwo OJ, Ulbrich P, Uthman OA, Watson SI, Wilson R, Yusuf R. ISPRS International Journal of Geo-Information. 2021; 10(4):265.

https://doi.org/10.3390/ijgi10040265

Jury's rationale for the paper selection

The winning paper addresses the needed assessment of OpenStreetMap data quality to quantify volunteer mapping in morphologically complex urban slums in Africa and Asia. Data integrity is a critical area of research. Experts in many parts of the world contributed to this paper by an extensive data collection showing the critical importance of remotely sensed image-derived urban slum data for addressing many social and environmental problems. The approach for this paper was an extremely large undertaking and is novel in its scope. The results make an important contribution to our understanding of volunteer data related to feature complexity. The Jury felt this well-written contribution represents a genuine scientific advance in volunteered geographic information handling and, therefore, very deserving of the Jack Dangermond Award for 2020-2021.

THE SAMUEL GAMBLE AWARD

The Samuel Gamble Award is sponsored by the Canadian Institute of Geomatics in honour of Dr. Samuel G. Gamble, former President of ISPRS, and Director of the 1972 Congress. A recipient of the award shall be a person who, like Dr. Gamble, has contributed significantly to the development, organization or professional activities of photogrammetry, remote sensing and spatial information sciences, at the national or international level.

In 2020, two recipients are awarded: Jonathan Li, for his contribution to the field of mobile mapping in Canada and internationally; and Jan Skaloud, who has advanced the frontier between photogrammetry & remote sensing and navigation sensors.

In 2022, Ruisheng Wang is awarded for his significant contribution to the field of photogrammetry and remote sensing.



Jonathan Li (2020)

Jonathan Li is a professor both in Geomatics and Systems Design Engineering at the University of Waterloo (UW), Canada, where he founded and leads the "Mobile Sensing and Geodata Science" group with 20 researchers. He has been a principal investigator of over 30 research projects since 2001.

He has made outstanding contributions to the development and commercialization of photogrammetry and remote sensing technologies. His research has resulted in the development of new concepts and algorithms for a HD mapping system for smart cities and a 3D LiDAR point cloud processing system for roadway inventory.

Jonathan has been serving on the Canadian National Committee for ISPRS of both the Canadian Institute of Geomatics and the Canadian Remote Sensing Society. He has been an officer of several ISPRS working groups, he has also served as associate editor of various scientific prestigious journals. His research has been supported by government funding agencies, industry and international sponsors. His research activities have led to 16 granted
patents, 8 books, and more than 400 research papers published in refereed journals, and in refereed conferences. He has received numerous citations and has also received a number of awards.

Jonathan Li has played an important role in the successful training of geomatics students and professionals. He is very actively involved in many

international professional activities, which include his role as a national examiner of Professional Engineers
Ontario (PEO) and a co-organizer and/or programme committee of several well-known international conferences including mobile mapping technology (MMT, since 2003), and earth observation for global/environmental changes (EOGC, since 2009).



Jan Skaloud (2020)

Jan Skaloud is, among other accomplish-ments, senior research fellow at EPFL since 2008 and (co-) chair of ISPRS WGs for 12 years. Furthermore, he is active in other international (ION, IAG) and national (Swiss Geodetic Commission, Swiss Society for Photogrammetry and Remote Sensing) scientific and professional organisations.From these positions he has contributed significantly in the organisation of professional activities and events. A highlight of his contributions is his role in the successful EuroCOW conference series.

Throughout his career, Jan Skaloud has advanced the frontier between photogrammetry & remote sensing and navigation sensors: during his time in Canada he developed the 1st practical result of airborne direct orientation, presented at the ISPRS Congress in Vienna while optimizing georeferencing by INS/DGPS in general. Since his arrival in Switzerland, he put forward the rigorous calibration technique for airborne lidar and new methodology for sensor georeferencing. He led the development of a system and techniques for real-time registration of airborne lasers with sub-decimetre accuracy and in-flight quality control. Since 2013, he pioneered the integrated sensor orientation on small UAV for mapping with cm-level accuracy without ground control, which won him the Hansa Luftbild Price in 2014. In this field, he is the co-recipient of 2020 Helava Award for the development of bundle adjustment with raw inertial observations.

Over the last 20 years, Jan Skaloud contributed to various ISPRS and EuroSDR activities, chairing ISPRS working groups (since 2008) that organize the EuroCOW meetings for which he acts as a main convener since 2016. His other research activities are related to geodesy and navigation.



Ruisheng Wang (2022)

Ruisheng is a professor in the Department of Geomatics Engineering at the University of Calgary which he joined in 2012. Before that, he worked as an industrial researcher at HERE Technologies in Chicago, Illinois. Ruisheng Wang holds a Ph.D. in Electrical and Computer Engineering from McGill University, an M.Sc.E. in Geomatics Engineering from the University of New Brunswick, and a B.Eng. in Photogrammetry and Remote Sensing from the Wuhan University, respectively. He has supervised over 50 PhD, MSc, Postdoc, and Honour theses of undergrads. He has co-authored over 70 research papers published in prestigious ISPRS, IEEE, Elsevier journals in photogrammetry, remote sensing, and computer vision. He is currently a Professional Engineer registered in the Province of Alberta, a member of CIG and CRSS and a senior member of IEEE.

Ruisheng Wang is an acknowledged expert in automatic LiDAR point cloud processing, who leads an internationally recognized research program that aims to develop fully automated methods for real-time generation and updating of 3D maps, operating at the interface of photogrammetry and computer vision. He also made important contributions related to building extraction and modelling in complex urban environments.

Ruisheng Wang and his research team's highly innovative work has been recognized through important and highly competitive awards, including Google Research awards in 2014 and 2016 in the Geo/Maps category for contributions on "Building Entrance Recognition from Street-Level LiDAR and Video Images" and "Enhancing Building Facades Using Mobile LiDAR". In regard to broader contributions to the profession, Ruisheng Wang serves as Associate Editor of Photogrammetric Engineering and Remote Sensing, IEEE Selected Topics in Applied Earth Observations and Remote Sensing, the Canadian Journal of Remote Sensing, and the Journal of Applied Remote Sensing. Also, he has served as a program committee member for many conferences and has been involved in organizing the IEEE Winter Conference on Applications of Computer Vision series.

THE WILLEM SCHERMERHORN AWARD

The Willem Schermerhorn Award (1988), sponsored by Geo-Information Nether-lands is granted to a person who has most significantly contributed to the activities of a Working Group of the ISPRS during the four-year Congress period. The award consists of a certificate.



The 2020 Award has been awarded to **Michael Ying Yang** for his leadership of in co-chairing ISPRS working group II/5 Dynamic Scene Analysis in continuity of his involvement in working group III/3 in Image Sequence Analysis (2012-2016). Through this working group he displayed great effort in building bridges between communities, in particular Computer Vision. Such an effort is permitted by the fact Dr. Yang has a clear and sharp vision of this domain and current challenges, as well as by his methodological expertise and publication track record. This allows him to pave the way in new directions for ISPRS and to build new initiatives with counterparts in other communities. His research interests broadly cover computer vision and photogrammetry. During the last 10 years, he specialized on scene understanding and semantic interpretation from imagery and videos, and has published more than 100 papers in international journals and conference proceedings.

He serves as Associate Editor of Photogrammetric Engineering & Remote Sensing journal, he co-organized 10 international workshops, and is guest editor of 4 journal special issues. He was also the Programme Chair of the ISPRS Geospatial Week 2019.

He is recipient of the ISPRS President's Honorary Citation (2016) and Best Science Paper Award at BMVC 2016. Since 2012, he is regularly serving as program committee member of conferences and reviewer for international journals. He has twice received the Outstanding Reviewer Award for ISPRS Journal of Photogrammetry and Remote Sensing.

He also recently co-edited a book in Multimodal Scene Understanding, which includes state-of-the-art developments on the topic both from a theoretical and an applicative perspective

THE SCHWIDEFSKY MEDAL

The Schwidefsky Medal is sponsored by the German Society of Photogrammetry, Remote Sensing, and Spatial Information (DGPF), in memory of Professor Dr. rer. techn. Dr.-Ing. e.h. Kurt Schwidefsky, Honorary Member of the ISPRS. The Award is in the form of a medal made of porcelain. The recipients shall be persons who have made significant contributions to photogrammetry and remote sensing, either through the medium of publication as author or editor, or in another form.



The Schwidefsky Medal 2020 is awarded to **Derek Lichti,** in recognition of his role as Editor-in-Chief for the ISPRS's flagship journal, the ISPRS Journal of Photogrammetry and Remote Sensing, a role in which he served since 2013. He successfully managed the journal's tremendous growth by doubling the editorial team and kept quality the primary focus, as evidenced by the impact factor more than doubling, and the journal's top ranking among remote sensing journals.

Widely recognized for his professional prominence in the worldwide photogrammetry and laser scanning community, Derek has held senior leadership positions with several national and international societies and associations. He was the Co-Chair of Working Group V/3, Terrestrial Laser-scanning for the period 2004-2008, and then continued as Chair for the next four-year period. During this time, he organized the very successful Laser Scanning 2011 workshop in Calgary, Canada.

He was the Head of the Geomatics Engineering Department at the University of Calgary from 2013 to 2018, and has received numerous awards for his excellence in teaching undergraduate students and supervising graduate students, and has an outstanding scholarly record, measured in a large number of peer-reviewed journal papers, giving keynotes, teaching tutorials and workshops worldwide.

Prior to his time in Calgary, Derek worked as an academic in Perth, Australia, starting in 1999 and has held visiting academic positions in Australia, Brazil, Malaysia and Switzerland. He was also a co-founder of Scanalyse Pty. Ltd., a successful Perth-based start-up company specialising in wear-measurement solutions for the mining industry, based on laser scanning technology.

THE EDUARD DOLEŽAL AWARD

The Eduard Doležal Award is donated by the Austrian Society for Surveying and Geoinformation to assist individuals or representatives of institutions from developing or reform countries to participate in the ISPRS Congress.



The 2020 recipient is **Damdinsuren Amarsaikhan** for his implementation of many practical applications of remote sensing (RS) and GIS. In 1991, as one of the first GIS specialists of Mongolia, he developed the first GIS system of the country.

Since then, he has developed many techniques applied in different fields of RS/GIS and also worked as a project leader in many RS/GIS projects. Damdinsuren Amarsaikhan has been working as Head of Division of RS and Spatial Modelling, Institute of Geography and Geoecology, Mongolian Academy of Sciences (MAS) since February 25, 2015. From 2004 to 2015, he worked as Head of Geoinformatics Department, Institute of Informatics and RS, MAS. He was elected as a full member of the Mongolian Academy of Sciences and became Academician (i.e. Distinguished Professor of Mongolia) in June 2011. From 2007 to 2017, he worked as a professor of GIS/RS at the Geography Department, National University of Mongolia.

He was awarded the "Young Scientist" Prize, by World Academy of Sciences; "Outstanding Scientist of Mongolia - 2005", by the Ministry of Science and Education of Mongolia; "Best ITC Alumni Paper Award", from the ISPRS TC VII Mid-Term Symposium of 2006; "Outstanding Scientist of Mongolia - 2008"; and "Most Outstanding IT Researcher of Mongolia - 2009". In November 2011, his paper entitled "Advanced Applications of Optical, Microwave and Hyperspectral RS in Mongolia" was selected as "The Paper of the Month" by the International Federation of Surveyors.

THE WANG ZHIZHUO AWARD

The Wang Zhizhuo Award is sponsored by the Chinese Society of Geodesy, Photogrammetry and Cartography (CSGPC) and consists of a medal and a monetary grant. It is granted at each quadrennial ISPRS Congress to a person who has made significant achievement or innovation in the spatial information sciences.



The recipient of the 2020 Award is **Wolfgang Kainz** for his contribution to the theoretical foundations of GIS in fuzzy logic and topology, his efforts to strengthen international education through the development of international graduate programs in geospatial information technology at LIESMARS, Wuhan University, and his excellent work as editor-in-chief of the ISPRS International Journal of Geo-Information.

Wolfgang Kainz is a full professor of Cartography and Geo-Information Science at the Department of Geography and Regional Research of the University of Vienna, Austria. In his research, he focuses on the theoretical issues of GIS, in particular related to spatiotemporal modelling, uncertainty, and topology.

Previously, he has led several research groups in Austria and the Netherlands. He has published more than 150 scientific papers and guided more than 25 international PhD students.

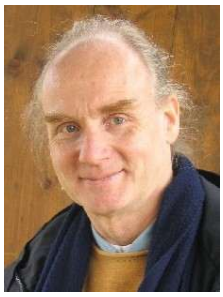
Wolfgang held visiting professor positions at universities in Brazil, the Czech Republic, Kuwait and the USA. In 2014, he became a visiting professor at Wuhan University. He has served ISPRS as chair of WG II/5 (2000-2004), President of Technical Commission II (2004-2008), member of the Executive Committee for the preparation of the ISPRS Centennial (2007-2010), and member of the ISPRS International Scientific Advisory Committee (2008-2012).

He is co-editor of volumes 1 and 5 of the ISPRS Book series. Since 2011, he is founding editor-in-chief of the ISPRS International Journal of Geo-Information (IJGI). In 2019, he was accepted as a member of the ISPRS White Elephant Club.

THE KARL KRAUS MEDAL

The Karl Kraus Medal, sponsored by the German Society of Photogrammetry, Remote Sensing, and Spatial Information (DGPF), the Austrian Society of Surveying and Geoinformation (OVG), and the Swiss Society of Photogrammetry and Remote Sensing (SGPF), is awarded to authors of excellent textbooks in the fields of photogrammetry, remote sensing, and spatial information sciences, published no more than eight years prior to the commencement of the ISPRS Congress at which it is to be awarded.

In 2020, the medal is awarded to **Wolfgang Förstner and Bernhard P. Wrobel** for their textbook *Photogrammetric Computer Vision - Statistics, Geometry, Orientation and Reconstruction*, published by Springer in 2016.



Wolfgang Förstner

After obtaining a degree in geodesy, Wolfgang Förstner started his career at the Institute for Photogrammetry, University of Stuttgart. In his dissertation he concentrated on blunder detection in photogrammetric blocks; his results still prevail.

Förstner then devoted his research to the problem of image matching which was highly topical with the first-time availability of digital images. His work was pioneer in digital photogrammetry world-wide. Papers on least squares matching presented at the 1984 ISPRS Congress and on an Interest-Operator, later named the Förstner Operator, at the 1986 ISPRS Symposium are, to this day, recognized as ground-breaking. Almost all systems, which have proven themselves in the practical world, are based on either LSM, the Förstner-Operator or variants thereof. After his appointment to the professorship of photogrammetry at Bonn University in 1990, Förstner became interested also in pattern recognition and computer vision. Work on building reconstruction from aerial images formed his scientific focus for the following years, resulting in many scientific publications but also in the commercial program system *inJect*.

Many other areas of interest of Wolfgang Förstner and many more of his achievements could be mentioned. Suffice it to say that throughout his exemplary career of more than 40 years as a researcher, inventor, innovator and educator, he has made exceptionally significant scientific contributions in many areas of *Information from Imagery* and mentored generations of mapping scientists and engineers. Although formally retired since 2012, he continues his scientific activities.

In 2016, Wolfgang received the Brock Gold Medal Award for his outstanding scientific achievements in the fields of photogrammetry and computer vision.



Bernhard P. Wrobel

After studying Surveying and Mapping at the Technical University Darmstadt and the University of Bonn, Germany, where he also worked as a research assistant, Bernhard Wrobel obtained a PhD degree in 1965. He continued his career as an assessor at the Land Registry Cadastre, in the state of North Rhine-Westphalia. From 1967 to 1974, he was head engineer in Photogrammetry at the Institute for Theoretical Geodesy, Bonn University, where he obtained his venia legendi in 1973. He took up the position of associate professor at the Universität Hannover in 1974, and in 1981 became full professor of photogrammetry at the TU Darmstadt, a position he employed until his retirement in 2001. Since then he has intensified his interest in the link between photogrammetry and computer vision, which is visible in the publication of the awarded book.

He was guest lecturer in Zurich, in 1992, 1996 and 2000, and in Tainan, Taiwan in 1984, 1988 and 1999.

Bernhard's main areas of interest have been mathematical aspects of photogrammetry, surface reconstruction of objects using digital image matching, particularly with the "Facetten-Stereosehen" approach, and applications in cadastre, construction and engineering.

He is author and co-author of various publications, including "Digital Image Matching by Facets using Object Space Models" (SPIE 804, 1987) and "Calibration and Orientation of Cameras in Computer Vision" (Springer, 2001). In 1977, he was awarded the Hansa Luftbild Prize.

THE FREDERICK J. DOYLE AWARD

The Frederick J. Doyle Award is awarded to an individual who has made significant accomplishments in advancing the photogrammetry, remote sensing and spatial information sciences and technologies. A recipient of the award should typically be less than 50 years of age and have outstanding stature within the ISPRS community. The award consists of a silver medal and a monetary grant.



The Frederick J. Doyle Award 2020 goes to **Konrad Schindler** for his outstanding scientific achievements and his exceptional contribution to connecting the areas of photogrammetry and computer vision.

Konrad Schindler has been active in photogrammetry, remote sensing and computer vision for more than 20 years. He has worked in various academic positions, since 2010 he is professor of Photogrammetry and Remote Sensing at ETH Zurich. He has been a figurehead of photogrammetric computer vision, both within the world of photogrammetry and as one of the few photogrammetrists with a long-term recognition in the computer vision community. He has made sustained contributions to the use of high-level computer vision in photogrammetry and remote sensing, and to the adoption of deep learning.

Overall, he has co-authored more than 150 peer-reviewed publications. His work has won several scientific awards: Helava Award 2008-2011, the Helava Best Paper 2018, Best Paper at the TC2 Symposium 2018, Best Paper at PIA 2015, and Honourable Mentions for the Marr Prize 2013, and the 3DV Award 2019. With more than 12,000 citations and a h-index of 63, Konrad is among the most-cited academics in photogrammetry.

Konrad has been ISPRS Technical Commission II President (2012-2016), organiser of several joint ISPRS/IEEE workshops, and since 2012 is associate editor of the ISPRS Journal. His exceptionally inspirational work consistently and successfully bridges the presumable gap between photogrammetry and remote sensing on one hand, and (modern) computer vision on the other. In this way, he has inspired many top PhDs, helping them to a successful career.

THE GIUSEPPE INGHILLERI AWARD

The Giuseppe Inghilleri Award, sponsored by the Italian Society for Surveying and Photogrammetry (SIFET) is presented to a person who has significantly enhanced the applications of photogrammetry, remote sensing or spatial information sciences in the 4 years preceding the Congress. The award consists of SFr 2,500 and a certificate.

Two recipients of the award have been chosen for 2020: Marc Pierrot Deseilligny, for his long-term development of the open source software MicMac; and Cheng Wang, for his work in 3D point cloud processing.



Marc Pierrot Deseilligny is research director at IGN, France. He currently works at the Ecole Nationale des Sciences Géographiques (ENSG) where he is involved in research and teaching in the LaSTIG (Laboratoire en Sciences et Technologies de l'Information Géographique). It is his conviction that research must be closely linked to teaching. The principal topic of his scientific career is “Image processing applied to data production for geographic

information systems”. Until 2003, his research was focused on “Automatic interpretation of scanned maps”. Since then, his main activities have moved to the field of photogrammetry.

Since 2003, Marc’s photogrammetric research has been integrated into the software named MicMac. In 2007, he proposed to IGN, to make MicMac a free open source project, motivated by his belief that it is good that intangible property is shared for free, and because free open source is a necessary condition to preserve freedom in the digital domain. Since then, the user base of MicMac has largely increased, demonstrating the convincing success of his work.



Cheng Wang is presently a professor in Computer Science and Executive Associate Dean at the School of Informatics, Xiamen University, China, and Deputy Director of the Fujian Key Laboratory on Sensing and Computing for Smart Cities.

He holds a PhD in Communication and Information Systems (2022) and a B.Sc degree in Electronic Engineering (1997), both from the National University of Defense Technology, Changsha, China. His

current main research interests are 3D point cloud processing, mobile mapping system design and geospatial big data analysis with applications on Smart Cities. He has extensively published and hold different patents in these areas and attracted numerous research grants, mainly from Chinese funding agencies. Furthermore, he has been active in ISPRS and has organised different scientific meetings, mainly on topics common to photogrammetry and computer vision.

ISPRS BEST YOUNG AUTHOR AWARD

The awards for Best Papers by Young Authors are provided by donor organizations and by ISPRS to authors who are less than 35 years old and are the 1st author of a high-quality paper presented at the Congress. In 2020, two awards were presented per Technical Commission, in 2021 and 2022 one award was presented.

TECHNICAL COMMISSION I

Emmanuel Cledat, Switzerland (2020)

Camera calibration models and methods in corridor mapping with UAVs

Stefan Blaser, Switzerland (2020)

Cm-accuracy in forests and urban canyons – combining a high-performance image-based mobile mapping backpack with new georeferencing methods

Jiayuan Li, China (2021)

Robust estimation in robot vision and photogrammetry: A general model and its applications

Kyriaki Mouzakidou, Switzerland (2022)

On the benefit of concurrent adjustment of active and passive optical sensors with GNSS & raw inertial data

TECHNICAL COMMISSION II

Dennis Wittich, Germany (2020)
Deep domain adaptation by weighted entropy minimization for the classification of aerial images

Eleonora Maset, Italy (2020)
Bundle Block Adjustment with Constrained Relative Orientations

Rahima Djahel, France (2021)
Towards Efficient Indoor/Outdoor Registration Using Planar Polygons

Corinne Stucker, Switzerland (2022)
ImpliCity: City Modeling from Satellite Images with Deep Implicit Occupancy Field

TECHNICAL COMMISSION III

Rory Clifford Pittman, Canada (2020)
Estimation of soil bulk density and carbon using multi-source remotely sensed data

Jiangyuan Zeng, China (2020)
Development and validation of a new passive microwave-based soil moisture index

Milad Niroumand-Jadidi, Italy (2021)
Water quality retrieval and algal bloom detection using high-resolution CubeSat imagery

Mirjana Voelsen, Germany (2022)
Investigation 2D and 3D convolutions for multitemporal land cover classification using remote sensing images

TECHNICAL COMMISSION IV

Xiaoli Li, China (2020)
Region-based fuzzy clustering image segmentation algorithm with Kullback-Leibler distance

Patrick Hübner, Germany (2020)
Voxel-based indoor reconstruction from hololens triangle meshes

Oskar Wage, Germany (2021)
Joint estimation of road roughness from crowd-sourced bicycle acceleration measurement

Xiaodan Shi, Japan (2022)
Learning social compliant multi-modal distributions of human path in crowds

TECHNICAL COMMISSION V

Priyanka Singh, India (2020)
Maximum entropy modelling using citizen science: use case on Jacobin cuckoo as an indicator of Indian monsoon

Recep Can, Turkey (2020)
Development of a CitSci and artificial intelligence supported GIS platform for landslide data collection

Clemence Dubois, Germany (2021)
Knowledge and skills related to active optical sensors in the body of knowledge for earth observation and geoinformation (EO4GEO BoK)

Juan Fernando Toro, Italy (2022)
The open database of regional models of the international service for the geoid

THE PRESIDENT'S HONORARY CITATION

The President's Honorary Citation is a certificate of recognition presented by the President of ISPRS to one or more officers of one Working Group of each ISPRS Technical Commission. The citation is to recognize special, personal and meritorious contributions to the operation of the relevant Technical Commission's activities and advancement of its interests, during the quadrennial term of the Society. Due to the pandemic, citations were presented separately for the 2016-2020 and the 2020-2022 periods.

TECHNICAL COMMISSION I

Francesco Nex, Netherlands (2020)

for his outstanding efforts in leading ICWG I/II "UAS and Small Multi-Sensor Platforms" and meritorious contributions to our scientific community.

Rupert Müller, Germany (2022)

for his outstanding efforts in leading WG I/1 "Multi- and Hyperspectral Sensing" and meritorious contributions to our scientific community.

TECHNICAL COMMISSION II

Diego Gonzalez-Aguilera, Spain (2020)

for his excellent work in strengthening relationships with the heritage community, for his overall contribution to the organization of scientific events related to heritage 3D documentation and for his efforts in educational activities.

Devis Tuia, Switzerland (2022)

for his meritorious efforts and hard work to increase collaboration between IEEE and ISPRS communities by organizing numerous joint events.

TECHNICAL COMMISSION III

Eija Honkavaara, Finland (2020)

for her outstanding leadership of ISPRS Working Group III/4 on "Hyperspectral Image Processing", and meritorious contributions to the objectives and missions of TC III.

Mitsunori Yoshimura, Japan (2022)

for his outstanding leadship of WG III/10 on "Agriculture and Natural Ecosystems Modelling and Monitoring", and his meritorious contributions to the Technical Commission III's activities and its scientific goals.

TECHNICAL COMMISSION IV

Maria Antonia Brovelli, Italy (2020)

for her significant support to Commission IV by organising multinational open data projects with the aim of promoting geospatial knowledge and technologies for community-based mapping and outstanding leadership of WG IV/4 on "Collaborative Crowdsourced Cloud Mapping (C^3M)".

Zhizhong Kang, Kourosh Khoshelham, Lucía Díaz Vilariño, China/Australia/Spain (2022)

in recognition of their special, personal and meritorious contributions to the operation of the working group in 3D modelling of indoor and outdoor environment.

TECHNICAL COMMISSION V

Vladimir Seredovich, Russia (2020)

for his meritorious contributions to Technical Commission V and invaluable leadership of WV/7 on "Innovative Technologies in training Civil Engineers and Architects".

Sultan Kocaman, Turkey (2022)

for her significant contributions to the objectives of Commission V, and in particular, to the capacity building on advanced Geospatial methods in Citizen Science, as well as demonstrated leadership of WGV/3 on "Promotion of Regional Collaboration in Citizen Science and Geospatial Technology.

STUDENT CONSORTIUM SERVICE AWARD

The ISPRS Student Consortium Service Award recognizes an individual who has rendered exceptional contributions to the Consortium during an ISPRS Congress term. This award is given for the first time in 2020, and then at each following Congress.



For 2020, the award is presented to **Sheryl Rose Reyes** for outstanding leadership of the ISPRS Student Council in the 2016 to 2020 term.

In the past four years, Ms. Reyes has provided outstanding leadership for the ISPRS Student Council and developed strong respect among her peers.

From her many achievements, two are particularly noteworthy: the first is the Student Consortium Newsletter, SPECTRUM, which, for the student community is in par with the ISPRS eBulletin, and signifies Sheryl's commitment and hard work. The second one is the increasing number of Student Consortium Summer Schools, which have not only grown but improved in quality under her Student Consortium leadership.

CATCON AWARD

At the Congress, the CATCON Prizes (1996), a software Computer Assisted Teaching Contest, was organized by ISPRS Technical Commission V and funded by The ISPRS Foundation. The main objective of the contest is to promote the development and dissemination of good, user-friendly software packages, www contents and data sets for computer assisted teaching, which preferably are non-commercial and free. Typically, the prizes consist of a Gold Award (SFr. 3,000), Silver Award (SFr. 2,500), and Bronze Award (SFr. 1,500) and a certificate.

The eighth CATCON8 was been organized at the XXIV ISPRS Congress, Nice, France, June 9, 2022. The main objective of the contest is to promote the development and dissemination of effective, educational and user-friendly –

- multimedia tutorials
- simulations and virtual environments
- information packages or data sets
- application software

designed and used specifically for computer assisted teaching in photogrammetry, remote sensing or spatial information science.

In general, the CAT tutorial, software or data set is preferred to be non-commercial and provided to users without licence charges or other fees for not-for-profit use. Since many ISPRS attendees have been interested in this contest at three previous Congresses, this is a very good opportunity to show the effectiveness and utility of your CAT product.

Award	Contestant/s	Entry
Gold CHF 3000	Maria Chizhova, Germany	VRscan3D: ELearning software for Simulation of Terrestrial Laser Scanning and Photogrammetry
Silver CHF 2500	Rongjun Qin, USA	The Satellite Stereo Processing System – RPC Stereo Processor
Bronze CHF 1500	Jakub Dvořák and Markéta Potůčková, Czech Republic	CNNcompare

BEST POSTER PAPERS

At the Congress, a total of 10 Best Poster Papers Awards are sponsored by ISPRS. A jury for each of the five ISPRS Commissions observes the poster presentations and selects the two best Poster Papers of each Commis-sion. The award consists of a gift and certificate from the Congress Director.

TC	Author	Paper
I	Rahima Djahel, Pascal Monasse, Bruno Vallet	A 3D Segments Based Algorithm For Heterogeneous Data Registration
I	Federica Marotta, Luca Perfetti, Francesco Fassi, Cristiana Achille and Giorgio Vassena	LIDAR IMMS vs Handheld Multicamera System: A Stress-Test in a Mountain Trailpath
II	Fabio Remondino, Luca Morelli, Elisavet Konstantina Stathopoulou, Mostafa Elhashash, and Rongjun Qin	Aerial Triangulation with Learning-Based Tie Points
II	Hristina Hristova, Meinrad Abegg, Christoph Fischer, and Nataliia Rehush	Monocular Depth Estimation in Forest Environments
III	Noorlaila Hayati, Noorkomala Sari, Rahmat Arief, Maulida Annisa Uzzulfa	Parameters to estimate CO2 emission in peatland area based on carbon content and subsidence rate from SAR interferometry
III	Paraskevi Mikeli, Katerina Kikaki, Ioannis Kakogeorgiou and Konstantinos Karantzalos	How challenging is the discrimination of floating materials on the sea surface using high resolution multispectral satellite data?
IV	Oskar Wage, Lasse Bienzeisler and Monika Sester	Risk Analysis of Cycling Accidents using a Traffic Demand Model

IV	Hao Li and Alexander Zipf	A conceptual model for converting OpenStreetMap contribution to geospatial machine learning training data
V	Maria Grazia D'urso and S. Rasera	Multi-Criteria Analysis in the Management of Temporary Reuse of Spaces

CERTIFICATES OF RECOGNITION FOR EXCELLENCE IN SERVICE TO ISPRS

Besides the Working Group officers, the Technical Commission Presidents and Council Members there are many people who collectively contribute to the activities and the success of ISPRS. At the Congress a representative number of them are honoured for their dedicated and excellent work and service for the society. At the Nice Congress Certificates of Recognition go to:

Ian Dowman, ISAC Chair

Gunter Schreier, IPAC Chair

Christian Hoffmann, IIAC Chair

Yana Gevorgyan, ICORSE Chair 2018-2021

Mary Ann Kutny, ICORSE Chair 2021-2022

Stratos Stylianidis, CIPA Chair

Sheryl Rose Reyes, President, Student Consortium

Stewart Walker, TIF Trustee & Chair of the Board

Marguerite Madden, TIF Trustee & Finance Officer

John Trinder, TIF Trustee & Operations Officer

George Vosselman, Chair Financial Commission 2021-2022, Member 2016-2021

Jon Mills, Chair Financial Commission 2016-2021

Emmanuel Baltsavias, Financial Commission 2016-2021

Fulvio Rinaudo, Financial Commission 2021-2022

Petri Rönnholm, Financial Commission 2021-2022

Hussein Farah, Regional Representative for Africa

Mario Hernandez, Regional Representative Latin America

Shailesh Nayak, Regional Representative Asia

Muhamad Alrajhi, Regional Coordinator Arab States

Mohammed Yahia Al Sayel, Regional Coordinator Arab States

Abdalla Alobeid, Vice- Regional Coordinator Arab States

Derek Lichti, Editor-in-Chief ISPRS Journal of Photogrammetry & Remote Sensing

Qihao Weng, Editor-in-Chief ISPRS Journal of Photogrammetry & Remote Sensing

Clément Mallet, Editor-in-Chief ISPRS Journal of Photogrammetry & Remote Sensing

George Vosselman, Editor-in-Chief ISPRS Open Journal of Photogrammetry & Remote Sensing

Wolfgang Kainz, Editor-in-Chief ISPRS Journal Geo-Information

Zhilin Li, Book Series Editor

Markus Englich, Web Master

Mustafa Ustuner, Social Media Editor

Annette Radtke, ISPRS Headquarters

Dan Brooking-Coker, ISPRS Treasurer's Office

Chen Chen, ISPRS Beijing Office

Laurent Polidori, Deputy Director and Institutional Chair of the XXIV Congress

Clément Mallet, Advisor to the Congress Director of the XXIV Congress

Inez Burger, Advisor to the Congress Director and PCO of the XXIV Congress

Eric Labergerie, Financial Chair of the XXIV Congress

Pierre Grussenmeyer, Industry chair of the XXIV Congress

Tania Landes, Media chair of the XXIV Congress

Ian Dowman, Chair of the International Pro-gramme of the XXIV Congress

Clément Mallet, Programme Chair of the 2020-2021 Editions of the XXIV Congress

Florent Lafarge, Programme Chair of the 2020-2021 Editions of the XXIV Congress

Ewelina Rupnik, Programme Chair of the 2022 Edition of the XXIV Congress

Loïc Landrieu, Programme Chair of the 2022 Edi-tion of the XXIV Congress

Sander Oude Elberink, Programme Chair of the 2022 Edition of the XXIV Congress

Erica Nocerino, Tutorial Chair of the XXIV Congress

Jan-Dirk Wegner, Tutorial Chair of the XXIV Congress

Franz Rottensteiner, Student Consortium Mentor of the XXIV Congress

Michael Ying Yang, Thematical Session Chair of the 2021 Edition of the XXIV Congress

Clément Mallet, Thematical Session Chair of the 2022 Edition of the XXIV Congress

THE ISPRS FOUNDATION AND CONGRESS TRAVEL GRANTS

In 2022, The ISPRS Foundation has allocated Cash travel grants funded by TIF to the sum of $US34,600 and, with the generous support from France, fee waivers funded by IRD (Institut de Recherche pour le Développement) to the sum of €17,150 to assist students and young scientists to attend the ISPRS Congress. These grants repre-sent a major part of the philanthropic activities of the ISPRS Foundation. Of the 69 applicants for the travel grants and fee waivers received, partial travel grants and fee waivers were awarded to 63 participants from 23 countries.

The recipients for 2022 are:

First Name	Last Name	Residence
Joelle	Abu-Hani	Israel
Sanchalita	Bandyopadhyay	Germany
Valeria	Belloni	Italy
Shruti	Bharadwaj	India
Arpit	Bhatt	India
Mehmet	Büyükdemircioğlu	Germany
Recep	Can	Turkey
Letícia Ferrari	Castanheiro	Brazil
Sinem	Çetinkaya	Turkey
Jorge Andres	Chamorro Martinez	Brazil
Jisung	Chang	Korea
Elisabetta	Colucci	Italy
Francesca	Condorelli	Italia
Irene	Cortesi	Italy
Nicholas	De Kock	South Africa
Holly	Dehingia	India
Mangesh	Deshpande	India
Ashraf	Dewan	Australia
Renato Cesar	Dos Santos	Brazil
Rakesh	Dubey	India
Bashar	Elnashef	Israel
Bernard	Essel	Ireland
Sarah Narges	Fatholahi	Canada
Cyprien	Fol	Switzerland
Diogo	Gonçalves	Portugal
Priyanka	Gupta	India
Hongjie	He	Canada
Pooja	Jindal	India
Vinu	Kamalasanan	Germany
Samira	Kamel Basmenj	Canada
Gizem	Karakaş	Turkey
Andrianna	Kontoudaki	Greece
Sunni Kanta Prasad	Kushwaha	Slovakia
Miguel Luis	Lagahit	Japan
Yue	Li	United Kingdom
Francesca	Matrone	Italy
Azile	Mdleleni	South Africa
Saeed	Mehri	Iran
Vishal	Mishra	India
Madan	Mohan	India
Mabel	Ortega Adarme	Brazil
Hamidreza	Ostadabbas	Germany
Eugenio	Pellis	Italy
Pamela Carolina	Pesántez Cabrera	Ecuador
Matheus	Pinheiro Ferreira	Brazil
Leticia	Porto	Brazil
Ipshita	Pradhan	India
Abdul Hannan	Qureshi	Malaysia
Harsimranjit Kaur	Romana	India
Antigoni	Roumana	Greece
Yoksa	Salmamza Mshelia	Kenya
Luis Miguel	Santos	Spain
Shahram	Sattar	Canada
Vinamra	Sharma	India
Chandrahas	Singh	India
Carmen	Soncco	Perú
Renate	Thiede	South Africa
Ana	Toro	Brazil
Prateek	Tripathi	India
Anjana	Vyas	India
João	Werner	Brazil
Ilyas	Yalçın	Turkey
Tian	Zhang	China

GALA DINNER

CONGRESS GALA DINNER

The Congress Gala Dinner took place in the gardens of the Villa Ephrussi de Rothschild on Friday 10th June 2022.

Located between Nice and Monaco, overlooking the prestigious peninsula of Saint-Jean-Cap-Ferrat, the Villa Ephrussi de Rothschild is one of the most beautiful properties and gardens on the French Riviera. Built during the 'Belle Époque' period by Baroness Béatrice Ephrussi de Rothschild, it is surrounded by nine magnificent gardens overlooking the sea: the Spanish, Florentine, Stone, Japanese, Exotic, Rose, Provençal, French, and Sèvres gardens.





Congress Director, Nicolas Paparoditis warmly welcomes his guests

Presentation of Awards during the Dinner



Michael Ying Yang receives the Willem Schermerhorn Award from George Vosselman, GIN representative



Damdinsuren Amarsaikhan is awarded the Eduard Doležal Award from incoming ISPRS President Lena Halounová



Derek Lichti receives the Schwidefsky Medal from DGPF representative Ludwig Hoegner



Sheryl Rose Reyes receives the ISPRS Student Consortium Service Award from Christian Heipke, ISPRS President



Awarding of the 2020 and 2022 Fellows: Songnian Li, Marguerite Madden, Charles Toth, George Vosselmann, Sisi Zlatanova, *Kohei Cho and *Jon Mills (*not present)



The spectacular view of the peninsula of Saint-Jean-Cap-Ferrat



Past Presidents Larry Fritz, John Trinder, Ian Dowman, Orhan Altan, and Gottfried Konecny together with present and incoming Presidents, Christian Heipke and Lena Halounová



Dining in the beautiful gardens of Villa Ephrussi de Rothschild



Enjoying the evening













The highlight of the evening was the opera performance by Laurie Jauffret & Jeremy Bertini



- Duo 1: « Le duo des fleurs » by Lakmé
- Duo 2: « Barcarolle » by Offenbach
- Duo 3: « Heure exquise » from « La veuve joyeuse » by Lehár
- Solo 1: « Air des bijoux » from « Faust » by Gounod, performed by Laurie Jauffret
- Solo 2: « Lascia ch'io pianga » by Handel, performed by Jeremy Bertini

OBITUARIES

Einari Kilpelä 1937 - 2016
Aino Savolainen 1924 - 2016
Yuri Tjuflin 1934 - 2017
Mario Fondelli 1924 - 2017
James Boyce Case 1928 - 2017
Paolo Trino 1937 - 2017
Wilfreid Hartmann 1988 - 2017
Gerd Hildebrandt 1923 - 2017
Ivan Antipov 1927 - 2018
Klaas Jan Beek 1935 - 2019
Haruhisa Shimoda 1944 - 2019
Gordon Petrie 1931 - 2020
Gabriele Fangi 1945-2020
Hans J Wehrli 1926 - 2020
Sherman Shou-Chou Wu 1928 - 2020
Clifford Leslie Ogleby 1955 - 2020
RB Singh 1955 - 2021
Donald William Proctor 1928 - 2021
Arthur Cracknell 1940 - 2021
James Bryan Mercer 1940 - 2021
Martin Isenburg 1972 - 2021
Friedrich Ackermann 1929 - 2021
Shibendu Shankar Ray 1963 - 2021
Lynn Usery 1951 - 2022

OBITUARIES

Einari Kilpelä (1937 – 2016)



Prof. Einari Kilpelä died 1.12.2016 at age of 79 after a long illness.

In him we lost a person who profoundly combined in his career his capacity as a scientist, supervisor, organiser, manager, leader, economist friendly colleague, and last but not least, as an artist.

He was the chair of the Institute of Photogrammetry of the Helsinki University of Technology (1976-1993), and served ISPRS as Commission President for two successive periods (1980-1988), and as Chair of the Financial Commission (1988-1992). He also designed medals for two prestigious ISPRS awards, namely The U.V. Helava Award and the The Frederick J. Doyle Award.

Einari Kilpelä was born on November 5, 1937 in Tervola, Northern Finland. He completed his secondary school in Rovaniemi in 1957. Following his military service, he started his academic studies in Helsinki.

Einari Kilpelä graduated with a degree in engineering from the Department of Surveying of the Helsinki University of Technology in 1964. His thesis was on calibration of the stereo comparator PSK of Zeiss-Aerotopograph. From 1964-1967, he spent three years as a research assistant for professor Kurt Schwidefsky at the University of Karlsruhe in Germany. His Licentiate Thesis was a comparative study on different adjustment methods in aerial strip and block triangulation based on observations made with Wild Autograph A8. The Licentiate Thesis was accepted in July 1967 in Karlsruhe.

After returning to Finland, he became the senior assistant at the Institute of Photogrammetry at Helsinki University of Technology, and he graduated as a Licentiate in Technology in 1968. The institute was founded in 1960 and led by Professor R. S. Halonen, who actively pursued research in analytical photogrammetry. A special interest was in developing aerial analytical photogrammetry based on image observations rather than on model coordinates. In 1968, aerial triangulation had already become widely applied in Finland and was also used by Finnish consulting companies in their international mapping projects. Einari Kilpelä's doctoral research work was on theoretical investigation of the accuracy of the bundle block adjustment. He graduated as a Doctor of Technology in June 1970.

After his graduation, he was nominated as a researcher in the Laboratory of Land Use at the Technical Research Center of Finland (VTT). In 1972 Einari Kilpelä received a one-year grant from the W. K. Kellogg Foundation to visit remote sensing institutes in the USA. He spent a brief tenure as a post-doctoral fellow at the Watershed Science at Colorado State University and as a visiting scientist at the Earth Observations Division of the Lyndon B. Johnson Space Center in Houston, Texas.

During his stay in the USA, Einari Kilpelä visited numerous research institutes, instrument manufacturers and companies involved with remote sensing technologies and applications. At the beginning of 1974, he received remarkable domestic funding to initiate interdisciplinary research in remote sensing in Finland. The three-year project was based at the Laboratory of Land Use in VTT and it collected Finnish research institutes to collaboratively concentrate on applications in forestry, geology and hydrology. The goal was to develop remote sensing applications suitable for the inventory and monitoring of natural resources within Finnish circumstances.

In 1976, Einari Kilpelä was nominated as a professor of photogrammetry at the Helsinki University of Technology after the sudden death of Professor R. S. Halonen. During the summer, the International Congress of Photogrammetry organised by the International Society of Photogrammetry (ISP) was held in Helsinki, and Einari Kilpelä was responsible for the coordination of the technical program. After the congress, he got to chair the Working Group of ISP Commission III on "Compensation of systematic errors of image and model coordinates".

Analytical photogrammetry again became the main focus of Einari Kilpelä's academic research. However, now the combination of photogrammetry and remote sensing meant that the trend within this focus will lead to a technological transfer process from analog to digital.

Under Einari Kilpelä's leadership, the Institute of Photogrammetry became internationally involved with the front-end research on analytical photogrammetry. He had the capacity to increase both the academic and financial resources domestically and to support networking with colleagues internationally - especially the active exchange and common processing of experimental data as well as the publication of results within the working group and later within the commission was largely due to the organisational capacity of Einari Kilpelä in his works.

He was nominated president of Commission III of the International Society of Photogrammetry and Remote Sensing, now ISPRS, on "Mathematical Analysis of Data" twice, first in 1980 in Hamburg, and then in 1984 in Rio de Janeiro. The inter-congress symposia of the Commission III were held in Espoo in 1982 and in Rovaniemi in 1986. The meeting in Rovaniemi was titled

"From analytical to digital", and can really be regarded as a kind of culmination point where the methodological research on analytical photogrammetry was changing over to applications of digital photogrammetry. In 1988 at the Congress in Kyoto, Einari Kilpelä was elected chair of the Financial Commission of the ISPRS.

During his academic career, Einari Kilpelä was included in several societal and scientific organisations with remarkable reputations. In addition to the aforementioned, the following were listed in the biographic directory of the Professors in Finland (2007): 1976-1992, Member of theboard, OEEPE, European Organisation for Experimental Photogrammetric Research (EuroSDR); President, Finnish Society of the Surveying Sciences (1977); President, Finnish Society of Photogrammetry (1978-1980); Honorary member, The Guild of Surveying Engineering (The Student union); Honorary member, Finnish Society of Photogrammetry and Remote Sensing; Member, Finnish Academy of Technology; Corresponding member, Deutsche Geodätische Kommission (1987-1997). Einari Kilpelä was an active member of the board of Finnish Geodetic Institute, FGI, during 1987-1990, when it was developed as a research organization to cover entire mapping sciences. He was the editor of the Photogrammetric Journal during 1977-1993.

Einari Kilpelä retired from the chair of photogrammetry in 1993. He then begun to study what he initially wanted when he finished the secondary school in Rovaniemi in 1957. Einari Kilpelä became an authorised silversmith as an apprentice by supervision of the Academician, Professor Bertel Gardberg in 1996, after three years of studies. In his new role, he was again extremely profound and effective. He and his wife, artist Pirkko Salminen-Kilpelä, regularly held exhibitions together. In 2014 at his last exhibition, he explained that he has made his jewellery of silver, often combining it with varying natural materials in order to make unique pieces with an antique-vintage style reflective of his Lappish background.

As a silversmith, Einari Kilpelä continued his contribution to the International Society of Photogrammetry and Remote Sensing and designed medals for two prestigious ISPRS awards.

The U.V. Helava Award, to encourage and stimulate the submission of high-quality scientific papers, was presented at the ISPRS Congress in Amsterdam in 2000. The Frederick J. Doyle Award, which honours inspiring new engineers and scientists in the ISPRS disciplines, in consideration of significant accomplishments in advancing these sciences and technologies, was launched at the Congress in Melbourne 2010.

Einari Kilpelä was internationally known by his social consciousness and home hospitality. Citing Professor Wolfgang Förstner: "He was consistently not only technically smart and a leader in our field, he also had the gift to bring people together and allow them feel happy and comfortable. His generosity in inviting his friends to his house I experienced and have good memories." Many of us remember a visit to the old elementary school in which he, alongside his family, had renewed and used for years as a summer cottage in the municipality of Pohja, which in modern times is now Tammisaari. Einari Kilpelä also is known within the photogrammetric society from his skiing tours each year in Lapland. The core team of this touring consisted of him together with professors Kennert Torlegård and Armin Grün, for 17 consecutive years until 2007.

Henrik Haggrén

Aino Savolainen (1924 – 2016)



It is my sad duty to announce to the ISPRS Community, that our first and only female Honorary Member, Aino Savolainen has passed away peacefully at the age of 92 in Helsinki, Finland.

Aino was born on May 10, 1924 in the Finish country town of Kouvola, situated about 100km north east of Helsinki, where she graduated from high school in 1942. In her early school years, she had already expressed her wish to become a survey engineer. Aino´s daughter, Outi Savolainen supplied me with a school text she once wrote: " My dream is to become a surveying engineer. I love mathematics and physics. One night as I was thinking of a future career, I remembered from my childhood a surveyor, (who did some work in the village). Then I thought how nice it would be to follow such a career. The work seemed wonderful. I felt as if a new world had opened up for me. In my mind's eyes I saw myself on a high ridge, with the most beautiful summer nature of Finland around. Somewhere a cuckoo would be calling. This is the kind of environment I would be working in. …"

Hence, she went for studies of geodetic engineering at Helsinki University of Technology, becoming a Survey Engineer in 1948.

Aino is shown here as a student at right.

Her first employment was with the Military Survey Unit Topografikunta, headed by General Karl Löfström, who was a leading photogrammetrist.

Aino is shown here doing work on the Zeiss Planigraph.

In her photogrammetric activities, Aino attended the Zeiss Photogrammetric Week in Munich in 1952 at which I was employed as an assistant. She also convinced me to become a photogrammetrist during my exchange of technical experience stay in Helsinki, while visiting her laboratory.

In 1960, she became employed in teaching surveying at the Technical University of Helsinki and where she worked as Photogrammetric Engineer from 1966 to her retirement in 1988.

During that time, her director, Prof. Reino Sakari Halonen applied at the 1972 ISP Congress in Ottawa for Finland and its Photogrammetric Society to host the 1976 ISP Congress in Helsinki. Unfortunately, Prof. Halonen died in 1975, one year before the Congress was to take place. Aino took on the difficult task of organizing the Helsinki Congress. She received help from her former boss, General Karl Löfström, who became the official Congress Director for ISP, and by the young engineer Einari Kilpelä, who later became Prof. Halonen´s successor at the University.

The Congress organization became an outstanding success. As a result, Aino was elected as a member of the ISP Council for the 1976 to 1980 period. She greatly helped the German Society for Photogrammetry team which was to organize the next 1980 ISPRS Congress in Hamburg.

Aino became President of the Finish Photogrammetric Society from 1981 to 1983.

At the 1988 ISPRS Congress in Kyoto, she was elected as Honorary Member into the group of 7 living Honorary Members of ISPRS for her excellent service to the International Society and the Finish contributions to photogrammetry, in which Aino has left her mark. She was the first woman, and so far, the only one to receive this distinction. With her husband Päiviö Savolainen, who passed away in 2006 she will be remembered by her 4 children, and the photogrammetry community at large, for her openhearted and modest nature as a prominent personality of our society. Thank you, Aino, for your contributions.

Gottfried Konecny, Hannover, Germany, January 2017

Mario Fondelli (1924 – 2017)



The CIPA family is deeply saddened to inform you that Prof. Mario Fondelli, one of the former CIPA presidents, passed away.Mario Fondelli (26th of October 1924 – 17th of February 2017) was an engineer and full professor at the University of Florence. He started his career in 1940 at the Italian Geographic Military Institute (IGMI).

As Chief of Studies and Projects at the IGMI, he carried out considerable theoretical and experimental studies in photogrammetry and spatial aerial triangulation (OEEPE-Organisation Européenne d'Etudes Photogrammètriques Experimentales).

During his academic career in Florence, he also gave courses at the University of Venice, Modena; he was a visiting professor at the Virginia Polytechnic Institute and State University in Blacksburg – Virginia (USA); at the Municipalidad de La Plata (Argentina), he was an honorary guest professor.

Between 1988 and 1993, Mario was president of CIPA. During but also after his presidency, he always remained very devoted to cultural heritage and dedicated much of his time to educate the principles of photogrammetry for the documentation of cultural heritage as well as for cartographic purposes.

He authored important books on various geomatical topics including topography and photogrammetry. He also co-authored the Atlases of Venice, Florence and Genua.

Yuri S. Tyuflin (1934 – 2017)

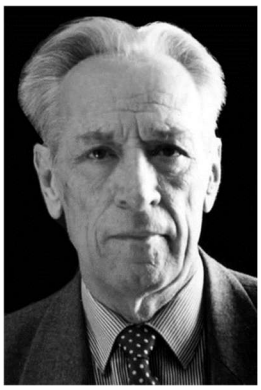
Yuri S. Tyuflin, a veteran of the Federal Service of Geodesy and Cartography of Russia, and the F. Krasovsky Central Research Institute of Geodesy and Cartography (TSNIIGAiK), after a short illness died on May 10, 2017 in the age of 83.

Yu.S. Tyuflin was born on November 27, 1934 in the Tver County of the Moscow Region. In 1958 he has graduated from the faculty of Aerial Phototopography at the Moscow Institute of Engineers for Geodesy, Cartography and Aerial Phototopography (MIIGAiK)

From 1958 to 1962 he was busy with photogrammetric works in the field and in office for the Main Administration of Geodesy and Cartography under the Council of Ministers of the USSR (GUGK and the Marine Hydrophysical Institute.

In 1967 after postgraduate courses at the MIIGAiK he defended the Ph.D. thesis in Engineering Science.

The greater part of his professional life, that is 27 years, was connected with the F. Krasovsky Central Research Institute of Geodesy and Cartography (TSNIIGAiK)



where he led the Laboratory of Moon and Planet Cartography and then the Department of Aerial Phototopography. During these years he carried out a variety of research and development on analytical photogrammetry, photogrammetric technique for planet mapping, and space experiments in exploration of the Moon, Venus, and Mars.

Under the leadership of Yu. S. Tyuflin the first detailed maps of the Venus surface were created using digital techniques. In 1989 he was given the USSR State Award.

Yu.S. Tyuflin is one of the founders of Russia space and planet photogrammetry, the new field in photogrammetry. In 1987 he has defended the doctoral dissertation, and since 1994 he has been a professor.

Along with fruitful scientific activity Yu.S. Tyuflin took an active part in public works. He was the president of the Russian Society for Contribution to Development of Photogrammetry and Remote Sensing. He participated in numerous events organized by the International Society for Photogrammetry and Remote Sensing (ISPRS).

The distinctive features of Yu.S. Tyuflin were a high competence, looking forward, the ability to implement the best domestic and foreign experience, and the validity of decision-making. He has deserved authority with the scientific photogrammetric community. He had about 250 scientific publications.

The scientific and professional activities of Yuri Tyuflin have been highly appreciated by the Russian Government. He was awarded the Badge of Honour Order (1967), medals, State Prize, and different industry awards. Besides, in 1996 he received the ISPRS Brock Gold Medal at the ISPRS Congress in Vienna. The last award is the evidence that Yuri Tyuflin gained prominence not only in Russia, but far away beyond it as well.

Yuri S. Tyuflin was distinguished by his hard working, high professionalism and erudition, infinite devotion to labour of love, deep adherence to principles and scrupulous honesty, readiness of wit, cheerfulness, the kind attitude towards colleagues and fellow workers, and desire and readiness to help people.

Cherished memory of Yuri S. Tyuflin forever will remain in our hearts.

Colleagues and friends

Gennady Pobedinsky, Director of the Federal State Unitary Enterprise "Center for Geodesy, Cartography and Spatial Data Infrastructure"

Em. Prof. Ivan Antipov, the Siberian State University of Geosystems and Technologies

Prof. Dr. Sergey S. Nekhin, Director of Photogrammetric Research Department, Federal State Unitary Enterprise "Center for Geodesy, Cartography and Spatial Data Infrastructure"

Prof. Vladimir Seredovich, Acting Vice-Rector for Scientific Activity, Head of Science and Research Division

Novosibirsk State University of Architecture and Civil Engineering (Sibstrin)

Prof. Dr. Alexander G. Chibunichev, Head, Department of Photogrammetry, Moscow State University of Geodesy and Cartography (MIIGAiK)

Prof. Dr. Igor G. Zhurkin, Head, Department of Computer Engineering and Automated Aerial and Satellite Data Processing,

Moscow State University of Geodesy and Cartography (MIIGAiK)

James Boyce Case (1928 – 2017)



The long serving former Editor of Photogrammetric Engineering & Remote Sensing (PE&RS), Jim Case, died in St. George, Utah on 8th May, 2017 at the age of 88. Jim grew up in Hanford, California and studied for his first degree at Stanford University, graduating in 1950. He was awarded his doctorate in geodetic science from Ohio State University in 1958.

From 1970 until 1989, Jim Case worked for the US Defense Mapping Agency (DMA). During that time, he presented the Digital Stereo Comparator/Compiler (DSCC) to the ISPRS Commission II symposium in Ottawa in 1982. This development was reported as the most exciting advance, a completely digital system with the capabilities of an analytical plotter which used image correlation. It was appropriate that Case should have been one of the contributing authors to Chapter XIII of the Fourth Edition of the Manual of Photogrammetry (American Society of Photogrammetry, 1980) which dealt with automation of the photogrammetric process. Case's earlier professional career was spent with the Broadview Research Corporation in Washington, DC., followed by a move in 1961 to the Autometric Corporation in Alexandria, Virginia. It was also in 1961 that his much-cited paper on "The utilization of constraints in analytical photogrammetry" was published in Photogrammetric Engineering.

On his retirement from DMA in 1989, Case moved to Cedar City, Utah where he continued to edit PE&RS, a task which he first began in 1975. Recognition, both nationally and internationally, followed with the American Society for Photogrammetry and Remote Sensing Fairchild Award (1993) and the Outstanding Service Award (2004) “for 30 years of service as PE&RS technical editor”. In Vienna in 1996, Case received the Schwidefsky Medal of the International Society for Photogrammetry and Remote Sensing “for his outstanding and successful editorship of PE&RS”. He was made an Honorary Member of the UK Photogrammetric Society in 1987 in recognition of his significant contribution to photogrammetry through his editorship of PE&RS.

Beyond photogrammetry and editorial responsibility, Case had wide interests. They included glacier mapping which began with an undergraduate project in Alaska. He enjoyed hiking and skiing. He was a collector – of maps, stamps, model trains, books, art, old instruments – so that his home became a small museum. He loved music and photography, especially of wild flowers. He was curious about anything intellectually interesting. Above all, he had many friends and admirers, both within and outside his chosen profession.

[Reproduced with some revisions from the original published in The Photogrammetric Record, 32(159): 336 – 337 (September 2017).]

Paulo Cesar Teixeira Trino (1937 – 2017)



On 13 May 2017, the Cartographic Community lost one of its most outstanding icons, with the passing of Cartography Specialist Engineer Paulo Cesar Teixeira Trino.

With his remarkable personality and immense obstinacy, he dedicated much of his professional life to the cause of Cartography.

His leadership has been effective since the beginning of his career, when he simultaneously assumed the presidency of three important institutions of the cartographic activity, the Brazilian Society of Cartography - SBC, the Brazilian National Association of Aerial Survey Companies - ANEA and the Brazilian Association of Cartographers - ABEC. He returned to the presidency of these institutions on several occasions, always with dedication and willingness equal to his first mandates. Until his death, he exercised cumulatively the presidencies of SBC and ANEA.

He has also held, for many years, as a representative of ANEA, the position of Board Member at the Brazilian National Cartography Commission - CONCAR.

A profound connoisseur of Universal History, where he improved his ability to formulate strategies, always in favour of Cartography, which, in addition to being aware of its historical details, has continually struggled for its development both in the Brazilian community and in the international community.

Paulo Cesar leaves our community in mourning, in which he made great and numerous friends and admirers.

Wilfried Hartmann (1988 – 2017)



We have the sad duty to inform the ISPRS community that Wilfried passed away on the 27th May, in a tragic accident during a hiking trip.

Wilfried studied geodesy and geoinformatics at Leibniz University Hannover, and received a BSc. degree in 2009. He then joined ETH Zurich, finished a MSc degree and became a PhD student and research assistant under the supervision of Konrad Schindler.

From 2012-2016 he was Secretary of ISPRS Technical Commission III "Photogrammetric Computer Vision". He was about to defend his dissertation this summer.

We feel deeply shocked about Wilfried's passing at such a young age. Our thoughts are with his family and friends.

Gerd Hildebrandt (1923 – 2017)



Prof. Dr. Gerd Hildebrandt, former head of the Department of Aerial Imaging and Remote Sensing at the Albert-Ludwigs University Freiburg, passed away on December 11, 2017, at the age of 95.

Professional background

Prof. Hildebrandt was born on 27 November, 1923 in Leipzig. After studying forest science at the Tharandt University, he began his scientific career in 1950 at the Institute for Forest Management, Humboldt University in Eberswalde. In 1953 he set up the Department of Forest Surveying and Aerial Photo Analysis there. In 1957, he had to flee the GDR due to political persecution and continued his further scientific work at the Institute for Forestry Management at the Albert-Ludwigs-University under Professor Karl Abetz. In 1969 he was appointed head of the Department for Forest Aerial Imaging and Aerial Interpretation, renamed in 1980 to Aerial Photography and Remote Sensing, at the University of Albert Ludwigs and headed this until his discharge in 1989.

Research activities

He made outstanding research contributions in the use of color infrared images and the creation of aerial image-based elevation models for forest applications. He also established the European system for the aerial image-based recording of novel forest damage and was an international pioneer in the emerging development of information fusion from different digital geodata sources.

In retirement, he summarized the unbelievable sum of his publications and research experiences in the field of remote sensing in the book "Remote Sensing and Aerial Imaging for Forestry, Vegetation Mapping and Landscape Ecology", published by Wichmann Publishing in 1996.

Committees and awards

Prof. Dr. Gerd Hildebrandt was Dean of the Faculty of Forest Sciences from 1970 to 1972, and member of the Senate of the University from 1974 to 1978. Furthermore, for many years Hildebrandt was the editor of the Freiburg University Journal, thereby making a significant contribution to the visibility of university research both internally and externally.

As a longtime member of the State Forestry Council Baden-Württemberg, he supported the further development of the practical forest inventory and installation procedures. As a member of the advisory board of the Food and Agriculture Organization (FAO), the European Space Agency (ESA), the European Commission and the Society for Technical Cooperation GTZ (today Society for International Cooperation, GIZ), he also set standards in practical applications at international level. After reunification, as Chairman of the founding committee and with great dedication, he successfully led the Forest Research Institute in Eberswalde into the modern research landscape of the Federal Republic of Germany.

Hildebrandt was also active in the ISP (as the ISPRS was called until 1980). He was Technical Commission President of Commission VII entitled “Interpretation of Data” from 1976 – 80 and organized an ISP Symposium in Freiburg in 1978, cosponsored by ISP and the International Union of Forest Research Organisations. The proceedings of this symposium comprise nearly 2.400 pages, a clear sign of the importance of remote sensing only 6 years after the start of the first Landsat satellite.

Hildebrandt received a number of awards, the highlight being his appointment as "Honorary Member of the Society of American Foresters". This was the first time a researcher outside the United States was honored in this way. Since 1995 he was also an Honorary Member of the German Society for Photogrammetry, Remote Sensing and Geoinformation (DGPF).

With the passing of Prof. Dr. Gerd Hildebrandt, we lose an extraordinary scientist who has made a lasting impact on the research field of remote sensing. The Albert Ludwigs University, the Faculty of Environment and Natural Resources and the staff of the Department of Remote Sensing and Landscape Information Systems will always keep an honorable memory of him.

Prof. Dr. Barbara Koch, Fernerkundung und Landschaftsinformationssysteme, Albert-Ludwigs Universität Freiburg

Ivan Antipov (1927 – 2018)



The former Second Vice President of the International Society for Photogrammetry and Remote Sensing, Professor Ivan Antipov, 91, who passed away on Friday, March 23, 2018 at his home in Novosibirsk, Russia had a long educational and scientific career.

At the age of 18 he joined the WW II and fought against Nazi Germany as a soldier. On his return from the war he attended Novosibirsk Institute of Engineers for Geodesy, Aerial Photography and Cartography (NIIGAiK) that he graduated in 1952 and started his career at the Institute as an assistant at the Department of Photogrammetry. From 1954 to 1957 I. Antipov studied at postgraduate courses in Moscow and later defended his Candidate of Technical Science degree. Starting from 1969 he served as an assistant to the head of the Department of Photogrammetry and Deputy Director of NIIGAiK. Then he was offered to become the head of the programming office at the first computer centre organized by the State Geodetic and Cartographic Survey of the USSR.

Under Professor Antipov's leadership the first programs for different geodetic calculations were developed. At that time and for many years analytical phototriangulation became the main topic of his scientific interest. In 1974 I. Antipov defended his doctorate dissertation, receiving Dr.Sci.Tech. All those years, Professor Ivan Antipov kept high scientific and professional National and International High status. In addition to his high performance as a scientist and manager he had many scientific and personal connections outside Russia. In 1976-1980 Professor Antipov served as the President of International Society for Photogrammetry Commission III, which was the most desirable commission. In 1980, at the Hamburg Congress when ISP turned into ISPRS he was elected as ISPRS Second Vice President. As a member of the ISPRS Council Professor Antipov was one of the authors of the ISPRS Statutes 1984.

From 1977 to 1989 Professor Antipov was the director of Research Institute of Applied Geodesy, in 1989-1992 was sent to his official mission to Cuba where he significantly improved their photogrammetric technologies. Till his las days he served as a Professor at the Department of Photogrammetry and Remote Sensing of Siberian State University of Geosystems and Technologies (former NIIGAiK) where he became an Honorary professor.

In addition to his valued scientific stature, his highly respected professionalism and most appreciative managerial knowledge, Professor Antipov had a special, kind, positive, warm personality, and loving nature. He loved his work, his family, Russia and he loved people around him. Due to his special characteristics, in 2006 he was invited to join the ISPRS White Elephant Club, whose members are ISPRS veterans who donate their time and energy for the benefit of the society and young researchers. With no reservation Professor Antipov was the symbol of a WEC member. As a token of appreciation to his scientific status and his sustainable support of ISPRS goals, Professor Antipov was awarded as ISPRS FELLOW in 2010 while celebrating ISPRS' 100th anniversary.

The ISPRS and Siberian State University of Geosystems and Technologies express condolences to Professor Antipov's family, friends, colleagues and numerous disciples.

Those who knew Ivan Timofeevich Antipov will never forget him. May God give him eternal rest.

Klaas Jan Beek (1935 – 2019)



Klaas Jan was born in 1935 in Anloo in the Netherlands. He gained his MSc and PhD from Wageningen University, The Netherlands. In his early career he worked as a Soil Scientist. From 1960 to 1963 he undertook soil surveys in Grijalva Lowlands, for the Mexican Ministry of Hydraulic Resources. From 1963-1974 he was a Soil Scientist with the Land and Water Development Division of FAO. In this period, he had duty stations in Rome (HQ), Brazil, Mexico and Chile. His main duties were surveys for the World Soil Map sheets of South America and the mapping of soil and land suitability and agro-ecological mapping for land evaluation. Through this experience he became an early expert in Land Evaluation. He was one of the first to publish a dissertation on this topic by which

he earned his Doctors degree of Wageningen University. He did his doctoral research in the period 1974-1980 as a senior Soil Scientist at the International Institute for Land Reclamation and Improvement (ILRI) in Wageningen.

In 1980 he was appointed as Professor of Land Evaluation at the *International Institute for Aerial Survey and Earth Sciences (ITC)*. At the same time, he was appointed as Rector of the ITC. This made him the third rector of ITC and he was the first Rector who was not a photogrammetrist. His background in Land Evaluation helped him to understand in an early stage what the potentiality of GIS and Earth Observation would be for the ITC Community. The increased use of data from space platforms was the reason for a name change where the term "*Aerial*" was replaced by "*Aerospace*". Under his leadership ITC made an important transition from aerial photo interpretation to satellite remote sensing and from analogue to digital geo-information processing. ITC's main focus remained capacity development in economic and technological less developed countries. But these activities required more and more support of education and research at an increasing scientific level. He stepped down as Rector in 1996, at the occasion of the opening of the new ITC premises in Enschede.

When Klaas Jan came to ITC he became also an active member of the ISPRS community. Here too he understood the importance of GIS and Earth Observation for this community. This had certainly an important impact on the way he served ISPRS at different positions. From 1984 to1988 he was president of Commission VII. In this term he organized a successful symposium at ITC in 1986. When he stepped down as Rector of ITC, he was appointed ISPRS Congress Director for the period 1996-2000. The ISPRS Amsterdam Congress in 2000 was a great event, which many participants will remember; they saw Amsterdam at its best. Until his death he was Fellow of ISPRS and member of the White Elephant Club.

August 2000, just after the Congress he reached the age of 65, time for official retirement. This was for Klaas Jan no reason to stop his activities. He took up new duties as Vice-chair of the Netherlands Commission for Environmental Impact Assessment. He also became Chair of the Netherlands Foundation for Water and Climate.

His work for ISPRS did not mean that he stopped his activities in his original domain of interest. He served in the International Soil Science Society (ISSS) from 1978 to 1986 as chair of the *Working Group on Land Evaluation* and from 1994 to 1998 he was Chair of the *Sub-Commission on Land Evaluation for Sustainable Development*.

During his career he served on many Boards and Committees in the field of capacity development, environmental protection and climate change; among which:

- Netherlands University Foundation for International Cooperation (NUFFIC),
- International Centre for Integrated Mountain Development (ICIMOD, Kathmandu, Nepal),
- International Water Management Institute (IWMI, Colombo, Sri Lanka),

Through his work he earned many international honorary appointments; among which:

- Honorary professor of Wuhan Technical University for Surveying and Mapping (WTUSM), Wuhan China, and of Chinese Academy of Sciences;
- Honorary Fellow of the International Soil Reference and Information Centre (ISRIC);
- Honorary Fellow of the International Institute for Geo-Information Science and Earth Observation (ITC).

The last six years Klaas Jan suffered from a prostate cancer and his health deteriorated slowly. Whenever we met, he would answer shortly when I asked about his health, but then soon he would be the lively and optimistic Klaas Jan again who loved to tell a good story or anecdote and he kept his interest in new developments. With Klaas Jan we lost a great friend and colleague; with his passing an era comes to its end. Our hearts and feelings are with his wife Herma and their children and grandchildren now that he is no more.

Martien Molenaar
Rector of ITC 2001-2009

Haruhisa Shimoda (1944 – 2019)



It is with deep sadness that I have to share with you the passing of Prof. Haruhisa Shimoda. He passed away on March 9, 2019 at the age of 74. He was suffered from cancer. He was one of the key persons in the field of satellite remote sensing. He was TC VIII President from 2008 to 2012 and successfully organized Mid-term Symposium in Kyoto in 2010. Please pray for him. Prof. Haruhisa Shimoda received the B.S., M.E., and Ph.D. degrees in Chemistry from the University of Tokyo, Japan. He joined Tokai University in 1972 as a Lecturer of the Department of Electro-Photo-Optics, Faculty of Engineering. He became an Associate Professor in 1974. In the same year, he joined Tokai University Research & Information Center (TRIC) as a Senior Researcher. In 1985, he became a Professor there. In 1994, he joined the National Space Development Agency (now Japan Aerospace Exploration Agency) as an Invited Scientist, where he has been the Program Scientist for ADEOS and later for the Global Change Observation Mission (GCOM). In 1999, he became Deputy Director of TRIC. In 2000, he became Director of the Tokai University Space Information Center (TSIC). He has been engaged in the field of remote sensing since 1974. His main achievements are development of a remote sensing image analysis system, including both hardware and software, developments of high-accuracy classification algorithms, and development of IMG on ADEOS. His contribution to the development of remote sensing satellites in Japan is tremendous. He is also known as the main editor of the book entitled Image Analysis Handbook written in Japanese. This book is called “a bible on image processing” in Japan. He invited me to join Tokai University in 1982. Since then, we have worked together in many projects, and I have learned much from him. Especially his stoic and precise approach to his research works was very impressive. He assigned me many tasks. Through his assignment, I understood his expectations and I had to work hard to meet them. I think this was the way he trained up others. He was a kind person, but was not so kind to un-precise research works of the others. When he became ISPRS Commission VIII President on remote sensing in 2008, I supported him as a Secretary. Due to our hard work, the mid-term Symposium in Kyoto in 2010 was quite successful. It was a good memory for us. He was famous for smoking, drinking and reading books. Prof. Shimoda, don’t smoke too much in heaven!

Kohei Cho General Secretary Asian Association on Remote Sensing (AARS)

Gabriele Fangi (1945 – 2020)



Distinguished Executive Member of CIPA Heritage Documentation

It is with deep sadness and grief that the family of CIPA Heritage Documentation announces the demise of Prof. Gabriele Fangi, former Geomatics Professor at the Università Politecnica delle Marche in Ancona, Italy, and former member of CIPA Executive Board. Gabriele passed away on January 17th, 2020 after a brief illness at the age of 75.

Rigorous, passionate, humble and reserved expert and scholar of photogrammetric theory, he developed original solutions to facilitate the metric documentation of cultural heritage, in particular using spherical photogrammetry. He had an outstanding contribution to Italy’s and World’s cultural heritage sector, while he worked diligently to make CIPA and heritage documentation truly a world body. He worked in many countries around the world, particularly in Syria, where he dedicated lots of his work with unparallel passion. Recently he published the book “Reviving Palmyra in Multiple Dimensions: Images, Ruins and Cultural Memory” together with Minna Silver and Ahmet Denker.

His smile, his dedication to safeguarding cultural heritage, his ability to work with different professionals in diverse situations has made him a much-respected colleague, both nationally and internationally. He was an inspiring scientist, someone to admire and envy for the way he focused and vigorously persisted in achieving his targets.

Recently, during the 27th CIPA Symposium in 2019 in Avila, Spain, we were fortunate to having heard him as an invited speaker presenting his work all these years in Syria. It happened to be his last public appearance in CIPA of a long and distinguished career.

While CIPA joins his beloved wife Silvana and his family to share the unbearable loss, we are proud to have been associated with one of the most tender colleagues we ever had in our cultural heritage documentation community.

Hans J Wehrli 1926 - 2020



Hans J. Wehrli passed away on February 20, 2020. He is survived by his wife of 64 years, Lisette (Leichti) Wehrli, and his children Nicole Wampfler, Gregory Wehrli, and Linette LaMountian, as well as his 7 grandchildren (Jake Wampfler, Carlene Wampfler, Mathew LaMountain, Christopher LaMountain, Peter LaMountain, Jackson Wehrli, Michael Wehrli). Hans was a long-time resident of Valhalla, NY and more recently a resident of Wilton, CT.

Hans, born in Aarau, Switzerland, on April 25, 1926, (93 years old) was the youngest of 5 children. His childhood was not easy especially during the war time however he was never one to sit still and was always curious. One time, around the age of 10, the doctor came to the house. Hans had to understand the working of the doctor's bicycle so he completely took the bike apart while the doctor was inside.

Hans had several hobbies that he was passionate about - he would read every minute of the day – newspapers, art books, detective novels. You could always find him in a corner on the deck at the beach house in Westhampton reading something. Hans enjoyed camping across the United States and Canada with his family. Usually, those trips would conveniently coincide with a destination where the ASPRS convention was being held or customers were in the nearby town.

Hans loved to collect and trade oriental prayer rugs and Meissen porcelain in his spare time. He often purchased items in the US and would bring it to Switzerland to sell. In Switzerland, among the porcelain collectors, he was known as the "Meissen King".

Hans enjoyed cooking and he was very good at it. He usually referred to how he would watch his mother and that is how he learned how to cook. He would make anything and everything from kidneys to roasts to poached fish to flan to strawberry souflee. Of course, Hans had to become a sommelier to serve the perfect wine along with the meals.

His career was very exciting and fulfilling. Hans came to the United States in 1953 to expand Kern Instruments Inc., a subsidiary of Kern & Co. AG, Aarau, Switzerland. Initially, the focus of his assignment was in surveying instrumentation, including adaptation of such instruments for the optical tooling industry, ranging in applications from alignment of paper machines to sophisticated guidance systems in the aerospace industry. Later, under Hans's leadership and guidance, Kern entered the photogrammetric market (map making) with his instrumentation concept, design and sales.

Hans was considered a visionary in his field as demonstrated by his early understanding of the benefit of electronics to improve productivity. Some unique projects were in 1969 having Kern optical lenses accompany the moon landing of Apollo 11 where these lenses were used in the craft's acquisition cameras which filmed the tests of reactions of men and materials in space; the first Industrial Measurement System used for the alignment of the magnets of the Stanford Linear Collider.

In 1988, Hans received the ASPRS Fairchild Award established to recognize someone who demonstrated outstanding efforts and influence in the development of the art of aerial photogrammetry in the United States.

Even after retiring in 1988, Hans continued to work until his late 80s, designing and bringing to market photogrammetric instrumentation through Wehrli & Associates.

Gordon Petrie 1931 – 2020



GORDON PETRIE, Emeritus Professor of Topographic Science and Honorary Research Fellow at the University of Glasgow, passed away on 4 April 2020 at the age of 89. Born on 20 July 1930 in Peterhead, a small fishing town on the north-east coast of Scotland, he was educated at Stirling High School and Aberdeen Grammar School. He read geography at the University of Aberdeen, graduating MA with first class honors in 1952. He completed a Diploma in Surveying at University College London and in 1953 was hired by the Overseas Survey Service. He worked in Aden, now South Yemen, until 1957, on triangulation, levelling for photo-control, large scale engineering work and cadastral surveying. During this period, he served for a time under Colonel D. R. Crone, who kindled his interest in photogrammetry. At the Conference of Commonwealth Survey Officers in 1955, he met Professor W. Schermerhorn, who undergirded this new passion and sowed the seed of what would become a fruitful relationship, destined to last more than half a century, between the University of Glasgow and the International Training Centre for Aerial Survey (ITC) in Delft, where Petrie graduated BSc in photogrammetric engineering in 1958.

That same year he was appointed Lecturer in Surveying in the Department of Geography of the University of Glasgow, as a result of the desire of the department chair, Professor Ronald Miller, to increase the Department's capabilities in surveying, photogrammetry and cartography, which came to be known in Glasgow as topographic science. Petrie was promoted to senior lecturer in 1964 and awarded a personal Chair of Topographic Science in 1977. Initially, he taught specialized option courses in surveying and photogrammetry within the BSc degree program in geography. In 1963, with John Keates, he was responsible for instituting postgraduate courses leading to diplomas in cartography, photogrammetry and (later) surveying. In 1966, he was also responsible for launching the BSc degree in topographic science, which was the first full-time honors degree in these subjects in the UK. In 1976, added a master's degree program by course and project in topographic science. He supervised several PhD students. By 1980 his department had the largest postgraduate enrolment in these subjects in the United Kingdom.

Petrie's research interests were broad. He was keenly aware of the foundation on which he built and studied the history and development of stereoplotting machines. He worked on digitizing them for cartographic purposes, especially using computer-controlled devices. He worked on small-scale topographic mapping, especially the possibilities of mapping from satellites and high-altitude aircraft, including the use of non-metric reconnaissance cameras. He was intrigued by orthophotography and orthophotomapping before their widespread adoption. He applied photogrammetric measurement and mapping to research in the field sciences and directed the production of the large number of geomorphological, vegetation, geological and orienteering maps produced by his department at Glasgow. His Glasgow colleagues in specialisms such as geomorphology and biogeography were eager beneficiaries of these endeavors. As technology evolved, he anticipated the importance of technologies such as side-looking airborne radar and infrared line-scan and bridged the gap between remote sensing and its predecessors surveying and photogrammetry better than most.

Petrie was a Scot and proud of it, but traveled extensively. He took up a Carnegie Fellowship at ITC in 1969-70. He attended and addressed innumerable conferences. He relished the semesters he spent at the University of Georgia (twice) and Miami University of Ohio. He directed and participated in a large program of mapping glaciers in Switzerland, Iceland, Norway and Alaska to detect glacial and landform changes. From 1971 to 1973, he was a member of the European Research Panel in Geodesy, Photogrammetry, Cartography and Geography of the United States Engineer Topographic Laboratories. With P. J. Carmody from the University of Newcastle upon Tyne, he visited the Sudan to advise on the setting up of university courses in surveying and photogrammetry. He was consulted by Professor M. A. R. Cooper, regarding the mapping of Stone Age shelters in Swaziland. He was British National Correspondent for the International Society for Photogrammetry (ISP) Commission VI for 1966-74, for Commission II for 1974-77 and for Commission IV for 1977-79. He was a member of the ISP specialist working groups on standard tests, digitising and automation. Petrie had a wide and catholic list of publications.

Petrie married twice, first to Dorothy Bewick in 1953. There were three children, but the marriage was ultimately unsuccessful. Petrie met Kari Dahl, an ITC alumna, two further children were born and the couple married in 1991. His long, happy relationship with Dahl resulted in research into Dahl instruments for photogrammetry and surveying. Both wives and one son predeceased him. There were five grandchildren. In the last years of his life, his companion Jean McCulloch supported him and they enjoyed contented times together, based on common interests such as cycling and concerts.

Much more could be said further to demonstrate the extraordinary contribution which Petrie made to British photogrammetry, both at home and internationally. Since the demise of Professor E. H. Thompson in 1976, he was for some time the doyen of UK academic topographic science, which was taught in several university departments and recognized worldwide. Those who heard him speak, either in formal settings such as the lecture room or conference stage, or in less formal conversation, could not but be impressed by the breadth of his reading, the depth of his knowledge, the grasp of detail, the clarity and perception of his intellect and his command of the English language.

Petrie was perhaps more of a teacher than a researcher, though his work on the histories of stereoplotters and map-making go deep, involving heavy use of original source materials and personal interviews. He was generous with his time in a manner that is not so easy today. He would take the time for one-on-one meetings to explain concepts to troubled undergraduates and did all his own grading of essays and practical work, methodically marking all errors, whether technical, spelling, grammar or syntax, usually with his vivid purple pen. Many of his publications were review papers, meticulous contributions involving reflection on the development path of the subject – or category of instrumentation – followed by painstaking teasing out of all the detail he required. He liked to introduce a taxonomy of whatever he was presenting: undergraduates up to the 1970s did not go short of classifications of analog stereoplotters. Many of his contributions followed this template, in both professional periodicals and, especially late in his career, more popular but less exalted publications: introduce a technology or instrument type, with clear exposition, usually illustrated by original graphics created by technical staff at the University of Glasgow; provide a taxonomy; then consolidate with

characteristics of exemplars of each class in the taxonomy. This approach is didactic and valuable. It has found followers, for example, in the readership of the two editions of the highly regarded Topographic Laser Ranging and Scanning: Principles and Processing, edited by Jie Shan and Charles Toth. Many more papers proselytized topographic science to audiences less well versed in its capabilities, such as a piece on orthorectification in Transactions of the Institute of British Geographers in 1977.

For the writer and, doubtless, many readers of this account, the most telling aspect of Petrie's academic duties was the career advice he gave to undergraduates. Often this involved leaving Scotland to pursue graduate degrees or take up posts in locations that must have seemed very exotic to the young Scots sitting in his brimming study. They absorbed his counsel, then ranged far and wide in exciting careers, which they would perhaps have left undiscovered had it not been for his encouragement. Petrie was fond of his students and maintained a list of graduates and diplomates with information about their whereabouts after leaving Glasgow.

Petrie was a staunch member of The Photogrammetric Society, which awarded him the President's Essay Prize in 1959, for a submission he had made under a pseudonym; the President's Medal in 1979; and honorary membership in 1995. Other honors included the 2006 Photogrammetric Award (Fairchild) in 2006 and the Bartholomew Globe by the Royal Scottish Geographical Society in 2008.

As funding crises and departmental amalgamations beset the universities, Petrie's academic position in Glasgow reached a dramatic denouement. He and his colleague Barry Methley (ITC alumnus) decided to retire early, on condition that the University used the funds thus released for a new, full-time position in topographic science. Gordon continued part-time into 1995 and topographic science marched on, albeit with changes in the courses: a postgraduate Diploma in Digital Mapping & Automated Cartography introduced about 40 years ago was one of the earliest programmes that most would label GIS, and there is now a suite of taught master's degrees. Naturally, too, the relationship between topographic science and the other pillars of modern academic geography has evolved over the decades.

Petrie's passing ended an era. He had been a leader in UK photogrammetric education and practice for more than half a century. The University of Glasgow became a top school in topographic science as a result of his efforts. Students who had passed through his care traveled the world to follow the profession and contributed to the leadership of surveying and mapping on a global scale. All of them will remember his enthusiasm, patience and insistence on the highest of standards. We all suffer the loss.

On 8 March 2020, Petrie e-mailed Stuart Granshaw, editor of The Photogrammetric Record, that he was, still engaged in a number of topics, including further investigations into the historic aerial photography of Ethiopia; more delving into the archives of Barr & Stroud Ltd., a Glasgow optical engineering firm involved in photogrammetric and surveying instrumentation; a new study of the secret pre-WW-II spy flights over Germany; and a book chapter on mobile mapping.

The restrictions associated with covid-19 resulted in a very sparsely attended funeral (as a result, an event celebrating Petrie's life is planned to take place in Glasgow in 2021). The eulogy from the eldest son, Donald, was a fine, lively encapsulation of Petrie as family man. For those of us unable to be present, the order of service, made available by the officiant, University of Glasgow chaplain Reverend Stuart MacQuarrie, was poignant. The service concluded with the opposite words of Robert Burns's Epitaph on my own Friend. Let us remember Gordon Petrie, photogrammetrist, teacher, researcher, mentor, husband, father, grandfather, enthusiast, with an excerpt: "An honest man here lies at rest, As e'er God with His image blest. Few hearts like his, with virtue warm'd, Few heads with knowledge so inform'd."

Stewart Walker

Clifford Leslie Ogleby (1955 – 2020)



It was with great sadness that the Australian and international communities of photogrammetry and remote sensing noted the passing of Clifford Leslie Ogleby, B.Surv., M.Surv. More commonly referred to as 'Og' or 'Oggie' by his friends, Ogleby was born on 22nd April 1955 and died in Melbourne, Victoria, Australia in the third week of May 2020 at the age of 65. He had had a number of health issues, particularly problems with auto-immune disease, which compromised his physical resilience and impacted significantly on his quality of life in his later years.

Cliff completed the Bachelor of Surveying degree at the University of Melbourne in 1976 and, after a short period working as a field surveyor for the Department of Lands in Victoria, returned to the university in the Department of Surveying as a sessional teacher in 1981. He was awarded his Master of Surveying degree by the University of Melbourne in 1987. His commitment to

student learning and effectiveness in student-centred teaching was quickly recognised and he was appointed as a contract and then continuing Lecturer, promoted to Senior Lecturer and designated as a Teaching Specialist toward the end of his career.

Cliff was a passionate and charismatic presenter and, as an educator, was held in the highest regard by his students and by those with whom he worked. He was recognised many times by his students and his academic peers through numerous awards for teaching excellence and many grants to conduct research and development of learning and teaching innovations. He was incredibly popular with the students he taught and the graduate students that he supervised. In a world of estimated teaching quality, he invariably received overwhelmingly positive feedback year after year.

As well as accolades for learning and teaching, he was also a very active applied researcher. In his early career, he became involved in the recording of indigenous rock art and other historical artefacts. He was passionate about working with indigenous people and showing great respect for their culture well before it was politically correct to do so. The enthusiasm for heritage documentation never left him and was extended to archaeological and historical sites throughout Australia, Papua New Guinea, Thailand, Syria and Georgia. In 1985, with co-author Leo Rivett, he compiled a Handbook of Heritage Photogrammetry which was published by the Australian Government. Long before the days of drone surveys, Ogleby developed innovative platforms for low-altitude mapping based on kites, bipods and balloons, and he was an early adopter of three-dimensional recording devices such as image correlators and laser scanners. He also pioneered the use of three-dimensional digital exhibits in museums and libraries, with themes ranging from walking with dinosaurs to ancient Olympia and Ned Kelly's suit of armour. Ogleby will be remembered as a person of enormous energy and no project involving photogrammetric measurement was too small or too large for him to take on.

Cliff joined the Photogrammetric Society in 1976 and, on 11th January 1999, he presented a paper to a technical meeting of the Society on photogrammetry and the virtual world of ancient Ayutthaya in Thailand (see Photogrammetric Record, 16(94): 651–670). His engagement with industry and his contributions to the profession were exemplary. For several decades, he was involved in organisations such as the International Society for Photogrammetry and Remote Sensing (ISPRS), Comité International de la Photogrammétrie Architecturale (CIPA; now CIPA Heritage Documentation), Remote Sensing and Photogrammetry Association of Australia (RSPAA) and the (now) Surveying and Spatial Science Institute in Australasia. He was involved in many working groups as both an active member and an office bearer and was always an enthusiastic contributor to conferences, seminars and workshops. He was the first Australian to become a member of CIPA and his typical passionate engagement led to him becoming Secretary-General, Vice President and then President during 2006-2010.

However, perhaps his most visible role in the profession was as the Director of the highly successful 22nd International Congress of Photogrammetry and Remote Sensing, held in Melbourne, Australia in 2012. There is no doubt that his unconditional commitment to bidding for the Congress and his leadership of the Congress management made a massive contribution to the technical, social and financial success of the event. Being selected as the host of the Congress is a very long process which requires a huge commitment, not to mention a lot of promotion at other events, across a dozen years

Cliff was one of a small group of Congress organisers who travelled to many conferences and meetings. He always flew with two suitcases, one for his personal belongings and one with a kangaroo suit (Fig. 3). It seemed like a great idea to promote Australia at the Congress venue and he revelled in wandering around the registration desks or the exhibit halls in the suit, greeting everyone and having his photograph taken with conference delegates. On at least a couple of occasions on arrival at an event, only one suitcase turned up at the airport. You can guess which one! And of course, on a warm summer afternoon in Europe or Asia he would sweat profusely inside the suit, wearing the only clothes he had.

Cliff could be argumentative, he could be loud and, on occasion, quick tempered. However, he could also be charming, witty and incredibly generous. Many, many times he hosted international visitors and took them camping or visiting rock art sites because he wanted them to have an outstanding experience in Australia. He was also an excellent cook: many visitors will remember outstanding meals, good wine and great company at his house in Melbourne.

He retired in 2018 after 38 years of dedicated service to the University of Melbourne and the (now) Department of Infrastructure Engineering. His kindness, thoughtfulness and effectiveness are remembered by everyone. He devoted the major proportion of his career to his students through delivering engaging and enriching educational programmes and by being a guide for their self-confidence, ambition and well-being. He went out of his way on countless occasions to mentor and inspire students. Ogleby's own heritage will certainly be his unbounded kindness and generosity to his colleagues and, especially, his students.

We extend our heartfelt condolences, particularly to his many colleagues and friends in the photogrammetric and heritage recording communities.

Sherman Shou-Chou Wu (1928 – 2020)



Sherman Shou-Chou Wu, born on April 9, 1928, died at 92 years of age on August 22, 2020 with family by his side.

Astrogeologists know him as Dr. Mars for the integral role he played in creating the first topographical map of Mars and other interstellar bodies. The asteroid (2075), discovered on October 9, 1980, is named after him for his influential contributions. Even in his "retirement," his expertise was highly regarded. He moved to Las Vegas from Flagstaff to work as a consultant with the U.S. Department of Energy.

To the people of his hometown, a remote village in China accessible only by foot, he remains an inspiration and benefactor. Neighboring villagers would welcome home their celebrity by setting off firecrackers, waving celebratory banners, and preparing a feast with only the best of their limited resources. His visits ended with them enthusiastically thanking him for the roads and schools he had built for them and flocking to him to bask in his exceptionalism, even if just for the briefest of moments. Even now, they are working to erect a monument in his honor as a beacon of hope to future generations.

He valued filial piety and academic excellence above all. His passion for mathematics translated to a passion for blackjack and other games involving probabilities and statistics. He loved deeply and widely, was generous with both his praises and criticisms, and approached all aspects of his life with perseverance, stubbornness, and grit tempered by a quick wit, charming smile, and roguish nature.

He will be forever remembered by his children Alan (Jessica), Stella, Dona (Louis), Rita (Brannon), and Doug. He will also be remembered by his grandchildren Brian, Sam, Ryker, Sofia, and Alexander; his sisters Xue Fen (Zhou Bing Guang) and Xue Huan; and his nieces and nephews Zhou Zengwen, Zhou Zengwu, Zhou Zengrong, Zhou Zengjian, Tian Jingsen, Tian Jinglin, Tian Jingrong, Tian Jingying, Sandy, and Atlas.

Published by Legacy.com

Arthur P Cracknell (1940 – 2021)



Arthur P Cracknell, who was 80, was professor of theoretical physics at Dundee University when the station was developed by the electrical engineering and electronics department. Professor Cracknell then created the means of taking the data gathered by the satellite and interpreting it for use by environmental scientists and engineers in Dundee.

He was one of the pioneers in this remote sensing work at a time when the field was in its infancy. Both the satellite station and Professor Cracknell's techniques went on to receive national and international recognition.

In time, Dundee would have one of the largest groups of people working on remote sensing in any UK university. The data interpreted by Professor Cracknell's team was used to measure ozone depletion, sea temperature and currents and to monitor the effects of forest fires, among many other applications.

Arthur Cracknell was born in Illford, Essex, on May 18, 1940, to Christopher Cracknell, a shipping clerk, and his wife Phyllis. After primary education in the town, he won a scholarship to the private Chigwell School. He remained there until 1958 when he went to Pembroke College, Cambridge, to study natural sciences and physics. Between 1961 and 1964 Professor Cracknell studied the band structure of metals at Oxford University for his PhD.

While he was at Oxford, he met his future wife Margaret, a fellow physics postgraduate student. Professor Cracknell then took up a lecturing post in Singapore and in 1966 the couple married. After a return to the UK and a period lecturing at Essex University, the couple moved to Dundee. Professor's Cracknell's first position was a senior lecturer while his wife taught physics at Carnoustie High School. He was promoted to reader in 1974 and professor of theoretical physics in 1978. He later transferred to the Carnegie Chair of Physics in the department of Applied Physics and Electronic and Mechanical Engineering.

Professor Cracknell served on several internal and external bodies and undertook three separate periods as head of department. During his career he had around 300 research papers and several books published and was editor-in-chief of the International Journal of Remote Sensing for over 25 years.

Professor Cracknell retired from Dundee University in September 2002 and then, as an emeritus professor, continued as an active scientist, teaching, researching

and contributing presentations at conferences around the world.

Shortly before his death he completed his final book with Professor CA Varotsos of Athens University, an institution which had awarded him an honorary doctorate.

A man of strong Christian faith, Professor Cracknell converted from Anglicism to Catholicism while at Cambridge and played an active role in the life of Our Lady of Good Counsel in Broughty Ferry.

A keen traveller, Professor Cracknell is survived by his wife Margaret, children Chris, Trish and Andree and six grandchildren.

Published in the Dundee Courier

Shibendu Shankar Ray (1963 – 2021)



ISPRS sadly announces that Shibendu Shankar Ray, Co-Chair of Working Group III/10 on Agriculture and Natural Ecosystems Modelling and Monitoring, succumbed recently to Covid infection after a long battle.

Dr. Shibendu Shankar Ray was an outstanding Indian agriculture physicist. He obtained academic excellence through Masters and Doctorate degrees from the prestigious Indian Agricultural Research Institute, New Delhi. Dr. Ray contributed very actively towards ISPRS activities. He served as Chair, International Society for Photogrammetry & Remote Sensing (ISPRS), Working Group VIII/6 on Agriculture, Ecosystem and Bio-diversity (2008-2012) and Co-Chair ISPRS Working Group III/10 on Agriculture and Natural Ecosystems Modelling and Monitoring (2016-2022). He served as Vice-President, Indian Society of Remote Sensing (ISRS), 2014-2016 and Vice-President, Indian Society of Agro-Physics, 2015-2017.

Dr. Ray has contributed significantly to developing, demonstrating and operationalizing procedures for various aspects of agricultural resources management using Remote Sensing and Geographical Information System over the years. Most significant contribution of Dr. Ray was towards the establishment and growth of the Mahalanobis National Crop Forecast Centre (MNCFC) under Department of Agriculture & Cooperation as its first Director and institutionalizing the various national programs that exploit the earth observation data for agro-meteorology, horticulture assessment to build a reliable national level operational agricultural system. He was also actively involved in GEOGLAM activities at the international level. He published 67 peer-reviewed scientific papers, two books, many edited books and invited talks at both national and international forums. Many awards including Hari Om Prerit Ashram (PRL), Pisharoty and Satish Dhawan (ISRS), National Geomatics (ISG) and Merit and Team (ISRO) have been conferred on him.

Dr. Ray belongs to that genre of scientists who can radiate energy and bring a smile on your face, even in an adversity. In addition to being a vivacious person he was always helpful and took a lead role in the organization of things, be it official or interpersonal. He was a ray of enthusiasm, energy, positivity and happiness to all his family members, colleagues and friends.

While the ISPRS and ISRS fraternity share our deepest condolences to his beloved family and his colleagues on the unbearable loss, we cherish the moments that he spent with us and his long professional association with us.

Rest in Peace, Dr. Shibendu Ray.

R.B. Singh (1955 – 2021)



The IGU deeply regrets to announce the passing of our beloved Secretary-General, the great Indian geographer, Professor R.B. Singh (b. 03 February 1955 ~ d. 22 July 2021; MA and PhD – Banaras Hindu University, Varanasi). Known to us affectionately as 'RB", he was elected as IGU Vice-President in 2012 and was the first Indian Geographer to hold the position of IGU Secretary-General (2018-2022). Professor Singh was a distinguished Geographer in Environmental Geography and GIS applications, and made countless academic contributions over the last four decades. He was an outstanding mentor, guide, and life-long advisor to his students, evident in the fact that he had supervised 36 Ph.D., 82 M. Phil, Research Scholars and countless MA students. Professor Singh was Chair, UGC National Committee–Learning Outcome Based Curriculum Framework since July 2018 and a member of many important committees of the Government of India-Ministry of Environment and Forests, Department of Science and Technology, National Disaster Management Authority (NDMA). He has

written and edited more than 50 books and published more than 230 research papers.

We are devastated and our hearts go out to his family, colleagues, students and close friends. May his soul rest in peace.

Martin Isenburg (1972 – 2021)



It is with great sadness that we learned about the passing of Martin Isenburg. We feel this loss deeply and our condolences go to his family and friends.

Martin was a giant in the field of lidar and topographic data processing. His "fast tools to catch reality" (rapidlasso) LAStools were powerful and widely used throughout the lidar industry. They liberated us to be able to quickly and easily process LAS point cloud files produced from laser scanning and photogrammetry. His tools were easy to use; they worked and scaled; and they drove standards and became the foundation of countless lidar processing workflows. Even more importantly, Martin was an iconoclast who advocated for open data, and for peaceful uses of those data.

Martin was a friend and supporter of OpenTopography. We taught together at several high-resolution topography workshops over the years. His command of the tools and also his honest and genuine interaction with the students was inspiring. Learning from Martin improved our understanding and our service to the OpenTopography community. He had many stories and was mischievous as he challenged closed data and software. Who can forget the April Fools message that rapidlasso and ESRI were going to collaborate on a LAS compressor? He was happy to poke fun with his demos using Pentagon LAZ data.

Martin's brilliance lives on figuratively in his leadership for data standards, open data, and software performance. It also is literal as LAStools technologies such as his brilliant Streaming Computation of Delaunay Triangulations (BLAST) help power OpenTopography.

Martin was a force and we will miss his brilliant mind, sharp wit, and steadfast positions.

Published in OpenTopography

Donald William Proctor (1928 – 2021)



THE DEATH occurred on 28th September, 2021 in St David's Hospital, Cardiff, UK at the age of 93 of Donald William Proctor, OBE, BSc, FRICS. Proctor was born in Muree in India (now Pakistan) on the 8th August, 1928 where his father was serving as an officer in the Indian Army. He lived in India with his family until 1935 and then attended boarding school in the UK where he developed an interest in map making.

After leaving school he was commissioned into the Royal Engineers (RE). He was later posted to 42 Survey Engineer Regiment in Egypt and on to the Topographic Squadron in Jordan. He served in the British Army until 1965. After a number of overseas postings, he returned to the UK and was appointed manager of Air Survey Branch at the Ordnance Survey at Chessington where military personnel still occupied most managerial grades. It came as a surprise to him that his first task was to write an in-house handbook on aerial triangulation which included detailed instructions for calculating and adjusting observations from a Hilger and Watts stereocomparator of which E. H. Thompson was closely involved in the design.

In 1965, he opted to leave the Army with the rank of major and became a lecturer in the Department of Photogrammetry and Surveying at University College London (UCL). He also became involved in projects where his mathematical and computer programming knowledge was required to calculate measurements from stereoscopic observations obtained from unusual cameras in extraordinary configurations. One example involved calculating the depth of several craters on the moon for NASA where one photograph of the stereopair was taken through a telescope at the Mount Wilson Observatory in 1919 and the other from the Ranger 7 in 1964. In 1967 Proctor gave evidence to the Aberfan Tribunal, which investigated the circumstances of a slag heap which collapsed onto a primary school in Wales. The complex calculations with measurements made on a series of single photographs taken over several decades with various non-metric cameras showed that the pit heap had been moving very slowly for a long time before its sudden collapse. During his cross examination, he advised a somewhat aggressive QC that he might have asked more appropriate questions if he had previously consulted a professional land surveyor. He

also played the major part in the field work involved in carrying out a photogrammetric wriggle survey on an experimental stretch of the second Mersey tunnel while under construction. During his time at UCL, he always enjoyed teaching basic surveying on field courses and in taking part in the field work involved with providing control for several photogrammetric projects of a research nature including Huby's Tower at Fountains Abbey, The White Tower at the Tower of London and Silbury Hill.

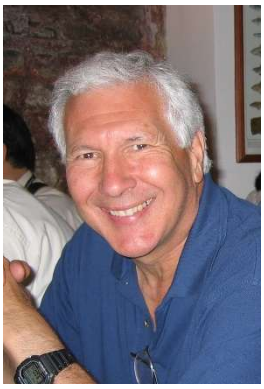
As a result of an open competition in 1970, Proctor joined the Joint Survey Service (Ordnance Survey (OS), Directorate of Military Survey (DMS) and Directorate of Overseas Surveys (DOS)) and was placed in charge of Research and Development at OS. During the next 18 years, he held senior positions in each of the constituent organisations, the longest of which was ten years as Assistant Director Survey at DOS. During this time, he regularly travelled to visit up to 14 field parties operating in different countries including much of Africa, the Caribbean, Yemen and the East Indies. In 1984 he returned to his former post at OS as head of Research and Development until his retirement in 1988. In January 1988, he was awarded the OBE for services to the Ordnance Survey.

Proctor was a keen supporter of the former Photogrammetric Society, being a member of Council from 1967 to 1983 and President from 1979 to 1981. He was made an Honorary Member in 1983. He published several papers in The Photogrammetric Record, mainly on aerial triangulation, and co-operated with others on a number of reviews and reports. He was Secretary of Commission III (Aerial Triangulation) of the International Society for Photogrammetry from 1968 to 1972 and a member of the Financial Commission of The International Society for Photogrammetry and Remote Sensing from 1980 to 1988, latterly taking the chair.

Proctor had an analytical mind matched by an inquisitive nature which may not have always worked to his advantage. He would not let go until he fully understood the matter in hand. Similarly, he always wanted to get the best out of a situation or a product. This is illustrated by the fact that he kept his first car, a Borgward Isabella, for 17 years.

This obituary is an edited version of a longer version published in The Photogrammetric Record.

James Bryan Mercer (1940 – 2021)



Dr. Bryan Mercer passed away peacefully on September 30, 2021 in Calgary, Alberta. For more than 30 years, he was actively involved in ISPRS, never missing any Congresses, attending many Commission Symposia and numerous Working Group meetings.

Bryan received his B.Sc. in Physics from the University of Alberta in 1962, and then a PhD in Astrophysics in 1967 at the University of Calgary. As a postdoc and young researcher, he travelled a lot and spent longer periods of time in Italy and the UK before settling back to Calgary, where he played a key role in initiating an arctic remote sensing program. In 1984, he joined Intermap Technologies as Chief Scientist, a position he held until his retirement. His primary interest was in radar technologies, in particular airborne SAR, and soon he became a world renown expert in the commercial SAR practice, including airborne data acquisition, processing and product development.

Bryan's involvement in ISPRS activities started at the dawn of the digital age, with the introduction of softcopy photogrammetric workstations and the transition to digital sensors and fully digital workflows in the late 80's. From 2000 to 2012, as Chair and Co-Chair, he contributed to WG II/2 efforts, including organizing two very successful WG meetings in Banff, Canada, that attracted over 100 attendees from all over the world, including ISPRS Council members. At that time, WG II/2, on SAR and LiDAR systems was one of the most active WGs in TC II, as interest was very high in these rapidly developing technologies.

Bryan's scientific contributions were widely respected by the ISPRS community, he was active until TCII Symposium in Denver in 2014, though he kept following ISPRS activities at large afterwards.

Bryan, a born optimist, was not only a very bright scientist, but he was an exceptionally kind and supportive person. He treated everyone with honesty, respect, humility, and professionalism, and always had warm words for everyone around him, and, being an excellent speaker, was always ready to share some nice stories. As a globetrotter scientist, he met many people all over the world and developed long-lasting friendships in the ISPRS community. Bryan was a well-rounded person, as besides being a devoted professional, he had a life outside the office too. As a family person, he enjoyed nothing more than to share time with his children and grandchildren. He loved nature, the mountains, especially the Canadian Rockies where he found lots of joy, including camping, hiking, skiing and biking. He liked movies and books; a good book, as well as his eternal

optimism, had always accompanied him on his numerous trips all over the world. While he loved jazz his entire life, it was fairly late when he started to play the saxophone, something he could enjoy till the very end.

Bryan is survived by his beloved family including wife Diane; his children Larissa and David and stepdaughter Robin; grandchildren Caelan, Athan, Noah, Maya and Fiona. He will be missed by his family, friends and colleagues.

Charles Toth, Vice President 2016-2022

Friedrich (Fritz) Ackermann (1929 – 2021)



We mourn the loss of our dear colleague and institute founder Friedrich (Fritz) Ackermann, who passed away on December 4, 2021. He founded the Institute for Photogrammetry with his appointment to the University of Stuttgart on April 1, 1966, and was its director until March 31, 1992. With his research and development work in the field of analytical and digital photogrammetry, he significantly influenced the developments and progress in these two fields and helped the Institute of Photogrammetry to achieve a worldwide reputation. For many younger photogrammetrists he was always a role model and stood for the close connection between basic research and application. With the software developments he initiated with his spin-off inpho GmbH, Stuttgart (today Trimble), he was able to drive very successful technology transfer from research to practice. Fritz Ackermann was born on November 1, 1929 in Moosbeuren (Ehingen) on the Danube. As a result of the Second World War, his school education, like that of many of his generation, was not entirely easy. He attended the elementary schools in Moosbeuren and Ehingen (1936-1940) and then the grammar school in Ehingen, where he graduated in 1949. Few knew of his inclination towards physics - he enrolled in the same year at the University of Tübingen to study physics. A year later, he began studying surveying at the Technical University of Stuttgart - a stroke of luck for photogrammetry. He finished his studies in 1954 and decided to get his first taste of practical experience as a young graduate engineer. For this purpose, he joined Zeiss-Aerotopograph, Munich, and was able to help developing film-based aerial photogrammetry and photogrammetric evaluation equipment in analog photogrammetry. After almost four years of practical experience, he decided to enter international photogrammetry research and development and in 1958 applied to the International Training Center for Earth Sciences (ITC), which at the time was located in Delft (now Enschede and part of the University of Twente). Here he also completed a master's degree in photogrammetry and got to know other recognized companions of photogrammetric research such as H.G. Jerie and C.M.A. Van den Hout, who at this time had already entered the field of analytical photogrammetry. The analytical formulation of the bundle block adjustment had just been worked out by D.C. Brown and published by H.H. Schmid, who used it to perform the first world-wide photogrammetric triangulation for geometric determination of the Earth's figure at the National Oceanic and Aeronatics Administration (NOAA) Institute. The analytical block adjustment also fascinated the young researcher Fritz Ackermann, who was able to write a doctoral thesis at the ITC on "Error-Theoretical Investigations on the Accuracy of Photogrammetric Strip Triangulations" (DGK Series C, Issue No. 87) and defended it at the University of Stuttgart in 1964 -supervisor was Prof. E. Gotthardt. For this dissertation he was awarded the Otto-von-Gruber Award of the International Society for Photogrammetry (ISP). When Prof. E. Gotthardt was appointed to the Technical University of Munich in 1965, his professorship in Stuttgart was vacant and Fritz Ackermann was able to demand the foundation of a new Institute for Photogrammetry in his appointment negotiations - he took over its direction on April 1, 1966. In research and development Fritz Ackermann has set standards worldwide. In analytical photogrammetry, the block adjustments according to the method of independent models (software PAT-M) and the ray bundle (software PAT-B) are associated with his name. It was he who published the method of image correlation by the method of least squares and transferred it into application (later software MATCH-T). In the late 1980s, he worked to integrate GPS into photogrammetry, thus introducing GPS-based aerotriangulation to measure directly projection centers by DGNSS - now a matter of course. With the advent of airborne laser profiling, high-accuracy laser profiles were successfully acquired and analyzed. In the early 1990s, he worked on digital aerotriangulation and transformed it into a fully automated workflow (software MATCH-AT). In total, 26 PhD students and 3 post-doctoral students were supervised by him, who went on to successful careers in administration, universities and colleges, and industry. No wonder that he was often called the "father of modern photogrammetry". In addition to research and

development, technology transfer was always important to him: from 1973 to 1991, he organized the Photogrammetric Week symposia at the University of Stuttgart every two years, in cooperation with Carl Zeiss, Oberkochen. With so many successes, honors were not lacking. In 1988, for example, the Helsinki University of Technology honored him with an honorary doctorate Dr. tek. h.c., and four years later the Vienna University of Technology awarded him the dignity of Dr. tech. E.h. The University of Wuhan awarded him an honorary professorship Prof. h.c. in 1989 - a distinction comparable to the honorary doctorates here. At the University of Hanover, he was awarded the Dr.-Ing. E.h. degree in 1995, and in 2009 he received the Dr.-Ing. E.h. award from the Moscow State University of Geodesy and Cartography (MIIGAiK). Furthermore, he was an honorary member not only of the German Society for Photogrammetry and Remote Sensing and the ISPRS, but also in the corresponding professional societies in the USA and Great Britain. With Fritz Ackermann we and the Institute for Photogrammetry at the University of Stuttgart lose an extremely successful scientist, academic teacher and a kind, friendly and humble colleague. He was always humorous in his dealings and, in addition to photogrammetry, especially loved music, including playing the piano. We fondly remember the 50th anniversary celebration of the Institute of Photogrammetry in April 2016, which he introduced with a piano sonata - at the age of more than 86. Besides his fondness for music, mountain hiking and skiing were important to him; he was almost 80 years old when he climbed Kilimanjaro. Until the end he tried to keep up professionally. At the photogrammetric weeks he was an honorary participant until the end. We will miss him very much and cherish his memory.

Dieter Fritsch and Uwe Soergel Institute for Photogrammetry of the University of Stuttgart

Eddy Lynn Usery (1951 – 2022)



On March 22, 2022, the world lost a GIS giant and cartography compadre when Dr. E. Lynn Usery, current Chair of the ICA Commission on Map Projections and former ICA Vice-President, passed from this earthly plane. Not even a week earlier, Lynn was busily planning workshops for AutoCarto 2022. He will be sorely missed by ICA and our community, not only for his many research contributions, leadership and vision, and tireless service, but also for his friendship and camaraderie.

Michael Tischler of the U.S. Geological Survey (USGS) wrote, “On paper, we knew him as the Director of the Center of Excellence for Geographic Information Science [CEGIS]. But he was far more than that title would lead one to believe. Lynn leaves a remarkable legacy given his extraordinary scientific accomplishments, presence as a leader in the geographic science community, and impact on individual geographic scientists inside USGS and around the world.”

It’s a challenge to specify the impact that Lynn has had on the field of GIScience because of the breadth and depth of his involvement and contributions. He was centrally involved in many areas of the discipline, including cartography, GIS, remote sensing, and spatial analysis. His eclectic research interests included digital cartography, map projections, scale and resolution, image classification, temporal GIS, geospatial semantics and ontology, and high-performance computing for geospatial data. It would be difficult to name a subject in our field about which Lynn could not speak knowledgably and insightfully.

Lynn was unique in that his impact came through his careers in both government and academia. Lynn started working for the USGS in 1977. He was a cartographer and geographer for the USGS from 1978 to 1988 focusing on developing automated cartographic production systems. In 1988, he took on a geography faculty position at the University of Wisconsin (UW) – Madison. In January of 1994, he moved to Georgia to serve on the geography faculty at the University of Georgia (UGA). In May of 1999, Lynn took on a Research Geographer position with the USGS in addition to his academic job at UGA. In 2005, he returned to USGS and ultimately conceived and became Director of CEGIS. In this role, he directed the science program and the visions and plans for topographic mapping research. While at USGS, Lynn also taught remote sensing at the Missouri University of Science and Technology.

In all his positions, Lynn was a ground breaker. In his early days at USGS, he began the development of digital mapping systems for the automated production of printed topographic maps. At UW, he helped found a GIS program. At UGA, he helped establish certificate programs in GIScience at both the undergraduate and graduate levels. When he returned to USGS, he started a cartography research program that led to CEGIS. For CaGIS, he chaired AutoCarto 2005 to close an eight-year gap and resurrect the symposium series. He also spearheaded the effort to bring the International

Cartographic Conference back to the United States for only the second time, the first being in 1978.

Lynn was involved in multiple activities of the ICA:

2004–2008 US National Committee to the ICA member

2007–2011 ICA Map Projections Commission Secretary

2007–2015 US National Committee to the ICA Chair

2011–2012 ICA Technology Outreach Working Group Chair

2011–2015 ICA Map Projections Commission Vice Chair

2011 Bid for ICC 2017

2012–2017 ICC 2017 Conference Organizer

2015–2019 ICA Vice President

2018–2019 ICA Body of Knowledge for Cartography Working Group Chair

2019–2022 ICA Map Projections Commission Chair

That Lynn was so involved in the association is admirable. That he did the same with many other societies, at the same time, makes Lynn exceptional and unparalleled. There is truly no match for him in this regard, and really not even anyone in the running. No other person has been elected vice-president of the ICA, president of the Cartography and Geographic Information Society (CaGIS), president of the American Society for Photogrammetry and Remote Sensing (ASPRS), and president of the University Consortium for Geographic Information Science (UCGIS), as Lynn was in 2015, 2002, 2004, and 2015, respectively. Additionally, as with the ICA, in all these associations, he also served in other roles.

On a personal note, Lynn was born in December 1951. He had two children, a son Kelynn, born 1986, and a daughter, Lacy, born 1988. Lynn received his BS in geography from the University of Alabama and MA and Ph.D. degrees in geography from UGA. He died Tuesday, March 22, 2022, after a brief illness.

Tim Trainor, President of ICA &
Aileen Buckley, U.S. national representative to ICA
Published by ICA



General Assembly

Ordinary Member's Attendance List

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Decisions of the General Assembly

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Reports to the General Assembly

Ordinary Member Delegates and Advisors Attendance List

Country	**Cat.**	**Ordinary Member Name**	**Delegate,** Advisers	**virtual/ in person**
Algeria 10002	3	Institut National de Cartographie et de Teledetection		
Argentina 10115	2	Instituto Geográfico Nacional		
Australia 10004	5	Surveying and Spatial Sciences Institute - Remote Sensing & Photogrammetry Commission	**Petra Helmholz** Clive Fraser Sisi Zlatanova	in person
Austria 10005	4	Österreichische Gesellschaft für Vermessung & GeoInformation	**Camillo Ressl**	in person
Azerbaijan 10006	2	Azerbaijan representation of ISPRS - Baku State University		
Bangladesh 10007	1	Center for Environmental and Geographic Information Services		
Belgium 10010	3	VITO N.V.		
Botswana 10012	1	Ministry of Land Management, Water and Sanitation Services		
Brazil tbc	4	SELPER	**Hilcéa Ferreira** Raul Feitosa Laurent Polidori	virtual in person in person
Brunei Darussalam 10014	1	Survey Department, Ministry of Development		
Bulgaria 10015	2	Union of Surveyors & Land Managers in Bulgaria		
Burkina Faso 10016	1	Institut Geographique du Burkina		
Cameroon 10017	1	La Cameroon Geomat		
Canada 10117	5	Canadian Remote Sensing Society	**Ahmed Shaker** Derek Lichti Gordon Staples	in person
Chile 10019	1	Sociedad Chilena de Fotogrametria y Sensores Remotos	**Rodrigo Monzon**	in person
China 10020	8	Chinese Society of Geodesy Photogrammetry & Cartography	**Peng Zhenzhong** Deren Li Chen Jun	virtual
China Taipei 10021	4	Chinese Taipei Society of Photogrammetry & Remote Sensing	**Jen-Jer Jaw** Fu-An Tsai Su-Fen Wang	virtual in person virtual
Colombia 10022	2	Sociedad Latinoamericana de Especialistas Percepción Remota y Sistemas de Información Espacial		

Cote D'Ivoire 10113	1	Côte d'Ivoire Géomatique		
Croatia 10025	2	Croatian Geodetic Society - Sec. for Photogrammetry, RS and Geoinformations	**Dr.-Ing. Andrija Krtalić** Rinaldo Paar Jasmina Trupković	virtual
Cuba 10026	1	GEOCUBA		
Cyprus 10104	2	Department of Lands and Surveys	**Georgia Papathoma Economidou** Andreas Demosthenous Mr. George Kokosis	virtual
Czech Republic 10028	2	Society for Photogrammetry and Remote Sensing	**Karel Vach** Václav Šafář Pavel Holubec	in person
Denmark 10029	3	Geoforum Danmark	**John Kamper**	virtual
Egypt 10030	2	Egyptian Committee of Surveying & Mapping		
El Salvador 10031	3	Instituto Geográfico y del Catastro Nacional		
Ethiopia 10033	1	Ethiopian Geospatial Information Institute		
Finland 10034	3	Finnish Society of Photogrammetry & Remote Sensing	**Petri Rönnholm** Matti Vaaja Ville Lehtola	in person
France 10035	6	Société Française de Photogrammétrie et de Télédétection	**Aurélie Sand** Michael Tonon	in person
Germany 10036	8	Deutsche Gesellschaft für Photogrammetrie, Fernerkundung und Geoinformation e.V.	**Uwe Sörgel** Georg Bareth Michael Cramer	in person
Ghana 10037	1	The Society for Photogrammetry & Remote Sensing	**Stephen Djaba** Priscilla Atta Djaba	in person
Greece 10038	2	Hellenic Society for Photogrammetry & Remote Sensing	**Konstantinos Karantzalos**	in person
Hong Kong 10039	2	Hong Kong Institute of Surveyors		
Hungary 10040	3	Hungarian Society of Surveying, Mapping and Remote Sensing		
India 10041	8	Indian Society of Remote Sensing	**Prakash Chauhan** Sameer Saran Praveen Kumar Thakur	in person
Indonesia 10042	1	Indonesian Surveyors Association		
Iran 10043	3	National Cartographic Center of Iran		
Iraq 10044	1	State Commission of Survey		

Ireland 10116	2	Ordnance Survey Ireland		
Israel 10046	2	Israeli Society of Photogrammetry & Remote Sensing	**Ammatzia Peled** Tal Geah Weizman	in person
Italy 10047	6	Societa' Italiana di Fotogrammetria e Topografia	**Andrea Lingua** Andrea Masiero Enrico Borgogno Mondino (for AsM AIT)	in person
Japan 10048	7	Japan Society of Photogrammetry & Remote Sensing	**Kohei Cho** Mitsunori Yoshimura Takashi Fuse	virtual
Jordan 10049	4	Royal Jordanian Geographic Centre		
Kenya 10050	1	Kenya Nat'l Committee for Photogrammetry & Remote Sensing		
Korea 10051	2	Korean Society of Surveying, Geodesy, Photogrammetry and Cartography	**Byung Gil Lee** Woosug Chu Jae Hyun Kwon Myung-Hee JO	in person
Kuwait 10052	2	Directorate of Survey Department - Kuwait Municipality		
Latvia 10053	1	Latvian Society of Geodesy & Photogrammetry		
Libya 10055	1	Surveying Department of Libya		
Lithuania 10056	1	Lithuanian Committee for Photogrammetry & Remote Sensing		
Malawi 10058	2	Surveys Department Malawi		
Malaysia 10059	2	Department of Survey & Mapping Malaysia (JUPEM)		
Mexico 10060	2	National Institute of Statistics and Geography (INEGI)	**Mr. Gerardo Esparza** Mrs. Eva Luévano Mr. Héctor Aguayo	in person virtual virtual
Mongolia 10061	1	Mongolian Nat'l Society for Photogrammetry & Remote Sensing	**Dr. M.Saandari** J.Gurragchaa Dr. B.Bayartungalag	virtual
Morocco 10062	3	Agence Nationale de la Conservation fonciere de Cadastre et de la Cartographie	**Zineb DIDOUZ** Ilyas AFA	in person
Myanmar 10063	2	Myanmar Survey Department	**Kyaw Sann Oo** Tin Aung Moe Dr. Moe Myint	virtual
Namibia 10064	1	Directorate of Survey & Mapping, Ministry of Lands and Resettlement		
Nepal 10065	1	Nepal Remote Sensing and Photogrammetric Society	**Ms Laxmi Thapa**	in person

Netherlands 10066	4	Geo-Information Netherlands	**George Vosselman** Roderik Lindenbergh Francesco Nex	in person
New Zealand 10067	2	Land Information New Zealand		
Nigeria 10105	1	Geoinformation Society of Nigeria		
Norway 10069	3	GeoForum		
Oman 10114	1	National Survey Authority, Ministry of Defence		
Pakistan 10070	1	Survey of Pakistan		
Peru 10071	1	Direccion General de Aerofotografia		
Philippines 10072	1	Philippine Geosciences and Remote Sensing Society		
Poland 10073	3	Polish Society for Photogrammetry and Remote Sensing	**Dr. Krzysztof Bakuła** Aleksandra Bujakiewicz Prof. Zdzisław Kurczyński	in person virtual in person
Portugal 10109	2	Direção Geral do Território		
Qatar 10075	1	Qatar Center for GIS		
Romania 10076	2	Romanian Society for Photogrammetry & Remote Sensing	**Prof. Alexandru BADEA** Prof. Octavian BALOTA Eng. Daniel ILIE	in person
Russian Federation 10077	8	Federal Service of State Registration, Cadastre and Cartography (Rosreestr)	**Andrey Muhkin** Valentina Radke Galina Kirichenko	vitual
Saudi Arabia 10078	4	General Authority for Survey & Geospatial Information	**Mohammad Almabrook** Abdullah Alsultan Raej Alharbi Ali Alahmari	in person
Senegal 10108	1	Centre de Suivi Ecologique		
Slovak Republic 10079	2	Slovak Society for Photogrammetry and Remote Sensing	**Katarína Pukanská** Karol Bartos	in person
Slovenia 10080	1	Association of Slovenia Surveyors - Section of Photogrammetry & Remote Sensing	**Mr. Bujar Fetai** Mr. Matej Račič	in person
South Africa 10111	3	South African Society for Photogrammetry and Remote Sensing	**Serena Coetzee**	in person
Spain 10082	3	Spanish Society of Cartography, Photogrammetry & Remote Sensing (SECFT)		

Sri Lanka 10083	3	Survey Department of Sri Lanka		
Sweden 10086	5	Kartografiska Sällskapet - Swedish Cartographic Society		
Switzerland 10087	4	Swiss Society of Photogrammetry and Remote Sensing	**Stefan Blaser** Manuela Ammann Manos Baltsavias	in person
Syria 10088	3	General Establishment of Surveying		
Tanzania 10089	1	Ministry of Lands & Human Settlements Development		
Thailand 10090	2	Royal Thai Survey Department		
Turkey 10092	4	Turkish National Society of Photogrammetry and Remote Sensing	**Veysel Okan ATAK** Orhan FIRAT Levent İŞCAN	virtual
Ukraine 10094	3	Ukrainian Society of Photogrammetry and Remote Sensing	**Lyubov Babiy** Oleksandr Dorozhynskyy Borys Chetverikov	virtual
United Arab Emirates tbc	6	Federal Geographic information Center	**Hamad Al Mutawa** Anwaar Al Shimmari Bakhita Al Remeithi	virtual
United Kingdom 10093	6	Remote Sensing and Photogrammetry Society	**Ian Dowman** Paul Newby Jon Mills	in person
Uruguay 10096	1	Instituto Geográfico Militar	**Col. Juan J. Croquis**	virtual
USA 10097	8	ASPRS	**Marguerite Madden** Stewart Walker Bandana Kar	in person
Uzbekistan 10110	2	Center of Remote Sensing and GIS Technologies		
Venezuela 10098	2	Instituto Geografico de Venezuela Simon Bolivar		
Vietnam 10099	1	Vietnam Academy of Science and Technology, Institute of Geography	**Nguyen Dinh Duong**	virtual
Zimbabwe 10106	1	Survey Institute of Zimbabwe		

AGENDA OF ISPRS GENERAL ASSEMBLIES

XXIV ISPRS Congress, Nice 2022

GA I: Monday, 6 June 2022, 10:00 – 16:00

1 Opening Address
2 Certification of Delegate credentials, Explanation and Confirmation of Voting Rights, Obituaries
3 Approval of Agenda
4 Approval of new Fellows (by acclamation)
5 Admission of new Members
6 Ratification of Council Agreements, MoU
7 Member proposals to host Commissions 2022-2026
7.1.1 Com I – China/Brazil
7.2.1 Com II – China/Finland
7.2.2 Com II – USA/Switzerland
Coffee/Tea break
7.3.1 Com III – France/Brazil
7.3.2 Com III – Indian/Turkey
7.4.1 Com IV – Australia/Italy
7.5.1 Com V – Philippines/USA
8 Election of Members to host Commissions 2022-2026
9 Announcement of results of Tech Commission Elections
10 Member proposals to host ISPRS Congress in 2026
10.1 Candidate 1 - Canada
10.2 Candidate 2 - China
10.3 Candidate 3 - Korea

GA II: Wednesday, 8 June 2022, 9.00 - 18.00

11 Report of Council
11.1 Report of the President
11.2 Report of the Secretary General
11.4 Report of the Treasurer
12 Report of the Financial Commission
13 Nominations for Financial Commission 2022-2026 postponed to Friday
14 Election and announcement of three Financial Commission Members postponed to Friday
15 Report from the Regional Representatives/Coordinator
15.1 Africa
15.2 South-East Asia
15.3 Latin America
15.4 Arab States
16 Council's proposal and confirmation of 2022-2026 Regional Representatives by GA
17 Nominations for Council
17.1 Election of President
17.2 Election of Secretary General
17.3 Election/Appointment of Past President
17.4 Election of Vice President
17.5 Election of Treasurer
18 Nominations for 2026 Fellow Committee members postponed to Friday
Approval of the Fellow Committee Members postponed to Friday
19 Proposal and Discussion of Amendments to Statutes and Bylaws postponed to Friday
11.3 Proposal for Amendments to Statutes & Bylaws postponed to Friday
Discussion about Amendments to Statutes & Bylaws postponed to Friday
20 Decision on Amendments to Statutes and Bylaws postponed to Friday
21 Membership
21.1 Membership Development
21.2 Member Correspondence to Council
22 Report on The ISPRS Foundation (TIF)
23 Report on Website
24 Student Consortium
25 Report on ISPRS Journals
25.1 Report on IJPRS
25.2. Report on IJ-GI
25.3. Report on ISPRS Open JPRS
GA II: 9.00-18.00

GA III: Friday, 10 June 2022, 9.00 - 18:00

26 Reports from ISPRS Committees
26.1 ISAC
26.2 IPAC Report
26.3 IIAC
26.4 ICORSE
26.5 CIPA
18 Fellows Committee Election
13 Nominations for Financial Commission 2022-2026
14 Election and announcement of three Financial Commission Members
19 Proposal and Discussion of Amendments to Statutes and Bylaws
20 Decision on Amendments to Statutes and Bylaws
27 Election of Member to Host the ISPRS Congress in 2026
30 Announcement of the 2026 Congress Host
33 Evaluation of TC restructuring
34 Evalluation of Scientific and Capacity Building Initiative
35 Presentation of Resolutions
29 GSW 2023 Report
37 Congress Director's Report
38 Date of the next General Assembly
39 Any other Business
40 Close of General Assembly

Decisions of the General Assembly

The General Assembly:

Approved the Agenda

The General Assembly:

Approved the appointment of the following Fellows:

- Kohei Cho (Japan)
- Songnian Li (Canada)
- Marguerite Madden (USA)
- Charles K. Toth (USA)
- George Vosselman (The Netherlands)
- Jon Mills (UK)

Sisi Zlatanova (Australia)

The General Assembly:

Approved the following changes in membership during Congress:

Admission of 2 new Ordinary Members:

- SELPER – Brazil - Cat. 4
- Federal Geographic Information Center, UAE – Cat. 6

2 Ordinary Member category changes:

- GASGI, Saudi Arabia - category 4 to 6
- Korean Society of Surveying, Geodesy, Photogrammetry and Cartography – Cat. 2 to 6

The General Assembly:

Ratified changes to MoUs and Contracts:

MOUs – new agreements with professional organisations:

- 3S (MIIGAiK, SSUGT, Tongji, Wuhan Universities)
- OSGeo - Open Source Geospatial Foundation
- SELPER - Sociedad Latinoamericana en Percepción Remota y Sistemas de Información Espacial
- IAA - International Academy of Astronautics
- IEEE - Geoscience and Remote Sensing Society
- OGC - Open Geospatial Consortium Inc.

Seven contracts have been signed:

- MDPI, Amendment III to the Journal Publishing Agreement from 8 August 2011
- MDPI, Amendment IV to the Journal Publishing Agreement from 8 August 2011
- MDPI, Amendment V to the Journal Publishing Agreement from 8 August 2011
- Elsevier BV, Data Protection Addendum, 5 April 2018
- Elsevier BV, Journal Publishing Agreement for Open Access Journals, 10 November 2020
- Elsevier BV, Journal Publishing Agreement for Hybrid Journals, 10 November 2020
- Copernicus GmbH, Publishing Agreement for Archives and Annals, 17 June 2020
- TIB Agreement – CC License, 19 November 2020
- TIB First Addendum to Archive and Distribution Agreement of 21 May 2014, 9 December 2020
- Dan Brooking-Coker - Agreement for ISPRS Treasurer Assistant, 1 January 2018 – 31 December 2020, extended to 2022
- Gang Chen - Assoc. Editor IJPRS, 1 February 2018 – 31 January 2019
- Vasit Sagan - Assoc. Editor IJPRS, 1 February 2018 – 31 January 2019
- Roderik Lindenbergh - Assoc. Editor IJPRS, 1 February 2018 – 31 January 2019
- Marco Scaioni - Assoc. Editor IJPRS 1 February 2018 – 31 January 2019
- Tuia Devis - Assoc. Editor IJPRS, 1 April 2018 – 31 March 2019
- CliftonLarsonAllen LLP Statement of Work – Tax Exempt Returns and State Filings, 5 February 2021

The General Assembly:

Elected the following Members to host Technical Commissions:

TC I: China/Brazil

TC II: USA/Switzerland

TC III: France/Brazil

TC IV: Australia/Italy

TC V: Philippines/USA

The General Assembly:

Ratified the appointment of:

Derek Lichti (Canada) as the Congress Director

Christian Heipke (Germany) as Past President

The General Assembly:

Elected the following Members of Council:

Lena Halounová (Czech Republic) as President

JIANG Jie (China) as Secretary General

Nicolas Paparoditis (France) as Vice President

Stewart Walker (USA) as Treasurer

The General Assembly:

Elected as Members of the Financial Commission:

A Senthil Kumar (India)

Petri Rönnholm (Finland)

Andrea Masiero (Italy)

The General Assembly:

Elected as members of the Fellows Committee:

Manos Baltsavias (Switzerland)

Marguerite Madden (USA)

Kohei Cho (Japan)

John Mills (UK)

The General Assembly:

Elected the following as Regional Representatives to Council:

Africa: André Nonguierma

Asia: Shailesh Nayak

Latin-America: Raul Queiroz Feitosa, and Regional Vice-Representative: Jaime Hernandez

Arab States: Mohammed Yahya Al Sayel, and Regional Vice-Representative: Abdalla Alobeid

The General Assembly:

Ratified the amendments to the Status and Bylaws

The General Assembly:

Approved of the Resolutions of the Congress

MINUTES OF GENERAL ASSEMBLIES

GA I: Monday June 6, 2022, 10.10 - 16.00

Opening Address

ISPRS President Christian Heipke opened the meeting at 10:10am and welcomed the delegates, attending both in person and via Zoom, to the General Assembly.

The Chinese OdM and delegates greeted the Assembly and were welcomed via a video link.

A minute's silence was held in remembrance of those ISPRS persons deceased in the past term.

Certification of Delegate Credentials, Explanation and Confirmation of Voting Rights

ISPRS Secretary General Lena Halounová explained the voting procedure to delegates.

Approval of Agenda

The agenda was approved.

Approval of new Fellows

The new fellows, Kohei Cho (JP), Songnian Li (CA), Marguerite Madden (USA), Charles K. Toth (USA), George Vosselman (NL), Jon Mills (UK) and Sisi Zlatanova (AUS), were approved by acclamation.

Jon Mills received his Fellowship silver plate and certificate as he will not be present at the handing over ceremony.

Admission of new Members

The new Ordinary members, for Brazil: SELPER Capítulo Brasil (Sociedad Latinoamericana en Percepción Remota y Sistemas de Información Espacial), and for United Arab Emirates: Federal Geographic Information Center, were approved by acclamation.

Ratification of Council Agreements, MoU

Council agreements and MoUs were approved by ratification.

Member Proposals to host Commissions 2022-2026

The following members presented proposals to host the respective commissions:

1.1 Commission I - Sensor Systems

Chinese Society for Geodesy Photogrammetry and Cartography

Proposed President: TANG Xinming, Land Satellite Remote Sensing Application Center, Ministry of Natural Resources of the People's Republic of China

Proposed Vice-president: Antonio Maria Garcia Tommaselli, São Paulo State University, Brazil

Proposed Secretary: ZHANG Tao, Land Satellite Remote Sensing Application Center, Ministry of Natural Resources of the People's Republic of China

7.2 Commission II – Photogrammetry

7.2.1. Chinese Society for Geodesy Photogrammetry and Cartography

Proposed President: YANG Bisheng, Wuhan University, China

Proposed Vice-president: Hyyppä Juha, Finnish Geo-spatial Research Institute, Finland

Proposed Secretary: CHEN Chi, Wuhan University, China

7.2.2 American Society for Photogrammetry and Remote Sensing

Proposed President: Alper Yilmaz, The Ohio State University, USA

Proposed Vice-president: Jan Dirk Wegner, ETH Zürich, Switzerland

Proposed Secretary: Rongjun Qin, The Ohio State University, USA

1.3 Commission III - Remote Sensing

7.3.1 Indian Society of Remote Sensing

Proposed President: Prakash Chauhan, National Remote Sensing Centre, ISRO, Hyderabad

Proposed Vice-president: Sultan Kocaman, Hacettepe University, Ankara, Turkey

Proposed Secretary: Sameer Saran, Indian Institute of Remote Sensing, Indian Space Research Organisation

7.3.2 Société Française de Photogrammétrie et de Télédétection

Proposed President: Laurent Polidori, Universidade Federal do Pará, Brazil, and Centre d'Etudes Spatiales de la Biosphère, France

Proposed Vice-president: Alessandra Gomes, Instituto Nacional de Pesquisas Espaciais, Brazil

Proposed Secretary: Jean-François Faure, Institute of Research for Development, France

7.4 Commission IV - Spatial Information Systems

Surveying and Spatial Sciences Institute, Australia

Proposed President: Sisi Zlatanova, University of New South Wales, Sydney, Australia

Proposed Vice-president: Maria Antonia Brovelli, Politecnico di Milano, Italy

Proposed Secretary: Hao Wu, National Geomatics Center of China, Beijing, China

1.5 Commission V - Education and Outreach

Philippine Geosciences and Remote Sensing Society

Proposed President: Gay Jane Perez, Philippine Space Agency, Philippines

Proposed Vice-president: Josefino Comiso, NASA Goddard Space Flight Center, USA

Proposed Secretary: Ayin Tamondong, University of the Philippines, Diliman, Philippines

Election of Members to host Commissions 2022-2026

The elections were held online using the SimplyVoting software.

Announcement of Results of Technical Commission Elections

As there was only one application for Commissions I, IV and V, the candidates were voted in by acclamation.

The results of the elections were:

Com. I - Sensor Systems: China / Brazil

Com. II - Photogrammetry : USA /Switzerland

(118 out of 142)

Com. III - Remote Sensing: France / Brazil

(102 out of 150)

Com. IV - Spatial Information Science: Australia / Italy

Com. V - Education and Outreach: Phillipines / USA

Member Proposals to host ISPRS Congress in 2026

The following proposals were presented:

Candidate 1 – Canada, by Derek Lichti

Candidate 2 - China, by Huayi Wu

Candidate 3 – Korea, by Woosug Cho

The General Assembly closed at 16:00

GA II: Wednesday, June 8 2022, 9.00 - 18.00

Report of Council (all written reports were sent to members prior to GA)

The following reports where presented:

Report of the President, by Christian Heipke

Report of the Secretary General, by Lena Halounová

Report of the Treasurer, by Songnian Li

Report of the Financial Commission

George Vosselman reported on the findings of the Financial Commission. The ten recommendations to the Treasurer and Council can be found in the report submitted to the GA.

Nominations for Financial Commission 2022-2026

The following proposals for members of the Financial Commission were made:

Finish OdM proposal: Petri Rönholm

Italian OdM proposal: Andrea Masiero

Council proposal: Senthil Kumar

Election and Announcement of three Financial Commission Members

The following Commission members were elected by the General Assembly by acclamation:

Chair:	Senthil Kumar
Member:	Petri Rönholm
Member:	Andrea Masiero

Reports from the Regional Representatives/ Coordinator (all written reports were sent to members prior to GA)

Reports from the following representatives were given:

Africa, by Hussein Farah, remote

Asia, by Shailesh Nayak, remote

Latin America, by Mario Hernandez

Arab States, by Mohammad Almabrook, on behalf of Mohammed Yahya M. Al Sayel

It was reported that the Syrian OdM, General Establishment of Surveying, does not exist any longer.

Council's Proposal and Confirmation of 2022-2026 Regional Representatives by GA

The following representatives were approved by the GA:

Africa

Regional Representative: André Nonguierma, UN Economic Commission for Africa, Addis Ababa, ETHIOPIA

Asia

Regional Representative: Shailesh Nayak, National Institute of Advanced Studies, Indian Institute of Science Campus, INDIA

Latin America

Regional Representative: Raul Queiroz Feitosa, Pontifical Catholic University of Rio de Janeiro, BRAZIL

Regional Vice-Representative: Jaime Hernandez, Universidad de Chile, CHILE

Arab States

Regional Representative: Mohammed Yahya Al Sayel, President of General Authority for Survey and Geospatial Information, SAUDI ARABIA

Regional Vice-Representative: Abdalla Alobeid, Royal Commission for Riyadh City (RCRC) & General Authority for Survey & Geospatial Information, SAUDI ARABIA

Nominations for Council

President: Lena Halounová

Secretary General: Jie JIANG

Vice-President: Nicolas Paparoditis

Treasurer: Stewart Walker

1.1 Election of President

Lena Halounová was elected as President for the term 2022-2026.

1.2 Election of Secretary General

Jie JIANG was elected as Secretary General for the term 2022-2026.

Election/Appointment of Past President

Christian Heipke was appointed Past President for the term 2022-2026.

Election of Vice President

Nicolas Paparoditis was elected as Vice-President for the term 2022-2026.

Election of Treasurer

Stewart Walker was elected as Treasurer for the term 2022-2026.

Fellows Committee

The following proposals were made for members of the Fellows Committee for 2026:

Swiss OdM proposal: Manos Baltsavias

Stewart Walker proposal: Marguerite Madden

Council proposal: Kohei Cho and Jon Mills

The proposals were approved by acclamation.

Discussion and Decision about Changes of Statutes & Bylaws

Proposals about changes of Statutes & Bylaws were discussed. It was decided to continue the discussion after a new written proposal from Switzerland had been submitted.

Following detailed discussion based on a revised proposal, which included suggestions from Council and GA members, each amendment to the Statutes and Bylaws of that new proposal was then put to vote and was approved by acclamation.

The president thanked Manos Baltsavias for his detailed work in revising and proposing the amendments.

Membership Development

1.1 Statistics

Current Status of ISPRS Members

Cat.	1	2	3	4	5	6	7	8	A	B	C	D	E	Total
OdM	31	24	14	7	3	6	1	5						91
AsM	11	1												12
RgM														14
StM									5	7	12	21	13	58

Ordinary Members

There are currently 91 Ordinary Members.

New Ordinary Members

The following 5 Ordinary Members have been admitted since the Prague Congress:

ID	Name	Country	Cat.	Date
10114	National Survey Authority, Ministry of Defence	Oman	1	14.07.2016
10115	Instituto Geográfico Nacional	Argentina	2	08.03.2017
10116	Ordnance Survey Ireland	Ireland	2	06.03.2018
10117	Canadian Remote Sensing Society	Canada	5	08.05.2018
10118	Instituto Nacional de Pesquisas Espaciais	Brazil	4	14.04.2020
10120	SELPER Capítulo Brasil	Brazil	4	during Congress
10121	Federal Geographic Information Center	UAE	6	during Congress

Discontinued Ordinary Members

The following 6 Ordinary Members have cancelled membership since the Prague Congress:

ID	Name	Country	Cat.	Date
10003*	Argentine Association for Photogrammetry & Related Sciences	Argentina	2	08.03.2017
10045*	Irish Society of Surveying, Photogrammetry & Remote Sensing	Ireland	2	05.03.2018
10018	Canadian Institute of Geomatics	Canada	8	08.05.2018
10013	Brazilian Society of Cartography - Sociedade Brasileira de Cartografia	Brazil	5	22.03.2019
10118	Instituto Nacional de Pesquisas Espaciais	Brazil	4	20.04.2022
10095	Remote Sensing Center - Fac. of Science - Geology Dept., UAE University	UAE	6	27.04.2022
10088*	General Establishment of Surveying	Syria		During Congress, as reported by Regional Rep. of the Arab States

*No longer exists

Change of Ordinary Member Category

The following Ordinary Member requested a change of category since the Prague Congress:

ID	Name	Country	Cat.	Date
10041	Indian Society of Remote Sensing	India	6 to 8	12.01.2017
10078	General Authority for Survey & Geospatial Information	Saudi Arabia	4 to 6	During Congress
10051	Korean Society of Surveying, Geodesy, Photogrammetry and Cartography	Korea	2 to 6	During Congress

Associate Members

There are currently 12 Associate Members.

New Associate Members

Two Associate Members have been admitted since the Prague Congress:

ID	Name	Country	Cat.	Date
20022	IEEE/GRSS Brazil Chapter	Brazil	1	20.11.2018
20023	Azercosmos OJSCo.	Azerbaijan	1	28.07.2020

Discontinued Associate Members

The following 5 Associate Members have cancelled membership since the Prague Congress:

ID	Name	Country	Cat.	Cancellation Date
20015*	Chinese-Taipei Geoinformatics Society	Chinese-Taipei	1	20.09.2018
20018	Servicio Aerofotogramétrico – Fuerza Aérea de Chile	Chile	2	02.10.2020
20010*	Society for Contributing Development of Photogrammetry and Remote Sensing	Russian Federation	2	01.02.2021
20014*	Centre Royal de Teledetection Spatiale	Morocco	1	01.02.2021
20006*	Korean Society for Geo-Spatial Info Systems	Korea	1	15.12.2021

*No longer exists

Change of Associate Member Category

The following Associate Member requested a change of category since the Prague Congress:

ID	Name	Country	Cat.	Change Date
20005	Associazione Italiana di Telerilevamento – AIT	Italy	3 to 1	12.07.2016

Regional Members

There are currently 14 Regional Members.

New Regional Members

The following Regional Member has been admitted since the Prague Congress:

ID	Name	Country	Cat.	Membership Date
30018	Pacific GIS and Remote Sensing Council	Fiji	1	20.08.2018

Discontinued Regional Members

The following 3 Regional Members have cancelled membership since the Prague Congress:

ID	Name	Country	Cat.	Cancellation Date
30009	Secretariat of the Pacific Islands Community - Geoscience Division	Fiji	1	20.08.2018
30017	Association of Geographic Information Laboratories in Europe	Netherlands	1	04.04.2019
30005*	African Association of Cartography & Remote Sensing – OACT	Algeria	1	15.12.2021

*No longer exists

Sustaining Members

There are currently 58 Sustaining Members.

New Sustaining Members

The following 21 Sustaining Members have been admitted since the Prague Congress:

ID	Name	Country	Cat.	Membership Date
40128	Teledyne Optech Incorporated	Canada	B	04.07.2016
40129	Good Shepherd Engineering	Palestine	D	12.07.2016
40130	Brilliant Remote Sensing Labs	Egypt	E	15.05.2017
40131	Phase One Industrial	Denmark	C	03.08.2017
40132	nFrames GmbH	Germany	D	02.08.2017
40133	Leador Spatial Information Technology Corporation	China	C	01.01.2018
40134	Beijing University of Civil Engineering & Architecture, School of Geomatics and Urban Spatial Informatics	China	E	30.03.2018
40135	University of Novi Sad, Faculty of Technical Science, Geoinformatics Laboratory	Serbia	E	15.05.2018

40136	GeoCloud	Israel	D	17.09.2018
40137	Mohammed Bin Rashid Space Centre	UAE	C	12.11.2018
40138	PhotoGAUGE Inc.	USA	D	07.12.2018
40139	GGS - Geotechnik, Geoinformatik & Service GmbH	Germany	D	21.03.2019
40140	HySpex, Norsk Elektro Optikk	Norway	D	15.10.2019
40141	Beijing PIESAT Information Technology	China	C	25.10.2019
40142	Geoscience & Digital Earth Centre INSTeG, Universiti Teknologi Malaysia	Malaysia	E	14.11.2019
40143	MIIGAiK	Russian Federation	E	15.02.2020
40144	DGLinks Limited	Nigeria	D	11.12.2019
40145	Survey World	Botswana	D	05.08.2020
40146	Geomakani	Egypt	D	08.09.2020
40147	Bayanat for Mapping and Surveying Services LLC	Dubai	B	10.09.2020
40148	Global Mapping	Peru	D	28.09.2020
40122	Airbus	France	B	during Congress

Discontinued Sustaining Members

The following 18 Sustaining Members have cancelled membership since the Prague Congress (and one member prior to that Congress) or have been expelled by Council for lack of membership payment:

ID	Name	Country	Cat.	Cancellation Date
40090	Infoterra GmbH	Germany	C	17.04.2013
40067	Yildiz Technical University	Turkey	E	29.09.2017
40114	Vietnam Association of Geodesy, Cartography and Remote Sensing	Vietnam	E	29.09.2017
40062	Hansa Luftbild	Germany	D	31.12.2017
40128	Teledyne Optech Incorporated	Canada	B	31.12.2017
40078	Earth Data Analysis Center	USA	E	26.03.2018
40126	Foxel SA	Switzerland	D	22.10.2018
40082	Newcastle University, School of Engineering	UK	E	05.11.2018
40107	Lead'Air Inc.	Netherlands	D	27.11.2018
40068	University Teknologi Malaysia	Malaysia	E	21.01.2019
40121	University of Haifa, Center for Spatial Information Systems Research	Israel	E	14.02.2019
40125	VisionMap	Israel	B	18.04.2019
40001	Adam Technology	Australia	D	20.01.2020
40021	Instituto Nacional de Pesquisas Espaciais	Brazil	C	14.04.2020
40089	Geometral	Portugal	C	30.04.2021
40132	nFrames GmbH	Germany	D	15.02.2021
40100	Ramani Geosystems	Kenya	D	28.02.2022
40111	Airborne Hydrography AB	Sweden	D	28.02.2022
40117	Extensis (was LizardTech)	USA	D	12.04.2022

Change of Sustaining Member Category

The following Sustaining Member requested a change of category since the Prague Congress:

ID	Name	Country	Cat.	Change Date
40022	Trimble	USA	D to B	01.01.2018

1.2 Member Correspondence to Council

1.3 Based on the request of various OdMs, an intense discussion was held regarding the ISPRS membership of those members with connections to the ongoing Russian invasion of the Ukraine.

After a number of statements, Swiss representative, Manos Baltsavias proposed to vote on whether to continue the discussion. Orhan Altan (Turkey) seconded the motion.

The GA voted against continuing the discussion with 98 no and 13 yes.

Orhan Altan then proposed that the ISPRS General Assembly endorse the statement published by ISPRS Council on the ISPRS website on 3 March 2022 in regard to the Russian invasion of the Ukraine. The proposal was endorsed per acclamation; the item was then closed.

Report on The ISPRS Foundation (TIF), by Stewart Walker

In his report, Stewart Walker particularly thanked IRD France for funding registration waivers to attend the Congress.

Report on Website, by Markus Englich

Student Consortium, by Sheryl Rose Reyes

Report on ISPRS Journals

25.1 Report on IJPRS, by Clément Mallet

25.2 Report on IJ-GI, Wolfgang Kainz

25.3 Report on ISPRS Open JPRS, George Vosselman

The GA closed at 18:00.

(All written reports were sent to members prior to GA.)

GA III: Friday, June 10 2022, 9.00- 18:00

Greetings from Japan

Shunji Murai greeted the GA via remote connection and expressed his best wishes to the community on behalf of the Asian Association of Remote Sensing.

Reports from ISPRS Committees (all written reports were sent to members prior to GA)

1.4 ISAC, by Ian Dowman

1.5 IPAC Report, by Gunter Schreier

1.6 1.3 I2AC Report, by Hartmut Rosengarten

It was noted that collaboration between ISPRS and industry needs to be strengthened.

1.4 ICORSE, by Mark Doherty on behalf of Mary Ann Kutny

1.5 CIPA, by Stratos Stylianidis, (remote)

Election of Member to Host the ISPRS Congress in 2026

The election was held using SimplyVoting software online.

Presentation on 2023 GSW in Egypt

2023 GSW Director, Naser El-Sheimy presented the preparation status of the coming event which will take place in Cairo, Egypt, from 2-7 September 2023.

ISPRS President Christian Heipke and Naser El-Sheimy signed the contract between ISPRS and the GSW organisers.

Announcement of the 2026 Congress Host

Canada was elected to host the 2026 Congress in Toronto.

Canada	96 votes	66,2%

China	16 votes	10,8%
Korea	34 votes	23%

Ratification of the 2026 Congress Director

Derek Lichti was ratified as Congress Director.

Presentation of the 2026 Congress Director

Derek Lichti presented his vision for the XXV ISPRS Congress in 2026.

Evaluation of TC Restructuring

ISAC Chair, Ian Dowman reported on the evaluation from ISAC of the restructuring of the Technical Commissions made in 2016, from 8 to 5 commissions.

The complete evaluation was submitted to members prior to the GA.

Evaluation of Scientific and Capacity Building Initiative

ISAC Chair, Ian Dowman reported on the evaluation from ISAC on the Scientific, and the Education and Capacity Building Initiatives.

The complete evaluation was submitted to members prior to the GA.

Presentation of Resolutions

The resolutions were presented and discussed.

Approval of Resolutions for 2022-2026

The resolutions were approved by acclamation.

2022 Congress Director's Report

Congress Director, Nicolas Paparoditis reported on the three XXIV Congress events with statistics, innovations and some recommendations for the future.

Date of the next General Assembly

The dates of the next GA will be between 4-11 July 2026.

Any other Business

George Vosselman requested that the GA be shortened in future.

Close of General Assembly

The assembly closed at 17:35.

Report of ISPRS President Christian Heipke to the General Assembly for the Term 2016-2022

Distinguished Delegates, Ladies and Gentlemen,

It is my great pleasure to present to you my report on the activities of the ISPRS. This report covers the activities of ISPRS Council, and in particular my own activities, between the XXIII Congress in Prague in 2016 and the physical edition of the XXIV Congress in Nice in 2022. During this period, efforts were undertaken by all ISPRS officers to strengthen the scientific leadership of ISPRS, to develop new and relevant services for our members, and to more closely cooperate with our sister societies in order to serve the society at large with not only geospatial *Information from Images*, but also from other sources, and to make the world a better place. As the pandemic struck in early 2020, an additional task was to keep the community together and to provide help to those ISPRS members who needed it.

ISPRS, www.isprs.org, is an international non-governmental organization promoting international cooperation between worldwide organizations with interests in the photogrammetry, remote sensing and spatial information sciences. As the oldest international umbrella organization in its field, it is summarized as "information from imagery".

ISPRS achieves its aims by:

- Advancing knowledge in the areas of interest of ISPRS by encouraging and facilitating research and development, scientific networking and inter-disciplinary activities;
- Facilitating education and training with particular emphasis in less developed countries;
- Promoting public recognition of the contributions of the photogrammetry, remote sensing and spatial information sciences for the benefit of humankind and the sustainability of the environment.

The ISPRS scientific and technical programs are organized by five Technical Commissions. The five Technical Commissions have established about 60 Working Groups which are responsible for particular topics within the Commissions' areas of interest.

The ISPRS Student Consortium is an independent body associated to ISPRS and forms the next generation of leaders in the fields related to ISPRS. TIF, the ISPRS Foundation is funded through donations, and supports in particular young scientists who can otherwise not attend ISPRS events.

After the commission restructuring process between 2012 and 2016, the inter-Congress period between 2016 and 2022 was the first to feature five Commissions, entitled *Sensor Systems*, *Photogrammetry*, *Remote Sensing*, *Spatial Information Science* and *Education and Outreach*, respectively. At the same time, next to the positions of Commission Presidents, Vice-presidents had been introduced in 2016 for the first time. Four of the five Commissions have filled these two positions with candidates from Ordinary Members coming from different continents, which significantly increased the mutual understanding and the level of cooperation.

I would like to note here that leading the Society was significantly facilitated by a generous grant from the German Science Foundation, DFG (Deutsche Forschungsgemeinschaft), and was excellently supported by Annette Radtke. Both, the DFG support and Annette's invaluable work are gratefully acknowledged.

Scientific Leadership – Events and Publications

The most visible ISPRS activities are scientific meetings and scientific publications. All five Technical Commissions held very successful **Symposia** in 2018, other major events were the **ISPRS Geospatial Weeks** in Wuhan, China, in September 2017, under the leadership of Li Deren, and in Enschede, The Netherlands, in June 2019, organised by George Vosselman and his team. In addition, a large number of **workshops** and smaller events were organised, mainly by the ISPRS working groups, and sometimes in conjunction with non-ISPRS groups. After the start of the pandemic, many of these meetings were organised as virtual events, while others were cancelled.

As a side effect of some of the working group activities, an increasing amount of **benchmark data** can now be accessed through the ISPRS web site free of charge. A prime example is the ISPRS Semantic Labelling Contest, with hundreds of participants, which was very well received not only within our community, but also in our neighbouring disciplines, in particular in computer vision.

Publications

The main scientific outlets of ISPRS are the journals and the proceedings. The **ISPRS Journal of Photogrammetry and Remote Sensing** saw an enormous growth in the number of published papers as a well as in the impact factor, which went up to 8.979 in 2020, ranking first in physical geography, first in photogrammetry and second in remote sensing. The Editors-in Chief, Derek Lichti and Qihao Weng significantly contributed to this success. The same is true for Clément Mallet, who succeeded Derek Lichti in 2021.

The new **ISPRS Open Journal of Photogrammetry and Remote Sensing** started in 2021 with George Vosselman as Editor-in-Chief, and is considered the sister journal of the ISPRS JP&RS. The journal has made first inroads into the field and is beginning to establish itself as a strong scientific voice in the open access area.

Under the leadership of Editor-in-Chief Wolfgang Kainz, the **ISPRS International Journal of Geo-Information,** another open access journal, has seen a similar growth in published papers and impact factor, standing at 2,899 in 2020. Two major changes were introduced during the last few years: ESRI, together with the publisher MDPI established the Jack Dangermond Award for the best paper published in the journal in the inter-Congress period. The first awardees, announced in 2020, are Florent Poux and Roland Billen, University of Liège, for their paper *Voxel-based 3D Point Cloud Semantic Segmentation: Unsupervised Geometric and Relationship Featuring vs Deep Learning Methods*. The second new development is the addition of a Board of Associate Editors, established in 2021, to further increase the quality of the review process and of the publications.

With the aim to publish special issues for the 2020 Congress, the two journals, under the leadership of Charles Toth and Songnian Li, prepared an issue entitled Data Analytics: Meeting the challenges of Big Geo Data (ISPRS Journal of Photogrammetry and Remote Sensing, https://www.sciencedirect.com/journal/isprs-journal-of-photogrammetry-and-remote-sensing/special-issue/10S3F3M57S9) and State-of-the-art in Spatial Information Systems (ISPRS International Journal of Geo-Information, https://www.mdpi.com/journal/ijgi/special_issues/ISPRS_2020_Nice). The papers published in these two special issues clearly demonstrate the high level of research done in the ISPRS community and at the same time showcase the breadth of the ISPRS activities.

Both **proceedings series**, the abstract-reviewed Archives and double-blind full-paper reviewed Annals are also open access and are indexed in the Web of Science, SCOPUS, DOAJ and EI. In order to guarantee the originality of the papers, as of 2020, each submission undergoes an automatic plagiarism check prior to publication. Furthermore, efforts to increase the availability of older proceedings have been intensified in conjunction with TIB-LUH (Technische Informationsbibliothek of Leibniz University Hannover) with the result that nearly all Archive volumes are now online at the ISPRS web site.

Finally, a new **preprint policy** was introduced, stipulating that publications in public repositories such as arXiv would not be considered as published work for the review process. Therefore, an arXiv paper does not preclude a publication either as a conference or a journal paper.

Internal society matters and new member services

After the restructuring of the Commissions between 2012 and 2016, which, according to an evaluation of ISAC, the International Science Advisory Committee of ISPRS, was found to be successful, Council looked at its own structure during the last inter-Congress period. **Council restructuring** had the aims to (a) facilitate the organisation of a large ISPRS event in a country without a strong legacy in ISPRS fields and (b) increase flexibility when filling Council positions. Both aims were directed to increase the attractivity of ISPRS and its activities. Restructuring was achieved by amending the Statutes & Bylaws, which now offer (a) the possibility of a Council member to be responsible, together with the Congress or Geospatial Week Director, for a strong scientific programme of the respective meeting, and (b) more diversity when going from one Council position to the next, incl. a maximum of three inter-Congress periods to stay on Council for any individual in order to allow for more people to become involved in ISPRS affairs at Council level.

More diversity was also the aim of the introduction of a new **Regional Coordinator for the Arab States** in early 2017. Muhamad Alrajhi offered his assistance, without the need to be funded, and Council subsequently created this new position. Activities have increased in the region since then, incl. two successful meetings in Saudi Arabia, a number of new members from the area, and a successful bid to organise the Geospatial Week 2023 in Egypt.

Along the same lines, the **ISPRS brochure** was published in **six different languages** (Arabic, Chinese, English, Portuguese, Russian and Spanish) to promote the society and the Nice Congress.

New member services created during 2016 – 2022 include the new Key Note Series, offering support for ISPRS members who wish to invite a senior speaker to their meeting. Local meeting organisers can also profit from support with respect to the management system ConfTool, used throughout the society; the system is now offered free of charge for ISPRS events. In addition, partial funding of APC (Author Processing Charges) in ISPRS open access journals is available for authors of accepted papers who could otherwise not have their research results published.

Finally, the **Scientific Initiative** and the **Educational & Capacity Building Initiative** have regularly been launched in alternate years to encourage cooperation between different groups within ISPRS. Results from the E&CB projects have produced ample educational material which has been made available at the ISPRS web site. Another ISAC evaluation has shown the great potential of these initiatives, and has pointed to a few issues deserving a closer look in order to further improve the schemes.

International cooperation

During the inter-Congress period, the focus of international cooperation was (a) on Latin America, with a number of initiatives, many together with the IEEE Geoscience and Remote Sensing Society (GRSS), (b) a continuation of the strong link to the Asian Association of Remote Sensing (AARS), and (c) increased contact to the IEEE Computer Vision Society (CVS).

In Latin America, a series of yearly summer schools was organised by the IEEE GRSS Young Professionals and the ISPRS Student Consortium. Unfortunately, the common LAGIRS 2020 Conference in Chile had to be cancelled due to the pandemic (see below). Summer schools, together with high level presentations and While Elephant sessions were the main ingredients of the cooperation with AARS. CVS and ISPRS cooperated e.g. in the Earth Vision Workshop, held in conjunction with the IEEE Conference on Computer Vision and Pattern Recognition (CVPR) in the US.

On the more political level, ISPRS participated in the UN GGIM: Geospatial Societies, which had been founded to provide a common GI voice to the United Nations. In this regard, also IPAC, the International Policy Advisory Committee of ISPRS, played a major role; IPAC organised various high-level round table discussions, e.g. during the Com. V Symposium and during UNISPACE 50, both in 2018.

Finally, a number of Memorandums of Understanding were signed to improve partnership between the different societies, e.g. with OSGeo and SELPER (2016), IAA (2017), IEEE GRSS (2018), and OGC (2020).

Consequences of the corona pandemic

And then, disaster struck …

As is well known, the Congress had to be postponed twice, once on March 26, 2020 and, as the pandemic kept interrupting normal business and travel around the globe, a second time on February 10, 2021. Instead of meeting in-person, ISPRS, like many other organisations, organised two digital editions of the XXIV Congress. These decisions had many consequences, also on the general meeting schedule: The ISPRS Geospatial Week 2021 was first moved to 2022, but then had to be cancelled altogether. The next GSW is now scheduled to be held in Egypt in autumn 2023.

In the view of Council, it is essential that ISPRS members and delegates can meet and exchange ideas in person. Therefore, the digital events did not include any General Assembly: A digital General Assembly in 2020 or 2021 and a next Congress in 2024 would have meant that there would be no large scale physical meeting for a total of 8 years. Council judged the involved risk, namely that by then the ISPRS community might have significantly lost influence or even substantially disintegrated, as too high. Council also judged it to be very difficult to staff a new set of Commissions, working groups etc., when running a digital-only meeting. As an alternative, the general 4-year period of activities of ISPRS was shifted by two years, and all ISPRS officers were asked to continue serving the society; this request was accepted by the large majority of officers.
Both digital editions came with a complete peer review and publication process, because authors had already submitted papers at the time the meeting was postponed. The 2020 edition saw about 300 scientific presentations selected from nearly 1800 submissions (however the latter number relates to the time before the pandemic; many submissions were withdrawn as a consequence of travel restrictions), and about 1000 papers were published. In 2021, we saw a more diverse programme with key notes, about 300 oral presentations (selected from nearly 700 submissions and over 500 published papers), tutorials, two fora on *Geo and Pandemic* and the *Role of the Youth in Sustainable Development*, a new technology track, award sessions, and also a digital exhibition, which unfortunately did not work as well as hoped. These two events were a new experience in many aspects and offered a leap forward in terms of digitisation of scientific meetings for ISPRS. A benefit of the new technology is the pre-recorded videos, which had been submitted together with the camera-ready manuscripts. ISPRS now provides these videos as an open access addition to the written papers in the new digital media library.

The pandemic also had a significant financial impact for ISPRS. First of all, participation in the digital events was nearly free of charge to keep the community together. This meant that ISPRS had to substantially support the local host, as the professional organisation of a digital meeting and live streaming comes, of course, with a cost. The possibility to cancel the Congress altogether was not a viable alternative, as contracts for the Congress Centre etc. had been signed beforehand and at least down payments would have been lost. In addition, Council felt strongly that SFPT deserves the chance to organise the Congress, and finally, an alternative location was not available either.

In recognition of the fact that not only ISPRS itself, but also its members are lacking income during the pandemic due to cancelled meetings and a reduction of overall activity, Council decided to waive all membership fees for 2021. This was possible due to a comfortable financial cushion. For ISPRS, the financial guideline, which stipulates that the society should be able to survive one inter-Congress period without income, has thus proven to be very wise. The 2016 – 2022 Council is very much aware of the fact that those reserves had been built up by previous society leaders, and not by its own efforts. On behalf of the 2016 – 2022 Council, may I say that we are very grateful to those

who have made it possible for ISPRS to survive this crisis without too many financial concerns.

In closing this issue, I would like to point out that, as every crisis also includes opportunities for new developments, ISPRS tried to take advantage of the digital technology by making use of it, and thus much of the travel and travel costs disappeared. Living in different parts of the globe did not preclude people from coming together anymore (although, only via video chats), and thus participation numbers were significant. A prime example of this development was certainly the celebration of the 90th birthday of former ISPRS President and Honorary Member, Gottfried Konecny in June 2020.

Another point to be mentioned is the Digital Keynote Series, established in early 2021, with exciting presentations about every month or two. Council suggests to continue this series well into the future, as it has attracted large crowds and can be judged a splendid success. Finally, let me point to the fact that these dashboards we have all seen in the evening news over the last two years, showing the evolution of the corona virus are, of course, based on mapping and geospatial information. Thus, we can conclude that GI has seen a significant increase in popularity and recognition by the public – the technology we offer does contribute as one (of many) to fight and eventually defeat the pandemic.

Conclusions and future challenges

In the past six years, the path of scientific excellence in photogrammetry, remote sensing and spatial information science has been continued successfully, as witnessed by the growth in size and importance of the ISPRS journals and the large number of participants in the Symposia and the Geospatial Weeks. During the pandemic, ISPRS started to offer digital services, and in particular two successful digital Congress editions. In order to continue their activities in the same way, ISPRS has to be aware of and find answers to a number of future challenges. The major ones are:

- to define a sustainable relationship with its neighbouring disciplines and communities, some of which, like computer vision, are much larger;
- to give industry and the commercial world a stronger vote, while not compromising the search for excellent science;
- to increase the influence in the socio-political arena by collaborating more closely with national and international space organisations and mapping organisations, incl. UN OOSA and UN GGIM;
- to discuss and implement more professional approaches to organising large events, incl. commercial exhibitions;
- to define its new role in post-pandemic times, incl. a good balance between in-person and digital events, and a viable business model for virtual events;
- to increase and improve its activities towards global education and outreach, in particular on the African continent.

It seems that in its new structure and with the dedication of its community, IPSRS will master those challenges and will remain viable and relevant in the years to come.

Acknowledgements

I would like to acknowledge the great support from many people during my term as ISPRS President.

First of all, my thanks go to our colleagues from the Société Française de Photogrammétrie et de Télédétection (SFPT). In what could be described as a play in three acts - a great first act of Congress preparation, followed by a second act considered by many as a nightmare, yet with two pinnacles being the digital events in 2020 and 2021, to a tremendous coda, when the physical Congress finally became reality, they never gave up, always kept calm, brought in creative ideas, supported and implemented Council ideas and decisions, and always believed in a happy end. Such development can only happen when there is strong leadership and an enthusiastic team. Thank you very much to Congress Director Nicolas Paparoditis, SFPT President Aurélie Sand, Institutional Chair Laurent Polidori, Programme Chairs Clément Mallet, Florent Lafarge, Ewelina Rupnik and Loïc Landrieu, Industry Chair Pierre Grussenmeyer, Media Chair Tania Landes, Financial Chair Eric Labergerie, Inez Burger from ISPRS 2020 and Key4Events, and all those enthusiastic people I have not mentioned in person!

I would like to thank everybody within ISPRS who has interacted with me in one way or another, particularly all Council Members, all TCPs, Vice-TCPs and WG officers, with whom it was a pleasure to cooperate in the spirit of real teamwork. I would also like to mention Markus Englich, the ISPRS web master, who, in a very reliable and efficient manner, has supported the work of ISPRS for more than a decade now.

A group I would like to single out is the Student Consortium. In a time, when nobody of the elder generation really knew what to do and how to operate those new fancy devices, which most of us had only seen from the distance (namely, when youngsters played online computer games), it was the Student

Consortium, under the leadership of Sheryl Rose Reyes, who taught us how to operate the new technology and thus showed us a way to keep in contact when meeting in person was not possible. The Student Consortium is vital for the future of ISPRS, anyway, but the help offered to the Society in the last more than two years was tremendous – thank you very much!

I would like to acknowledge the advice of previous ISPRS presidents and Council members, in particular Gottfried Konecny, John Trinder, Ian Dowman and Orhan Altan, who always took time to think about solutions when a question arose - which it did many times.

Also, I would like to mention my colleagues from IPI. Besides Annette Radtke, who runs the ISPRS Headquarters in an outstanding manner and keeps on top of all daily matters in a way second to none, I would like to thank our IT gurus Uwe Breitkopf, and Amadeus Langer, who solved technical problems in a perfect way whenever necessary.

The financial support for the salary of Annette Radtke, for my travel and for consumables came from DFG - The German Science Foundation. Without their funding of more than 355,000€ over the six years, I would not have been able to carry out the job of President without the need of funds from ISPRS. This very generous support is gratefully acknowledged.

I have also had excellent support from DGPF - the German Society of Photogrammetry, Remote Sensing and Geoinformation. DGPF supported my activities with a considerable sum of 3,500€.

There is a lot of effort involved in running a society like ISPRS, but the rewards from working with such a dedicated and stimulating group of people makes it all worthwhile, indeed. I would like to thank all members of the Society and the supporting organisations who have assisted me so willingly during the past six years. Without their help I could not have carried out the job.

Annexes

- Annex 1: Organization of ISPRS Business Meetings
- Annex 2: Reports published in ISPRS e-Bulletin and other media
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Annex 1: Organization of ISPRS Business Meetings

With the strong support from the Secretary General and ISPRS Headquarters, 14 in-person council meetings/joint meetings (partly in conjunction with scientific conferences) and 31 video conferences were organized. During the pandemic, video conferences were obviously the only feasible way to meet, and a large series of shorter meetings was scheduled. Minutes of all in-person meetings and some video conferences have been published on the ISPRS website.

No.	Dates	Council Meeting	Joint Meeting	Venue (combined conference, if any)
2016				
1	July 20, 2016	√	√	Prague, Czech Republic (ISPRS XXIII Congress)
2	Oct. 16-20, 2016	√	√	Colombo, Sri Lanka
3	Dec. 7, 2016	√		Video conference
2017				
4	March 17-19, 2017	√		Nice, France
5	Aug. 9, 2017	√		Video conference
6	Sept. 19-22, 2017	√	√	Wuhan, China (ISPES Geospatial Week)
7	Dec. 14, 2017	√		Video conference
2018				
8	March 18-21, 2018	√		Istanbul, Turkey
9	May 7-9, 2018	√		Beijing, China (Com. III Symposium)
10	June 28, 2018	√		Video conference
11	Sept. 13, 2018	√		Video conference
12	Oct. 4, 2018	√		Delft, The Netherlands (Com. IV Symposium)
13	Nov. 21-23, 2018	√	√	Dehradun, India (Com. V Symposium)
2019				
14	March 27-29, 2019	√		Toronto, Canada
15	June 10-14, 2019	√	√	Enschede, The Netherlands (ISPRS Geospatial Week)
16	Nov. 15-26, 2019	√		Guilin, China (International Conference on Geomatics in the Big Data Era)
2020				
17	Jan. 6, 2020	√		Video conference
18	Feb. 10,2020	√		Video conference
19	March 23-27, 2020	√	√	Video conference
20	April 3, 2020	√		Video conference
21	May 11, 2020	√		Video conference
22	May 27, 2020	√	√	Video conference
23	June 19, 2020	√		Video conference
24	June 25, 2020	√	√	Video conference
26	July 1, 2020	√		Video conference
26	July 9, 2020	√	√	Video conference
27	Sept. 11, 2020	√	√	Video conference
28	Nov. 6, 2020	√		Video conference
29	Nov. 20, 2020	√	√	Video conference
30	Dec. 11	√		Video conference
31	Dec. 21	√		Video conference
2021				
32	Jan. 8, 2021	√		Video conference
33	Feb. 5, 2021	√		Video conference
34	Feb. 19, 2021	√	√	Video conference
35	March 26, 2021	√		Video conference
36	April 9, 2021	√	√	Video conference
37	April 29, 2021	√		Video conference

38	May 20, 2021	√	√	Video conference
39	June 18, 2021	√	√	Video conference
40	Sept. 2, 2021	√		Video conference
41	Oct. 8, 2021	√	√	Video conference
42	Nov. 5, 2021	√		Video conference
43	Nov. 27-28, 2021	√		Paris, France (60 anniversary SFPT)
2022				
44	Jan. 21, 2022	√	√	Video conference
45	Feb. 21-22, 2022	√		Budapest, Hungary
46	April, 11-12, 2022	√		Prague, Czech Republic
47	April / May 2022	√		Weekly short video conferences
48	June, 3-5, 2022	√		Nice, France (pre-Congress meeting)

Annex 2: Reports published in ISPRS e-Bulletin and other media

Magazines	Issue/Date	Title
ISPRS e-Bulletin	Issue 4, 2016	ISPRS – the next 4 years
	Issue 2, 2020	Editorial
	Issue 1, 2021	Another pandemic year: ISPRS 2021 Congress edition will be digital – but a real Congress (together with Nicolas Paparoditis)
	Issue 3, 2021	2021 Digital Edition of the XXIV ISPRS Congress completed successfully (together with Nicolas Paparoditis)
	Issue 5, 2021	ISPRS updates strategic vision and mission plan for its publications
GIM Page	No. 12, 2016	ISPRS Hannover Workshop: A mix of geometry and semantics from images
	No. 8, 2017	The prepublication of papers in public archives
	No. 1/2, 2019	Reviewing – Nuisance or Necessity?
	No. 7/8	LAGIRS 2020 – Another opportunity for cooperation between ISPRS and GRSS (together with P. Gamba)
	No. 3/4, 2020	New ISPRS services for members and the ISPRS community at large
Annual Report	2016-2017 Biennial Report	Message from the President
	2018-2019 Biennial Report	Message from the President

Annex 3: Representing ISPRS at other Conferences

During the past six years, I have represented ISPRS at numerous conferences and meetings organized by ISPRS or other international organizations. This participation gave me a very good opportunity to learn from our members and to meet representatives from other countries/organizations.

Name of meeting	Date	Remarks
2016		
Visit of Spanish OdM SECFT - Spanish Society of Cartography, Photo-grammetry & Remote Sensing, Madrid	2016_09_29	Discussion
ACRS Opening, Colombo + visit RgM AARS	2016_10_17	Welcome message
ISPRS presentation + session	2016_10_18	Presentation
Visit of Dep. of Survey, Sri Lanka (OdM)	2016_10_19	Discussion
60 years Geomatics at Wuhan University	2016_10_22	Welcome message
AARSE Ann. Meeting, Kampala, presentation + visit of RgM	2016_10_24	Presentation
SELPER International Symposium, Opening, Puerto Iguazú + visit of RgM	2016_11_07	Welcome message
ISPRS presentation	2016_11_08	Presentation
INPE, São José dos Campos, Visit of StM	2016_11_11	Presentation
Hong Kong Institute of Surveyors (OdM) Annual Dinner	2016_11_24	Written message
Celebration, ISPRS Fellow Ivan Antipov 90 years, Novosibirsk	2016_12_02	Written + video message
2017		

Visit of NRSPS - Nepal Remote Sensing and Photogrammetric Society (OdM), Kathmandu	2017_01_27	Discussion
Oldenburger 3D-Tage, Opening	2017_02_01	Welcome message
Visit of Egyptioan OdM ECSM - Egyptian Commission for Surveying and Mapping, Cairo	2017_05_06	Discussion
Symp. Bras. Sens. Rem., Opening + visit of OdM, StM INPE, Santos	2017_05_28	Welcome message
IAA Small Satellite Symposium + visit of Mongolian OdM MSPRS - Mongolian Society of Photogrammetry and Remote Sensing, Ulanbaatar	2017_08_22	Presentation, discussion
ISPRS Workshop on collaborative and dynamic land cover information services supporting UN SDG goals, Jinan	2017_09_16	Welcome message
Reception by NASG China (OdM), Wuhan	2017_09_17	Discussion
ISPRS Geospatial Week 2017, Wuhan, Opening	2017_09_18	Welcome message
ACRS Opening, New Delhi	2017_10_23	Key Not
Brazilian Congress on Cartography, SBC, Rio de Janeiro	2017_11_06	Welcome message (video)
2018		
Visit to Dubai Municipality (StM)	2018_01_20	Discussion
DGPF (OdM) Annual Meeting	2018_03_07	ISPRS report
GI4DM, Istanbul	2018_03_18	Welcome message
LARS 2018 Opening, Santiago de Chile + visit SAF (AsM)	2018_04_03/05	Welcome message, discussion
SBC, Rio de Janeiro, Visit of OdM	2018_04_09	Discussion
ISPRS Com. II Symposium, Riva el Garda	2018_06_04	Welcome message
UNISPACE +50 Panel discussion, Vienna	2018_06_19	Panel member
RSPSoc, Visit of OdM during UK National Earth Observation Conference, Birmingham	2018_09_04	Opening Key Note, Discussion
SPIE Remote Sensing Europe, Berlin	2018_09_10	Discussion
Polish Society Annual Meeting, Visit of OdM, Koszalin	2018_09_19	Opening Key Note, discussion
TeanGEO 2018, Visit of RgM CRTEAN, Tunis	2018_09_28	Plenary Key Note, discussion
ISPRS Com. IV Symposium, Delft	2018_10_01	Welcome message
ACRS 2018, Opening Ceremony and visit to RgM AARS, Kuala Lumpur	2018_10_15	Welcome message, presentation
AARSE, Visit to RgM during AARSE Conference 2018, Alexandria	2018_10_25	Plenary Key Note, discussion
DGK (German Geodetic Commission), Munich	2018_11_08	Presentation
EuroSDR, Visit of RgM during Board Meeting, Berlin	2018_11_16	Presentation
Visit to StM Mohammed Bin Rashid Space Center, Dubai	2018_11_18	Discussion about GSW 2021
ISPRS Com. V Symposium, Dehradun	2018_11_20	Welcome message
2019		
DGPF/OVG/Swiss Society, 3 Ländertagung, Vienna	2019_02_20	Greetings
Visit to OdM CRSS, Toronto	2019_03_27	Presentation
Visit to OdM SFPT, Paris	2019_04_30	Discussion
Visit to OdM NCC, Tehran	2019_05_05	Discussion
Meeting FIG, IAG, ICA, ISPRS, Tag der Geodäsie – Hannover	2019_05_24	Presentation
ISPRS GSW Opening, Enschede	2019_06_10	Welcome message
International Workshop on Polarized Remote Sensing, Peking University, Beijing	2019_06_17	Presentation
GI4DM, Prague	2019_09_04	Welcome message
ISRSE, 38th Symposium, Baltimore	2019_10_08	Welcome message
ACRS 2019, Opening Ceremony and visit to OdM Korean Society, Daejeon	2019_10_14/15	40th Anniversary greetings
Hong Kong Institute of Surveyors (OdM) Annual Dinner	2019_11_12	Welcome message
International Conference on Geomatics in the Big Data Era, Opening Ceremony, Guilin	2019_11_15	Welcome message
DGK Annual Meeting, Munich	2019_11_18	Presentation

2020		
DGPF Meeting, Stuttgart, Opening	2020_03_05	Welcome message
IEEE GRSS AdCom Meeting (online)	2020_07_17	Presentation
ISPRS Congress Nice, 2020 edition (online)	2020_08_31	Welcome message (video)
ACRS 2020, Opening, Deqing (online)	2020_11_09	Welcome message (video)
ACRS 2020, Deqing, Panel session (online)	2020_11_10	Video
DGK Annual Meeting, Munich (online)	2020_11_26	Presentation
2021		
SIFIT, 70 years anniversary (online)	2021_01_04	Congratulation message
Intermediate Pacific Islands GIS & RS User Intermediate Conference, Suva (online)	2021_02_23	Presentation
International Geomatics Conference, Saudi Geographic Society, Riyadh (online)	2021_03_29	Opening Key Note
Symp. Bras. Sens. Rem., Opening ISPRS-Webinar on Domain Adaptation (online)	2021_04_13	Welcome message (Video)
ISPRS Congress Nice, 2021 edition (online), Opening Remarks	2021_07_05	Presentation
ISPRS Congress Nice, 2021 edition (online), Forum on Geo for Pandemics	2021_07_09	Welcome message
IGARSS 2021 Brussels (online), Special Session on GRSS-ISPRS cooperation	2021_07_12	Presentation
Brazilian GRSS-ISPRS Summer school (online), Greetings	2021_08_17	Welcome message (Video)
CIPA Symposium, Beijing (online)	2021_08_28	Opening Key Note
URSI General Assembly and Scientific Symposium, Opening Session, Rome (online)	2021_08_29	Invited participation
ZGC Forum, Beijing, Opening session (online)	2021_09_24	Invited participation
ISPRS Keynote Speaker Series, All you ever wanted to know about the ISPRS Congress n Nice 2022 (online)	2021_10_05	Presentation
XIX International SELPER Symposium, Opening, Santiago de Chile (online)	2021_11_16	Presentation
ACRS 2021, Opening + ISPRS presentation, Can Tho (online)	2021_11_22	Welcome message (video) + presentation
Pacific Islands GIS & Remote Sensing User Conference, Vanuatu (online)	2021_11_23	Presentation
DGK Annual Meeting (online)	2021_11_25	Presentation
SFPT, 60y anniversary, Paris	2021_11_29	Congratulation message + presentation

Annex 4: Congress postponement 2020

International Society for Photogrammetry and Remote Sensing
Internationale Gesellschaft für Photogrammetrie und Fernerkundung
Société Internationale de Photogrammétrie et de Télédétection

ISPRS President, **Christian Heipke**
Leibniz Universität Hannover, Institut for Photogrammetry und GeoInformation
Nienburger Straße 1, 30167 Hannover, GERMANY

President
Christian Heipke
Leibniz Universität Hannover
Institute of Photogrammetry
and GeoInformation
Nienburger Str. 1
30167 Hannover
GERMANY
Phone: +49 511 762 2482
Fax: +49 511 762 2483
Email: isprs-pr@isprs.org
www.isprs.org
26 March 2020

Reference: Postponement of ISPRS XXIV Congress

TO WHOM IT MAY CONCERN

ISPRS officially announces that due to the corona virus crisis, the XXIV ISPRS Congress to be held in Nice, France, has been postponed to 2021. Council is aware that this decision has many consequences, but the very real health risks and the capacity to travel for the Congress participants did not leave us with any other alternative.

As the reviewing process of scientific submissions is nearly completed, the preparation of the ISPRS Archives and Annals scheduled for this summer is on track, and the proceedings will be published as planned. Results of abstract review are already out, those for the double-blind peer review will follow at the end of the month, and the deadline for submission of camera-ready manuscripts stays May 4, 2020.

All registrations for this year's Congress will be carried forward to next year. This means that anybody who has registered and paid the registration fee until May 4, 2020 can use that fee to participate in the Congress in July 2021, and if desired, submit a new paper for the July 2021 Congress.

Sponsors and exhibitors are also encouraged to maintain their involvement in the Nice Congress even though it is postponed by one year. The involvement of companies in the activities of ISPRS is indeed essential.

The General Assembly and all elections have also been postponed until next year. We ask all ISPRS officers to please continue their service for the society in their current position for an additional 12 months.

ISPRS Council is diligently working on developing the details of this transition, including refund policy, publication requirements, etc., and will make corresponding announcements in subsequent communications in the near future.

All the best and hoping to see you in Nice in July 2021,

Christian Heipke, ISPRS President

Annex 5: Congress postponement 2021

International Society for Photogrammetry and Remote Sensing
Internationale Gesellschaft für Photogrammetrie und Fernerkundung
Société Internationale de Photogrammétrie et de Télédétection

ISPRS President, **Christian Heipke**
Leibniz Universität Hannover, Institut for Photogrammetry und GeoInformation
Nienburger Straße 1, 30167 Hannover, GERMANY

President
Christian Heipke
Leibniz Universität Hannover
Institute of Photogrammetry
and GeoInformation
Nienburger Str. 1
30167 Hannover
GERMANY
Phone: +49 511 762 2482
Fax: +49 511 762 2483
Email: isprs-pr@isprs.org
www.isprs.org
10 February 2021

ISPRS Congress edition 2021 digital only, physical meeting shifted to 2022

Considering the current pandemic situation worldwide, the restrictions to travel and cross borders in the short term, and then the health risks for the members of our community, the ISPRS Council, after a long deliberation, has made the difficult decision to run the 2021 edition of the XXIV Congress digitally only (online) on the planned dates in July, 2021 and a primarily in-person meeting in June 2022.

This 2021 edition of the XXIV Congress will have all the features of a classical ISPRS Congress except for the General Assembly which will be postponed to the 2022 edition of the XXIV Congress, to be held from June 6-10, 2022. This 2021 edition will feature the classical Congress program, including scientific tracks and sessions, plenary sessions with exciting keynote speakers, a forum track to discuss hot topics for our community (the role of geo in pandemics, earth resource and climate change monitoring, smart cities and autonomous navigation, etc.). The 2021 edition will also involve a technology track for the industry to present their latest innovations, and an exhibition to meet with sponsors and exhibitors.

All papers submitted in 2021 that successfully pass the peer review process will be published in the Proceedings (Annals and Archives) of the 2021 edition of the XXIV Congress. If authors agree, the videos of the oral presentations of the papers will be made available on the ISPRS media library together with the presentations of the 2020 edition, allowing a stronger dissemination of scientific contributions in the geospatial community.

All registered participants of the XXIV Congress will have the possibility to participate, and present their scientific contributions in both events with the same registration.

Newly registered participants will have the choice to participate only in the 2021 edition or to register for an attractive bundle for the 2021 and 2022 editions.

We all deeply regret that we will not be able to meet and network physically in 2021 but we do believe that the current vaccination programs with lifted travel restrictions will allow us to meet physically again in 2022. We are also convinced that both events will be successful and serve the geospatial community at large.

We thank you for supporting ISPRS, particularly through these difficult times!

Christian Heipke, ISPRS President & Nicolas Paparoditis, ISPRS Congress Director

Annex 6: Rationale for Congress postponement 2021

International Society for Photogrammetry and Remote Sensing
Internationale Gesellschaft für Photogrammetrie und Fernerkundung
Société Internationale de Photogrammétrie et de Télédétection

ISPRS President, **Christian Heipke**
Leibniz Universität Hannover, Institut for Photogrammetry und GeoInformation
Nienburger Straße 1, 30167 Hannover, GERMANY

President
Christian Heipke
Leibniz Universität Hannover
Institute of Photogrammetry
and GeoInformation
Nienburger Str. 1
30167 Hannover
GERMANY
Phone: +49 511 762 2482
Fax: +49 511 762 2483
Email: isprs-pr@isprs.org
www.isprs.org
10 February 2021

Dear all,

in this note we want to give you some background information on the decision of Council to run the 2021 edition of the Congress digitally only, and to move the physical Congress to 2022, which implies that the whole ISPRS cycle will be shifted by two years (the next Symposia will be held in 2024 and the next Congress in 2026). We hope that this additional information will make our rationale more transparent.

The decision was based on the following arguments:

- While we do not know what will happen in 2022, it has become clear in recent weeks, that very few people, indeed, will go to Nice this summer. In addition to travel restrictions, many are not willing to travel without being vaccinated. For many potential participants, vaccination will not happen before summer or autumn this year.

- As a result, the 2021 meeting would have been mostly digital in any case. Thus, the real question was not the character of the 2021 meeting, but when (a) the next Congress and (b) the next General Assembly should be held.

- We can now hope to have a Congress in 2022, six years after the Prague Congress. Given that this year's meeting is only digital, the alternative would have been one in 2024 only. We believe that not having a Congress for a total of 8 years is rather risky, because by then the community might have substantially disintegrated. The way for ISPRS to remain relevant is to do something important and to remain visible. Bigger meetings are a means to do so.

- We believe it would be very difficult, indeed, to staff a new set of Commissions, working groups etc., when running a digital-only meeting. In addition, the new TCPs would have only had one year to prepare for a 2022 Symposia. Therefore, we believe a shift of the ISPRS meeting cycle is the better solution.

- As a face-to-face General Assembly is much easier to organise, in particular on a global scale, where time zones need to be taken into account and internet access possibilities vary widely across the globe, not to mention transparent, secure and fast voting. With the 2022 Congress in the calendar, we therefore opted to shift the General Assembly to 2022, also.

- There is also a financial side: it is true, of course, that a digital meeting does not come for free. Nevertheless, it is much less costly than a hybrid meeting. Note, that contracts have been signed to rent the Congress Centre and many other facilities, and there is legally no way to cancel those contracts from our side. How would we explain to our members that we accepted a very significant financial loss (six digits in €) without even trying to limit the deficit by organising a Congress at that very Congress Centre with a hopefully balanced budget in 2022?

- Finally, our French hosts started planning the organisation of the Congress more than 10 years ago. Despite the pandemic, they are still very motivated to organise a physical meeting and to welcome the world to their country, although they have shouldered an extreme additional amount of work by agreeing to also organise the digital meetings in 2020 and 2021. In this situation, Council feels that we cannot say "thanks for the work – tough luck with the pandemic" and then ignore the deficit, and move on to another destination. Which signal would ISPRS send to the

rest of its members and the community at large? Council believes that during these times, we all need to show solidarity with respect to each other - the Congress organisers need and deserve the support of the whole community.

To Council, these were the reasons to take the decision to have a face-to-face Congress in Nice in 2022. We also determined that this will be the last change in schedule, so should there be no improvement as far as the pandemic goes over the next 12 months, there will not be any additional change of dates. In concert with this decision, the whole meeting sequence will be shifted by two years, so we will have symposia in 2024 and the next Congress in 2026.

We hope that after reading these lines you have perhaps a little more sympathy for this decision, and we trust that you will stay committed to ISPRS and its aims.

All the best and thanks for your support of ISPRS.

Yours,

Christian Heipke, ISPRS President

Report of ISPRS Secretary General Lena Halounová to the General Assembly for the Term 2016-2022

Distinguished Delegates, Ladies and Gentlemen,

It is my great pleasure to present my report to the General Assembly as Secretary General for the term 2016 – 2022. Following my position as Congress Director from 2012 – 2016, I have continued to do my best to serve the Society and its members. The work of the Secretary General is very different compared to the scientific and practical work involved in organising one event. The Office of the Secretary General requires keeping a constant overview of the various activities of the Society, its members and officers, from many different perspectives, in order to manage the day-to-day administrative work. When necessary, the Secretary General also represents the Society through various channels. These duties are defined by the ISPRS Statutes and Bylaws.

(https://www.isprs.org/documents/statutes19.aspx) (https://www.isprs.org/documents/bylaws19.aspx).

Communication

Communication with the Society Members

Various types of communication are implemented to deal with Society business. The most frequent type relates to the approval and organisation of events, the preparation of ISPRS meetings at various levels, countless membership issues, distribution and dissemination of material and information, along with general email enquiries. Another type of communication is the dissemination of emails to you, the ISPRS members, requesting your response in order to make Society decisions in your favour.

The eBulletin is a one-way communication disseminated regularly, informing the ISPRS community of news and events. The eBulletins can be found at https://www.isprs.org/news/newsletter/default.aspx). We have published 30 eBulletins since the 2016 Congress. Table 1 shows a list of the texts written by the Secretary General in the past ISPRS term. My thanks go to Annette Radtke who significantly helps with their preparation and compiling.

ISPRS co-operates with many organisations and this activity is maintained mainly by the Secretary General. Contact between the Society and its members, and with non-ISPRS organisations is maintained to 99% via e-mails. The transition from paper to email contact, which began some 20 years ago, has not reduced the working hours. However, I believe it opened a more intensive relation among all of us. We received many emails every day and most of them require a reply or an active reaction.

Some tasks in the communication have been done via the ISPRS web site. I am very grateful and express my thanks to Markus Englich, ISPRS Web Master, for his excellent work, which is always done very quickly and very carefully. He also quietly and inconspicuously modernised the whole ISPRS web site.

Table 1. eBulletin editorials and other texts in the eBulletins published by the Secretary General

eBulletin	
2016 No. 3	XXIII ISPRS Congress – a short overview of the past Congress Director
2016 No. 4	New Structure of ISPRS and Joint Meeting during the Asian Conference of Remote Sensing in Colombo, Sri Lanka
2016 No. 5	Report from Global Partnership on Space Technology Applications for Disaster Risk Reduction (GP-STAR)
2017 No. 1	The Jack Dangermond Award for the most outstanding paper in the ISPRS International Journal of Geo-Information
2017 No. 2	Report from GRASF
2017 No. 3	37th EARSeL Symposium
2017 No. 3	Impact Factors reflect the Success of ISPRS Journals
2018 No. 2	50 years of Earth Observation - What's next?
2019 No. 3	Jack Dangermond Best Paper Awards 2017 and 2018 presented in Enschede
2019 No. 3	U.V. Helava Best Paper 2018 Award presented at the GSW2019

2019 No. 3	GSW 2019
2019 No. 4	Call for Nominations for Council Positions and Bids to Host Technical Commissions 2020-24
2019 No. 4	ISPRS awarded at the International Union of Geodesy and Geophysics Centenary
2021 No. 5	Report from Geospatial World Forum

Communication with the Public

ISPRS presents Society activities in two magazines – GIM and Geoinformatics. The Secretary General is responsible for providing texts and photographs several times per year to the magazine editors. Council Members select interesting topics and propose a responsible author – usually a Council Member or a Technical Commission President.

Table 2. ISPRS Columns published in GIM and Geoinformatics

GIM	
2017	Year of 2017 in the International Society for Photogrammetry and Remote Sensing
2018	Message from ISPRS Secretary General
2018	TC Symposia in 2018.docx
2018	International Society for Photogrammetry and Remote Sensing, and United Nations
2021	ISPRS Keynote Speaker Series – Science is the way to a better world

Geoinformatics	
2017	The Jack Dangermond Award for the most outstanding paper in the ISPRS International Journal of Geo-Information
2019	Development between XXIII and XXIV ISPRS Congresses
2020	Projects financed through ISPRS Initiatives since the XXIII ISPRS Congress

Preparation and Reporting from ISPRS Business Meetings

Business meetings allow mutual discussion between Council Members, together with ISPRS officers, which enable effective decision making.

These meetings are twofold – Council Meetings and Joint Meetings. Joint Meetings are meetings of the Council together with Technical Commissions Presidents and Vice-Presidents. The following table shows Council Meetings, and Council and Joint Meetings, held together with TCPs and other invited persons of ISPRS (Committee Chairs, TIF Chair, Regional Representatives, etc.). The list of Minutes from the meetings is available at the ISPRS website (https://www.isprs.org/documents/minutes.aspx).

An overview of the Joint Meetings is in Table 3 and 4. Minutes of the meetings are available at https://www.isprs.org/documents/minutes.aspx.

Table 3. Council Meetings

Date	Place, event	
20/07/2016	Prague, Czech Republic, XXIII Congress	Council Meeting
16 & 19/10/2016	Colombo, Sri Lanka, ACRS	Council Meeting
07/12/2016	Teleconference	Council Meeting
18-19/2017	Nice, France	Council Meeting

09/08/2017	Teleconference	Council Meeting
18-19 & 22/09/2017	Wuhan, China, GSW	Council Meeting with EiCs, ISAC, ICORSE, FinCom, SC, Elsevier
14/12/2017	Teleconference	Council Meeting
19-21/03/2018	Istanbul, Turkey	Council Meeting
07 & 09/05/2018	Beijing, China, Symposium TC III	Council Meeting
28/06/2018	Teleconference	Council Meeting
13/09/2018	Teleconference	Council Meeting
04/10/2018	Delft, Netherlands, Symposium TC IV	Council Meeting
21 & 23/11/2018	Dehradun, India, Symposium TC V	Council Meeting with IPAC, ISAC, Webmaster, SC
27-29/03/2019	Toronto, Canada	Council Meeting with TIF
10, 11 & 14/06/2019	Enschede, Netherlands, GSW	Council Meeting with ISAC, TIF, EiCs, Elsevier, MDPI, Reg. Reps, SC,
18/09/2019	Munich, Germany	Meeting with IPAC chair
15-16/11/2019	Guilin, China	Council Meeting with EiC IJGI
06/01/2020	Teleconference	Council Meeting
12/02/2020	Teleconference	Council Meeting
23-26/03/2020	Teleconference (due to COVID 19)*)	Council Meeting
03/04/2020	Teleconference	Council Meeting
11/05/2020	Teleconference	Council Meeting
27/05/2020	Teleconference	Council Meeting
19/06/2020	Teleconference	Council Meeting
25/06/2020	Teleconference	Council Meeting
01/07/2020	Teleconference	Council Meeting
11/09/2020	Teleconference	Council Meeting
06/11/2020	Teleconference	Council Meeting with EiC IJGI
20/11/2020	Teleconference	Council Meeting
11/12/2020	Teleconference	Council Meeting
21/12/2020	Teleconference	Council Meeting
08/01/2021	Teleconference	Council Meeting
05/02/2021	Teleconference	Council Meeting
19/02/2021	Teleconference	Council Meeting

26/03/2021	Teleconference	Council Meeting with Editors-in-Chief, Elsevier, MDPI
09/04/2021	Teleconference	Council Meeting
29/04/2021	Teleconference	Council Meeting
20/05/2021	Teleconference	Council Meeting
18/06/2021	Teleconference	Council Meeting with ISAC, IPAC
02/09/2021	Teleconference	Council Meeting with EiC MDPI
08/10/2021	Teleconference	Council Meeting with Reg. Reps
05/11/2021	Teleconference	Council Meeting
27-28/11/2021	Paris/Teleconference	Council Meeting
21/01/2022	Teleconference	Council Meeting
21/02/2022	Budapest/Teleconference	Council Meeting
10-11/04/2022	Prague	Council Meeting
3-5/06/2022	Grasse	Council Meeting

*) Teleconferences since 23-26/03/2020 till 05/11/2021 - due to Covid-19

Table 4. Joint Meetings

Date	Place
20/07/2016	Prague, Czech Republic
17-18/10/2016	Colombo, Sri Lanka
20-21/09/2017	Wuhan, China
22-23/11/2018	Dehradun, India
12-13/06/2019	Enschede, Netherlands
25/03/2020	Teleconference *)
27/05/2020	Teleconference
25/06/2020	Teleconference
09/07/2020	Teleconference
11/09/2020	Teleconference
20/11/2020	Teleconference
05/02/2021	Teleconference
19/02/2021	Teleconference
09/04/2021	Teleconference
20/05/2021	Teleconference
18/06/2021	Teleconference with ISAC and IPAC Chairs
08/10/2021	Teleconference

21/01/2022	Teleconference
10-11/04/2022	Prague

*) Teleconferences since 25/03/2020 till 21/01/2022 - due to Covid-19

Membership Management

Another duty of the Secretary General is to maintain the membership contacts and state.

ISPRS membership is divided into six types: Ordinary, Associate, Regional, Sustaining, Individual, and Honorary Members. ISPRS has 92 Ordinary Members (OdMs), 13 Associate Members (AsMs), 14 Regional Members (RgMs), 61 Sustaining Members (StMs), 8 Honorary Members (HnMs) and … Individual Members (on April 30, 2022). Individual Membership is valid for a one-year period. The membership begins upon registration and ends on December 31 every year.

There have been changes in all membership types since the last Congress. Several Ordinary Members were replaced by new organisations due to local decisions, which were approved by postal voting among Ordinary Members. There were also changes in categories. A detailed overview of changes in memberships can be found in the GA Agenda Item 4.

The Secretary General is responsible for updating the database which contains member information and contacts. This is a never-ending task but ensures that Council maintains active contact with ISPRS members. The updated contacts of all members are available at the ISPRS website. I would like to thank Regional Representatives for their significant help with this task (https://www.isprs.org/members/Default.aspx).

Coordination of ISPRS Events and ISPRS Co-sponsored Events

The Secretary General is responsible for the coordination of ISPRS events. ISPRS differentiates between activities of ISPRS members: ISPRS sponsored events, which are events organised by ISPRS; and activities of other organisers which are supported by ISPRS and allow the use of the ISPRS logo; they are called ISPRS co-sponsored events.

ISPRS events can be classified into four groups. Workshops and conferences form the first group, which do not have any predetermined schedule since each is organised by one or several Working Groups. Table 5 gives an overview of the total sponsored and co-sponsored events of the 2016-22 period, including an event of CIPA, ISPRS Committee.

A complete list of ISPRS sponsored and co-sponsored events can be found in Appendix 1.

Table 5. List of ISPRS events approved in 2016 – 2022 (since the Prague Congress)

Year	Sponsored Events	Co-sponsored Events
2016	7	2
2017	21	30
2018	13	19
2019	26	31
2020	10	4
2021	9	7
2022	3	2
2016–2022	**89**	**95**

Technical Commission Presidents (TCPs) are responsible for Mid-Term Symposia which cover topics of their Technical Commissions. The Symposia represent the second group of ISPRS events and are held in countries of TCPs, in the years of the Winter Olympic Games. The Symposia (Table 3) were spread throughout Europe and Asia and attracted a high number of participants in 2018. The TC III Symposium boasts the highest number of participants of ISPRS Symposia in the whole ISPRS history.

It is my pleasure to thank Senthil Kumar, TCP V, who sponsored the Council and Joint Meeting during the TC V Symposium in Dehradun.

Table 6. Technical Commission Symposia in 2018

TC	Date	Place	Title	Total Attendance/ Countries	Papers in Archives/ Annals	Parallel Events
I	Oct 9-12	Karlsruhe, Germany	Innovative Sensing - From Sensors to Methods and Applications	170/28	70/22	
II	June 4-7	Riva del Garda, Italy	Towards Photogrammetry 2020	410/37	172/41	
III	May 7-10	Beijing, China	Developments, Technologies and Applications in Remote Sensing	763/52	467/43	International Seminar on SDI
IV	Oct 1-5	Delft, Netherlands	3D Geospatial Information Science - The Engine of Change	550/30	108/34	3D Geoinfo 2018, 3D Cadasters 2018, SDSC 2018
V	Nov 20-23	Dehradun, India	Geospatial Technology- Pixel to People	445	144/66	

Geospatial Weeks (GSWs), the third group of ISPRS events, take place in the odd years between Congresses. The idea to set up such a series was to bring more workshops together to enable experts of the wider scientific community to meet. The concentration of a higher number of participants can be more attractive not only for scientists but also for Sustaining Members and sponsors. Wuhan University was the venue of the third GSW in 2017. The fourth ISPRS GSW was held at the University of Twente. Both GWS were very successful.

I would like to thank the organisers of these events, who accommodated both Council and Joint Meetings during their GSW.

Table 7. Geospatial Weeks in 2017 and 2019

Term	Place	Workshops	Total Attendance/ Countries	Papers in Archives/ Annals
Sep 18-22, 2017	Wuhan, China	10	1,200/31	317/69
June 10-14, 2019	Enschede, The Netherlands	13	711/56	289/81

Congresses are the fourth type of ISPRS events. The last one, held in Prague on 12-19 July 2016, attracted a total attendance of 2294 participants from 88 countries. 61 exhibitors presented their products and services in an area of 799 sqm. A Summer School took place in the historical city of Telč, south-east of Prague, in the week before the Congress. The Congress organiser supported participants from developing countries with 35k CHF.

ISPRS received 88k CHF from the Congress as a percentage from the Congress fees and exhibition.

Scientific Publications

ISPRS publishes three kinds of scientific publications: three ISPRS Journals, one Book Series and Proceedings from ISPRS events.

Journals

The ISPRS flagship journal - ISPRS Journal of Photogrammetry and Remote Sensing (ISSN: 0924-2716) has reached very good results with CiteScore: 8.64 and Impact Factor: 6.942. It is my pleasure to thank Derek Lichti and Qiang Wang, and Clément Mallet, Editors-in-Chief of the journal, for their great work. Derek Lichti asked to be replaced by a new Editor in Chief and Clément Mallet accepted this position in 2020.

An Open Access journal - the ISPRS International Journal of Geo-Information (ISSN 2220-9964) - founded in 2012, has reached an Impact Factor equal to 1.840 (2018) and 5-year Impact Factor: 2.022 (2018) within these years. I would like thank Wolfgang Kainz, Editor-in-Chief of the journal, for his work which has led the journal to reach such a good result in just a few years.

ISPRS Council decided to launch a new Open Access Journal - ISPRS Open Journal of Photogrammetry and Remote Sensing on 1 January 2021. George Vosselman agreed to become its Editor-in Chief.

Book Series

The present scientific community, which is under pressure to publish results in prestigious journals, has significantly less interest in publishing books. The Book Series list comprises 3 volumes since 2016: Spatial Context: An Introduction to Fundamental Computer Algorithms for Spatial Analysis Christopher Gold, 2016; Planetary Remote Sensing and Mapping, Bo WU, Kaichang DI, Jürgen Oberst and Irina Karachevtseva (Edts), 2018; Laser Scanning: An Emerging Technology in Structural Engineering, Belén Riveiro, Roderik Lindenbergh, 2019.

ISPRS Proceedings

The ISPRS proceedings (The International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences and the ISPRS Annals of the Photogrammetry, Remote Sensing and Spatial Information Sciences) are listed in the ISI Conference Proceedings Citation Index (CPCI) of the Web of Science, SCOPUS, the E/I Compendex, and the Directory of Open Access Journals (DOAJ).

The Scientific Committee of the Prague Congress developed detailed Guidelines for papers published in the proceedings. The Guidelines were slightly amended for the Nice Congress and have been included in the Orange Book (https://www.isprs.org/documents/orangebook.aspx).

The table shows that a high number of events published full papers in the ISPRS Annals.

A detailed list of all ISPRS Proceedings can be found in Appendix 2.

Table 8. Number of events with Archives and Annals volumes published during 2016 - 2022 (incl. Symposia and GSW proceedings) and events without Archives/Annals proceedings

Year	Events only with Archives	Events only with Annals	Events with Archives and Annals	Events Without Proceedings
2016	3	1	1	3
2017	10	2	7	2
2018	5		7	1
2019	16		7	3
2020	1		6	3
2021	4		3	2
2022	3			
2016-2022	**42**	**3**	**31**	**14**

The International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences

The ISPRS website describes the proceedings, The International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences (ISPRS Archives), as a series of peer-reviewed proceedings published by the International Society of Photogrammetry and Remote Sensing (ISPRS). They are published as Open Access since 1999. An overview with links to the entire content of Archives is available at https://www.isprs.org/publications/archives.aspx and in Appendix 2.

ISPRS Annals of the Photogrammetry, Remote Sensing and Spatial Information Sciences

The ISPRS Annals of the Photogrammetry, Remote Sensing and Spatial Information Sciences (ISPRS Annals) contain selected full paper double-blind peer-reviewed scientific contributions of ISPRS Congresses, Symposia and a number of Conferences and Workshops. The series was newly established in 2012 (https://www.isprs.org/publications/annals.aspx).

Representation of ISPRS at International Meetings

The Secretary General represents ISPRS at various meetings. These are international conferences and

meetings of international organisation of which ISPRS is a member. A list can be found in Appendix 3.

Acknowledgement

I sincerely thank the following organisations and persons: The Society for Photogrammetry and Remote Sensing of the Czech Republic, the Department of Geomatics of the Faculty of Civil Engineering of the Czech Technical University in Prague, Technical Commission Presidents 2016-2022, and organisers of all ISPRS sponsored events, Directors of GSWs, ISAC and IPAC Chairs, and CIPA President. I would like to express my gratitude to my fellow Council Members, to Annette Radtke, my secretary, and to Markus Englich, ISPRS Web Master, for their day-to-day hard work, and to the many ISPRS members who support the Society by their participation in education, research, industry and business activities in our branches.

Appendix 1

ISPRS Sponsored Events since the Prague Congress

Date	Title	Place	Proceedings
Jul 24-31, 2016	International Workshop on Cloud Computing and Big Data	Canada, Fairfax	-
Sep 4-7, 2016	International Conference on Geomatics and Geospatial Technology (GGT) 2016	Malaysia, Kuala Lumpur	Arch
Sep 7-9, 2016	1st International Conference on Smart Data and Smart Cities, 30th UDMS	Croatia, Split	Ann
Sep 24-25, 2016	International Workshop on Analysis and Application of Global Land Cover Information	China, Beijing	-
Sep 27, 2016	Machine Learning Methods for Spatial and Temporal Analysis	Canada, Montreal	-
Oct 16-17, 2016	GeoAdvances 2016 : ISPRS Workshop on Multi-dimensional & Multi-scale Spatial Data Modeling	Turkey, Istanbul	Arch
Oct 20-21, 2016	11th 3D Geoinfo Conference	Athens, Greece	Arch/Ann
Mar 1-3, 2017	3D Virtual Reconstruction and Visualization of Complex Architectures	Greece, Nafplio	Arch
May 8-12, 2017	International Symposium on Remote Sensing of Environment 37	Tshwane, South Africa	Arch
May 15-17, 2017	International Workshop on “Photogrammetric and computer vision techniques for video surveillance, biometrics and biomedicine”	Russia, Moscow	Arch
May 22-24, 2017	GEOMATICS & RESTORATION - Conservation of Cultural Heritage in the Digital Era	Italy, Florence	Arch
Jun 6-9, 2017	ISPRS Hannover Workshop: HRIGI 17 – CMRT 17 – EuroCOW 17 Joint Meeting	Germany, Hannover	Arch/Ann
Jun 18-22, 2017	FOSS4G-Europe 2017	France, Marne-La Vallée	Arch
Aug 7-9, 2017	International Symposium on Spatiotemporal Computing 2017	USA, Cambridge	Ann
Aug 13-16, 2017	2017 International Symposium on Planetary Remote Sensing and Mapping	Hong Kong	Arch
Aug 28-Sep 1, 2017	26th ICOMOS/ISPRS CIPA Symposium	Canada, Ottawa	Arch/Ann
Sep 4-7, 2017	International Conference on Unmanned Aerial Vehicles in Geomatics (UAV-g 2017)	Germany, Bonn	Arch/Ann
Sep 18-22, 2017	ISPRS Geospatial Week 2017	China, Wuhan	Arch/Ann

Sep 16-17, 2017	ISPRS Workshop on Collaborative and Dynamic Land Cover Information Services Supporting UN Sustainable Development Goals	China, Jinan	-
Oct 26-27, 2017	3D-Geoinfo 2017	Melbourne, Australia	Arch/Ann
Oct 25-27, 2017	Frontiers in Spectral imaging and 3D Technologies for Geospatial Solutions	Finland, Jyväskylä	Arch
Oct 4, 2017	International Conference on Geomatic and Geospatial Technology 2017	Kuala Lumpur, Malaysia	Arch
Oct 4-6, 2017	Second International Conference on Smart Data and Smart Cities	Mexico, Puebla	Arch/Ann
Oct 11, 2017	ISPRS Workshop on “Role of Geoinformatics in Citizen Science for Governance”	India, New Delhi	-
Oct 7-10, 2017	ISPRS International Joint Conferences of GI Research 2017), SMPR2017, EOEC2017	Iran, Tehran	Arch
Oct 14-15, 2017	4rd International GeoAdvances Workshop, GeoAdvances 2017 : ISPRS Workshop on Multi-dimensional & Multi-scale Spatial Data Modeling,	Karabuk, Turkey	Arch/Ann
Nov 28-29, 2017	LowCost 3D - Sensors, Algorithms, Applications	Germany, Hamburg	Arch
Dec 4-6, 2017	ISPRS WG V/7 workshop “Geospatial Solutions for Structural Design, Construction and Maintenance in Training Civil Engineers and Architects” and a seminar “GIS-based Decision-making in Realizing Smart City Concept”	Ukraine, Kyiv	Ann
Mar 18-21, 2018	Geo-information for Disaster management (Gi4DM)	Turkey, Istanbul	Arch
Mar 27-29, 2018	GRASF Conference 2018 – ISPRS event WG IV/7, WG III/IVb, WG IV/1	U.A.E.Dubai	-
May 7-10, 2018	TC III Symposium	China, Beijing	Arch/Ann
Jun 4-7, 2018	TC II Symposium	Italy, Riva del Garda	Arch/Ann
Aug 29-31, 2018	FOSS4G 2018 Academic Track	Tanzania, Dar-es-Salaam	Arch
Sep 3-5, 2018	International Conference on Geomatic and Geospatial Technology 2018	Malaysia, Kuala Lumpur	Arch
Oct 1-2, 2018	13th GeoInfo Conference 2018	Netherlands, Delft	Arch/Ann
Oct 1-5, 2018	TC IV Symposium	Netherlands, Delft	Arch/Ann
Oct 4-5, 2018	3D Internatuional Conference on Smart Data and Smart Cities	Netherlands, Delft	Arch/Ann
Oct 10-11, 2018	Geoadvances 5th Edition	Morocco, Casablanca	Arch

Oct 10-12, 2018	TC I Symposium	Germany, Karlsruhe	Arch/Ann
Nov 7-8, 2018	2018 ISPRS Workshop on Remote Sensing and Synergic Analysis on Atmospheric Environment	China, Guangzhou	Arch
Nov 20-23, 2018	TC V Symposium	India, Dehradun	Arch/Ann
Feb 6-8, 2019	8th International Workshop - 3D ARCH - 3D Virtual Reconstruction and Visualization of Complex Architectures	Italy, Bergamo	Arch
Feb 18-20, 2019	International Workshop on Earth Observations for Agricultural Monitoring	India, New Delhi	Arch
Feb 10-13, 2019	International Geoinformatics Conference 2019	Saudi Arabia, Riyadh	-
Mar 12-14, 2019	ISPRS Technical Commission III WG III/2, 10 Joint Workshop Multidisciplinary Remote Sensing for Environmental Monitoring	Japan, Kyoto	Arch/Ann
May 2-3, 2019	Underwater 3D recording and modeling: a tool for modern applications and CH recording	Cyprus, Limassol	Arch
May 8-10, 2019	GeoRes2019 (Geomatics and Restoration) - 2nd International Conference	Italy, Milan	Arch
May 13-15, 2019	International Workshop on “Photogrammetric and computer vision techniques for video surveillance, biometrics and biomedicine”	Russia, Moscow	Arch
Jun 10-14, 2019	Geospatial Week 2019	Netherlands, Enschede	Arch/Ann
Aug 26-30, 2019	FOSS4G 2019 Academic Track	Romania, Bucharest	Arch
Sep 3-6, 2019	GI4DM - GeoInformation for Disaster Management	Czech Republic, Prague	Arch
Sep 16-17, 2019	Summer school and Workshop on Evaluation and Benchmark of Sensors and Systems in Photogrammetry and Remote Sensing	Poland, Warsaw	Arch
Sep 18-20, 2019	PIA19 - Photogrammetric Image Analysis 2019	Germany, Munich	Arch/Ann
Sep 24-29, 2019	ISPRS WG V/7 workshop: Measurement, Visualisation and Processing in Bim For Design and Construction Management	Czech Republic, Prague	Arch
Sep 26-27, 2019	14th 3D GeoInfo 2019	Singapore	Arch/Ann
Oct 1-3, 2019	Geospatial Kuala Lumpur 2019	Malaysia, Kuala Lumpur	Arch
Oct 1-3, 2019	Fourth International Conference on Smart Data and Smart Cities	Malaysia, Kuala Lumpur	Arch/Ann

Oct 12-14, 2019	Joint SMPR and GIResearch 2019, Sensors and Models in Photogrammetry and Remote Sensing	Iran, Karaj	Arch
Oct 25-27, 2019	2019 ISPRS Workshop on Remote Sensing and Synergic Analysis on Atmospheric Environment	China, Nanjing	Arch/Ann
Nov 14-15, 2019	Joint Philippine Geomatics Symposium and 6th International Conference on Geoinformation Advances	Philipines, Manila	Arch
Nov 15-17, 2019	PhilGEOS X GeoAdvances 2019	China, Guilin	Arch
Nov 19-20, 2019	ISPRS and GEO workshop on Geospatial-enabled SDGs Monitoring for the 2030 Agenda	China, Changsha	Arch
Nov 28, 2019	Towards an Automatic Data Processing Chain for Airborne and Spaceborne Sensors	New Zealand, Auckland	-
Dec 2-3, 2019	O3DM 2019 - Optical 3D Metrology workshop	France, Strasbourg	Arch
Dec 2-3, 2019	LowCost 3D 2019, 6th International Workshop LowCost 3D – Sensors, Algorithms, Applications	France, Strasbourg	Arch
Dec 10-11, 2019	BIM Technologies in Urban Land Management and Development using Remote Sensing, Photogrammetry and Laser Scanning Data: Managerial, Engineering and Educational Aspects	Nepal, Dhulikhel,	Arch/Ann
Dec 17-18, 2019	International Symposium on Environmental Health (EnvHealth-2019)	Bangladesh, Dhaka	-
Apr 20-22, 2020	SpaceTimeAI 2020: First International Symposium on Spatio-Temporal Artificial Intelligence	UK, London	Arch/Ann
Mar 22-26, 2020	ISPRS WG III/10 LAGIRS 2020 – the Latin America GRSS & ISPRS Remote Sensing Conference	Santiago de Chile Chile	Arch/Ann
Aug 31-Sept 2, 2020	The 2020 Edition of The XXIV ISPRS Congress Imaging today, Foreseeing tomorrow	Nice France *online*	Arch/Ann
Sep 9-12, 2020	Heritage 2020. International Conference on Vernacular Architecture in World Heritage Sites. Risks and New Technologies	Spain València *online*	-
Sep 7-11, 2020	ISPRS TC IV 3D GeoInfo 2020	London, UK ***online***	Arch/Ann
Sep 30–Oct 2, 2020	ISPRS TC IV 5th International Conference on Smart Data and Smart Cities 2020	Nice, France ***online***	Arch/Ann
Oct 7-9, 2020	ISPRS TC IV, ISPRS WG IV/1 The 5th International Conference on Smart City Applications	Turkey Safranbolu ***online***	Arch

Oct 31 - Nov 2, 2020	ISPRS TC V UASG-2020 Second International Conference on Unmanned Aerial Systems-2020	India Greater Noida ***online***	-
Nov 3-4, 2020	ISPRS WG V/7, ISPRS WG III/5 and ISPRS WG II/10 International Workshop of ISPRS "Digital technologies in architecture and construction education – BIM modelling, virtual and augmented reality"	Ukraine Kyiv ***online***	-
Nov 30-Dec 4, 2020	ISPRS ICWG III/IVa Climate Change and Disaster Management: Technology and resilience in a troubled world (Gi4DM, NSW SSSI, URAP2)	Australia Sydney ***online***	Arch/Ann
Mar 29-31, 2021	International Geoinformatics Conference 2021	Riyadh Saudi Arabia	-
Apr 26-28, 2021	ISPRS WG II/10 & WG II/5 PSBB 4th International Workshop on "Photogrammetric and computer vision techniques for video	Moscow Russia *hybrid*	-
5-9 Jul, 2021	2021 Edition of XXIV ISPRS Congress Imaging today, Foreseeing tomorrow **ISPRS Congress edition 2021 digital only**	Nice France ***online***	Arch/Ann
Sep 15-17, 2021	ISPRS TC IV Smart Data, Smart Cities 2021	Germany Stuttgart	Arch/Ann
Sep 27-Oct 2, 2021	ISPRS WG IV/4, WGIV/9 and WGV/8 FOSS4G 2021: Academic Track	Argentina Buenos Aires	Arch
Oct 5-6, 2021	ISPRS WG IV/7 International Conference Geospatial Asia-Europe 2021	Morocco Marrakesh *online*	Arch
Oct 11-14, 2021	ISPRS TC IV 3D GeoInfo 2021	USA, New York *online*	Arch/Ann
Oct 27-29, 2021	ISPRS WG IV/1 The 6th International Conference on Smart City Applications	Turkey Safranbolu *online*	Arch
Nov 17-19, 2021	ISPRS TC IV Philippine Geomatics Symposium (PhilGEOS 2021)	Philippines Quezon City *online*	Arch
Feb 7-8, 2019	ISPRS WG V/7 workshop: Measurement, Visualisation and Processing in Bim for Design And Construction Management II.	Czech Republic Prague	Arch

Mar 2-4, 2022	ISPRS WG II/8 9th 3D-ARCH - 3D Virtual Reconstruction and Visualization of Complex Architectures - International Workshop	Italy Mantova	Arch
Mar 18-19, 2022	ISPRS WG III/1 The 7th International conference on Ubiquitous Positioning, Indoor Navigation and Location-Based Services (UPINLBS 2022).	China Wuhan	Arch
25-27 May 2022	ISPRS WG I/7, WG I/2, WG I/6, WG II/3 The 12th International Conference on Mobile Mapping Technology	Padua Italy	

ISPRS Co-sponsored Events since the Prague Congress

Date	Title	Place
Oct 8-9, 2016	Looking from above: when Earth observation meets Vision (EarthVision)	Netherlands, Amsterdam
Nov 24-26, 2016	3D-Modelling and Interpretation for Underwater Archaeology Workshop	South Australia, Adelaide
Feb 22-23, 2017	International Conference on Urban Geoinformatics (ICUG) 2017	India, New Delhi
Mar 5-7, 2017	JURSE	U.A.E., Dubai
Mar 6-8, 2017	GRASF Conference 2017	U.A.E., Dubai
Mar 16-17	International Forum “GEOSTROY” - “Geospatial Solutions for Structural Design, Construction and Maintenance”	Russia, Novosibirsk
Apr 3-7, 2017	1st International Symposium on Applied Geomatics and Geospatial Solutions GEODATA2017	Argentina, Rosario
Apr 17-18, 2017	Sino-EU Workshop on Remote Sensing Observation and Quantitative Analysis of Landslide Hazard	China, Shanghai
Apr 20-22, 2017	XIInd Exhibition and the Scientific Congress Interexpo GEO-Siberia 2017	Russia, Novosibirsk
May 6-8, 2017	10th International Symposium on Mobile Mapping Technology and Summer School on mobile Mapping	Egypt, Cairo
May 9, 2017	Bridging space, time, and semantics in GIScience	Netherlands, Wageningen
Jun 6-8, 2017	Special Session “The Citizen Sensor” with the GeoIoTWorld Conference	Belgium, Brusselss
Jun 15-16, 2017	First International Symposium of GRSS-Chile, A review of the State of the Art in Geoscience and the Remote Sensing in Chilean and the World	Chile, Valdivia

Jun 28-30, 2017	UAS4Enviro 2017: Small Unmanned Aerial Systems for Environmental Research	Portugal, Vila Real,
Jul 1-2, 2017	Geospatial Public Health	India, Hyderabad
Jul 2-7, 2017	Joint ISPRS/ICA Session on: LULC Change Detection	USA, Washington
Jul 16-22, 2017	Innsbruck Summer School of Alpine Research 2017 - Close Range Sensing Techniques in Alpine Terrain	Austria, Obergurgl
Jul 18-22, 2017	ISPRS Track at FOSS4G 2017 Europe	France, Marne-La-Vallée
Jul 21, 2017	EarthVision 2017: Large Scale Computer Vision for Remote Sensing Imagery	Hawaii, USA
Jul 24-Aug 2, 2017	Laboratory of Place 2017 - Ghesc and surroundings: history, survey, evolution, Summer School on 3D Surveying in Cultural Heritage	Italy, Montecrestese
Sep 11-14, 2017	SPIE Remote Sensing	Poland, Warsaw
Sep 14-16, 2017	8th International Scientific Conference "Environmental Monitoring, Photogrammetry, Geoinformatics - Modern Technologies and Perspectives of development"	Ukraine, Lviv
Sep 22-23, 2017	Geospatial Hackathon	Turkey, Ankara
Oct 16-19, 2017	17th International Scientific and Technical Conference “From Imagery to Digital Reality: ERS &Photogrammetry”	Israel, Hadera
Oct 20, 2017	Workshop on Pattern Recognition for Earth Observation	Brazil, Rio de Janeiro
Oct 23-25,2017	MetroArcheo 2017 special session on “3D Imaging for underwater cultural heritage”	Italy, Lecce
Oct 23-28, 2017	ISPRS WG V/4 and WG V/6 Joint Technical Session on “Online Platforms for Education and Outreach”	India, New Delhi
Oct 28, 2017	Workshop on Multi-Sensor Fusion for Dynamic Scene Understanding	Italy, Venice
Nov 6-9, 2017	XXVII Brazilian Congress of Cartography	Brazil, Rio de Janeiro
Nov 13-17, 2017	SELPER Conference	Chile, Temuco
Nov 20, 2017	Workshop on Passive and Active Electro-Optical Sensors for Aerial & Space Imaging	China, Wuhan
Dec 15-16, 2017	National Symposium on Industry Academia Collaboration for Geospatial Technologies – 2017	India, Ahmedabad
Jan 15-17, 2018	14th International Conference on Location Based Services	Switzerland, Zurich
Mar 21-23, 2018	GIS Ostrava 2018 – GIS for Safety & Security Management	Czech Republic, Ostrava
Apr 10, 2018	Close and Long Range Sensing of Environment (Session at EGU 2018)	Austria, Vienna
Apr 27, 2018	Workshop on “Lessons learned from volunteers’ interactions with geographic citizen science applications: best practices and design recommendations”	UK, London

May 2-10, 2018	International Seminar on Construction and Application of Spatial Data Infrastructure	China, Beijing
Jun 16-22, 2018	Innsbruck Summer School of Alpine Research 2019 - Close Range Sensing Techniques in Alpine Terrain	Austria, Obergurgl
Jun 27-29, 2018	UAS4Enviro 2018: Small Unmanned Aerial Systems for Environmental Research – 6th Edition	Croatia, Split
Jul 23-Aug 1, 2018	Laboratory of Place 2018 - Ghesc and surroundings: history, survey, evolution. Summer School on 3D Surveying in Cultural Heritage	Italy, Montecrestese
Aug 7-8, 2018	1st International Workshop on Cloud Remote Sensing, Atmosphere Radiation and Renewal Energy Application	China, Beijing
Aug 19-20, 2018	PRRS 2018 - 10thIAPR Workshop on Pattern Recognition in Remote Sensing	China, Beijing
Sep 5-8, 2018	International Conference on 3D Vision	Italy, Verona
Sep 10-14, 2018	15th International Circumpolar Remote Sensing Symposium (ICRSS)	Germany, Potsdam
Sep 12-16, 2018	The International Symposium on Cultural Heritage Conservation and Digitization (CHCD2018)	China, Beijing
Sep 18-20, 2018	International Symposium on the use of space technologies to support Natural and Cultural Heritage sites.	Mexico, Campeche
Sep 24-27, 2018	18th International Scientific and Technical Conference “From Imagery to Digital Reality: ERS & Photogrammetry”	Greece, Crete
Sep 26-28, 2018	Second International Conference & Exhibition on Advanced Geospatial Science & Technology (2nd TeanGeo 2018)	Tunis, Tunisia
Oct 22-24, 2018	4th International Conference MetroArcheo 2018 -Metrology for Archaeology and Cultural Heritage	Italy, Cassino
Nov 14-21, 2018	International Seminar on Standards and Techniques of Spatial Data Infrastructure	China, Beijing, Deqing
Dec 13, 2018	Second GIS Day for Education	Bulgaria, Sofia
Apr 2-4, 2019	Geospatial World Forum 2019	Netherlands, Amsterdam
Apr 6-7, 2019	1st International Conference on Unmanned Aerial System in Geomatics – 2019 (UASG-2019)	India, Uttarpradesh
Apr 17-18, 2019	Workshop on Open Source and Multi-level Education for Geospatial Technology 2019	Taiwan Taipei
Apr 30, 2019	Journée du bicentenaire Aimé Laussedat (1819-1907)	France, Paris
May 6-8, 2019	11tth International Symposium on Mobile Mapping Technology and Summer School on mobile Mapping	China, Shenzen
May 15-17, 2019	4th Joint International Symposium on Deformation Monitoring and Analysis (4th JISDM)	Greece, Athens

May 22-24, 2019	Joint Urban Remote Sensing Event, JURSE 2019	France, Vannes
May 24, 2019	Good City Life: The Role of Urban Data Science in Enhancing Urban Planning and Policy-Making	India, Ahmedabad
May 28, 2019	Workshop 'Photogrammetric 3D Reconstruction for Geo-Applications 2019' (PhotoGA19)	Canada, Kingston
Jun 7, 2019	ISPRS Workshop on Modelling and Managing Geospatial Data	Canada, Fredericton
Jun 16, 2019	Workshop 'Photogrammetric Computer Vision 2019' (PCV 19)	USA, Long Beach
Jun 16, 2019	EARTHVISION 2019 - IEEE/ISPRS Workshop. Large Scale Computer Vision for Remote Sensing Imagery	USA, Long Beach
Jun 16-22, 2019	Innsbruck Summer School of Alpine Research 2019 - Close Range Sensing Techniques in Alpine Terrain	Austria, Obergurgl
Jun 19-21, 2019	64° Congress of the Italian Society of Surveying and Photogrammetry 2019	Italy, Venice
Jun 24-26, 2019	The Joint International Conference on Earth Observation for Environmental Changes and Geoinformation Technologies for Natural Disaster Management (EOEC-GiT4NDM 2019)	China, Chengdu
Jul 27-31, 2019	Laboratory of Place 2019 - Ghesc and Surroundings: history, survey, evolution. Summer School on 3D Surveying in Cultural Heritage	Italy, Sacro Monte Calvario di Domodossola
Aug 15-18, 2019	15th South East Asia Survey Congress	Australia, Darwin
Sep 1-6, 2019	27th CIPA International Symposium: Documenting the past for a better future	Spain, Avila
Sep 11, 2019	Architecture and Environment - AE Lab 1 "Land Knowledge, Practices & Data"	Italy, Florence
Oct 3-5, 2019	International Conference on Smart Data, Smart Cities, Smart Governance	India, Ahmedabad
Oct 10-11, 2019	Workshop on Researches, Results and Reviews in Geomatics (R3 in Geomatics)	Italy, Naples
Oct 28-31, 2019	19th International Scientific and Technical Conference "From Imagery to Digital Reality: ERS & Photogrammetry"	Republic of Korea, Seoul
Nov 11-13, 2019	15th International Conference on Location Based Services	Austria, Vienna
Nov 13-14, 2019	The Sixth International Ubiquitous Positioning, Indoor Navigation and Location-Based Services (UPINLBS) conference, 2019	China, Beijing
Nov 20, 2019	Workshop on Passive and Active Electro-Optical Sensors for Aerial & Space Imaging	Australia, Sydney
Nov 20-22, 2019	Capacity Building and Education in Geospatial Technology an An ISRS Annual Convention on 'Innovations in Geospatial Technology for Sustainable Development with Special Emphasis on N-E Region, India'	India, Meghalaya

Nov 22, 2019	Geomatics for digitization of built heritage: the GAMHer "Geomatics Data Acquisition and Management for Landscape and Built Heritage in a European Perspective" project	Italy, Bologna
Dec 4-6, 2019	5th International Conference MetroArcheo 2018 -Metrology for Archaeology and Cultural Heritage	Italy, Florence
Dec 13-14, 2019	National Symposium on Industry Academia Collaboration for Geospatial Technology – 2019	India, Ahmedabad
Dec 17-19, 2019	4th Geospatial Technologies Conference, Essential Standards for Spatial Data Infrastructure	Egypt, Cairo
Mar 18-20, 2020	GIS Ostrava 2020 UAV in Smart City and Smart Region	Czech Republic, Ostrava *online*
Mar 23-25, 2020	Geo Week 2020 ASPRS Annual Conference in conjunction with ILMF	Washington DC, USA *online*
Jul 1-3, 2020	27th International Conference on Systems, Signals and Image Processing IWSSIP 2020 held as an online conference	Brazil Niteroi – Rio de Janeiro *online*
Nov 9-11, 2020	ISPRS WG I/6 2020 International Workshop on Automated High-Resolution Earth Observation Image Interpretation	China, Jinan *online*
Jan 10-15, 2021	ISPRS ICWG II/III, WG II/6 11th IAPR Workshop on Pattern Recognition in Remote Sensing	Italy, Milan *online*
Mar 17-19, 2021	GIS Ostrava 2021 – Advances in Localization and Navigation	Czech Republic, Ostrava *online*
Apr 2-4, 2021	ISPRS TC-V UASG-2021 Second International Conference on Unmanned Aerial Systems in Geomatics-2021	Greater Noida India *hybrid*
May 19-21, 2021	Joint Urban Remote Sensing Event, JURSE 2021	Colombia, Medellin *online*
8 Jun, 2021	ISPRS WG IV/2 CYBERCARTOGRAPHY A Beyond State-of-the-Art Role of Geovisualization in the Understanding of the World	Chania, Crete Greece *online*
Aug 28-Sep 1, 2021	28th CIPA Symposium Title: Great Learning & Digital Emotion	China, Beijing *hybrid*
Dec 3-5, 2021	2021 International Workshop on Automated High-Resolution Earth Observation Image Interpretation	China, Xiamen *online*
01 Mar - 30 Nov 2022	ISPRS TC III	Beijing China

	The 2022 Belt and Road International Student Competition on Digital Architectural Design	
Mar 16-18, 2022	GIS Ostrava 2022 – Earth Observation for Smart City and Smart Region	Czech Republic, Ostrava *online*
April 6-8, 2022	5th Joint International Symposium on Deformation Monitoring (JISDM 2022)	Spain, Valencia

Appendix 2

ISPRS Proceedings: ISPRS Archives 2016 – 2022 since the Prague Congress

Year	Event/Title	Date / Place	Volume	Type
2022	ISPRS WG II/8 9th International Workshop 3D-ARCH "3D Virtual Reconstruction and Visualization of Complex Architectures"	2-4 Mar Mantua, Italy	XLVI-2/W1-2022	digital
2022	ISPRS WG V/7 Measurement, Visualisation and Processing in BIM for Design and Construction Management II	7-8 Feb Prague, Czech Republic	XLVI-5/W1-2022	digital
2021	ISPRS TC IV Philippine Geomatics Symposium 2021	17-19 Nov virtual meeting, Philippines	XLVI-4/W6-2021	digital
2021	ISPRS TC IV (WG IV-1) The 6th International Conference on Smart City Applications	27-29 Oct Virtual Safranbolu, Turkey	XLVI-4/W5-2021	digital
2021	ISPRS TC IV 16th 3D GeoInfo Conference 2021	11-14 Oct New York City, USA	XLVI-4/W4-2021	digital
2021	ISPRS TC IV Joint International Conference Geospatial Asia-Europe 2021 and GeoAdvances 2021	5-6 Oct on-line, Casablanca, Morocco	XLVI-4/W3-2021	digital
2021	ISPRS WG IV/4, WG IV/9 & WG V/8 FOSS4G 2021 – Academic Track	27 Sep - 2 Oct Buenos Aires, Argentina	XLVI-4/W2-2021	digital
2021	ISPRS WG I/1 & WG III/4 1st DESIS User Workshop – Imaging Spectrometer Space Mission, Calibration and Validation, Applications, Methods	28 Sep - 1 Oct virtual, Germany	XLVI-1/W1-2021	digital
2021	ISPRS TC IV 6th International Conference on Smart Data and Smart Cities	15-17 Sep Stuttgart, Germany	XLVI-4/W1-2021	digital
2021	ICOMOS/ISPRS International Scientific Committee on Heritage Documentation (CIPA) 28th CIPA Symposium “Great Learning & Digital Emotion”	28 Aug - 1 Sep Beijing, China	XLVI-M-1-2021	digital
2021	XXIV ISPRS Congress, 2021 edition, Commission I	5-9 Jul on-line, Nice, France	XLIII-B1-2021	digital
	XXIV ISPRS Congress, 2021 edition, Commission II		XLIII-B2-2021	digital
	XXIV ISPRS Congress, 2021 edition, Commission III		XLIII-B3-2021	digital

	XXIV ISPRS Congress, 2021 edition,Commission IV		XLIII-B4-2021	digital
	XXIV ISPRS Congress, 2021 edition,Commission V and Youth Forum		XLIII-B5-2021	digital
2021	ISPRS WG II/10 & WG II/5 PSBB 4th International Workshop on "Photogrammetric and computer vision techniques for video surveillance, biometrics and biomedicine"	26-28 Apr Moscow, Russia	XLIV-2/W1-2021	digital
2021	ASPRS 2021 Annual Conference	29 Mar - 2 Apr virtual, USA	XLIV-M-3-2021	digital
2020	ISPRS TC IV Gi4DM 2020 – 13th GeoInformation for Disaster Management conference	30 Nov - 4 Dec on-line, Sydney, Australia	XLIV-3/W1-2020	digital
2020	ISPRS TC IV, ISPRS WG IV/1 5th International Conference on Smart City Applications	7-8 Oct on-line, Safranbolu, Turkey	XLIV-4/W3-2020	digital
2020	ISPRS TC IV 5th International Conference on Smart Data and Smart Cities	30 Sep - 2 Oct Nice, France	XLIV-4/W2-2020	digital
2020	HERITAGE2020 (3DPast | RISK-Terra) International Conference on Vernacular Architecture in World Heritage Sites. Risks and New Technologies	9-12 Sep on-line, Valencia, Spain	XLIV-M-1-2020	digital
2020	ISPRS TC IV 3rd BIM/GIS Integration Workshop and 15th 3D GeoInfo Conference 2020	7-11 Sep London, UK	XLIV-4/W1-2020	digital
2020	XXIV ISPRS Congress, 2020 edition, Commission I	31 Aug - 2 Sep on-line, Nice, France	XLIII-B1-2020	digital
	XXIV ISPRS Congress, 2020 edition, Commission II		XLIII-B2-2020	digital
	XXIV ISPRS Congress, 2020 edition, Commission III		XLIII-B3-2020	digital
	XXIV ISPRS Congress, 2020 edition, Commission IV		XLIII-B4-2020	digital
	XXIV ISPRS Congress, 2020 edition, Commission V and Youth Forum		XLIII-B5-2020	digital
2020	ASPRS 2020 ASPRS 2020 Annual Conference Virtual Technical Program	22-26 Jun on-line, USA	XLIV-M-2-2020	digital
2020	ISPRS WG III/10 2020 IEEE Latin American GRSS & ISPRS Remote Sensing Conference (LAGIRS 2020)	22-26 Mar Santiago, Chile	XLII-3/W12-2020	digital

2019	ISPRS WG V/7 & WG IV/6 International Workshop on “Capacity Building and Education Outreach in Advance Geospatial Technologies and Land Management”	10-11 Dec Dhulikhel, Nepal	XLII-5/W3	digital
2019	ISPRS TC II Optical 3D Metrology	2-3 Dec Strasbourg, France	XLII-2/W18	digital
2019	ISPRS TC II 6th International Workshop LowCost 3D – Sensors, Algorithms, Applications	2-3 Dec Strasbourg, France	XLII-2/W17	digital
2019	ISPRS WG IV/4 & IC WG IV/III ISPRS and GEO Workshop on Geospatially-enabled SDGs Monitoring for the 2030 Agenda	19-20 Nov Changsha, China	XLII-4/W20	digital
2019	ISPRS WG III/5 International Conference on Geomatics in the Big Data Era (ICGBD 2019)	15-17 Nov Guilin, Guangxi, China	XLII-3/W10	digital
2019	ISPRS TC V PhilGEOS x GeoAdvances 2019 “Geomatics and Data Science: Towards Adaptive Management in a Changing World”	14-15 Nov Manila, Philippines	XLII-4/W19	digital
2019	ISPRS TC III Joint meeting of the 21st William T. Pecora Memorial Remote Sensing Symposium (Pecora 21) and the 38th International Symposium on Remote Sensing of Environment (ISRSE 38) "Earth Observation and Continuous Monitoring of Our Changing Planet: From Sensors to Decisions"	6-11 Nov Baltimore, Maryland, USA	XLII-3/W11	digital
2019	2019 ISPRS Workshop on Remote Sensing and Synergic Analysis on Atmospheric Environment (RSAE)	25-27 Oct Nanjing, China	XLII-3/W9	digital
2019	ISPRS WG IV/3, WG I/8 & WG II/4 ISPRS International GeoSpatial Conference 2019, Joint Conferences of 5th Sensors and Models in Photogrammetry and Remote Sensing (SMPR) and 3rd Geospatial Information Research (GI Research)	12-14 Oct Karaj, Iran	XLII-4/W18	digital
2019	4th International Conference on Smart Data and Smart Cities	1-3 Oct Kuala Lumpur, Malaysia	XLII-4/W17	digital
2019	ISPRS WG IV/I 6th International Conference on Geomatics and Geospatial Technology (GGT 2019)	1-3 Oct Kuala Lumpur, Malaysia	XLII-4/W16	digital
2019	ISPRS WG IV/10 14th 3D GeoInfo Conference 2019	24-27 Sep Singapore	XLII-4/W15	digital

2019	ISPRS WG V/7 Measurement, Visualisation and Processing in BIM for Design and Construction Management	24-25 Sep Prague, Czech Republic	XLII-5/W2	digital
2019	ISPRS ICWG II/III PIA19+MRSS19 Photogrammetric Image Analysis & Munich Remote Sensing Symposium: Joint ISPRS conference	18-20 Sep Munich, Germany	XLII-2/W16	digital
2019	ISPRS TC I & WG I/10 Workshop on the Evaluation and Benchmarking Sensors, Systems and Geospatial Data in Photogrammetry and Remote Sensing	16-17 Sep Warsaw, Poland	XLII-1/W2	digital
2019	ICOMOS/ISPRS International Scientific Committee CIPA – Heritage Documentation: 50 Years: Looking Backwards	-	XLII-2/W14	digital
2019	ISPRS ICWG III/IVa Gi4DM 2019 GeoInformation for Disaster Management	3-6 Sep Prague, Czech Republic	XLII-3/W8	digital
2019	ICOMOS/ISPRS International Scientific Committee on Heritage Documentation (CIPA) 27th CIPA International Symposium *Documenting the past for a better future*	1-5 Sep Ávila, Spain	XLII-2/W15	digital
2019	ISPRS WG IV/4 FOSS4G 2019 – Academic Track	26-30 Aug Bucharest, Romania	XLII-4/W14	digital
2019	ISPRS Geospatial Week 2019	10-14 Jun Enschede, The Netherlands	XLII-2/W13	digital
2019	ISPRS WG II/10 & WG II/5 International Workshop on *Photogrammetric and Computer Vision Techniques for Video Surveillance, Biometrics and Biomedicine*	13-15 May Moscow, Russia	XLII-2/W12	digital
2019	ISPRS WG II/8, WG III/5, WG V/1 GEORES 2019 *2nd International Conference of Geomatics and Restoration*	8-10 May Milan, Italy	XLII-2/W11	digital
2019	ISPRS TC II, WG II/9 Underwater 3D Recording and Modelling *A Tool for Modern Applications and CH Recording*	2-3 May Limassol, Cyprus	XLII-2/W10	digital
2019	ISPRS Technical Commission III WG III/2, 10 Joint Workshop *Multidisciplinary Remote Sensing for Environmental Monitoring*	12-14 Mar Kyoto, Japan	XLII-3/W7	digital

2019	ISPRS WG III/10 - GEOGLAM - ISRS Joint International Workshop on *Earth Observations for Agricultural Monitoring*	18-20 Feb New Delhi, India	XLII-3/W6	digital
2019	8th International Workshop 3D-ARCH *3D Virtual Reconstruction and Visualization of Complex Architectures*	6-8 Feb Bergamo, Italy	XLII-2/W9	digital
2018	ISPRS TC V ISPRS TC V Mid-term Symposium *Geospatial Technology – Pixel to People*	20-23 Nov Dehradun, India	XLII-5	digital
2018	2018 ISPRS Workshop on Remote Sensing and Synergic Analysis on Atmospheric Environment	7-8 Nov Guangzhou, China	XLII-3/W5	digital
2018	ISPRS TC I ISPRS TC I Mid-term Symposium *Innovative Sensing – From Sensors to Methods and Applications*	10-12 Oct Karlsruhe, Germany	XLII-1	digital
2018	5th International Conference on Geoinformation Science – GeoAdvances 2018: *ISPRS Conference on Multi-dimensional & Multi-scale Spatial Data Modeling*	10-11 Oct Casablanca, Morocco	XLII-4/W12	digital
2018	3rd International Conference on Smart Data and Smart Cities	4-5 Oct Delft, The Netherlands	XLII-4/W11	digital
2018	ISPRS TC IV ISPRS TC IV Mid-term Symposium *3D Spatial Information Science – The Engine of Change*	1-5 Oct Delft, The Netherlands	XLII-4	digital
2018	13th 3D GeoInfo Conference 2018	1-2 Oct Delft, The Netherlands	XLII-4/W10	digital
2018	International Conference on Geomatic & Geospatial Technology (GGT 2018) *Geospatial and Disaster Risk Management*	3-5 Sep Kuala Lumpur, Malaysia	XLII-4/W9	digital
2018	FOSS4G 2018	29-31 Aug Dar es Salaam, Tanzania	XLII-4/W8	digital
2018	ISPRS TC II ISPRS TC II Mid-term Symposium *Towards Photogrammetry 2020*	4-7 Jun Riva del Garda, Italy	XLII-2	digital
2018	ISPRS TC III ISPRS TC III Mid-term Symposium *Developments, Technologies and Applications in Remote Sensing*	7-10 May Beijing, China	XLII-3	digital
2018	ISPRS ICWG III/IVa GeoInformation for Disaster Management	18-21 Mar Istanbul, Turkey	XLII-3/W4	digital
2017	ISPRS TC II 5th International Workshop LowCost 3D Sensors, Algorithms, Applications	28-29 Nov Hamburg, Germany	XLII-2/W8	digital

2017	ISPRS WG IV/1, WG IV/5 & WG IV/10 12th 3D Geoinfo Conference 2017	26-27 Oct Melbourne, Australia	XLII-4/W7	digital
2017	ISPRS WG III/4, WG III/1 & WG I/5 Frontiers in Spectral imaging and 3D Technologies for Geospatial Solutions	25-27 Oct Jyväskylä, Finland	XLII-3/W3	digital
2017	ISPRS WG IV/1 4th International GeoAdvances Workshop – GeoAdvances 2017: ISPRS Workshop on Multi-dimensional & Multi-scale Spatial Data Modeling	14-15 Oct Safranbolu, Karabuk, Turkey	XLII-4/W6	digital
2017	ISPRS TC IV, WG IV/3 ISPRS International Joint Conferences of The 2nd Geospatial Information Research GI Research 2017 The 4th Sensors and Models in Photogrammetry and Remote Sensing SMPR 2017 The 6th Earth Observation of Environmental Changes EOEC 2017	7-10 Oct Tehran, Iran	XLII-4/W4	digital
2017	ISPRS WG IV/10, WG IV/4, WG IV/6, WG IV/7 2nd International Conference on Smart Data and Smart Cities	4-6 Oct Puebla, Mexico	XLII-4/W3	digital
2017	ISPRS WG IV/1 International Conference on Geomatic and Geospatial Technology 2017 "Geospatial and Disaster Management"	4 Oct Kuala Lumpur, Malaysia	XLII-4/W5	digital
2017	ISPRS Geospatial Week 2017	18-22 Sep Wuhan, China	XLII-2/W7	digital
2017	International Conference on Unmanned Aerial Vehicles in Geomatics	4-7 Sep Bonn, Germany	XLII-2/W6	digital
2017	ICOMOS/ISPRS International Scientific Committee on Heritage Documentation (CIPA) 26th International CIPA Symposium – Digital Workflows for Heritage Conservation	28 Aug - 1 Sep Ottawa, Canada	XLII-2/W5	digital
2017	ISPRS ICWG III/II 2017 International Symposium on Planetary Remote Sensing and Mapping	13-16 Aug Hong Kong	XLII-3/W1	digital
2017	ISPRS WG IV/4 FOSS4G-Europe 2017 – Academic Track	18-22 Jun Marne La Vallée, France	XLII-4/W2	digital
2017	ISPRS Hannover Workshop: HRIGI 17 – CMRT 17 – ISA 17 – EuroCOW 17	6-9 Jun Hannover, Germany	XLII-1/W1	digital
2017	ISPRS WG V/1, WG V/2, WG II/8 & CIPA GEOMATICS & RESTORATION – Conservation of Cultural Heritage in the Digital Era	22-24 May Florence, Italy	XLII-5/W1	digital

2017	ISPRS WG II/10, II/5 International Workshop on "Photogrammetric and computer vision techniques for video surveillance, biometrics and biomedicine"	15-17 May Moscow, Russia	XLII-2/W4	digital
2017	37th International Symposium on Remote Sensing of Environment	8-12 May Tshwane, South Africa	XLII-3/W2	digital
2017	TC II & CIPA 3D Virtual Reconstruction and Visualization of Complex Architectures	1-3 Mar Nafplio, Greece	XLII-2/W3	digital
2016	TC IV 11th 3D Geoinfo Conference	20-21 Oct Athens, Greece	XLII-2/W2	digital
2016	3rd International GeoAdvances Workshop	16-17 Oct Istanbul, Turkey	XLII-1/W1	digital
2016	TC IV International Conference on Geomatic and Geospatial Technology (GGT) 2016	3-5 Oct Kuala Lumpur, Malaysia	XLII-4/W1	digital

ISPRS Proceedings: ISPRS Annals 2016 – 2022 since the Prague Congress

Year	Event/Title	Date / Place	Volume
2022	ISPRS WG V/7 Measurement, Visualisation and Processing in BIM for Design and Construction Management II	7-8 Feb Prague, Czech Republic	VIII-5/W1-2022
2021	ISPRS TC IV 16th 3D GeoInfo Conference 2021	11-14 Oct New York City, USA	VIII-4/W2-2021
2021	ISPRS TC IV 6th International Conference on Smart Data and Smart Cities	15-17 Sep Stuttgart, Germany	VIII-4/W1-2021
2021	ICOMOS/ISPRS International Scientific Committee on Heritage Documentation (CIPA) 28th CIPA Symposium “Great Learning & Digital Emotion”	28 Aug - 1 Sep Beijing, China	VIII-M-1-2021
2021	XXIV ISPRS Congress, 2021 edition, Commission I	5-9 Jul on-line, Nice, France	V-1-2021
	XXIV ISPRS Congress, 2021 edition, Commission II		V-2-2021
	XXIV ISPRS Congress, 2021 edition, Commission III		V-3-2021
	XXIV ISPRS Congress, 2021 edition, Commission IV		V-4-2021
	XXIV ISPRS Congress, 2021 edition, Commission V and Youth Forum		V-5-2021
2020	ISPRS TC IV Gi4DM 2020 – 13th GeoInformation for Disaster Management conference	30 Nov - 4 Dec on-line, Sydney, Australia	VI-3/W1-2020
2020	ISPRS TC IV 5th International Conference on Smart Data and Smart Cities	30 Sep - 2 Oct Nice, France	VI-4/W2-2020
2020	ISPRS TC IV 3rd BIM/GIS Integration Workshop and 15th 3D GeoInfo Conference 2020	7-11 Sep London, UK	VI-4/W1-2020
2020	XXIV ISPRS Congress, 2020 edition, Commission I	31 Aug - 2 Sep on-line, Nice, France	V-1-2020
	XXIV ISPRS Congress, 2020 edition, Commission II		V-2-2020
	XXIV ISPRS Congress, 2020 edition, Commission III		V-3-2020
	XXIV ISPRS Congress, 2020 edition, Commission IV		V-4-2020
	XXIV ISPRS Congress, 2020 edition, Commission V and Youth Forum		V-5-2020
2020	ISPRS WG III/10 2020 IEEE Latin American GRSS & ISPRS Remote Sensing Conference (LAGIRS 2020)	22-26 Mar Santiago, Chile	IV-3/W2
2019	ISPRS WG V/7 & WG IV/6 International Workshop on “Capacity Building and	10-11 Dec Dhulikhel, Nepal	IV-5/W2

	Education Outreach in Advance Geospatial Technologies and Land Management"		
2019	4th International Conference on Smart Data and Smart Cities	1-3 Oct Kuala Lumpur, Malaysia	IV-4/W9
2019	ISPRS WG IV/10 14th 3D GeoInfo Conference 2019	24-27 Sep Singapore	IV-4/W8
2019	ISPRS ICWG II/III PIA19+MRSS19 - Photogrammetric Image Analysis & Munich Remote Sensing Symposium: Joint ISPRS conference	18-20 Sep Munich, Germany	IV-2/W7
2019	ICOMOS/ISPRS International Scientific Committee on Heritage Documentation (CIPA) 27th CIPA International Symposium *Documenting the past for a better future*	1-5 Sep Ávila, Spain	IV-2/W6
2019	ISPRS Geospatial Week 2019	10-14 Jun Enschede, The Netherlands	IV-2/W5
2019	ISPRS Technical Commission III WG III/2, 10 Joint Workshop *Multidisciplinary Remote Sensing for Environmental Monitoring*	12-14 Mar Kyoto, Japan	IV-3/W1
2018	ISPRS TC V ISPRS TC V Mid-term Symposium *Geospatial Technology – Pixel to People*	20-23 Nov Dehradun, India	IV-5
2018	ISPRS TC I ISPRS TC I Mid-term Symposium	10-12 Oct Karlsruhe, Germany	IV-1
2018	3rd International Conference on Smart Data and Smart Cities	4-5 Oct Delft, The Netherlands	IV-4/W7
2018	ISPRS TC IV ISPRS TC IV Mid-term Symposium *3D Spatial Information Science – The Engine of Change*	1-5 Oct Delft, The Netherlands	IV-4
2018	13th 3D GeoInfo Conference 2018	1-2 Oct Delft, The Netherlands	IV-4/W6
2018	ISPRS TC II ISPRS TC II Mid-term Symposium *Towards Photogrammetry 2020*	4-7 Jun Riva del Garda, Italy	IV-2
2018	ISPRS TC III ISPRS TC III Mid-term Symposium *Developments, Technologies and Applications in Remote Sensing*	7-10 May Beijing, China	IV-3
2017	ISPRS WG V/7 ISPRS Workshop "Geospatial Solutions for Structural Design, Construction and Maintenance in Training Civil Engineers and Architects"	4-6 Dec Kyiv, Ukraine	IV-5/W1

2017	ISPRS WG IV/1, WG IV/5 & WG IV/10 12th 3D Geoinfo Conference 2017	26-27 Oct Melbourne, Australia	IV-4/W5
2017	ISPRS WG IV/1 4th International GeoAdvances Workshop – GeoAdvances 2017: ISPRS Workshop on Multi-dimensional & Multi-scale Spatial Data Modeling	14-15 Oct Safranbolu, Karabuk, Turkey	IV-4/W4
2017	ISPRS WG IV/10, WG IV/4, WG IV/6, WG IV/7 2nd International Conference on Smart Data and Smart Cities	4-6 Oct Puebla, Mexico	IV-4/W3
2017	ISPRS Geospatial Week 2017	18-22 Sep Wuhan, China	IV-2/W4
2017	International Conference on Unmanned Aerial Vehicles in Geomatics	4-7 Sep Bonn, Germany	IV-2/W3
2017	CIPA 26th International CIPA Symposium – Digital Workflows for Heritage Conservation	28 Aug - 1 Sep Ottawa, Canada	IV-2/W2
2017	ISSC 2017 2nd International Symposium on Spatiotemporal Computing 2017	7-9 Aug Cambridge, USA	IV-4/W2
2017	ISPRS Hannover Workshop: HRIGI 17 – CMRT 17 – ISA 17 – EuroCOW 17	6-9 Jun Hannover, Germany	IV-1/W1
2016	ISPRS TC IV 11th 3D Geoinfo Conference	20-21 Oct Athens, Greece	IV-2/W1
2016	ISPRS TC IV 1st International Conference on Smart Data and Smart Cities, 30th UDMS	7-9 Sep Split, Croatia	IV-4/W1

Appendix 3

Events attended by Secretary General 2016-2022

Representation at International and National Meetings			
24-26/10/2016	Oslo, Norway	Extraordinary GA of ICSU	Representation of ISPRS
09-10/11/2016	Sankt Petersburg, Russia	GEO XIII Plenary	ISPRS representation
01-02/12/2016	Bonn, Germany	UNSPIDER project	Preparation of Booklet on RDR
06-08/02/2017	Vienna, Austria	UNOOSA, COPUOS	ISPRS Statement
22-26/05/2017	Cancun, Mexico	UNISDR	Presentation of Booklet on RDR
01-05/08/2017	New York, USA	Academ. Netw. UN-GGIM	ISPRS statement
01-02/09/2017	Berlin, Germany	GeoUnion Meeting	ISPRS representation
24-26/10/2017	Taipei, Taiwan	32nd ICSU GA	ISPRS representation
23-24/11/2017	Bonn, Germany	UN OOSA	ISPRS representation
31/01-03/02/2017	Vienna, Austria	UNOOSA, COPUOS	ISPRS statement
19-20/06/2018	Vienna, Austria	UNISPACE+50	Organ. of the ISPRS event, welcome speech
01-06/072018	Paris, France	ISC 1st General Assembly	Representation of ISPRS
08-11/11/2018	Istanbul, Turkey	GeoUnion Meeting	Chair of the meeting
12-14/02/2019	Vienna, Austria	UNOOSA, COPUOS	Representation of ISPRS
29/07/2019	Paris, France	IUGG Centenary	Accepting IUGG Award for ISPRS
30/07/2019	Paris, France	GeoUnion Meeting	Chair of the meeting
19/09/2019	Kutná Hora, Czech Rep	GA of the Czech ICA	ISPRS representation
3-5/02/2020	Vienna, Austria	UNOOSA, COPUOS	ISPRS statement
21-22/10/2021	Amsterdam, the Netherlands	GWF	ISPRS session

Representing ISPRS at other Conferences			
27-30/09/2016	Antalya, Turkey	Secuk International Scientific Conference on Applied Sciences - 2016	Welcome and Plenary speech
06-08/03/2017	Dubai, UAE	GRASF	Keynote speech
10-13/09/2017	Stuttgart, Germany	Photogrammetric Week	ISPRS representation
15-16/03/2018	Ostrava, Czech Rep.	GIS Ostrava	Plenary presentation
02-06/04/2018	Santiago, Chile	LARS	Plenary presentation
07-11/05/2018	Beijing, China	Symposium TC III	Welcome speech
01-05/10/2018	Delft, Netherlands	Symposium TC IV	Greetings
12-14/10/2018	Prague, Czech Rep.	SSIP	Keynote presentation
15-24/11/2018	Dehradun, India	TC V Symposium	Round table
23-26/04/2019	Novosibirsk, Russia	GeoSiberia	Plenary presentation
10/09/2019	Prague, Czech Rep.	SSIP conference	Keynote speech
14-17/11/2019	Guilin, China	International Conf. on Geomatics in Big Data Era	Keynote speech
18/11/2019	Changsha, China	ISPRS and GEO Workshop on Geospatially-enabled SDGs Monitoring for the 2030 Agenda	Welcome speech

Report of ISPRS Treasurer Songnian Li to the General Assembly for the Term 2016-2022

Opening Comments

It is my pleasure to present a financial summary of the past six years. As announced in 2020 and 2021, the ISPRS congress period has been shifted by two years, making this Congress period six years. During this period, the Society has faced with the similar challenges stated in my two predecessors' reports. In addition, after the year-end of 2019, the Society has also been faced with significant challenge of the COVID-19 pandemic.

The extension of this Congress period makes the financial data from this Congress period less comparable with that from recent Congress periods. This report focusses primarily on the six fiscal years prior to the Congress year (i.e., 2016-2021), for which the incumbent Treasurer has been responsible for financial operations, year-end reporting, and filing tax returns, but references to the previous quadrennial periods if necessary and appropriate.

ISPRS Financial Summary

ISPRS Net-worth (Total Assets)

ISPRS assets include only current assets (cash and investments). Figure 1 shows the balance of the Society's total assets at the end of each fiscal year from 2015 to 2021. For this six-year Congress period, the initiating balance at the beginning of 2016 was CHF 617,896[1] and ended up with a closing balance of CHF 957,362[2] at the end of 2021. The Society's current net worth represents an increase of 54% over that of 31st December 2015, compared to 7% increase during the last quadrennial period.

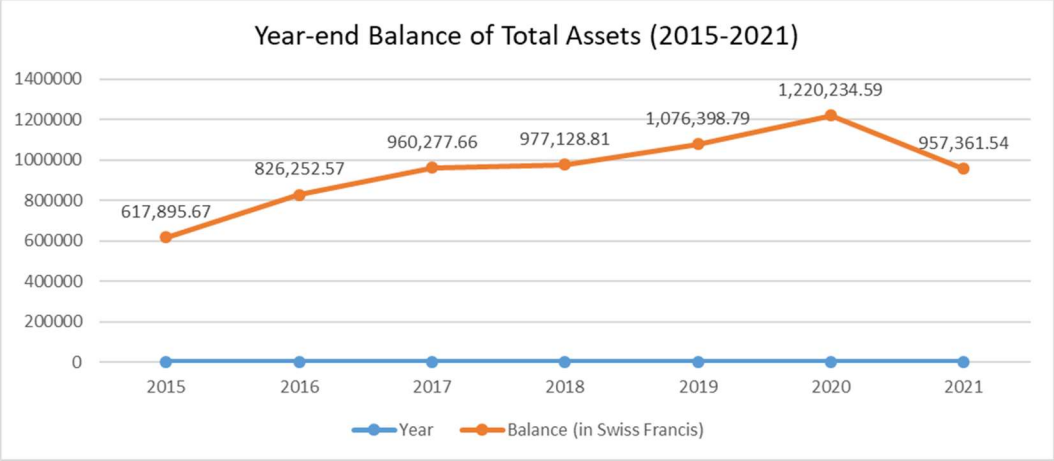


Figure 1. Year-end Balance of Total Assets (2015-2021)

Table 1 provides a summary of ISPRS assets as of 31st December 2021. Total custody account assets reached CHF 887,016, which maintains a more than sufficient level of reserve equivalent to the full, unhindered operation of the Society for a quadrennial term as per the ISPRS Financial Policy. As a result of the higher level of expenditure (costs of organizing ISPRS Virtual Congresses in 2020 and 2021) and the additional investment in exchange-traded funds of CHF 300,000 in 2021, the total cash asset ended up CHF 70,348 as of 31 December 2021 but still provided the Society the cash flow required to start operation in 2022. An analysis of monthly income and expenditure of the past five years indicates that a minimum opening balance of CHF 20,000 at the beginning of the fiscal year is sufficient to start and maintain the Society's operation.

1 The opening balance does not include the 2016 Congress load, which was returned in early 2016.

2 The net worth does not include the Nice Congress loan to be returned in 2022.

ITEM	31 December 2021	31 December 2021
	(EUR, USD, CHF)	(CHF)
CASH		
Euro #.7EM	23,547.63	24,399.00
USD #.60C	28,348.54	25,830.00
CHF #.01E	20,116.83	20,116.83
Total Cash		**70,345.83**
INVESTMENTS		
# 359540 Bonds [USD]	231,117.76	203,234.05
# 278859 Bonds [EUR]	201,751.66	209,046.98
# 1640534 Corp Bonds [USD]	163,587.70	143,851.30
# 279211 Strat Fund [CHF]	30,921.70	27,191.08
# 1272980 UBS (LUX) FUND [EUR]	151,468.80	156,945.90
# 10737611 UBS (iShares) [USD]	166,880.00	146,746.39
Total Investments		**887,015.71**
TOTAL ASSETS		**957,361.54**

Table 1: ISPRS assets (as of 31st December 2021)

Income and Expenditure

Income and expenditure details for the past six years from 1 January 2016 to 31 December 2021 are provided in Table 2, with the income and expenditure of the first quarter of 2022 provided in Appendix I. The total expenses incurred during this six-year period was significantly less than the total income received, resulting a net surplus of CHF 343k. This represents a substantial increase compared with a small net surplus of CHF 31k for previous four years (2012-2015). While overall the Society has continued to cost less to run (at least in terms of directly incurred costs) over the last six years, both income and expenditure have increased with annual average income from CHF 182k in 2012-2015 to CHF 278k in 2016-2021 and annual average expenditure from CHF 175k in 2012-2015 to CHF 221k in 2016-2021.

Table 2: ISPRS Income and Expenditure (2016 to 2021)

	2016	2017	2018	2019	2020	2021	Total
Income (CHF)	348,389	258,649	302,652	262,922	274,581	222,797	1,669,990
Expenditure (CHF)	151,572	140,409	267,263	186,807	117,380	463,274	1,326,705
Net Surplus (CHF)	196,817	118,240	35,389	76,115	157,201	-240,477	343,285

Figure 2 presents historical reported income/expenditure for each fiscal year from 1 January 2000 through to 31 December 2021. The linear trend lines indicate an increased divergence of income and expenditure up to the end of 2019, which was disrupted due to the impact of the COVID-19 pandemic in 2020 and 2021.

The substantial increase of revenue in 2016 was mainly due the financial contributions (dividends) from the 2016 ISPRS Congress. The decrease of income in 2021 was mainly due to 2021 membership fee exemption, while the sharp increase of the expenditure in 2021 is attributed to the financial contribution to 2020/2021 editions of virtual congress. As such, the Society ended in the red by 31 December 2021, with expenditure (CHF 463,274) exceeding income (CHF 222,797) for that period.

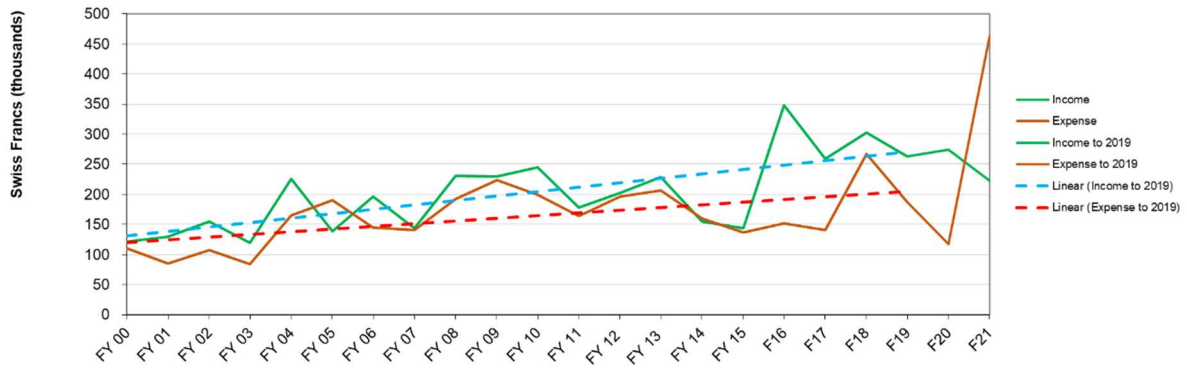


Figure 2. Historical reported income/expenditure (2000-2021

Income

The Society's incomes are mainly from four sources: membership subscriptions, publication revenue, contribution from major ISPRS events (incl. congress, geospatial week, and midterm symposia), and dividends from ISPRS investments.

Membership Subscriptions

Table 3 provides a summary by category of current ISPRS membership and the number of members who have paid their fees up to 2021 as of April 15, 2022. It is worth noting that a sizeable number of members have also paid their 2022 fees as of April 15th, including 19 ordinary, 2 associate, 5 regional and 23 sustaining members.

Table 3: ISPRS members and payment status by category

Category	No.	Paid members (up to and including 2021)	
		# of paid as of April 15	% of paid as of April 15
Ordinary member	92	60	65.2
Associate member	13	5	38.5
Regional member	14	9	64.3
Sustaining member	61	44	72.1
Total:	180	118	65.6

Figure 3 shows historical collected membership fees by category for each fiscal year from 1 January 2000 through to 31 December 2021 (see also Appendix II for detailed amounts). A rolling four-year average is presented to remove the variations created by members paying large amounts of arrears, etc. in any one year. The total collected fees in each year varied but the four-year average was relative stable. It is worth noting that the exceptionally low level of membership fees collected in 2021 was because the Council decided to waive all members' fees for that year considering the impact of the COVID-19 pandemic to members, which also allowed some members to pay their fees in arrears.

Further, a look at the total membership fees collected from ISPRS ordinary members and sustaining members over the 4 years of previous quadrennial periods, as shown in Figure 4, indicates a continuous significant falling income from sustaining members, which is in line with the findings from the previous treasurer's report to the General Assembly for 2012-2016, that "the income that has reduced most markedly over the period 2008 to 2015 is from the Sustaining Membership".

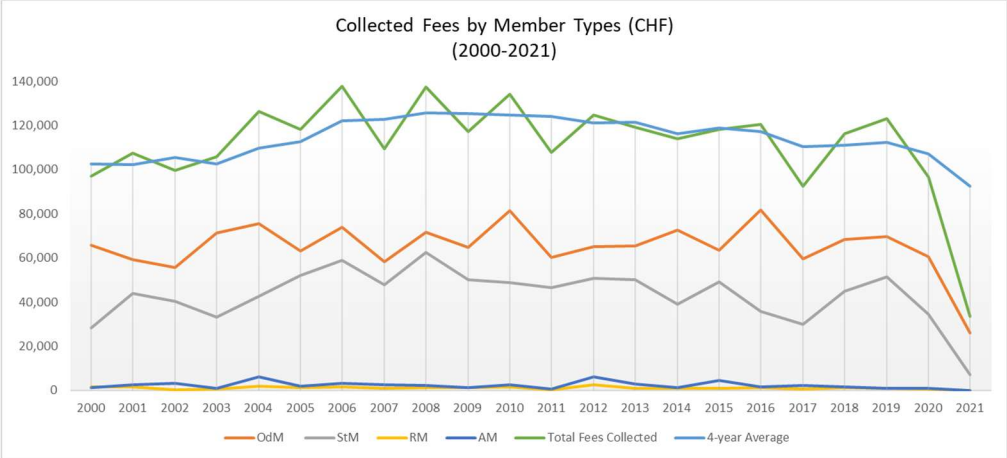


Figure 3. Historical collected membership fees (2000-2021)

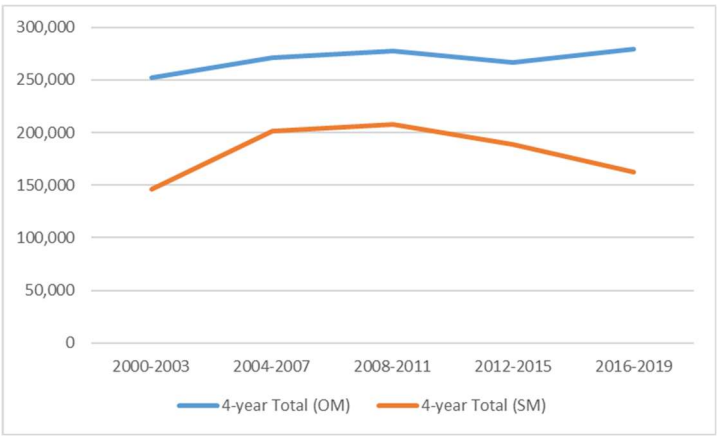


Figure 4. 4-year total of the collected membership fees from ordinary and sustaining members

A visible rise in the number of members in arrear since around 2008 was confirmed in the previous Treasurer's report. As shown in Figure 5, the percentage of members in arrear was up and down over the last six years (2016-2021), but average 48.5% (2016-2020, excluding 2021 when fees were waived). This also confirmed the ongoing trend that only about half of the members will pay their subscriptions, as indicated in the previous Treasurer's report.

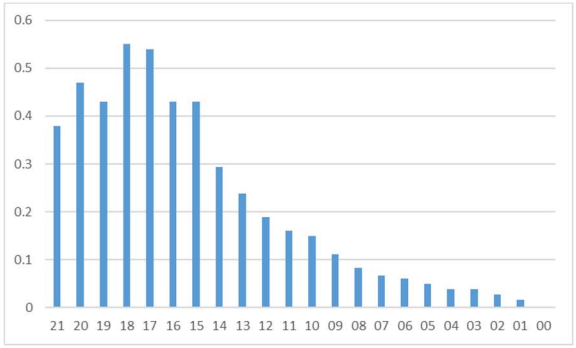


Figure 5. Percentage of members in arrear (2000-2021)

Publication Revenue

Revenue from publication royalties, mainly the two journals: *ISPRS Journal of Photogrammetry and Remote Sensing* (IJPRS) and *ISPRS International Journal of Geo-Information* (IJGI), has become one of major regular sources of the Society's income, averaging about 50% of the total income. As shown in Figure 6, the revenue from IJGI has steadily and significantly increased over the last six years. On the other hand, the revenue from the royalties of printed annals and archives proceedings as well as books in the ISPRS Book series has become insignificant. CHF 476 was recorded from the 2021 royalties of the new *ISPRS Open Journal of Photogrammetry and Remote Sensing* (launched in January 2021). It is anticipated that this journal will become another source of Society's income.

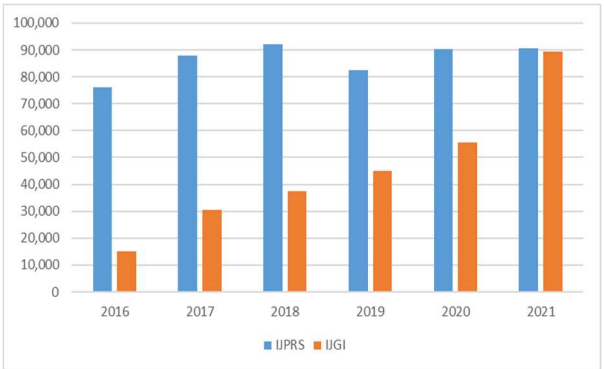


Figure 6. Publication income (2016-2021)

Contribution from Major ISPRS Events

As a result of the contributions of the organizers of the major ISPRS events over the last 6 years, the Society has received a total of CHF 193,953 financial contributions from 2016 ISPRS Congress, 2015, 2017 and 2019 Geospatial Weeks (GSW), and 2018 Technical Commission Symposia. The contribution of CHF 86,592 received from 2016 Prague Congress (up from CHF 82,441 received from the 2012 Melbourne Congress) and CHF 51,605 from the five Technical Commission symposia held in 2018 (up from CHF 36,090 from the eight symposia held in 2014 due to a large amount of CHF 24,639 from TC III symposium) contributed to the increased income of this quadrennial period. Three Geospatial Weeks made a total of CHF 55,756 contribution, on an increasing trend (CHF 5,409 from GSW'15, CHF 21,680 from GSW'17, and CHF 28,677 from GSW'19), indicating that over CHF 20,000 can be anticipated from future GSWs.

ISPRS Investments

Figure 7 shows values for each of the investment funds from 2006 to 2021. The Society's bond investments (the first four custody accounts listed in the legend) yielded a modest average of CHF 2,687 in dividends each year on a decreasing trend. These funds were re-invested in the bond funds from which they were earned. The total value of these investments on 31 December 2021 was CHF 583,323, which is a slight increase of about 0.4% from the valuation at the beginning of this quadrennial period (CHF 558,964).

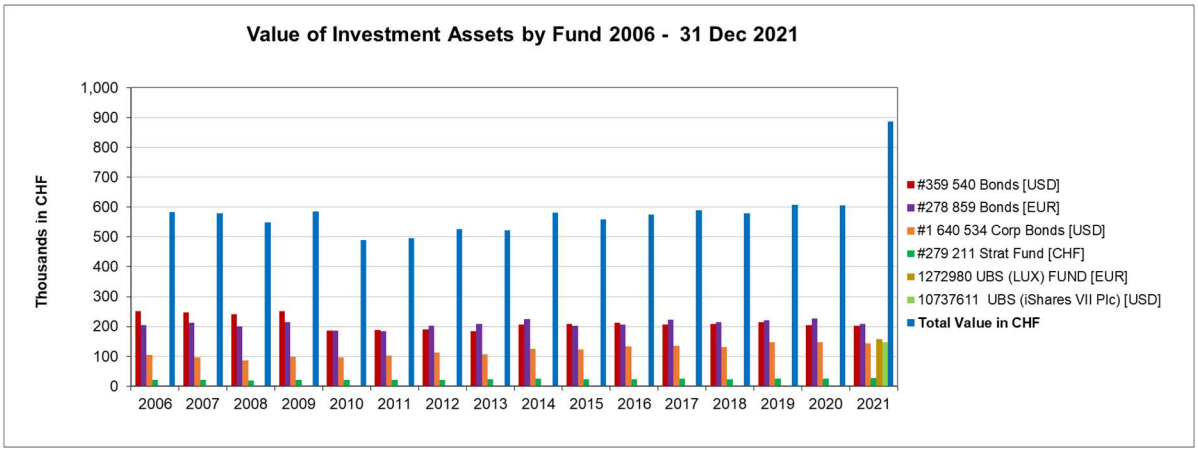


Figure 7. Value of ISPRS investment assets by fund (2006-2021)

An investment of an additional 300,000 CHF was made in two exchange-traded funds in December 2021: one in US stock market – "iShare VII Plc - iShare Dow Jones Industrial Average UVITS ETF USD-acc", and one in European stock market –"UBS (Lux) Fund Solutions - EURO STROXX 50 UCITS ETF (EUR)". The total valuation of these funds was 303,692 CHF as of 31 December 2021 and there was no sufficient data to evaluate their performance.

Expenses

The Society's expenditures are mainly for supporting council activities, investing in Society activities, and covering ISPRS journal editors' honoraria not paid by publishers per agreements. Figure 8 presents the level of expenditure of each year over the last six years by category. Notably, the significant low spending in 2020 was due to the impact of COVID-19 that resulted in many cancelled activities and the high spending in Society's activities in 2021 was because the payments for 2020 U.V. Helava Award and Jack Dangermond Award, of which the donor's contributions were booked in revenue, as well as the lump sum payment to the French Society of Photogrammetry and Remote Sensing for the cost of organizing 2020 and 2021 Virtual Congresses. Council spent less in both 2020 and 2021 mainly because almost all meetings were held in Zoom since the pandemic started.

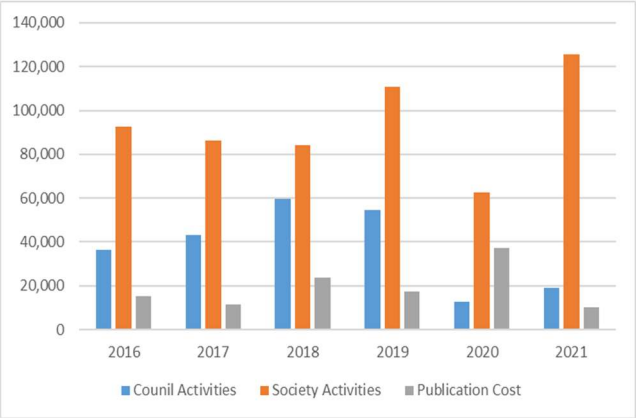


Figure 8. ISPRS major spending by category (2016-2021)[3]

[3] *The actual spending in 2021 was CHF 425,331, which included the expenses of CHF 299,534 for organizing 2020 and 2021 Virtual Congresses. This amount was not a "regular" expense and was not included in the bar graph.*

An analysis of the "cost of doing business", total expenses plus in-kind support, was included in the two previous treasurer's reports. Over the last six years, the total ISPRS operational expenses have been substantially reduced by the following in-kind contributions:

- Support from ISPRS members and event organizers to host ISPRS Council Meetings, which consists of estimated out-of-pocket expenses.
- The President's successful application to the German Research Foundation (DFG) to cover the cost of his travel/subsistence and a part-time secretary's salary throughout the six-year period (estimated CHF 364k).
- The First Vice President was also able to secure similar support from his employer during the same period.
- Council continued to make maximum use of Skype (later Zoom) services to minimise travel expenses, and all other Council Members continued to use alternate funds to support ISPRS travel wherever possible to minimise the impact on the Society's accounts.

These contributions have greatly helped reduce the expenditures of the Society and helped the Society to invest more in activities that benefit the entire ISPRS community. Some of these investment measures include 1) increased funds available for ISPRS Scientific Initiatives (from CHF 40,000 to CHF 70,000), 2) new ISPRS Educational and Capacity Initiatives established in 2017 (started 2018), 3) financial support to TCPs for attending joint meetings, 4) supporting authors from developing countries to publish in ISPRS OA journals, 5) new ISPRS keynote program which covers Keynote Speaker's travel expenses, and 6) supporting the organization of ISPRS events in terms of ConfTool cost and travel grants.

Financial Systems and Operations

Financial Policies

Financial operations are guided by ISPRS Bylaws (*BYLAW XV - Finances*), ISPRS Financial Policy, and ISPRS Spending Policy. The ISPRS Financial Commission reviews and approves the Treasurer's Annual Reports, examines and audits accounts provided by the Treasurer every year, and advises the council on annual budgets. All policy documents are available from the Guidelines section of the ISPRS website.

Accounting Systems

The ISPRS accounting system consists of a hybrid Microsoft Access database and Excel spreadsheets, with origins dating back to the 2000-2004 Congress Period. This system requires maintenance by both the Secretary General and the Treasurer, and it contains functions that require time consuming "work-around" solutions. Several incremental developments took place in the previous Congress Period, including the streamlining of bank reconciliation / accounting spreadsheets in Excel via a macro, as well as the production of a regular Treasurer's report via a Python script to provide the Council with up-to-date information on membership subscriptions. No additional developments have been made to this accounting system during this Congress Period.

Daily Banking

Day-to-day banking with the ISPRS bank, UBS in Zurich, has generally worked well throughout this Congress Period with the assistance of the Treasurer's Assistant. Because of UBS's restricted service and offering to the Treasurer's residence country (the incumbent Treasurer is a resident in Canada), only limited access to ISPRS bank accounts, "view only" access, was granted to the Treasurer, and the Treasurer's Assistant was added to the ISPRS corporate register to fully execute e-banking (including payments) to execute the Treasurer's instructions. In general, e-banking is still simple and efficient and helps to minimise the cost of transactions, since almost all transactions have been done through wire transfers with a few completed using cheques. However, high-profile publicity surrounding various tax scandals, and the subsequent response of governments towards offshore banking has continued to create significant complications for the ISPRS relationship with UBS at various points over the last six years as international banking regulations have been increasingly restrictive, making transfers to certain countries difficult. In particular, the lack of a permanent address for ISPRS Headquarters, the Society's incorporation in the USA State of Maryland, and the nomadic movements of the ISPRS Treasurer every four years have continued to be problematic in establishing a stable banking basis in Switzerland.

Credit Card Payments

Credit card payments can be made online using the service provided by Copernicus GmbH by all categories of member through a portal provided in the ISPRS Payment Instructions, which is attached to annual membership invoices. Working together with Copernicus IT, some improvements were made, including an email advice sent to the Treasurer for each online payment made and reconciling the difference between the invoiced amount and the amount shown in online payment system when arrear payment is involved. The Society pays a fixed amount handling fee, plus credit card fees charged (currently 2.35% for American Express, 3.57% for Visa and JCB, and 3.56% for MasterCard) and VAT. For each payment, this presents about 5-6% of the payment amount. During

this Congress period, an increasing number of members (about 10% in 2020) have used the service to pay their subscription fees.

Incorporation and Tax

The Society's incorporation in the State of Maryland, USA as a not-for-profit (that is, tax exempt) organization has worked reasonably well for a Treasurer not resident in the USA. However, it adds additional responsibility to the ISPRS Treasurer, and requires professional assistance in the USA to complete and file tax return and submit annual financial and property forms, most notably the IRS-990 and the State of Maryland Annual Report / Personal Property forms. As with changes in banking regulations, there are changes in these forms each year that, if not submitted, can result in ISPRS being "not in good standing" or "forfeited" and losing its standing and tax-exempt status.

Summary

Overall, the Society's financial status continues to be healthy in terms of income, but raises concerns of continuous financial asset accumulation, as shown by the increased divergence of income and expenditure up to 2019, which is different from the convergence trend of the last quadrennial period. The Society's net worth by the end of December 2021 was CHF 957,362 (up from CHF 617,896 in the end of 2015). The stable income from membership subscription fees and revenue generated from publication royalties have continued the increase of the total assets which once again require attention of Council to continue to seek solutions and investigate strategic investments.

Although Council has been continuously working on connecting and communicating with those members that remain in arrears, increasing percentage of members in arrear and falling income from Sustaining Members will require the next Council's further attention for developing strategies for recognizing members, rewarding long-term members, and providing more member-only benefits.

The current Council had launched some new investment measures (e.g., APC support to developing country authors, keynote program, free use of ConfTool services by ISPRS events) in 2018 but their implementation impacted by the COVID-19 pandemic. The next Council is encouraged to continue to monitor and evaluate the performance of these new measures once the pandemic is over, as well as developing new ways of investing the Society's financial resources.

One of the recommendations from the previous Treasurer's report was to consider the streamlining of the current accounting practice and membership management using an appropriate online, off-the-shelf solution. The current Council decided to not make changes. However, it is worth investigation by the next Council to replace the current MS Access based accounting and membership management systems.

As the duration and impact of the COVID-19 pandemic is unclear currently, so too is the related fiscal impact on the Society. Nevertheless, the incumbent Treasurer believes that the Society is well-positioned to face the near-term financial challenges that may lie ahead and to continue working towards its mission of advancing the photogrammetry, remote sensing and spatial information sciences through international cooperation in research, development and education for the benefit of society and in general for environmental sustainability.

Acknowledgement

My work could not be done without the valued assistance of Dan Brooking-Coker throughout my six-year term of office as ISPRS Treasurer. I am greatly indebted to the previous Treasurer, Jon Mills, for his immense help and patience in making a smooth transition and answering my questions after the handover. A special gratitude goes to my colleagues in ISPRS Council for their continuous support and good spirits. Finally, the support of the ISPRS Financial Commission, consisting of Jon Mills, George Vosselman, and Manos Baltsavias for the period of 2016-2021 and George Vosselman, Fulvio Rinaudo, and Petri Ronnholm for the period of 2021 to 2022, are gratefully acknowledged.

Appendix

I. 2022 budget and quarter-one statement of income and expenditure by category

		Budget	JAN	FEB	MAR	Total Spent	Under/Over Projection
Expenditure		**374,700**	**3,538**	**28,239**	**1,346**	**33,123**	**341,577**
	Council Activities	61,300	2,522	0	0	2,522	58,778
	Society Activities	293,200	1,000	24,280	0	25,280	267,920
	Publication	14,400	0	3,958	0	3,958	10,442
	Bank and Loans	5,800	15	0	1,346	1,362	4,438
Income		**369,900**	**29,200**	**34,841**	**10,673**	**74,713**	**295,187**
	Subscriptions	107,500	28,390	10,723	6,124	45,237	62,263
	Royalties	160,300	0	23,373	4,549	27,922	132,378
	Congress and GSW	0	0	0	0	0	0
	Symposium	0	0	0	0	0	0
	Other Income	11,800	810	0	0	810	10,990
	Bank and Loans	90,300	0	744	0	744	89,556

II. Historical record of membership fees collected

Year	Collected Fees by Member Type (CHF)				Total (CHF)
	OdM	StM	RM	AM	
1997	61,111	44,729	800	1,400	108,040
1998	52,763	31,863	200	1,300	86,126
1999	82,082	34,500	300	1,700	118,582
2000	65,918	28,294	1,577	1,200	96,989
2001	59,246	43,985	1,555	2,532	107,318
2002	55,659	40,426	364	3,200	99,649
2003	71,373	33,161	486	949	105,969
2004	75,513	42,662	1,944	6,238	126,357
2005	63,195	51,936	1,283	1,817	118,231
2006	74,070	58,945	1,462	3,207	137,684
2007	58,275	47,729	858	2,482	109,344
2008	71,510	62,473	1,110	2,382	137,476
2009	64,741	50,069	1,103	1,334	117,247
2010	81,386	48,679	1,555	2,683	134,303
2011	60,174	46,520	419	599	107,713
2012	65,271	50,924	2,437	6,198	124,831
2013	65,414	50,050	780	2,931	119,174
2014	72,647	38,917	1,060	1,278	113,901
2015	63,504	49,081	1,085	4,395	118,065
2016	81,825	35,752	1,272	1,721	120,570
2017	59,433	30,078	592	2,263	92,366
2018	68,525	44,907	1,185	1,678	116,295
2019	69,642	51,551	1,001	828	123,022
2020	60,495	34,480	658	1,021	96,654
2021	26,133	7,268	0	0	33,401

Note: Exchange rates between the USD and CHF and between the Euro and CHF were calculated for each year according to x-rates.com (http://www.x-rates.com) and a few exchange forecasting reports (incl. USB) since 2016.

Report of Financial Commission Chairs, Jon Mills, 2016-2021 and George Vosselman, 2021-2022, to the General Assembly for the Term 2016-2022

Composition of the Financial Commission

The Financial Commission of ISPRS in the period 2016-2021 was composed of:
- Jon Mills, chair, Newcastle University, United Kingdom
- George Vosselman, member, University of Twente, the Netherlands
- Emmanuel Baltsavias, member, ETH Zürich, Switzerland

For the period 2021-2022, the Financial Commission was composed of:
- George Vosselman, chair, University of Twente, the Netherlands
- Fulvio Rinaudo, member, Politecnico di Torino, Italy
- Petri Rönnholm, member, Aalto University, Finland

Approval of accounts

At each fiscal year from 2016 to 2021, the Financial Commission closely examined all Society accounts included in the Treasurer's report, including income and expenditure and the evolution of the assets, dividends and cash accounts. The provided Treasurer's accounts and reports were detailed, generally well documented and easy to follow. This allowed a thorough understanding of the various financial flows throughout each period, on a year by year basis. The Financial Commission thanks the ISPRS Treasurer, Songnian Li, and his team for their important and thorough work in this regard. The year 2021 has been exceptional because of the COVID-19 pandemic which has caused a notable loss of 262 872 CHF to the Society. However, the Financial Commission appreciates the actions of the ISPRS Council during these difficult times. The Financial Commission confirms that the 2016 to 2021 ISPRS accounts show no apparent accounting errors.

Delivery of documents

Following the submission of accounts by the ISPRS Treasurer for each of the fiscal years 2016 to 2021, the Financial Commission responded with comments and questions as per the dates reported in Table 1. Simultaneous to the analysis of the previous years' accounts, the proposed budget for the forthcoming year (i.e. 2017 – 2022), together with a four-year forecast, was also submitted by the Treasurer and scrutinised by the Financial Commission, with feedback provided on the same dates (Table 1). Following discussion, the accounts and budget were signed off by the Financial Commission as per the date shown in the final column in Table 1. It is apparent from Table 1 that the timeline associated with setting and approving the annual Society budget has meant that it has gone unapproved until Quarter 2 or Quarter 3 of the year to which it relates. Moreover, the timescale for the submission and approval of accounts has necessitated the Society's accountants to regularly apply for deferral of the ISPRS' Maryland annual tax return (early April annual deadline).

Fiscal Year of accounts / budget	Date accounts first received by FC	Date of first response by FC	Date final revisions received by FC	Date signed off by FC
2016 / 2017	29th April 2017	15th May 2017	18th May 2017	19th May 2017
2017 / 2018	29th June 2018	31st July 2018	25th Sept 2018	26th Sept 2018
2018 / 2019	23rd February 2019	13th March 2019	27th Aug 2019	9th Sept 2019
2019 / 2020	22nd February 2020	13th March 2020	21st March 2020	30th March 2020
2020 / 2021	17th February 2021	12th March 2021	15th April 2021	16th April 2021
2021 / 2022	10th February 2022	17th Feb 2022	23rd Feb 2022	23rd Feb 2022

Table 1: Timeline for scrutinising and signing off annual accounts and budgets.

Over the years, the Financial Commission has repeatedly made recommendations regarding the budget and cash assets which were not followed up by the Treasurer. While the Financial Commission recognizes it only has an advisory role regarding the budget, the lack of explanations for not following up recommendations demotivates the Financial Commission to continue its role.

Recommendation #1:

For the period 2023-26, the ISPRS Treasurer provides the budget to the Financial Commission two months in advance of the fiscal year to which it relates such that the Financial Commission can examine it and pass it on to the Council one month before the start of the

budgeted fiscal year, as is requested in Bylaw XV.7a adopted in 2019.

Recommendation #2:

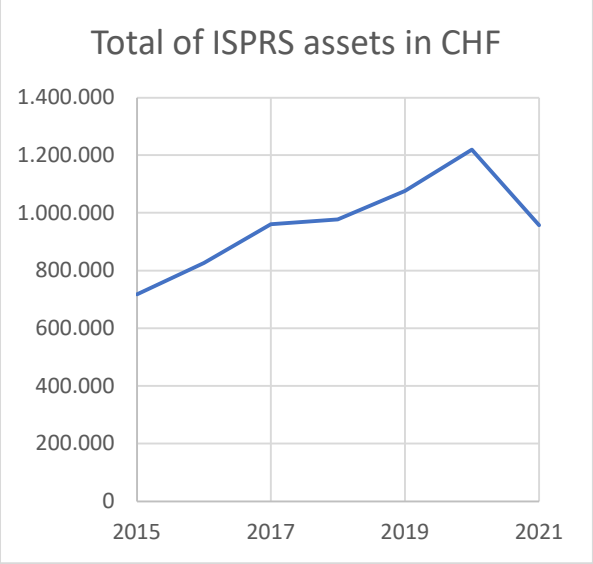
For the period 2023-26, the ISPRS Treasurer provides the fiscal accounts to the Financial Commission by the end of February in the following year (i.e. before 28th February of Accounting Year +1).

Recommendation #3:

The ISPRS Treasurer provides a written clarification to the Financial Commission whenever the Commission's recommendations are not followed up.

Financial policy

The ISPRS financial policy, as published on https://www.isprs.org/documents/guidelines/financial-policy.aspx, provides guidelines for financial planning and budgeting in Part 1. It recommends in article E: "*Conservative Budgeting: It is prudent financial planning to under-budget for income and over budget for expenses.*" In the past term, the ISPRS Treasurer strictly adhered to this policy for every budget item, in particular for expenses. As a consequence, the total of the budgeted expenses was a gross overestimation of the incurred expenses and ISPRS was generating annual profits of over kCHF 100 in the pre-covid years 2016-2019. This has resulted in a vast accumulation of assets. The Financial Commission repeatedly recommended to budget more realistically and considers the growth of the ISPRS assets not in the interest of the ISPRS members and not supporting the Society's mission. It should be noted that the decline in assets in 2021 is the consequence of waiving the 2021 member fees and already taking costs for the online congresses in 2020 and 2021, and is not a result of a structural change in the budgeting policy.



The financial policy further recommends in article I, *"Custody Accounts: It is the desire of the Council to maintain a reserve within the custody accounts equivalent to the full, unhindered operation of the Society for a quadrennial term. Based on the four-year budgeting process, the target level for total custody account reserves is a minimum of CHF 500k."* The current ISPRS assets significantly exceed this minimum amount. Even after the 2021 fee waiver for all members, total assets still exceed the sum of all expenses of the years 2016-2019 by more than kCHF 200.-. Furthermore, the Financial Commission observes that the annual income from royalties paid by the journal publishers grew significantly from kCHF 27.- in 2016 up to kCHF 173.- in 2021, a trend which is expected to continue at least for the duration of the current publishing contracts. This establishes the journal revenues as a very significant source of income next to the membership fees and income from ISPRS events. This larger diversification of income has increased the resilience of Society finances, making it questionable whether reserves are still required to match the costs for the operation of the Society for a full quadrennial term.

Recommendation #4:

Given the diversification of income due to the reliable and increasing revenue from journal publishers, the ISPRS Council is recommended to review the financial policy regarding the desired reserves on custody accounts.

Recommendation #5:

The ISPRS Council is recommended to adopt a more realistic budgeting policy to avoid continued structural growth of the Society's assets.

Recommendation #6:

The ISPRS Council is recommended to put in place a forward strategic plan for the sustainable and controlled reduction of the Society's assets and for the benefit of the Society and its membership. The Financial Commission recognises and accepts that this will involve annual budgeting to make a loss. Care must be taken that additional expenditure does not become a part of compulsory ISPRS' structural expenses, but is associated with activities that directly benefit members, such as scientific initiatives, awards, travel grants, summer schools, competitions, etc.

Recommendation #7:

The ISPRS Treasurer is recommended to review the cash reserves annually and reduce them to, and maintain them at, the target level specified in article H. of the Financial Policy, Part 1.

Members in arrears

With a number of Ordinary Members now anything up to 20 years in arrears, it seems obvious that many of these members are no longer engaged with the Society. Two years ago, the Financial Commission recommended Council to take action at the next General Assembly to remove the worst non-payers from the membership, as appropriate. The Financial Commission understood that Council will propose to amend the by-laws to allow this.

Recommendations to the 2016 General Assembly

The Financial Commission noted that two recommendations made by the previous Financial Commission have not been addressed in the past term. The Financial Commission requests the future Council to consider these recommendations:

Recommendation #8:

Incorporation and compatibility with banking: The future Council are asked to consider the possible co-location of the Society's incorporation with its banking activity, either through registering ISPRS as an entity in Switzerland, by transferring its banking operations to the USA, or by moving both to a mutually convenient location.

Recommendation #9:

Overhaul of accounting system: With a total of only 180 members in all categories, a much simpler and more efficient on-line method to record and manage member payments, etc. than is currently in operation should be feasible. The incoming Treasurer, together with the Secretary General's office should consider the streamlining of the current practice to an appropriate on-line, off-the-shelf solution.

Term of the Financial Commission

Bylaw XIV currently states "*The outgoing Financial Commission shall continue to serve after the Congress to ensure that the outgoing Treasurer hands over the accounts and funds of the Society to the new Treasurer within two months of the Congress. The new Financial Commission shall replace the outgoing Financial Commission at the same time as the changeover of Treasurers, and report to the Council that the changeover has been satisfactorily accomplished.*" The Financial Commission supports the custom that the Past Treasurer continues as chair or member of the Financial Commission as the Past Treasurer is very well introduced to the financial processes and challenges of the ISPRS. However, the consequence of the current Bylaw XIV is that the Past Treasurer, as a member of the Financial Commission, becomes responsible for approval of the accounts of the last year of his/her treasurership.

Recommendation #10:

The Financial Commission recommends adapting Bylaw XIV such that the outgoing Financial Commission continues to serve until approval of the accounts for the Congress year is complete. Council may consider whether the outgoing Financial Commission will also advise on the budget of the year after the Congress, or whether this is left to the incoming Financial Commission. In the latter case, two Financial Commissions will be active at the same time.

Report of the Editors-in-Chief on ISPRS Journal of Photogrammetry and Remote Sensing
Qihao Weng, 2016-22, Clément Mallet, 2021-22, Derek Lichti, 2016-20

Overview of Major Developments

The Journal experienced significant growth in terms of the number of new submissions and the number of published articles. There were more than 1,800 new papers submitted in 2021 and the projection for 2021 is of similar magnitude. The number of published papers is well over 200 per year. To handle this load, the editorial team now comprises two Editors-in-Chief and 23 Associate Editors. The latter increased from 13 at the end of the 2012-2015 reporting period. The Editorial Advisory Board was also expanded in 2019. Journal performance has improved both in terms of efficiency and quality. Article handling time decreased every year during the reporting period. The Impact Factor more than doubled (from the end of the previous reporting period) to 8.979, which places the Journal first out of 52 in the category of Physical Geography and second out of 32 journals in the Remote Sensing category.

The winner of the U.V. Helava Award for the best paper during 2016-2019 period has been awarded to "*Bundle adjustment with raw inertial observations in UAV applications*" by Davide Antonio Cucci, Martin Rehak and Jan Skaloud. In addition, the winner of the Best Paper Award in 2020 has been awarded to "*Cloud removal in Sentinel-2 imagery using a deep residual neural network and SAR-optical data fusion*" by Andrea Meraner, Patrick Ebel, Xiao Xiang Zhu and Michael Schmitt. The winner of the Best Paper Award in 2021 has been awarded to "*ULSD: Unified line segment detection across pinhole, fisheye, and spherical cameras*" by Hao Li, Huai Yu, Jinwang Wang, Wen Yang, Lei Yu and Sebastian Scherer.

Manuscript Handling

Submitted Manuscripts

The number of manuscripts submitted during the reporting period is tabulated below. The year 2016 marked the end of three years of stability in terms of the number of submissions at around 650 (653 in 2014 and 658 in 2015). The Journal experienced a huge increase in 2017, possibly due to the increase in the Impact Factor, and continued growth thereafter. As of February 21, 275 papers have been received in 2022, which projects to more than 1,935 papers for the year. The Journal did not experience a decrease during the Covid-19 pandemic.

Table 13.1. Manuscripts submitted to the Journal.

Year	2016	2017	2018	2019	2020	2021
# submitted manuscripts	651	1,048	1,106	1,312	1,534	1,806
% increase from previous year (658 in 2015)	-1	61	6	19	17	18

Manuscripts are submitted to the Journal by Elsevier's EES online system. This system was used prior to a move to Elsevier's Evise system. The Journal was moved back to EES in 2016 due to many problems experienced with Evise. Since November 9th, 2020, the Journal has been migrated from EES to EM (Editorial Manager) system.

Accepted Manuscripts

Metrics concerning accepted manuscripts are provided below. The number of papers accepted has increased since 2016, although 2019 was an anomalous year. The acceptance rate has decreased by nearly 10% in the past five years. The increased Impact Factor makes the Journal an attractive target for authors hoping to publish their papers. This has led to an increase in the number of submissions, as mentioned. It has also led to an increase in low quality and out-of-scope manuscripts, hence the high rejection rate.

Table 13.2. Journal acceptance statistics.

Year	2016	2017	2018	2019	2020	2021
# final decisions	621	947	1,165	1,312	1,534	1,806
# accepted papers	166	208	253	223	264	255
# rejected papers	453	737	908	1,079	1,269	1,506
# withdrawn/removed papers	23	19	9	9	16	10
Acceptance rate (%)	27	22	22	17	17	15

Published Manuscripts

The number of papers published and the total journal pages (see table below) have also increased

considerably since 2016, though 2018 was an anomaly. A double volume (145-A and 145-B) was published at the end of 2018 for two theme issues, so there were more papers published in this year.

Table 13.3. Journal publication statistics.

Year	2016	2017	2018	2019	2020	2021
# volumes	12	12	12	12	12	12
# papers	182	201	280	229	263	263
# pages	2,268	2,760	3,612	3,100	3,840	3,978

Unfortunately, two papers published in 2018 were retracted due to academic misconduct. The first was a case of research results being published in two journals. The second was a case of multiple submissions of substantially the same work to three journals. In both cases, the authors voluntarily retracted the articles. Retraction notices were published accordingly.

Theme Issues

The table below summarizes the Theme Issues (TIs) and Theme Sections (TSs) published in the Journal for the 2016-2021 period plus early 2022. There has been 15 published TIs/TSs, averaging 2.5 special issue per year. The distinction between designations is on the basis of the number of accepted papers: a TI comprises 10 or more papers; a TS comprises less than 10 manuscripts. At least 1 TI proposal is received every month. Most of these proposals are formulated by experts out of the field of the journal or correspond to topics already correctly covered by the Journal, which explains a high rejection of such proposals.

Table 13.4. Theme Issues.

Title	Guest Editors	Year	Volume(s)	Number of Articles	TI/TS
SI: Cloud/Web Mapping	Bert Veenendaal Maria Brovelli Lixin Wu	2016-03-24	114C	6	TS
SI: State-of-the-art	Christian Heipke Marguerite Madden Zhilin Li Ian Dowman	2016-03-31	115C	12	TI
SI: Multi-dimensional modeling, analysis and visualization	Francesc Antón Castro Arzu Çöltekin Éric Guilbert Chris Pettit	2016-05-17	117C	7	TS
SI: 36th ISRSE Special Issue	Bjorn Waske John Trinder	2016-09-13	119C	4	TS
SI: Geospatial Week 2015	Ian Dowman Nicolas Paparoditis	2017-04-20	127C	10	TI
SI: Geospatial Computer Vision	Jan Dirk Wegner Devis Tuia Michael Ying Yang Clément Mallet	2018-04-18	140C	11	TI
SI: UN Sust Dev Goals	John Trinder Sisi Zlatanova Jie Jiang	2018-07-10	142C	5	TS
SI: Point Cloud Processing	Ruisheng Wang Bisheng Yang Florent Lafarge Suya You	2018-08-07	143C	21	TI
SI: Deep Learning RS Data	Giorgos Mountrakis Jun Li Xiaoqiang Lu Olaf Hellwich	2018-10-05	145PA	13	TI
SI: Latin America Issue	Raul Q. Feitosa Jaime Hernandez	2018-10-22	145PB, 146C, 147C, 148C	18	TI

	Carlos M. Scavuzzo Luiz E.O.C. Aragão Claudia de Almeida				
VSI: Big Geo Data	Charles Toth Jan Dirk Wegner Oni Mutanga Cheng Wang	2020-11	156C	6	TS
VSI: African Sustainability	Onisimo Mutanga Elfatih Mohamed Abdel Rahman Lalit Kumar Qihao Weng	2020-11	157C, 159C, 161C	13	TS
VSI: Multi-view Satellite Image Processing	Rongjun Qin Pablo d'Angelo Naoto Yokoya Jan Dirk Wegner	2021-06	167C ~ 183C	6	TS
VSI: Muti-Modal Learning in Photogrammetry and Remote Sensing	Michael Ying Yang Loic Landrieu Devis Tuia Charles Toth	2021-06	167C ~ 176C	10	TI
VSI: 3D Modeling of Indoor Environments	Zhizhong Kang Cheng Wang Kourosh Khoshelham Ville Lehtola	2022-01	175C ~ 183C	13	TS
New Generation of Hyperspectral Remote Sensing Data in the Study of Global Agriculture and Vegetation	Prasad S. Thenkabail Alfredo Huete Eyal Ben-Dor	Submission deadline: October 31, 2021	177C ~ (In process)	5	
Street-level Imagery Analytics and Applications	Fan Zhang Jan Dirk Wegner Bisheng Yang Yu Liu	Submission deadline: 31 January 2022	182C ~ (In process)	5	

Since 2019, the ISPRS Journal has adopted the Virtual Special Issues (VSI) model for theme issues. VSI is an online-only grouping of Special Issue articles traditionally assigned to a single Special Issue. Each article in a VSI is assigned a unique identifier and then published in a regular journal issue as soon as available. The unique identifier allows us to simultaneously add the article to a VSI on ScienceDirect which is gradually built up as individual articles are published online. Articles grouped together in a VSI retain their original citation details.

Manuscript Handling Time

The editorial and publication time in the period of 2016-2021 continues to be shortened, as can be seen in the table below. These improvements can likely be attributed to a number of factors including: the appointment of additional editors; the appointment of the Editorial Advisory Board; and weekly email reports about the status of each paper that are sent to editors (It unfortunately has been discontinued).

Table 13.5. Manuscript handling time statistics for published articles.

	Submission to First Decision (weeks)[1]	Submission to Acceptance (weeks)[2]	Submission to First Online (weeks)[3]	Submission to Final Publication (weeks)[4]
2016	13.12	29.82	33.46	41.69
2017	12.6	27.71	30.12	36.63
2018	12.0	27.19	29.69	39.04
2019	11.4	26.7	28.11	32.55
2020	11.1	24.3	26.9	31.7
2021	9.7	22.1	25.1	30.2

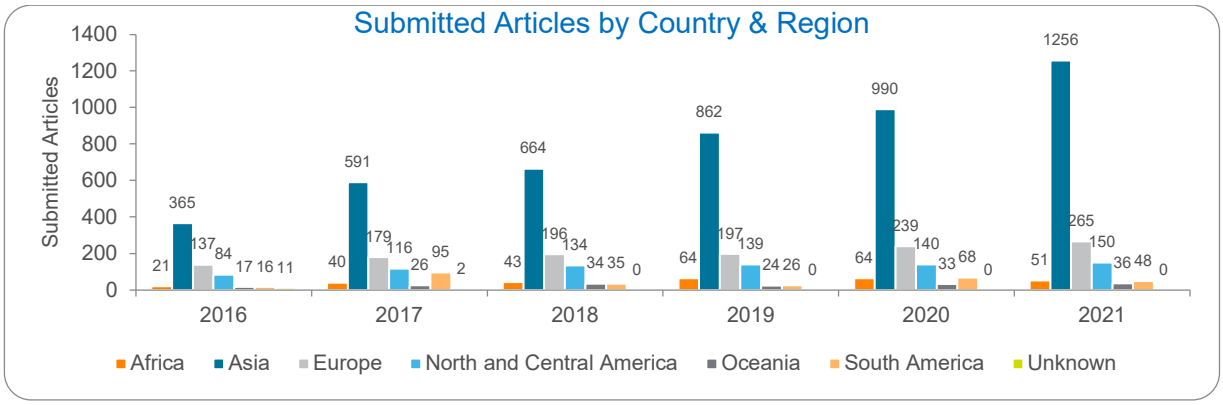
[1]Submission to First Decision is the average total time, in weeks, between submission and first decision.

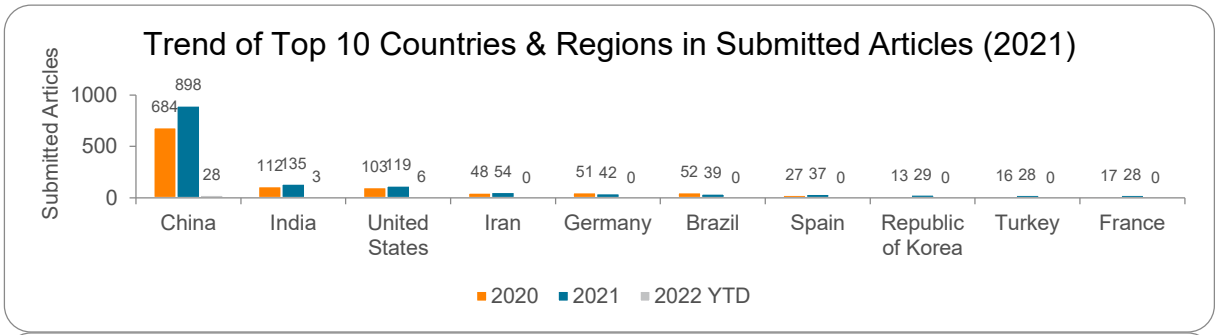
[2]Submission to Acceptance is the average total time, in weeks, between submission and editorial outcome "Accept".
[3]Submission to First Online is the average total time, in weeks, between submission and publication first online.
[4]Submission to Final Publication is the average total time, in weeks, between submission and issue dispatch (print) or final publication date online (e-only).

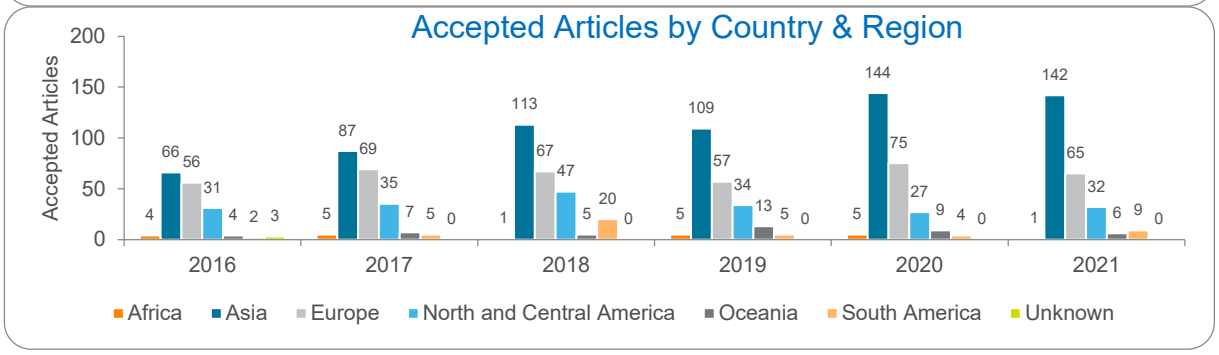
The desk-reject time, performed by the Editors-in-Chief, is 0.2 to 0.6 week. This fast desk-rejection strategy allows to significant limit the load of both EiC and AE while proposing a swift redirection of many manuscripts to more adequate journals.

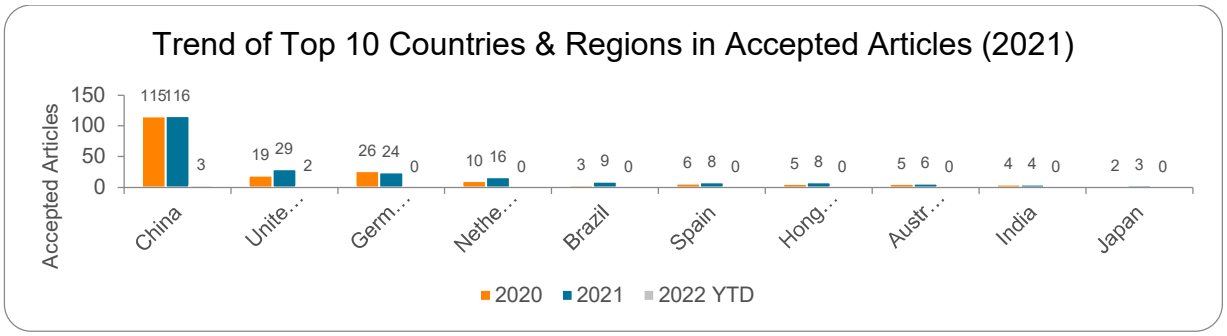
Country of Origin

The figures below provide a graphical summary of the country of origin of the corresponding author. Though the Journal received manuscripts from all populated continents, Asia was the major contributor, followed by Europe and North and Central America. From 2016 to 2021, Asia experienced the most growth (by more than 244%). Europe had also increased the submission by over 93%, while the North and Central America by nearly 79%. South America remained stable in submissions, except for 2017 when there was a planned special issue in 2018. The largest contributing countries were China, India, and USA. In terms of the number of accepted papers, the main contributors were also Asia, Europe and North and Central America, with the top three countries of China, USA, and Germany.









Access to Articles

Papers are available on-line through the Elsevier website http://www.sciencedirect.com/science/journal/09242716/118.

As can be seen below, the number of downloads increased each year of the reporting period. The largest increase was experienced in 2018.

Table 13.6. Journal download statistics.

Year	2016	2017	2018	2019	2020	2021
# downloads	507 196	588 370	759 994	805 934	963 306	977,426
% increase from previous year (453978 in 2015)	12	16	29	6	19.5	1.47

Impact

The Impact Factor (IF) is a two-year measure of Journal quality published annually in the Journal Citation Reports by Clarivate Analytics. Over the past four years the impact factor of the Journal increased significantly from 3.132 in 2014. The Journal is ranked second out of around 32 journals in the Remote Sensing category in terms of IF. The five-year impact factor also increased each year from 4.652 in 2014. The CiteScore increased from 5.41 in 2015 to 14.9 in 2020. The total number of citations of Journal articles reached over 18,000 in 2020.

Table 13.7. Journal impact factor and citations.

Year	2015	2016	2017	2018	2019	2020
Impact Factor	4.118	6.387	5.994	6.942	7.319	8.979
Five-year impact factor	5.063	6.457	6.592	7.856	8.597	9.948
CiteScore	5.41	9.2	11.2	10.6	11.7	14.9
Total # citations	5125	7720	8535	11 576	13 946	18,026

Editorial Team

Editors and Board

The editorial team comprises two Editors-in-Chief (EiCs) and 23 Associate Editors (AEs) with at least one from each populated continent. Derek Lichti finished his second four-year term as EiC at the end of 2020. Qihao Weng continues his EiC role and Clément Mallet has taken over for Derek.

Long-serving AE Konrad Schindler, who has done an excellent job since 2011, retired from duties in June 2020. Konrad was replaced by Jan Dirk Wegner. Two additional AEs began duties in April 2020, Michael Ying Yang and Jungho Im. Mariana Belgiu has been selected an AE since January 2021 to replace the position that Clément Mallet left. At the end of December 2021, Professors Sanna Kaasalainen, Markus Gerke and Debra Laefer have also retired as Associate Editors (Markus and Debra being in 2022 Editors-in-Chief of PFG and Photogrammetric Record, respectively). Our Journal's readership has benefited greatly from their strong commitment to their editorial duties. Sanna has dutifully served the Journal for a total of ten years since 2012; while Markus and Debra began their service in 2018 and 2019, respectively, a time at which the journal experienced rapid growth in terms of the number of paper submissions. Thanks to their high standards for paper quality and rigorous peer review, these editors have made invaluable contributors to the Journal's

current high standing. All are recognized experts in their respective subject areas. Sanna handled submissions in laser scanning and natural environments. Markus oversaw papers in photogrammetry and semantic scene analysis. Debra was responsible for laser scanning and data fusion manuscripts.

Starting January 1, 2022, seven individuals have been appointed Associate Editors of the Journal. These individuals have been contributing to the ISPSR Journal for years as authors, reviewers, and/or guest editors. We are looking forward to working with them, and together, to bringing the journal a greater success. Dr. Ronny Hänsch will oversee paper dealing with SAR and semantic scene analysis, Yuhong will handle remote sensing papers dealing with geospatial analysis and ecosystem modelling, Dr. Florent Lafarge will be in charge of papers related to 3D modelling, surface reconstruction and point cloud processing, and Prof. Rongjun Qin will also focus on 3D modelling but also on change detection and land-cover classification. Dr. Lars Waser will oversee contributions in LiDAR and satellite image time series and natural environments; Dr. Martin Weinmann will bring his expertise in point cloud processing and semantic scene analysis, and Prof. Gui-Song Xia will handle from low-level to high-level optical image understanding.

Table 13.8. Editors-in-chief.

Name	**Institution**	**Country**	**Subject areas handled**	**Period served**
Qihao Weng	The Hong Kong Polytechnic University / Indiana State University	China / United States of America	Remote sensing	2015- 2009-2014 as AE
Clément Mallet	Institut National de l'Information Géographique et Forestière	France	Laser scanning, Photogrammetry, Computer vision	2021-

Table 13.9. Associate Editors

Name	**Institution**	**Country**	**Subject areas handled**	**Period served**
Cláudia Maria de Almeida	National Institute for Space Research	Brazil	Remote sensing	2015-
Mariana Belgiu	University of Twente	Netherlands	Remote Sensing	2021-
Gang Chen	University of North Carolina at Charlotte	United States of America	Remote sensing	2018-
Michele Crosetto	Centre Tecnologic Telecomunicacions Catalunya	Spain	RADAR	2019-
Ronny Hänsch	German Aerospace Center (DLR)	Germany	SAR	2022-
Yuhong He	The University of Toronto	Canada	Remote sensing	2022-
Jungho Im	Ulsan National Institute of Science and Technology	South Korea	Remote sensing	April 2020-
Florent Lafarge	Inria Sophia Antipolis Mediterranean Research Centre	France	3D modelling/Laser scanning	2022-
Roderik Lindenbergh	Delft University of Technology	The Netherlands	Laser scanning	2018-
Bunkei Matsushita	University of Tsukuba	Japan	Remote sensing	2018-
Xin Miao	Missouri State University	United States of America	Remote sensing	2014-
Deepak Mishra	University of Georgia	United States of America	Remote sensing	2019-
Giorgos Mountrakis	State University of New York	United States of America	Remote sensing	2015-
Onisimo Mutanga	University of KwaZulu-Natal	South Africa	Remote sensing	2013-

Rongjun Qin	Ohio State University	United States of America	Remote sensing/computer vision	2022-
Vasit Sagan	Saint Louis University	United States of America	GIS, RADAR	2018-
Marco Scaioni	Politecnico di Milano	Italy	Photogrammetry	2018-
Devis Tuia	EPFL	Switzerland	Computer vision	2018-
Lars Waser	Swiss Federal Institute for Forest Snow and Landscape Research	Switzerland	Laser scanning/remote sensing	2022-
Jan Dirk Wegner	ETH Zürich/University of Zürich	Switzerland	Computer vision	June 2020-
Martin Weinmann	Karlsruhe Institute of Technology	Germany	Laser scanning/computer vision	2022-
Gui-Song Xia	Wuhan University	China	Computer vision	2022-
Michael Ying Yang	University of Twente	The Netherlands	Computer vision	April 2020-

The Journal's Editorial Advisory Board (EAB) was formed in 2019. Comprising internationally recognized scientists who have reliably served and/or contributed articles to the Journal, the EAB is primarily a reviewer resource for the editorial team. Each member is responsible for performing at least four reviews per year. It consists of 50 members appointed for a three-year term. The new EAB will be formed in June 2022 before the Congress.

Elsevier Staff

The EiCs generally had frequent contact with several Elsevier staff. Based in Amsterdam, the Publisher is responsible for the Journal and is our main contact. The EiCs have regular contact with the Publisher through email and Zoom meetings are held every 4-6 months. Dr. Konstantinos (Kostas) Bischiniotis began duties as Publisher March 2020 after the resignation of Lan Song in 2019.

The Chennai-based Journal Manager is our contact for production matters as well as issues that arise with Elsevier's online submission system EES. The Publishing Content Specialist, who is based in Beijing, has been our contact for Theme Issues. However, the EiCs were informed in March 2020 that the Journal has been categorized as a C-level journal within Elsevier. As a result, the Journal Manager handles Theme Issues. The table below summarizes the staff for the reporting period.

Table 13.10. Elsevier contacts

Name	**Service Period**
Publisher	
Lan Song	March 2016-July 2016
Tobias Wesselius	August 2016-May 2017
Lan Song	June 2017-August 2019
Konstantinos (Kostas) Bischiniotis	March 2020-
Journal Manager	
Sundar Ananthakrishnan	2015-March 2018
Mark Anthony	April 2018-
Publishing Content Specialist	
Jia/Jessica Yang	November 2014- December 2020
Yixuan Zhao	December 2019-February 2020

The U.V. Helava Award

Background

The U.V. Helava Award, sponsored by Elsevier B.V. and Leica Geosystems AG, is a prestigious ISPRS Award, which was established in 1998 to encourage and stimulate submission of high-quality scientific papers by individual authors or groups to the ISPRS Journal, to promote and advertise the Journal, and to honour the outstanding contributions of Dr. Uuno V. Helava to research and development in photogrammetry and remote sensing.

The Award is presented to authors of the best paper, written in English and published exclusively in the ISPRS Journal during the four-year period from January of a Congress year, to December of the year prior to the

next Congress. The Award consists of a monetary grant of SFr. 10,000 and a plaque. A five-member Jury, comprising experts of high scientific standing, whose expertise covers the main topics included in the scope of the Journal, evaluates the papers. For each year of the four-year evaluation period, the best paper is selected, and among these four papers, the best-of-best one to receive the U.V. Helava Award.

Jury

The U.V. Helava Award Jury was recently renewed and replaced. The composition of the U.V. Helava Award Jury for the 2021-2024 evaluation period is summarized in the table below. The Jury is led by one of the Editors-in-Chief, who serves as a non-voting member. Qihao led the Jury in 2016, 2018 and 2020, while Derek was the lead in 2017 and 2019. Clément led the Jury in 2021.

Table 13.11. UV Helava Award Jury members.

Name	Institute	Country
Songnian Li	Ryerson University	Canada
Xiaoli Ding	Hong Kong Polytechnic University	China
Helmut Mayer	Bundeswehr University Munich	Germany
Anjana Vyas	CEPT University	India
Peijun Li	Peking University	China

Winners

The four best papers, 2016-2019, selected by the Jury are:

The Best Paper Award for 2019 (volumes 147-158) was awarded to Roland Schwarz, Gottfried Mandlburger, Martin Pfennigbauer and Norbert Pfeifer for their paper "*Design and evaluation of a full-wave surface and bottom-detection algorithm for LiDAR bathymetry of very shallow waters*"
https://www.sciencedirect.com/science/article/pii/S0924271619300358

The Best Paper Award for 2018 (volumes 135-146) was awarded to Steve Branson, Jan Dirk Wegner, David Hall, Nico Lang, Konrad Schindler and Pietro Perona for their paper "*From Google Maps to a fine-grained catalog of street trees*".
https://www.sciencedirect.com/science/article/pii/S0924271617303453?via%3Dihub

The Best Paper Award for 2017 (volumes 123-134) was awarded to Davide Antonio Cucci, Martin Rehak and Jan Skaloud for their paper "*Bundle adjustment with raw inertial observations in UAV applications*".
https://www.sciencedirect.com/science/article/pii/S0924271617301387?via%3Dihub

The Best Paper Award for 2016 (volumes 111-122) was awarded to Wei Huang, and Songnian Li for their paper "*Understanding human activity patterns based on space-time-semantics*"
https://www.sciencedirect.com/science/article/pii/S0924271616303203

The winner of the **U.V. Helava Award for the 2016-2019 period** as selected by the Jury was awarded to Davide Antonio Cucci, Martin Rehak and Jan Skaloud for their paper "***Bundle adjustment with raw inertial observations in UAV applications***".

In addition, the Best Paper Award for 2020 (volumes 159-170) has been selected by the Jury, which was awarded to Andrea Meraner, Patrick Ebel, Xiao Xiang Zhu and Michael Schmitt for their paper "*Cloud removal in Sentinel-2 imagery using a deep residual neural network and SAR-optical data fusion*".
https://www.sciencedirect.com/science/article/pii/S0924271620301398

The Best Paper Award for 2021 (volumes 171-182) was awarded to Hao Li, Huai Yu, Jinwang Wang, Wen Yang, Lei Yu and Sebastian Scherer for their paper "*ULSD: Unified line segment detection across pinhole, fisheye, and spherical cameras*".
https://www.sciencedirect.com/science/article/pii/S0924271621001623

Outlook

- The Journal continues to grow in paper quality, quantity, and impact.
- Volume of submissions and published articles have increased markedly over the past 6 years.
- To handle the increasing workload, the editorial team has also grown.
- Handling time continues to decrease while the Impact Factor has increased thanks to the strong capabilities and dedication of the editorial team.
- Editors-in-Chief, Clément Mallet and Qihao Weng, have kept communications about recent developments in the Journals etc., and have best intentions to keep growing the quality, quantity and impacts of the Journal.

Report of the Editor-in-Chief of the ISPRS International Journal of Geo-Information, Wolfgang Kainz

Highlights

- After being accepted for coverage by **Science Citation Index Expanded** (Web of Science), the impact factor of ISPRS *IJGI* has been increasing steadily year-by-year. The latest impact factor for ISPRS *IJGI* is **2.899**, ranking 19/32 (Q3). The impact factor has had sustained growth for 5 years. The latest CiteScore is **4.6**.
- The number of publications and pdf downloads keeps growing every year.
- A new, more focused journal scope was announced in June 2021.
- Nine associate editors were appointed for IJGI in 2021
- Eleven volumes have been published since 2012. Volume 1 (2012) has 3 issues; Volumes 2 (2013) to 4 (2015) have 4 issues; Volumes 5 (2016) to 10 (2021) have 12 issues, and since the beginning of 2016, we transitioned to monthly issues. Volume 11 (2022) is ongoing, and has published 1 issue so far.

Online Readership

The total number of downloads of *IJGI* papers has been increasing as a whole (Table 1), especially in 2017. Compared with the data for 2016, we observed an increase of more than 65% in 2017.

Table 1. Downloads in 2016, 2017, 2018, 2019, 2020, 2021 and 2022

Year	2016	2017	2018	2019	2020	2021	2022(till January)
Downloads	191,640	317,701	112,345	150,624	258,910	364,512	14,783

* The data from visits according to Google Analytics (GA).

The country downloading the most *IJGI* articles during past four years was China, with 21.7% of the total number of downloads. Please see below information about top 20 accessing countries (Figure 1).

The most downloaded article from 2016 till now was "Automatic Geodata Processing Methods for Real-World City Visualizations in Cities: Skylines" (https://doi.org/10.3390/ijgi9010017) by Jan Pinos, Vit Vozenilek and Ondrej Pavlis published in Volume 9, Issue 1 as part of the Special Issue "Gaming and Geospatial Information", and was downloaded 18,228 times. For a top 10 list of most downloaded articles published from 2016 to 2022, please see Appendix 1.

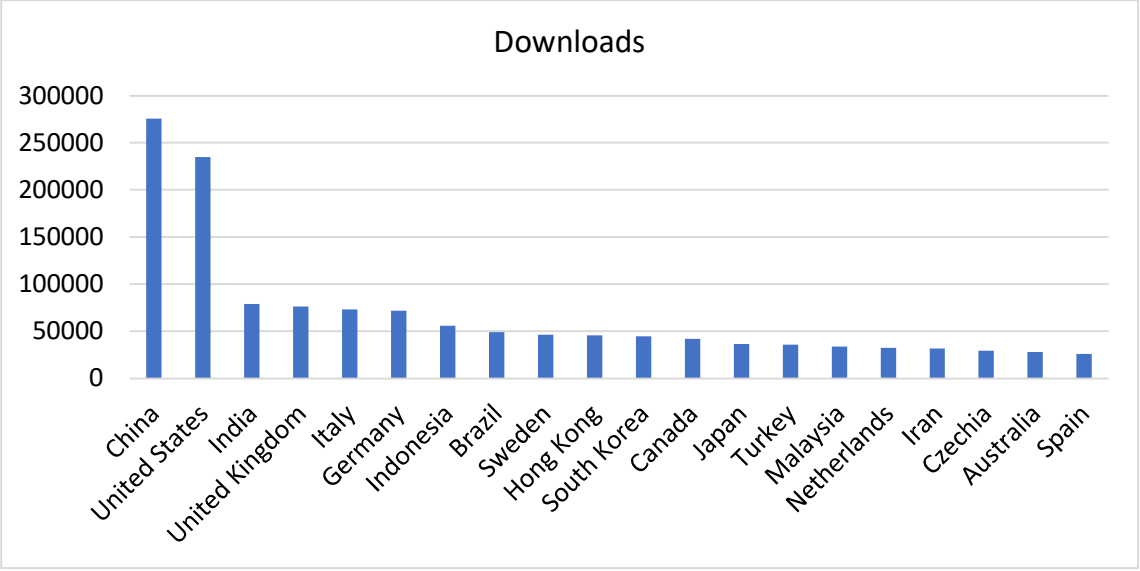


Figure 1. Geographical distribution of downloads for the top 20 countries.

Publication Statistics

New Submissions Distribution

From 2016 to date, we have received 9,839 submissions, 43.3% of which are Special Issue submissions and the remaining 56.7% are regular submissions. Figure 2 shows the yearly submission data. The average number of monthly submission data from 2016 to 2022 is shown in Figure 3.

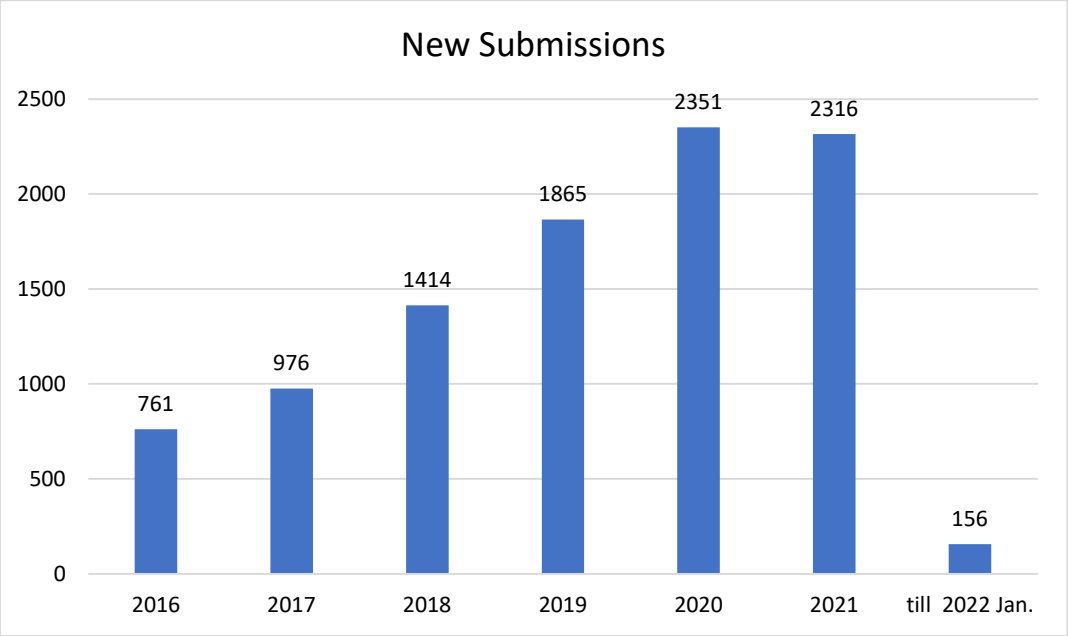


Figure 2. The number of yearly submissions from 2016 to 2022.

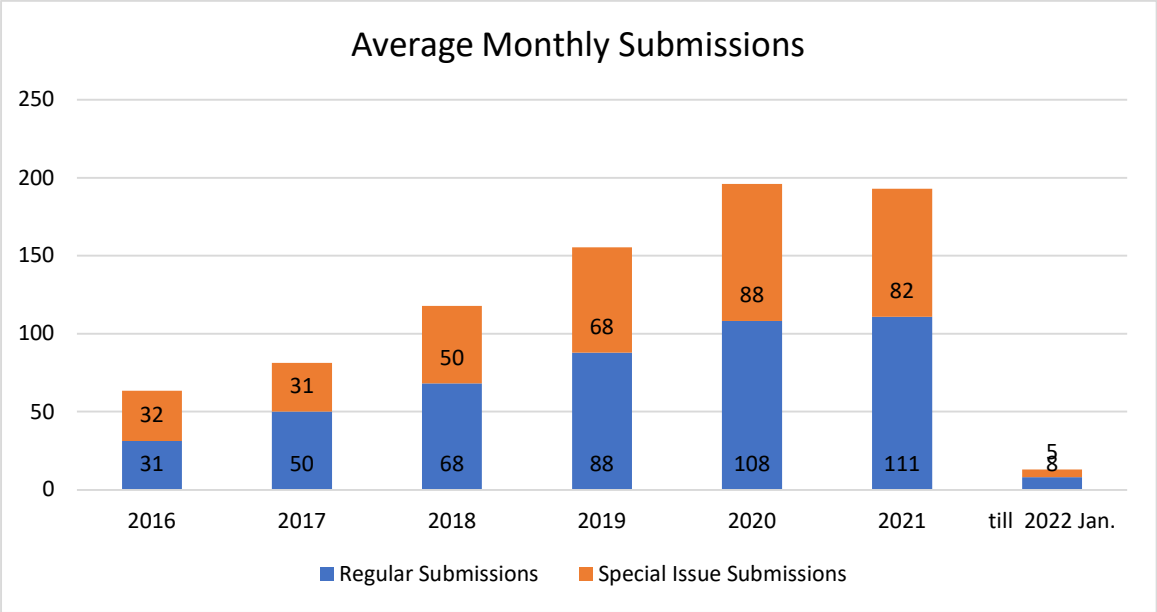


Figure 3. Average number of monthly submission data from 2016 to 2022.

The Figure 4 below shows the geographical distribution of new submissions from 2016 to 2022. We received submissions from 109 countries. Authors from China are the largest contributors with 47.7%, followed by authors from USA (4.7%), Italy (2.8%), and Germany (2.6%).

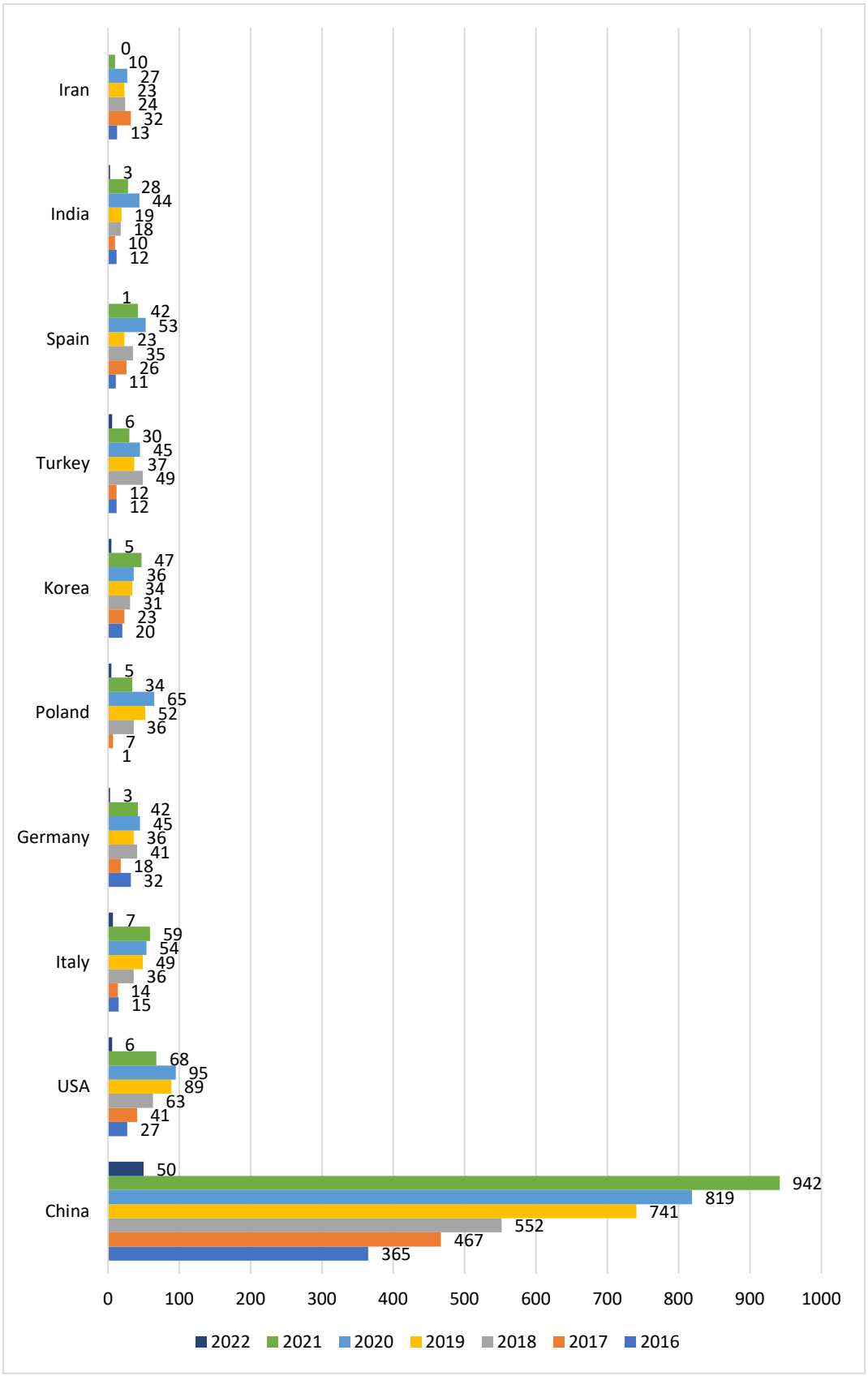


Figure 4. Geographical distribution of new submissions of top ten counties from 2016 to 2022.

Trend in Submissions and Rejection Rates

The number of submissions has been steadily increasing from 2016 up to now. Please refer to Table 2 and Figure 5 for a representation of the trends in submissions and accepted and rejected papers from 2016 up to now.

Table 2. Publication and rejection trends from 2016–2022.

Year	New Submissions	Accepted Papers (published)	Rejected Papers (=Rejected before and after review)	Rejection Rate (peer-reviewed)
2016	479	203	445	64.31%
2017	976	403	529	56.76%
2018	1414	486	791	61.94%
2019	1865	578	1180	67.12%
2020	2351	745	1388	65.07%
2021	2316	850	1331	61.03%
2022	186	86	126	59.43%

The main reason for manuscripts being rejected before peer review is that manuscripts do not reach the journal requirements, e.g., they are out of the journal scope, may have a high repetition rate, language problems, insufficient references, and rather short length (some research articles are less than seven pages and/or lack figures and tables).

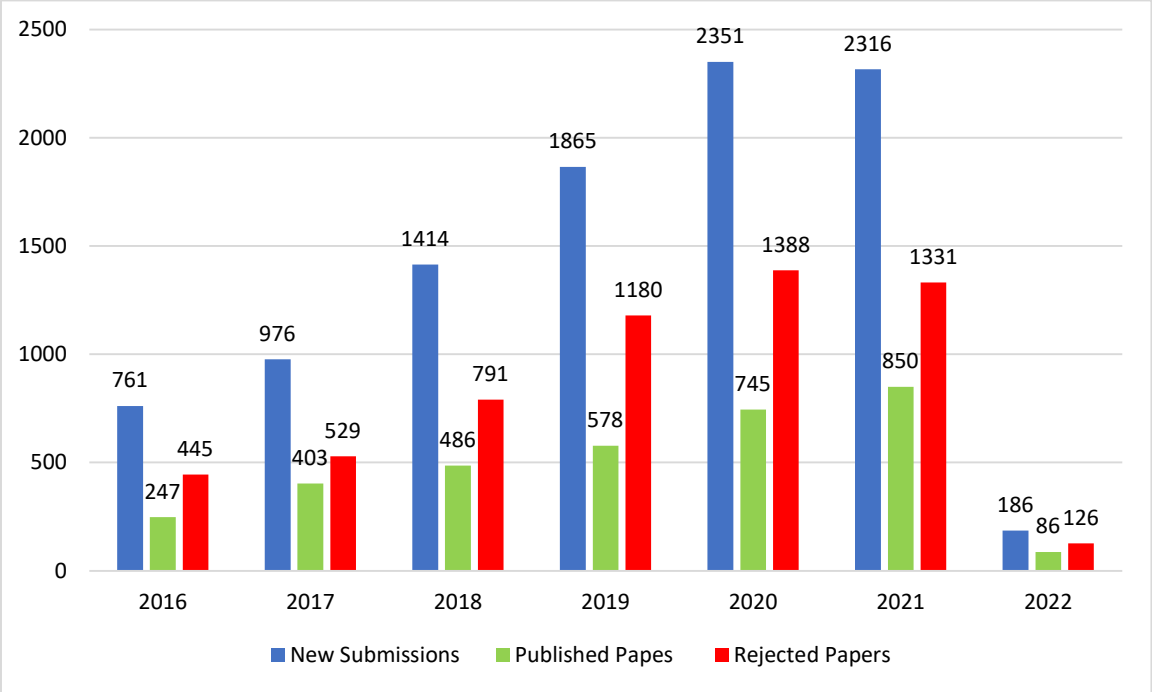


Figure 5. Publication and rejection trends from 2016 to 2022.

2.3. Contributing Countries

The geographical distribution (top 20 countries) of published papers in the past six years is shown in Figures 6. Authors from China were the largest contributors (39.3% of all publications), followed by USA (7.07%), Germany (4.55%), Italy (4.12%), Spain (3.48%), Poland (2.86%), and Korea (2.55%).

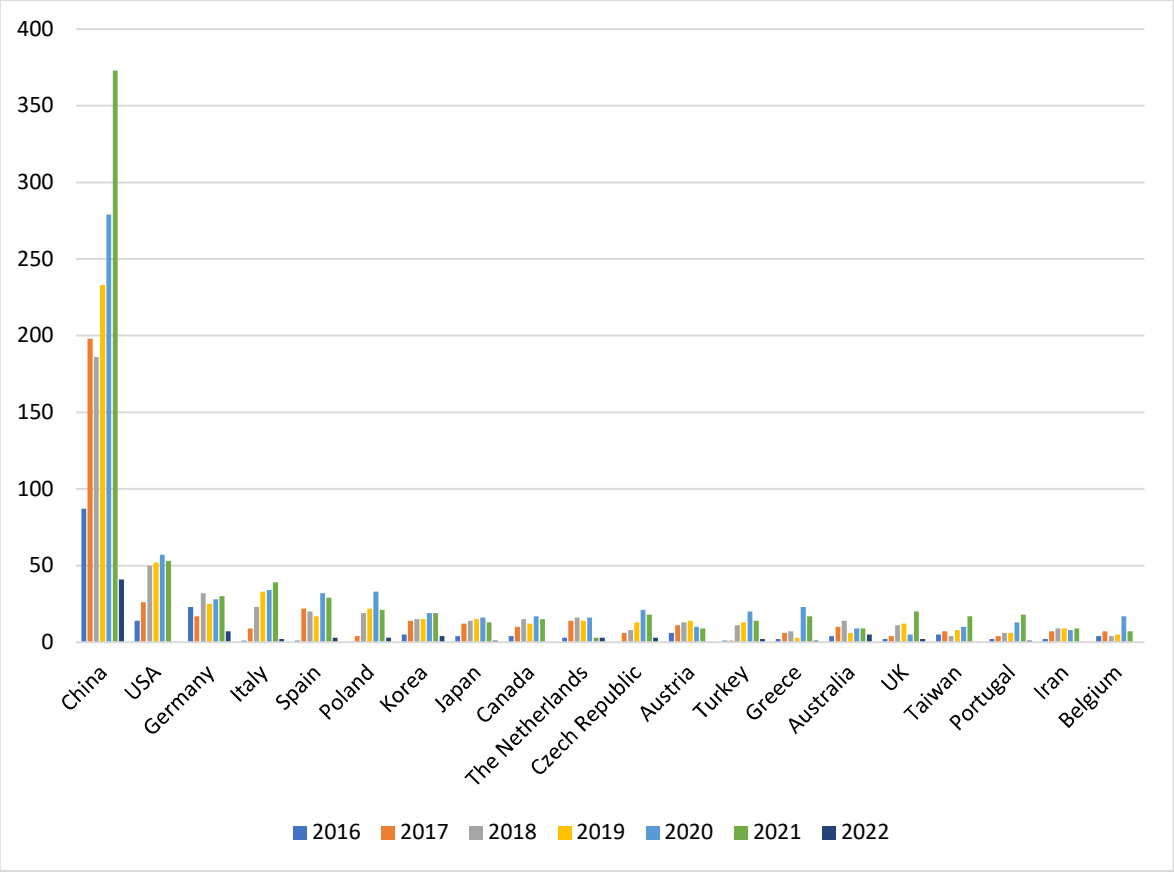


Figure 6. Publications by top 20 countries from 2016 to January 2022.

Type of Published Papers

The percentage of articles published in each year were 97.6% (2016), 97% (2017), 96.9% (2018), 94.6% (2019), 96.2% (2020), 97.2% (2021) and 96.7%(2022) (Figure 7).

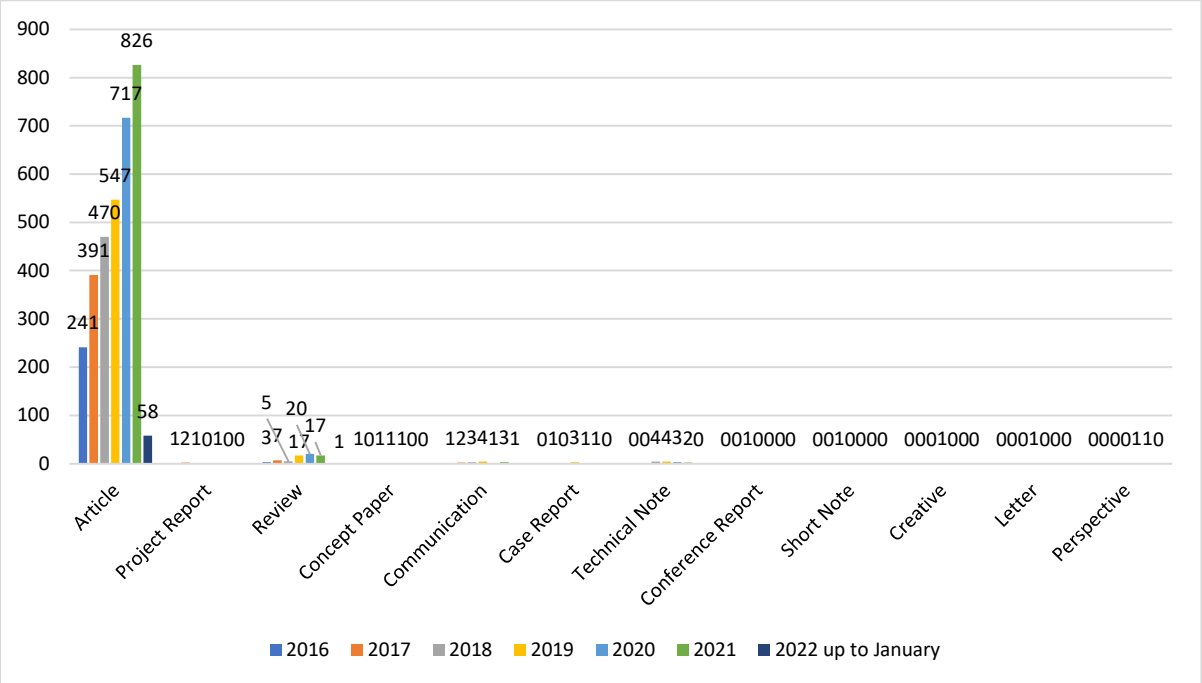


Figure 7. Paper type of publications from 2016 to 2022.

Turnaround Time

The average publication time (submission to online publication) was 97.85 days for 2016, 73.34 days for 2017, 56.79 days for 2018, 56.21 days for 2019, 46.84 days for 2020, 62.12 days for 2021 and 63.03 days for 2022. The main factors affecting the processing time are 1) paper quality (the most important factor); 2) revision time; 3) review time; 4) decision time.

Special Issues

During the last six years, we have closed 217 Special Issues with an average of more than 6 papers published per issue. In 2021, there are 13 Special Issues open for submission to date. The closed Special Issues with more than 10 papers are listed in Table 3.

Table 3. Special Issues with more than 10 papers (from 2016 to 2022).

Special Issue Name	GE name	Submission Deadline	Paper Published
Advances and Innovations in Land Use/Cover Mapping	Qiming Zhou, Zhilin Li	2016-10-31	11
Recent Advances in Geodesy and Its Applications	Zhao-Liang Li, José A. Sobrino, Chao Ren	2016-11-30	15
Intelligent Spatial Decision Support	Shih-Lung Shaw, Qingquan Li, Yang Yue	2016-12-31	10
Location-Based Services	Georg Gartner, Haosheng Huang	2017-02-28	19
Spatial Ecology	Duccio Rocchini	2017-02-28	11
Volunteered Geographic Information	Alexander Zipf, David Jonietz, Vyron Antoniou, Linda See	2017-03-15	17
Smart Solutions for Disaster Risk Reduction: Big Data Concepts for Disaster Risk Reduction (DRR)	Milan Konecny	2017-04-30	14
Web/Cloud Based Mapping and Geoinformation	Bert Veenendaal, Maria Antonia Brovelli, Serena Coetzee, Peter Mooney	2017-05-31	10
3D Indoor Modelling and Navigation	Sisi Zlatanova, Kourosh Khoshelham, George Sithole	2017-06-30	15
Geospatial Big Data and Transport	Bin Jiang, Constantinos Antoniou	2017-06-30	10
Advances in Geo-Information for Environmental Forensics and Environmental Risk Management in the Anthropocene	Jason K. Levy	2017-06-30	10
Research and Development Progress in 3D Cadastral Systems	Peter Van Oosterom, Efi Dimopoulou	2017-08-31	14
Discovery and Prediction of Moving Objects in Databases using GIS-based Tools	Sabine Timpf, Jean Damascène Mazimpaka	2018-02-28	13
Spatial Environmental Analysis, Informatics, Planning, Restoration, and Management	Jason K. Levy	2018-02-28	11
Geoinformatics in Citizen Science	Gloria Bordogna	2018-03-31	11

State-of-the-Art Virtual/Augmented Reality and 3D Modeling Techniques for Virtual Urban Geographic Experiments	Jianming Liang, Jianhua Gong, Yu Liu	2018-04-30	18
Urban Environment Mapping Using GIS	Fabio Dell'Acqua	2018-05-31	18
Geographic Information Science and Spatial Analysis in Water Resources	Heejun Chang	2018-05-31	14
Web and Mobile GIS	Martin Breunig	2018-07-31	10
Geo-Information and the Sustainable Development Goals (SDGs)	Karin Pfeffer, Yola Georgiadou	2018-08-31	16
Place-Based Research in GIScience and Geoinformatics	Thomas Blaschke, Song Gao	2018-08-31	12
Geospatial Big Data and Urban Studies	Maria Antonia Brovelli, Hussein Abdulmuttalib, Chris Pettit, Peter Mooney	2018-09-30	19
GEOBIA in a Changing World	Geoffrey J. Hay, Christiane Weber	2018-10-01	15
GIS for Safety and Security Management	Igor Ivan, Jan Caha, Jaroslav Burian	2018-12-15	14
Data Acquisition and Processing in Cultural Heritage	Fulvio Rinaudo, Gabriele Bitelli, Pierre Grussenmeyer, Diego Gonzalez-Aguilera	2019-01-31	12
Spatial Analysis for Terrestrial Ecosystems: Advances in Mapping, Analyses and Management	Jason K. Levy	2019-02-28	15
Big Data Computing for Geospatial Applications	Zhenlong Li, Wenwu Tang, Qunying Huang, Eric Shook, Qingfeng Guan	2019-06-30	11
Free and Open Source Tools for Geospatial Analysis and Mapping	Paolo Dabove, Bianca Federici	2019-10-30	11
Geospatial Approaches to Landslide Mapping and Monitoring	Veronica Tofani, William Frodella	2019-10-31	14
Historical GIS and Digital Humanities	Keiji Yano, Akihiro Tsukamoto	2019-11-30	12
Data Mining and Feature Extraction from Satellite Images and Point Cloud Data	Pedram Ghamisi	2019-11-30	16
Open Science in the Geospatial Domain	Massimiliano Cannata	2019-12-20	10

Advanced GIS and RS Applications for Soil and Land Degradation Assessment and Mapping	László Pásztor	2019-12-31	13
Urban Crime Mapping and Analysis Using GIS	Michael Leitner, Alina Ristea	2020-02-15	18
State-of-the-Art in Spatial Information Science	Songnian Li, Sisi Zlatanova, Maria Antonia Brovelli, Monika Sester	2020-03-31	10
Advance Geospatial Artificial Intelligence for Landslide Modeling, Prediction and Management	Dieu Tien Bui, Endre Før Gjermundsen	2020-05-31	11
Geo-Informatics in Resource Management	Francisco Javier Mesas Carrascosa	2020-06-30	12
Recent Trends in Location Based Services and Science	Georg Gartner, Haosheng Huang	2020-07-15	13
3D Indoor Mapping and Modelling	Lucía Díaz-Vilariño, Abdoulaye Abou Diakité, Shayan Nikoohemat	2020-10-31	10
Multimedia Cartography	Beata Medynska-Gulij, David Forrest, Paweł Cybulski	2020-12-30	15
Measuring, Mapping, Modeling, and Visualization of Cities	José António Tenedório	2020-12-31	20
Geospatial Methods in Social and Behavioral Sciences	Mei-Po Kwan	2020-12-31	17
Geographic Complexity: Concepts, Theories, and Practices	Changxiu Cheng, Peichao Gao, Samuel A. Cushman	2020-12-31	13
Geospatial Artificial Intelligence (geoAI)	Jacinto Estima, Bruno Martins	2020-12-31	11
OpenStreetMap as A Multi-Disciplinary Nexus: Perspectives, Practices and Procedures	A. Yair Grinberger, Marco Minghini, Peter Mooney, Levente Juhász, Godwin Yeboah	2021-01-31	14
Geodata Science and Spatial Analysis in Urban Studies	Maria Antonia Brovelli, Xiao-guang Zhou, Hussein Abdulmuttalib	2021-04-30	26
Spatio-Temporal Models and Geo-Technologies	Géraldine Del Mondo, Peng Peng, Feng Lu, Jérôme Gensel	2021-06-30	17

Selected Papers from the International Conference on Geo-Information Technology and its Applications (ICGITA2019)	Weicheng Wu, Yalan Liu, Mingxing Hu	2021-06-30	14
GIS in Sustainable Transportation	Alexandre B. Gonçalves, Filipe Moura	2021-06-30	12
GIS in Healthcare	Fazlay S. Faruque	2021-07-31	11
Application of Geology and GIS	Peter Bliš'an	2021-08-31	10
Geovisualization and Social Media	Yeran Sun, Shaohua Wang	2021-08-31	23
Geographical Analysis, Urban Modelling, Spatial Statistics, Econometric and Multidimensional Evaluation in Urban Environment	Giuseppe Borruso, Beniamino Murgante, Carmelo Maria Torre, Hartmut Asche, Ginevra Balletto	2021-09-30	14
Geomatics and Geo-Information in Earthquake Studies	Christian Bignami, Hiroyuki Miura, Maurizio Pollino, Sonia Giovinazzi	2021-09-30	14
Disaster Management and Geospatial Information	Dean Kyne	2021-09-30	11
Geo-Information Science in Planning and Development of Smart Cities	Giuseppe Borruso, Ginevra Balletto, Michele Campagna, Andrea Favretto, Giovanni Mauro	2021-09-30	22
GIS-Based Analysis for Quality of Life and Environmental Monitoring	Christos Chalkias, Vassilis Pappas, Andreas Tsatsaris	2021-09-30	12
Cultural Heritage Mapping and Observation	Andreas Georgopoulos	2021-10-01	11
Unmanned Aerial Systems and Geoinformatics	Panagiotis Partsinevelos, Filiberto Chiabrando, Fabio Giulio Tonolo, Kevin W. Franke	2021-10-31	11
Geospatial Metadata	Mohsen Kalantari, Abbas Rajabifard, Jacynthe Pouliot	2021-11-30	12
Deep Learning and Computer Vision for GeoInformation Sciences	James Haworth, Suzana Dragicevic, Marguerite Madden, Mingshu Wang, Haosheng Huang	2021-12-15	23
Geomorphometry and Terrain Analysis	Josef Strobl, Liyang Xiong	2021-12-31	14

There are currently 17 Special issues open for submissions:

Table 4. Online Special Issues

Special Issue Name	GE name	Submission Deadline
Cartography and Geomedia	Beata Medynska-Gulij, David Forrest, Thomas P. Kersten	2022-05-20
Geo-Information for Watershed Processes	Walter Chen, Fuan Tsai	2022-03-31
Heritage Building Information Modeling: Theory and Applications	Carlo Bianchini, Martina Attenni, Marika Griffo	2022-04-30
Upscaling AI Solutions for Large Scale Mapping Applications	Fabio Remondino, Joep Crompvoets, Norbert Haala	2022-06-30
GIS-supported DEM Analysis for Characterization of Short to Long Term Landscape Dynamics	Michele Santangelo, Dario Gioia	2022-04-30
Eye-Tracking in Cartography	Stanislav Popelka, Zdeněk Stachoň, Peter Kiefer, Arzu Çöltekin	2022-06-30
Integrating GIS and Remote Sensing in Soil Mapping and Modeling	Dimitris Triantakonstantis, Panagiotis Tziachris	2022-04-30
Spatial Components of COVID-19 Pandemic	Fazlay S. Faruque, Peng Jia, Mo Ashifur Rahim	Collection
Climate Adaptation: The Role of Geospatial Data in Sustainable Infrastructures	Joep Crompvoets, Cesar Casiano Flores	2022-07-31
Advances in GIS Hydrological Modeling	Paolo Paron	2022-02-28
Spatial and Temporal Modelling of Renewable Energy Systems	Luis Ramirez Camargo, Johannes Schmidt, Wolfgang Dorner	2021-01-31
Application of GIS for Biodiversity Research	Neftali Sillero, Salvador Arenas-Castro	2022-05-31
GIS Software and Engineering for Big Data	Peng Yue, Danielle Ziebelin, Yaxing Wei	2022-12-31
Advances in Augmented Reality and Virtual Reality for Smart Cities	Sylvie Daniel, Gunho Sohn, Lingli Zhu	2022-02-15
Applications of GIScience for Land Administration	Mohsen Kalantari, Gerhard Navratil	2022-02-28
Geovisualization and Map Design	Vit Vozenilek, Georg Gartner, Ian Muehlenhaus	2022-04-30
Navigation for Autonomous Driving	Dong-Hwan Hwang	2022-03-01

Editorial Board

Associate Editors

For the first time, we are proud to have 9 new Associate Editors join the *IJGI* editorial board in 2021 (Table 5) consecutively. Each of the associate editors takes charge of one research area separately. Furthermore, the associate editors will provide support for journal management, including paper quality control, paper solicitation, journal promotion, management of the entire team of academic editors, etc. In addition, two more associate editors are expected to be in position in early 2022. They will take responsibility for the topics 'Location-based services and trajectory analysis' and 'Spatial data management'.

Table 5. Associate editors and responsible areas.

	**Dr. Dev Raj Paudyal** School of Civil Engineering and Surveying, University of Southern Queensland West Street, Toowoomba, QLD 4350, Australia **Interests:** spatial data infrastructure (SDI); land administration; cadastre; IoT; citizen science; mixed method research; land use policy; catchment management; health informatics **Responsible Area of the Scope:** Spatial data infrastructures
	**Prof. Dr. Florian Hruby** Berlin University of Applied Sciences and Technology, Luxemburger Straße 10, 13353 Berlin, Germany **Interests:** geovisualization; empirical cartography; theoretical cartography; virtual reality; GIS **Responsible Area of the Scope:** Cartography
	**Prof. Dr. Jamal Jokar Arsanjani** Geoinformatics and Earth Observation Research Group, Department of Planning, Aalborg University Copenhagen, A.C. Meyers Vænge 15, DK-2450 Copenhagen, Denmark **Interests:** citizen observations; Earth observation; geocomputation; GEO-artificial intelligence; data quality; environmental monitoring and assessment **Responsible Area of the Scope:** Spatial analysis and decision making
	**Prof. Dr. Maria Antonia Brovelli** Department of Civil and Environmental Engineering, Politecnico di Milano, Piazza Leonardo da Vinci 32, 20133 Milano, Italy **Interests:** geospatial web; geodata science; citizen science; open science; open data; open geospatial software; geospatial artificial intelligence **Responsible Area of the Scope:** Geospatial Artificial Intelligence
	**Dr. Wei Huang** College of Surveying and Geo-informatics, Tongji University, 1239 Siping Road, Shanghai 200092, China **Interests:** VGI; urban computing; transportation geography; computational social science **Responsible Area of the Scope:** Citizen Science, Crowd Sourcing and Volunteered Geographic Information
	**Dr. Mingshu Wang** School of Geographical & Earth Sciences, College of Science & Engineering, University of Glasgow, Glasgow G12 8QQ, UK **Interests:** GIScience; geodata science; urban informatics; city and regional development **Responsible Area of the Scope:** Urban Informatics, Smart Cities and Communities



Prof. Dr. Huayi Wu
LIESMARS, Wuhan University, 129 Luoyu Road, Wuhan 430079, China
Interests: spatial analysis; spatial statistics; web-based GIS; geospatial information sharing; geoprocessing; high-performance computation
Responsible Area of the Scope: Geospatial Web



Dr. Godwin Yeboah
Institute for Global Sustainable Development, University of Warwick, Coventry CV4 7AL, UK
Interests: GIScience; citizen science; spatial analysis; geomatics; open-source; geocomputation; human–environment interactions; urban informatics; sustainable development
Responsible Area of the Scope: Advanced Geospatial Applications Special Issues, Collections and Topics in MDPI journals



Prof. Dr. Sisi Zlatanova
School of Built Environment, Faculty of Arts, Design and Architecture, University of New South Wales, Sydney, NSW 2052, Australia
Interests: geospatial information systems; data structures; database management; building information modelling; digital twin; photogrammetry and remote sensing; surveying; conceptual modelling; mobile technologies
Responsible Area of the Scope: Spatial Data Modeling

Editorial Board Member

We now have 109 Editorial Board Members from 26 countries of all over the world. Table 6 below lists the names and geographical distribution of these members.

Table 6. List of Editorial Board Members (Data: up to February 2022).

Country	EBM
USA	Dr. Amr Abd-Elrahman
	Prof. Dr. Barbara P. Buttenfield
	Prof. Dr. Andrew Crooks
	Prof. Dr. Leila De Floriani
	Prof. Dr. Fazlay S. Faruque
	Prof. Dr. Suchi Gopal
	Prof. Dr. Hartwig H. Hochmair
	Prof. Dr. Michael Leitner
	Prof. Dr. Jason Levy
	Dr. Stefan Leyk
	Dr. Zhenlong Li
	Dr. Marguerite Madden
	Dr. Silvia Nittel
	Prof. Dr. Michael P. Peterson
	Prof. Dr. Robert Pontius Jr
	Prof. Dr. Sergio Rey

	Prof. Dr. Markus Schneider
	Prof. Dr. Shih-Lung Shaw
	Dr. Giulia Sofia
	Prof. Dr. Kathleen Stewart
	Prof. Dr. Jean-Claude Thill
	Prof. Dr. John P. Wilson
UK	Prof. Dr. Tao Cheng
	Prof. Dr. Paul A. Longley
	Dr. Nicholas Tate
Turkey	Dr. Ozgun Akcay
The Netherlands	Prof. Dr. Yola Georgiadou
	Dr. Marco Helbich
	Dr. Derek Karssenberg
	Prof. Dr. Karin Pfeffer
	Prof. Dr. Andrew Skidmore
	Dr. Ron van Lammeren
	Dr. Bastiaan Van Loenen
Switzerland	Prof. Dr. Massimiliano Cannata
	Dr. Haosheng Huang
Sweden	Prof. Dr. Lars Harrie
	Prof. Dr. Bin Jiang
	Dr. Ali Mansourian
Spain	Prof. Dr. Rafael Suárez-Vega
Russia	Prof. Dr. Vladimir Tikunov
Portugal	Dr. Sérgio Freire
	Prof. Dr. Bruno Martins
	Prof. Dr. Marco Painho
	Dr. Maribel Yasmina Santos
	Prof. Dr. José António Tenedório
Poland	Dr. Marcin Kulawiak
	Prof. Dr. Beata Medynska-Gulij
New Zealand	Prof. Dr. Mark Gahegan
	Dr. Antoni Moore
Korea	Prof. Dr. Ki-Joune Li
Italy	Dr. Raffaele Albano
	Dr. Christoph Aubrecht
	Dr. Luigi Barazzetti
	Prof. Dr. Alberto Belussi

	Dr. Gloria Bordogna
	Prof. Dr. Giuseppe Borruso
	Dr. Filiberto Chiabrando
	Prof. Dr. Eliseo Clementini
	Dr. Gino Dardanelli
	Dr. Cristiano Fugazza
	Dr. Gerardo Grelle
	Prof. Dr. Fulvio Rinaudo
	Dr. Veronica Tofani
Israel	Dr. Sagi Dalyot
	Prof. Dr. Ammatzia Peled
	Dr. Motti Zohar
Ireland	Dr. Michela Bertolotto
Iran	Prof. Dr. Mahmoud Reza Delavar
	Dr. Himan Shahabi
Hungary	Prof. Dr. Arpad Barsi
	Prof. Dr. Michael Szell
Greece	Prof. Dr. Christos Chalkias
	Prof. Dr. Marinos Kavouras
	Prof. Dr. Yannis Maniatis
	Dr. Panagiotis Partsinevelos
	Dr. George P. Petropoulos
Germany	Prof. Dr. Manfred Ehlers
	Prof. Dr. Dieter Fritsch
	Prof. Dr. Francis Harvey
	Prof. Dr. Jochen Schiewe
	Prof. Dr. Monika Sester
France	Prof. Dr. Christophe Claramunt
	Prof. Dr. Sébastien Lefèvre
Czech Republic	Prof. Dr. Milan Konecny
	Prof. Dr. Vit Vozenilek
China	Prof. Dr. Jun Chen
	Prof. Dr. Tao Cheng
	Prof. Dr. Mei-Po Kwan
	Prof. Dr. Wenzhong Shi
	Prof. Dr. Qiming Zhou
	Prof. Dr. Xinming Tang
Canada	Prof. Dr. Suzana Dragicevic

	Prof. Dr. Chris Gold
	Dr. Geoffrey Hay
	Prof. Dr. Faramarz Samavati
	Dr. Gunho Sohn
	Prof. Dr. Fraser Taylor
Belgium	Prof. Dr. Philippe De Maeyer
	Prof. Dr. Nico van de Weghe
	Prof. Dr. Bart Kuijpers
Austria	Prof. Dr. Norbert Bartelme
	Prof. Dr. Thomas Blaschke
	Prof. Dr. Georg Gartner
	Dr. Bernd Resch
	Prof. Josef Strobl
Australia	Prof. Dr. Matt Duckham
	Prof. Dr. Chris Pettit
	Prof. Dr. Biswajeet Pradhan
	Prof. Dr. Stephan Winter

New Board Section

Starting from September 2019, we created two new editorial positions named "Topic Board" and "Reviewer Board" to provide more editorial opportunities for qualified junior scholars and strengthen the cooperative relationship with our authors and reviewers.

Starting from October 2021, we create a new editorial position named "*Topical Advisory Panel*". As MDPI recently launched Topics, which are collections of papers that concentrate on specific interdisciplinary topics, the original Topic Board in IJGI was adjusted to the new Topical Advisory Panel. The Topical Advisory Panel is mainly comprised of early career researchers, eager to gain experience in editorial work.

In conclusion, the journal now has 191 Reviewer Board members and 83 Topical Advisory Panel members.

Contribution of the Editorial Board Members

Paper Contribution

From 2016 to January 2022, a total of 401 manuscripts have been submitted to ISPRS *IJGI* by 72 Editorial Board Members. By January 2022, 274 of these submissions were published.

Special Issue Contribution

71 Editorial Board Members have organized 114 Special Issues and helped solicit papers for our Special Issues in the past six years.

Reviews

71 Editorial Board members helped review 305 manuscripts for ISPRS *IJGI* in the last six years.

Decisions

100 Editorial Board members have helped make decisions (including pre-check decisions, first decisions, and final decisions) for papers submitted to ISPRS *IJGI* between 2016 and 2022.

Please refer to Table A3 to see the detailed information about the activities of the Editorial Board Members between 2016 and 2022.

Indexing

ISPRS *IJGI* was firstly covered by the Science Citation Index Expanded (Web of Science) in April 2015. It then received its first impact factor of 0.651 in 2016. After that, the impact factor of ISPRS *IJGI* has steadily increased year-by-year. The latest impact factor of the journal is 2.899, which has had sustained growth for 5 years. Data related to the impact factor in the latest Journal Citation Reports are presented below (Table 5).

Table 5. IF data from the Journal Citation Reports.

Year	Total Cites	Impact Factor	Geography, Physical		Remote Sensing		Computer Science, Information Systems	
			Rank	**Quartile**	**Rank**	**Quartile**	**Rank**	**Quartile**
2016	552	1.502	35/49	Q3	22/29	Q4	n/a	n/a
2017	1183	1.723	33/49	Q3	18/30	Q3	n/a	n/a
2018	2196	1.840	31/50	Q3	19/30	Q3	n/a	n/a
2019	3730	2.239	31/50	Q3	18/30	Q3	n/a	n/a
2020	6433	2.899	23/50	Q2	19/32	Q2	76/161	Q2

Data related to citations from the latest Journal Citation Reports between 2016 and 2022 are presented below (Figure 8). In comparison to other competitors (Figure 9), we still have much space for significant progress.

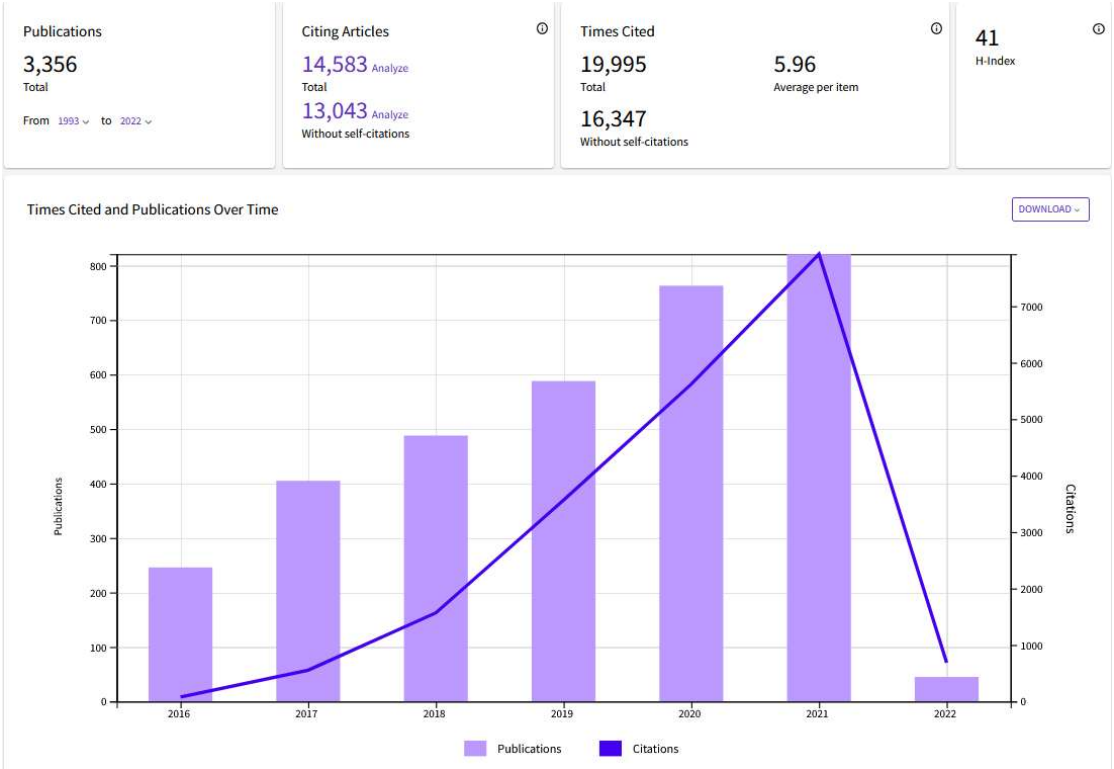


Figure 8. Citation data from the latest Journal Citation Reports for 2016–2022.

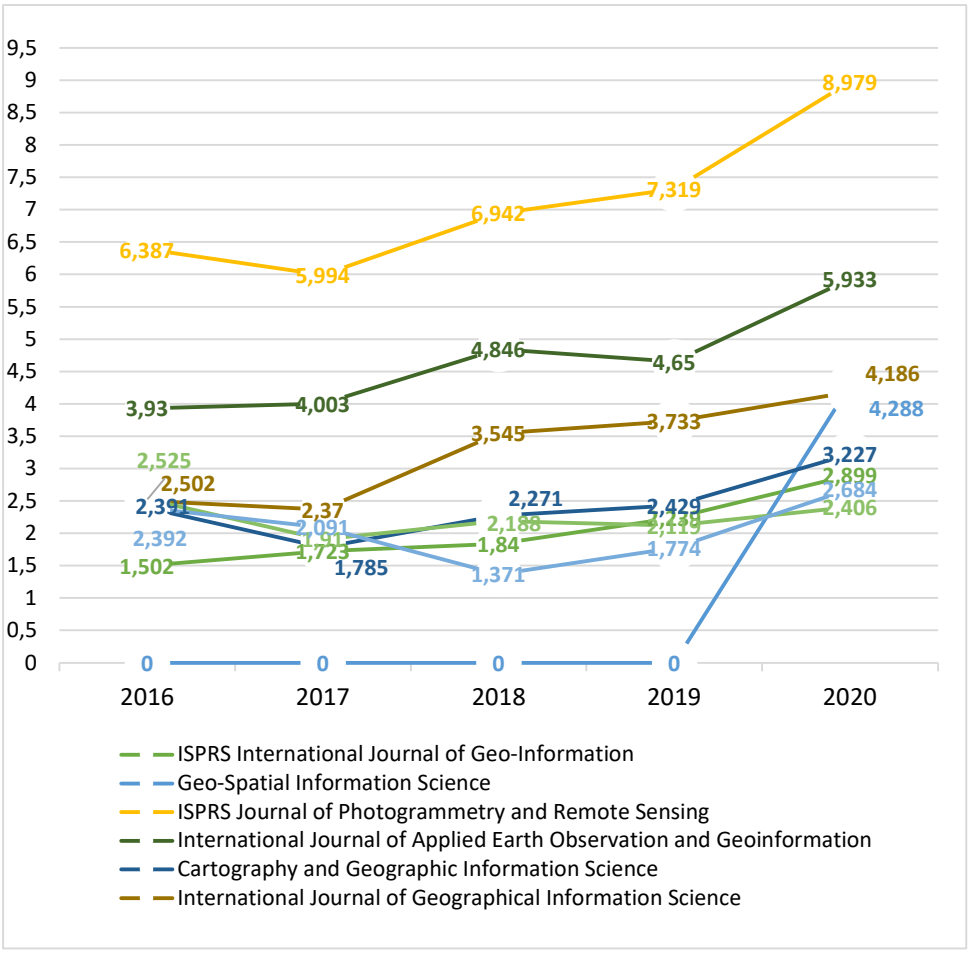


Figure 9. Comparative trends in impact factors for various GIS journals.

Marketing and Promotions

Journal Awards

The Jack Dangermond Award

The Jack Dangermond Award, which consists of an ISPRS certificate and a grant of USD 10,000, will be presented every four years to the author(s) of an outstanding paper on one of the topics included in the scope of the journal. The winner of the 1st Jack Dangermond Award had been selected from papers published in the ISPRS *International Journal of Geo-Information* between 1 January 2017 and 31 December 2019:

Voxel-Based 3D Point Cloud Semantic Segmentation: Unsupervised Geometric and Relationship Featuring vs. Deep Learning Methods (https://doi.org/10.3390/ijgi8050213) by Florent Poux and Roland Billen

The winner of the 2nd Jack Dangermond Award will be selected from papers published in the ISPRS International Journal of Geo-Information between 1 January 2020 and 31 December 2021. During this period, the committee will select one best paper each year as the award candidate, and the final winner will be selected from these candidates. Thus far, one candidate for this award has been determined:

2020 *IJGI* Best Paper

Cartographic Vandalism in the Era of Location-Based Games—The Case of OpenStreetMap and Pokémon GO

by Levente Juhász, Tessio Novack, Hartwig H. Hochmair and Sen Qiao

https://doi.org/10.3390/ijgi9040197

IJGI Travel Award

To support postdoctoral researchers and PhD students in the GIS field, we established the *IJGI* Travel Award, which has been awarded annually since 2016. Each winner of this award is granted with a certificate and 800 CHF to attend an academic conference of their choice in the coming year. So far, we have hosted this award four times and granted 5600 CHF to seven researchers and PhD students to attend academic conferences. Below is the detailed information of each award winner in the last four years, according to their status at the time of receiving the reward.

IJGI Travel Award 2021

Junghwan Kim is a Ph.D. student of the Department of Geography and GIScience, University of Illinois at Urbana-Champaign, Champaign, IL 61820, USA;

Xuke Hu is a postdoctoral fellow in the Department of Citizen Science, Institute of Data Science, German Aerospace Center (DLR), Jena, 07745, Germany.

IJGI Travel Award 2020

Jesús Balado Frías is a postdoctoral researcher at University of Vigo, Applied Geotechnologies Research Group. His research interests include point cloud processing, laser scanning, urban modeling, machine learning, and deep learning.

Yang Zhang is a PhD student at the SpaceTimeLab for Big Data Analytics, Department of Civil, Environmental and Geomatic Engineering, University College London (UCL), UK. Her PhD thesis is "Deep Learning Models for Network-Based Spatio-Temporal Prediction and Optimisation". Her research focuses on geoinformatics, spatial–temporal data mining, applied machine learning and deep learning, urban computing, and complex network and graph theory.

IJGI Travel Award 2019

Taylor Anderson is a PhD student at Simon Fraser University (SFU), Canada. She is a research assistant working on various research-related tasks, including conducting literature reviews; handling GIS data; and developing, programming, and implementing complex systems models.

Jue Wang is a PhD student in the Department of Geography and Geographic Information Science at the University of Illinois at Urbana-Champaign, USA. His research focuses on creating a robust and reliable resource for accessing, sharing, and analyzing confidential geospatial research data, overcoming obstacles for replicating NSF research. His work is about evaluating and implementing masking and encryption capabilities for the GVDE, and he is responsible for experiment design, data collection, data processing and analysis, and the writing of papers for publication.

IJGI Travel Award 2018

Yanbiao Sun joined UCL from Tianjin University in 2017 as a postdoctoral researcher in the Light Controlled Factory Project. He works in the field of digital mapping photogrammetry and industrial photogrammetry, with notable research in nonlinear optimization methods used for photogrammetric applications. His current work includes two aspects: photogrammetric optimization and coded target design. He is always been looking for efficient and robust algorithms to address problems faced in images-based navigation and position. Dr. Yanbiao Sun, working with Prof. Stuart Robson, designed new planar coded targets in which each coded target includes five fixed circle dots and another three coded circle dots. The coded targets have now been successfully used in robotic tracking and positioning in the UCL project. In the future, Dr. Yanbiao Sun will focus on accurate and real-time tracking of industrial photogrammetry.

Marco Minghini's research spans the domains of Geographic Information Systems (GIS), Geoinformatics, and Remote Sensing. He is an early career scientist working on Volunteered Geographic Information (VGI), Land Use/Land Cover (LULC) mapping and education. He is also a Charter Member of the Open Source Geospatial Foundation (OSGeo, https://www.osgeo.org) and GeoForAll (https://www.osgeo.org/initiatives/geo-for-all). He has addressed several aspects of this field: the development of platforms for VGI collection (mainly from mobile devices) and management; the role of VGI to increase public participation; the analysis of VGI data to understand contribution patterns and contributors' motivations; the assessment of VGI quality, in particular positional accuracy and completeness; the relevance of protocols to guide data collection in VGI projects; VGI applications to disaster response; the role of VGI in education; and the exploitation of VGI in deriving scientific datasets such as LULC maps.

IJGI Travel Award 2017

Hongchao Fan is from the GIScience Research Group, Institute of Geography, University of Heidelberg, Germany. Dr. Fan's research focuses on volunteered geographic information and data quality. With the help of this grant, he presented findings of a recently granted research project at the International Cartographic Conference in Washington, DC, in July 2017.

IJGI Outstanding Reviewer Award

Since 2018 we set up the *IJGI* Outstanding Reviewer Award, to acknowledge the time and energy given by reviewers in checking manuscripts submitted to *IJGI*. This award is presented annually to five winners (three "Top" winners and two "Further" winners). Each "Top" winner of this award is granted with 500 CHF, a chance to publish a paper free of charge in *IJGI* in the coming year, and a certificate. Each "Further" winner of this award is granted with a chance to publish a paper free of charge in *IJGI* in the coming year and a certificate. We have so far hosted this award twice. Table 6 outlines the list of award winners for 2018, 2019 and 2020.

Table 6. Award winners of IJGI Outstanding Reviewer Awards 2018 - 2021.

Award	Type	Winners
IJGI Outstanding Reviewer Award 2018	"Top" Winner	**Vít Pászto** Department of Geoinformatics, Faculty of Science, Palacký University Olomouc, 77146 Olomouc, Czech Republic
	"Top" Winner	**Andrew Newton** Department of Criminology, The University of Leicester, Leicester LE1 7QA, UK
	"Top" Winner	**Robert Jeansoulin** emeritus CNRS, LIGM, Université Paris-Est Marne (UPEM), Champs sur Marne, 77454 Marne-la-Vallée Cedex 2, France
	"Further" Winner	**Miguel-Angel Manso-Callejo** MERCATOR Research Group, Universidad Politécnica de Madrid, ETSI en Topografía, Geodesia y Cartografía Mercator St #2 Madrid 28031, Spain
	"Further" Winner	**Dapeng Li** Department of Geography, South Dakota State University, Brookings, SD 57007, USA
IJGI Outstanding Reviewer Award 2019	"Top" Winner	**Levente Juhasz** GIS Center, Florida International University, Miami, FL 33199, USA.
	"Top" Winner	**Waldemar Kociuba** Department of Geology Soil Science and Geoinformation, Maria Curie-Skłodowska University, 21-030 Lublin, Poland
	"Top" Winner	**Timofey E. Samsonov** Faculty of Geography, Lomonosov Moscow State University, Moscow 119991, Russia
	"Further" Winner	**Sara Migliorini** Dipartimento di Informatica, Università degli Studi di Verona, 37134 Verona, Italy
	"Further" Winner	**Amílcar Soares** Department of Computer Science, Dalhousie University, Halifax, NS B3H 1W5, Canada
IJGI Outstanding Reviewer Award 2020	"Top" Winner	**Christophe Claramunt** Naval Academy Research Institute, F-29240 Lanvéoc, France
	"Top" Winner	**Lars Bodum** Department of Planning, Aalborg University, Rendsburggade 14, DK-9000, Aalborg, Denmark
	"Top" Winner	**Kalliopi Kyriakou** Department of Public Health Sciences, Institute for Risk Assessment Sciences, Division of Environmental Epidemiology, Utrecht University, 3584 CM Utrecht, The Netherlands

	“Further” Winner	**Izabela Gołębiowska** Department of Geoinformatics, Cartography and Remote Sensing, Faculty of Geography and Regional Studies, University of Warsaw, Krakowskie Przedmiescie 30, 00-927 Warsaw, Poland
	“Further” Winner	**Johannes Scholz** Research Group Geoinformation, Institute of Geodesy, Graz University of Technology, 8010 Graz, Austria
IJGI Outstanding Reviewer Award 2021	“Top” Winner	**Lemenkova Polina** Université Libre de Bruxelles, École polytechnique de Bruxelles (EPB, Brussels Faculty of Engineering), Laboratory of Image Synthesis and Analysis, Building L, Campus de Solbosch CP131/3, Avenue Franklin D. Roosevelt 50, B-1050, Brussels, Belgium
	“Top” Winner	**Andrew Newton** Department of Criminology and Criminal Justice (CCJ), School of Social Sciences, Nottingham Trent University, Room 3011, Chaucer Building, 50 Shakespeare Street, Nottingham, NG1 4FQ, UK
	“Top” Winner	**Dennis Edler** Geography Department, Cartography, Ruhr University Bochum, 44801 Bochum, Germany
	“Further” Winner	**Lukáš Herman** Department of Geography, Faculty of Science, Masaryk University, Kotlarska 2, 61137 Brno, Czech Republic
	“Further” Winner	**Marcela Bindzarova Gergelova** Institute of Geodesy, Cartography and Geographical Information Systems, Faculty of Mining, Ecology, Process Control and Geotechnology, Technical University of Kosice, 04200 Kosice, Slovakia

Journal Promotion in Conferences

From 2016 until now, ISPRS *IJGI* has set up collaborative relationships with events all around the world in more than 40 instances. We collaborated with these events in numerous ways, including through media partnerships, conference Special Issues, sponsored booths, sponsored coffee breaks, etc. The following table (Table 7) lists the detailed information of the events with which we collaborated in 2016–2022.

Due to the emergence of COVID-19, which has been expanding globally since February 2020, our plans for sponsoring booths at the AAG Annual Meeting 2020 and the XXIVth ISPRS Congress 2020 have been canceled.

Table 7. Journal promotion at conferences in 2016–2020 (up to March 2020).

Conferences	Date	Place	Sponsorship Type
ISPRS Congress 2016	12–19 July 2016	Prague, Czech Republic	Booth
GLP 3rd OSM 2016	24–27 October 2016	Beijing, China	Media Partner
AAG 2017	5–9 April 2017	Boston, USA	Booth

2017 SCGIS Annual Conference	16–19 July 2017	Monterey CA, USA	Coffee Break
FOSS4G 2017	14–15 August 2017	Cambridge, MA, USA	Bronze Sponsor
Geospatial Week 2017	18–22 September 2017	Wuhan, China	Booth
3D Australia Conference 2017	26–27 October 2017	Melbourne, Australia	Media Partner
ILUS 2017	1–3 November 2017	Dresden, Germany	Media Partner
FIG Commission 3 annual workshop and meeting	27–30 November 2017	Lisbon, Portugal	Special Issue
LBS 2018	15–17 January 2018	ETH Zurich	Media Partner
Foss4G-IT 2018	19–22 February 2018	Università di Roma La Sapienza	Poster
Sixth International Conference on Remote Sensing and Geoinformation of Environment	26–29 March 2018	Cyprus	Media Partner
EGU 2018	8–13 April 2018	Vienna, Austria	Booth #36
AAG 2018	10–14 April 2018	New Orleans, USA	Booth #202
GEOBIA'18	18–22 June 2018	Montpellier, France	Special Issue
IGARSS 2018	22–27 July 2018	Valencia, Spain	Booth #33
10th International Conference on Geographic Information Science	28–31 August 2018	Melbourne, Australia	Special Issue
ISPRS TCIV Symposium in Delft	1–5 October 2018	Delft, the Netherlands	Special Issue; Sponsor
2018 AGU Fall Meeting	26–27 October 2018	Washington, USA	Booth #737
The Applied Geography Conferences	31 October– 2 November 2018	Kent State University, USA	Coffee Break
GIS Ostrava 2019	20–22 March 2019	Ostrava, Czech Republic	Media Partner
AAG 2019	3–7 April 2019	Washington, DC. USA	Booth #412
GISTAM 2019	3–9 May 2019	Crete, Greece	Special Issues
IF&IGIS'19	10–12 May 2019	St. Petersburg, Russia	Media Partner
Geospatial Week 2019	10–14 June 2019	University of Twente	Booth #1
ISPM conference 2019	17–19 June 2019	Aalto University	Media Partner
IGARSS 2019	28 July–2 August 2019	Yokohama, Japan	Booth #30

CIPA 2019	1–5 September 2019	Ávila, Spain	Material Sponsor
Gi4DM (Geo-Information for Disaster management)	3–6 September 2019	Prague, Czech Republic	Special Issue
LBS 2019	11–13 November 2019	Vienna, Austria	Media Partner
AGU Fall Meeting 2019	9–13 December 2019	San Francisco, USA	Special Issue
AAG Annual Meeting 2020	6–10 April 2020	Denver, Colorado, USA	Special Issues & Booth #415 (canceled due to COVID-19)
Geospatial World Forum 2020	7–9 April 2020	Amsterdam, The Netherlands	Publishing Partner
EGU 2020	3–8 May 2020	Vienna, Austria	Special Issues
GISTAM 2020	7–9 May 2020	Prague, Czech Republic	Media Partner
FIG Working Week 2020	10–14 May 2020	Amsterdam, The Netherlands	Media Partner
XXIVth ISPRS Congress 2020	14–20 June 2020	Nice, France	Booth (canceled due to COVID-19)
8th International Conference on Cartography & GIS	15–20 June 2020	Nessebar, Bulgaria	Media Partner
3D GeoInfo 2020	9–11 September 2020	London, UK	Media Partner
GIScience 2020	15–18 September 2020	Adam Mickiewicz University in Poznań, Poland	Media Partner
EuroCarto 2020	21-25 September 2020	University of Vienna, Austria	Paid Sponsorship
LBS 2020	11–13 November 2020	London, UK	Media Partner
vEGU21: Gather Online (#vEGU21)	19–30 April 2021	Virtual Booth	Paid Sponsorship
IGARSS 2021	12–16 July 2021	Virtual Booth	Paid Sponsorship
AAG 2021	14-16 October 2021	Virtual Booth	Paid Sponsorship
The 28th International Conference on Geoinformatics CPGIS Annual Conference	3-5 November 2021	Nanchang, Jiangxi Province, China	Paid Sponsorship

License Fees for the Society

In the last four years (2016–2019), MDPI paid 129,310.1 CHF (Swiss Francs) in license fees to the ISPRS Society. The license fees were paid out in quarterly settlements within 14 days after the end of each quarter (Table 8).

Table 8. Annaly Payment to ISPRS Society.

Year	License Fees (CHF)	Quarter 1	Quarter 2	Quarter 3	Quarter 4
2016	15,190.5	560	3755	5258.5	5617
2017	30,539.2	7993	6928.2	7765	7853
2018	38,556.4	9292	10,242.3	10,734.4	8287.7
2019	45,024.0	10,499	11,030	11,235	12,260
2020	55,485.0	15,175	14,610	10,135	15,565
2021	89,320.5	16,407.5	26,859	22,681	23,373

Conclusions

ISPRS *IJGI* has had a very positive performance in the past six years. In 2022, we will continue working hard to further improving the quality of the published papers, increasing impact factor, enhancing the brand of the journal, and increasing the readership of the journal.

Appendix

Table A1. *Top 10 most downloaded papers published in 2016–2022.*

#	Title	Author name	Downloads
1	Automatic Geodata Processing Methods for Real-World City Visualizations in Cities: Skylines	Jan Pinos, Vit Vozenilek and Ondrej Pavlis	18,228
2	Trends and Opportunities of BIM-GIS Integration in the Architecture, Engineering and Construction Industry: A Review from a Spatio-Temporal Statistical Perspective	Yongze Song, Xiangyu Wang, Yi Tan, Peng Wu, Monty Sutrisna, Jack C. P. Cheng and Keith Hampson	16,249
3	Indoor Fingerprint Positioning Based on Wi-Fi: An Overview	Shixiong Xia, Yi Liu, Guan Yuan, Mingjun Zhu and Zhaohui Wang	15,940
4	Analysis of Attraction Features of Tourism Destinations in a Mega-City Based on Check-in Data Mining—A Case Study of Shenzhen, China	Zhihui Gu, Yan Zhang, Yu Chen and Xiaomeng Chang	15,556
5	A Comparative Analysis of the Distributions of KFC and McDonald's Outlets in China	Yikang Rui, Huang Huang, Min Lu, Bao Wang and Jiechen Wang	15,524
6	GIS and Transport Modeling—Strengthening the Spatial Perspective	Martin Loidl, Gudrun Wallentin, Rita Cyganski, Anita Graser, Johannes Scholz and Eva Haslauer	14,549
7	A State-of-the-Art Review on the Integration of Building Information	Xin Liu, Xiangyu Wang, Graeme Wright, Jack C. P. Cheng, Xiao Li and Rui Liu	14,032

	Modeling (BIM) and Geographic Information System (GIS)		
8	Crowdsourcing, Citizen Science or Volunteered Geographic Information? The Current State of Crowdsourced Geographic Information	Linda See, Peter Mooney, Giles Foody, Lucy Bastin, Alexis Comber, Jacinto Estima, Steffen Fritz, Norman Kerle, Bin Jiang, Mari Laakso, Hai-Ying Liu, Grega Milčinski, Matej Nikšič, Marco Painho, Andrea Pődör, Ana-Maria Olteanu-Raimond and Martin Rutzinger	13,928
9	Corporate Editors in the Evolving Landscape of OpenStreetMap	Jennings Anderson, Dipto Sarkar and Leysia Palen	12,876
10	Land Use and Land Cover Change Modeling and Future Potential Landscape Risk Assessment Using Markov-CA Model and Analytical Hierarchy Process	Biswajit Nath, Zhihua Wang, Yong Ge, Kamrul Islam, Ramesh P. Singh and Zheng Niu	12,011

Table A2. *Top 10 most cited papers published in 2016–2022.*

#	Title	Authors	Citations	Publication Year
1	Crowdsourcing, Citizen Science or Volunteered Geographic Information? The Current State of Crowdsourced Geographic Information	Linda See, Peter Mooney, Giles Foody, Lucy Bastin, Alexis Comber, Jacinto Estima, Steffen Fritz, Norman Kerle, Bin Jiang, Mari Laakso, Hai-Ying Liu, Grega Milčinski, Matej Nikšič, Marco Painho, Andrea Pődör, Ana-Maria Olteanu-Raimond and Martin Rutzinger	180	2016
2	A State-of-the-Art Review on the Integration of Building Information Modeling (BIM) and Geographic Information System (GIS)	Xin Liu, Xiangyu Wang, Graeme Wright, Jack C. P. Cheng, Xiao Li and Rui Liu	121	2017
3	User-Generated Geographic Information for Visitor Monitoring in a National Park: A Comparison of Social Media Data and Visitor Survey	Vuokko Heikinheimo, Enrico Di Minin, Henrikki Tenkanen, Anna Hausmann, Joel Erkkonen and Tuuli Toivonen	107	2017
4	mgwr: A Python Implementation of Multiscale Geographically Weighted Regression for Investigating Process Spatial Heterogeneity and Scale	Taylor M. Oshan, Ziqi Li, Wei Kang, Levi J. Wolf and A. Stewart Fotheringham	105	2019
5	Indoor Fingerprint Positioning Based on Wi-Fi: An Overview	Shixiong Xia, Yi Liu, Guan Yuan, Mingjun Zhu and Zhaohui Wang	96	2017
6	Evaluation of Feature Selection Methods for Object-Based Land Cover Mapping of Unmanned Aerial Vehicle Imagery Using	Lei Ma, Tengyu Fu, Thomas Blaschke, Manchun Li, Dirk Tiede, Zhenjin Zhou, Xiaoxue Ma and Deliang Chen	96	2017

	Random Forest and Support Vector Machine Classifiers			
7	Multi-Temporal Land Cover Classification with Sequential Recurrent Encoders	Marc Rußwurm and Marco Körner	92	2018
8	Land Use/Land Cover Dynamics and Modeling of Urban Land Expansion by the Integration of Cellular Automata and Markov Chain	Bhagawat Rimal, Lifu Zhang, Hamidreza Keshtkar, Barry N. Haack, Sushila Rijal and Peng Zhang	81	2018
9	Trends and Opportunities of BIM-GIS Integration in the Architecture, Engineering and Construction Industry: A Review from a Spatio-Temporal Statistical Perspective	Yongze Song, Xiangyu Wang, Yi Tan, Peng Wu, Monty Sutrisna, Jack C. P. Cheng and Keith Hampson	79	2017
10	Detection of Land Use/Land Cover Changes and Urban Sprawl in Al-Khobar, Saudi Arabia: An Analysis of Multi-Temporal Remote Sensing Data	Muhammad Tauhidur Rahman	77	2016

Table A3. *Activities of Editorial Board members in 2016–2022 (up to January 2022).*

First Name	Last Name	Submissions	Reviews	Decisions History	Special Issues
Amr	Abd-Elrahman	1	1	9	1
Ozgun	Akcay	2	11	55	0
Raffaele	Albano	3	0	55	2
Christoph	Aubrecht	0	0	7	0
Luigi	Barazzetti	1	2	11	2
Arpad	Barsi	0	8	6	1
Norbert	Bartelme	0	1	42	0
Alberto	Belussi	1	2	23	2
Michela	Bertolotto	2	6	2	0
Thomas	Blaschke	25	0	19	1
Gloria	Bordogna	8	12	20	2
Giuseppe	Borruso	0	13	96	2
Barbara P.	Buttenfield	1	5	0	1
Massimiliano	Cannata	1	4	10	1
Christos	Chalkias	8	5	17	1
Jun	Chen	1	0	2	1
Tao	Cheng	1	1	2	0
Tao	Cheng	2	0	8	1

Filiberto	Chiabrando	5	2	16	1
Christophe	Claramunt	7	23	7	0
Eliseo	Clementini	1	2	32	2
Andrew	Crooks	0	0	1	0
Sagi	Dalyot	6	3	10	1
Gino	Dardanelli	2	1	0	0
Leila	De Floriani	0	0	1	0
Philippe	De Maeyer	14	0	0	0
Nico	de Weghe	8	4	1	0
Mahmoud Reza	Delavar	6	1	3	2
Suzana	Dragicevic	3	0	6	1
Matt	Duckham	0	0	1	0
Manfred	Ehlers	0	0	0	0
Fazlay S.	Faruque	4	0	39	1
Sérgio	Freire	0	0	0	0
Dieter	Fritsch	3	5	12	2
Cristiano	Fugazza	7	12	9	1
Mark	Gahegan	0	1	0	1
Georg	Gartner	3	1	51	2
Yola	Georgiadou	7	1	6	2
Chris	Gold	0	0	0	0
Suchi	Gopal	0	0	1	0
Gerardo	Grelle	1	3	10	1
Lars	Harrie	8	11	11	1
Francis	Harvey	1	10	0	1
Geoffrey	Hay	3	1	11	1
Marco	Helbich	3	10	39	2
Hartwig H.	Hochmair	6	6	13	2
Haosheng	Huang	0	0	6	3
Bin	Jiang	13	0	11	1
Derek	Karssenberg	0	0	0	1
Marinos	Kavouras	0	0	9	0
Milan	Konecny	3	2	20	2
Bart	Kuijpers	7	3	17	2
Marcin	Kulawiak	1	5	6	1
Mei-Po	Kwan	12	2	26	3
Sébastien	Lefèvre	5	0	9	0
Michael	Leitner	10	1	20	2

Jason	Levy	1	1	62	6
Stefan	Leyk	4	1	1	1
Zhenlong	Li	1	5	13	0
Ki-Joune	Li	0	1	7	0
Paul A.	Longley	1	0	0	0
Marguerite	Madden	1	3	20	3
Yannis	Maniatis	0	0	0	0
Ali	Mansourian	5	4	11	1
Bruno	Martins	1	0	2	0
Beata	Medynska-Gulij	9	9	15	1
Antoni	Moore	4	5	1	0
Silvia	Nittel	0	2	0	0
Marco	Painho	10	6	5	0
Panagiotis	Partsinevelos	1	2	15	1
Ammatzia	Peled	0	0	2	0
Michael P.	Peterson	0	8	3	0
George P.	Petropoulos	3	1	22	0
Chris	Pettit	5	0	1	1
Karin	Pfeffer	4	0	11	1
Robert	Pontius Jr	2	1	2	0
Biswajeet	Pradhan	12	0	23	0
Bernd	Resch	12	2	28	3
Sergio	Rey	1	0	0	0
Fulvio	Rinaudo	3	6	16	2
Faramarz	Samavati	5	0	1	0
Maribel Yasmina	Santos	2	0	1	1
Jochen	Schiewe	8	3	14	1
Markus	Schneider	0	0	0	0
Monika	Sester	3	1	10	2
Himan	Shahabi	6	0	4	0
Shih-Lung	Shaw	6	2	17	2
Wenzhong	Shi	5	1	0	0
Andrew	Skidmore	0	0	7	0
Giulia	Sofia	1	2	3	1
Gunho	Sohn	2	0	9	1
Kathleen	Stewart	1	3	9	1
Josef	Strobl	2	4	26	1
Rafael	Suárez-Vega	2	5	15	1

Michael	Szell	1	0	4	1
Xinming	Tang	1	0	0	0
Nicholas	Tate	0	0	0	0
Fraser	Taylor	1	0	6	1
José António	Tenedório	1	10	22	1
Jean-Claude	Thill	4	1	23	1
Vladimir	Tikunov	0	0	0	0
Veronica	Tofani	1	0	16	1
Ron	van Lammeren	0	5	0	1
Bastiaan	Van Loenen	2	0	0	1
Vit	Vozenilek	4	0	11	0
John P.	Wilson	2	2	2	0
Stephan	Winter	4	6	3	1
Qiming	Zhou	3	0	24	2
Motti	Zohar	0	1	12	1

Report of the Editor-in-Chief on the ISPRS Open Journal of Photogrammetry and Remote Sensing, George Vosselman, Editor in Chief 2021-22

The start of a new Open Access journal

Society increasingly demands science to be open, including open access publications, open data, and open software. While the ISPRS International Journal of Geo-Information is an Open Access journal, the ISPRS Journal of Photogrammetry and Remote Sensing is a hybrid journal. As flipping the latter journal to an Open Access journal could potentially lead to a lower number of submissions (and thereby to a reduction of society income), the ISPRS Council decided to launch a new Open Access journal on photogrammetry and remote sensing to ensure that articles in the entire spectrum of the ISPRS can be published Open Access. After negotiations with Elsevier, the ISPRS Open Journal of Photogrammetry and Remote Sensing was launched on 1 January 2021. The journal has the same aims and scope as the well-established ISPRS Journal of Photogrammetry and Remote Sensing. Both journals also share the Editorial Advisory Board. Various activities were employed to make a start with the new journal.

Vouchers for attracting high-quality papers

Although the emphasis on publishing in journals with a high impact factor is diminishing (see e.g. the San Francisco Declaration on Research Assessment, DORA), many researchers target journals with a high impact factor. A first impact factor can only be calculated three years after the start of a journal. In the first three years, a journal will only attract submissions from authors that do not require publication in journals with an impact factor. Elsevier provides 30 vouchers per year to waive article processing charges to stimulate submission to the new journal. While some 60 scientists were invited to submit an article free of charge, only 13 articles were submitted of which 7 could be accepted before the end of 2021.

Communications

The launch of the new journal has been communicated in the ISPRS eBulletin as well as in dedicated ISPRS Announcements. Furthermore, ISPRS 2nd vice-president Charles Toth, in charge of publications in the ISPRS Council, and the Editor-in-Chief were interviewed by Elsevier to mark the launch of the new journal and explain the rationale behind it. This interview has been published on the journal's website.

Manuscripts are submitted through the Editorial Manager of Elsevier. The log-in page of both the ISPRS Open Journal of Photogrammetry and Remote Sensing and the ISPRS Journal of Photogrammetry and Remote Sensing contain a text to inform authors on the differences between the two journals. Authors intending to submit to the ISPRS Journal of Photogrammetry and Remote Sensing will thereby also be informed on the existence of the new Open Access journal.

Manuscript handling

After running the journal for only one year, only a few statistics on manuscript handling can be provided. In total 39 manuscripts were submitted in 2021. A final decision was made for 27 manuscripts. 11 were accepted and 16 were rejected. A desk reject (reject without reviews) was made for 13 of the 16 rejected manuscripts. The relatively high acceptance rate of 41% is explained by the fact that 7 of the 11 accepted manuscripts were submitted by invited authors. 4 manuscripts were withdrawn (typically because the authors mistook the journal for the ISPRS Journal of Photogrammetry and Remote Sensing). The remaining 8 manuscripts were under review or revision at the end of 2021. On average 18.3 weeks were needed from initial submission to the final acceptance of a manuscript.

Editorial team

Editor-in-Chief and Associate Editors

The ISPRS Open Journal of Photogrammetry and Remote Sensing started with one Editor-in-Chief and two Associate Editors.

Name	Institution	Country	Subject areas handled
Editor-in-Chief			
George Vosselman	University of Twente	The Netherlands	Photogrammetry, laser scanning

Associate Editors			
Eija Honkavaara	Finnish Geodetic Institute	Finland	Remote Sensing
Michele Volpi	Swiss Data Science Center, ETH Zurich, EPFL	Switzerland	Machine learning

Editorial Advisory Board

The Journal's Editorial Advisory Board is shared with the ISPRS Journal of Photogrammetry and Remote Sensing and consists of internationally well-recognized scientists.

Elsevier

The Editor-in-Chief is in regular contact with the Publisher based in Amsterdam, the Netherlands, and the Journal Manager based in Chennai, India. When needed the Journal Manager contacts the technical support to solve issues with the configuration of the manuscript handling system Editorial Manager.

Name	**Function**	**Service period**
Kostas Bischiniotis	Associate Publisher	Since January 2021
Prakash Marudhu	Journal Manager	January 2021 – August 2021
Edna Jayaseelan	Journal Manager	Since August 2021

Report of the ISPRS Book Series Editor, Zhilin Li, 2016-2020

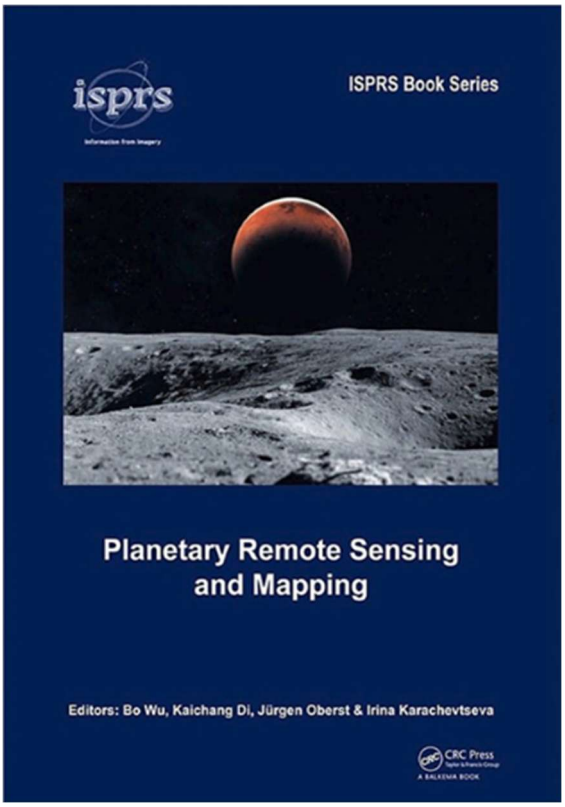
The Book Series editor stepped down from the position in 2020. This report covers the work during 2016-2020.

A call for book proposal was sent to ISPRS working groups, however, very few proposals have been received.

The editor, Zhilin Li, made a Proposal for a Special Volume to Celebrate the 80th Anniversary of the ISPRS Journal of Photogrammetry and Remote Sensing (formerly Photogrammetria). This proposal was approved by the Council, but we failed to produce the volume because of the copyright problem.

In the period 2016-2020, the following books have been published in the ISPRS Book Series:

Advances in Planetary Remote Sensing and Mapping



By Bo Wu, The Hong Kong Polytechnic University, Hong Kong

Kaichang Di, Chinese Academy of Sciences, China

Jürgen Oberst, German Aerospace Center, Germany

Irina Karachevtseva, Moscow State University of Geodesy and Cartography, Russia.

Chapter 1. Introduction

Section A: Highlights from Recent Planetary Exploration Missions

Chapter 2. Exploring the Ancient Martian Geologic Record Using the Opportunity and Curiosity Rovers

Chapter 3. The Colour and Stereo Surface Imaging System (CaSSIS) on the ExoMars Trace Gas Orbiter

Chapter 4. Comet 67P/Churyumov-Gerasimenko through the Eyes of the Rosetta/OSIRIS Cameras

Chapter 5. High-Resolution Topography from Messenger Orbital Stereo Imaging

Chapter 6. New Results from the Chang'E-3 Optical Instruments

Chapter 7. Mission Profile and Design Challenges for China's Mars Landing Exploration

Section B: Reference Systems of Planetary Bodies

Chapter 8. Construction of New-Generation Lunar Global Control Network Using Multi-Mission Data

Chapter 9. Enceladus Geodetic Framework

Chapter 10. Height Systems for Telluric Planets

Section C: Planetary Photogrammetry

Chapter 11. A Photogrammetric Pipeline for the 3D Reconstruction of Cassis Images on Board ExoMars TGO

Chapter 12. Optimizing the Distribution of Tie Points for the Bundle Adjustment of HRSC Image Mosaics

Chapter 13. Community Tools for Cartographic and Photogrammetric Processing of Mars Express HRSC Images

Chapter 14. Correcting Spacecraft Jitter in HiRISE Images

Chapter 15. An Iterative Pixel-Level Image Matching Method for Mars Mapping Using Approximate Orthophotos

Chapter 16. A Robust Method for Stereo Visual Odometry Based on Multiple Euclidean Distance Constraint and RANSAC Algorithm

Chapter 17. A Performance Comparison of Feature Detectors for Planetary Rover Mapping and Localization

Section D: Planetary Cartography and GIS

Chapter 18. From Planetary Cartography to Planetary Spatial Data Infrastructure

Chapter 19. Planetary Cartography and Mapping: Where We Are Today, and Where We Are Heading for?

Chapter 20. PSUP: A Planetary SUrface Portal

Chapter 21. Trek Portals - Solar System Mapping and Modelling

Chapter 22. Service-Oriented Visualization of Planetary Surface Geospatial Data

Chapter 23. Large-Scale Slope Analysis on Mars Based on Correlation of Slopes Derived with Different Baselines

Section E: Planetary Remote Sensing Data Fusion

Chapter 24. Fusion of Multi-Scale DEMs from Descent and Navcm Images of Chang'E-3 Using Compressed Sensing Method

Chapter 25. High Precision Co-Registration of Lunar Images and Digital Terrain Models Constrained by both Geometric and Photometric Information

Chapter 26. Accurate Registration of the Chang'E-1 IIM Data Based on LROC-WAC Mosaic Data

Chapter 27. Comparative Study of Lunar Roughness from Multi-Source Data

Section F: Information Extraction from Planetary Remote Sensing Data

Chapter 28. Automatic Detection of Secondary Craters and Mapping of Planetary Surface Age Based on Lunar Orbital Images

Chapter 29. Small Craters and Their Diagnostic Potential

Chapter 30. A Bayesian Network Framework for Automatic Detection of Lunar Impact Craters Based on Optical Images and DEM Data

Chapter 31. Elemental and Topographic Mapping of Lava Flow structures in Mare Serenitatis on the Moon

Chapter 32. Retrieval of Mineral Abundances of the Delta Region in Eberswalde, Mars

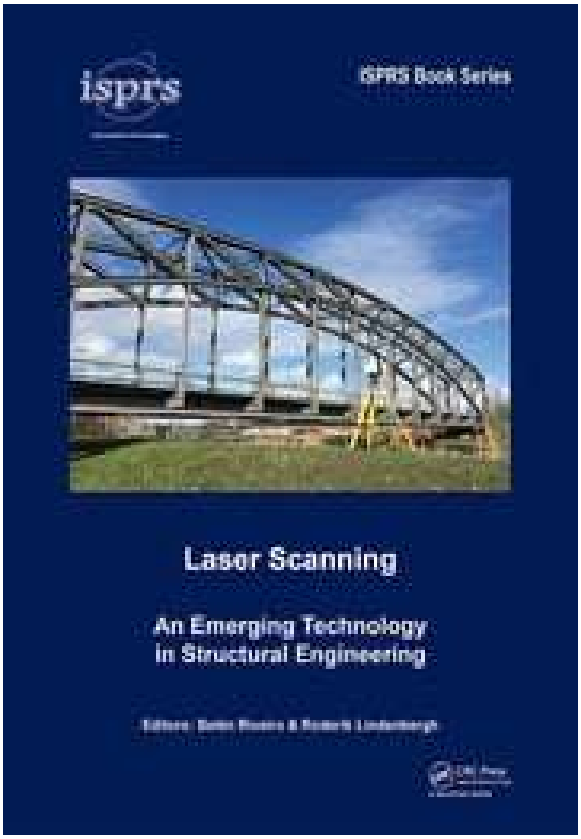
Chapter 33. Spectral Unmixing Based Construction of Lunar Mineral Abundance Maps

Chapter 34. Estimation of Aeolian Dune Migration over Martian Surface Employing High Precision Photogrammetric Measurements

Chapter 35. Mineral Abundance and Particle Size Distribution Derived from In-Situ Spectra Measurements of Yutu Rover of Chang'E-3

Epilogue

Laser Scanning: An Emerging Technology in Structural Engineering



by Belén Riveiro (School of Industrial Engineering, University of Vigo, Spain) and Roderik Lindenbergh (Dept of Geoscience and Remote Sensing, Delft University of Technology, The Netherland).

Chapter 1. Introduction

Chapter 2. Multispectral terrestrial Lidar: state of the art and challenges

Chapter 3. Multiplatform mobile laser scanning

Chapter 4. Introduction to mobile mapping with portable systems

Chapter 5. Indoor modelling with laser scanning

Chapter 6. Geometric point cloud quality

Chapter 7. Semantic segmentation of dense point clouds

Chapter 8. Laser scanning for operational multiscale structural monitoring

Chapter 9. A smart point cloud infrastructure for intelligent environments

Chapter 10. Integration of TLS and sonar for the modelling of semi-immersed structures

Chapter 11. Integral diagnosis and structural analysis of historical constructions by terrestrial laser scanning

Chapter 12. Laser scanning for bridge inspection

Chapter 13. Laser scanning data for inverse problems in structural engineering

Chapter 14. Construction site monitoring based on laser scanning data

Chapter 15. Integrated modelling and management information system (MMIS) for SCAN-to-BIM projects

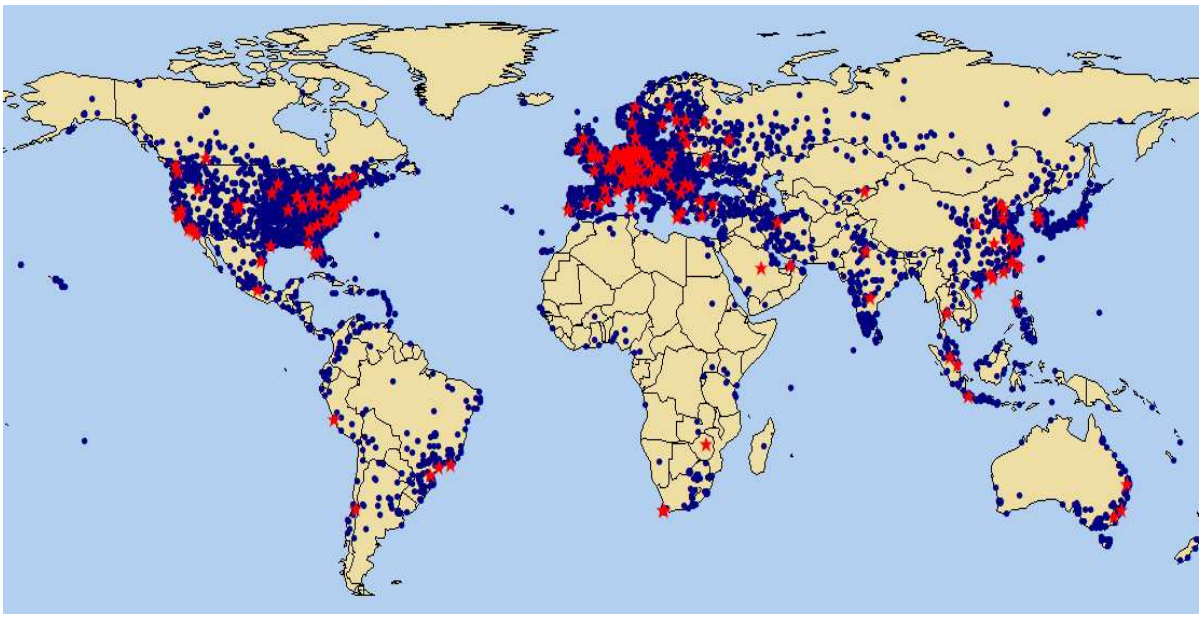
More detailed information can be found from CRC website: https://www.crcpress.com/Laser-Scanning-An-Emerging-Technology-in-Structural-Engineering/Riveiro-Lindenbergh/p/book/9781138496040

Report on the ISPRS Website, Markus Englich, Web Master

Statistics

Currently, we host 1,200 aspx files (main html files), about 10,700 html files and more than 25,000 PDFs, thereof more than 80% papers. The most visited sites have been publications (Archives and Annals), calendar, job opportunities and announcements. The average number of visitors is still in the same range as in the last term with about 5,000 unique visitors per day.

The map shows were our visitors come from. The red stars mark the most active cities, dark blue circle cities with average activities and the small blue circle cities with lower activities. It shows that the visitors come from around the world but mainly from the Europe, USA, and East Asia.



Map of ISPRS web site visitors

New Homepage and Layout

With the beginning of this term, the structure of the homepage has been changed. Announcements in a teaser version and a link to the full version are now offered. They can even be viewed even after their expiry in an archive.

Since 2020, a new responsive layout is now used for all web pages. This has the advantage that it adapts to different output devices and thus content should be readable even on the smallest devices such as smartphones. With this change, the homepage was expanded in terms of content, taking into account the most sought-after information (most visited pages). Thus, in addition to the latest announcements, quick links to the most visited pages as well as the latest entries in Archives, Annals, calendar and job opportunities can now be found.

Use of databases

Many data and pages are now database-based, e.g. Archives & Annals, TCs & WGs, officers, news, TIF news, TIF trustees. The calendar now has more options, e.g., further information on the event in an extra window. TC and WG skin pages are generated from these database entries. Commissions, WGs and Officers are now also administered by term, so "historical" data is then still available.

An online form for the TIF travel grants has been created on the TIF website, which then also stores the applications in a database.

Privacy Information Notice

We had to create a privacy information notice due to the European General Data Protection Regulation (GDPR). This can be accessed on all pages via the footer. For new applications for individual membership as well as to the mailing list for the e-Bulletin, applicants must accept the policy.

Hosting

In addition to the main server for the ISPRS web pages, we also host a second system, a content management system, where TCs and WGs can

manage their own pages. In addition to the TIF website, we have also been hosting the Student Consortium website and the websites for the TC II and TC IV Symposia in 2018.

Mailing

Since long emails are more and more in danger of being classified as spam, the e-Bulletin has now been split into a short version for the email announcement as well as a full version on the web server. With this in mind, care has also been taken to ensure that only the most important announcements are sent to the mailing list.

Report on The ISPRS Foundation (TIF), Stewart Walker, Chair

Introduction

The ISPRS Foundation Inc. is a non-profit entity, managed by a Board of Trustees, which responds to ISPRS grant needs that are identified by ISPRS Council, which will solicit proposals for grants and then collaborate with the Board to support worthy candidates. The Board is responsible for fund raising, investment, management and approval of grants from Foundation funds. Day-to-day operations of the Foundation are managed by an Executive Committee (ExCom), comprising the Chair, Operations Officer and Finance Officer. The Board is kept informed, especially with respect to the budget and the disbursement of grants.

The ISPRS Foundation (TIF) was legally established in August 2003 and the Trustees, comprised of prominent professionals in the fields of ISPRS, were then appointed. TIF has as its aims to improve the ability of ISPRS to satisfy its philanthropic aims and objectives, by administering a broadly-based international program of fund-raising to provide grants to qualified individuals and organizations pursuing and/or applying knowledge for advancing the sciences and technologies associated with the disciplines embodied by ISPRS.

The areas that are expected to be funded by TIF include travel grants, awards, awareness education, distance learning, exchange programs, fellowships, grants, international workshops, internships, preservation and archiving, research initiatives, scholarships, standards projects, tools and literature. It is contributing significantly to the efforts of ISPRS in capacity building, international cooperation and technology transfer. The Foundation has now been in operation for almost 17 years. The first grants were provided to participants to attend the mid-term Symposia in 2006 and further travel grants have been awarded every year except 2021.

Summary of TIF Board of Trustees Decisions Prague 2016

The TIF Board of Trustees last met at the XXIII Congress in Prague, Czech Republic on 27 August 2016. The following decisions were made:

- Council Trustees Chen Jun and Jon Mills were replaced by Christian Heipke and Songnian Li. Stewart Walker was appointed Chair. Dieter Fritsch, who had extended his term till July 2016 in accordance with the decision made during the XXII Congress in Melbourne, Australia, and Juergen Dold indicated a wish to stand down and it was agreed to seek a replacement for the latter from Trimble.
- The existing officers, John Trinder and Marguerite Madden, were re-elected.
- Jon Mills agreed to continue as chair of Grants Evaluation Committee for one year, after which Songnian Li would take over. Mario Hernandez agreed to join that Committee. The Audit Committee would continue with Lewis Graham (chair), John Trinder and Laurent Polidori. The Marketing & Promotion Committee and the Large Grants Procurement Committee were unstaffed and inactive and should be reviewed.
- Recommendations were made on future members of the Board and committees as listed below.
- Large donors Leica Geosystems, Geoway and IGI were acknowledged. TIF had provided awards of USD 100,000 over the last four years, but donations had not increased, so TIF needed to increase its revenue, for example by fund-raising activities. The investments had not done well.
- Marguerite Madden reported on the awards made over the four years, totalling USD 172,378. TIF should request a donation from Council and construe the Geospatial Week events as a source of additional funds. Similarly, the Board should approach the Congress Director for a larger proportion of the registration income from the XXIV Congress in Nice, France. [Subsequently it was decided not to proceed with this request.]
- Dieter Fritsch undertook to provide annual reports for 2013, 2014 and 2015. Stewart Walker should handle those for 2016 *et seq.* [The reports for 2013, 2014 and 2015 were subsequently abandoned. It was decided no longer to provide annual reports but to create, in addition to this report for the XXIV Congress, a more detailed document about TIF, including historical material and information about award winners, which would appeal to a broader audience and also could be used for marketing purposes.]

TIF Activities and Funding 2016-22 (Travel Grants and Awards for 2016-21 and planned for 2022)

During the past six years, TIF has provided funding for the following activities:2016 – Total USD 55,496.98

International Workshops: USD 7708.12

2015 YP-GRSS and ISPRS Summer School, Curitiba, Brazil, 26-30 October 2015	2045.66
Support Student Consortium Chair to attend 2016 Brazil Summer School	1575.00
2016 YP-GRSS and ISPRS Summer School, Presidente Prudente, Brazil, 26-30 September 2016	1332.46
15th Student Consortium - WG VI/5 Summer School, Diyatalawa, Sri Lanka, 22-26 October 2016	2755.00

Travel Grants – USD 35,575.00.

- Partial travel grants were awarded for 62 participants from 33 countries to attend the XXIII Congress in Prague, Czech Republic.

Congress Awards – USD 12,713.86

- Wang Zhizhuo Award (CHF 2500 or USD 2568.66)
- Frederick J. Doyle Award (USD 2512.10)
- Finished and engraved Doyle medal (USD 439.86)
- CATCon (3) Awards - Gold (USD 3098.24), Silver (USD 2536.00) and Bronze (USD 1559.00) - for winners of software contest organized by ISPRS Commission VI Working Group 2, Computer Assisted Teaching and sponsored donor companies.

2017 – Total USD 16,249.07

International Workshops – USD 6950.75

2017 YP-GRSS and 16th ISPRS Student Consortium and WG V/5 Summer School, Lages, Brazil, 2-6 October 2017, instructor travel	3007.28
17th Student Consortium - WG VI/5 Summer School at Asian Conference of Remote Sensing (ACRS), New Delhi, India, 23-27 October 2017, Student Consortium Board Members Travel	3943.47

Travel Grants – USD 16,249.07

- ISPRS Hannover Workshop, 'High-Resolution Earth Imaging for Geospatial Information', at Leibniz University Hannover, Germany, 6-9 June 2017 (USD 4298.32), total 6 Travel Grants from 6 countries.
- ISPRS Geospatial Week 2017, Wuhan, China, 18-22 September 2017 (USD 2953.30), total 5 Travel Grants from 5 countries.

2018 - Total USD 35,698.84

International Workshops – USD 9703.07

ISPRS Summer School - Student Consortium - WG VI/5 at Asian Conference of Remote Sensing (ACRS), New Delhi, India, 23-27 October 2017, Student Consortium board member travel	2127.43
ISPRS Summer School, Dehradun, India, 30 October – 3 November, 2017, Indian Institute of Remote Sensing Indian Space Research Organization	4296.00
ISPRS Summer School, Beijing, China, 4-6 May 2018, Student Consortium board members travel	481.48
ISPRS Summer School, at Asian Conference of Remote Sensing (ACRS) 2018, Kuala Lumpur, Malaysia, 20-24 October 2018, Student Consortium board member travel	704.23
2018 IEEE/GRSS – Young Professionals and ISPRS Student Consortium and WG V/5 Summer School, Campo Grande, Brazil, 29 October-4 November 2018, instructor travel	2093.93

Travel Grants – USD 25,995.77

- Partial travel grants were awarded for 41 participants from 21 countries to attend ISPRS Symposia for Commissions I to VIII.

2019 – Total USD 38,915.61

International workshops – USD 14,152.53

ISPRS Summer School, at Asian Conference of Remote Sensing (ACRS) 2018, Kuala Lumpur, Malaysia, 20-24 October 2018, Geoscience and Digital Earth Centre, Univ. Technology Malaysia (3000 EUR) and Student Consortium board member travel	5220.49
ISPRS Summer School, at Geospatial Week, ITC Univ. of Twente, Enschede, The Netherlands, 12 June 2019	2574.65
ISPRS Summer School, Entebbe, Uganda, 22-24 July 2019, Dept. Geomatics and Land Management, Makerere University, instructor travel	1154.82
ISPRS Summer School, Wroclaw University, Poland, 26-30 October 2019, Wroclaw Univ. of Science and Technology (WURST) and Forest Research Institute, Student Consortium board member travel	657.19
ISPRS Summer School, Campo Grande, Brazil 2019, 29 October-4 November 2019, Student Consortium board member travel	2176.23
SERFA-ISPRS SAR Summer School, Sorocaba City, Brazil 2019, 10-14 November 2019, instructor travel	2369.15

Travel Grants – USD 24,763.08

- Photogrammetric Image Analysis (PIA) 2019/HRIGI in Munich, Germany, 18-20 September 2019 (USD 3869.32), total 5 Travel Grants from 3 countries.
- Student Consortium Board Meeting at TC-V Symposium, Dehradun, India, 18-23 November 2018 (USD 2630.09), total 2 Travel Grants from 1 country.
- ISPRS Geospatial Week-2019, 10-14 June 2019, Enschede, The Netherlands, (USD 13,100.00), Total 19 Travel Grants from 15 countries.
- CIPA International Symposium, 1-5 September 2019, Avila, Spain, (USD 5163.67), Total 6 Travel Grants from 5 countries.

2020 – Total USD 5743.96

International workshops – USD 3359.00

ISPRS Summer School, at Asian Conference of Remote Sensing (ACRS) 2019, Daejeon, South Korea, 14-18 October 2019, Korean Society for Remote Sensing for organizing the Summer School (3000 EUR)	3359.00

Travel Grants – USD 631.44

- XXIV Congress, Nice, France, 12-18 July 2020 (moved to virtual and postponed due to COVID-19) (USD 331.44)*
- Latin American GRSS & ISPRS Remote Sensing (LAGIRS) Conference, Santiago, Chile, 22-27 March 2020 (USD 300.00)*

*These reimbursements reflect expenses paid in advance by TIF Travel Grant recipients that could not be cancelled.

Congress Awards – USD 1753.52

- Frederick Doyle Medals were finished (3) with medal housings (3) and shipping from Alto University, Finland to ISPRS (Hannover, Germany) (USD 1753.32)

2021 – Total USD 2500*

- Frederick Doyle Award recipient, Konrad Schindler (USD 2500.00)

*No TIF travel grants were awarded in 2021 due to travel restrictions and all virtual conferences.

2022 – Total USD 44,532*

Travel Grants – USD 34,600.00

- Partial travel grants were awarded for 63 participants from 23 countries to attend the XXIV Congress in Nice, France.
  - Fee waiver only – 10 awards for a total of €5600, funded by Institut de recherche pour le développement (IRD), as explained later in this report
  - Fee waiver and travel grant – 29 awards for a total of €11,550 for fee waivers, funded by IRD, and $17,300 cash travel grants, funded by TIF
  - Travel grant only – 24 awards for a total of $17,300, funded by TIF

Congress Awards – USD 9932 (estimated currency conversion)

- Wang Zhizhuo Award (CHF 2500)
- Frederick J. Doyle Award (USD 2500 paid in 2021)
- 3 finished, engraved and shipped Doyle medals (USD 1753.52 paid in 2020)
- CATCON (3) Awards - Gold (CHF 3000), Silver (CHF 2500) and Bronze (CHF 1500) - for winners of software contest organized by ISPRS WG V/1.

*** This report includes all awards up to and including those related to the XXIV Congress. It is possible that other awards will be made before the end of 2022.**

**** The awards are listed with the currencies and amounts given in the deeds. TIF usually pays out awards in USD, using the prevailing ISPRS exchange rates to compute the amounts. The USD amounts given here, in advance of the Congress, are, therefore, estimates.**

Summary 2016-22

Total grants for the period 2016-2021 were USD 159,883.62. An additional USD 34,600 for TIF Travel Grants and USD 9932 for Congress Awards (plus 17,150 EUR from the Congress/IRD in reduced registration fees) is expected to be granted in 2022 for the XXIV Congress.

Figures 1a and 1b, respectively, show TIF Travel Grant recipients receiving their awards.



Figure 1. TIF Travel Grant recipients at the Technical Commission I Symposium held in 2018 in Karlsruhe (top), Germany; and Technical Commission IV Symposium held in 2018 in Delft, The Netherlands.

TIF IGI Africa Ambassador Award

IGI has offered the IGI Ambassador Award, via TIF, valued at 2500 EUR per year, to young scientists in photogrammetry and laser scanning coming from regionally under-represented African countries in the geospatial sciences and technology fields. The award, which allowed for visits at IGI's main office, Kreuztal, Germany, and active participation at ISPRS Workshops, Conferences, and Symposia, was first made in 2016. A further award was made in 2018, but the winner, from Kenya, was unable to obtain a

visa to visit Germany. In 2022, IGI decided to discontinue the award.

AGSI Award

The African Geospatial Sciences Institute (AGSI) was a non-profit NGO established in Tunisia in 2012 to accelerate geospatial capacity development in North Africa. In 2018, however, it decided to cease operations. Its remaining funds, USD 1508.45, were transferred to TIF later that year, to be used as a single award to support attendance by one or two early-career researchers from North African countries in the geospatial sciences and technology fields at the XXIV ISPRS Congress, so the funds would now be used for a 2022 attendee. A Selection Committee to decide the winners comprises Stefan Oeldenberger, Chairman of AGSI; Prof. John Trinder, Operations Officer of TIF; and Dr. Stewart Walker, Chair of the Board of Trustees of TIF. The funds would be exhausted and the award discontinued thereafter. Unfortunately, of the successful candidates for TIF grants to attend the XXIV Congress, none met the criteria for the AGSI Award, so discussions are ongoing between TIF and the officers of AGSI to determine the way forward.

IRD: French research funds in support of attendance at XXIV Congress

Institut de recherche pour le développement (IRD) is a French research organization founded in 1937. Emphasizing interdisciplinarity, IRD has focused its research on the relationship between man and its environment in Africa, the Mediterranean, Latin America, Asia, and the French tropical overseas territories. IRD's research, training, and innovation activities are intended to contribute to the social, economic, and cultural development of southern countries. IRD agreed to provide additional funds of 30,000 EUR to support waiving of registration fees at the XXIV Congress. These grants were to be awarded to applicants from countries and territories eligible to receive official development assistance (ODA). The Grants Evaluation Committee decided which of the successful applicants for TIF travel grants to attend the Congress will be funded from the IRD contribution. 39 fee waivers were made, totalling 17,150 EUR.

ISPRS WEC Kennert Torlegård Travel Grant

A White Elephant Restricted Kennert Torlegård Travel Grant Fund has been established in TIF to support young people to attend ISPRS events and especially the quadrennial ISPRS Congresses. The restricted grant category will be funded by senior members of ISPRS, who are members of the White Elephant Club (WEC - a group of previously or still active senior officers of ISPRS and other recognized persons with close relations to ISPRS, founded in 2004) and wish to demonstrate their continued commitment to the aims and goals of ISPRS. By supporting outstanding young scientists worldwide to attend ISPRS congresses, the Fund will demonstrate the commitment of WEC to the future of ISPRS. The support for these young people will encourage and equip them to take over leadership in ISPRS in the future. Members of WEC donate generously to the Fund to enable TIF to support as many young people as possible to attend ISPRS events. The White Elephants Travel Grants were offered for the first time in 2016 for awardees to attend the XXIII Congress (total 3200.00 USD). A deed was prepared in 2021 formally naming the award as the ISPRS WEC Kennert Torlegård Travel Grant. To be eligible for the Award, the candidate must have produced a high-quality paper in the areas of digital terrain modelling, surface modelling or related topics. This paper can be the one that the candidate plans to present at the ISPRS Congress for which he/she is applying for the Award, provided that it has been accepted by the Congress organizers for presentation and inclusion in the ISPRS *Archives* or *Annals*.

Financial Statements (2016-21)

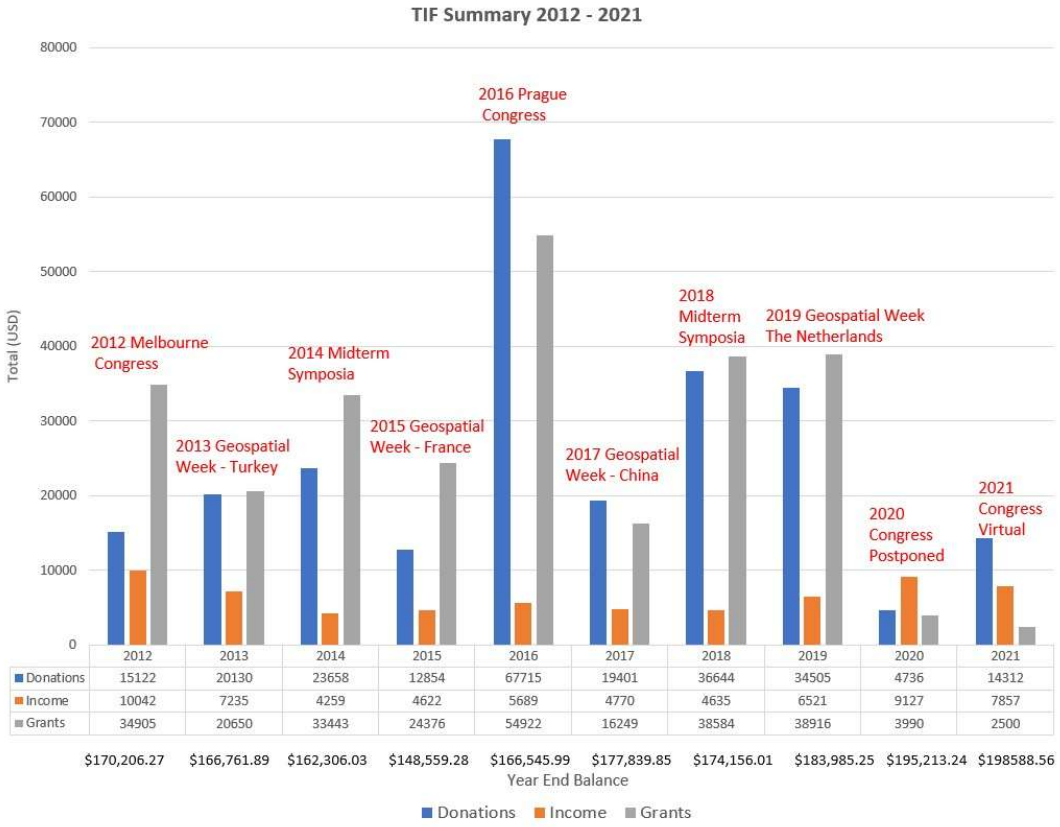
The Bylaws were constructed in accordance with regulations to be exempt from Federal and other taxation. The Foundation’s net worth is expressed as Net Fair Market Value (NFMV), which takes into account unrealized gains and losses on investments on an annual basis. Over the past six years, the year-end NFMV in USD, the amount of grants, administrative costs, and investment earnings are listed in Table 1.

Table 1. TIF Net Fair Market Value (NFMV), Grants, Admin Costs, Earnings and Donations

Year-End	NFMV	Grants Distributed	Operating Costs (% of NFMV)	Investment Earnings	Donations
2016	166545.99	61126.14	0.75	5688.61	67715.18
2017	178189.87	15899.07	0.08	4770.35	19401.00
2018	167831.01	35698.84	1.98	4635.70	38157.83
2019	194003.63	38915.61	0.89	5373.13	34405.20
2020	196688.46	5743.96	0.09	17092.92	4735.89
2021	193142.60	2500.00	2.07	7857.22	14312.31
2022 (estimated)	200000	44532	1.00	6000	45000

Summary of Financial Performance

The following graph provides a summary of donations, interest, awards and end-of-year balance for the period 2106-21:



General Comments on Financial Statements

- TIF was informed in November 2021 that the Indian Society of Remote Sensing (ISRS) intended to donate USD 10,000 to TIF. The formalities were completed in March 2022.
- For some years, TIF has used the address of ASPRS in Bethesda, Maryland, USA as its formal address. ASPRS, however, has begun to use the address of the association management company that handles much of its administrative and financial work, in Baton Rouge, Louisiana, USA. As of this writing, TIF was investigating whether action is needed. ASPRS still owns the building in Bethesda, so it may be possible for TIF to continue using this address.
- As of this writing, the accounts for the period 2016-21 were in an advanced stage of preparation and it was expected that these would be presented to the Audit Committee before the XXIV Congress.

Acknowledgement of Major Donors

TIF is grateful to the following organizations for their support and generous donations:

- Leica Geosystems, for its donations of CHF 5000 per year (period 2012-2022)
- IGI, Kreuztal, Germany, for its donation of 2500 EUR in 2016 to support the TIF IGI Ambassador Award
- The Ministry of Municipal and Rural Affairs, Saudi Arabia, for its Unrestricted donation of USD 2000 in 2019
- The National Administration of Surveying, Mapping and Geoinformation, China, for its donation of CHF 2500 in 2008 and 2012 and USD 2500 in 2016 and 2022 to cover the Wang Zhizhou Award (USD 2550 in 2016)
- Members of the White Elephant Club, for generously donating annually to TIF
- ISRS, for its donation of USD 10,000 in 2022.
- ISPRS Council for continued financial support for TIF activities over the past six years
- ISPRS Council and the event organizers, for enabling TIF to receive donations from Congress and GeoWeek registrations:
    - 2016 – XXIII Congress, Prague, Czech Republic, USD 4927.47
    - 2017 – Geospatial Week, Wuhan University, Wuhan, China, USD 2236.00
    - 2019 – Geospatial Week, ITC Twente University, Enschede, The Netherlands, USD 2879.95
    - 2022 – XXIV Congress, Nice, France, USD 2000 (estimated)

Board of Trustees – 2016-2022

The Board of Trustees comprises 11 persons, who are appointed by ISPRS Council. Only two members of the Board of Trustees may be members of the existing Council of ISPRS. Trustees are leaders in fields of the photogrammetry, remote sensing and spatial information sciences, who have significant knowledge and experience in the needs of industry and governments. Membership of the Board reflects the international character and diversity of the Society. Trustees do not receive any salary or other compensation for their services.

Special thanks and acknowledgements are extended to all present and past Board members for their commitment and contributions to the work of TIF.

Current Board Members

Stewart Walker, photogrammetry4u, San Diego, California, USA – Chair and ExCom member – newly appointed 2016

John Trinder, University of New South Wales, Sydney, Australia – Operations Officer and ExCom member

Marguerite Madden, University of Georgia, Athens, Georgia, USA – Finance Officer and ExCom member

Ron Bisio, Trimble, Westminster, Colorado, USA – newly appointed 2017

Sandra Maria Fonseca da Costa, UNIVAP, São José dos Campos, SP, Brazil – newly appointed 2020

Michael Gruber, Vexcel Imaging, Graz, Austria – newly appointed 2019

Christian Heipke, Leibniz University Hannover, Hannover, Germany – ISPRS Council representative

Lawrie Jordan, Esri, Redlands, USA

Songnian Li, Ryerson University, Toronto, Canada – ISPRS Council representative

Shailesh Nayak, National Institute of Advanced Studies, Bangalore, India – newly appointed 2019

Qihao Weng, Hong Kong Polytechnic University, Hong Kong – newly appointed 2021

Former Board Members

Li Deren, Wuhan University, Wuhan, China (term ended 2018, but he continued until Qihao Weng was appointed)

Lewis Graham, GeoCue Group**,** Madison, Alabama, USA (resigned 2019)

Mario Hernandez, Mies, Switzerland (term ended February 2020, but he continued until Sandra Maria Fonseca da Costa was appointed)

Mazlan Othman, International Science Council for Science Regional Office for Asia and the Pacific, Kuala Lumpur, Malaysia (term ended 2018, but she continued until Shailesh Nayak was appointed)

Office Bearers – 2016-2022

Chair – Stewart Walker

Operations Officer –John Trinder

Finance Officer – Marguerite Madden

Board Meetings

A meeting of the TIF Board of Trustees was held on 27 August 2016 during the XXIII Congress, with eight Board members in attendance and Stewart Walker via Skype. See above.

A meeting will be held in Nice, France, during the XXIV Congress.

Committees

The Board eliminated the Marketing and Promotions Committee and Large Grants Procurement Committee in 2019, since they were not active, and replaced them with the Fund-Raising Committee (see below). Thus, the following Committees assist TIF in its operations. Members of these Committees and Terms of Reference are given in the Appendix.

- Audit Committee
- Executive Committee
- Fund-Raising Committee
- Grants Evaluation Committee

- The Executive Committee held 11 meetings from December 2016 to March 2022. Each meeting was carefully minuted and the results sent to the Board of Trustees.
- It became clear during the period 2016-18 that not only were the Marketing and Promotions Committee and the Large Grants Procurement Committee ineffective, but there was little significant growth in TIF's funding, so no expansion could be expected in its activities. It was decided to form a Fund-Raising Committee to solicit donations in a planned, measured way. Terms of reference were developed in 2018 and Michael Gruber became chair in 2019. He has recruited nine members (see Appendix), with the goal of covering the globe as widely as possible. By the end of 2021, the Committee had developed lists of possible donors in several countries and began sending packages of material to carefully selected individuals in the prospective donor organizations. In each case, the Committee selected which of its members would be best to make contact, or whether to ask a trustee to do so instead. As of this writing, 80 organizations in 32 countries, including Africa, the Middle East and India, had been approached. It is hoped that initial successes will be reported at the meeting of the Board of Trustees during the XXIV Congress.

Marketing and Website

TIF updated its brochure and PowerPoint presentation several times during 2016-22. The latest versions are on the website and have been distributed to the Board of Trustees to be used more widely.

Throughout the period, TIF has been supported meticulously and enthusiastically by Markus Englich, the ISPRS webmaster at the University of Stuttgart, Stuttgart, Germany, who has ensured that all requested changes to the TIF web pages were made immediately.

TIF is aware that a stronger presence on social media would be beneficial, in terms of not only attracting more applications for grants but also publicizing its work and attracting donors. Whereas there had been 216 applications for grants for the XXIII Congress, there were only 69 for the XXIV. Though this was partly the result of the two postponements and the associated uncertainty, it seems clear that TIF's activities need to be better known amongst students and early-career researchers.

Conclusions and Outlook

The continued need to provide assistance to young scientists to attend international workshops and ISPRS sponsored events has placed strong demands on TIF to attract funds. Nevertheless, TIF has been able to provide assistance to many young scientists from developing countries throughout the past six years.

The Net Fair Market Value (NFMV) has not increased to satisfy the Board's resolutions in 2012 to boost capital by 5% per year and providing USD 30,000 per year in grants. However, despite the difficult financial times the NFMV has risen slowly from the amount of approximately USD 170,000, thanks to the generous support of major donors for which the Board is very much appreciative. All persons involved in ISPRS are urged to seek donors for TIF so that its very beneficial work can continue. The path to growth inevitably involves more donations, so the Fund-Raising Committee has been created to address this. The activities of this committee will be critical to TIF's growth.

Certain obstacles impede the progress of TIF. It has proved difficult to recruit trustees, as a result of which many trustees have served beyond the two three-year terms specified in the bylaws. It has been even more difficult to recruit trustees to replace the Finance Officer and Operations Officer, both in their 4th terms. Nevertheless, once the duties of several individuals are clarified during the XXIV Congress, it should be possible to move forward. We hope that the trustees will become more engaged in TIF, for example by assisting the Fund-Raising Committee, and that we will thus be able to benefit fully from these talented, successful individuals, who volunteer their time to TIF.

APPENDIX – TIF COMMITTEES

Audit Committee

Terms of Reference of Audit Committee

The responsibilities of the Audit Committee are to advise the Board of Trustees with its:

1. Submission of a report every February of its findings resulting from its independent examination and audit of all Foundation income and expenses of the preceding year.

2. Recommendations for improving the rules and procedures governing the receipt, anonymity and investment of gifts and donations, consistent with Foundation Bylaws and with

federal and state law.

3. Recommendations for improving the rules and procedures governing the disbursement of grants, consistent with Foundation Bylaws and with federal and state law.

4. Prompt review of all proposed Foundation contracts and agreements to ensure consistency with Foundation Bylaws, as may be deemed necessary to carry on the business of the Foundation.

5. The term of members of the Committee will be three (3) years, with the term of the Chair for one (1) year, when it will be passed to another member of the Committee.

Members of Audit Committee

Chair and Trustee – Shailesh Nayak, National Institute of Advanced Studies, Bangalore, India

Trustee and Operations Officer – John Trinder, Australia

Trustee – Qihao Weng, Hong Kong Polytechnic University, Hong Kong

Member – Laurent Polidori, CESBIO, Toulouse, France

Executive Committee

Terms of Reference of Executive Committee

1. Address daily issues (ongoing)
2. Set agenda for Board meetings (annual)
3. Draft documents (ongoing)
   - terms of reference;
   - operating procedures;
   - publicity;
   - investment policy;
   - annual reports

Members of Executive Committee

Chair and Trustee – Stewart Walker, USA

Member, Trustee and Operations Officer – John Trinder, Australia

Member, Trustee and Finance Officer – Marguerite Madden, University of Georgia, Athens, Georgia

Fund-Raising Committee

Terms of Reference of Fund-Raising Committee

Support the Board of Trustees with the following:

1. Identify and follow up opportunities to increase funding from international grant-funding agencies/foundations, private sector organizations and government organizations
   a. Identify prospective donors likely to be sympathetic to the goals of ISPRS and TIF
   b. Publicize the aims of ISPRS and TIF to these organizations
   c. Develop appropriate procedures and points of contact for approaching, then applying for grants or seeking donations from, these organizations
   d. Develop procedures for renewal/maintenance of annual grants and donations from these organizations
   e. Following on from §1(a)-(d) above, take actions jointly with the Board of Trustees to secure grants or donations or renewals from these organizations.
2. Identify and follow up other opportunities to increase funding
   a. Identify opportunities to increase funding levels from existing donors
   b. Identify new opportunities to raise funds, e.g. within ISPRS and/or TIF
   c. Identify individuals who may be interested in donating
   d. Following on from §2(a)-(c) above, take actions jointly with the Board of Trustees to secure donations.
3. Publicize the goals and work of TIF worldwide
   a. Identify target audiences that may not be aware of TIF
   b. Develop appropriate communications materials, including but not limited to brochure, PowerPoint presentation, website
   c. Following on from §3(a)-(b) above, take actions jointly with the Board of Trustees to use these materials and ensure that TIF's message reaches the target audiences.

Members of Fund-Raising Committee

Chair and Trustee – Michael Gruber, Vexcel Imaging, Graz, Austria

Member and Trustee – Ron Bisio, Trimble, Westminster, Colorado, USA

Member and Trustee - Sandra Maria Fonseca da Costa, UNIVAP, São José dos Campos, SP, Brazil

Member and Trustee – Lawrie Jordan, Esri, Redlands, California, USA

Member and Trustee – Qihao Weng, Hong Kong Polytechnic University, Hong Kong

Member – Paul Marshall, Southampton, UK

Member – Fabio Menna, Fondazione Bruno Kessler, Trento, Italy

Member – Marko Pasko, Expert_for_3D_Landscape, Bratislava, Slovak Republic

Member – Miguel Pelaz, GeoToolBox Ibérica, Madrid, Spain

Member – Sisi Zlatanova, University of New South Wales, Sydney, Australia

Grants Evaluation Committee

Terms of Reference of Grants Evaluation Committee

1. Make recommendations to the Board of Trustees on priorities for grants in any 12-month period.
2. Consider applications for grants and make recommendations to the Board of Trustees.
3. Generally advise the Board on matter relating to grants.

Members of Grants Evaluation Committee

Chair and Trustee – Songnian Li, Ryerson University, Toronto, Canada

Member - Nguyen Dinh Duong, Vietnam Academy of Science and Technology, Hanoi, Vietnam

Member - Hussein Farah, Kenya

Member and Trustee – Mario Hernandez, Mies, Switzerland

Member - Rakesh Malhotra, North Carolina Central University, Durham, USA

Member - Norbert Pfeiffer, T U Wien, Vienna, Austria

Member - Sisi Zlatanova, University of New South Wales, Sydney, Australia

Report of the International Policy Advisory Committee (IPAC), Gunter Schreier, Chair

IPAC Organizational Issues

According to its Terms of Reference, the International Policy Advisory Committee (IPAC) of ISPRS shall advise Council on issues relevant to Society interaction with intergovernmental organizations and shall – specifically - identify, coordinate and prioritize issues on which ISPRS should have a public policy. These issues include legal and policy challenges, data and information policy and industrial developments.

Chaired by Gunter Schreier (German Aerospace Center, DLR) in the entire reporting period, IPAC addressed these duties in supporing the council in topics raised by UNOOSA and other international bodies. Furthermore, IPAC supported the organization related workshops in the reporting period.

IPAC reviewed its 2016 – 2020 Workplan, in close contact with the ISPRS council. The revision of early 2017 included the main duties of IPAC and the chair of IPAC:

- Continue to support ISPRS council; discuss and raise awareness to policy issues
- Manage IPAC, its membership and relations to ISPRS Council
- Adapt and modify Terms of Reference and IPAC structure where necessary
- Representation at and cooperation with international organizations
- Organize and conduct topic workshops and conferences
- Contribute to or organize major publications in IPAC topics

A further revision of the work plan is now planned for the IPAC meeting during the 2022 Congress.

By end 2019, IPAC also renewed its membership. IPAC has now 14 members presenting academia, organisations and companies coming from nearly all continents:

Gunter Schreier (chair)	DLR, Germany	Germany
Sias Mostert	SCS Space (Pty) Ltd South Africa. Member board of trustees for AARSE	South Africa
Frans Von der Dunk	University of Nebraska, Lincoln, USA	USA
George Cho	University Canberra, Australia	Australia
Michael Rast	ESA ESRIN, Italy	EU, Italy
Barbara Ryan	executive director of the World Geospatial Industry Council (WGIC).	INT, USA
Marcello Maranesi	CEO, GMATCIS, Rome, Italy	Italy
Einar Bjorgo	UNITAR-UNOSAT, UN - Switzerland	INT, Swizz
Andre Nonguierma	UN Economic Commission for Africa, UN- Ethiopia	INT, Ethiopia
Fabio Tronchetti	University of Beijing and University of Mississippi	USA
Giovanni Marchisio	VP of Applied Analytics, Planet	USA, Italy
Jide Kufoniyi	Professor of Geoinformatics, Obafemi Awolowo University Ex ISPRS Reg.Rep. for Africa and former President, AARSE	Nigeria
Thomas Blaschke	University of Salzburg, Department of Geoinformatics - Z_GIS, Austria	Austria
Laurent Polidori	CESBIO, Toulouse, France	France

The actual list of members is here: https://www.isprs.org/structure/ipac.aspx

IPAC is actually looking for more new female members and new members from South America. Proposals for a new membership list of IPAC will tabled in early 2022.

Organization of Sessions, Workshops and Round Table Discussions

ISPRS UN-GGIM National Mapping and Cadastre Agency (NMCAF) and ISPRS-IAA Space Agency (SAF) Forum



This forum featured on July 14-15, 2016 during the ISPRS congress in Prague. The overall motivation for this joint forum has been the plans of Space Agencies in the sphere of data for National Mapping and Cadastral Agencies; how can this cooperation be strengthened? How do National Mapping and Cadastral Agencies use satellite remote sensing data, what would they like to see improved?

The NMCAF part was organized and chaired by André Streilein and Julius Ernst representing EuroSDR, the SAF part by Gunter Schreier and Ian Dowman representing ISPRS. The SAF part was also supported by the International Academy of Astronautics (IAA), announced as the first ISPRS-IAA Space Agency Forum.

The forum featured four sessions with 17 speakers for the NMCAF part and four sessions with 16 speakers from agencies and companies for the SA part. Quite some high-level speakers have been president of agencies or CEOs of companies. In addition, in 3 joint sessions common aspects have been covered, concluded by a round table discussion with participation by the audience.

50 years of Earth observation – What's next?

Conducted as an ISPRS hosted plenary aside UNISPACE 50+ (June 19th, 2018) at the VIC, Vienna, Austria, this event assembled speakers from academia, international organisations, space agencies and NEW SPACE businesses: (Christian Heipke, President ISPRS; Barbara Ryan, Director GEO; Jim Green, Chief Scientist, NASA; Josef Aschbacher, Director Earth Observation, ESA; Mr. Kazuo Tachi, Associate Director General, JAXA; Robbie Schingler, CSO, Planet; Wolfgang Wagner, TU Vienna; Jean-Jacques Tortora, Director ESPI, Vienna).

Panelists at the UNISPACE 50+ ISPRS Space Agency Forum



Moderated by Lena Halounova and Gunter Schreier, the panel ended with a round table discussion, wherein the speakers shared their visions on where

Earth observation is developing and what actions need to be taken to meet the societal demands on fast, reliable and global geo- information.From Space to Place

This International Symposium on the use of Space Technologies for Natural and Cultural sites (Sept. 18-20, 2018 Campeche – Mexico) was – amongst others – also organized under auspices of ISPRS (Conference Organizer: Mario Hernandez). Gunter Schreier, IPAC Chair, was invited to give a keynote on "Earth Observation and the Copernicus Programme in support to Archaeology and World Heritage Preservation". He also introduced the participants to ISPRS topics.



Participants to the International Symposium on the use of Space Technologies for Natural and Cultural sites

International Cooperation in Earth Observation

IPAC organized this event on November 20th, 2018, aside ISPRS TC V Mid Term Symposium - November 20th, 2018 at the Indian Institute of Remote Sensing, Dehradun.

The presentations and panel discussions with invited speakers reviewed international cooperation in Earth observation missions and Earth observation application projects. Conducted in India, the focus was on cooperative missions between ISRO and international partners.



Final Round Table discussion at the IPAC Session "International Cooperation in Earth Observation"

High level speakers from ISRO, ANTRIX, CNES, NASA and ESA introduced to collaborative Earth Observation Missions and application schemes which aim to contribute to the understanding of global change and support the United Nations Sustainable Development Goals (SDG). Next to the wide range of missions conducted and planned by ISRO, joint missions with CNES (Megha-Tropiques, SARAL, Trishna) and NASA (NISAR) have been presented. International programs and organisations such as CEOS, the Space Climate Observatory (SCO), the Asia-Pacific cooperation scheme and Copernicus concluded the presentations. A round table discussion closed the one day event.

Towards Digital Twins of our Earth

This session was organised by IPAC as a Partners Program hosted by ISPRS at the Geospatial World Forum (GWF) in Amsterdam Thursday, 21 October 2021.

It featured three key note speakers from organisations engaged in the European Destination Earth program. This initiative aims to build gradually a "Digital Twin of the Earth" based on Earth observation data from the Copernicus program, other EO missions and geospatial information. Facing the challenges of global climate change, this data- together with large scale computing infrastructure and innovative analysis schemes – could also be used as starting point and frame for modelling complex earth science scenarios to be used for simulating developments and the effects of

potential measures to mitigate global change. Those virtual "digital twins" would improve the understanding of environmental/climate developments and eventually help to forecast changes and extreme events. Key notes included Liina Munari (European Commission), Peter Bauer (ECMWF) and Nicolaus Hanowski (ESA), The speakers were introduced by Lena Halounova, Secretary General, ISPRS. The follow-up discussion was moderated by Gunter Schreier, IPAC chair.



Earth Observation Forum during the ISPRS Congress in Nice, 2020 - 2022

IPAC was asked to organize an "EuroSDR National Mapping and Cadastral Agency (NMCA) and ISPRS Space Agency (SA) Forum" during the planned ISRS Congress in 2020. The Track 1 Forum was titled: "Mapping the world of tomorrow: Plans and Challenges of Space and Mapping Agencies".

For EuroSDR Jon Mills and André Streilein have gathered key note speakers from mapping agencies. The Earth observation part was organized by Gunter Schreier and Michael Rast (ESA). Plan was to have 4 sessions followed by a round table discussion over a full day. Speakers from ESA (Josef Aschbacher, now DG ESA), NASA, CNES, IGN, GEO, Planet and others have already confirmed their participation prior to the cancelation of the 2020 congress.

The forum was planned to be revived in the 2021 virtual version of the ISPRS congress. However, EuroSDR, did withdraw from the virtual format. In addition, some of the Space Agency speakers have been no longer in their 2020 position, which would have caused an entire re-design of the sessions. Therefore, this session was skipped to the ISPRS 2022 congress in Nice.

At the time of writing (early Feb 2022), a draft agenda for an "Earth Observation Forum" (EuroSDR has withdrawn from organising a "Mapping Agency" part) has been established and speakers from Space Agencies (CNES, ESA, NASA) and EO industry (Airbus, Planet, Ororatech) have confirmed their participation (depending on Corona-rules). Current remaining task is to coordinate other proposals for forum tracks at the Nice 2020 congress. This coordination is currently done by Laurent Polidori, Ian Dowman and Gunter Schreier.

Activities in Support to Council

Responses to questions from UNOOSA

IPAC supported the ISPRS Council specifically with questions related to legal and international affairs, coming – amongst others – from UNOOSA. In this context, UNOOSA requested ISPRS for information and for an opinion on the "Delineation of outer Space".

A first request from UNOOSA was on 12 Sept 2017. Frans van der Dunk, IPAC member and professor of space law, responded on 18 Nov 2017 with an elaborate 5 pages response, incl. recommendation to ISPRS council: *"Efforts at increasing adherence to the space treaties, especially the four addressed above in somewhat greater detail, should therefore in general be very much supported by the ISPRS, noting that of course on particular details other concerns may require efforts to amend or otherwise adapt this regime"*

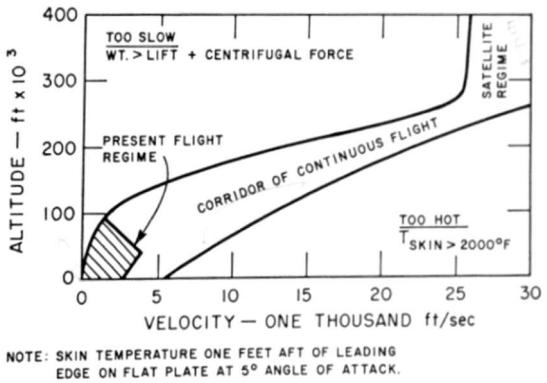


Figure 8.2: Variation Versus Altitude for Various Values of Dynamic Pressure and Equilibrium Temperature

Source: Von Kármán 1956, at 141

One particular point was the definition of the delineation of "outer space". Whilst this is often referred to as the "Karman Line" at 100km, both the heritage from "von Karman" and the use in legal regime leave room for questions and interpretation.

A further request from UNOSSA was tabled on 1 December 2020, about the definition of the delineation of outer space and the character and utilization of the geostationary orbit

Fabio Tronchetti, IPAC member and professor on Space Law, responded on 13. January 2021 & 20. February 2021 to the 12 specific questions by UNOOSA in an 11-page detailed response.

With increasing commercial activities in space borne and very high altitude (e.g. balloon and others) Earth observation, these questions are also of considerable interest for the ISPRS community.

Representation on other international organizations

The IPAC chair is appointed by Council to represent ISPRS in the following international organizations (partly together with other ISPRS representatives):

- UNOOSA, COPOUS: Lena Halounova and Orhan Altan are frequently participating in the yearly UNOOSA Meetings in Vienna. IPAC was supporting requests for information from UNOOSA (see above)
- COSPAR: IPAC Chair participated on behalf ISPRS in the COSPAR (virtual) Council Meeting 28.-29.1.2021
- IAF/IAA: IPAC Chair, Gunter Schreier, is member of the International Astronautical Federation (IAF) Earth Observation Committee and co-chairing EO sessions at the yearly International Astronautical Congress (IAC). Last IAC was conducted in 25– 29 October, 2021 in Dubai. The next one will be 18 – 22 September in Paris.
- CEOS: Committee on Earth Observation Satellites; Members are mostly national space agencies. IPAC chair participated- amongst others – in a recent virtual meeting of the CEOS Working Group on Capacity Building and Data Democracy

Forthcoming conferences with IPAC/ISPRS involvement include:

- GLOC 2022: IAF Global Space Conference on Climate Change, Oslo, Norway. Due to conflicts with the ESA living Planet Conference in 2022 (and the Corona situation), the conference is now postponsed to 2023.
- International Symposium on Remote Sensing of the Environment (ISRSE) - 39, Hanoi, hosted by VNSC& VAST. The planning is mastered by International Committee on Remote Sensing of the Environment (ICORSE, a committee affiliated to ISPRS). The Symposium was postponed from 2021 to now 14-18 Nov, 2022; but still to be confirmed by the local organizers.

Recommendations to Council: NEW SPACE Earth Observation mission/constellations

“New Space” is a general notion for the increased presence and performance of commercial companies starting businesses in earth observation missions and downstream data analysis and services. Companies are either newly founded and start-ups or have been created/supported by big industrial players. These New Space companies gain from the considerable amount of financial resources (e.g. venture capital), drive the development of the market and change the way data is analyzed and services are provided (e.g. Big Data, AI, ML). Therewith, New Space has also a considerable influence on the needs for skills and experience developed by science and engineering. New Space has therefore also a considerable influence on ISPRS.

ISPRS council asked IPAC to compile a set of recommendation on how ISPRS should react on New Space and how and where ISPRS need to react, adapt and change.

These recommendations should be tabled to the ISPRS council before the Nice 2022 congress.

Report of the International Scientific Advisory Committee Report (ISAC), Ian Dowman, Chair

Introduction

The International Science Advisory Committee (ISAC) has been active between 2016 and 2022, (the period of office was extended because the 2020 GA was cancelled due to Covid), to advise Council on science issues with the same terms of reference as in the previous four years (2012-2016), and with unchanged membership during the past six years. The committee has responded to Council requests and worked closely with Council on a number of issues. The activities of ISAC are set out below with some comments and recommendations for future action.

Terms of Reference

- Identify and prioritize scientific and technologic (S&T) trends which will impact the S&T activities of the Society and recommend actions to ISPRS Council.
- Facilitate excellence in scientific research and development and the use of proper and appropriate technology by evaluating and refining S&T Resolutions proposed in advance by ISPRS Member Organizations and Commissions for approval by the quadrennial ISPRS General Assembly.
- Collaborate with the ISPRS Council to formulate Resolutions for ISPRS General Assembly approval which will ensure that ISPRS is at the forefront of the S&T in the photogrammetry, remote sensing and spatial information sciences and covers the full breadth of the Society's mission.
- Review proposed Working Groups Terms of Reference with Council and identify S&T gaps and overlaps and recommend corresponding fills and consolidations.
- Evaluate inputs recommended for changing the overall scope and direction of S&T activities in the Society and advise Council accordingly.
- Suggest collaborative S&T activities with other international societies and intergovernmental bodies to foster cooperation on the inter-disciplinary boundaries.
- Propose worthy candidates for recognition and awards.

Membership

Dowman, Ian **(ISAC chair)**	Photogrammetry and Remote Sensing University College London	UK
Cho, Kohei	Photogrammetry and Remote Sensing Tokai University	Japan
Elberink, Sander Oude	Spatial Information Science University of Twente	The Netherlands
Fraser, Clive	Photogrammetry and Remote Sensing University of Melbourne	Australia
Hernandez, Jaime	Remote Sensing University of Chile, Santiago	Chile
Madden, Marguerite	Spatial Information Science University of Georgia	USA
Nayak, Shailesh	Earth Observation Chairman, Indian Space Research Organisation	India
Polidori, Laurent	Photogrammetry and Remote Sensing Centre d'Etudes Spatiales de la Biosphère, Toulouse	France
Sester, Monika	Spatial Information Science Leibniz University, Hannover	Germany

Shan, Jie	Photogrammetry and Remote Sensing Purdue University	USA
Shi, John	Spatial Information Science The Hong Kong Polytechnic University	Hong Kong
Skidmore, Andrew	Remote Sensing ITC, University of Twente	The Netherlands
Smit, Julian	Photogrammetry and Remote Sensing University of Cape Town	South Africa
Vosselman, George	Photogrammetry and Remote Sensing ITC, University of Twente	The Netherlands
Wagner, Wolfgang	Remote Sensing Vienna University of Technology	Austria
Winter, Stefan	Spatial Information Science University of Melbourne	Australia

Activities

Council has requested advice from ISAC on a number of issues and these are listed with a brief summary of the advice given and conclusions.

Proposals for working groups of the Technical Commission Presidents: proposals were examined and commented on.

Publications: Council asked ISAC for advice on how to deal with pre-publication of papers submitted to ISPRS publications and comment on the Council draft. ISAC members generally agreed with the draft guideline.

Restructuring Council: ISAC reviewed proposals to restructure Council and made a number of comments which were taken into account by Council in the revision of the first draft. A number of additional issues were identified which Council might wish to consider in the future.

One issue which has not been addressed is encouraging and enabling individuals from developing countries to serve on Council. Although Council travel is funded, it is common and useful for people to serve as Commission Presidents prior to seeking Council positions and that is where there is a problem with financial support. There can also be a disconnection between qualified individuals and national representation on ISPRS.

Restructuring Commissions: ISAC was asked to review the success of the restructuring of the Technical Commissions which was approved before the 2016 Congress. The restructuring is considered to be successful, however the new structure has not significantly helped communication or involvement with less well financed countries.

Keynote Speaker Programme: ISAC is generally in favour of the proposals for a Keynote Speaker programme with some reservations such as possible problems in evaluating speakers and keeping the list up to date. ISAC made some suggestions to Council. First, Ordinary Members (OdMs) should be able to nominate speakers themselves and second, Council shall ensure that OdMs from developing countries apply. It was also suggested that ISPRS make the list available to non ISPRS members.

Plagiarism: In November 2019 Council asked ISAC to advise on how to implement tests for plagiarism in the Annals and Archives. ISAC made a number of comments, largely based on the experience of members.

Assessment of the Scientific Initiative and Education and Capacity Building Initiatives: this was done by ISAC and provided to Council. There is a separate report on this activity.

Unsolicited Advice

As noted above it was recommended at the Prague Congress ISAC should be more proactive in advising Council on developments which may not have been identified by Council and that ISAC should meet on convenient occasions for discussion of relevant issues.

In July 2017 the chair invited members to raise any issues which they thought to be relevant and particularly to comment on ISPRS strategy in Africa and Latin America. ISAC members have made a number of useful comments. The suggestion made most frequently is that ISPRS should work with other organisations to develop recognition in these areas; AARSE, ICA and GEO were all mentioned.

Areas for collaboration include capacity building, GEO BON (Biodiversity Observation Network) and SDGs. It was also suggested that the Regional Representative structure was not working well. All of these approaches have been tried in the past, clearly without great success. Council has addressed this through changes in the Statutes. On a more individual level it was suggested that people who had received TIF grants could be targeted to become involved with ISPRS.

Comments and Conclusions

The chair of ISAC was appointed chair of the International Science Committee of GSW in Enschede and the Congress in Nice, and served on the Committee to oversee preparation of the Forum Track in Nice. The role of the chair in these positions has varied significantly in all of these and other events and it considered to be important that the role of ISAC in GSW and Congresses should be made quite clear.

I believe that ISAC has provided a useful role in advising Council and that this should continue; as noted earlier ISAC could be more proactive in searching out areas where Council could benefit from additional advice.

Finally, I note that I have chaired ISAC since 2012 and wish to pass this role on after the Congress in 2022. I thank all members of ISAC for their cooperation and support and Council for good interaction.

Restructuring ISPRS Commissions - ISAC Review

At the Prague Congress in 2016 the decision or establish five Technical Commissions, instead of the previous eight' was implements. These Commissions are now well established and have held their mid-term symposia. Council would now like to get a preliminary assessment of whether the new arrangements is meeting the objectives for change.

Background to change

The following rationale for changing the commission structure was put forward before the changes were agreed:

- *The geospatial information market has become larger and more interesting to the Information and Communications Technology (ICT) and also to the general public. As a result, our area of interest faces stronger competition from other disciplines.*
- *The number of scientific ISPRS meetings has risen, as has the number of meetings outside ISPRS that are relevant to our community.*
- *Scientific and technical progress has given rise to overlaps in the topics covered by the different ISPRS commissions, resulting in a fragmentation of activities and increasing duplication of effort.*
- *During recent General Assemblies there has been only a limited number of Ordinary members interested in hosting a Technical Commission.*

The overall goal is to better position our society as a relevant, vibrant and forward-looking organisation for the 21st Century.

In line with the ISPRS Strategic Plan, which calls for a concentration of Society efforts on the most important issues of our field, Council suggests examining and re-defining the commission structure. The aims of this re-structuring effort are threefold:

- *To increase the relevance of the society and its work in the global geospatial world in science, government, industry and end user communities;*
- *To concentrate the efforts of the society on the most relevant issues and thus reduce the existing lack of focus in some of our activities*
- *To enhance the attractiveness of hosting a Technical Commission for Ordinary Members and individuals acting as Technical Commission Presidents.*

In order to maximise multi-national participation in ISPRS, we further suggest the formal position of a Vice-Technical Commission President (V-TCP), simultaneously encouraging the V-TCP to originate from an Ordinary Member different to that of the TCP.

An additional possibility to engender involvement of ordinary members not hosting a Technical Commission and scientists in such countries, is the introduction of Regional Meetings, in particular in areas far away from symposia venues. In this way it is anticipated that global participation of all ISPRS members will be enhanced.

The change was agreed by postal vote in 2015 and the following Commissions were established. The figures in brackets indicate the number of bids made for the Commission.

	2012 - 2016 Commissions		2016 - 2020 Commissions
I	Sensors and Platforms for Remote Sensing [1]	I	Sensor systems [2]
		III	Remote Sensing [1]
II	Theory and Concepts of Spatial Information Science [1]	IV	Spatial Information Science [1]
III	Photogrammetric Computer Vision and Image Analysis [1]	II	Photogrammetry [2]
IV	Geospatial Databases and Location Based Services [1]		
V	Close-Range Imaging, Analysis and Applications [1]		
VI	Education, Technology Transfer and Capacity Development [1]	V	Education and Outreach [2]
VII	Thematic Processing, Modeling and Analysis of Remotely Sensed Data [2]		
VIII	Remote Sensing Applications and Policies [1]		

The Commission terms of reference can be found on the ISPRS website.

Current position

The statistics for the 2018 and 2014 TC Symposia are as follows:

TC	Held by TCP/V-TPC	No. of participants.	No. of countries represented	No. of Annals/ Archives papers, submitted	No. of Annals/ Archives papers, published	No. of exhibitors	No. of TIF travel grants
I	Germany/ Brazil	170	28	36/85	22/70	3	7
II	Italy/Japan	410	37	44/217	41/172	12	5
III	China/ Canada	763	52	72/655	43/467	12	8
IV	Netherlands / Canada	252 + > 50day reg.	30	46/153	34/108		9
V	India	374 + 66 at tutorial	17	445	66/144	18	10
Sum					**206/961**	**45**	**39**
TC	**Held by**	**No. of part-icipants**	**No. of countries represented**	**No. of Annals/ Archives papers, submitted**	**No. of Annals/ Archives papers, published**	**No. of exhibitors**	**No. of TIF travel grants**
I	USA	480	25	82/20	10/62		3
II	Canada	150	24		13/38	8	
III	Switzerland	200		48/62	27/66		

IV	China	320	17	129	15/68		2
V	Italy	280			52/114	9	7
VI	China	300	22		3/24		5
VII	Turkey	81	21	64	13/36		2
VIII	India	450	18		28/336		
Sum					**161/744**	**17**	**19**

It is difficult to make a comparison between these two tables because there is no direct link between the topics covered and regional influences affect the number of attendees but three conclusions can be reached:

- More papers were published in 2018 than in 2014;
- More exhibitors attended the symposia.
- There were more bids for each Commission in2016 and taking into account the position of V-TCP, more countries were involved. Although no new countries bid for Commissions.

So, it can be concluded that the 2018 symposia were more popular to academics seeking to publish and to commercial companies and there is a small increase in the wish to run Commissions.

In order to make a further assessment from personal experiences, ISAC members are asked to complete a short questionnaire.

Comments from ISAC

This was a difficult brief to respond to because few members of ISAC attended the symposia or had much contact with the Commissions. Those who had attended symposia were asked to fill in a questionnaire to summarise their impressions and others were asked for general comments. Only 7 members responded and of those, 4 had attended symposia.

This report includes a summary of all comments and the individual comments in full, including significant comments from the questionnaire. The results of the questionnaire are summarised in a table.

The results are fairly subjective but can be summarised as follows:

- More papers were published in 2018 than in 2014.
- More exhibitors attended the 2018 symposia.
- The 2018 symposia were more popular with academics seeking to publish and with exhibitors.
- The current structure is effective and better than the previous structure.
- The Commission symposia were well organised and covered the fields of ISPRS activities.
- There was no significant overlap between symposia except for TC V.
- The role of TC V needs to be reviewed; in 2018 there was insufficient focus on education and outreach.
- The effect of having a V-TCP was not much in evidence except for TC II.
- The new structure has not significantly helped communication or involvement with less well financed countries.

There is a strong feeling that ISPRS is offering an efficient suite of meetings, taking the symposia with the Geospatial Week and WG meetings.

May 2019

An Assessment of the Scientific Initiative and Education and Capacity Building Initiatives

A report on a study carried out by ISAC

Introduction

The ISPRS Science Advisory Committee (ISAC) was asked by Council to carry out an independent evaluation of the ISPRS Scientific Initiatives (SI) and Education and Capacity Building Initiatives (ECBI). ISPRS has launched and financed rounds of SI in 2014, 2015, 2017, 2019 and 2021 and rounds of ECBI in 2018 and 2020. The brief to ISAC was to report on how many papers were published from these projects, what were other outcomes from them, how many citations of the outcomes of the initiatives can be found, which projects were more successful, and any other factors of interest.

In order to make the project feasible in a reasonable length of time with the manpower available it was decided to limit the evaluation to the most recent four years for which reports were available, this

meant that 20 projects from 2017, (SI). 2018, (ECBI) and 2019, (SI) were assessed.

This report summarises the procedures and guidelines for applying and conducting projects, describes the methodology used in the evaluation, summarises the conclusions and makes recommendations for future projects.

Background

The guidelines for SI and ECBI are set out in the Orange Book https://www.isprs.org/documents/orangebook.aspx appendices 9A and 9B.

Methodology of the assessment

Documentation

Reports submitted to ISPRS from all projects were available on the ISPRS website and in addition to these, all PIs were asked to provide additional information as follows:

1. A list on any papers and citations which have arisen from your project since it was completed.
2. Details of any activities which have resulted from your project, for example funded research, new courses or curricula.
3. An assessment of how the project has benefitted ISPRS, the geospatial community or society in general.

The information provided by the PIs is in the appendix of the full report, this information has been edited to include only the required information. All PIs except one provided the requested information.

The number of papers from each project is included in the annex of the full report. The information from questions 2. and 3. was reviewed by members of ISAC and summarised below.

Evaluation

The reports from the ISPRS website and the returns from the PIs were used by 14 members of ISAC to evaluate the projects. All projects were reviewed by 2 people who were given the following brief:

This assessment is intended to evaluate the overall effectiveness of the initiative scheme and whether it is good value for ISPRS. It is not meant to be a judgment on the performance of each project and the report presented to the GA will not criticise any particular project although any specific criticism may be passed on to Council in confidence. The report may give examples of best practice. Please answer the following specific questions and add any comments which you have.

1. *Was the project completed successfully?*
2. *If not give the reasons for non-completion and provide comment.*
3. *Was the project effectively publicised and the results published widely?*
4. *Assess the usefulness of the project within the ISPRS community.*
5. *Assess the usefulness of the project to other organisations and groups.*
6. *Give any general comments on the project and any recommendations which could be applied to future initiatives.*
7. *Would you recommend this project as an example of good practice?*

The responses from the ISAC members were collated and analysed by the chair and are presented as follows:

1. A summary of conclusions
2. Recommendations
3. Breakdown of comments by project (Annex).

Summary of comments

The number of published papers from the projects varied considerably. The average for all projects was 3.6 with a range from 0 to 9. Reporting on citations was inconsistent between projects and the 2019 projects have as yet had less chance to publish reports and be cited. Several PIs reported that the preparation and presentation of papers to conferences has been affected by Covid and that additional papers had been written but not yet published. Many of the papers have been published in ISPRS Archives and Annals but a number have appeared in other journals such as those of the IEEE Geoscience and Remote Sensing Society.

An analysis of the returns from the PIs to question 3 reveals a number of common factors:

- Any datasets which were created have been widely used, especially for teaching, this has increased the visibility of ISPRS.
- The projects have generated workshops and tutorials which have also benefitted the visibility of ISPRS.
- The participants in the projects have benefited.

The responses from ISAC members to questions 1, 3 and 4 were overwhelmingly positive with some useful comments indicating good practice and

lessons learned for future projects. Responses to question 5 were also positive although the number of other organisations actually involved in projects was limited. It is noted that the quality of reporting and promotion of the results varies as does access to the data used and the results. The general comments are discussed below and also included in the annex of the full report. Of the 20 projects assessed, 12 were considered to be completely successful and 5 successful with minor reservations. Three were not considered to be satisfactorily completed.

There is no clear difference between the quality of SI and ECBI but it is clear that a strong definition of targets helps to obtain a successful outcome and that projects involving a number of organisations, for example with more than one ISPRS working group and including other international organisations, also work well. It is also clear that projects which include workshops work well and that projects involving preparation of teaching materials benefit from student workshops.

Those projects which are considered to be unsuccessful suffered from being too specific in their scope, were not fully integrated with local conditions or did not initially properly assess the resources of time and man power required.

Relating these assessments to the aims of SI and ECBI set out in the Orange Book, we conclude that the projects improve the international status of ISPRS, benefit ISPRS members and strengthen the Society's educational activities. Overall it can be concluded that SI and ECBI have been successful.

Recommendations

Overall recommendation

- To make results free and openly available where possible.
- Maintain a register of grant recipients and evaluated status of the project.

Recommendations for proposals

- Well defined targets needed.
- A model project proposal would emphasise the key benefits which ISPRS expects.
- Council to ensure that projects are suited to local conditions and that appropriate lines of communication are in place.

Recommendations for execution

- Include workshops in the project and invite other interested parties.
- Education projects should work with teaching organisations.
- For workshops with a training element, provide material suitable for a wide range of understanding and expertise.....
- ... and develop pre-planned advanced exercises for those who finish early or desire additional information.

Recommendations for outreach

- Revise guidelines to ensure that data collected is available on the ISPRS website and fully publicised to non ISPRS organisations including commercial and government bodies.
- Establish a central register on ISPRS website.
- Give clear requirements for reporting and access to datasets e.g. on ISPRS website.
- Project websites should be available for a specified period, e.g. 5 years.
- Report any problems identified with software during the projects to developers.

Conclusions

This assessment has taken a comprehensive look at 20 SI and ECBI projects and concludes that the programme is working well and provides good value to ISPRS and those involved in working groups and Technical Commissions. The programme should continue and a number of recommendations are made to improve the effectiveness of the projects, particularly in promoting the findings and use of the project data to non-ISPRS individuals and organisations.

Report of the International Committee on Remote Sensing of Environment (ICORSE)
Mary Ann Kutny, Chair

The International Committee on Remote Sensing of Environment (ICORSE) is a standing Subcommittee of ISPRS. ICORSE membership is composed of representatives from national and international organizations that actively develop, operate, and utilize remote sensing techniques and Earth observation capabilities. The ICORSE primary goal is to advance the use and application of remote sensing to address priority issues of the environment including scientific and technical, as well as policy and management. A key objective of ICORSE is to provide guidance to the biennial International Symposium on Remote Sensing of Environment, (ISRSE).

ICORSE UPDATE

Following ISRSE-38, held in Baltimore, Maryland, USA in October 2019, chairmanship of ICORSE transitioned from Prof. Guo Huadong of the Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences to Ms. Yana Gevorygan (2020), and Ms. Mary Ann Kutny, Deputy Director, International and Interagency Affairs Division, U.S. National Oceanic and Atmospheric Administration (NOAA) Satellite and Information Service (2021).

It was not long after the October 2019 ICORSE meeting that we were faced with the global coronavirus pandemic. At that time, like many others, we assumed that it would be relatively short-lived, and went ahead making arrangements for ISRSE-39. The ICORSE met in April and November 2020 where plans were made with the Vietnam Academy of Science and Technology (VAST) and the Vietnam National Space Center (VNSC) to host ISRSE-39 in Hanoi, Vietnam in October 2021. Co-Chairs from ICORSE and VNSC were selected for both Organizing and Program Committees, where a suite of themes, largely aligned with the U.N. Global Sustainable Development Goals (SDGs), was selected.

As we entered 2021, clearly recognizing the pandemic was not going to be short-lived, ICORSE took the decision to postpone ISRSE-39 from October 2021 to November 2022, still to be held in Hanoi, Vietnam. The ICORSE met, again virtually, in July 2021 to meet and hear from Ms. Mary Ann Kutny, the incoming Chair, to discuss the themes and working groups for ISRSE-39, and to thank ICORSE Members for their continued support of the Committee, and the applications-focused Symposium.

It will come as no surprise that discussions are ongoing with VNSC regarding the timing for ISRSE-39. While it is currently scheduled for 14-18 November 2022 in Hanoi, few would have expected that we would still be dealing with new infections and the impacts from the global pandemic. Travel restrictions are still impacting international travel, which may result in yet another postponement of ISRSE-39. We anticipate making a final decision by mid-April 2022.

Regardless of the ultimate decision on ISRSE-39, I would like to thank ISPRS, and each of the ICORSE Members for their continued support. The role Earth observations and remote sensing play in addressing the challenges of climate change, sustainable development, and yes, even the coronavirus should not be underestimated. The world is, indeed, a safer and healthier place given the daily contributions of ICORSE Members and Partners. Thank you.

Report of the International Committee for Documentation of Cultural Heritage (CIPA)
Stratos Stylianidis, President

General

CIPA Heritage Documentation is a dynamic international organization that has twin responsibilities: keeping up with technology progress regarding documentation of Cultural Heritage and ensuring its usefulness for cultural heritage conservation, education and dissemination. This dual role is exhibited in our parent organizations: *ICOMOS* (International Council of Monuments and Sites) and *ISPRS* (International Society for Photogrammetry and Remote Sensing).

We try to accomplish these two, sometimes conflicting goals, in a variety of ways, through:

- encouraging and promoting the development of principles and good practices for recording, documentation, and information management of cultural heritage.
- leading and participating in international training programs for conservation.
- advising government bodies, regional authorities, non-profit groups and institutions on tools, technology, and methods for using technology.
- sponsoring an international network of professionals in both the fields of technology and cultural heritage for scientific research but also applied practical experience.
- providing a platform with bi-annual congresses for the exchange of ideas, best practices as well as scientific research papers.

Executive Board Activities

In 2019, CIPA held its annual meeting in Avila during the 27th International Symposium. In 2021, our annual meeting took place on a hybrid mode due to the COVID-19 pandemic. For the first time in the history of CIPA, the 28th International Symposium also took place in a hybrid mode; it was scheduled to take place in Beijing. In Avila, for the first time, we implemented our updated Statutes (approved by both ISPRS and ICOMOS) which introduced a new voting system by the CIPA Expert Members and a new Executive Board, was elected. In addition, three Scientific Commissions[4] were established and started to contribute to the work of our Commission. The Board held several meetings and discussed internal business. CIPA Emerging Professionals a dynamic group of younger members was initiated for the first time. When necessary, EB has its meeting through teleconference. During 2020, CIPA faced the loss of its former President Cliff Ogleby and its former EB member Gabrielle Fangi.

Organized and Co-organized Events in 2018-2021

During the last 4 years CIPA organized and/or embarked on several events/activities, the majority of which is shown below:

- CIPA Thesis Competition Award, 2018
- International Conference on Cultural Heritage, Tehran Iran and organization of a Workshop on Heritage documentation, March 2018
- 27th CIPA International Symposium, Avila, Spain, September 2019
- Organization of the "Photogrammetry Field School" in Manila, Philippines in cooperation with the Philippines ICOMOS, September 2019
- CIPA workshop "Research and Education in Urban History in the Age of Digital Libraries", 2019
- 2nd International Conference on "Geomatics and Restoration" - GEORES 2019
- CIPA Spanish Webinar[5], November 2020
- 28th CIPA International Symposium, Beijing, China, August-September 2021 (hybrid)
- Co-organization of the 2nd International Conference TMM-CH in Athens, December 2021
- Transformational Impacts of Information Technology[6], OurWorldHeritage Initiative, 2021
- Themes 2021 Debate 9th ARQUEOLÓGICA 2.0 & 3rd GEORES 2021, April 2021

[1] https://www.cipaheritagedocumentation.org/about/task_groups/

[2] https://www.youtube.com/watch?v=c-rMzQSWmlc

[3] https://ourworldheritage.org/information-technology/

[4] https://www.cipaheritagedocumentation.org/about/task_groups/

[5] https://www.youtube.com/watch?v=c-rMzQSWmlc

[6] https://ourworldheritage.org/information-technology/

- Celebration of the IDMS – International Day for Monuments and Sites 2021

Recent Media and Publication information

CIPA redesigned its logo

CIPA website has been reset and moved to a new address[7]

CIPA is active on various social media, e.g., Facebook[8] and Twitter[9]

CIPA Newsletter appears every four months since 2014 and it continues up to now

The proceedings of the CIPA 2019 Symposium in Avila published as ISPRS Archives[10] and Annals[11]

CIPA – Heritage Documentation 50 years: Looking backwards[12], published as ISPRS Archives

The proceedings of the CIPA 2021 Symposium (in Beijing) published as ISPRS Archives[13] and Annals[14]

Supporting the publication "Reviving Palmyra in Multiple Dimensions: Images, Ruins and Cultural Memory[15]" [Minna Silver, Gabriele Fangi, Ahmet Denker], Whittles Publishing, 2018.

Partners - Members

CIPA is cooperating both with ISPRS and ICOMOS and it is defined by the CIPA Statutes. The Statutes have been approved by CIPA, ICOMOS and ISPRS and they are in force from 27th January 2019. CIPA has the status of a permanent ISPRS Committee as well as of an International Scientific ICOMOS Committee. CIPA is always striving to attract Sustaining Members to support its activities. Currently, CIPA has already 9 Sustaining Members, while CIPA Expert and Regular members are published in our website. Membership is free for the time being.

[7] https://www.cipaheritagedocumentation.org
[8] https://www.facebook.com/cipaheritage
[9] @CIPAHeritageDoc
[10] https://www.int-arch-photogramm-remote-sens-spatial-inf-sci.net/XLII-2-W15/
[11] https://www.isprs-ann-photogramm-remote-sens-spatial-inf-sci.net/IV-2-W6/
[12] https://www.cipaheritagedocumentation.org/wp-content/uploads/2020/02/isprs-archives-XLII-2-W14-1-2019.pdf
[13] https://www.int-arch-photogramm-remote-sens-spatial-inf-sci.net/XLVI-M-1-2021/
[14] https://www.isprs-ann-photogramm-remote-sens-spatial-inf-sci.net/VIII-M-1-2021/
[15] https://www.whittlespublishing.com/Reviving_Palmyra_in_Multiple_Dimensions_

Report of the ISPRS Industry Advisory Committee (I²AC), Hartmut Rosengarten, Chair

The I²AC has been established at the XXIII ISPRS Congress in Prague 2016 to support the ISPRS Council in its dealings with the Geospatial industry, with the aim of making the ISPRS more relevant to industry. Recognizing that the ISPRS is a learned society of academics, and also is strong in governmental mapping agencies, it needs to improve its interactions with the rapidly changing and evolving Geospatial industry as the driver of all global geospatial activities and innovations.

The Nice meeting June 6th was the 2nd onsite meeting joined by 15 representatives of major industry companies and exhibitors. Reflecting the outcome of suggestions from the past, the team was appreciating some first good progress in tightening the links between science and industry by a conference program called “Bridging back with industry”. Key activities were:

•The Technology Track – to present industry solutions w/o submitting scientific papers

•Forum Track – different topics addressed to decision makers, market leaders, start-ups, etc.

•Industry Exhibition – reduced to 3 days to increase efficiency and time management.

TECHNOLOGY TRACK (previsional schedule May 2022)

Tuesday 7 June 2022		Wednesday 8 June 2022		Thursday 9 June 2022	
09h00-12H00	TT1 - Esri *			09h00-09h20	TT11 - PIESAT Information Technology *
				09h40-10h00	TT12 - YellowScan
				11h00-11h20	TT13 - Vexcel *
				11h40-12h20	TT14 - MOMRA
16h00-16h20	TT2 - Riegl *	[illegible]	TT6 - Pix4D*	16h00-18h00	TT15 - THALES ALENIA SPACE*
16h40-17h00	TT3 - ESA *	16h40-17h00	TT7 - Aerometrex *		
17h20-18h00	TT4 - Hexagon*	17h20-17h40	TT8 - Trimble *		
		18h00-18h20	TT9 - Space Data Marketplace*		
		18h30-18h50	TT10 - Racurs	18h20-18h40	TT16 - Agisoft

Industry tracks at the Nice Congress very well excepted !

(*) Programme available

However, the committee identified quite some more topics to be adressed in order to better attract industry´s ISPRS engagement towards the benefits of both, the society as well as the private sector:

•Improve the benefits of its industrial sustaining membership program

•Advise Council in matters regarding the cooperation of industrial sustaining members

•Enable an improved response to the incredible dynamics in our industry

•Tighter integration of exhibition & conference (infrastructure, opening times, catering, booth party, improved media support, lightning talks, mentoring, hiring place, etc.)

•Differentiate requirements for companies of different size to participate in exhibitions

•Coordinate research & development support links to universities & governmental agencies

•Coordinate ideas and policies with other ISPRS committees & orgs (e.g. IPAC, TIF)

Ongoing activites focus on a close communication with the ISPRS Council to support the initiatives. The Chairmen holds close lines with key players such as the 2026 Congress Director, the IPAC chairman as well as members of the ISPRS Foundation (TIF).

Report of the African Regional Representative, Hussein Farah

The major activities were attending ISPRS events, workshops and conferences that support the objectives of ISPRS. The details of the activities are as follows:

Africa Association of Remote Sensing Conference - AARSE Conference 2016

The African Association of Remote Sensing of Environment (AARSE) was held in Kampala, Uganda from 24th to 28th October 2016. The AARSE2016 conference theme was *"Our Earth, our Heritage: Harnessing Geospatial Technology for Sustainable Development in Africa".* This event is a premier forum in the African continent, bringing together leading scholars from the remote sensing and related communities from Africa and around the world. The ISPRS Regional representative for Africa attended the conference and promoted the objectives and activities of ISPRS and took part in special sessions on land cover mapping, food security, water resources management and AfriGEOSS.

Training on applications of SAR - 2016

The Regional Centre for Mapping of Resources for Development, together with its partners, organized two training events on the use of SAR data and its applications in environmental monitoring and food security in Kenya and Rwanda.

The Kenya event was held at Kenyatta University, Kenya from 29th to 30th September 2016. The Rwanda event was be held from 3rd to 4th October 2016 at National University of Rwanda and 6th and 7th October at INES Ruhengri University, Rwanda.

1st AfriGEOSS Symposium - 2016

The first AfriGEOSS Symposium was held in Victoria Falls, Zimbabwe from 27th to 29th April, 2016. The AfriGEOSS initiative has the objective to strengthen the link between the current GEO activities with existing capabilities and initiatives in Africa and provide the necessary framework for countries and organizations to access and leverage ongoing bilateral and multilateral Earth Observation-based initiatives across Africa. The symposium's theme was "Earth Observations for the Africa We Want" and discussions focussed on objectives such as the African Union (AU) Agenda 2063 with the objectives of understanding the role of Earth Observations in the implementation of African policies for sustainable development; Identifying ways of mainstreaming Earth Observations in the decision making process in Africa; and building synergies with GEO initiatives and international initiatives relevant to Africa with continental initiatives.

Global Land Cover and Bamboo Mapping Workshop - 2017

Global Land Cover Mapping Workshop with emphasize on bamboo mapping was held in Nairobi from 13th to 14th January 2017. The training was organized by the International Network for Bamboo and Rattan and Tsinghua University of China. Participants were introduced to the Global Land Cover Mapping and Bamboo mapping efforts. The ISPRS Regional Representative for Africa attended the conference and promoted the objectives and activities of ISPRS.

37th International Symposium on Remote Sensing of Environment (ISRSE-37) - 2017

The Symposium was held in Tshwane, South Africa from 8th to 12th May 2017. The theme was "Earth Observation for Development and Adaptation to a Changing World." ISRSE is convened on a biennial basis by the International Centre on Remote Sensing of Environment (ICRSE) and the International Committee on Remote Sensing of the Environment (ICORSE), a standing committee of the International Society of Photogrammetry and Remote Sensing (ISPRS). The symposium was opened by Minister of Science and Technology of South Africa, who shared the significance of symposium to the African communities for the collaborative opportunities they offer with the international partners. ISPRS representative John Trinder spoke at the opening session with a message of goodwill from ISPRS.

ISPRS Capacity Building for High-Resolution Land Cover Inter-comparison and Validation Workshops - 2018

The project "Capacity Building for High-Resolution Land Cover Inter-comparison and Validation", involving ISPRS WG IV/4, was one of the ISPRS Education and Capacity Building Initiatives 2018. The project aimed at developing educational material on the inter-comparison and validation of global Land Cover (LC) maps to address a variety of societal needs including the United Nation's Sustainable Development Goals (SDGs). Two workshops were held: the first on September 1, 2018, at the World Bank in Dar es Salaam, Tanzania and the second on September 3, 2018, at the Regional Centre for Mapping of Resources for Development (RCMRD) in Nairobi, Kenya. The two workshops, run by representatives of the project's

Principal Investigators - Politecnico di Milano (Italy) and the National Geomatics Center of China (China) - were attended by a total of 60 people from 8 African countries.

Free Open Source for Geosptial (FOSS4G) 2018 Conference

The conference was held in Dar es Salaam, Tanzania, in August 2018. The Theme was 'Leave No-One Behind.' The conference show-cased geo and open data projects across Africa and the world which included: growth of OpenStreetMap communities and innovative ways of data collection using mobile phones to drones, Open Cities Africa – making cities resilient through open data and participatory mapping, Ramani Huria - community-based mapping project in Dar es Salaam creating highly accurate open data on flood prone areas using Open Street Map. The conference was attended by 1,135 delegates 71% being from Africa.

Summer School in Botswana - 2018

ISPRS in collaboration with the Regional Centre for Mapping of Resources for Development (RCMRD) and other partners in Botswana organized four days training event in Gaborone Botswana from 24th to 28th September 2018. The Other partners were University of Botswana and Surveys and Mapping Department. The training targeted university students and young researchers to further develop and enhance EO data processing skills they learnt at tertiary institutions. Fifty-four (54) participants took part in the training. The following outcomes were achieved : Increased capability to pre-process and analyze remote sensed earth observation data; Use open source tools in analysis of spatial data and remote sensing data and building of institutional linkages of participating institutions and inter-personal networks amongst participants and peers.

Joint 4th AfriGEOSS Symposium and 3rd RCMRD International Conference - 2019

The fourth AfriGEOSS Symposium and the third Regional Centre for Mapping of Resources for Development (RCMRD) International Conference was held jointly from 13th to 16th August, 2019 in Nairobi, Kenya. The objective of the Conference was to spur exchange of ideas on fast-tracking application of earth observation and geospatial technologies in development decision making. The theme was *Earth Observation for Evidence Based Decision Making.* More than 200 scientists, researchers and government officials attended the conference. The ISPRS African Regional Representative attended and gave a good will message from ISPRS.

Africa Association of Remote Sensing Conference - AARSE - 2018

The conference was held in Alexandria Egypt from 25th to 29th October 2018. It was organized by the African Association of Remote Sensing of the Environment (AARSE) in partnership with the National Authority for Remote Sensing & Space Sciences (NARSS). The Theme was Earth Observations and Geospatial Science in service of Sustainable Development Goals. The Conference was attended by the ISPRS President where he was honoured for his outstanding contribution to Earth Observation in Africa.

Summer School in Uganda – July 2019

The summer school took place on 22nd to 24th July 2019, at the GIS Center of the College of Engineering, Design, Art and Technology, Makerere University, Kampala, Uganda. The summer school was attended by 25 participants from different institutions in Uganda. It was facilitated by Prof Mahdi Motagh, from Leibniz University Germany, who gave a series of lectures on the use and acquisition of SAR data.

AfricaGIS 2019 and 2021

AfricaGIS 2019 conference was held from 18th to 22nd November 2019 in Kigali, Rwanda. Organized by EIS-Africa and the University of Rwanda, the conference explored the role of innovations in geospatial information and its implication in addressing the 17 SDGs targets for an inclusive, prosperous and sustainable African continent. The conference which attracted about 500 participants and contributes to the development of skills and institutional capacity across the continent.

AfricaGIS 2021 physical in-person conference was held from 22nd to 26th November 2021, in Abidjan, Ivory Coast. The theme of the conference was *geospatial innovation and science for Africa's growth and sustainable development.* About 300 participants attended the conference. The conference featured keynote speeches by leading scholars, technical sessions with reports of the latest research outcomes. In addition, there were poster presentations and exhibitions.

4th RCMRD International Conference 2021

The conference was held virtually from 17th to 19th August 2021, with the theme *"Reflecting on Resilience: Mapping challenges and Solutions for a Better World".* The conference discussed formulating ideas toward the utilization of earth observation and geospatial technology in development and decision-making with focus on agriculture and food security, weather and climate,

water and water-related disasters and natural resources management. Being among the first international virtual conferences held in Africa, it was very successful attracting about 1,000 participants from all over the world. It also attracted many virtual exhibitors including AfriGEOSS, Alliance for a Green Revolution in Africa (AGRA), GMES and Africa, East Africa Forest Observatory and SERVIR Africa.

Report of the Asian Regional Representative, Shailesh Nayak

The Asian Association of Remote Sensing has been actively engaged in promotion of geospatial technologies and applications in Asia. AARS is consisted of 18 Ordinary Members, 8 Associate Members, and 13 Sustaining Members. ISPRS is an Associated Member and strong supporter of AARS and Asian Conference on Remote Sensing (ACRS).

The 41st Asian Conference on Remote Sensing (ACRS) was held from 9 to 11 November, 2020 in Deqing, China. The conference was jointly organized by the Asian Association on Remote Sensing (AARS) and the Chinese National Committee for Remote Sensing (CNCRS) in Deqing, China during November 2-6, 2020. Considering the serious situation of COVID-19, the conference was organized online connecting the conference place with the international community. Over 800 participants from 44 countries presented 248 papers at the conference. It was the first ACRS organized online in the 41 years history of ACRS. Usually, ACRS is organized for five days. However, considering the online conference situation, the conference was reduced to three days, and usual technical sessions were organized on second day with ten sessions running in parallel. To reduce the no show, the speakers were requested to provide presentation video in advance. One of the uniqueness of ACRS is organising Satellite Program Session which is being attended mainly by Space Agencies and industries from Asian region.

The 42nd ACRS was held at the Can Tho University, Can Tho, Vietnam from November 22 to 24, 2021. The conference was jointly organized by AARS and Can Tho University. Considering the continuous situation of coronavirus epidemic, the conference was organized online. 300 delegates presented 205 papers related to remote sensing, spatial sciences and environment. The interest to AI, Big data, and micro satellites is increasing. 11 agencies and companies participated in the online exhibition. The Satellite Program Session was organised with 8 space agencies including industry participated in the session.

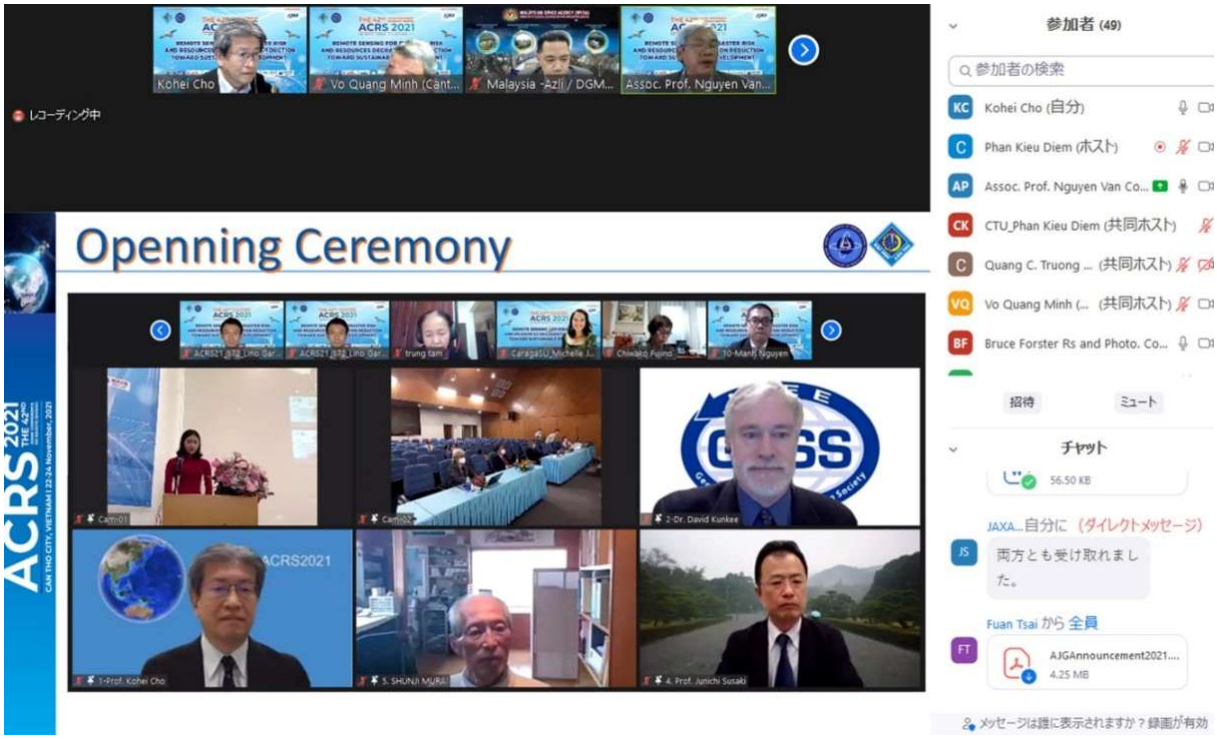
The Centre for Space Science Technology Education in Asia and the Pacific (CSSTEAP), Dehradun, India regularly conducts Post Graduate (PG) courses (nine months) and short courses (2-4 weeks) related to space science and technology. During the year 2020 and 2021, due to worldwide COVID-19 pandemic, the PG courses planned physically for year 2020 were conducted through online mode in year 2021. The three ongoing and online PG courses are 25th PG course in Remote Sensing & Geographic Information System (18 participants from 11 countries), Satellite Meteorology & Global Climate (10 participants from 06 countries) and Space and Atmospheric Sciences (15 participants from 06 countries). During 2020-2021, a total 473 participants from 26 countries got benefitted from 10 online short courses in RS&GIS Technology, Meteorological Satellites, Atmospheric Science, Forest Monitoring and Assessment, Disaster Management, Weather and Climate Studies, Coastal Zone management, Small Satellite Mission, Satellite Navigation etc. A two-day special online course jointly organized with UNOOSA ESA-ISRO-NASA was organised on Remote Sensing Applications for Crop Mapping and Monitoring (64 participants from 20 countries) on October 5 and 7, 2021.

To increase the outreach through virtual mode, CSSTEAP and UNOOSA designed and developed the first MOOC on 'Geospatial Applications for Disaster Risk Management' so as to reach large number of participants enabling flexible online education. The Phase-I MOOC received huge response and based on the feedback received on the Phase-I of MOOC organized during 2020 and request to continue the MOOC, CSSTEAP had launched Phase II of MOOC on June 01, 2021 which continued until November 30, 2021. About 7049 participants from 128 countries across the globe have attended the Phase II of MOOC. CSSTEAP also supported to UN activities in the Regional workshop on "Enhancing Preparedness for Climate Related Disasters Using Space-Based Technologies" for SAARC Countries on 17th February 2021.

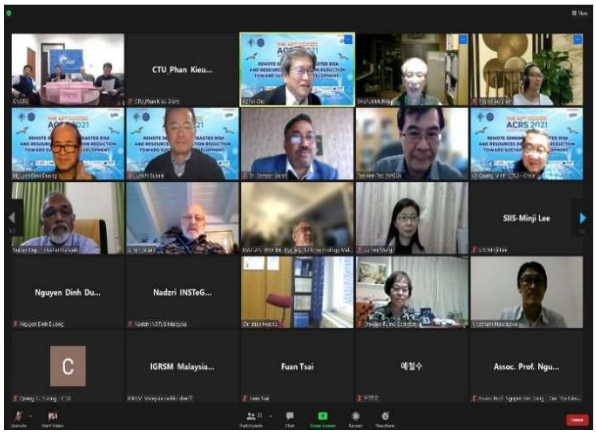
Besides these training activities, CSSTEAP has taken up new research initiatives in support of UniSpace+50 Thematic Priority 7 on Capacity Building for the 21st Century. Outcome of these are:

1) A conceptual framework for coordinated capacity development was evolved to maximize the contributions of Geospatial technologies in support of implementing Global Sustainable Development Agendas.

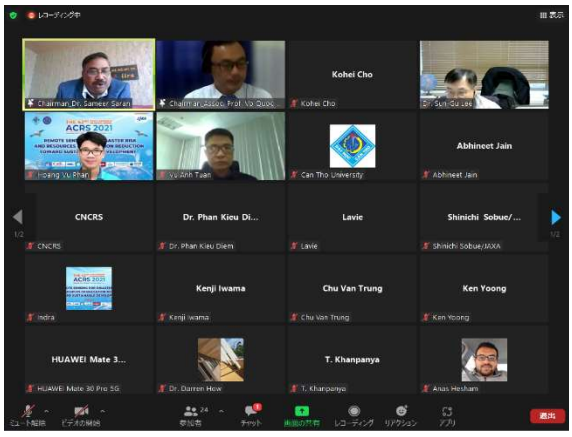
2) A detailed study from the Centre's 25 years database could help understand the women priorities in uptake of Geo-informatics disciplines and their challenges faced in developing Asian region countries, and to suggest possible solutions to support their career building in Geospatial technologies.



Opening Ceremony of ACRS 2021 in Online Mode



AARS General Conference during ACRS 2021



(b) Satellite Program Session

Report of the Latin American Regional Representative, Mario Hernandez

This report describes the current situation and suggests a roadmap for ISPRS in Latin America

Latin America is a geo-diverse continent, home of several terrestrial biodiversity hot spots. With a wide range of ecosystems varying from high mountains, desert, tropical rainforest, grasslands, etc. Such ecosystems are vulnerable to extreme climate change events. Land use is another driver that modifies land cover on this region. The interaction of land-use change with climate change on the land cover is not well understood in Latin America. All these issues are producing an intense use of satellite remote sensing research and technologies. Unfortunately, current efforts are done in isolation and there is no academic body that brings all these expertise together.

The worldwide pandemic: The region is not yet organized as far as a well-established regional association of Remote Sensing and/or Photogrammetry experts. As a consequence, in order to organize ISPRS related events, we need to organize such events through universities and/or through the ISPRS presence at regional events (e.g. SELPER, LARS). The different lockdowns in Latin America had, as a consequence, that no RS or Photogrammetry events could take place.

Complex political situation: Our two major RS-space-research-institutions INPE and CONAE, faced a complex national situation. The deforestation results obtained by INPE were rejected by the Government. Argentina, passing through an extremely complex economic situation, is being forced to cut budgets all over the country.

GRSS & ISPRS Latin American Remote Sensing Conference (LAGIRS)

During this period, our strategic objective as ISPRS has been to set up a scientific forum for the exchange of RS and Photogrammetry in the region. The first LAGIRS conference was planned for March 22-26, 2020 being co-organized jointly with University of Chile, Dr. H. Jaime Hernández Palma. The pandemic forced us to cancel.
Taking advantage of the work already done to prepare LAGIRS (124 papers were selected), we decided to publish selected papers: https://ieeexplore.ieee.org/xpl/conhome/9162082/proceeding
Brazil has indicated interest in hosting the next edition of LAGIRS (through Raul Feitosa from the Pontifical Catholic University of Rio de Janeiro). Our plan is to have it in 2023 in Brazil.

ISPRS and SELPER (Society of Remote Sensing Experts of Latin America)

SELPER organizes each year a regional get-together. Slowly the importance of SELPER has been decreasing. SELPER, conscious about the need for a change is redefining their overall strategy. In this sense we as ISPRS have offered that LAGIRS could become the scientific get-together of Latin America and that ideally would be to organize LAGIRS as a joint event SELPER, ISPRS and GRSS.

New opportunities for ISPRS emerging in Latin America

A regional space Agency: In October 2020, Mexico and Argentina agreed to lead the creation of ALCE (Agencia America Latina Caribe Espacio), a regional space agency that will seek to unite resources, have a common budget, common human resources and technological expertise. Bolivia, Ecuador, El Salvador, and Paraguay have indicated their intention to join. In addition, Colombia and Peru have indicated their will to be part of the group, not yet as active members but as observers.
In April 2022, Mario Hernandez will meet with the Mexican Space agency to discuss an eventual partnership between ALCE and ISPRS, suggesting for example jointly co-organizing, from time to time, a Geo-spatial week for Latin America.

The International Science Council (ISC) announced in February 2022 the establishment of a Latin American Regional Focal Point. Such a regional office will be hosted by the Colombian Academy of Exact, Physical and Natural Sciences. Soon ISC will make a call for regional experts willing to become members of the Liaison Committee for this Regional Office. Mario Hernandez will apply in order to see if in such way we can assist this Regional Office in Latin America in organizing joint events with ISPRS.

Report of the Regional Coordinator for the Arab States, Abdalla Alobeid, Vice Regional Coordinator

It is a great honor for me as ISPRS Vice Regional Coordinator for the Arab States to be working with ISPRS Council to strengthening of ties between the society and the Arab world and it is certain that the already very good relations with the region will further improve by increasing scientific activity by holding joint international conference and workshops in cooperation with ISPRS in Arab countries. Our activities cover the following Arab countries:

#	Country	Ordinary Member	Category	Associate Member	Sustaining Member	Regional Member
1	Saudi Arabia	√	4	√	×	×
2	United Arab Emirates	√	6	×	√	×
3	Jordan	√	4	×	×	×
4	Morocco	√	3	√	×	×
5	Syria	√	3	×	×	×
6	Algeria	√	3	×	×	√
7	Egypt	√	2	×	×	×
8	Kuwait	√	2	×	×	×
9	Qatar	√	6	×	×	×
10	Oman	√	1	×	×	×
11	Iraq	√	1	×	×	×
12	Libya	√	1	×	×	×
13	Palestine	×	-	×	√	×
14	Tunisia	×	-	×	×	√
15	Bahrain	×	-	×	×	×
16	Comoros	×	-	×	×	×
17	Djibouti	×	-	×	×	×
18	Lebanon	×	-	×	×	×
19	Mauritania	×	-	×	×	×
20	Somalia	×	-	×	×	×
21	Sudan	×	-	×	×	×
22	Yemen	×	-	×	×	×
√: we have activity & **×: we don't have activity**						

We are trying to contact with the official authorities to determine the official representative in ISPRS in all the countries that we don't have any activity with ISPRS

Since the appointment of the first ISPRS Regional Coordinator for the Arab States on Feb. 24 2017, we have spent considerable effort to resolve some issues in the Arab world, where we can report some success:

- efforts to bring back activity of some members who stopped their contribution in the society such as Saudi Arabia, Tunisia, Qatar
- communication with Dubai Municipality with regard to the organization of Geospatial Week 2019
- A visit to Dubai Municipality to discuss about the delay in signing the contract with ISPRS with regard to hosting Geospatial Week 2019
- Participation in many conferences in the Arab countries as Tunisia, Egypt, Dubai and Bahrain to meet with delegates and officials active in photogrammetry, remote sensing and spatial information science in academic, business, administration and education fields and encouraging them to become a member of ISPRS.

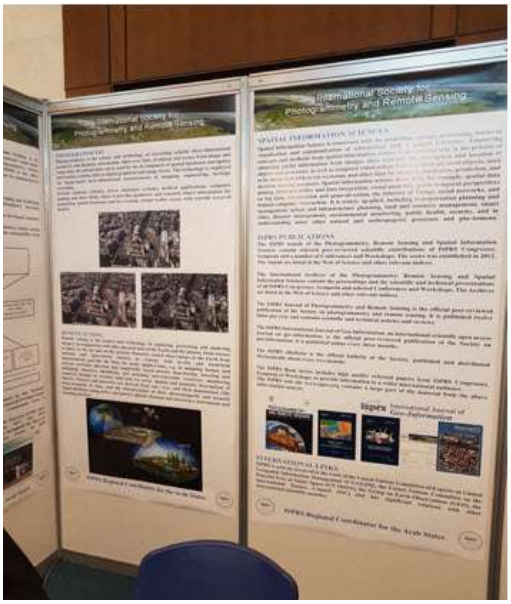
- Organizing ISPRS event in the Saudi Arabia with title “International Geoinformatics conference 2019“.
- Translation of the ISPRS brochure into Arabic language for distribution in Nice Congress 2022
- Participation in an international exhibition about Geographical Environment data in Riyadh, KSA and encouraging organizations to become members of ISPRS.
- Accompanying ISPRS President in a visit to Mohammed bin Rashid Space Centre to discuss about organizing ISPRS Geospatial Week 2021 in Dubai.
- Organizing ISPRS event in the Saudi Arabia with title “International Geoinformatics conference 2021“.
- Efforts were made to win MOMRA as a sponsorship in ISPRS Congress 2022, Nice.
- Preparation of a brochure in Arabic language to introduce the ISPRS in the Arab States.
- Preparation for organizing ISPRS event in 2022 in Saudi Arabia

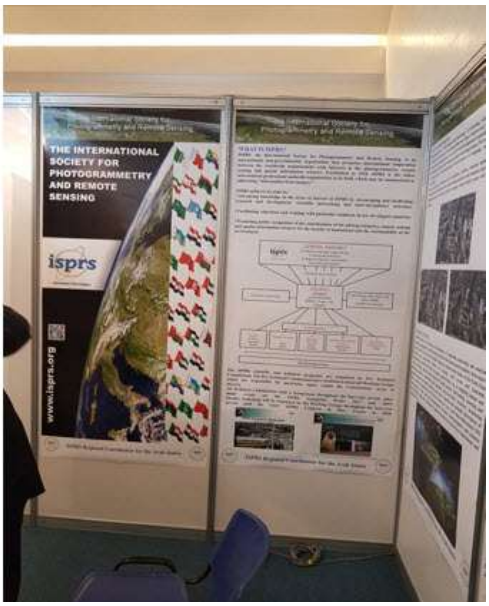
Priorities for the Future:

- ✓ Increase relevance to ISPRS members, expand membership
- ✓ Increase cooperation with sister societies
- ✓ Encourage countries and organizations within our region to become a member of ISPRS.
- ✓ Encourage members within the region to conduct activities to support the aims of ISPRS and attend national and regional activities within the region and promote the aims and activities of ISPRS







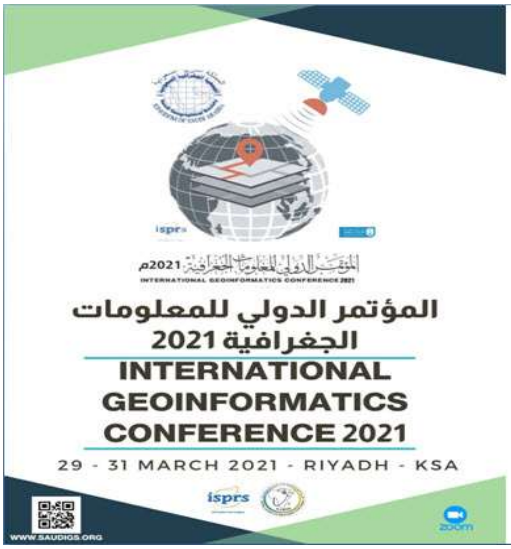




ISPRS site inspection at MBRSC in November 2018: ISPRS Treasurer Songnian Li, ISPRS President Christian Heipke, Ghariba Salem, Specialist Business Development, MBRSC, Abdalla Alobeid, ISPRS Vice Regional Coordinator for the Arab States, and GSW 2021 Director Saeed Al Mansoori (from left to right)



Name and Type of Event	International Geoinformatics conference 2019 https://igc-sa.com/ Organized by : ISPRS (ICWG III/IVb) and Saudi Geographical Society (SGS) Venue : Sheikh Hamad Al-Jasser Hall, King Saud University, Riyadh, Saudi Arabia
Nº of participants	**286 participants from 21 different countries**
Nº of Paper	**42 Oral presentations and 48 Posters**



Name and Type of Event	**International Geoinformatics conference 2021** http://saudigs.org/en/news/igc-2021/ Organized by: ISPRS (ICWG III/IVb) and Saudi Geographical Society (SGS) Venue : The conference was holded electronically through the SGS in the zoom
Nº of participants	**325 participants from 14 different countries**
Nº of Paper	**60 Oral presentations and 12 Posters**



ISPRS site inspection at MBRSC in November 2018:
ISPRS President Christian Heipke, ISPRS Treasurer Songnian Li,
Muhamad Alrajhi, ISPRS Regional Coordinator for the Arab States





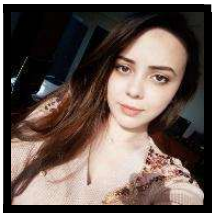


Report of the ISPRS Student Consortium, Sheryl Rose Reyes, President

Important note: Parts of this report have been published in the ISPRS SC's past event reports in the ISPRS SC Newsletter, the ISPRS eBulletin and the ISPRS Annals.

The Board of Directors (2016 – 2022)

Table 1. The former and current Board of Directors from 2016 to 2022.

	Name	Affiliation	Country	Position	Term
	Sheryl Rose Reyes	United Nations University Institute for the Advanced Study of Sustainability	Japan/ Philippines	President	2016 - 2022
	Charles Jjuuko	Makerere University	Uganda	Vice President Website Administrator Board Member	2019 – 2022 2017 – 2018 2016 - 2017
	Charmaine Cruz	Trinity College Dublin	Ireland / Philippines	Newsletter Editor-in-Chief	2018 - 2022
	Mustafa Ustuner	Yildiz Technical University	Turkey	Social Media Administrator	2016 - 2021
	Sona Guliyeva	National Aviation Academy	Azerbaijan	Website Administrator	2018 - 2022
	Jacky C. K. Chow	University of Calgary	Canada	Co-Chair/Secretary	2016 - 2018

	Angelica Kristina Monzon	Center for Conservation Innovations	Philippines	Newsletter Editor-in-Chief	2018 - 2018
	Kingsly Jeba Ashish	Sam Higginbottom University	India	Board Member	2017 - 2019

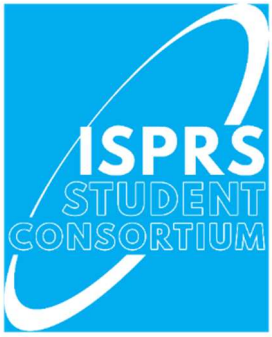


Figure 1. The official logo of the ISPRS SC.

The official logo used by the Consortium at present is a redesigned version of the original logo (Figure 1). This logo and its other color variations are used in all the communications and promotional media of the organization. This was also designed by the ISPRS SC Design Team, comprised of volunteers from the Philippines.

Until the introduction of the new Statutes in August 2019, the Consortium was part of the Technical Commission V (formerly Technical Commission VI), "Education and Outreach," and collaborated with the Working Group V, "Promotion of the Profession to Young People." At present, the Consortium directly reports to the ISPRS Council through an Advisory Committee (AC). The Consortium is led by the Board of Directors, who controls and directs the affairs of the organization and aligns its activities and policies with the Society. The current Board of Directors are Sheryl Rose Reyes (President), Charles Jjuuko (Vice President), Charmaine Cruz (Newsletter Editor-in-Chief), Mustafa Ustuner (Social Media Administrator) and Sona Guliyeva (Website Administrator). Except for the Social Media Coordinator, all current elective officers have extended their services for another two years due to the pandemic (Table 1). The elected Co-Chair/Secretary and Newsletter Editor-in-Chief resigned in 2016 and were replaced in 2018, and the Website Administrator was replaced in 2019.

Membership

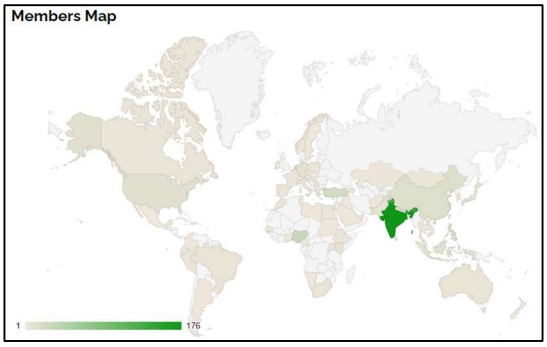


Figure 2. The members map of the ISPRS SC as of February 2022

The membership registration of the ISPRS SC was revised in 2020 and at present, we currently have a total of 517 members from 72 countries with the new system for individual membership registration, which follows the ISPRS individual membership process (Figure 2).

Our social media following also continued to increase in our most active accounts. As of 26 February 2022, our Facebook group has about 7,065 members (https://www.facebook.com/groups/isprssc), 1,569 Twitter followers (@ISPRS_SC), and 745 subscribers on our YouTube channel (https://www.youtube.com/c/ISPRSSC). The Consortium also started an Instagram account but is currently inactive.

Summer Schools

One of the major activities of the Consortium is the summer school (Figure 3), which aims to provide opportunities for students and young researchers to participate in a series of lectures, practical sessions, technical tours, and social events at a minimum cost. It also provides a venue to build relationships and strengthen the network among participants, resource speakers, professors and experts from the

host country, which can potentially stimulate future collaborations and introduce the youth to the international scientific community.

A total of 12 summer schools were organized by the ISPRS SC from 2016 to 2019. Four of these summer schools were organized in partnership with the Asian Association on Remote Sensing (AARS) and the local organizers of the annual Asian Conference on Remote Sensing (ACRS). Three summer schools were hosted in Brazil, in partnership with the IEEE-GRSS Brazil Chapter and the IEEE-GRSS Young Professionals.

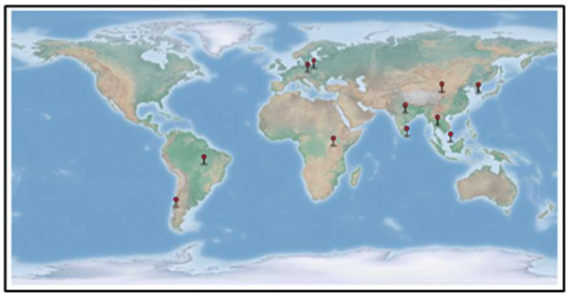


Figure 3. The locations of the in-person summer schools from 2016 to 2019.

Table 2. The ISPRS SC summer schools from 2017 to 2021.

Event Name and Dates	Theme
16th ISPRS SC and WG V/5 Summer School: Lages, Brazil (2 – 6 October 2017)	Multivariate Statistics, Introduction to Laser Scanning, and Image Processing with Google Earth Engine
38th Asian Conference on Remote Sensing ISPRS SC Summer School (30 October – 3 November 2017)	Geo-processing Tools and Technologies in Citizen Science
18th ISPRS SC and WG V/5 Summer School: Santiago, Chile (13 – 17 November 2017)	Land Cover Assessment and Monitoring Using Google Earth Engine
ISPRS Technical Commission III Midterm Symposium Summer School – Beijing, China (4 - 6 May 2018)	Innovative methods, theory and practice of earth observation and remote sensing technology for the measurement and mapping of complex urban environments
39th Asian Conference on Remote Sensing ISPRS SC Summer School (20 – 24 October 2018)	Big Geo-Sensing Data Ecosystem: Theory, Processing & Application
IEEE GRSS YP and ISPRS SC Summer School (29 October – 1 November 2018)	UAV Photogrammetry and Machine Learning Applications: Emerging Trends and Challenges for Earth Observation
ISPRS SC Summer School in Makerere University, Kampala, Uganda (22 – 24 July 2019)	Synthetic Aperture Radar (SAR) Remote Sensing Workshop
ISPRS SC Summer School in Wroclaw, Poland (26 – 30 August 2019)	Geospatial technologies for natural environment management and monitoring
40th Asian Conference on Remote Sensing ISPRS SC Summer School, Seoul, South Korea (21 – 25 October 2019)	New Remote Sensing Technology for Smart Future
5th ISPRS Student Consortium Summer School & IEEE GRSS Young Professionals, Sao Paulo, Brazil (10 – 14 November 2019)	Space Technology, Markets and Building the New Brazilian Space Age
6th ISPRS Student Consortium Summer School & IEEE GRSS Young Professionals (16 Oct – 11 Dec 2020, online)	Trends in Remote Sensing Science and Applied Machine Learning
Beijing University of Civil Engineering and Architecture (BUCEA), Beijing, China (19 – 23 July 2021, online)	Virtual Summer School on Smart City
7th ISPRS Student Consortium Summer School & IEEE GRSS Young Professionals (12 Aug – 16 Dec 2021, online)	Application of GIS, Remote Sensing and Artificial Intelligence in Agricultural Applications

The summer schools scheduled for 2020 were postponed due to the pandemic and the subsequent travel restrictions to many countries. As we transitioned to digital events, the ISPRS SC welcomed organizers who are willing to host the summers schools online. The first virtual summer school was organized by Universidade Federal de Minas Gerais (UFMG) and the IEEE Geoscience and Remote Sensing Society (IEEE-GRSS) Brazil Chapter in 2020. The online summer schools continued in

2021, which started with the virtual summer school on Smart Cities that was organized by the Beijing University of Civil Engineering and Architecture, China and followed by the second edition of the virtual summer school hosted by IEEE-GRSS Brazil Chapter and Université de l'État de Santa Catarina.

Virtual Rooms



Figure 3. The five different rooms in the ISPRS SC Virtual Rooms.

The ISPRS SC Virtual Rooms were launched in April 2020 as the organization's response to country-wide lockdowns and the need to stay at home due to the COVID-19 pandemic. The Virtual Rooms were designed to serve as venues for open discussion, informal lectures, and the exchange of ideas. The Virtual Rooms were hosted from 5 April to 30 April 2020. We created a single registration for simplicity since it was hosted on an almost daily basis. We also intended for this initiative to be a venue where people could join if they were available or if they were interested in the topic of one of the upcoming Virtual Rooms. Three of the Virtual Rooms were open rooms, which include In Memory of Schrodinger's Cat, Writer's Block and Bring Your Own Sunshine! – moderated by the Board of Directors and some of our good friends as guest moderators (Figure 4). The open rooms provided a more relaxed atmosphere to our members, where we can freely exchange ideas, ask and give advice and to simply enjoy having a good conversation with fellow students and young researchers from different countries (Figure 4).

The other two Virtual Rooms featured very special guests, the Wisdom of the White Elephants and the ISPRS SC Super Friends. The Wisdom of the White Elephants featured the legends of remote sensing, photogrammetry and spatial information science, from the ad hoc committee of ISPRS called The White Elephant Club. We recorded a total of 215 responses. About 46% of the registered participants were students, 39% were young professionals and about 15% were classified as others (i.e., industry expert, faculty member, government employee). We had an average attendance of about 21 participants for the Wisdom of the White Elephants and The ISPRS SC Super Friends.

The Virtual Rooms also welcomed a collaboration and celebration with ISPRS and the ISPRS White Elephant Club (Figure 5). On 17 June 2020, colleagues, friends, family and followers of Dr. Gottfried Konecny gathered in celebration of his 90th birthday. Taken under the Virtual Rooms branding, the Wisdom of the White Elephants, and pertinently titled, "A Life for Photogrammetry and Remote Sensing," this event presented our members with a timeline of the experiences, contributions, and achievements of Dr. Konecny and a glimpse of his personal life. It was a very well-attended event with over 160 guests who celebrated and greeted him on this special occasion. An editorial related to this event was published in The Photogrammetric Record in September 2020.



Figure 4. Dr. Gottfried Konecny's 90th birthday celebration in the Virtual Rooms - Wisdom of the White Elephants.

Webinar Series

The first webinar, titled "Deep Learning for Photogrammetric Analysis and Remote Sensing," was held on 20 February 2020 with Dr. Konrad Schindler, a professor at the Department of Civil, Environmental and Geomatic Engineering, Institute of Geodesy and Photogrammetry in ETH Zürich, as guest speaker. The lecture provided an overview of deep learning and its applications in the era of big data. The second webinar was on the topic of "Digital Animal Conservation - From Flying UAVs to Mapping with Deep Learning" and was hosted on 21 May 2020. Dr. Devis Tuia, who was then a professor at Wageningen University, the Netherlands (Figure 4), was guest speaker for this event. His lecture focused on how digital technologies such as advanced imaging and cutting-edge computer vision coupled with advanced deep learning methods could support wildlife conservation and protect biological diversity. Two webinars were hosted under the topics of deep learning and computer vision.

Table 3. The lectures presented in the ISPRS SC Webinar Series.

Title	Speaker(s)	Registration	Participants
Deep Learning for Photogrammetric Analysis and Remote Sensing	Dr. Konrad Schindler, ETH Zurich	361	91
Digital Animal Conservation - From Flying UAVs to Mapping with Deep Learning	Dr. Devis Tuia, University of Wageningen	414	94
Collaborative Humanitarian Mapping with PoliMappers and UN Mappers	Dr. Maria Brovelli, Politecnico di Milano, UN Mappers and PoliMappers	119	52
Deep ensembles for global vegetation analysis - ISPRS SC Webinar Series	Dr. Jan Dirk Wegner, University of Zurich/ETH Zurich	93	32

The webinar entitled "Collaborative Humanitarian Mapping with PoliMappers and UN Mappers" was organized on September 16, 2021 with Professor Maria Antonia Brovelli from Politecnico di Milano, Chiara Ponti from PoliMappers and Michael Montani from UN Mappers as the guest speakers. This webinar highlighted how an individual or a team can contribute and offer theoretical insights on the collaborative humanitarian mapping and OpenStreetMap (OSM). A practical session in the form of a mapathon was conducted, which involved the step-by-step procedure on how to edit data in OSM.

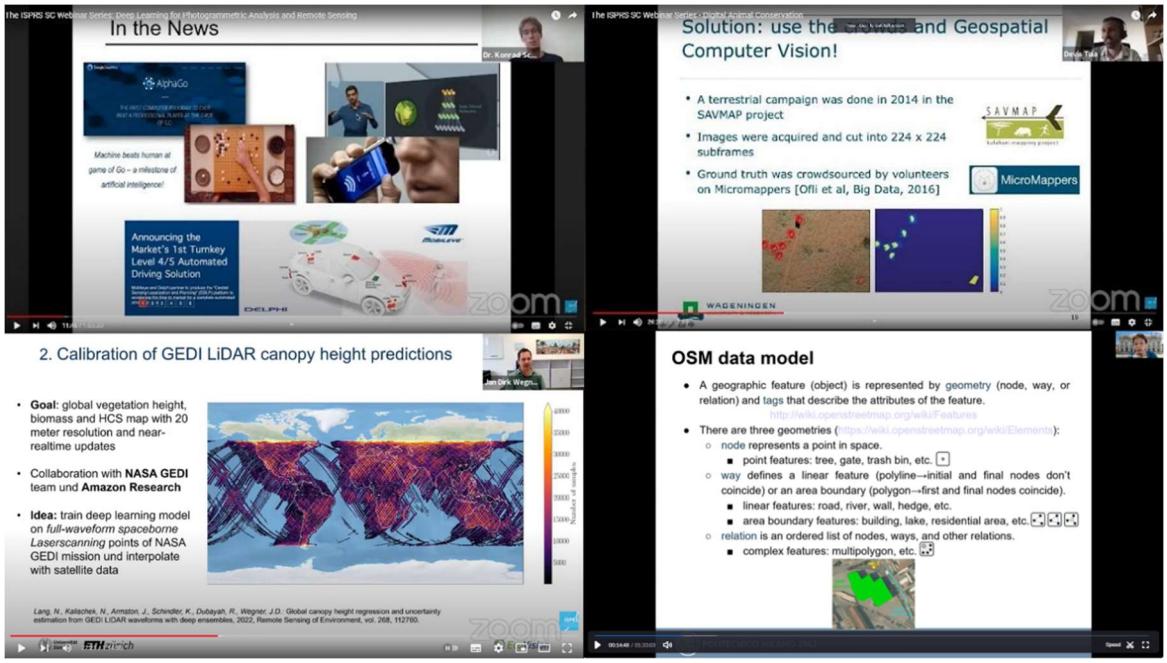


Figure 5. Snapshots from the ISPRS SC Webinar Series

Another webinar on "Deep ensembles for global vegetation analysis" was conducted on November 19, 2021; the guest speaker was Dr. Jan Dirk Wegner, an Associate Professor and the Head of the EcoVision Lab at ETH Zurich. During this webinar, Dr. Wegner lectured on the application of satellite images for the vegetation canopy analysis, the development of the global reference vegetation dataset for supervised machine learning techniques. He also presented the research about integration of probabilistic approaches and deep ensembles techniques for the global determination of vegetation height.

The webinar video recording and presentations are uploaded to the ISPRS SC website and can be viewed by accessing the link: http://sc.isprs.org/isprs_sc_webinars.html.

Newsletters

From 2016, the Newsletter has been running for 8 years. The Newsletter has been one of the major modes of communication and ways of disseminating information to the members. However, the Newsletter also needs to keep up with the changing time, the fast-paced Internet, and the diversity of its readers. In line with this, the ISPRS SC board members, through the Chair and the leadership of the Newsletter Editor-in-Chief, initiated the repackaging of the Newsletter.

The final outcome of the discussion was SpeCtrum – indicative of the electromagnetic spectrum, which is one of the principles in remote sensing, and at the same time, containing the initials S and C, to represent the Student Consortium (see Figure 7).

In addition to the significance of SpeCtrum in the discipline, the name is also an epitome of diversity and now that the scientific community has welcomed the era of multidisciplinary, interdisciplinary, and transdisciplinary research, this publication aims to cover the wide range of applications related to our profession. Quoting the message from the ISPRS SC Chair in the first issue, "Just like the electromagnetic spectrum, defined by wavelengths and frequencies, SpeCtrum opens an opportunity for everyone to realize the entire scope of our profession, in varying fields of expertise and applications." The SpeCtrum was launched in September 18, 2017, around the time of the Geospatial Week 2017, with the theme about the ISPRS and the Council (Figure 4). This is issue was followed by an issue about the Technical Commissions released for ACRS 2017.



Figure 6. The design for SpeCtrum: The Official Newsletter of the ISPRS Student Consortium, created by the Design Team.

The issues of SpeCtrum feature several sections, also named after common terms in the disciplines of remote sensing, photogrammetry, and spatial information sciences, and some other sections retained from the original Newsletter. Backsight is the section featuring past event reports. Spotlights are feature articles about important events and scientific articles related to the theme of the Newsletter issue. I-F-O-V, an acronym for the instantaneous field of view, is recreated in the Newsletter as Important-Focused-Outstanding-Valuable, for the interviews with professors and experts renowned in the community. In the Horizon is a list of upcoming events relevant to our profession. Foresight is about upcoming ISPRS and ISPRS SC events and opportunities. SpeCtrum envisions to deliver timely issues and to invite more members to contribute their scientific work and personal experiences.

Table 4. The SpeCtrum issues published from 2017 to 2021, including the number of reads recorded in the uploaded version in Scrbd.

Title	Vol no.	Issue no.	Date published	No. of reads
Remote Sensing of Coastal Environments	15	2	Dec 2021	505
Geospatial Technologies for the Conservation and Promotion of Cultural Heritage in support of the UN Sustainable Development Goals	15	1	Aug 2021	182
UAS for Environmental Monitoring	14	4	Apr 2021	924
SAR Remote Sensing	14	3	Dec 2020	959
3D GIS	14	2	Sep 2020	557
The Roles of Geospatial Information During the COVID-19 Pandemic	14	1	Jul 2020	1229

Applications of Remote Sensing and Geospatial Information to Climate Change	13	4	Feb 2020	846
Advances in Remote Sensing and Spatial Information Science in Africa	13	3	Dec 2019	529
Remote Sensing of Blue Carbon Ecosystems	13	2	Aug 2019	190
Women in Remote Sensing and Geospatial Information	13	1	Apr 2019	1348
Citizen Science and Geoinformatics	12	4	Jan 2019	
Ecology and Conservation	12	3	Sep 2018	274
Photogrammetry and Computer Vision	12	2	Jun 2018	421
The ISPRS Midterm Symposia Special Issue	12	1	Jun 2018	71
RS and GIS in Forest Management	11	4	Mar 2018	
The ISPRS Student Consoertium: 2017 in Review	11	3	Dec 2017	363
The Technical Commissions: An Overview	11	2	Oct 2017	363
The Leaders Behind the Society: The ISPRS Council	11	1	Sep 2017	422

Table 4 lists all the issues of SpeCtrum published from 2017 to 2021. The most read issues were Women in Remote Sensing and Geospatial Information, and The Roles of Geospatial Information During the COVID-19 Pandemic. The Newsletter continues to invite experts in the remote sensing, photogrammetry, and spatial information and identifies the most relevant themes for the upcoming issues.

Website

The website was in operation starting March 28, 2017. The layout was proposed by the ISPRS SC Chair, the design of the ISPRS banner and the logos were created by the Design Team, and the implementation was made by Mr. Markus Englich. The layout of the website was intended to be simple and clean, with a user-friendly navigation. The website is comprised of the following sections: Home, About, Members, News, Events, Newsletters, Summer Schools, Opportunities and Links. Quick links to the social media account of the ISPRS SC are found at the end of the web pages.

ISPRS Congress

The ISPRS Virtual Event was held from August 31 to September 2, 2020. The ISPRS Student Consortium's Youth Forum was hosted as a joint session with the Technical Commission V – Education and Outreach on September 1. The Youth Forum sessions were moderated by Sheryl Rose Reyes, President of the ISPRS SC, and Dr. P. N. L. Raju of Technical Commission V. Three presentations were delivered in the Youth Forum, including one live talk and two pre-recorded videos (Figure 8). The Youth Forum contributed a total 12 papers, three for the ISPRS Annals and nine for the ISPRS Archives for this edition of the ISPRS Congress.

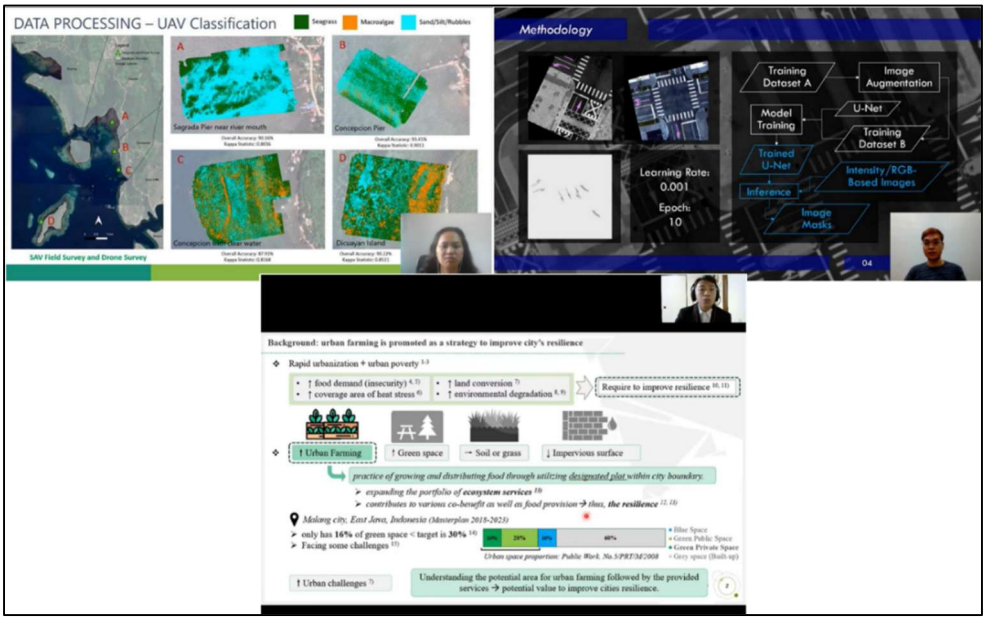


Figure 7. The Youth Forum presentations in the ISPRS Congress 2020 virtual edition.

We again joined Technical Commission V in the joint session of the Education and Outreach track in 2021, which included the presentations for the Youth Forum (Figure 9). Our President, Sheryl Rose Reyes, presented the paper entitled, "Creative strategies in navigating the new normal: advancing the contributions of the ISPRS Student Consortium as an international organization." She shared the activities and development in the Consortium and how the organization adapted and advanced during this challenging time. Also, presented in this live session was the paper entitled, "Regression analysis of errors of SAR-based DEMs and controlling factors" by Yen Wi Wu and Hsuan Ren of the National Central University in Taiwan. The authors used InSAR for topographic mapping, to provide a formal description that attempts to explain the relationship between SAR-measured elevation height and controlling factors.

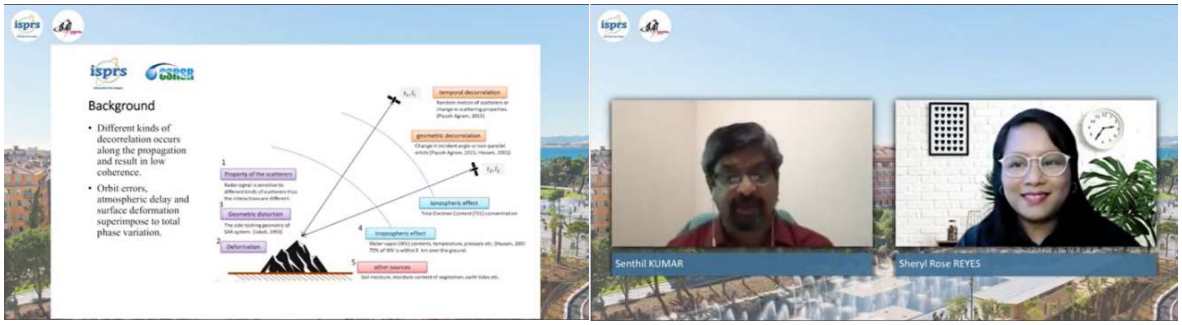


Figure 8, The presentation by Yen Yi Wu of the National Central University and the session chairs, Dr. Senthil Kumar, President of Technical Commission V and Sheryl Rose Reyes, President of the ISPRS SC.



Figure 9. Our special guests for the panel discussion in the forum, which was moderated by the ISPRS SC President, together with Adele Roccato of UNEP.

Finally, the main highlight of this year's Youth Forum track is the forum entitled, "Towards Transformational Change: Potential Contributions of ISPRS and the Role of the Youth in Sustainable Development." This forum was organized in partnership with the United Nations Environment Programme (UNEP). The main objectives of this forum were to promote the recently released Global Environment Outlook 6 for Youth report (#GEO6YouthReport, https://www.unep.org/resources/geo-6-youth) and to engage the youth and experts in ISPRS in a discussion about the linkages between sustainable development and the fields of remote sensing, photogrammetry and spatial information science (Figure 10). We had the privilege of having the GEO for Youth Authors, AlAnoud Al-Khatlan and our President, Sheryl Rose Reyes, sharing the valuable information from UNEP's first fully interactive epublication. This presentation was followed by Dr. Christian Heipke's discussion on the roles of remote sensing, photogrammetry and spatial information science in sustainable development. This was followed by a panel discussion with our special

guests, Maria Antonia Brovelli (Politecnico di Milano), Khaled Mashfiq (UNOSAT), Laura Mugeha (Sanergy/Youth Mappers), Thuy Le Toan (CESBIO) and Pierre Boileau (UNEP). The discussion was driven by questions that would help identify the roles of ISPRS and the contributions of the youth towards a more sustainable society. We also requested audience participation through questions we posted via Mentimeter.



Figure 10. The participants of the Spatial Exchange Program under MOTIVATE Learning.

For the upcoming ISPRS Congress this 2022, the ISPRS SC is organizing a forum on women in remote sensing, photogrammetry and spatial information science. The Consortium will also participate in the General Assembly. Special issues of SpeCtrum will also be published for the Congress. A total of seven contributions have been submitted to the Youth Forum, with one full paper and six abstracts.

ISPRS Education and Capacity Building

The Consortium was also one of the first recipients of the grants under the 2018 ISPRS Education and Capacity Building Initiatives. The ISPRS SC, in collaboration with the Geo-informatics and Space Technology Development Agency (GISTDA), Thailand's public organization leading the country's activities in space technology and geo-informatics applications and the ASEAN Research and Training Center for Space Technology and Applications (ARTSA), organized MOTIVATE Learning: Making Opportunities to Initiate Valuable Alliance through Experiential Learning from August 6 – 20, 2018 in Space Krenovation Park, Chon Buri, Thailand. The project was designed to build the capabilities of students and young professionals in the fields of remote sensing, photogrammetry and spatial information sciences. MOTIVATE Learning was comprised of two programs: (1) ISPRS SC Summer School + Hackathon and (2) The Spatial Exchange Program (Figure 11). The ISPRS SC Summer School followed the conventional design of the summer schools, with the addition of the 2-day hackathon as a challenging activity after the lectures, practical sessions and break-out sessions, which resulted to 4 innovative ideas using geospatial information in tourism, public health, infrastructure and transportation, and emergency response. The Spatial Exchange Program was an 8-day exchange program for students and young professionals, in which the participants were guided by groups of mentors from different universities and organizations. The research from this program included disaster risk reduction, environmental monitoring, emergency decision support system and carbon stock assessment.

For 2022, the ISPRS SC President Sheryl Rose Reyes joined Working Groups from Technical Commissions IV and V for implementing the Education and Capacity Building Initiative entitled, "Capacity Building for GIS-based SDG Indicator Analysis with Global High-resolution Land Cover Datasets." The ISPRS SC and WGs will be collaborating with the organizers of the forum on geospatial information enabled SDG monitoring in the upcoming ISPRS Congress in June 2022.

GeoMixer

The ISPRS Student Consortium, in collaboration with the Ladies of Landsat, Sisters of SAR, American Society for Photogrammetry and Remote Sensing (ASPRS) Student Advisory Council, Mato Grosso do Sul IEEE-GRSS (MS IEEEGRSS) Student Branch Chapter, and the Asian Association on Remote Sensing (AARS), started a monthly virtual event called GeoMixer. Inspired by the GeoMixers organized in previous conferences, this event provided a platform for remote sensing scientists at all career stages from around the world to build their professional networks. The kick-off GeoMixer event was hosted in January 2021 with over 40 participants from across the globe. The initial registration for the event recorded the contact information of about 135 individuals interested in participating in the monthly GeoMixer events. The GeoMixer was also hosted in the virtual edition of the ISPRS Congress in 2021. We had the honor of having several White Elephant Club members joining the GeoMixer and the current ISPRS President, Dr. Christian Heipke, interacting with our participants and playing the game, "Scattergories," which proved to be challenging and fun! We had about 38 participants who joined us in this virtual networking event. In November 2021, the event was part of the Asian Conference on Remote Sensing, which served as the official networking event of the conference. Finally, the last GeoMixer

for the year was hosted in the Geo for Good Summit, organized by Google (Figure 12).



Figure 11. The GeoMixer hosted in the Geo for Good Summit.

EarthEngine@SG

The Google Earth Engine Singapore (EarthEngine@SG) is a virtual meetup that took place on 13th September 2021, as part of the Singapore Geospatial Festival 2021. Lead by the Nangyang Technological University Singapore – Asian School of the Environment, the ISPRS SC is one of the co-organizers of the event, together with National University of Singapore – Centre for Nature-Based Climate Solutions, Imperial College London, Earth Observatory of Singapore and Sabrina Szeto Consulting (Figure 13).

The keynote presentation was delivered by Dr. Nicholas Clinton, Developer Advocate at Google, who gave an overview of the current and future capabilities of the GEE. After a short break, the audience participated in their selected parallel session and specific topic of interest. Keiko Nomura, Director of Product Development at Climate Engine, gave a lecture entitled, “Fate of forests at your fingertips”.

Nicholas Murray, Senior Research Fellow at James Cook University talked about “Losses and gains of Earth’s intertidal ecosystems”. Jakrapong Tawala, Satellite Analyst at the United Nations Satellite Centre, talked about “GEE for the United Nations humanitarian assistance missions”, while Mong Suan Yee, Director of Engineering at Kumi Analytics, provided a lecture on “Machine Learning with Google Earth Engine.”



Figure 12. The ISPRS SC together with the organizers of the EarthEngineSG in the Singapore Geospatial Festival.

A virtual networking session followed, which engaged the participants in discussions on the various applications of GEE as well as their visions for its future as one of the many users of this platform. The afternoon was reserved for three different workshops where the audience was guided by the experts in GEE to work on practical. Minerva Singh, Research Fellow at Imperial College London, provided an introduction to GEE for beginners, Keiko Nomura presented tips and tricks for the intermediate audience, while Yvonne Fong, Data Scientist at EO Data Science, provided an intermediate to advanced level overview of the Google Earth Engine Apps. A follow-up in person meeting is scheduled on April 25, 2022 in Singapore.

Leadership and Service Mentoring Programme

The ISPRS SC Board of Directors, given the extended term, worked on activities that can be promoted to foster meaningful connections among the organization's members and to further the advancement of their personal and professional skills. In order to train and familiarize aspiring applicants for the next Board of Directors, the Leadership and Service Mentoring Programme was launched in December 2020. This programme primarily aims to train and familiarize qualified individuals with the responsibilities of the position they are interested in and about the activities of the Consortium. In addition, they will be involved and immersed in the actual work done by the current Board of Directors and will be given a set of milestones that must be achieved by the end of the programme. Lastly, this programme aims to provide skills necessary not only on the professional level, but also skills that can contribute to one's personal growth through cooperation and coordination of activities and the development of ideas to foster the career advancement and professional progress of the members of the Consortium. Outstanding mentees will be nominated by the current Board of Directors for the next ISPRS SC elections.

A total of seven mentees were accepted to the programme, with all positions in the Board of Directors with at least one mentee. Based on the questions asked during the application, the majority of the mentees became interested in getting more involved because of their participation in the Webinar Series and the Virtual Rooms. Furthermore, the opportunity of connecting with ISPRS experts through these online events motivated them to learn more about the ISPRS SC.

Nominations and Elections

The five mentees from the Leadership and Service Mentoring Programme were nominated to the Board of Directors for the term 2022 – 2026. Additional nominations were received during the call in February 2022 and two more qualified candidates were identified for the open positions, specifically for the Social Media Administrator and Board Member. The elections were held in March using the online platform, Election Runner. The newly elected Board of Directors are listed in Table 5.

Table 5. The elected Board of Directors for the term 2022 - 2026.

Name	Country	Position
Laxmi Thapa	Nepal	President
Nicolas Pucino	Australia	Vice President
Sunni Kushwaha	India	Newsletter Editor-in-Chief

Miguel Luis Lagahit	Philippines	Social Media Administrator
Yogender Yadav	India	Website Administrator
Chukwuma Okolie	Nigeria	Board Member

The period after the elections until the ISPRS Congress 2022 will be the transition period for the current and incoming Board of Directors.

Student Chapters

The document related to the Student Chapters was finalized. Due to the uncertainties brought about by the pandemic, this program was not launched. It will be passed on to the next Board of Directors.

Publications

Reyes, S. R., Jaojoco, A. K. M., Cruz, C., Jjuuko, C., Üstüner, M., Chow, J. C. K., & Guliyeva, S. (2020). The ISPRS Student Consortium: Sustaining Relevance and Creating Shared Visions for the Youth. *ISPRS Annals of Photogrammetry, Remote Sensing & Spatial Information Sciences*, *5*(5).

Reyes, S. R., Cruz, C., Üstüner, M., Jjuuko, C., & Guliyeva, S. (2021). Creative Strategies in Navigating the New Normal: Advancing the Contributions of the Isprs Student Consortium as AN International Organization. *ISPRS Annals of the Photogrammetry, Remote Sensing and Spatial Information Sciences*, *5*, 23-30.

Other Activities

The Asian Conference on Remote Sensing (ACRS 2020) organized annually by the Asian Association on Remote Sensing (AARS) and this year, together with Chinese National Committee for Remote Sensing (CNCRS), arranged a special panel discussion related to the roles of international academic societies during this pandemic. Ms. Sheryl Rose Reyes, President of the ISPRS SC, participated in this panel discussion together with Dr. Christian Heipke, Dr. Paolo Gamba and Dr. Gu Xingfa and the session was moderated by Dr. Kohei Cho. The ISPRS SC President held a presentation on the challenges that many of the Consortium members faced at the onset of the pandemic and provided several examples of the activities developed and hosted by the organization in order to support the youth at this challenging time. You can visit the official AARS website for the presentations in this panel discussion: https://a-a-r-s.org/2020/12/14/the-panel-session/.



Figure 13. The panel discussion in ACRS 2020 on the roles of international academic societies in the pandemic.



SCIENTIFIC PROGRAMME

International Programme Committee

National Scientific Committee

2020 Scientific Programme

2021 Scientific Programme

2022 Scientific Programme

International Program Committee


Ian Dowman
President


Nicolas Paparoditis
Co-Ptresident


Ewelina Rupnik
Program Co-Chair


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Program Co-Chair


Sander Oude Elberink
Program Co-Chair


Stefan Hinz
Commission I


Alper Yilmaz
Commission II


Jie Jiang
Commission III


Sisi Zlatanova
Commission IV


A Senthil Kumar
Commission V


Jan Wegner
Tutorial Chair


Erica Nocerino
Tutorial Chair


Franz Rottensteiner
Student Consortium mentor


Michael Ying Yang
Thematical Session Chair 2021


Clément Mallet
Thematical Session Chair 2022


Sheryl Rose Reyes
Student Consortium

NATIONAL SCIENTIFIC COMMITTEE


Aurélie Sand CNES,
Chair, SFPT President


Nicolas Paparoditis IGN
Co-Chair, Conference Director


Nicolas Baghdadi
IRSTEA


Sidonie Christophe
IGN


François Goulette
Mines-ParisTech


Marc Pierrot-Deseilligny
IGN



Laurent Lebegue
CNES



Tullio Tanzi
Telecom, ParisTech



Josiane Zerubia
INRIA

2020 SCIENTIFIC PROGRAMME

2020 Digital Edition of the XXIV Congress
31 August - 2 September 2020
Programme

The 2020 on-line digital edition of the XXIV ISPRS Congress was held from August 31 to September 2, 2020. Due to COVID-19, it was impossible to organise and gather a large part of our commmunity for a physical meeting in 2020, due to travelling restrictions, closed frontiers, and public events shutdown.

This 2020 on-line digital edition was limited to the presentation of a subset of papers published in the ISPRS Annals and Archives on a voluntary basis of authors. This on-line edition was made totally open and free of charge.

Only a limited selection of these presentations were presented in live sessions followed with 10 minutes of Questions&Answers from the through the chairs who read the questions in the public chat to authors.

All other paper presentations were pre-recorded and streamed in their session after a live introduction of the session by the chairs of the session and were followed by 10 minutes of Questions&Answers.

Live talk sessions are indicated in the program with (LIVE).

31 August 2020	
08:00 - 09:10:	**MO.1.1.: Mobile Mapping and Location-based Services**
	Moderators: Naser El-Sheimy (University of Calgary, Canada), Chen Wang (Xiamen University, China)
	MO.2.1.: Spatial Applications for Smart Cities
	Moderators: Giorgio Agugiaro (Delft University of Technology, The Netherlands), Mila Koeva (University of Twente, The Netherlands)
09:15 - 10:25:	**MO.1.2.: LiDAR Processing and Evaluation**
	Moderators: Jan Skaloud (EFPL, Switzerland), Petri Ronnholm (Aalto University, Finland)
	MO.2.2.: Simulation, VR and Augmented Reality
	Moderators: Arzu Coltekin (FHNW, Switzerland), Sidonie Christophe (Univ. Gustave Eiffel, ENSG, IGN, France)
10:30 - 12:00:	**MO.1.3.: Multi Sensorial Data Processing (LIVE)**
	Moderator: Stefan Hinz (KIT, Germany)
	MO.2.3.: Spatial Data Management
	Moderators: Martin Breunig (KIT, Germany), Mulhim Al Doori (University of Fujairah, UAE)
12:10 - 13:40:	**MO.1.4.: UAS: Concepts and Applications**
	Moderators: Francesco Nex (University of Twente, The Netherlands), Ralf Reulke (DLR, Germany)
	MO.2.4.: Advances in Spatial Information Science 1 (LIVE)
	Moderators: Sisi Zlatanova (University of New South Wales, Australia), Marguerite Madden (University of Georgia, USA)
13:50 - 15:20:	**MO.1.5.: High Precision Positioning & Mapping (LIVE)**
	Moderator: Raul Feitosa (Pontifical Catholic University, Brazil)

	MO.2.5.: Indoor/Outdoor Modelling and Geocomputation
	Moderators: Zhizhong Kang (China University of Geosciences, China), Lucia Vilarino (University of Vigo, Spain)
15:30 - 17:00:	**MO.1.6.: Robotics for 3D Mapping and Modelling**
	Moderator: Jonathan Li (University of Waterloo, Canada)
	MO.2.6.: Advances in Spatial Information Science 2 (LIVE)
	Moderators: George Sithole (GeoVariant, South Arrica), Eric Guilbert (University of Laval, Canada)
17:10 - 18:20:	**MO.1.7.: Spaceborne Sensing**
	Moderators: Timo Balz (Wuhan University, China), Xinming Tang (National Administration of Surveying, Mapping and Geoinformation, China)
	MO.2.7.: Collaborative Crowdsourced Cloud Mapping
	Moderators: Maria Brovelli (Politecnico di Milano, Italy), Cid lia Fonte (University of Coimbra, Portugal)
18:30 - 19:40:	**MO.1.8.: Image Enhancement: Technology and Methods**
	Moderators: Rupert Mller (DLR, Germany), Rongjun Qin (OSU, USA)
	MO.2.8.: Ontology, Semantics and Spatial Data Analysis
	Moderators: Margarita Kokla (National Technical University of Athens, Greece), Mahmoud R. Delavar (University of Tehran, Iran)
	1 September 2020
08:00 - 09:10:	**TU.1.1.: Cultural Heritage**
	Moderators: Fulvio Rinaudo (Politecnico di Torino, Italy), Diego Gonzalez-Aguilera (University of Salamanca, Spain)
	TU.2.1.: Advancements in Photogrammetric Processing
	Moderators: Norbert Haala (University of Stuttgart, Germany), Fabio Menna (FBK, Italy)
09:15 - 10:25:	**TU.1.2.: : Industrial Photogrammetry**
	Moderators: Stephen Kyle (UCL, UK), Erica Nocerino (LIS/CNRS, France)
	TU.2.2.: 3D & Semantics
	Moderators: Franz Rottensteiner (Leibniz Universität Hannover, Germany), Bruno Vallet (Univ. Gustave Eiffel, ENSG, IGN, France)
10:30 - 12:00:	**TU.1.3.: Photogrammetry 2020 - 1 (LIVE)**
	Moderator: Takashi Fuse (Tokyo University, Japan)
12:10 - 13:40:	**TU.1.4.: Geospatial Machine Learning**
	Moderators: Jan Wegner (ETH Zurich, Switzerland), Ribana Roscher (University of Bonn, Germany)
	TU.2.4.: Education, Outreach & Youth Forum 1 (LIVE)
	Moderators: P.L.N. Raju (North Eastern Space Applications Centre, India), Sheryl Rose Reyes (United Nations University Institute for the Advanced Study of Sustainability, Japan)
13:50 - 15:20:	**TU.1.5.: Photogrammetry 2020 - 2 (LIVE)**
	Moderator: Isabella Toschi (FBK, Italy)
	TU.2.5.: Education, Outreach & Youth Forum 2
	Moderators: P.L.N. Raju (North Eastern Space Applications Centre, India), Sheryl Rose Reyes (United Nations University Institute for the Advanced Study of Sustainability, Japan)
15:30 - 17:00:	**TU.1.6.: Point Cloud Processing**
	Moderators: Jan Boehm (UCL, UK), Mathieu Brédif (Univ. Gustave Eiffel, ENSG, IGN, France)

	TU.2.6.: Education, Outreach & Youth Forum 3 (LIVE)
	Moderators: Senthil Kumar (Indian Institute of Remote Sensing, India)
17:10 - 18:20:	**TU.1.7.: 3D Mapping**
	Moderators: Roderik Lindenbergh (Delft University of Technology, Netherlands), Martin Rutzinger (Austrian Academy of Sciences, Austria)
	TU.2.7.: Education, Outreach & Youth Forum
	Moderators: Senthil Kumar (Indian Institute of Remote Sensing, India)
18:30 - 19:40:	**TU.1.8.: Image Orientation**
	Moderators: Andrea Fusiello (Università degli Studi di Udine, Italy), Ronny Hänsch (DLR, German Aerospace Center, Germany)
	TU.2.8.: Dynamic Scene Analysis
	Moderators: Alper Yilmaz (OSU, USA), Michael Yang (Twente University, The Netherlands)
	2 September 2020
08:00 - 09:10:	**WE.1.1.: Hyperspectral Image Processing**
	Moderators: Eija Honkavaara (National Land Survey of Finland, Finland), Baoxin Hu (York University, Canada)
	WE.2.1.: Disaster Assessment, Monitoring and Management
	Moderators: Tullio Tanzi (Institut Mines-Telecom - Telecom ParisTech, France), Jana Viessmann (Chemnitz University of Technology, Germany)
09:15 - 10:25:	**WE.1.2.: Microwave & Lidar Remote Sensing**
	Moderators: Marco Scaioni (Politecnico Milano, Italy), Zhenhong Li (Newcastle University, UK)
	WE.2.2.: Planetary Remote Sensing and Mapping
	Moderators: Jürgen Oberst (DLR, Germany), Irina Karachevtseva (Moscow University of Geodesy and Cartography, Russia)
10:30 - 12:00:	**WE.1.3.: Planetary Remote Sensing and Mapping (LIVE)**
	Moderators: Bo Wu (The Hong Kong Polytechnic University, Hong Kong), Kaichang Di (Institute of Remote Sensing and Digital Earth, China)
	WE.2.3.: Remote Sensing Data Fusion
	Moderators: Wei Yao (The Hong Kong Polytechnic University, Hong Kong), Shihong Du (Peking University, China)
12:10 - 13:40:	**WE.1.4.: Remote Sensing of Atmospheric Environment**
	Moderators: Lixin Wu (Central South University, China), Kai Qin (China University of Mining & Technology, China)
	WE.2.4.: Agriculture and Natural Ecosystems Modelling and Monitoring (LIVE)
	Moderator: Mitsunori Yoshimura (The University of Tokyo, Japan)
13:50 - 15:20:	**WE.1.5.: Thematic Information Extraction - 1 (LIVE)**
	Moderator: Xianlian Liang (National Land Survey of Finland, Finland)
	WE.2.5.: Thematic Information Extraction - 2
	Moderator: Maria Teresa Melis (University of Cagliari, Italy)
15:30 - 17:00:	**WE.1.6.: Remote Sensing Data Quality**
	Moderators: Hussein M. Abdulmuttalib (Dubai Municipality, U.A.E.), Arpad Barsi (Budapest University of Technology and Economics, Hungary)
	WE.2.6.: Disaster Assessment, Monitoring and Management (LIVE)
	Moderators: Tullio Tanzi (Institut Mines-Telecom - Telecom ParisTech, France), Jana Viessmann (Chemnitz University of Technology, Germany)

17:10 - 18:20:	**WE.1.7.: Change Detection & Disaster Management**
	Moderators: Ammatzia Peled (University of Haifa, Israel), Md. Surabuddin Mondal (Wollega University, Ethiopia)
	WE.2.7.: SAR-based Surface Generation and Deformation Monitoring
	Moderators: Uwe Soergel (University Stuttgart, Germany), Bahram Salehi (State University of New York, USA)
18:30 - 19:40:	**WE.1.8.: Landuse and Landcover Change Detection**
	Moderator: Yongnian Zeng (Central South University, China)
	WE.2.8.: Environment and Health
	Moderators: Fazlay S. Faruque (University of Mississippi Medical Ctr, USA), John B. Malone (Louisiana State University, USA)
	Monday, 5 July 2021
11:00	**ESA The ESA Earth Observation Platforms to leverage Open Science and Pioneer Innovative Applications**
	Guenther LANDGRAF
16:30 - 17:30	**AIRBUS - Introduction of PNeo images and technical specifications. First technical experiments on PNeo Images**
	Laurent COEURDEVEY, France, Laurent GABET, France, Herve POILVE, France

2021 SCIENTIFIC PROGRAM

Overview Program

Programme

XXIV ISPRS CONGRESS - 2021 Digital Edition (update 01/07/2021)

	Monday, 5 July 2021		Tuesday, 6 July 2021		Wednesday, 7 July 2021		Thursday, 8 July 2021		Friday, 9 July 2021		
08:00-08:50	Commission IV: Spatial Analysis		Commission IV: Data Integration		Commission V: Education and Outreach		Thematic session: Digital Twins		**ISPRS Geospatial Lecture Day 2021:**	**08:00-11:00 Forum Track 2 :** Geo for Pandemics	08:00-08:50
09:00-09:50	Commission IV: Advanced Applications in Smart Cities		Commission IV: Data Processing and simulation		Commission III: Land-use and Land-cover Change Detection		Thematic session: Unconventional Applications for Geospatial Deep Learning		08:30-10:30 Remote Sensing		09:00-09:50
10:00-10:50	Commission III: Thematic Information Extraction		Commission III: Surface Modelling	**10:00-10:20 : RIEGL** **10:30-10:50 : AIR6 Systems**	Commission III: Application of Remote Sensing Data	**09:30-10:30 : HEXAGON**	Thematic session: AI for Knowledge Discovery in Geosciences				10:00-10:50
11:00-11:50	Commission IIII : Active Remote Sensing	**11:00-11:30 : ESA**	Commission III: Hyperspectral Image Processing and Data Fusion	**11:00-12:00 THALES ALENIA SPACE**	Best Young Author Paper session	**10:45-12:15 ESRI**	Thematic session: Towards Resilient & Ubiquitous Navigation		11:00-13:00 Deep Learning		11:00-11:50
12:00-12:30	Opening Ceremony		The U.V. Helava Award		The Willem Schermerhorn Award						12:00-12:30
12:30-13:30	The Frederic J. Doyle Award **Keynote N°1** : Emmanuel Flory (AIRBUS)		**Keynote N°3** : A. Kiran Kumar (ISRO)		**Keynote N°5** : Chenghu Zhou (CAS)			**13:00-15:00 Forum Track 1 :** Towards Transformational Change: Potential Contributions of ISPRS and the Role of the Youth in Sustainable Development			12:30-13:30
13:30-14:15	Interactive Poster Session N°1		Interactive Poster Session N°3		Interactive Poster Session N°5						13:30-14:15
14:15-15:00	Interactive Poster Session N°2		Interactive Poster Session N°4		Interactive Poster Session N°6				14:00-16:00 Photogrammetry		14:15-15:00
15:15-16:15	The Karl Kraus Medal **Keynote N°2** : Claudio Almeida (INPE)		The Jack Dangermond Award **Keynote N°4** : Marc Pollefeys (ETHZ)		The Schwidefsky Medal **Keynote N°6**: Christoph Stiller (KIT)		The Samuel Gamble Award **Keynote N°7** : Sarah Gallagher (Canadian Space Agency)				15:15-16:15
16:30-17:20	Commission I: Sensor Calibration	**16:30-17:30 AIRBUS**	Commission II: 3D Change Detection	**16:30-16:50 GEODYN**	Commisssion II: 2D Segmentation and Classification		Thematic session: ISPRS Scientific and Educational Initiatives (I)		16:30-18:30 GIS & OGC	**15:00-18:00 Forum Track 2 :** Geo for Pandemics	16:30-17:20
17:30-18:20	Commission I : Object Monitoring in Remote Sensing		Commission II: 3D Instance Detection	**17:30-17:50 AGISOFT**	Commission II: 3D Registration		Thematic session: ISPRS Scientific and Educational Initiatives (II)				17:30-18:20
18:30-19:20	Commission I: Mobile Mapping		Commission II: 3D Semantic Segmentation		Commission II: Stereo Matching		Thematic session: Cultural Heritage				18:30-19:20
09:00-18:00	**Digital Exhibition**										

Access limited to registered XXIV ISPRS congress participants

Access limited to registered XXIV ISPRS congress participants

Access limited to registered XXIV ISPRS congress participants

Access limited to registered XXIV ISPRS congress participants / open access for Forum Track N°1

Access limited to registered XXIV ISPRS congress participants / open access for ISPRS Geospatial Lecture Day 2021 and Forum Track 2

KEYNOTE/AWARDS : Interactive Live Streaming	KEYNOTE/AWARDS : Interactive Live Streaming	KEYNOTE/AWARDS : Interactive Live Streaming	KEYNOTE/AWARDS : Interactive Live Streaming	GEOSPATIAL LECTURE DAY : Interactive Live Streaming
SCIENTIFIC TRACK : Interactive Live Streaming	SCIENTIFIC TRACK : Interactive Live Streaming	SCIENTIFIC TRACK : Interactive Live Streaming	THEMATIC SESSIONS : Interactive Live Streaming	FORUM TRACK 2 : Interactive Live Streaming
TECHNOLOGY TRACK - Interactive Live Streaming	TECHNOLOGY TRACK - Interactive Live Streaming	TECHNOLOGY TRACK - Interactive Live Streaming	FORUM TRACK 1 : Interactive Live Streaming	



2021 Edition of the XXIV Congress
5-9 July 2021
Science and Technology Programme

The 2021 on-line digital edition of the XXIV ISPRS Congress was held from 5-9 July 2021 after being postponed a first time in 2020. In 2021, it was still impossible to organise and gather a large part of our commmunity for a physical meeting due to travelling and public event attendance restrictions.

Although digital, this 2021 edition was organised as a Congress with its various tracks and sessions and a digital exhibition but without the gathering of the General Assembly. Some of the sessions had live presentations with Question and Answers and some others had streamed pre-recorded presentations but with live on-line Questions and Answers with the authors.

The different tracks and sessions were the following:

1. The plenary sessions which hosted the ISPRS awards ceremonies and inspiring keynote presentations. They were scheduled at times facilitating the participation of colleagues in different time zones.

2. The scientific track, which took place from 5-7 July 2021, with both oral or poster sessions. Each presentation in these sessions are associated to a paper published in the in the ISPRS Annals and Archives proceedings of the Congress.

3. The forum track, which took place from July 8 to July 9, 2021, gathered colleagues from academia, agencies (space, mapping, cadaster), and Industry debating on how the Science and the technologies developed in our community and in neighboring ones can be used to address policies and tackle societal challenges.

4. The technology track, which took place from July 5 to July 7, 2021, allowing colleagues from Industry to present their latest technological developments.

5. Geospatial tutorial lectures took place on July 9, 2021 provided by some of the best experts in the field.

A digital exhibition offered the possibility for participants to interact with sponsors and exhibitors in a private video-conference room.

The Plenary and Keynote Speakers Sessions

Monday, 5 July 2021

Time	Session Room	Session Title and Chairs
12:00 - 13:30	Virtual Room 1	**Plenary 1 - Opening Ceremony** Chair: L. POLIDORI, SFPT, France
		Welcome adress Presenters: C. HEIPKE, ISPRS President, Germany, N. PAPARODITIS, ISPRS Congress Director, France
		The Frederick J. Doyle Award Presenters: C. HEIPKE, ISPRS President, Germany, A. GRUEN, ISPRS Honorary Member, Switzerland Recipients: K. SCHINDLER, ETHZ, Switzerland
		Keynote: Pléiades Neo 30cm-resolution satellite constellation : enhanced data access and geospatial applications E. FLORY, Airbus, France
15:15 - 16:15	Virtual Room 1	**Plenary 2** Chairs: C. HEIPKE, Leibniz University, Germany
		The Jack Dangermond Award Presenters: L. JORDAN, Esri USA, L. HALOUNOVÁ, Czech Republic, A. KOLOMANSKA Recipients: R. BILLEN, F. POUX
		Keynote: Computer vision for mixed reality with Hololens2 M. POLLEFEYS, ETHZ, Switzerland

Tuesday, 6 July 2021

Time	Session Room	Session Title and Chairs
12:00 - 13:30	Virtual Room 1	**Plenary 3** Chair: J. CHEN , NGCC, China
		The U.V. Helava Award Presenters: Klaus NEUMANN, Leica Geosystems, Switzerland, K. BISCHINIOTIS, Elsevier Recipients: D. CUCCI, M. REHAK, J.SKALOUD
		Keynote: The Indian Space Program, with emphasis on Societal Applications A. KIRAN KUMAR, ISRO, India
15:15 - 16:15	Virtual Room 1	**Plenary 4** Chair: N. PAPARODITIS, ISPRS Congress Director, France
		The Karl Kraus Medal Presenters: M. BALTSAVIAS, Swiss Society for Photogrammetry and Remote Sensing, Switzerland, J. ERNST & C. RESSL, Austrian Society for Surveying and Geoinformation, G. BARETH, German Society for Photogrammetry, Remote Sensing and Geoinformation, Germany Recipients: W. FÖRSTNER, University of Bonn, Germany, B. WROBEL, Technical University of Darmstadt, Germany

		Keynote: Vegetation monitoring in Brazilian biomes, legacies, challenges and future perspectives C. ALMEIDA, INPE, Brazil

Wednesday, 7 July 2021		
Time	**Session Room**	**Session Title and Chairs**
12:00 - 13:30	Virtual Room 1	**Plenary 5** Chair: L. HALOUNOVA , ISPRS Secretary General, Czech Republic
		The Willem Schermerhorn Award Presenters: J. CHEN, ISPRS Past President, China, G. VOSSELMAN, Geo-Information Netherlands, Netherlands Recipients: M. YANG, University of Twente, Netherlands
		Keynote: The contribution of Geo-spatial technologies against COVID-19 C. ZHOU, Chinese Academy of Sciences, China
15:15 - 16:15	Virtual Room 1	**Plenary 6** Chair: C. TOTH, ISPRS Vice-President, USA
		The Schwidefsky Medal Presenters: U. SOERGEL, German Society for Photogrammetry, Remote Sensing and Geoinformation, Germany Recipients: D. LICHTI, University of Calgary, Canada
		Keynote: Automated driving with and without maps C. STILLER, Karslruhe University, Germany

Thursday, 8 July 2021		
Time	**Session Room**	**Session Title and Chairs**
15:15 - 16:15	Virtual Room 1	**Awards Ceremony, Keynote presentation**
		Chair: S. LI, ISPRS Treasurer, Canada
		The Samuel Gamble Award Presenters: U. SOERGEL, German Society for Photogrammetry, Remote Sensing and Geoinformation, Germany Recipients: D. LICHTI, University of Calgary, Canada
		Keynote: Space-Based Earth Observations: Challenges and New Opportunities S. GALLAGHER, Canada

The Scientific Track and Sessions

Monday, 5 July 2021

Time	Session Room	Session Title and Chairs
08:00 - 08:50	Virtual Room 1	**TC IV Session : Spatial Analysis**
		Chairs: M. DELAVAR, Iran, Islamic Republic of, H. WU, China
09:00 - 09:50	Virtual Room 1	**TC IV Session : Advanced applications for Smart Cities**
		Chairs: M. KOKLA, Greece, G. AGUGIARO, Netherlands
10:00 - 10:50	Virtual Room 1	**TC III Session : Thematic Information Extraction**
		Chair: X. LIANG, Finland
11:00 - 11:50	Virtual Room 1	**TC III Session : Active remote sensing**
		Chairs: B. OSMANOGLU, United States, S. ABDIKAN, Turkey
16:30 - 17:20	Virtual Room 1	**TC I Session : Sensor Calibration**
		Chairs: J. SKALOUD, Switzerland, F. NEX, Netherlands
17:30 - 18:20	Virtual Room 1	**TC I Session : Object Monitoring in Remote Sensing**
		Chairs: M. SCHMITT, Germany, R. MULLER, Germany
18:30 - 19:20	Virtual Room 1	**TC I Session : Mobile Mapping**
		Chairs: N. EL-SHEIMY, Canada, S. NEBIKER, Switzerland

Tuesday, 6 July 2021

Time	Session Room	Session Title and Chairs
08:00 - 08:50	Virtual Room 1	**TC IV Session : Data integration**
		Chairs: Z. KANG, China, A. COLTEKIN, Switzerland
09:00 - 09:50	Virtual Room 1	**TC IV Session : Data processing and simulation**
		Chairs: M-A. BROVELLI, Italy, M. BREUNIG, Germany
10:00 - 10:50	Virtual Room 1	**TC III Session : Surface Modelling**
		Chairs: U. SOERGEL, Germany, K. DI, China
11:00 - 11:50	Virtual Room 1	**TC III Session : Hyperspectral Image Processing and Data Fusion**
		Chairs: E. HONKAVAARA, Finland, B. HU, Canada
16:30 - 17:20	Virtual Room 1	**TC II Session : 3D Change Detection**
		Chairs: B. RIVEIRO, Spain
17:30 - 18:20	Virtual Room 1	**TC II Session : 3D Instance Detection**
		Chair: M. YANG, Netherlands
18:30 - 19:20	Virtual Room 1	**TC II Session : 3D Semantic Segmentation**
		Chair: N. HAALA, Germany

Wednesday, 7 July 2021

Time	Session Room	Session Title and Chairs
08:00 - 08:50	Virtual Room 1	**TC V Session : Education and Outreach**
		Chairs: S. R. REYES, Japan, S. KUMAR, India
09:00 - 09:50	Virtual Room 1	**TC III Session : Landuse and Landcover Change Detection**
		Chair: A. PELED, Israel
10:00 - 10:50	Virtual Room 1	**TC III Session : Application of Remote Sensing Data**
		Chairs: M. YOSHIMURA, Japan, F. S. FARUQUE, United States

11:00 - 12:00	Virtual Room 1	**Best Paper session**
		Chair: C. HEIPKE, Germany
16:30 - 17:20	Virtual Room 1	**TC II Session : 2D Segmentation and Classification**
		Chair: R. ROSCHER, Germany
17:30 - 18:20	Virtual Room 1	**TC II Session : 3D Registration**
		Chair: F. ROTTENSTEINER, Germany
18:30 - 19:20	Virtual Room 1	**TC II Session : Stereo Matching**
		Chair: E. RUPNIK, France

Thursday, 8 July 2021		
Time	**Session Room**	**Session Title and Chairs**
08:00 - 08:50	Virtual Room 1	**Thematic Session: Digital Twins**
		Chairs: A. COLTEKIN, Switzerland, S. CHRISTOPHE, France
09:00 - 09:50	Virtual Room 1	**Thematic Session: Unconventional applications for geospatial deep learning**
		Chairs: D. TUIA, Switzerland, M. MOLINIER, Finland
10:00 - 10:50	Virtual Room 1	**Thematic Session: AI for Knowledge Discovery in Geosciences**
		Chairs: A. ANGHELEA, Italy, D. FERNANDEZ-PRIETO, Italy
11:00 - 11:50	Virtual Room 1	**Thematic Session: Towards resilient & ubiquitous navigation**
		Chair: C. TOTH, United States
16:30 - 17:20	Virtual Room 1	**Thematic Session : ISPRS Scientific Initiatives & Education and Capacity Building Initiatives (I)**
		Chair: S. LI, Canada
17:30 - 18:20	Virtual Room 1	**Thematic Session : ISPRS Scientific Initiatives & Education and Capacity Building Initiatives (II)**
		Chair: S. LI, Canada
18:30 - 19:20	Virtual Room 1	**Thematic Session : Cultural Heritage**
		Chairs: M. YOUNAN, Palestine, State Of, F. RINAUDO, Italy

Policy Forum Track and Sessions

Thursday, 8 July 2021

Time	Session Room	Session Title and Chairs
13:00 - 15:00	Virtual Room 2	**Towards Transformational Change: Potential Contributions of ISPRS and**
		Chairs: S. R. REYES, Japan, A. ROCCATO
		About the UNEP GEO-6 for Youth Report
		A. AL-KHATLAN, Kuwait, S. R. REYES, Japan
		Roles of Remote Sensing, Photogrammetry and Spatial Information Science in Sustainable Development
		C. HEIPKE, ISPRS, Germany
		Panel discussion
		M.-A. BROVELLI, Italy, P. BOILEAU, United States, K. MASHFIQ, L. MUGEHA, T. LE TOAN, France

Friday, 9 July 2021

08:00 - 11:30	Virtual Room 1	**Geo for Pandemics**
		Chairs: F. S. FARUQUE, United States, S. ZLATANOVA, Australia
		Welcome
		C. HEIPKE, ISPRS, Germany
		Introduction to the forum
		F. S. FARUQUE, United States
		WHO Health Emergencies Program and potential roles for geospatial experts
		M. MCLAWS, Australia, O. GUDES, Australia
		Nexus of Earth observations, natural hazard studies and disaster risk assessments to impact policymaking
		A. ISMAIL-ZADEH, France
		Linking Earth observations and health activities to global policy agendas
		S. RAMAGE
		Preparing for the future: The ISC's Covid-19 Global Outcome Scenarios Project
		I. HASSAN
		Joint ESA/JAXA/ NASA EO Dashboard in support of COVID-- 19
		S. SOBUE, Japan, S. CHELI, Italy
		COVID-19 risk assessment driven by spatiotemporal Big Data -- a case study of Shenzhen city
		Xia JIZHE, China
		Discussions
15:00 - 18:15	Virtual Room 1	**Geo for Pandemics**
		Chairs: H. CHAPMAN, United States, F. S. FARUQUE, United States,
		Welcome
		C. HEIPKE, ISPRS, Germany
		Introduction to the forum
		F. S. FARUQUE, United States

	Geoanalytics, public health, and pandemics: Do what you can with what you have
	L. WALLER, United States
	Indian Geo-initiatives for COVID and Post COVID management
	D. DUTTA, India
	An Overview of NASA Health and Air Quality Applications and Activities during the Pandemic
	J. HAYNES, United States
	Do 'Pre-Existing' Conditions Make Pandemics and Infectious Disease Outbreaks Worse? Using Geospatial Data to Identify Hotspots and Reservoirs
	J. G. ACKER , United States
	Using Earth Observations to Enhance One Health Collaborations during the COVID-19 Pandemic
	H. CHAPMAN, United States
	When EO Satellite Meets Health
	M. PAULIN , France
	In Search of the Lost Time - How the Earth Observation (EO) & Geo Communities can help Bridging the Gap between Research and Services in Public Health Operational Programs?
	M. MONTEIRO, Brazil
	Q/A and Discussions

Geospatial Tutorial Lectures

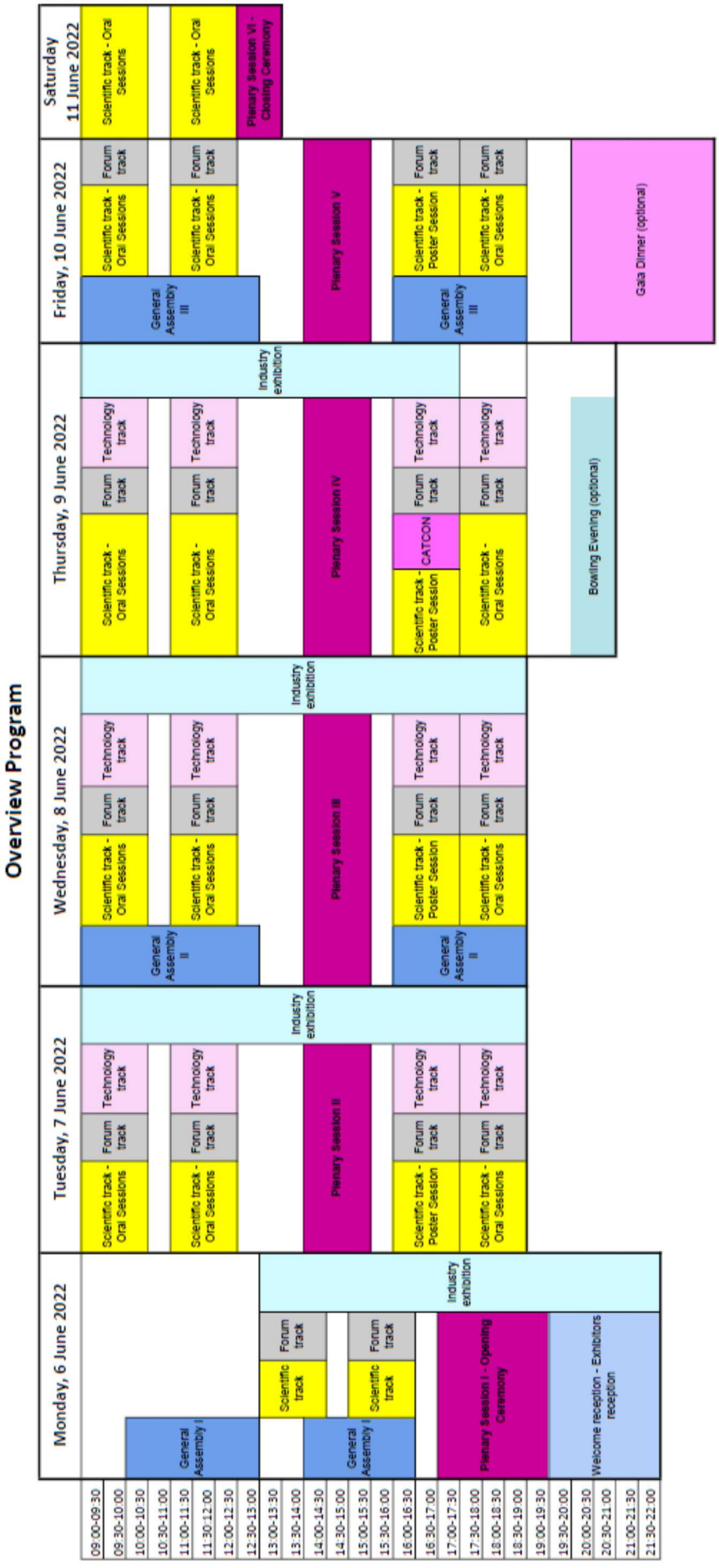
Friday, 9 July 2021

Time	Session Room	Session Title and Chairs
8:30 - 10:50	Virtual Room 1	**ISPRS Geospatial Lecture Day 2021 - Part 1**
		Chair: U. SOERGEL, Germany
		PS-InSAR for surface motion estimation
		Timo BALZ, China
		State and Trends in Airborne LiDAR
		Gottfried MANDLBURGER, Austria
		Discussion
11:00 - 13:20	Virtual Room 1	**ISPRS Geospatial Lecture Day 2021 - Part 2**
		Chair: R. ROSCHER, Germany
		Deep learning for 3D Point Cloud Analysis
		L. LANDRIEU, France
		Deep Learning for time series classification
		C. PELLETIER, France
		M. RUSWURM, Germany
		Discussion
14:00 - 16:20	Virtual Room 1	**ISPRS Geospatial Lecture Day 2021 - Part 3**
		Chair: E. NOCERINO, France
		High-precision mapping with UAVs
		E. RUPNIK, France, M. DAAKIR, Switzerland, M. PIERROT-DESEILLIGNY, Y. ZHOU, France
		Dynamic networks
		D. CUCCI, Switzerland
		Discussion chats
16:30 - 19:00	Virtual Room 1	**ISPRS Geospatial Lecture Day 2021 - Part 4**
		Chair: M. KOKLA, Greece
		Geospatial Tools for Collaborative Humanitarian Mapping
		M-A. BROVELLI, Italy, S. COETZEE, South Africa
		Federated Earth Datacubes: Concepts, Standards, Services
		P. BAUMAN, Germany
		Discussion chats

2022 SCIENTIFIC PROGRAM

Overview Program

Scientific and Technology Programme


Overview Program
Monday, 6 June 2022
Tuesday, 7 June 2022
Wednesday, 8 June 2022
Thursday, 9 June 2022
Friday, 10 June 2022
Saturday 11 June 2022
09:00-09:30
09:30-10:00
10:00-10:30
10:30-11:00
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20:30-21:00
21:00-21:30
21:30-22:00
General Assembly I
Scientific track
Forum track
Industry exhibition
Plenary Session I - Opening Ceramony
Welcome reception - Exhibitors reception
Scientific track - Oral Sessions
Forum track
Technology track
Industry exhibition
Plenary Session II
Scientific track - Poster Session
Scientific track - Oral Sessions
General Assembly II
Scientific track - Oral Sessions
Forum track
Technology track
Industry exhibition
Plenary Session III
Scientific track - Poster Session
Scientific track - Oral Sessions
Scientific track - Oral Sessions
Forum track
Technology track
Industry exhibition
Plenary Session IV
Scientific track - Poster Session
CATCON
Scientific track - Oral Sessions
Bowling Evening (optional)
General Assembly III
Scientific track - Oral Sessions
Scientific track - Oral Sessions
Forum track
Plenary Session V
Scientific track - Poster Session
Scientific track - Oral Sessions
Gala Dinner (optional)
Scientific track - Oral Sessions
Scientific track - Oral Sessions
Plenary Session VI - Closing Ceremony

2022 Edition of the XXIV Congress
6-11 June 2022
Science and Technology Programme

For the 2022 in-person edition of the XXIV ISPRS Congress, which took place in Nice from June 6 to 11 June after being postponed twice, in 2020 and 2021, and replaced by digital events, it was still impossible for many scientists to attend due to COVID-19.

This 2022 Congress was composed of various tracks (and sessions within these tracks) :

1. The plenary sessions which host the ISPRS awards ceremonies and inspiring keynote presentations.

2. The scientific track with sessions either oral or poster. Each Presentation in these sessions is associated to a paper published in the ISPRS Annals or Archives proceedings of the Congress.

3. The forum track gathers colleagues from academia, agencies (space, mapping, cadaster), and industry debating on how the Science and the technologies developed in our community and in neighboring ones can be used to address policies and tackle societal challenges.

4. The technology track, allowing colleagues from industry to present their latest technological developments.

5. The Geospatial tutorial lectures, which took place on the day before the Congress opening.

This 2022 Congress edition also hosted :
- the ISPRS General Assembly that is not detailed in this section but in a further section of this Archives volume. The General Assemby is the supreme governance authority of the Society for all decisions and it determines the general policy of the Society. The General Assembly consists of Delegates and Representatives of the Ordinary, Associate and Regional Member organizations plus Council, Financial Commission and Honorary Members of the Society. In 2022, it convened in a hybrid mode (in-person in Nice and on-line for colleagues that were still not able to travel).
- a large industry exhibition which was held fom Monday, 6 (after the opening ceremony) to Thursday, 9 June 2022. This exhibition is not detailed in this section but in a further section of this Archives volume.
- a summer school which took place the week after the Congress on the Campus of Saint Jean d'Angely of the University of Sophia Antipolis. This summer school will be detailed in another section.

The Plenary and Keynote Speakers Sessions

Plenary - Day 1 - Monday, 6 June 2022

Time Session	Session Room	Presentation Mode	Session Title and Chairs
17:00 - 19:30	APOLLON	Oral Presentation	**Opening Ceremony** Chair : N. PAPARODITIS (IGN, France)
			Welcome from the ISPRS Congress Director Presenter: N. PAPARODITIS (IGN, France)
			Welcome from the ISPRS President Presenter: C. HEIPKE (Leibniz University, Germany)
			Welcome message from SFPT, the French ordinary member Presenter: A. SANDES (SFPT President, CNES, France)
			Welcome message from IGN, the French mapping and forest inventory agency Presenter: M. STOLL (Deputy General Director, IGN, France)
			Welcome message from CNES, the French space agency Presenter: C. LAURENT (Dircetor of space observation systems, CNES, France)
			Keynote - Pléiades Neo, the most advanced optical constellation for sophisticated applications Presenter: F. LOMBARD (AIRBUS, France)
			Honorary Membership Recipient: C. JUN (National Geomatics Center, China)
			The Brock Gold Medal Recipient: L. DEREN (Wuhan University, China)
			Keynote - Exploring Human Heritage Presenter: Y. UBELMANN (ICONEM, France)

Plenary - Day 2 - Tuesday, 7 June 2022

Time Session	Session Room	Presentation Mode	Session Title and Chairs
14:00 - 15:30	APOLLON	Oral Presentation	Chair : L. HALOUNOVA (ISPRS Secretary General, Czech Technical University, Czech Republic)
			The U.V. Helava Award Presentation
			The Jack Dangermond Award Presentation
			Keynote - Geospatial Information for Sustainable Development Goals (SDGs) Presenter: C. JUN (National Geomatics Center, China)
			Keynote - ESA Earth Observation Programmes - the next challenges Presenter: I. PETITEVILLE (ESA)

Plenary - Day 3 - Wednesday, 8 June 2022			
Time Session	**Session Room**	**Presentation Mode**	**Session Title and Chairs**
14:00 - 15:30	APOLLON	Oral Presentation	Chair : C. TOTH (ISPRS 2nd Vice-President, The Ohio State University, USA)
			The Otto von Gruber Award Presentation
			The Samuel Gamble Award Presentation
			Keynote - Autonomous, Agile, Vision-controlled Drones: from Frame-based to Event-based Vision Presenter: D. Scaramuzza
			Keynote - GeoSpatial technology to provide health care and to mitigate health crisis Presenter: F.-S. Faruque (University of Mississippi Medical Center, USA)

Plenary - Day 4 - Thursday, 9 June 2022			
Time Session	**Session Room**	**Presentation Mode**	**Session Title and Chairs**
14:00 - 15:30	APOLLON	Oral Presentation	Chair : S. LI (ISPRS Treasurer, Ryerson University, Canada)
			The Frederick J. Doyle Award Presentation
			The Giuseppe Inghilleri Award Presentation
			Keynote - Geometry Processing and Learning for 3D Modeling of Complex Scenes Presenter: P. ALLIEZ (INRIA, France)
			Keynote - Advancing integrated geospatial information frameworks in Africa : Challenges and Opportunities for the spatial enablement of the societies Presenter: A. NONGUIERMA (United Nations Economic Commission for Africa)

Plenary - Day 5 - Friday, 10 June 2022			
Time Session	**Session Room**	**Presentation Mode**	**Session Title and Chairs**
14:00 - 15:30	APOLLON	Oral Presentation	Chair : C. HEIPKE (ISPRS President, Leibniz University, Germany)
			The Wang Zhizhuo Award Presentation
			The Karl Kraus Medal Presentation
			Keynote - A serious game: the Netherlands in 3D Minecraft Presenter: W. SIMON VAN LEEUWEN (Geofort, Netherlands)
			Keynote - Mind the space: 3D modelling for future Smart Cities Presenter: S. ZLATANOVA (University of New South Wales, Australia)

Plenary - Day 6 - Saturday, 11 June 2022			
Time Session	**Session Room**	**Presentation Mode**	**Session Title and Chairs**
12:30 - 13:30	APOLLON	Oral Presentation	**Closing Ceremony** Chair : N. PAPARODITIS (ISPRS Congress Director, IGN, France)
			ISPRS Best Posters Award 2022 Presentations **The ISPRS CATCON Award Presentations** **The President's Honorary Citation Presentations** **Closing Remarks, Presidency and ISPRS Flag Handover**

The Scientific Track and Sessions

Monday, 6 June 2022

Time Session	Session Room	Presentation Mode	Session Title and Chairs
13:00 - 14:30	ATHENA	Oral Presentation	**Disaster Assessment, Monitoring and Management (ICWG III/IVa-2)** Chairs: O. ALTAN (Istanbul Technical University, Turkey), J. TANZI (Telecom Paris, France)
13:00 - 14:30	RISSO 6	Oral Presentation	**Image Orientation, Point Cloud Generation/Processing** Chairs: T. LUHMANN (Jade University of Applied Sciences Oldenburg, Germany), F. FASSI (Politecnico di Milano, Italy)
13:00 - 14:30	RISSO 7	Oral Presentation	**Deep Learning For Satellite Image Time Series Analysis** Chairs: Z. ZHANG (University of Wisconsin-Madison, USA), C. PELLETIER (Univ. Bretagne Sud, France)
13:00 - 14:30	RISSO 8	Oral Presentation	**Best papers of editions 2020 and 2021** Chairs: E. RUPNIK (IGN, ENSG, Université Gustave Eiffel, France), M. PIERROT-DESEILLIGNY (IGN, ENSG, Université Gustave Eiffel, France)
15:00 - 16:30	ATHENA	Oral Presentation	**Remote Sensing Data Quality (ICWG III/IVb-2)** Chairs: C. MALLET (IGN, ENSG, Université Gustave Eiffel, France), T. BLASCHKE (University of Salzburg, Austria)
15:00 - 16:30	RISSO 6	Oral Presentation	**Towards Resilient and Ubiquitous Navigation** Chairs: C. TOTH (ISPRS 2nd Vice-President, The Ohio State University, USA)
15:00 - 16:30	RISSO 7	Oral Presentation	**Cultural Heritage Documentation** Chairs: F. RINAUDO (Politecnico di Torino, Italy), A. GEORGOPOULOS (Technical University of Athens, Greece)
15:00 - 16:30	RISSO 8	Oral Presentation	**Best papers of editions 2020/2021** Chair: L. LANDRIEU (IGN, ENSG, Université Gustave Eiffel, France)

Tuesday, 7 June 2022			
Time Session	**Session Room**	**Presentation Mode**	**Session Title and Chairs**
09:00 - 10:30	APOLLON	Oral Presentation	**Thematic Information Extraction from RS images (WG III/1-1)** Chairs: M. MELIS (University of Cagliari, Italy), B. LEBLON (University of New Brunswick, Canada)
09:00 - 10:30	ATHENA	Oral Presentation	**Point cloud processing_7** Chairs: F. MENNA (Fondazione Bruno Kessler, Italy), E. NOCERINO (Università degli Studi di Sassari, Italy)
09:00 - 10:30	RISSO 6	Oral Presentation	**Active Sensing with LIDAR and RADAR** Chairs: M. SCHMITT (Bundeswehr University Munich, Germany), J. GONÇALVES (University of Porto, Portugal)
09:00 - 10:30	RISSO 7	Oral Presentation	**Remote Sensing and the Geosciences – A Premier Field Of Data Science – A Session In Cooperation Between IEEE GRSS and ISPRS** Chairs: C. HEIPKE (ISPRS President, Leibniz University, Germany), D. KUNKEE (IEEE-GRSS President, The Aerospace Corp., USA)
11:00 - 12:30	APOLLON	Oral Presentation	**Best Young Author Paper Award Session** Chairs: C. HEIPKE (Leibniz University, Germany), N. PAPARODITIS (IGN, ENSG, University Gustave Eiffel, France)
11:00 - 12:30	ATHENA	Oral Presentation	**3D mapping for infrastructure monitoring** Chairs: M. RUTZINGER (University of Innsbruck, Austria), R. LINDENBERGH (Delft University of Technology, Netherlands)
11:00 - 12:30	RISSO 6	Oral Presentation	**Environment and Health (ICWG III/IVc)** Chair: F. FARUQUE (University of Mississippi Medical Center, USA)
11:00 - 12:30	RISSO 7	Oral Presentation	**Geovisualization and extended reality** Chairs: A. CÖLTEKIN (University of Applied Sciences and Arts Northwestern Switzerland, Switzerland), M. BRÉDIF (IGN, ENSG, University Gustave Eiffel, France)
16:00 - 17:30	BALCONY - AGORA 2 - ZONE A	Poster Session	**TCIII-Remote Sensing**
16:00 - 17:30	BALCONY - AGORA 2 - ZONE B	Poster Session	**TCII-Photogrammetry**
16:00 - 17:30	BALCONY - AGORA 3 - ZONE E	Poster Session	**TS-LULC Change Detection and Updating**
17:30 - 19:00	APOLLON	Oral Presentation	**Capacity development for geoinformation science** Chair : S. KUMAR (CSSTEAP, India)
17:30 - 19:00	ATHENA	Oral Presentation	**Cryosphere and Hydrosphere (WG III/9)** Chairs: H. Fan (Norwegian University of Science and Technology, Norway)
17:30 - 19:00	RISSO 6	Oral Presentation	**ML/Data Analysis** Chair : M. YING YANG (University of Twente, Netherlands), C. MALLET (IGN, ENSG, Université Gustave Eiffel, France)

17:30 - 19:00	RISSO 7	Oral Presentation	**Semantic approaches for processing data and SDSS** Chairs: M. MADDEN (University of Georgia, USA), N. SPANO (Politecnico di Torino, Italy)

Wednesday, 8 June 2022

Time Session	Session Room	Presentation Mode	Session Title and Chairs
09:00 - 10:30	APOLLON	Oral Presentation	**Landuse and Landcover Change Detection (WG III/7-1)** Chairs: E. RUPNIK (IGN, ENSG, Université Gustave Eiffel, France), L. LANDRIEU (IGN, ENSG, Université Gustave Eiffel, France)
09:00 - 10:30	ATHENA	Oral Presentation	**Point cloud processing** Chairs: M. BRÉDIF (IGN, ENSG, Université Gustave Eiffel, France), P. D'ANGELO (German Aerospace Center, Germany)
09:00 - 10:30	RISSO 6	Oral Presentation	**Planetary Remote Sensing and Mapping (ICWG III/II)** Chairs: J-P. MULLER (University College London, UK), I. KARACHEVTSEVA (Moscow State University of Geodesy and Cartography, Russia)
09:00 - 10:30	RISSO 7	Oral Presentation	**Digital twins I: Vision papers** Chairs: A. CÖLTEKIN (University of Applied Sciences and Arts Northwestern Switzerland, Switzerland), V. TOURRE (Ecole centrale Nantes, France)
11:00 - 12:30	APOLLON	Oral Presentation	**Point cloud processing** Chairs: F. ROTTENSTEINER (Leibniz University, Germany), E. NOCERINO (Università degli Studi di Sassari, Italy)
11:00 - 12:30	ATHENA	Oral Presentation	**Hyperspectral Image Processing (WG III/4)** Chairs: E. HONKAVAARA (Finnish Geospatial Research Institute, Finland), K. KARANTZALOS (National Technical University of Athens, Greece)
11:00 - 12:30	RISSO 6	Oral Presentation	**Spaceborne Optical Sensing** Chairs: R. MÜLLER (DLR, Germany), R. QIN (The Ohio State University, USA)
11:00 - 12:30	RISSO 7	Oral Presentation	**Open data and crowd sourcing** Chairs: M. BROVELLI (Politecnico di Milano, Italy), M. MINGHINI (European Commission)
16:00 - 17:30	BALCONY - AGORA 2 - ZONE A	Poster Session	**Posters of 2020/2021**
16:00 - 17:30	BALCONY - AGORA 2 - ZONE B	Poster Session	**Invited Posters**
16:00 - 17:30	BALCONY - AGORA 3 - ZONE C	Poster Session	**TCIV - Spatial Information Science**
16:00 - 17:30	BALCONY - AGORA 3 - ZONE D	Poster Session	**TCI-Sensor Systems**
16:00 - 17:30	BALCONY - AGORA 3 - ZONE E	Poster Session	**TCV-Education and Outreach**

16:00 - 17:30	BALCONY - AGORA 3 - ZONE E	Poster Session	**TS - Digital Twins**
16:00 - 17:30	BALCONY - AGORA 3 - ZONE E	Poster Session	**TS - Scientific and Educational & Capacity Building Initiatives**
16:00 - 17:30	BALCONY - AGORA 3 - ZONE E	Poster Session	**TS - Innovative Applications Of Satellite Data For Risk Management And Disasters**
16:00 - 17:30	BALCONY - AGORA 3 - ZONE E	Poster Session	**TS - Deep Learning For Satellite Image Time Series Analysis**
16:00 - 17:30	BALCONY - AGORA 3 - ZONE E	Poster Session	**TS - Unsupervised And Weakly Supervised Deep Learning For EO**
17:30 - 19:00	APOLLON	Oral Presentation	**Agriculture and Natural Ecosystems Modelling and Monitoring (WG III/10-1)** Chairs: M. YOSHIMURA (The University of Tokyo, Japan), F. PIROTTI (University of Padova, Italy)
17:30 - 19:00	ATHENA	Oral Presentation	**Point cloud generation** Chairs: N. HAALA (University of Stuttgart, Germany), M. WEINMANN (Karlsruhe Institute of Technology, Germany)
17:30 - 19:00	RISSO 6	Oral Presentation	**Unsupervised And Weakly Supervised Deep Learning For Earth Observation** Chairs: D. TUIA (EPFL), M. MOLINIER (VTT Technical Research Centre of Finland Ltd, Finland)
17:30 - 19:00	RISSO 7	Oral Presentation	**Indoor Applications and Mobility** Chairs: L. DÍAZ VILARIÑO (Universidade de Vigo, Spain), M. WANG (University of Glasgow, UK)

Thursday, 9 June 2022

Time Session	Session Room	Presentation Mode	Session Title and Chairs
09:00 - 10:30	APOLLON	Oral Presentation	**Mobile Mapping (Technology, Methods, Applications)** Chairs: N. EL-SHEIMY (University of Calgary, Canada), K-W. CHENG (National Cheng Kung University, Taiwan)
09:00 - 10:30	ATHENA	Oral Presentation	**SAR-based Surface Generation and Deformation Monitoring (WG III/3)** Chairs: U. SOERGEL (University of Stuttgart), M. CRESPI (La Sapienza University of Rome)
09:00 - 10:30	RISSO 6	Oral Presentation	**Digital twins II: Case studies** Chairs: A. CÖLTEKIN (University of Applied Sciences and Arts Northwestern Switzerland, Switzerland), V. TOURRE (Ecole Centrale Nantes, Nantes)
09:00 - 11:00	RISSO 7	Oral Presentation	**EuroSDR theme session for National Mapping and Cadastral Agencies** Chairs: J. MILLS (Newcastle University, UK), F. REMONDINO (FBK Trento, Italy)

11:00 - 12:30	APOLLON	Oral Presentation	**Integrated Sensor Orientation, Navigation and Mapping** Chairs: I. COLOMINA (GeoNumerics, Spain), M. CRAMER (University of Stuttgart, Germany)
11:00 - 12:30	ATHENA	Oral Presentation	**Surface reconstruction, SFM** Chairs: M. GERKE (Technische Universität Braunschweig, Germany), B. VALLET (IGN, ENSG, Université Gustave Eiffel, France)
11:00 - 12:30	RISSO 6	Oral Presentation	**Remote Sensing Data Fusion (WG III/6)** Chairs: W. YAO (The Polytechnic University, Hong Kong), A. BROOK (University of Haifa, Israel)
11:00 - 12:30	RISSO 7	Oral Presentation	**Spatial applications based on urban and regional Digital Twins** Chairs: M. KOEVA (University of Twente, Netherlands), P. KUPER (Karlsruhe Institute of Technology, Germany)
16:00 - 17:30	BALCONY - AGORA 2 - ZONE A	Poster Session	**TCIII - Remote Sensing**
16:00 - 17:30	BALCONY - AGORA 2 - ZONE B	Poster Session	**Invited Posters**
16:00 - 17:30	BALCONY - AGORA 3 - ZONE C	Poster Session	**TCIV - Spatial Information Science**
16:00 - 17:30	BALCONY - AGORA 3 - ZONE E	Poster Session	**TS - Cultural Heritage Documentation**
17:30 - 19:00	APOLLON	Oral Presentation	**Orientation and Calibration, Surface reconstruction and buildings** Chairs: J. WEGNER (University of Zurich, Switzerland), R. ROSCHER (University of Bonn, Germany)
17:30 - 19:00	ATHENA	Oral Presentation	**Landuse and Landcover Change Detection (WG III/7-2)** Chairs: M. WEINMANN (Karlsruhe Institute of Technology, Germany)
17:30 - 19:00	RISSO 6	Oral Presentation	**Microwave Remote Sensing (WG III/2 + III/5)** Chairs: B. OSMANOGLU (NASA, USA), M. SCAIONI (Politecnico di Milano, Italy)
17:30 - 19:00	RISSO 7	Oral Presentation	**ISPRS Scientific and Educational & Capacity Building Initiatives** Chairs: S. LI (ISPRS Treasurer, Ryerson University, Canada), S. KUMAR (CSSTEAP, India)

Friday, 10 June 2022			
Time Session	**Session Room**	**Presentation Mode**	**Session Title and Chairs**
09:00 - 10:30	APOLLON	Oral Presentation	**Spatial applications based on urban and regional Digital Twins** Chairs: G. AGUGIARO (TU Delft, Netherlands), P. BOGUSLAWSKI (Wroclaw University of Environmental and Life Sciences, Poland)
09:00 - 10:30	ATHENA	Oral Presentation	**Thematic Information Extraction from RS images (WG III/1-2)** Chairs: S. URAL (Politecnico di Milano, Italy), C. PELLETIER (Université Bretagne Sud, France)
09:00 - 10:30	RISSO 6	Oral Presentation	**Orientation and Calibration, Surface reconstruction and buildings** Chairs: D. SKARLATOS (Cyprus University of Technology, Cyprus), F. FASSI (Politecnico di Milano, Italy)
09:00 - 11:00	RISSO 7	Oral Presentation	**News Approaches in Radio Sciences for Disaster Management and Remote Sensing** Chairs: T. TANZI (Telecom Paris, France), M. CHANDRA (Chemnitz University of Technology, Germany)
11:00 - 12:30	APOLLON	Oral Presentation	**Uncertainty and spatial analysis** Chairs: M. DELAVAR (University of Tehran, Iran), M. MOSTAFAVI (Université Laval, Canada)
11:00 - 12:30	ATHENA	Oral Presentation	**Agriculture and Natural Ecosystems Modelling and Monitoring (WG III/10-2)** Chairs: F. PIROTTI (University of Padova, Italy), M. YOSHIMURA (The University of Tokyo, Japan)
11:00 - 12:30	RISSO 6	Oral Presentation	**Reality Capture And Quality Inspection In Digital Construction** Chairs: M. MABOUDI (Technical University of Brunswick, Germany), M. GERKE (Technical University of Brunswick, Germany)
11:00 - 12:30	RISSO 7	Oral Presentation	**LULC Change Detection And Updating** Chair: S. OUDE ELBERINK (University of Twente), Y. ZENG (Central South University)
16:00 - 17:30	BALCONY - AGORA 2 - ZONE A	Poster Session	**Posters of editions 2020 and 2021**
16:00 - 17:30	BALCONY - AGORA 2 - ZONE B	Poster Session	**TCII - Photogrammetry**
16:00 - 17:30	BALCONY - AGORA 3 - ZONE D	Poster Session	**TCI - Sensor Systems**
16:00 - 17:30	BALCONY - AGORA 3 - ZONE E	Poster Session	**Student posters**
16:00 - 17:30	BALCONY - AGORA 3 - ZONE E	Poster Session	**TS - News Approaches in Radio Sciences for Disaster Management and Remote Sensing**
17:30 - 19:00	APOLLON	Oral Presentation	**Semantic information extraction, deep learning** Chairs: R. ROSCHER (University of Bonn, Germany), R. QIN (The Ohio State University, USA)

17:30 - 19:00	ATHENA	Oral Presentation	**Remote Sensing of Atmospheric Environment (WG III/8)** Chair: F. PIROTTI (University of Padova, Italy)
17:30 - 19:00	RISSO 7	Oral Presentation	**Innovative Applications Of Satellite Data For Risk Management And Disasters** Chairs: H. DE BOISSEZON (CNES, France), A. EDDY (Athena Global)

Saturday, 11 June 2022

Time Session	Session Room	Presentation Mode	Session Title and Chairs
09:00 - 10:30	APOLLON	Oral Presentation	**Disaster Assessment, Monitoring and Management (ICWG III/IVa-1)** Chairs: J. TANZI (Telecom Paris), M. CHANDRA (Chemnitz University of Technology)
09:00 - 10:30	ATHENA	Oral Presentation	**Semantic information extraction, deep learning** Chairs: F. RINAUDO (Poiltecnico di Torino, Italy), D. GONZALEZ-AGUILERA (University of Salamanca, Spain)
09:00 - 10:30	RISSO 6	Oral Presentation	**New sensor technologies, benchmarking and validation** Chairs: D. IWASZCZUK (Technical University of Darmstadt, Germany), C. WANG (Xiamen University, China)
09:00 - 10:30	RISSO 7	Oral Presentation	**Spatial analysis and data management** Chairs: M. DELAVAR (University of Tehran, Iran), M. BROVELLI (Politecnico di Milano, Italy)
11:00 - 12:30	APOLLON	Oral Presentation	**Remote Sensing Data Quality (ICWG III/IVb-1)** Chairs: T. BLASCHKE (University of Salzburg, Austria), Á. BARSI (Budapest University of Technology and Economics, Hungary)
11:00 - 12:30	ATHENA	Oral Presentation	**Semantic information extraction, deep learning** Chairs: D. TUIA (EPFL, Switzerland), L. HOEGNER (Technical University of Munich, Germany)
11:00 - 12:30	RISSO 6	Oral Presentation	**UAS Applications and Robotics** Chairs: S. NEBIKER (University of Applied Sciences and Arts Northwestern Switzerland), F. NEX (University of Twente, Netherlands)
11:00 - 12:30	RISSO 7	Oral Presentation	**Agriculture and Natural Ecosystems Modelling and Monitoring (WG III/10-3)** Chairs: M. YOSHIMURA (The University of Tokyo, Japan), F. PIROTTI (University of Padova, Italy)

Policy Forum Track and Sessions

Monday 6 June 2022		Tuesday 7 June 2022		Wednesday 8 June 2022		Thursday 9 June 2022		Friday 10 June 2022	
09h00-12h30		09h00-12h30	Geospatial Information-enabled SDGs Monitoring	09h00-12h30	Earth observation	09h00-12h30	Openness and Innovation in Geomatics and Earth Observation	09h00-12h30	Intelligent data for Smart Cities
14h00-17h00	Women in remote sensing	16h00-19h00	Cultural heritage forum	16h00-19h00	Earth observation	16h00-19h00	Geospatial education towards digital transformation	16h00-19h00	Multi-source data collection for national/regional-wide mapping

Monday, 6 June 2022

14:00 - 17:00	HERMES	Oral Presentation	**Women in remote sensing** Chairs: M. MADDEN (University of Georgia, USA), M. CROWLEY (McGill University, Canada), S. REYES (United Nations University, Philippines), L. THAPA (Ministry of Land Management, Cooperatives and Poverty Alleviation, Nepal), C. CRUZ (Trinity College Dublin, Ireland) Presenters: M. MADDEN (University of Georgia, USA), M. CROWLEY (McGill University, Canada), S. REYES (United Nations University, Philippines), L. THAPA (Ministry of Land Management, Cooperatives and Poverty Alleviation, Nepal), C. CRUZ (Trinity College Dublin, Ireland), L. HALOUNOVA (ISPRS President, Czech Technical University, Czech Republic)

Tuesday, 7 June 2022

09:00 - 12:30	HERMES	Oral Presentation	**Geospatial Information-enabled SDGs Monitoring** Chairs: C. JUN (NGCC, China), A. SAND (CNES, France), S. REYES (United Nations University, Philippines), J. MILLS (Newcastle University, UK), S. LI (Ryerson University, Canada) Presenters: L. DURIEUX (GEO, IRD, France), M-J. KRAAK (University of Twente, Netherlands), P. PATIAS (Aristotle University of Thessaloniki, Greece), Y. BAN, F. BRETAR (CNES, France), J. MILLS (Newcastle University, UK), S. PENG (NGCC, China), D. OXOLI (Politecnico di Milano, Italy)
16:00 - 19:00	HERMES	Oral Presentation	**Cultural Heritage** Chairs: A. GEORGOPOULOS (Technical University of Athens, Greece), M. SILVER (University of Oulu, Finland) Presenters: C. COUGHENOUR (Google, UK), F. RINAUDO (Polytechnic University of Turin, Italy), P. GRUSSENMEYER (INSA Strasbourg, France), G. TUCCI (University of Florence, Italy), F. FASSI (Polytechnic University of Milan, Italy)

Wednesday, 8 June 2022			
09:00 - 12:30	HERMES	Oral Presentation	**Earth Observation (Part I)** Chairs: G. SCHREIER (DLR, Germany), I. DOWMAN (Honorary member, UK) Presenters: I. BENITO (Planet), S. CHELI (ESA), S. CHERCHALI (CNES, France), J. GAY PEREZ (Philipine Space Agency, Philippines), M. LANGER (Ororatech, Germany), Y. NAKANISHI (Axelspace Corporation, Japan), A. PAREKH (PIXXEL, India), J-F. SEGRESTAA (Airbus Defense & Space Intelligence, France)
16:00 - 19:00	HERMES	Oral Presentation	**Earth Observation (Part II)** Chairs: G. SCHREIER (DLR, Germany), I. DOWMAN (Honorary member, UK) Panelists: S. CHELI (ESA), I. BENITO (Planet,) , S. CHERCHALI (CNES, France), L. DURIEUX (GEO, IRD, France), J. GAY PEREZ (Philipine Space Agency, Philippines), M. LANGER (Ororatech, Germany), Y. NAKANISHI (Axelspace Corporation, Japan), A. PAREKH (PIXXEL, India), J-F. SEGRESTAA (Airbus Defense & Space Intelligence, France)

Thursday, 9 June 2022			
09:00 - 12:30	HERMES	Oral Presentation	**Openness and Innovation in Geomatics and Earth Observation** Chairs: M. BROVELLI (Politecnico di Milano, Italy), S. COETZEE (University of Pretoria, South Africa) Presenters: M. BERNASOCCHI (OPENGIS.ch LLC, Switzerland) Panelists: M. MINGHINI (JRC, Italy), S. ZLATANOVA (University of New South Wales, Australia), A. MDELENI (University of Pretoria, South Africa), M.GONZALEZ (UP42, Germany), S. REYES (United Nations University, Philippines), T.OBUKHOV (United Nations, USA), F. NOARDO (OGC, Netherlands), B. SIBOLLA (Council for Scientific and Industrial Research, South Africa), A. ANGHELEA (ESA, Italy), Venkatesh Raghavan (Osaka City University, Japan)
16:00 - 19:00	HERMES	Oral Presentation	**Geospatial education towards digital transformation** Chair: R. SHULTS (Research Institute of Geodesy, Topography, and Cartography, Czech Republic) Presenters: M. GARRAMONE (Politecnico di Milano, Italy), C. BOLOGNESI (Politecnico di Milano, Italy), J. NECHYBA (Czech Republic), R. SHULTS (Research Institute of Geodesy, Topography, and Cartography, Czech Republic)

Friday, 10 June 2022			
09:00 - 12:30	HERMES	Oral Presentation	**Intelligent data for Smart Cities** Chairs: V. TOURRE (Ecole Centrale Nantes, France), S. ZLATANOVA (University of New South Wales, Australia) Presenters: V. COORS (HFT Stuttgart, Germany), I. BASTRAKOVA (Geoscience Australia, Australia), G. GESQUIERE (University Lumière Lyon 2, France), Y. YUE (Shenzhen University, China), V. SIGNORELLI (UCL, UK) Panelists: V. COORS (HFT Stuttgart, Germany), I. BASTRAKOVA (Geoscience Australia, Australia), G. GESQUIERE (University Lumière Lyon 2, France), Y. YUE (Shenzhen University, China), V. SIGNORELLI (UCL, UK)
16:00 - 19:00	HERMES	Oral Presentation	**Multi-source data collection for national/regional-wide mapping** Chairs: R. HENO (IGN, France), A. CRISTOFOL (IGN, France) Presenters: O. BANASZAK (Ville et Eurométropole de Strasbourg, France), A. TOMMASELLI (UNESP, Brazil), M. TONON (Airbus, France), M. MARTINEZ (European Association of Aerial Surveying Industries), F. NEX (Univesity of Twente, Netherlands)
18:00 - 18:20	RISSO 8	Oral Presentation	**Youth Forum** Chairs: S. REYES (United Nations University, Philippines)

Technology Track and Sessions

In parallel with the scientific sessions, the forum track addresses the interactions between science, public organizations, industry and decision-makers on hot topics facing our geospatial community. The forum will not be a place to make research presentations (which is the scope of the scientific/technical sessions organized by the ISPRS commissions), but a proper place to address the impact of technologies and innovations and the role that our community could play in this changing context for «building a better future together» by providing shared visions and/or roadmaps.

TECHNOLOGY TRACK (previsional schedule May 2022)

Tuesday 7 June 2022		Wednesday 8 June 2022		Thursday 9 June 2022	
09h00-12H00	TT1 - Esri *	09h00-12h00	TT5- AIRBUS *	09h00-09h20	TT11 - PIESAT Information Technology *
				09h40-10h00	TT12 - YellowScan
				11h00-11h20	TT13 - Vexcel *
				11h40-12h20	TT14 - MOMRA
16h00-16h20	TT2 - Riegl *	16h00-16h20	TT6 - Pix4D*	16h00-18h00	TT15 - THALES ALENIA SPACE*
16h40-17h00	TT3 - ESA *	16h40-17h00	TT7 - Aerometrex *		
17h20-18h00	TT4 - Hexagon*	17h20-17h40	TT8 - Trimble *		
		18h00-18h20	TT9 - Space Data Marketplace*		
		18h30-18h50	TT10 - Racurs	18h20-18h40	TT16 - Agisoft

(*) Programme available

Tuesday, 7 June 2022

09:00 - 12:00	RISSO 8	Oral Presentation	**Esri** *ArcGIS as a comprehensive Imagery System* *Shifting to modern remote sensing and image analysis for teaching and research using ArcGIS* Presenters: P. BECKER, G. DOERFFEL, K. WENZEL, C. KURNIA
16:00 - 16:20	RISSO 8	Oral Presentation	**Riegl** *High-resolution Lidar Bathymetry from different platforms* Presenter: U. RIEGL
16:40 - 17:00	RISSO 8	Oral Presentation	**ESA** *Platform Services for Open Innovation in EO* Presenter: A. ANGHELEA
17:20 - 18:00	RISSO 8	Oral Presentation	**Hexagon** *Smart Digital Realities - Enabling A more Sustainable and Autonomous Future* Presenter: K. NEUMANN

Wednesday, 8 June 2022			
09:00 - 12:00	RISSO 8	Oral Presentation	**AIRBUS** *Pléiades Neo: The best of very high-resolution optical imagery for an unprecedented level of geospatial services* *Pléiades Neo: Highest resolution and accuracy available on the market* *Pléiades Neo: 2 new spectral bands to anwer many more needs* *Always one step ahead: introducing Pléiades Neo intensified. Joint super-resolution and image restoration for Pléiades Neo imagery* *OneAtlas: the platform to access Pléiades Neo* *Some real Pléiades Neo use cases by our partners* *An advanced processing tool: Pixel Factory Neo* *Do you want to be part pof the club? Call for projects for the user froup Pléiades Neo* Presenters: V. CASALS, M. TONON, H. POILVÉ, L. GABET, F. CHOUTEAU, L. LEONETTI, N. JAUNARD, L. PAVET
16:00 - 16:20	RISSO 8	Oral Presentation	**Pix4D** *Leveraging LIDAR and photogrammetry for next-level mapping* Presenter: P. ROTHENBÜHLER
16:40 - 17:00	RISSO 8	Oral Presentation	**Aerometrex** *High Resolution Multiscale 3D City Modelling* Presenter: F. MARRE
17:20 - 17:40	RISSO 8	Oral Presentation	**Trimble** *From Accurate Big Data Acquisition to a High-Quality Digital Twin* Presenter: M. MIRI
18:00 - 18:20	RISSO 8	Oral Presentation	**Space Data Marketplace** *Space Data Marketplace, the one-stop-shop for earth observation data* Presenter: D. NAVEZ

Thursday, 9 June 2022			
09:00 - 09:20	RISSO 8	Oral Presentation	**PIESAT Information Technology** *PIE-Engine and related PaaS* Presenter: T. GUO
09:40 - 10:00	RISSO 8	Oral Presentation	**YellowScan** *When high end LIDAR solution meets versatility* Presenter: T. ALLOUIS
10:15 - 10:45	RISSO 8	Oral Presentation	**MOMRAH** *Digital Transformation as Part of Saudi Vision 2030* Presenter: A. BINSAEED
11:00 - 11:20	RISSO 8	Oral Presentation	**Vexcel** *UltraCam Generation 4.1- Details and Insights* Presenter: M. GRUBER
11:40 - 12:20	RISSO 8	Oral Presentation	**Applanix** SAM: Simultaneous Adjustment And Mapping Using SLAM & ISO Presenter: M. MOSTAFA

16:00 - 18:30	RISSO 8	Oral Presentation	**Thales Alenia Space** *Earth Observation & Remote sensing at Thales Alenia Space* *Smart Space telescope : From Heritage to efficiency* *Meteosat Third Generation Infrared sounder, qualification results* *Flexible and configurable satellites Solutions* *Artificial intelligence on-board observation satellites : use-cases, in-orbit results and perspectives* Presenters: F. PISTONE, R. AURIBAULT, S. ABDON, F. ARBUSTI, T. GOUDEMANT

Geospatial Tutorial Lectures

The tutorials took place on the Campus of St. Jean d'Angely, of the University of Nice Sophia Antipolis.

XXIV ISPRS CONGRESS - Tutorials - Sunday 5 June 2022
University Côté d'Azur - Campus Saint Jean d'Angely
(Update 9 May 2022)

TIME	Room 1	Room 2	Room 3	Room 4	TIME
09h00-10h30	#1 - 3D DEEP LEARNING FOR REMOTE SENSING	#3 - MULTI-STEREO SATELLITE IMAGES DATA PROCESSING FOR DIGITAL SURFACE MODELING	#7 - DEEP LEARNING FOR TIME-SERIES CLASSIFICATION	#13 - DYNAMIC NETWORKS: A HANDS-ON COURSE	09h00-10h30
Coffee break					*Coffee break*
11h00-12h30					11h00-12h30
Lunch Break					*Lunch Break*
14h00-15h30	#1 - 3D DEEP LEARNING FOR REMOTE SENSING	#6 - MULTI-EPOCH HISTORICAL IMAGE PROCESSING IN MICMAC		#8 - UNDERWATER PHOTOGRAMMETRY: METHODS AND CHALLENGES FOR MAPPING AND MONITORING	14h00-15h30
Coffee break					*Coffee break*
16h00-17h30					16h00-17h30

Sunday, 5 June 2022

09:00 - 12:30 14:00 - 17:30	Room 1	Oral Presentation	***Deep Learning For Remote Sensing*** Presenters: L. LANDRIEU, R. LOISEAU, D. ROBERT, France
09:00 - 12:30	Room 2	Oral Presentation	***Multi-stereo Satellite Images data processing for Digital Surface Modeling*** Presenter: R. QIN, China
14:00 - 17:30	Room 2	Oral Presentation	***Multi-epoch historical image processing in MicMac*** Presenter: E. RUPNIK, L. ZHANG, France
09:00 - 12:30	Room 3	Oral Presentation	***Deep Learning For Time Series Classification*** Presenters: Z. ZHANG, United States, M. RUSSWURM, Germany, C. PELLETIER, France
09:00 - 12:30	Room 4	Oral Presentation	***Dynamic Networks: a hands-on course*** Presenters: I. COLOMINA, Spain, J. SKALOUD, D. CUCCI, Switzerland
14:00 - 17:30	Room 4	Oral Presentation	***Underwater photogrammetry: methods and challenges for mapping and monitoring*** Presenters: D. SKARLATOS, Cyprus, F. MENNA, E. NOCERINO, Italy

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CLOSING CEREMONY

Congress Director's Report
Nicolas Paparoditis

Outgoing President's Speech
Christian Heipke

Exchange of the Presidential Chain

Incoming President's Speech
Lena Halounová

Exchange of the ISPRS Flag

Invitation to Geospatial Week 2023
Naser El Sheimy

Awards presented at the Closing Ceremony

Incoming Congress Director's Speech
Derek Lichti

Congress Directors Report





Congress Director, Nicolas Paparoditis reports on the Congress and thanks the attendees, and his team, for their contribution to the huge success of
the event





The XXIV ISPRS Congress : an unusual script

- A large terrorist attack in Nice on the night of the French bidding party in the XXIII Congress Prague in 2016
- Congress dates in 2020 had to be changed because of the announcement in 2019 of the departure of Tour de France from Nice at the initial dates of the Congress
- Congress dates shifted to 2021 in February 2020 because of COVID-19 pandemy
- Congress dates again shifted to 2022 in December 2021 because of continuing COVID pandemy
- Current world tensions and their consequences have had an impact on the participation

The XXIV ISPRS Congress : the three editions

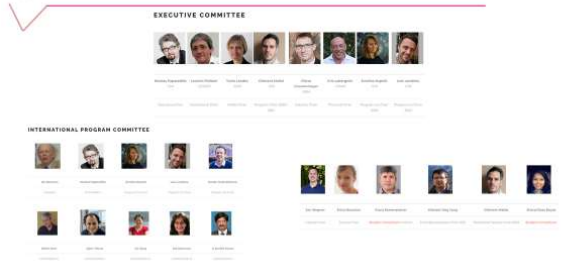
- Finally 3 editions of the XXIV Congress were organised
- The 2020 virtual and Open-Access edition limited to two scientific tracks, August 30-September 2 2020.
- The 2021 digital edition organised as a full Congress without GA, July 5-9
- The 2022 physical meeting in Nice as a full Congress with GA, June 6-11 (with some hybrid and some remote)



The XXIV ISPRS Congress : a preparation impacted by pandemy

- Permanently struggling to cope with the uncertainties (participants, exhibitors, etc.)
- A complex communication to organise in a confused world
- A remote presenter registration fee with a 50% reduction registration was introduced by council to encourage paper submissions for countries not knowing if they could travel in 2022
- Unfortunately Chinese colleagues (500-600 participants usually) and other colleagues (Japan, etc.) were not able to attend in 2022 due to their national policies to limitate the expansion of the pandemy.
- Airfare costs have severely increased thus reducing the capacity to travel

The Congress committees



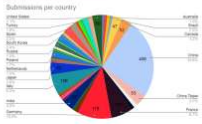
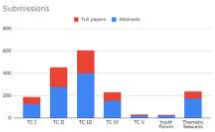
The XXIV Congress sub-events

- One General Assembly (2022)
- Scientific tracks (2020, 2021, 2022)
- Plenary sessions with awards and keynotes (3 in 2021, 6 in 2022)
- Keynotes (6 in 2021, 10 in 2022)
- Forum tracks (2 Fora in 2021, 8 Fora in 2022)
- A CATCON contest (2022)
- Technology tracks (2021 and 2022)
- Industry exhibitions (digital in 2021, on-site in 2022)
- A gala dinner (2022)

The submission and publishing results for 2020 edition

1,776 contributions submitted (2,150 authors from 80 countries)
1,132 abstracts
644 full papers

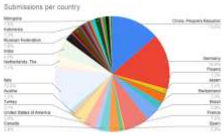
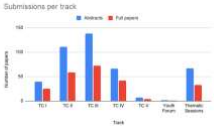
Papers published in Annals/Archives : 1054
716 papers published in ISPRS Archives
338 are published in the ISPRS Annals


The submission and publishing results for 2021 editions

667 papers were submitted (2,147 authors from 56 countries)
431 abstracts
236 full papers

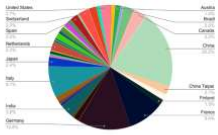
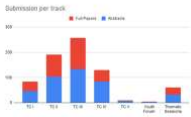
Papers published in Annals/Archives : 466
353 papers published in ISPRS Archives
113 are published in the ISPRS Annals

The submission and publishing results for the 2022 edition

959 papers were submitted (1475 authors from 77 countries)
354 full papers
605 abstracts

Papers published in Annals/Archives : 743
524 papers published in ISPRS Archives
219 are published in the ISPRS Annals

The 2021 and 2022 editions keynotes

2021

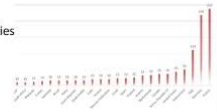


2022



Some statistics for the XXIV Congress and the 2022 edition

- **2720** participants in all for the 3 editions = 1800 « standard » registered participants + 492 « 2020 only registration» + 428 « 2021 only registration»
- **1250** participants on-site (Friday 10:00 AM) from **59** countries
- **300** presenters and participants from remote
- **170** remote participants for the opening plenary session
- In average, **60-70** persons attending remotely per day with peaks at **130** (opening plenary session)
- **30** booths in the exhibition



Some innovations in the XXIV Congress

- A 3-day only exhibition, a new technology track for Industry, development of the « Building the future together » fora track
- A plagiarism check for all camera ready full papers, introduction of *paper conditionnal acceptance* coming with a consolidation report
- A very early bird registration fee, free booths for Congress bidders
- A successful experimentation of the 10 mn pre-recorded videos
- An introduction and a continuous improvement of the Digital Congress platform to view the precorded videos, the live streams and the session replays
- Pre-recorded videos made Open-Access on the ISPRS media library
- An open class room CATCON contest



Hybrid or not hybrid ?

- Hybrid brings organisationnal difficulties, work overload, overcosts, for a limited added value in such events
- Remote presentation should be avoided as much as possible especially in the Scientific tracks
- Remote participation is interesting for the future in particular for the participants with no papers who can not afford the travelling and the accommodation and for participants who would like to limitate their carbon emissions

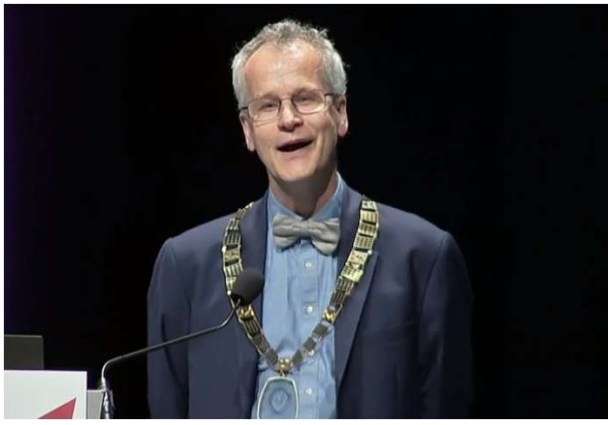
Some recommandations of the Congress Director

- A need for implementing a more professional approach to organize events
- All the Congress internal processes have to be documented
- We need a unique platform/website to manage the Congress information dissemination, submissions, registrations, and digital platform
- Develop the digital media and digital platform, and the long term archiving of videos on TIB with the ISPRS webmaster
- Make our large events more Industry friendly and give a better feedback to our sponsors and exhibitors
- We should probably think of a shortening of the event or at least the Conference in the Congress



Outgoing President's Speech





Christian Heipke, ISPRS President 2016-22, giving his outgoing speech at the Closing Ceremony

Exchange of the Presidential Chain





Outgoing President, Christian Heipke handing over of the Presidential Chain to incoming ISPRS President, Lena Halounová

Incoming President's Speech





Lena Halounová addresses the attendees with her vision for the coming ISPRS term 2022-26

Exchange of the ISPRS Flag





Au revoir France - Welcome/bienvenue Canada! Derek Lichti, Congress Director 2026, accepts the ISPRS flag from the outing Congress Director

Invitation to Geospatial Week 2023, Cairo, Egypt





ISPRS GSW 2023 Director, Naser El Sheimy invites attendees to the coming edition on the bank of the Nile, in Cairo

Awards presented at the Closing Ceremony



Three of the Best Poster Awardees receiving their certificates



The CATCon recipients



The Presidents Honorary Citation were awarded at the Closing Ceremony



Presentation of Certificates of Recognition

Address of Incoming Congress Director
Derek Lichti

XXV ISPRS Congress
Toronto, Canada

4-11 July 2026

Congress Director: Derek Lichti



The CRSS-SCT
Canadian Remote Sensing Society – Société Canadienne de Télédétection

- Independent, not-for-profit professional society
- Since 1972: has organized the world's longest running national remote sensing symposium
- Since 1989: an Associate Member of the Asian Association on Remote Sensing



Toronto, Canada





- **Easy to get to!**
- 2 international airports
- 65+ airlines
- 1100 daily flights
- Travellers from 68 countries and territories only require an Electronic Travel Authorization (eTA) to enter Canada by air
- The Congress will be registered with the Canada Border Services Agency
  - Assists with the visa application process
  - Helps exhibitors with customs
- Discount code from Air Canada for reduced airfares

Toronto, Canada

- **Easy to get around!**
- Dedicated train from airport to downtown
- Extensive transit network
- Transit pass for congress participants
- *Bike Share Toronto*



Toronto, Canada

- **Many accommodation options for all budgets**
  - 183 hotels, 36 000 rooms
  - > 23 000 Airbnb listings
  - Residences at 3 universities: Ryerson, Toronto, York



Intercontinental Toronto Centre



Daphne Cockwell Complex, Ryerson University



Many options close to the conference venue (in red box)!

Toronto, Canada

- Ryerson residence examples

Residence	Room type(s)	Rate
Pitman Hall	Single rooms shared bath Single room in 2 or 4 bedroom apartment	$55/night
Daphne Cockwell Complex	Single room in 2 or 4 bedroom apartment	$65/night
International Living/Learning Centre	Single rooms	$86/night

- Meal plans available (e.g. $11 hot breakfast)



Toronto, Canada

- Toronto is the 4th largest city in North America
- The most culturally diverse city in the world with 230 ethnic backgrounds: BBC Radio 2016
- Multiculturalism is federal policy since 1970s
- Huge range of dining options!
- 2nd safest city in the world: Economist Intelligent Unit 2021 Safe Cities Index
- Canadian full vax rate: 85.86% full (5+ years; 8 May 2022)
- Average July temperature: 22.3 °C
- Co-host to FIFA World Cup Matches in June 2026



Venue: The MTCC

Metro Toronto Convention Centre
- Largest convention facility in Canada
- ISPRS has South Building exclusivity
- Heart of Toronto Downtown Core
- 90% of event waste diverted from landfill



Conference Theme and Legacy Project

- **Theme:** ***From Imagery to Understanding***
  - Imagery: is our primary data source
  - Understanding: achieving greater awareness about the planet and its diverse peoples to meet the many challenges we face
- **Legacy Project**
  - Explore and report mechanisms successfully used in Canada and elsewhere to convince governments to support work in the ISPRS domain
  - Legacy: creation of materials that can be used by organizations world-wide to foster interest and gain support for what we do

Program at a Glance

- In-person event with a virtual registration option
- Daily plenary and parallel technical sessions
- Exhibition and Industry Forum sessions
- Technical tours
  - Teledyne Optech
  - MDA HQ
  - Ryerson Centre for Urban Innovation
- Canadian Symposium on Remote Sensing and the Indigenous Mapping Workshop
- Full social program

DAY	MORNING SESSION	AFTERNOON SESSION	EVENING ACTIVITIES	STUDENT ACTIVITIES
SATURDAY JULY 4	Tutorials & Workshops	Tutorials & Workshops	City Tour	Scavenger Hunt
	General Assembly No. 1			
SUNDAY JULY 5	Opening Ceremony	Technical Sessions	Welcome Reception	
MONDAY JULY 6	Technical Sessions	Technical Sessions	Exhibitors Reception	
	Exhibition			
TUESDAY JULY 7	Technical Sessions	Technical Sessions	Student Reception	
	Technical Tours	Technical Tours		
	General Assembly No. 2			
	Exhibition			
WEDNESDAY JULY 8	Technical Sessions	Technical Sessions	Harbour Tour	Hackathon
	Exhibition			
THURSDAY JULY 9	Technical Sessions	Technical Sessions	Gala Dinner	Mentoring and Professional Development
	General Assembly No. 3			
FRIDAY JULY 10	Technical Sessions	Technical Sessions	Free Evening	Informal Dinner Evening
SATURDAY JULY 11	Technical Sessions	Closing Ceremony		

On Site Registration Fees

- Many early registration options
- Reduced fees

REGISTRATION FEE SCHEDULE	VERY EARLY BIRD	EARLY-BIRD	REGULAR
	EUR	EUR	EUR
FULL FEE - BASIC	524	745	814
FULL FEE - STANDARD	814	994	1139
REDUCED FEE - BASIC	262	373	407
REDUCED FEE - STANDARD	407	497	573
1 DAY FEE - BASIC	166	200	235
1 DAY FEE - STANDARD	235	269	304
ACCOMPANYING PERSON	200	200	200

Bid Team


Steve DeRoy


Costas Armenakis


Derek Lichti


Ahmed Shaker


Gordon Staples

Academic, government and industry experience
Leaders in the ISPRS and the CRSS-SCT


Shabnam Jabari


Brigitte Leblon


Songnian Li


Mir Abolfazl Mostafavi


Bob Ryerson


Des Power

Student Activities

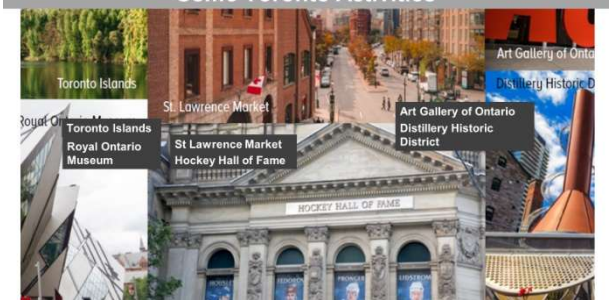
- **Emerging Professionals program (Youth Forum)**
  - Led by Emerging Professionals (students and Post Docs)
  - Mentoring and professional development session
  - Hackathon
  - Scavenger hunt in downtown and gaming night
- **Pre-Congress Summer School**
  - Design competition focused on a grand challenge related to the conference theme *From Imagery to Understanding*, e.g. a UN SDG
  - Student teams develop solution over the week
  - Lectures on methodology, technology and app development
  - Student presentations judged: winning team presents at a plenary session

Final Notes

- Our team is focused on delivering a first-rate scientific conference
- We have support from all levels of government and industry across Canada

- I have served the ISPRS in several roles since 2004
- I will to continue my devotion to the ISPRS as Congress Director
- **We look forward to welcoming the ISPRS back to Canada after 54 years for the 2026 Congress in Toronto!**

Some Toronto Activities



Thanks

Bid Committee Members
Ahmed Shaker
Songnian Li
Costas Armenakis
Brigitte Leblon
Mir Abolfazl Mostafavi
Des Power
Gordon Staples
Bob Ryerson
Steve DeRoy
Shabnam Jabari

Destination Toronto
Angela Jefferies

MTCC
Rahul Shah

Booth volunteers
Mojgan Jadidi
Ivan Detchev
Shahram Sattar
Samira Kamel
Mohamed Mostafa
Ruisheng Wang
Jonathan Li

Some Tours



1.5 h drive to Niagara Falls



Muskoka Region north of Toronto

Nearby Tour Destinations

Post Congress tour to Québec







RESOLUTIONS

Approved Resolutions of the XXIV ISPRS Congress

Nice 2022

Resolutions of XXIV ISPRS Congress

General Resolutions

Resolution 0.1: Appreciation of the *Société Française de Photogrammétrie et de Télédétection* (French Society for Photogrammetry and Remote Sensing - SFPT), the *Institut National d'Information Géographique et Forestière* (National Institute of Geographic and Forest Information - IGN), the *Centre National d'Études Spatiales* (French National Space Agency - CNES) and the other supporting French organisations (CNRS, IRD, Université Côté d'Azur, INRIA, and Ordre des Géomètres Experts).

The Congress commends:

to congratulate the ***Société Française de Photogrammétrie et de Télédétection*** (SFPT), its president Aurélie Sand, the ISPRS Congress Director 2016-2022, Nicolas Paparoditis, the Congress Executive Committee, the Programme Chairs of all three Congress editions, all supporters of SFPT, IGN and CNES, the International Programme committee, and the ISPRS Commission Presidents, for their excellent work which has resulted in a very successful Congress organized in difficult and uncertain conditions, resulting in three Congress editions.

Resolution 0.2:

The Congress

Noting:

- that the links between academia, government, space agencies and industry in ISPRS have loosened over the years, and
- that the link between science and policy needs to be reinforced in order to build more sustainable public policies;

Recognizing:

- the need for tighter links between academia, government, space agencies and industry in ISPRS to address common relevant topics and societal challenges, and in particular the global monitoring of the impact of climate change and mitigation on earth resources;

Recommends:

- that a specific task force including the chairs the ISPRS committees be created to work with the Council and propose and implement a more inclusive scientific-industry-government policy and road map for ISPRS.

Technical Resolutions

TC I

Resolution I.1: Sensor Systems for (Near-) Real-time Indoor and Outdoor Mapping

The Congress

Noting:

- the continuously growing consumer market and ubiquity of low-cost 2D/3D sensors, including stereo-RGB and RGB-D cameras, IMU, and laser scanners, in particular the increasing advancement in smartphone and IoT technologies, and
- the developments in (near-)real-time monitoring and mapping capabilities in both indoor and outdoor environments;

Recognizing:

- the need for robust and highly automated methods for calibration, multi-sensor co-registration, pose estimation, and sensor level data fusion for indoor and outdoor domains;

Recommends:

- the further development, improvement and performance characterization of automated algorithms, software tools and integrated systems to support these tasks for various sensor systems.

Resolution I.2: Embedded Vision, Onboard Processing and Cooperative Navigation and Mapping

The Congress

Noting:

- the increasing importance of real-time applications in 2D/3D navigation and mapping,
- the use of small multi-sensor platforms (multi-sensor UAS and UGV) or swarms, and
- the rapidly growing volumes of crowdsourced data acquired from a variety of real-life and virtual platforms;

Recognizing:

- the need for real-time capable and robust methods focused on onboard processing, and
- the increasing use of collaborative systems for data collection;

Recommends:

- the further development and investigation of real-time capable onboard-processing of photogrammetric tasks, such as sensor orientation, calibration and sensor data fusion from single and multiple platforms.

Resolution I.3: Small Satellite System Constellations

The Congress

Noting:

- the increasing deployment of small satellite systems for earth observation especially by the private sectors;

Recognizing:

- the availability and value of earth observation data derived from small satellites for remote sensing applications;

Recommends:

- the further investigation of the requirements for small satellite data used in geo-spatial applications, and
- in collaboration with the private sector, the development of algorithms for geospatial information extraction from small and low-orbiting satellites.

TC II

Resolution II.1: Machine Learning and Photogrammetry

The Congress

Noting:

- the developments in 3D-based deep learning, and
- the strong need for rapid 3D recovery, measurements, and object reconstruction;

Recognizing:

- the efforts extended to 2D/3D semantic segmentation in the society and their use in photogrammetric pipelines, and
- the rising interest in 3D content creation for digital twins and virtual/augmented/mixed/extended reality (VR/AR/MR/XR);

Recommends:

- extending the collaboration between TC II and other TCs for the explicit use of these pipelines in their research, including the creation of benchmark datasets and the organization of related competition, and
- taking the lead to create a concept of characterizing ML-produced data for accuracy estimation and overall performance assessment.

Resolution II.2: Algorithmic Developments to Support Autonomous Platforms

The Congress

Noting:

- the need in industry, government, and academia to improve autonomy in robotic/autonomous driving by developing fast geospatial semantic segmentation methods, and
- the development of high definition (HD) maps (as defined in the automotive context) with rich spatial, attribute, topologic information, and meta data;

Recognizing:

- efforts extended in the field regarding panoptic segmentation and geo-positioning;

Recommends:

- the further development of autonomous driving for ground, aerial and underwater platforms, and
- the further development of automatic mapping via autonomous platforms.

Resolution II.3: Integrative and Generalizable Artificial Intelligence and Machine Learning (AI/ML)

The Congress

Noting:

- the need to improve the photogrammetric pipeline using multiple data sources, and
- the need to address generalization issues of AI/ML models in photogrammetry;

Recognizing:

- the increasing availability of multiple sensor streams from the same platforms and systems,
- the potential of deep AI/ML models to address the specific complexity of geo-related problems of different geographical regions, and
- the relative lack of training data required for supervised AI methods;

Recommends:

- Providing datasets with multiple data sources for benchmarking and competition activities, and
- Integrating AI/ML models into geospatial information extraction from optical and LiDAR data.

TC III

Resolution III.1: New Methods and Techniques for Processing Multi-dimensional Remote Sensing Imagery

The Congress

Noting:

- the increasing availability of multi-temporal, multi-scale, multi-platform, multi-sensor remote sensing images and the need for efficient data processing,
- the significant advancement of deep learning technologies for image interpretation, and
- the general lack of large remote sensing sample datasets;

Recognizing:

- the challenges of constructing large scale sample datasets and deep learning networks for effective interpretation of remote sensing images, and
- the challenges on quality control, evaluation and validation of information extracted from remote sensing images at global/ regional level;

Recommends:

- facilitating the thematic scene understanding through using multi-dimensional (spatial, spectral and temporal) remote sensing data,
- promoting open access of remote sensing image resources, algorithms, deep learning networks, and publications, and
- developing benchmark datasets and task-oriented networks for intelligent remote sensing image interpretation and product validation.

Resolution III.2: Remote Sensing Applications

The Congress

Noting:

- the need for bridging the information gaps between the capabilities of earth observation systems and analytical techniques used to process such data, and
- the increasing requirement for accurate and timely monitoring of epidemics, disasters and emergency events;

Recognizing:

- the need for dynamic monitoring and better understanding of the earth system, and
- the environment, and human activities, for smarter decision making and risk reduction;

Recommends:

- developing new methods for exploiting the synergy of the earth observation systems to improve parameter retrieval and its use in predictive modelling, and
- strengthening the emphasis on developing applications to meet the requirements of a broad spectrum of remote sensing users, such as construction and infrastructure monitoring, disaster resilience, natural resources management, observations of the environment, human health monitoring, and Antarctic and Greenland ice sheet monitoring.

Resolution III.3: Geospatially-enabled SDGs Monitoring

The Congress

Noting:

- that the implementation of the 2030 Agenda for Sustainable Development requires the use of a wide range of data, including earth observation and the extracted geospatial information,
- that geospatial information is expected to play a pivotal role in assessing and monitoring the progress of Sustainable Development Goals (SDGs),
- that a number of the inter-governmental organizations, in particular UN-GGIM and GEO, have already supported studies and developments, and
- that ISPRS has already launched a scientific program in support of geospatially-enabled SDG monitoring;

Recognizing:

- the need for new data aggregation and disaggregation approaches to produce trusted geospatial information, and
- the need for new methodologies to extract relevant geospatial information to support SDG indicator estimation;

Recommends:

- initiating ISPRS-led or co-sponsored activities, such as innovative research and development as well as capacity building and outreach activities on geospatially-enabled SDG monitoring, to promote inter-disciplinary studies by mobilizing and integrating all resources that ISPRS and its members have.

TC IV

Resolution IV.1: Multi-dimensional and Semantically Rich Data Models

The Congress

Noting:

- the increasing availability of huge, complex, multi-dimensional (including time), multi-resolution, and unstructured location-based and spatial data, representing social, economic, man-made and natural phenomena above, beneath and on the surface, enclosed and open, designed and as built, local and global;

Recognizing:

- the contributions of ISPRS to representations, processing algorithms of multi-scale multi-dimensional data, models and data structures, and

uncertainty and quality modelling for static, mobile and dynamic data for a range of applications from indoor navigation, climate change monitoring to SDG implementation;

Recommends:

- the further development of semantically rich spatial data structures, spatial indexing schemes, and generic analytical tools for model validation,
- the further development of federated spatial data models and linked data, considering different representations, data uncertainty, and data quality, and
- the further development of multi-dimensional data models integrated with the internet of things (IoT).

Resolution IV.2: Spatial Analysis and Advanced Visualization

The Congress

Noting:

- the increasing availability of unprecedented amounts of big spatial data, from traditional remote sensors (satellites, aircrafts, UAVs, in-situ sensors, etc.) to the internet of things (IoT) and user-generated content (volunteered geographic information and social networks) for sustainable development, Smart Cities, Digital Twins and time-critical applications (such as disaster management);

Recognizing:

- the contributions of ISPRS to processing, analyzing, deep learning, mining, simulation, visualization, AR/VR/XR, and quality assessment (emphasizing user-centered aspects) of static and dynamic (including trajectory) data, user-generated content, image, and video data;

Recommends:

- further strengthening the research on real-time analytics, exploratory and confirmatory analysis, data interpretation, and uncertainty modeling for local and global applications,
- further intensifying the application of artificial intelligence and machine learning for data analysis and data fusion, and
- further developing web-based, VR/AR/MR environments, and multi-dimensional and multi-user visualizations, considering privacy, usability, and ethics.

Resolution IV.3: Information Services and Applications

The Congress

Noting:

- the rapid advancement of cloud computing, clusters and grids, high-performance computing, open source, geo-sensor networks, mobile technologies (e.g., smartphones, wearables and apps), web service technologies, and new AR/VR/XR devices and equipment, rising interest in human-centered design of technology, as well as open spatial standards;

Recognizing:

- the contributions of ISPRS to semantics and ontologies, sensor web, visual analytics, service architecture, applications for Smart Cities, Digital Twins, online interfaces, and open international spatial standards in the context of mobile/web/cloud-based geospatial services and usability concerns;

Recommends:

- the further involvement of parallel and distributed processing paradigms for management and analysis of spatial data,
- further intensifying the development of Application Programing Interfaces (API) and Software as a Service (SaaS), accounting for privacy and security issues, and
- further strengthening theory and practice in developing seamless indoor/outdoor

localization/navigation applications, location-based services, Smart Cities, and Spatial Digital Twins.

TC V

Resolution V.1: Restructuring Commission V Functional Activities

The Congress

Noting:

- that Commission V, on the theme 'Education and Outreach' for addressing capacity development in geospatial science and technologies, has been part of ISPRS structure for the last eighteen years,
- strong commonalities in their activities during the last four Congresses on capacity development,
- that capacity development methods/tools deliberated have reached a high-level of maturity and are operational in most educational institutions, so that the proposed innovative solutions are becoming rather incremental,
- that, barring summer school events, there have been no strong direct interactions with other Commissions' objectives and activities, and
- that the new initiative of TC-V in its Mid-term Symposium in 2018, jointly conducting with IPAC to deliberate on "International Cooperation on Earth Observation", received great appreciation with participation from international space agencies and regional/global organizations;

Recognizing:

- the need for re-orienting Commission V's activities and for supporting innovation for other Commissions' themes,
- that Commission V should continue engaging with ISPRS Advisory Committees in jointly organizing topical meetings to discuss especially on advances in Earth Observation data access and democracy and new geospatial technologies from a knowledge sharing point of view, and
- that new application-oriented capacity development activities, such as innovative technologies in training civil engineers and architects, citizen science, and geospatial technologies, 3D-survey integrating topology, drone imaging, and laser scanning for documenting the built heritage, have attracted a good number of events/programs in the last 4 years;

Recommends:

- focusing on a) planning ISPRS sponsored/co-sponsored events using capacity development tools and methods; b) conducting summer schools, competition programs and supporting the ISPRS Student Consortium and youth promotional activities; and c) reporting the experience and research as feedback in the Commission V Mid-term Symposia,
- establishing special working groups to address innovative technologies in education, training and outreach, jointly with IPAC, with an aim to deliver topics not covered in depth in previous Commissions, such as a) methods of enhancing academia-industry-government partnerships; b) methods of achieving global partnering for promoting quality education and gender inequality issues in STEM, regionally, that address SDG Goal 4 and 5 in collaboration with UN, CEOS, and WMO to promote geospatial science and technologies in societal benefit areas, and
- continuing significant contributions from dedicated working groups in developing educational tools in BIM and civil engineering for geospatial education in architecture, engineering and construction (AEC) towards digital transformation that includes digital twins, smart cities, and VR/AR tools for decision-support system in AEC.

Resolutions on Emerging Issues

Resolution 0.1: Establishment of a new Section on "Resolutions on Emerging Issues"

The Congress

Noting:

- the need to further increase our Society profile within society and science,
- the need to provide a broader picture of emerging scientific challenges, especially to our younger colleagues, and
- the need to record signals of changes as noted in discussions in academia, civil society or at political spheres;

Recognizing:

- that emerging issues are those for which there is generally not yet a body of research nor good scientific understanding, and that the aim is to describe, in exploratory and even speculative terms, the identified drivers, observed trends, potential key developments, eventual implications (opportunities/risks) and what kind of challenges this may mean to the ISPRS community;

Recommends:

- the establishment of a new section on "Resolutions on Emerging Issues", with the advice to the TCs to further elaborate and adapt these to suit their specific scientific work, as well as to translate the identified challenges to meet with their technical expertise and capacities. This section is structured in the following parts:
  - emerging environmental issues
  - emerging societal issues
  - emerging technological issues.

Resolution 0.2: Emerging Environmental Issues

The Congress

Noting:

- ISPRS Statue I, which emphasizes the Society's "…contribution to the well-being of humanity and the sustainability of the environment."

Recognizing:

- that emerging environmental issues reflect observed changes/developments in the environment occurring as a result of new research or knowledge, a shift in geographical or temporal scales of impact, or due to heightened awareness or new response measures to issues, their impact assessed in short-medium-/and long-term;

Recommends:

- emphasizing the investigation on the following cross-disciplinary issues:
  - Biodiversity-Food-Water-Energy nexus
  - Supply chains and circularity in economies.

Resolution 0.3: Emerging Societal Issues

The Congress

Noting:

- ISPRS Statue I, which emphasizes the Society's "…contribution to the well-being of humanity and the sustainability of the environment."

Recognizing:

- that emerging societal issues reflect shifts and changes in societal values and habits as well as individual behaviors, such as awareness of environmental concerns, wider economic changes, production/consumption practices, community cohesion, inclusion and resilience, health, and wellbeing;

Recommends:

- emphasizing the investigation on the following cross-disciplinary issues:
  - population concentration and pressures on infrastructure and resources
  - social, spatial inequalities and disproportionality in exposure to

pollution and the impacts of climate change.

Resolution 0.4: Emerging Technological Issues

The Congress

Noting:

- ISPRS Statue IV, where a main ISPRS activity is to "…facilitate excellence in research and development."

Recognizing:

- that emerging technological issues reflect either technological pushes or technological responses to emerging issues and, as such, normally correspond with innovate answers to cross-cutting and complex issues requiring coordination, integration, and collaboration across different siloed disciplines;

Recommends:

- emphasizing the investigation on the following cross-disciplinary issues:
  - contribution of geospatial information to Digital Twins and their applications (e.g. 3D model of the built infrastructure, street network model, urban mobility simulation - autonomous driving, pedestrian traffic, social distancing -, wind flow simulation, qualitative/quantitative data provided by citizens, circularity in cities, reduction of energy and environmental impacts)
  - open big data and peer-to-peer knowledge sharing, especially space and navigation data to boost downstream applications (e.g. researchers to track glacial recession, maritime agencies protect vulnerable marine reserves, and agronomists better predict food supply)
  - cloud and edge computing for IoT real-time sensoring
  - image/video contextualization as a more natural communication tool and user interface, replacing the text/keyboard/mouse.

This text of these Resolutions (2022-2026) was prepared by ISPRS Technical Commission Presidents (2016-2022) and the Resolution Committee (Jun Chen (Chair), Costas Armenakis, Shailesh Nayak, Petros Patias, and John Shi.) It was further discussed by ISPRS Council (2016-2022).



HISTORY

Chronology of Congresses, Symposia and Geospatial Weeks

Proceedings Publications

Chronology of ISPRS

Chronology of TIF

ISPRS Congresses, Symposia and Geospatial Weeks

A. Congresses

No.	Congress Venue	Country	Date	Year	Archive, Volume (Parts)		Annals, Volume (Parts)	
1	Vienna	Austria	24.09.-26.09.	1913				
2	Berlin	Germany	21. 11. -26.11.	1926				
3	Zurich	Switzerland	05.09. -10.09.	1930	VII (1)			
4	Paris	France	26.11. -01. 12.	1934	VII (2)			
5	Rome	Italy	29.09.-06.10.	1938	IX (3)			
6	The Hague	The Netherlands	01.09.-10.09.	1948	X(2)			
7	Washington	USA	03.09.-16.09.	1952	XI (3)			
8	Stockholm	Sweden	17.07.-26.07.	1956	XII (4)			
9	London	UK	06.09.-16.09.	1960	XIII (6)			
10	Lisbon	Portugal	07.09.-19.09.	1964	XV (7)			
11	Lausanne	Switzerland	08.07.-20.07.	1968	XVII (10)			
12	Ottawa	Canada	24.07.-04.08.	1972	XIX (6)			
13	Helsinki	Finland	11.07.-23.07.	1976	XXI (13)			
14	Hamburg	Germany	13.07.-25-07.	1980	XXIII A, B	(11)		
15	Rio de Janeiro	Brazil	17.06.-29.06.	1984	XXV A (8),	B		
16	Kyoto	Japan	01.07.-10.07.	1988	XXVII A, B	(13)		
17	Washington	USA	02.08.-14.08.	1992	XXIX A, B	(7)		
18	Vienna	Austria	09.07.-19.07.	1996	XXXI A, B	(7), J		
19	Amsterdam	The Netherlands	14.07.-26.07.	2000	XXXIII A, B	(7)		
20	Istanbul	Turkey	12.07.-23.07.	2004	XXXV A, B	(8)		
21	Beijing	China	14.07.-25.07.	2008	XXXVII A, B	(8)		
22	Melbourne	Australia	25.08.-01.09.	2012	XXXIX A, B	(8)	I	(2,3,4,7)
23	Prague	Czech Republic	12.07.-19.07.	2016	XLI A, B	(8)	III	(8)
24	Nice, online	France	31.07.-02.08.	2020	XLIII-B-2020	(5)	V-2020	(5)
24	Nice, online	France	05.07.-09.07.	2021	XLIII-B-2021	(5)	V-2021	(5)
24	Nice	France	07.07.-11.07.	2022	XLIII A, B-2022	(5)	V-2022	(5)
25	Toronto	Canada		2026				

Part A contains the proceedings and reports of the events.
Part B contains the papers presented to the Congress. There is 1 exception from Rio de Janeiro Congress in 1984: part A contains papers, part B proceedings.
Part J is an Index-Volume

B. Mid-term Commission Symposia

Commission I

No.	Symposium Venue	Country	Date	Year	Archives Volume (Part)	Annals Volume
1	Tokyo	Japan	29.07.-31.05.	1978	XXII-1	
2	Canberra	Australia	14.04.-16.04.	1982	XXIV-1	
3	Stuttgart	Germany	01.09.-05.09.	1986	XXVI-1	
4	Manaus	Brazil	24.06.-29.06.	1990	XXVIII-1 (2)	
5	Como	Italy	12.09-16.09.	1994	XXX-1	
6	Bangalore	India	25.02.-27.02.	1998	XXXII-1	
7	Denver	USA	10.11.-15.11.	2002	XXXIV part1	
8	Marne-la-Vallee	France	04.07.-06.07.	2006	XXXVI part 1	
9	Calgary	Canada	15.06.-18.06	2010	XXXVIII part 1	
10	Denver	USA	17.11.-20.11.	2014	XL-1	II-1
11	Karlsruhe	Germany	10.10.-12.10.	2018	XLII-1	IV-1
12	Changsha	China		2024		

Commission II

No.	Symposium Venue	Country	Date	Year	Archives Volume (Part)	Annals Volume
1	Bad Godesberg	Germany	18.04.-23.04.	1966	XVI-2	
2	Munich	Germany	n/a	1970	XVIII-2	
3	Torino	Italy	02.10.-04.10.	1974	XX-2	
4	Paris	France	n/a	1978	XXII-2	
5	Ottawa	Canada	30.08.-03.09.	1982	XXIV-2	
6	Baltimore	USA	26.05.-30.05.	1986	XXVI-2	
7	Dresden	Germany	08.09.-12.09.	1990	XXVIII-2	
8	Ottawa	Canada	06.06.-10.06.	1994	XXX-2	
9	Cambridge	UK	13.07.-1707.	1998	XXXII-2	
10	Xian	China	20.08.-23.08.	2002	XXXIV part2	
11	Vienna	Austria	12.07.-16.07.	2006	XXXVI part 2	
12	Hong Kong	China	26.05.-28.05.	2010	XXXVIII part 2	
13	Toronto	Canada	06.10.-08.10.	2014	XL-2	II-2
14	Riva del Garda	Italy	04.06.-07.06.	2018	XLII-2	IV-2
15	Las Vegas	USA		2024		

Commission III

	Symposium Venue	Country	Date	Year	Archives Volume (Part)	Annals Volume
1	London	UK	09.08.-13.08.	1971	XVIII-3	
2	Stuttgart	Germany	02.09.-06.09.	1974	XX-3	
3	Moscow	Russia	29.07.-05.08.	1978	XXII-3	
4	Helsinki	Finland	07.06.-11.06.	1982	XXIV-3	
5	Rovaniemi	Finland	19.08.-22.08.	1986	XXVI-3 (3)	
6	Wuhan	China	20.05.-25.05.	1990	XXVIII-3	
7	Munich	Germany	05.09.-09.09.	1994	XXX-3	
8	Columbus	USA	06.07.-10.07.	1998	XXXII-3	
9	Graz	Austria	09.09-13.09.	2002	XXXIV part3 (A+B)	
10	Bonn	Germany	20.09.-22.09.	2006	XXXVI part 3	
11	Paris -Saint Mandé	France	01.09.-03.09.	2010	XXXVIII part 3 (A+B)	
12	Zurich	Switzerland	05.09.-07.09.	2014	XL-3	II-3
13	Beijing	China	07.05.-10.05.	2018	XLII-3	IV-3
14	Belém	Brazil		2024		

Commission IV

	Symposium Venue	Country	Date	Year	Archives Volume (Part)	Annals Volume
1	Prague	Czech Republic	30.08.-03.09.	1966	XVI-4	
2	Delft	Netherlands	08.11.-11.09.	1970	XVII	
2	Paris	France	24.09.-26.09.	1974	XX-4 (3)	
3	Ottawa	Canada	02.10.-06.10.	1978	XXII-4	
4	Washington	USA	22.08.-28.08.	1982	XXIV-4	
5	Edinburgh	UK	08.09.-12.09.	1986	XXVI-4	
6	Tsukuba	Japan	15.05.-18.05.	1990	XXVIII-4	
7	Athens	USA	31.05.-03.06.	1994	XXX-4	
10	Stuttgart	Germany	07.09.-10.09.	1998	XXXII-4	
11	Ottawa	Canada	09.07.-12.07.	2002	XXXIV part4	
12	Goa	India	25.09.-30.09.	2006	XXXVI part 4	
13	Orlando	USA	16.11.-18.11.	2010	XXXVIII part 4	
14	Suzhou	China	14.05.-16.05.	2014	XL-4	II-4
15	Delft	The Netherlands	01.-10.-05.10.	2018	XLII-4	IV-4
16	Perth	Australia		2024		

Commission V

	Symposium Venue	Country	Date	Year	Archives Volume (Part)	Annals Volume
1	Tokyo	Japan	12.10.-17.10.	1966	XVI-5	
2	Paris	France	n/a	1970	XVIII-5	
3	Stockholm	Sweden	14.08.-17.08.	1978	XXII-5	
4	York	UK	05.09.-10.09.	1982	XXIV-5 (2)	
5	Ottawa	Canada	16.06.-19.06.	1986	XXVI-5	
6	Zurich	Switzerland	03.09.-07.09.	1990	XXVIII-5 (2)	
7	Melbourne	Australia	01.03.-04.03.	1994	XXX-5	
8	Hakodate	Japan	02.06.-05.06.	1998	XXXII-5	
9	Corfu	Greece	02.09.-06.09.	2002	XXXIV part5	
10	Dresden	Germany	25.09.27.09.	2006	XXXVI part 5	
11	Newcastle upon Tyne	UK	21.06.-24.06.	2010	XXXVIII part 5	
12	Riva del Garda	Italy	23.06.-25.06.	2014	XL-5	II-V
13	Dehradun	India	20.11.-23.11.	2018	XLII-5	IV-V
14	Clark City	Philippines		2024		

Commission VI

	Symposium Venue	Country	Date	Year	Archives Volume (Part)	Annals Volume
1	Krakow	Poland	08.08.-09.08.	1978	XXII-6	
2	Mainz	Germany	22.09.-25.09.	1982	XXIV-6	
3	Badagry	Nigeria	22.09.-26.09.	1986	XXVI-6	
4	Rhodes	Greece	13.09.-16.09.	1990	XXVIII-6	
5	Beijing	China	10.10.-13.10.	1994	XXX-6	
6	Bandung	Indonesia	13.04.-14.04.	1998	XXXII-6	
7	Sao Jose dos Campos	Brazil	16.09.-18.09.	2002	XXXIV part 6	
8	Tokyo	Japan	27.06.-30.06.	2006	XXXVI part 6	
9	Enschede	The Netherlands	02.06.-04.06.	2010	XXXVIII part 6	
10	Wuhan	China	19.05.-21.05.	2014	XL-6	II-6

Commission VII

	Symposium Venue	Country	Date	Year	Archives Volume (Part)	Annals Volume
1	Delft	The Netherlands	29.08.-05.09.	1962	XIV-7	
2	Paris	France	26.09.-30.09.	1966	XVI-7	
3	Dresden	Germany	10.09.-16.09.	1970	XVIII-7 (2)	
4	Banff	Canada	07.10.-11.10.	1974	XX-7 (2)	
5	Freiburg	Germany	02.07.-08.07.	1978	XXII-7 (3)	
6	Toulouse	France	13.09.-17.09.	1982	XXIV-7 (2)	
7	Enschede	The Netherlands	25.08.-29.08.	1986	XXVI-7 (3)	
8	Victoria	Canada	17.09.21.09.	1990	XXVIII-7 (2)	
9	Rio de Janeiro	Brazil	26.09.-30.09	1994	XXX-7 (A+B+C)	
10	Budapest	Hungary	01.09.-04.09.	1998	XXXII-7	
11	Hyderabad	India	03.12.-06.-12.	2002	XXXIV part7 (A+B)	
12	Enschede	The Netherlands	08.05.-11.05.	2006	XXXVIII part 7 (A+B)	
13	Vienna	Austria	05.07.-07.07.	2010	XXXVI part 7	
14	Istanbul	Turkey	29.09.-02.10.	2014	XL-7	II-7

Commission VIII

	Symposium Venue	Country	Date	Year	Archives Volume (Part)	Annals Volume
1	Kyoto	Japan	09.08.-12.08.	2010	XXXVIII part 8	
2	Hyderabad	India	09.12.-12.12.	2014	XL-8	II-8

C. ISPRS Geospatial Week

	Venue	Country	Date	Year	Archives Volume (Part)	Annals Volume
1	Antalya	Turkey	11.11.-17.11.	2013	XL-7/W2	
2	La Grande Motte	France	28.09.-03.10.	2015	XL-3/W3	II-3/W5
3	Wuhan	China	18.09.-22.09.	2017	XLII-2/W7	IV-2/W4
4	Enschede	The Netherlands	10.06.-14.06.	2019	XLII-2/W13	IV-2/W5

Proceedings Publications

The International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences

The International Archives of ISPRS were founded by Eduard Doležal in 1908 with the objective of collecting all photogrammetric and related know-how systematically. The volumes I-VII (1908/09, 1909/11, 1911/13, 1913/14, 1915/19, 1919/23, 1924/30) have or had their repository in Austria and Volume XI is in the USA. From 1939 to 1993, the publication and distribution was the responsibility of the hosting ISPRS Member organization. Some of these Archives are still available from the ISPRS Member of the respective country. A copy of all Archives resided in the International Training Centre (ITC) in The Netherlands for many years. In 2014 the repository was moved to the Technical Information Library (TIB) at Leibniz Universität Hannover, and is now gradually being made available to the public, as all volumes are being digitised and integrated into their web interface. TIB performs this task as a service to the Society and the spatial science community.

In 1993, ISPRS signed a contract with RIGS Books to serve as the official repository for post-Congress and post-Symposia sales of all Archives produced after 1993. This arrangement was designed to make the Archives more accessible from a single source without diverting revenues from the producing organizations. The Archives are now numbered 'odd' for the Congress Volumes and 'even' for Commission Symposia. Volume Parts are given the Commission number, if applicable, and are separate books. When a Volume or Part is composed of multiple books, the number of total books of the Volume or Parts is given in parentheses below. Parts for other ISPRS Conferences, Workshops or Tutorials have the Commission number followed by a C, W or T, respectively, and a sequence number.

The ISPRS Annals of Photogrammetry, Remote Sensing and Spatial Information Science

The *ISPRS Annals of the Photogrammetry, Remote Sensing and Spatial Information Sciences* (ISPRS Annals) contain selected full paper double-blind peer-reviewed scientific contributions of ISPRS Congresses, Symposia and a number of Conferences and Workshops. The series was newly established in 2012.

Address: ISPRS Secretary General
JIANG Jie
School of Geomatics and Urban Spatial Informatics,
Beijing University of Civil Engineering and Architecture
No.1 Zhanlanguan Road, Xicheng District, Beijing, 100044 CHINA
isprs-sg@isprs.org

Chronology of ISPRS

Compiled by G. Konecny, L. W. Fritz, P. Waldhäusl and J. Timmerman

Austrian Society for Photogrammetry
founded May 3, 1907

German Society for Photogrammetry
founded October 5, 1909 (officially certified 1911)

International Society for Photogrammetry
founded July 4, 1910

International Society for Photogrammetry and Remote Sensing
renamed July 15, 1980

Presidents

1910 - 1913	E. Doležal, Austria
1913 - 1926	E. Doležal, Austria
1926 - 1930	O. Eggert, Germany
1930 - 1934	G. Perrier, France
1934 - 1938	G. Cassinis, Italy
1938 - 1948	W. Schermerhorn, The Netherlands
1948 - 1952	O. S. Reading, USA
1952 - 1956	P. Mogensen, Sweden
1956 - 1960	R. LI. Brown, UK
1960 - 1964	A. Paes Clemente, Portugal
1964 - 1968	H. Harry, Switzerland
1968 - 1972	L. Solaini, Italy
1972 - 1976	S. G. Gamble, Canada
1976 - 1980	J. Cruset, France
1980 - 1984	F. J. Doyle, USA
1984 - 1988	G. Konecny, F. R. Germany
1988 - 1992	K. Torlegård, Sweden
1992 - 1996	S. Murai, Japan
1996 - 2000	L. W. Fritz, USA
2000 - 2004	J. Trinder, Australia
2004 - 2008	I. Dowman, UK
2008 - 2012	O. Altan, Turkey
2012 - 2016	Chen J., China
2016 - 2022	C. Heipke, Germany
2022 - 2026	L. Halounová, Czech Republic

Council

1910 - 1913

President:	E. Doležal, Austria

1913 - 1926

President:	E. Doležal, Austria

1926 - 1930

President:	O. Eggert, Germany
Honorary President:	E. Doležal, Austria
Secretary General:	O. Korner, Germany
Congress Director:	F. Baeschlin, Switzerland

1930 - 1934

President:	G. Perrier, France
Honorary President:	E. Doležal, Austria
Secretary General:	H. Roussilhe, France
Treasurer:	M. Labussiere, France
Council Members:	H. von Langendorff, Germany
	F. Baeschlin, Switzerland
	J. Torroja, Spain
	K. Buchholtz, Latvia

1934 - 1938

President:	G. Cassinis, Italy
Honorary President:	E. Doležal, Austria
Secretary General:	M. Tucci, Italy
Treasurer:	P. Dore, Italy
Council Members:	H. von Langendorff, Germany
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1938 - 1948

President:	W. Schermerhorn, The Netherlands
Secretary General:	B. Scherpbier, The Netherlands
Treasurer:	C. A. von Frytag Drabbe, The Netherlands
Council Members:	G. Perrier, France
	H. von Langendorff, Germany
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	G. Cassinis, Italy

1948 - 1952

President:	O. S. Reading, USA
Secretary General:	E. S. Massie, Jr., USA
Treasurer:	W. C. Cude, USA
Council Members:	F. Baeschlin, Switzerland
	G. Cassinis, Italy
	R. Janicot, France
	W. Schermerhorn, The Netherlands

1952 - 1956

President:	P. Mogensen, Sweden
Secretary General:	P. O. Fagerholm, Sweden
Treasurer:	S. G. Moeller, Sweden
Council Members:	R. LI. Brown, UK
	R. Janicot, France
	O. S. Reading, USA
	W. Schermerhorn, The Netherlands

1956 - 1960

President:	R. LI. Brown, UK
Secretary General:	R.T.L. Rogers,UK
Treasurer:	J. E. Odle, UK
Council Members:	P. O. Fagerholm, Sweden
	R. Janicot, France
	O. S. Reading, USA
	W. Schermerhorn, The Netherlands

1960 - 1964

President:	A. Paes Clemente, Portugal
Secretary General:	A. D. Calvario, Portugal (1960-1961)
	M. F. Alexandre, Portugal (1961-1964)
Treasurer:	A. Santos Silva, Portugal
Vice President:	R. LI. Brown, UK
Council Members:	P. O. Fagerholm, Sweden
	H. Harry, Switzerland
	G. D. Whitmore, USA

1964 - 1968

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Secretary General:	W. Bachmann, Switzerland
Treasurer:	E. Huber, Switzerland
Vice President:	P. O. Fagerholm, Sweden
Council Members:	A. Paes Clemente, Portugal
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	L. Solaini, Italy

1968 - 1972

President:	L. Solaini, Italy
Secretary General:	G. C. Tewinkel, USA
Treasurer:	S. G. Gamble, Canada
Vice President:	W. Bachmann, Switzerland
Council Members:	L. Skládal, Czechoslovakia
	R. S. Halonen, Finland

1972 - 1976

President:	S. G. Gamble, Canada
Secretary General:	J. Cruset, France
Congress Director:	R. S. Halonen, Finland (1972-1975)
	K. G. Lofström, Finland, (1975-1976)
First Vice President:	G. C. Tewinkel, USA
Second Vice President:	T. Maruyasu, Japan
Treasurer:	A. J. van der Weele, The Netherlands

1976 - 1980

President:	J. Cruset, France
Secretary General:	F. Doyle, USA
Congress Director:	G. Konecny, F.R. Germany
First Vice President:	S. G. Gamble, Canada (1976-1977)
	E. O. Dahle, Norway (1977 - 1980)
Second Vice President:	P. Fagundes, Brazil
Treasurer:	A. Savolainen, Finland

1980 - 1984

President:	F. Doyle, USA
Secretary General:	G. Konecny, F. R. Germany
Congress Director:	P. Fagundes, Brazil
First Vice President:	G. Zarzycki, Canada
Second Vice President:	I. Antipov, Soviet Union
Treasurer:	H. Jerie, The Netherlands

1984 - 1988

President:	G. Konecny, F. R. Germany
Secretary General:	K. Torlegård, Sweden
Congress Director:	S. Murai, Japan
First Vice President:	G. Zarzycki, Canada
Second Vice President:	J. Trinder, Australia
Treasurer:	A. J. van der Weele, The Netherlands

1988 - 1992

President:	K. Torlegård, Sweden
Secretary General:	S. Murai, Japan
Congress Director:	L. W. Fritz, USA
First Vice President:	G. Konecny, Germany
Second Vice President:	I. Katzarsky, Bulgaria
Treasurer:	K. Atkinson, UK

1992 - 1996

President:	S. Murai, Japan
Secretary General:	L. W. Fritz, USA
Congress Director:	K. Kraus, Austria
First Vice President:	K. Torlegård, Sweden
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Treasurer:	J. Trinder, Australia

1996 - 2000

President:	L. W. Fritz, USA
Secretary General:	J. Trinder, Australia
Congress Director:	K. J. Beek, The Netherlands
First Vice President:	S. Murai, Japan
Second Vice President:	M. Barbosa, Brazil
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2000 - 2004

President:	J. Trinder, Australia
Secretary General:	I. Dowman, UK
Congress Director:	O. Altan, Turkey
First Vice President:	L. W. Fritz, USA
Second Vice President:	G. Begni, France
Treasurer:	A. Peled, Israel

2004 - 2008

President:	I. Dowman, UK
Secretary General:	O. Altan, Turkey
Congress Director:	Chen J., China
First Vice President:	J. Trinder, Australia
Second Vice President:	E. Baltsavias, Switzerland
Treasurer:	S. Morain, USA

2008 - 2012

President:	O. Altan, Turkey
Secretary General:	Chen J., China
Congress Director:	C. Ogleby, Australia
First Vice President:	I.Dowman, UK
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Treasurer:	M. Renslow, USA

2012 - 2016

President:	Chen J., China
Secretary General:	C. Heipke, Germany
Congress Director:	L. Halounová, Czech Rep.
First Vice President:	O. Altan, Turkey
Second Vice President:	M. Madden, USA
Treasurer:	J. Mills, UK

2016 - 2022

President:	C. Heipke, Germany
Vice President:	C. Toth, USA
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Past President:	Chen J., China
Treasurer:	S. Li, Canada
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2022 - 2026

President:	L. Halounová, Czech Rep.
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Secretary General:	J. Jiang, China
Past President:	C. Heipke, Germany
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Congress Director:	D. Lichti, Canada

Honorary President

E. Doležal	1926-1955

Honorary Members

E. von Orel	Austria	1938 - 1941
G. Poivilliers	France	1948 - 1968
F. Baeschlin	Switzerland	1952 - 1961
U. Nistri	Italy	1952 - 1962
0. S. Reading	USA	1952 - 1984
E. Santoni	Italy	1952 - 1970
W. Schermerhorn	Netherlands	1952 - 1986
W. Bauersfeld	Germany	1956 - 1959
G. Cassinis	Italy	1956 - 1964
H. Harry	Switzerland	1956 - 1973
L. Hurault	France	1956 - 1973
P. Mogensen	Sweden	1956 - 1969
R. LI. Brown	UK	1960 - 1983
K. Schwidefsky	F.R. Germany	1972 - 1986
E. H. Thompson	UK	1972 - 1976
G. de Masson d'Autume	France	1976 - 2006
K. G. Lofström	Finland	1976 - 1984
J. Cruset	France	1980 - 1994
L. Solaini	Italy	1980 - 1989
P. Fagundes	Brazil	1984 - 1996
F. J. Doyle	USA	1988 - 2013
A. Savolainen	Finland	1988 - 2017
Wang Z.	China	1988 - 2002
G. Konecny	Germany	1992
F. Ackermann	Germany	1996 - 2021
S. Murai	Japan	2000
L.W. Fritz	USA	2004
A. Grün	Switzerland	2008
J. Trinder	Australia	2008
I. Dowman	UK	2012
Li D.	China	2012
O. Altan	Turkey	2016
Jun. C	China	2020

Fellows

I. Antipov	Russia	2010 - 2018
C. Armenakis	Canada	2010
M. Baltsavias	Switzerland	2010
M. Barbosa	Brazil	2010
K. J. Beek	Netherlands	2010 - 2019
W. Förstner	Germany	2010
Li D.	China	2010
S. Morain	USA	2010
K. Szangolies	Germany	2010
K. Torlegård	Sweden	2010 - 2016
R. Welch	USA	2010
G. Zarzycki	Canada	2010 - 2012
D. Fritsch	Germany	2012
M. Molenaar	Netherlands	2012
S. Nayak	India	2012
P. Newby	UK	2012
H. Rüther	South Africa	2012
A. Baudoin	France	2016
Jiang J.	China	2016
F. Leberl	Austria	2016
P. Patias	Greece	2016
A. Peled	Israel	2016
K. Cho	Japan	2020
S. Li	Canada	2020
M. Madden	USA	2020
C. K. Toth	USA	2020
G. Vosselmann	Netherlands	2020
J. Mills	UK	2022
S. Zlatanova	Australia	2022

Technical Commissions

1926 - 1930

Terrestrial Photogrammetry - H. Dock, Austria
Rectification - L. van Cost, Belgium
Stereo-Aerial Photogrammetry - O. Eggert, Germany
Aerial Triangulation - F. Baeschlin, Switzerland
X-ray Measurements - A. Hasselwander, Germany
Architectural and Engineering Photogrammetry - J. Torroya, Spain
6b. Photogrammetry for Flying Objects - Th. Ween, Norway
Economy - A. Kruttschnitt, Hungary
Instruments, Optics, Norms - G. Cassinis, Italy
Plates and Films - A. von Odencrants, Sweden
Education at Universities and Research Institutes A. Buchholtz, Latvia
10b. Training of Technical Personnel - A. Ivancianu, Romania
Photographic Airplanes - K. Weigel, Poland
11b. Navigation - J. Petrik, Czechoslovakia

1930 - 1934
Terrestrial Photogrammetry - F. Baeschlin, Switzerland
Aerial Photography - M. Labussiere, France
Mapping - H. von Langendorff, Germany
Various Applications - E. Doležal, Austria
4b. X-Ray Photogrammetry - A. Hasselwander, Germany
Industrial Applications & Economy - K. Weigel & E. Warchalowski, Poland
Education, Bibliography, Terminology - A. Medyev & K. v. Oltay, Hungary

1934 - 1938
Ground Photography - F. C. Baeschlin, Switzerland
Air Photography - H. H. Blee, USA
Aerial Triangulation - W. Schermerhorn, The Netherlands
Plotting of Air Photographs - H. v. Langendorff, Germany
Various Applications of Photogrammetry - E. Doležal, Austria
X-ray Photogrammetry and Close-Up Photogrammetry - C. Sannie, France
Industrial Organization of Photogrammetry and Statistics of Works - G. Cassinis, Italy
Teaching, Terminology, Bibliography - K. v. Oltay, Hungary

1938 - 1948
Ground Photogrammetry and its Applications - O. S. Reading, USA
Air Photography - M. Zeller, Switzerland
Preliminary Operations on the Ground for Aerial Photogrammetry - F. Baeschlin, Switzerland
Plotting of Air Photographs - P. Tham, Sweden
Geodetical Applications of Photogrammetry - G. Poivilliers, France
Application of Photogrammetry to Biology and Medicine - J. Didier & Coliez, France
Industrial Organization of Photogrammetry and Statistics - G. Cassinis, Italy
Teaching and Bibliography - G. Harding, USA

1948 - 1952
Photography & Navigation - L. E. Howlett, Canada
Plotting Machines & Instruments - G. Poivilliers, France
Aerial Triangulation - P. Wiser, Belgium
Mapping from Photographs - G. Cassinis, Italy
Special Applications of Photogrammetry - B. Hallert, Sweden
Education, Terminology, Bibliography, History, Polyglot Dictionary - K. Lego, Austria - K. Neumaier
Photo-Interpretation - R. N. Colwell, USA

1952 - 1956
Photography & Navigation - J. Cruset, France
Plotting, Theory and Instruments - W. K. Bachmann, Switzerland
Aerial Triangulation - P. Wiser, Belgium
Mapping from Photographs - G. S. Andrews, Canada
Non-Topographic Photogrammetry - G. Boaga, Italy
Education, Terminology, Bibliography - K. Neumaier, Austria
Photo Interpretation - C. G. Coleman, USA

1956 - 1960
Photography and Navigation - J. Cruset, France
Plotting, Theory and Instruments - F. Vanderheyden, Belgium
Aerial Triangulation - G. Cassinis, Italy
Mapping from Photographs - H. Harry, Switzerland
Special Applications of Photogrammetry - R. Burkhardt, F.R. Germany
Education, Terminology and Bibliography - A. Barvir, Austria
Photo Interpretation - C. G. Coleman, USA

1960 - 1964
Photography and Navigation - G. C. Brock, UK
Plotting, Theory and Instruments - A. L. Nowicki, USA
Aerial Triangulation - G. de Masson d'Autume, France
Mapping from Photographs - E. F. Gigas, F.R. Germany
Special Applications of Photogrammetry - K. Hubeny, Austria
Education, Terminology and Bibliography - R. S. Halonen, Finland
Photo Interpretation - C.H. Edelman, The Netherlands

1964 - 1968
Photography and Navigation - R. W. Fish, UK
Theory, Methods, Instruments of Restitution - K. Schwidefsky, F.R. Germany
Aerial Triangulation - G. C. Tewinkel, USA
Mapping from Photographs - L. Skladal, Czechoslovakia
Non-Topographic Photogrammetry - T. Maruyasu, Japan
Education, Terminology and Bibliography - W. Sztompke, Poland
Photo Interpretation - R. Chevallier, France

1968 - 1972
Aerial Photography and Navigation - M. B. Scher, USA
Plotting Theory, Methods and Instruments - H. Deker, F.R. Germany
Aerial Triangulation - E. Thompson, UK
Application of Photogrammetry to the Earth Surface Representation - A. J. van der Weele, The Netherlands
Special Applications of Photogrammetry - M. Carbonnell, France
Bibliography, Teaching, Terminology - P Gal, Czechoslovakia
Photo Interpretation - A. Reinhold, German D.R.

1972 - 1976
Primary Data Acquisition - E. Welander, Sweden
Instrumentation for Data Reduction - G. Inghilleri, Italy
Mathematical Analysis of Data - F. Ackermann, F.R. Germany
Topographic and Cartographic Applications - G. Ducher, France
Non-topographic Photogrammetry - H. M. Karara, USA
Economic, Professional and Educational Aspects of Photogrammetry - W. Sztompke, Poland
Interpretation of Data - L. Sayn-Wittgenstein, Canada

1976 - 1980
Primary Data Acquisition - I. Nakajima, Japan
Instrumentation for Data Reduction - M. Baussart, France
Mathematical Analysis of Data - I. Antipov, Soviet Union
Topographic and Cartographic Applications - J. M. Zarzycki, Canada
Non-Topographic Photogrammetry - K. Torlegård, Sweden
Economic, Professional and Educational Aspects of Photogrammetry - Z. Sitek, Poland
Interpretation of Data - G. Hildebrandt, F. R. Germany

1980 - 1984
Primary Data Acquisition - J. Trinder, Australia
Instrumentation for Data Reduction - Z. Jaksic, Canada
Mathematical Analysis of Data - E. Kilpelä, Finland
Topographic and Cartographic Applications - R. Mullen, USA
Non-Topographic Photogrammetry - J. W. Gates, UK
Economic, Professional and Educational Aspects of Photogrammetry and Remote Sensing - J. Hothmer, F.R. Germany
Interpretation of Data - L. Laidet, France

1984 - 1988
Primary Data Acquisition - P. Hartl, Germany
Instrumentation for Data Reduction and Analysis - L. W. Fritz, USA
Mathematical Analysis of Data - E. Kilpelä, Finland
Cartographic and Data Bank Applications of Photogrammetry and Remote Sensing - A. MacDonald, UK
Other Non-Cartographic Applications of Photogrammetry and Remote Sensing - V. Kratky, Canada
Economic, Professional and Educational Aspects of Photogrammetry and Remote Sensing - O. Adekoya, Nigeria
Interpretation of Photographic and Remote Sensing Data - K. J. Beek, The Netherlands

1988 - 1992
Primary Data Acquisition - M. Barbosa, Brazil
Systems for Data Processing and Analysis - K. Szangolies, German Dem. Rep.
Mathematical Analysis of Data - Li D., China
Cartographic and Data Base Applications of Photogrammetry and Remote Sensing - T. Hirai, Japan
Close Range Photogrammetry and Machine Vision - A. Grün, Switzerland
Economic, Professional and Educational Aspects of Photogrammetry & Remote Sensing - J. Badekas, Greece
Interpretation of Photographic and Remote Sensing Data - F. Hegyi, Canada

1992 - 1996
Sensors, Platforms and Imagery - L. Mussio, Italy
Systems for Data Processing, Analysis and Representation - M. Allam, Canada
Theory and Algorithms - H. Ebner, Germany
Mapping and Geographic Information Systems - R. Welch, USA
Close-Range Techniques and Machine Vision - J. Fryer, Australia
Economics, Professional Matters and Education - Li D., China
Resource and Environmental Monitoring - R. P. Da Cunha, Brazil

1996 - 2000
Sensors, Platforms and Imagery - G. Joseph, India
Systems for Data Processing, Analysis and Representation - I. Dowman, UK
Theory and Algorithms - T. Schenk, USA
Mapping and Geographic Information Systems - D. Fritsch, Germany
Close-Range Techniques and Machine Vision - H. Chikatsu, Japan
Education and Communications - K. Villanueva 1996-1997, Teuku Lukman Aziz 1997-2000, Indonesia
Resource and Environmental Monitoring - G. Remetey-Fülöpp, Hungary

2000 - 2004
Sensors, Platforms and Imagery - S. A. Morain, USA
Systems for Data Processing, Analysis and Representation - Chen J., China
Theory and Algorithms - F. Leberl, Austria
Mapping and Geographic Information Systems - C. Armenakis, Canada
Close-Range Techniques and Machine Vision - P. Patias, Greece
Education and Communications - T. M. Sausen, Brazil
Resource and Environmental Monitoring - R. R. Navalgund, India

2004 - 2008
Image Data Acquisition - Sensors and Platforms - A. Baudoin, France
Theory and Concepts of Spatio-Temporal Data Handling and Information - W. Kainz, Austria

Photogrammetric Computer Vision and Image Analyses - W. Förstner, Germany
Geo-Databases and Digital Mapping - S. Nayak, India
Close-Range Sensing: Analyses and Applications - H. G. Maas, Germany
Education and Outreach - K. Cho, Japan
Thematic Processing, Modeling and Analysis of Remotely Sensed Data - J. L. van Genderen, The Netherlands
Remote Sensing Applications and Policies - A. Peled, Israel

2008- 2012
Image Data Acquisition - Sensors and Platforms - N. El-Sheimy, Canada
Theory and Concepts of Spatial Information Science - W. Shi, Hong Kong
Photogrammetric Computer Vision and Image Analysis - N. Paparoditis, France
Geodatabases and Digital Mapping - M. Madden, USA
Close-Range Sensing: Analysis and Applications - J. P. Mills, UK
Education and Outreach - M. Molenaar, The Netherlands
Thematic Processing, Modeling and Analysis of Remotely Sensed Data - W. Wagner, Austria
Remote Sensing Applications and Policies - H. Shimoda, Japan

2012 - 2016
Sensors and Platforms for Remote Sensing - C. Toth, USA
Theory and Concepts of Spatial Information Science - S. Li, Canada
Photogrammetric Computer Vision and Image Analysis - K. Schindler, Switzerland
Geospatial Databases and Location Based Services - Jiang J., Chına
Close-Range Imaging, Analysis and Applications - F. Remondino, Italy
Education, Technology Transfer and Capacity Development - Gong J., Chına
Thematic Processing, Modeling and Analysis of Remotely Sensed Data - F. Sunar, Turkey
Remote Sensing Applications and Policies - V. K. Dadhwal, India

2016 - 2020
Sensor Systems – S. Hinz, Germany, R. Q. Feitosa, Brazil
Photogrammetry - F. Remondino, Italy, T. Fuse, Japan
Remote Sensing - Jiang J., China, A. Shaker, Canada
Spatial Information Science - S. Zlatanova, Australia, S. Dragicevic, Canada
Education and Outreach - A. S. Kumar, India, P. L. N. Raju, India

2020 - 2022
Sensor Systems – S. Hinz, Germany, R. Q. Feitosa, Brazil
Photogrammetry – A. Yilmaz, USA, J. D. Wegner, Switzerland
Remote Sensing - Jiang J., China, A. Shaker, Canada
Spatial Information Science - S. Zlatanova, Australia, G. Sithole, South Africa
Education and Outreach - A. S. Kumar, India, P. L. N. Raju, India

2022 – 2026
Sensor Systems – TANG X., China, A. M. G. Tommaselli, Brazil
Photogrammetry – A. Yilmaz, USA, J. D. Wegner, Switzerland
Remote Sensing – L. Polidori, France/Brazil, A. Gnomer, Brazil
Spatial Information Science - S. Zlatanova, Australia, M. A. Brovelli, Italy
Education and Outreach – G. J. Peres, Philippines, J. Comiso, USA

Chronology of TIF - The ISPRS Foundation

The ISPRS Foundation, Inc. (TIF) is an independently registered entity that has been established to provide financial assistance and in-kind support solely for benevolent purposes that are pursued by The International Society for Photogrammetry and Remote Sensing (ISPRS). TIF is a public charity formed under section 501 (c) (3) of the USA Internal Revenue Code, to administer an extensive and broadly-based international program that through the raising of funds shall provide grants, scholarships, awards, training supplies and other forms of scientific assistance to qualified individuals and organizations who are pursuing and/or applying knowledge for advancing the sciences and technologies associated with the disciplines embodied by the ISPRS. **Consideration is especially given to support those in developing countries and regions**. Through the public promotion of its philanthropic efforts TIF aims to foster greater international awareness of the benefits that applications of the photogrammetry, remote sensing and spatial information sciences produce for public good, to the well-being of humanity and sustainability of the environment.

The ISPRS Foundation solicits donations and provides grants in 12 Categories of benevolence. TIF is officially designated as a public charity formed for non-profit, educational and scientific purposes and is organized and operated exclusively for benevolent, charitable, scientific, research or educational purposes. TIF does not pay any salaries or travel expenses for its Trustees and it is limited to spend less than 2% of donations for administrative expenses (office operation, publicity, postage, bank fees, etc.).

TIF was established at the initiative of the then ISPRS President Lawrence Fritz, following an ISPRS Strategy meeting held by the ISPRS Council in 1998, in order to provide tax deduction incentives for donors to ISPRS for its charity initiatives. TIF was officially inaugurated at its 1st Board of Trustees meeting on 31 March 2004 while its Bylaws were ratification by ISPRS General Assembly in July 2004. A cocktail event to celebrate the establishment of the Foundation was held during the ISPRS Congress in Istanbul, Turkey in July 2004.

Board meetings have been held in March and July 2004, July 2006, July 2007, July 2010, August 2012, July 2016 and June 2022. Executive meetings are held electronically when required.

Officer Bearers

Chair

John Trinder, Australia	2004-2006
Dieter Fritsch, Germany	2006-2016
Stewart Walker, USA	2016-2022
Mario Hernandez	2023-present

Operations Officer

Lawrence Fritz, USA	2004-2006
John Trinder, Australia	2006-2022
Senthil Kumar, India	2023-present

Finance Officer

Ammatzia Peled, Israel	2004-2006
Lawrence Fritz, USA	2006-2011
Marguerite Madden, USA	2011-2022
Jeff Yates, USA	2023-present

Current Trustees

Mario Hernandez 2023-present
Chair
Fmr United Nations, Switzerland

Senthil Kumar 2023-present
Operations Officer
Indian Institute of Remote Sensing,
Indian Space Research Organisation,
India

Jeff Yates 2023-present
Finance Officer
Dat/EM Systems International, USA

Lena Halounová 2022-present
ISPRS President
Czech Technical University Prague,
Czech Republic

Qihao Weng
Hong Kong Polytechnic University,
Hong Kong

2021-present

Sandra Maria Fonseca da Costa 2020-present
University of Vale do Parabiba
(UNIVAP), Brazil

Michael Gruber 2019-present
Vexel Imaging Austria GmbH, Austria

Shailesh Nayak 2019-present
National Institute of Advanced
Sciences, Indian Institute of Science
Campus, India

Ronald Bisio Trimble, USA	2017-present
Stewart Walker ISPRS Treasurer, photogrammetry4u IIc, USA	2016-present
Lawrie Jordan ESRI, USA	2014-present

Past Trustees

Adigun A. Abiodun, Nigeria	2004-2011
Jürgen Dold, Switzerland	2010-2016
Ian Dowman, UK	2004-2012
Dieter Fritsch, Germany	2006-2016
Lawrence W. Fritz, USA	2004-2013
Lewis Graham, USA	2012-2019
Christian Heipke, Germany	2016-2022
Mario Hernandez, Switzerland	2014-2020
Hans Hess, Switzerland	2004-2011
Chen Jun, China	2012-2016
Terrence J. Keating, USA	2004-2010
Vanessa Lawrence, UK	2010-2014
Deren Li, China	2012-2021
Songnian Li, Canada	2016-2022
Marguerite Madden, USA	2013-2022
Jon P. Mills, UK	2012-2016
Martien Molenaar, The Netherlands	2004-2012
Robert Moses, Canada	2006-2010
Shunji Murai, Japan	2004-2006
Mazlan Othman, Malaysia	2012-2018
Ammatzia Peled, Israel	2004-2006
Michael Renslow, USA	2008-2012
John Trinder, Australia	2004-2022
Peter Woodsford, UK	2004-2008
Akihiro Yamaura, Japan	2004-2012

Compiled by J. Trinder



ISPRS COMMITTEES

The International Policy Advisory Committee (IPAC)

The International Science Advisory Committee (ISAC)

International Industrial Advisory Committee (I^2AC)

The International Committee on Remote Sensing of Environment (ICORSE)

International Committee for Architectural Photogrammetry (CIPA)

The International Policy Advisory Committee (IPAC)

The role of IPAC is to advise Council on issues relevant to Society interaction with intergovernmental organizations, especially those that relate to ISPRS collaborative activities with various elements of the United Nations, the International Council of Science (ICSU), the Committee on Peaceful Uses of Outer Space (COPUOS), the Committee on Earth Observation Satellites (CEOS), and other similar organizations.

IPAC Terms of Reference

- Identify, coordinate and prioritize issues on which ISPRS should have a public policy.
- Provide the ISPRS Council with early warning of relevant international policy issues and recommend spokespersons on these issues.
- Flag legal issues, problems and scenarios which may arise in the context of ISPRS activities in the context to international policy issues.
- Provide advice for and with the ISPRS Council on policy towards international organizations in which ISPRS is represented.
- Collaborate with the ISPRS Council to provide policy advice when requested by international bodies.
- Provide advice to, and coordinate inputs of, ISPRS Commissions and Working Groups on international policy issues.
- Ensure any advocacy stances are fair and in the best interests of all segments of the ISPRS membership.

Term	Chair
2000 - 2008	Ray Harris
2008 - 2012	Rainer Sandau
since 2012	Gunter Schreier

The International Science Advisory Committee (ISAC)

The ISAC has been established to support the Council and the ISPRS General Assembly in identifying and addressing important S&T trends which impact the scope of the ISPRS Commissions and the activities which should be addressed by ISPRS Working Groups. The ISAC is to ensure that ISPRS S&T activities are in proper balance and cover the breadth of the Society's S&T mission.

ISAC Terms of Reference

- Identify and prioritize scientific and technologic (S&T) trends which will impact the S&T activities of the Society and recommend actions to ISPRS Council.
- Facilitate excellence in scientific research and development and the use of proper and appropriate technology by evaluating and refining S&T Resolutions proposed in advance by ISPRS Member Organizations and Commissions for approval by the quadrennial ISPRS General Assembly.
- Collaborate with the ISPRS Council to formulate Resolutions for ISPRS General Assembly approval which will ensure that ISPRS is at the forefront of the S&T in the photogrammetry, remote sensing and spatial information sciences and covers the full breadth of the Society s mission.
- Review proposed Working Groups Terms of Reference with Council and identify S&T gaps and overlaps and recommend corresponding fills and consolidations.
- Evaluate inputs recommended for changing the overall scope and direction of S&T activities in the Society and advise Council accordingly.
- Suggest collaborative S&T activities with other international societies and intergovernmental bodies to foster cooperation on the inter-disciplinary boundaries.
- Propose worthy candidates for recognition and awards.

Term	Chair
2000 - 2012	Armin Grün
2012 - 2022	Ian Dowman
2022 - present	Charles Toth

International Industrial Advisory Committee (I²AC)

I²AC Organization and Terms of Reference

Approved by the I²AC inaugural meeting on 13-Jul-2016

Creation of the I²AC

The I²AC has been established to support the ISPRS Council in its dealings with the Geospatial industry, with the aim of making the ISPRS more relevant to industry.

Recognizing that the ISPRS is a learned society of academics, and also is strong in governmental mapping agencies, it needs to improve its interactions with the rapidly changing and evolving Geospatial industry as the driver of all global geospatial activities and innovations.

The I²AC's creation was by decisions of the ISPRS General Assembly at the 23rd international congress of the ISPRS [Prague, 2016]. It was installed with a membership of 19 businesses, each nominating a person to take one of the seats. Additionally, 1 seat was held for the Chairperson of The ISPRS Foundation TIF.

Membership in the I²AC

The membership of the I²AC is self-perpetuating. Should a person no longer represent a business, then this business will nominate a replacement. Should a business no longer want to hold a seat, then the I²AC will invite a replacement business. Continued inactivity of a seat holder may lead to a dialogue between the Chairperson and the

business-representative to refresh the business-agent, or to vacate that seat.

Chair of the I²AC
It is the membership of the I²AC that votes with a simple majority on its chairperson. Every member can propose a chairperson. Voting will be organized by the outgoing Chairperson in two steps. Each candidate will collect votes in the first round. Then the two persons with the most votes will go through a run-off. The position will be held for 4 years or until the ISPRS Congress following the election, whatever is first. Renewal of the Chairpersonship will be during the [currently quadrennial] ISPRS Congress.

Decision Making

Decisions by the committee will be taken upon a debate within the ranks of the committee, under the guidance of the Chairperson. If appropriate, decisions will get voted on with a simple majority. Each seat votes, each vote holds the same weight. Voting can be via physical presence at a meeting, or by electronic participation.

ISPRS Council and the I²AC
The I²AC interacts with the ISPRS-Council via its Secretary General.

Purpose | Terms of Reference
The I²AC may address any topic it deems of interest, and bring its views to the attention of the point of contact on the ISPRS council. This may be as general as identifying and addressing important *industry trends* which impact the scope of the ISPRS Commissions and activities by ISPRS Working Groups. It may very specifically address the *site choices of upcoming ISPRS-events*.

Broadly, activities of thel²AC are to

- Improve the benefits of its *industrial* sustaining membership program – simply provide industry with a better voice in ISPRS and thereby widen the base of ISPRS industrial sustaining members;
- Advise Council in matters regarding the cooperation of *industrial* sustaining members with the society;
- Enable an improved response to the incredible dynamics of the Geospatial industry;
- Define requirements which should be fulfilled by ISPRS for companies of different sizes to participate in the exhibition of ISPRS events, and in particular in the [currently quadrennial] Congress exhibition;
- Coordinate ideas and policies with other ISPRS committees. [www.isprs.org/structure/committees]

Budget | Costs
There will not be any costs associated with the activities of the I²AC. There is no budget for its activities.

Term	Chair
2015 - 2016	Franz Leberl
2016 - 2022	Christian Hoffmann
2022 - present	Hartmut Rosengarten

The International Committee on Remote Sensing of Environment (ICORSE)

The ICORSE has been established to foster the use of remote sensing to address priority issues of the environment. ICORSE will convene a biennial conference in alternating years with the ISPRS Commission Symposia. The conference will focus on remote sensing of the environment and will bring together scientists, technologists and environmental users of remotely sensed data. In conformance with ISPRS Guidelines, (a) the conference proceedings will be made available to the ISPRS community as part of the continuing series of the International Archives of The Photogrammetry, Remote Sensing and Spatial Information Sciences (IAPRSSIS), and (b) the committee will provide an annual report on the state of remote sensing of environment for publication in ISPRS eBulletin.

ICORSE Terms of Reference

- Identify issues and topics associated with applications and scientific studies of the environment and enlist leading spokespersons to organize sessions and/or workshops for the biannual International Symposium on Remote Sensing of Environment.
- Produce proceedings of the biannual conference and provide an annual written report on the state of remote sensing of environment.
- Propose Resolutions to the ISPRS Council regarding remote sensing of environment for approval by the ISPRS General Assembly.
- Collaborate closely with ISPRS Commissions to enhance remote sensing activities and coordinate event scheduling through mutual agreement.
- Nominate candidates for the Editorial Review Board and encourage submission of worthy papers for publication in the ISPRS Journal of Photogrammetry and Remote Sensing.
- Propose worthy candidates for recognition and awards.

Term	Chair
2000 - 2004	Alexander Tuyahov
2004 - 2014	Per Erik Skrovseth
2014 - 2017	Lawrence Friedl
2017 - 2020	Guo Huadong
2020 - 2021	Yana Gevorgyan
2021 - present	Mary Ann Kutny

International Committee for Architectural Photogrammetry (CIPA)

CIPA is one of the oldest International Scientific Committees of ICOMOS (International Council of Monuments and Sites), jointly founded in 1968 with ISPRS (International Society of Photogrammetry and Remote Sensing) to facilitate the transfer of technology from the measurements sciences into the heritage documentation and recording disciplines.
CIPA originally stood for **Comité International de la Photogrammétrie Architecturale** (English: "Inter-national Committee of Architectural Photogrammetry").
However, this old but well-known name no longer describes the full scope of CIPA activities, so **CIPA Heritage Documentation** was established.

The CIPA mission

Being the ICOMOS / ISPRS Committee for Documentation of Cultural Heritage, CIPA Heritage Documentation is now an international **non-profit** organisation that endeavours to transfer technology from the measurement and visualisation sciences to the disciplines of cultural heritage recording, conservation and documentation. CIPA thus acts as a bridge between the producers of heritage documentation and the users of this information.

CIPA's mission is twofold:

to encourage the development of principles and practices for the recording, documentation and information management for all aspects of cultural heritage;
to support and encourage the development of specialised tools and techniques in support of these activities.

The CIPA structure

CIPA Heritage Documentation is structured with an Executive Board, various Sustaining Members and some Task Groups related to the diverse areas of interest of the heritage community:

- recording, documentation and information management;
- cultural heritage information systems;
- digital image processing;
- surveying methods;
- archaeological objects, monuments, sites and landscapes.

Term	President
1968 - 1973	Maurice Carbonnel
1973 - 1977	Maurice Carbonnel
1977 - 1981	Maurice Carbonnel
1981 - 1985	Maurice Carbonnel
1985 - 1989	Maurice Carbonnel
1989 - 1993	Mario Fondelli
1993 - 1997	John Badekas
1997 - 2003	Peter Waldhäusl
2003 - 2007	Petros Patias
2007 - 2010	Cliff Ogleby
2010 - 2014	Mario Santana Quintero
2014 - 2019	Andreas Georgopoulos
2019 - present	Stratos Stylianidis



LEGISLATIVE DOCUMENTS

Statutes

Bylaws

ISPRS Awards Policy

Guidelines for Candidates for Members of Council

Guidelines for Members Planning to Host an ISPRS Congress

ISPRS Financial Policy including ToR for Financial Commission

ISPRS Spending Policy

Strategic Plan for ISPRS Publications

ISPRS Pre-Publication Policy

Guidelines for Hosting a Technical Commission

Guidelines for Conducting a Working Group

Guidelines for Planning an ISPRS Symposia

Terms of Reference for Sustaining Members

ISPRS Individual Membership Policy

Statutes

STATUTE I - Name and Mission

The International Society for Photogrammetry and Remote Sensing (hereinafter referred to as the Society) which was founded in Vienna, Austria in 1910 as 'Internationale Gesellschaft für Photogrammetrie', is a non-governmental international organization, devoted to the development of international cooperation for the advancement of knowledge, research, development, education and training in the photogrammetry, remote sensing and spatial information sciences, their integration and applications, to contribute to the well-being of humanity and the sustainability of the environment.

STATUTE II - Definitions

Photogrammetry is the science and technology of extracting reliable three-dimensional geometric and thematic information, often over time, of objects and scenes from image and range data.

Remote sensing is the science and technology of capturing, processing and analysing imagery, in conjunction with other physical data of the Earth and the planets, from sensors in space, in the air and on the ground.

Spatial Information Science is concerned with the modelling, storage, processing, retrieval, application and communication of information with a spatial reference.

STATUTE III - Qualifications

The Society pursues its aims without any discrimination on grounds of politics, nationality, religion, race, or gender

STATUTE IV - Activities

To achieve its aims, the Society shall:

(a) facilitate excellence in research and development and the proper use of appropriate technology in the photogrammetry, remote sensing and spatial information sciences, as well as the development of standards;

(b) initiate and coordinate research in the fields of the photogrammetry, remote sensing and spatial information sciences by creating Technical Commissions and Working Groups concerned with pertinent aspects of the photogrammetry, remote sensing and spatial information sciences;

(c) convene international congresses, symposia and other meetings, with lectures, communications, discussions, and as appropriate, tutorials, exhibitions, technical visits, and social events;

(d) ensure wide international circulation of the results of research and the records of discussion by the publication of The International Archives and Annals of the Photogrammetry, Remote Sensing and Spatial Information Sciences, which shall form the record of Congresses and Symposia, and other scientific meetings of the Society;

(e) publish and circulate international journals, a bulletin, and other communications relevant to the interest of the Society and the community at large;

(f) stimulate the formation of national and regional Societies of the photogrammetry, remote sensing and spatial information sciences and promote exchanges between such Societies;

(g) encourage interaction of the Society and its members with the community at large, including the publication and exchange of scientific papers and journals by, and among, its national and regional Societies;

(h) encourage recognition and administer awards to honor the achievements of individuals or groups.

(i) represent the photogrammetry, remote sensing and spatial information sciences in relevant international forums;

(j) promote and facilitate education, training, and technology transfer of the photogrammetry, remote sensing and spatial information sciences;

(k) promote other appropriate actions to enhance the Society's mission.

STATUTE V - Cooperation with Other International Organizations

The Society shall cooperate with:

(a) international and regional institutions or organizations concerned with photogrammetry, remote sensing, computer vision, spatial information sciences, land survey, geodesy, cartography, and other relevant disciplines;

(b) inter-governmental bodies of the United Nations and other relevant, international policy-making organizations.

STATUTE VI - Membership

The types of membership in the Society are:

- Ordinary Members
- Associate Members
- Regional Members
- Sustaining Members
- Honorary Members
- Fellows
- Individual Members

1. An **Ordinary Member** shall be the single organization of a country, or a geographic region thereof, having an independent budget, which should represent the whole community of photogrammetry, remote sensing and spatial information specialists in the country or region.

(a) An Ordinary Member shall be responsible to the Society for the proper discharge of all the duties of membership including specifically:

- participating in the scientific work of the Society, including active participation in Working Groups and Commissions;
- prompt payment of Membership subscription fee;
- actively participating in the decisions of the General Assembly;
- striving to provide equitable national representation for all photogrammetric, remote sensing and spatial information specialists in its country or region;
- serving as national focal point for distribution of ISPRS information to their members;
- submitting periodic reports and news for publication in the Society's bulletin;
- demonstrating active representation of the whole of their membership in their country or region;
- encouraging interdisciplinary cooperation in scientific and technologic activities, and establishing links with relevant groups;
- forming journals and registering them with the Secretary General.

(b) Normally, the Ordinary Member organization of a country shall be a national, formally constituted, representational Society. In the absence of such a Society the Ordinary Member may be:

- an association of societies, each having the advancement of the photogrammetry, remote sensing and spatial information sciences among its principal objectives;
- the principal Scientific Academy of a country or its National Research Council;
- or failing these, any other institution or association of institutions, whether governmental or non-governmental, concerned with the sciences of photogrammetry, remote sensing and spatial information.

(c) Different categories of Ordinary Members shall be established to reflect the use of the photogrammetry, remote sensing and spatial information sciences, and the number of specialists in the organization.

2. An **Associate Member** shall be an organization which represents a community of photogrammetrists and/or remote sensing specialists and/or spatial information specialists in a country, and which has a strong interest in participating in the Society's affairs, and which is not represented by the Ordinary Member organization of the country.
   An Associate Member shall be responsible to the Society for the proper discharge of all the duties of membership including specifically:

- participating in the scientific work of the Society, including active participation in Working Groups and Commissions;
- prompt payment of Membership subscription fee;
- promoting ISPRS activities;
- participating in the discussions of the General Assembly;
- serving as a focal point for distribution of ISPRS information to their members;
- submitting periodic reports and news for publication in the Society's bulletin;
- stimulating the establishment of appropriate means of communication.

3. A **Regional Member** shall be a multi-national association of photogrammetry and/or remote sensing and/or spatial information science organizations established for the purpose of considering questions of common interest, promoting regional cooperation, convening regional conferences, etc.
4. **Sustaining Members** contribute to the financial support of the Society and shall be individuals, organizations, institutions, or agencies who provide hardware, software, systems and/or services, in the fields of photogrammetry and/or remote sensing and/or spatial information, and/or who are engaged in research and/or education and training.
5. **Honorary Members**. In recognition of distinguished services to the ISPRS and its aims, an individual may be elected an Honorary Member of the Society.
6. **Fellows**. In recognition of sustained, excellent service to the ISPRS and its aims, an individual may be elected as a Fellow of the Society.
7. **Individual Members** are persons with a qualification or studying for a qualification in the fields of photogrammetry and/or remote sensing and/or spatial information, who wish to be involved with the activities and mission of the Society.

STATUTE VII - Organization and Administration

The direction and management of the Society, including the conduct of its technical and scientific program, shall be undertaken through the following components: the Congress, the General Assembly, the Council, the Financial Commission, the Technical Commissions and the Committees of the Society.

STATUTE VIII - Officers

1. The Officers of the Society shall be the President of the Society, the other Members of the Council and the Presidents and Vice-Presidents of Technical Commissions.
2. The Officers shall serve from the termination of the Congress at which they are elected or appointed until the completion of the next ensuing Congress.

STATUTE IX - Congress

1. The Congress shall consist of all photogrammetry, remote sensing and spatial information specialists

in attendance.
2. The Congress shall normally meet every four years.
3. The Congress shall be convened in plenary session at least twice during the course of each Congress.

STATUTE X - General Assembly

1. The General Assembly shall be the supreme authority of the Society for all decisions. It shall determine the general policy of the Society.
2. The General Assembly shall consist of the Delegates appointed by the Ordinary Members to represent them, each Ordinary Member being represented by one Delegate.
3. Delegates, Members of Council, Members of the Financial Commission, Honorary Members of the Society, the Regional Representatives, the President of the Student Consortium, one Representative of the Associate Members, the Regional Members and the Sustaining Members, the Chairpersons of the permanent Committees, and two Advisors per Delegate shall have the right to attend the meetings of the General Assembly.

STATUTE XI - Council

1. The Council shall consist of six individuals:
   - The President of the Society
   - The Vice-President
   - The Past President
   - The Secretary General
   - The Treasurer
   - The Congress Director

2. The General Assembly may appoint Regional Representatives, from separate regions, to assist Council to coordinate activities in regions not already represented on the Council. The Regional Representatives shall be invited to attend Council Meetings as appropriate.
3. The Council shall conduct the affairs of the Society in the interval between meetings of the General Assembly in accordance with the Statutes and Bylaws and with the decisions and directives of the General Assembly and of Congress.
4. The Council shall be answerable to the General Assembly for management of Society affairs and shall guide the conduct of the General Assembly.
5. The Council shall assist the President to coordinate and guide the activities of the Technical Commissions.
6. Between meetings of the General Assembly, the Council may consult Members by correspondence or otherwise.
7. The responsibilities of the members of Council are defined in the Bylaws.

STATUTE XII - Headquarters

The headquarters of the Society shall be designated by the Council.

STATUTE XIII - Technical Commissions

1. The scientific work of the Society shall be the responsibility of its Technical Commissions and shall be guided by Resolutions approved by the General Assembly.
2. Responsibility for the work of each Technical Commission during the interval between two successive Congresses shall be entrusted by the General Assembly to one of the Ordinary Members or to a number of Ordinary Members who have agreed to collaborate.
3. The work of each Commission should be conducted by the Commission Board consisting of:
   - The Commission President
   - The Commission Vice-President
   - The Commission Secretary/ies
   - The Working Group Chairpersons
   - Other officers as appointed

STATUTE XIV - Financial Commission

1. At each Congress the General Assembly shall elect a Chairperson and two members of a Financial Commission.
2. The role of the Financial Commission shall be advisory and consultative. It shall examine expenditure of all kinds incurred by the Society and suggest to the General Assembly broad lines of financial policy for the Society, having regard to its scientific responsibilities.
3. Between Congresses, the Financial Commission shall report directly to the Council through the Secretary General at least once a year after the annual balance sheet has been prepared and examined. It shall be present, in an advisory capacity, at meetings of the General Assembly.

STATUTE XV - Finances

1. Each Ordinary Member and Associate Member shall pay annually the subscription fee assigned to its category. The amount of subscription fee for each category shall be determined by the General Assembly and may be altered by the General Assembly only at one of its ordinary meetings, held during the course of a Congress.
2. Regional Members and Sustaining Members shall pay an annual subscription fee established by Council.
3. The ISPRS Foundation shall be guided by the Society and maintained as an independent entity, devoted solely to support philanthropic activities of the Society.

STATUTE XVI - Voting

1. In plenary sessions of the Congress, decisions shall be taken by a show of hands and by a simple majority of votes passed.
2. Voting in the General Assembly shall be conducted as follows:

(a) Only Delegates shall have the right to vote.

(b) No Delegate shall represent or vote for any Ordinary Member other than his/her own.
(c) Voting shall not be by proxy.
(d) If the President or any Delegate so requests, the vote shall be taken by secret ballot.
(e) Each Delegate shall have a number of votes equal to the category of the Ordinary Member which he/she represents.
(f) The adoption of Resolutions concerning admission of new Ordinary Members, Associate Members or Regional Members, cancellation of membership, alteration to the Statutes or the Bylaws, dissolution of the Society or its amalgamation with another international organization, shall require at least three-quarters of the votes cast to be in favor of the Resolution. Decision on all other matters shall be approved by a simple majority of the votes cast.
(g) Associate Members, Regional Members and Sustaining Members shall have observer status in the General Assembly with no voting rights, but with full discussion privileges.

3. Recourse to a vote by correspondence shall only be permitted in exceptional cases. This procedure shall be taken only when the Council considers it necessary to reach a decision without awaiting a meeting of the General Assembly.
4. Recourse to a remote vote or a hybrid vote, i.e. a mixture of in-person and remote vote, in the General Assembly shall only be permitted in exceptional cases. This procedure shall be taken only when the Council considers it necessary to reach a decision without an in-person-only General Assembly.

STATUTE XVII - Regulations and Directives

The Council shall be entitled to issue provisional Regulations and Directives to provide guidance in transitory situations, and such shall be valid until considered at the next Congress.

STATUTE XVIII - Languages

1. The official languages of the Society shall be English, French and German.
2. The English Text of the present Statutes and Bylaws shall be considered to be the definitive version.

STATUTE XIX - Dissolution and Amalgamation

Only the General Assembly may approve a decision on dissolution of the Society or amalgamation of the Society with another international body. An extraordinary meeting must be specially called for that sole purpose. For such an extraordinary meeting three clear calendar months' notice shall be given to all Ordinary Members in writing, requesting them to send Delegates thereto.

STATUTE XX - Amendments to Statutes and Bylaws

1. Only the General Assembly has authority to amend the Statutes and Bylaws.
2. The Statutes may be amended under the following conditions:

(a) An amendment may be formulated in writing by an Ordinary Member and addressed to the Secretary General not less than 10 months prior to the date fixed for the meeting of the General Assembly at which it is to be considered. Such an amendment shall be supported by at least one other Ordinary Member.
(b) Amendments may be formulated by the Council or a committee appointed by the Council. In such a case, there shall be no necessity for supporting these amendments by an Ordinary Member.
(c) The Secretary General shall inform all Ordinary Members on the proposed amendments at least six months prior to the date fixed for the meeting of the General Assembly at which they are to be considered.

3. The Bylaws may be amended under the following conditions:

(a) At least 48 hours must be given Delegates prior to discussing amendments to the Society Bylaws.
(b) No Bylaw that contravenes the Statutes shall be valid.

Original Statutes adopted by the General Assembly of the 11th Congress, July 1968, at Lausanne, Switzerland.
Statutes amended by the General Assembly of the 12th Congress, August 1972, at Ottawa, Canada.
Statutes amended by the General Assembly of the 14th Congress, July 1980, at Hamburg, Federal Republic of Germany.
Statutes amended by the General Assembly of the 15th Congress, June 1984, at Rio de Janeiro, Brazil.
Statutes amended by the General Assembly of the 16th Congress, July 1988, at Kyoto Japan.
Statutes amended by the General Assembly of the 18th Congress, July 1996, at Vienna, Austria.
Statutes amended by the General Assembly of the 19th Congress, July 2000, at Amsterdam, The Netherlands.
Statutes amended by the General Assembly of the 20th Congress, July 2004, at Istanbul, Turkey.
Statutes amended by the General Assembly of the 21st Congress, July 2008, at Beijing, China.
Statutes amended by the General Assembly of the 22nd Congress, August 2012, at Melbourne, Australia.
Statutes amended by the General Assembly of the 23rd Congress, July 2016, at Prague, Czech Republic.
Statutes amended by postal vote, October 2019.
Statutes amended by the General Assembly of the 24th Congress, June 2022, at Nice, France.
President: Christian Heipke (2016-2022) Secretary General: Lena Halounová (2016-2022)

Bylaws

BYLAW I - Name and Mission

The short title of the International Society for Photogrammetry and Remote Sensing shall be ISPRS with the motto "Information from Imagery" and these initials and motto shall be used on all Society publications and on flags, logos, stationery, etc. of the Society and its subordinate bodies.

BYLAW II - Definitions

The Society's scientific interests shall include the photogrammetry, remote sensing, and spatial information sciences and related disciplines.

Photogrammetry is employed for image-based three-dimensional measurements in mapping, engineering, heritage recording, forensic analysis, robotics, driver assistance systems, medical applications, computer gaming and other fields, where it provides geometric and semantic object information for populating spatial databases and for creating virtual reality scenes with real-life textured models.

Remotely sensed observations of the Earth from airborne and space-borne sensors, in synergy with in-situ and hand-held measurements, provide the basis for mapping human and natural activities; for physical and empirically based process monitoring; for assessing and mitigating disasters; for identifying and assessing non-renewable resources; for monitoring temporal changes in weather, land and sea cover; and for many other applications. Spatial and semantic descriptions of objects, features and processes are derived from one-, two- and three-dimensional (3D) measurements, and the interpretation of their electromagnetic and acoustic signal attributes using active and passive optical, thermal and microwave instruments and sounding devices.

Employing concepts and methods from spatial information science is an essential step in the process of obtaining useful information from images, since typically the description and location of objects and processes, as well as temporal relationships between these physical objects, need to be integrated with socio-economic and other data for analysis, simulation, prediction and visualisation purposes. Spatial information science deals with, for example, spatial data mining, interoperability and data integration, visual analytics, spatio-temporal perspectives on big data, visualisation and generalisation, the Internet of Things, social networks, and human-computer interaction. It is applied in transportation planning and management, urban and infrastructure planning, land and resource management, smart cities, disaster management, environmental monitoring, public health, security, and in understanding many other natural and anthropogenic processes and phenomena.

BYLAW III - Qualifications

The Society subscribes to the declaration adopted in 1958 by the 8th General Assembly of the International Council for Science (ICSU), concerning non-discrimination on the basis of politics, nationality, religion, race, or gender.

BYLAW IV - Activities

In addition to the activities in Statute IV, the Society may carry out all other activities incidental or conducive to the Society's aims, provided such acts do not contravene the Statutes or Bylaws of the Society or the laws of the country in which they are done, or the general principles to which the Society subscribes.

BYLAW V - Cooperation with Other International Organizations

In its policy of cooperation, the Society shall support consolidation of international societies committed to the promotion of the united profession of photogrammetry, remote sensing, spatial information sciences, cartography, geodesy, and surveying, as well as affiliation with other relevant international organizations.

BYLAW VI - Membership

1. Ordinary Members

(a) An application for Ordinary Membership in the Society shall be addressed to the Secretary General and be accompanied by a description of the photogrammetric, remote sensing and spatial information science activities in the country or geographic region thereof, having an independent budget, and of the nature of the organization making application, including specifically its statutes, aims, standing in the country, relations with other organizations concerned with the photogrammetry, remote sensing and spatial information sciences, and its administrative and financial structure.

(b) The application shall state the category in which Ordinary Membership is requested. The category chosen should be broadly related to the number of photogrammetrists and/or remote sensing and/or spatial information specialists represented by the applicant, and the uses made of the photogrammetry, remote sensing and spatial information sciences in the country concerned. The table below indicates the category to which an Ordinary Member should belong.

Number of Active Specialists			Category
less than 26			1
26	to	50	2
51	to	150	3
151	to	250	4

251	to	400	5
401	to	600	6
601	to	800	7
more than 800			8

(c) The Council shall review each application received and if it estimates that the proposed category is inappropriate, the Secretary General shall return the application. The Secretary General shall report every application received to all Members and shall inform them of the opinion of the Council thereon.

(d) The admission of an Ordinary Member shall be decided by vote of the General Assembly, or with approval of Council, by a vote by correspondence. The Secretary General shall declare the result of the vote to all Members and to the organization seeking admission.

(e) An Ordinary Member may at any time raise its category; it may not lower it without the previous assent of the General Assembly.

(f) To retain its good standing as Ordinary Member requires fulfillment of its responsibilities outlined in the Statutes.

(g) The cancellation of Ordinary Membership may be declared by the General Assembly:

- in the case of action manifestly contrary to the interests and objectives of the Society;

- in the case of repeated default in the payment of subscription fees in spite of a demand for payment which the Treasurer shall send to the defaulting Ordinary Member at least six months prior to the meeting of the General Assembly.

(h) An Ordinary Member may resign from the Society by a declaration in writing addressed to the Secretary General. The Council shall act upon the declaration and shall inform all Members as quickly as possible.

(i) When an Ordinary Member leaves the Society, whether by resignation or by exclusion, it shall thereby forfeit all rights in the Society.

2. Associate Members

(a) An application for Associate Membership in the Society shall be addressed to the Secretary General and be accompanied by a description of the photogrammetry, remote sensing and spatial information science activities in the country and of the nature of the organization making application, including specifically its statutes, aims, standing in the country, relations with other organizations concerned with photogrammetry, and/or remote sensing, and/or spatial information sciences, and its administrative and financial structure.

(b) The application shall state the category in which Associate Membership is requested. The category chosen should be broadly related to the number of photogrammetrists and/or remote sensing and/or spatial information specialists represented by the applicant, and the uses made of the photogrammetry, remote sensing and spatial information sciences in the country concerned. The table below indicates the category to which an Associate Member should belong.

Number of Active Specialists	Category
less than 51	1
51 to 250	2
251 to 600	3
more than 600	4

(c) The Council shall review each application received and shall consult with the Ordinary Member of the country, and the Secretary General shall report every application received to all Members and shall inform them of the opinion of the Council thereon.

(d) The admission of an Associate Member shall be decided by vote of the General Assembly, or with approval of Council, by a vote by correspondence. The Secretary General shall declare the result of the vote to all Members and to the organization seeking admission.

(e) An Associate Member can upgrade its membership to Ordinary Member:

- at any time by uniting or cooperating with the Ordinary Member of its country, or

- by vote of the General Assembly, after consultation by Council with the Ordinary Member and demonstration by appropriate documentation, of more active participation in areas of study of ISPRS and larger representation of the whole community of specialists in the country, than the current Ordinary Member. The new category will be determined according to Bylaw VI.1.(b).

(f) The cancellation of Associate Membership may be declared by the General Assembly:

in the case of action manifestly contrary to the interests and objectives of the Society;

- in the case of repeated default in the payment of subscription fees in spite of a demand for payment which the Treasurer shall send to the defaulting Associate Member at least six months prior to the meeting of the General Assembly.

(g) An Associate Member may resign from the Society by a declaration in writing, addressed to the Secretary General. The Council shall act upon the declaration and shall inform all Members as quickly as possible.

3. Regional Members

(a) An application for Regional Membership shall be submitted to the Secretary General and shall

include a full listing of the associated organizations, the charter of the Regional Member, and names of current officers.

(b) The Council shall assure that the charter of the Regional Member conforms to the Statutes and Bylaws of the Society. The Secretary General shall report every application received to all Members and shall inform them of the opinion of the Council.

(c) The admission of Regional Members shall be decided by vote of the General Assembly, or with approval of Council, by a vote by correspondence.

(d) The cancellation of Regional Membership may be declared by the General Assembly:
in the case of action manifestly contrary to the interests and objectives of the Society;
in the case of repeated default in the payment of subscription fees in spite of a demand for payment which the
Treasurer shall send to the defaulting Regional Member at least six months prior to the meeting of the General Assembly.

(e) A Regional Member may resign from the Society by a declaration in writing addressed to the Secretary General. The Council shall act upon the declaration and shall inform all Members as quickly as possible.

4. Sustaining Members

(a) An application for Sustaining Membership shall be addressed in writing to the Secretary General and shall include a full statement of the applicant's role in the fields of photogrammetry and/or remote sensing and/or spatial information sciences.

(b) Council shall consider each application and make the final decision on admission of an applicant.

(c) Sustaining Members may appoint a committee called the International Industry Advisory Committee (IIAC) to represent the exhibitors in the planning and operation of scientific and technical exhibits sponsored by the Society. The recommendations of the IIAC are advisory to the Congress Director.

(d) The IIAC Chair of the Society shall convene an IIAC meeting at least once during each Congress.

(e) Council shall have the authority to cancel Sustaining Membership:
- in the case of action manifestly contrary to the interests and objectives of the Society;
- in the case of repeated default in payment of subscription fees.

(f) A Sustaining Member may resign from the Society by a declaration in writing, addressed to the Secretary General. The Council shall act upon the declaration and shall inform all Members as quickly as possible.

5. Honorary Members

(a) There may not be more than ten living Honorary Members of the Society at any given time.

(b) Honorary Members are elected by the Congress in Plenary Session. A maximum of two Honorary Members may be elected at any Congress.

(c) Candidates for Honorary Membership may be proposed by any of the Member organizations of the Society. Proposals shall summarize the accomplishments of the candidate and be submitted to the Secretary General at least six months before the next Congress.

(d) Honorary Members shall be nominated by a seven-member committee appointed by the Council. The committee shall include three Honorary Members, three members from the three previous Councils plus one current Council member and shall be chaired by the most recent Honorary Member.

(e) Honorary Members shall have the right to attend all meetings of the Society and its constituent parts except for Council meetings. They shall not be required to pay registration fees for any Society function.

6. Fellows

(a) Candidates shall be nominated by any Member of the Society or by Council. The nomination shall be considered by the Fellows Committee, and recommendations for the award of Fellowship shall be made to the General Assembly which will elect the Fellows.

(b) The Fellows Committee shall be composed of five members from Fellows selected by Council (2), an Honorary Member selected by the Honorary Members (1), and individuals elected by the General Assembly (2). The Committee shall select a Chair from amongst their number. Members of the Fellows Committee are ineligible for nomination.

(c) The maximum number of living Fellows at any one time shall be 40, excluding those Fellows subsequently elected as Honorary Members. Up to five Fellows may be elected in any one General Assembly.

7. Individual Members

(a) An application for Individual Membership shall be addressed in writing to the Secretary General and shall include a full statement of the applicant's role in the fields of photogrammetry and/or remote sensing and/or spatial information.

(b) Council shall consider each application and make the final decision on admission of an applicant.

(c) Council shall have the authority to cancel Individual Membership in case of action manifestly contrary to the interests and objectives of the Society.

BYLAW VII - Organization and Administration

1. The Chairs of the Permanent Committees, the Chair of the Financial Commission, the President of the Student Consortium, the Editors in Chief of the ISPRS Journals, the Book Series Editor, the ISPRS Webmaster, the Editor of the eBulletin and the Regional Representatives shall comprise the Advisory Board. The Advisory Board shall meet with Council at least once during the inter-Congress period.
2. Committees may be appointed by the Council to report on special topics or to address issues in support of Council. The membership of a Committee shall consist of a Chairperson appointed by the President. Additional members shall be selected by the Chairperson with the approval of the President. International representation among Committee Members shall be encouraged. A committee shall be instituted when the Terms of Reference for the Committee have been approved by Council. The term of an Ad-Hoc Committee shall coincide with the inter-congress period. The term of a Permanent Committee shall be indefinite and may only be dissolved at the end of an inter-Congress period by consensus of the Council. The Chairperson shall prepare a report on Committee activities for presentation to each regular meeting of the General Assembly.
   Permanent Committees of the Society are:
   - International Committee on Remote Sensing of the Environment (ICORSE)
   - CIPA Heritage Documentation (CIPA)
   - International Policy Advisory Committee (IPAC)
   - International Science Advisory Committee (ISAC)
   - International Industry Advisory Committee (IIAC)
3. The Student Consortium (SC) is the organization of the students within the ISPRS community. The SC is governed by its own Statutes. The SC is directly connected to the ISPRS Council, and a three-person SC Advisory Committee, appointed by the ISPRS Council, serves the SC by providing assistance for SC business.

BYLAW VIII - Officers

1. The President of the Society, the Vice-President, the Secretary General and the Treasurer shall be elected by the General Assembly. Ordinary Members may submit nominations for members of Council to the Secretary General not later than four months prior to the meeting of the General Assembly at the time of a Congress. The Council will review the recommendations and submit nominations to the General Assembly.
2. A person shall hold the office of President only for one term.
3. In order to assist continuity, the outgoing President shall be appointed the incoming Past President as of right without election. Should he/she decline the office, it shall be filled by election by the General Assembly and the position shall be called Vice President.
4. The Congress Director shall be proposed by the Ordinary Member organizing the Congress and shall be confirmed by the General Assembly.
5. The Past President, who has been appointed to that office without election, and the Congress Director may be of any nationality. Of the remaining members of the Council, no two shall be of the same nationality. In this context, nationality shall be that of the Ordinary Member which nominates the candidate.
6. No more than three Council members may remain on Council from one inter-Congress period to the next.
7. Other than in exceptional cases, no person shall serve on Council for more than three terms.
8. The Council shall fill, by co-option, all vacancies occurring through the death or long-term disability of any of its members other than the President. When filling the post of Treasurer by co-option, the Council shall first consult all Ordinary Members, by correspondence or otherwise, and shall take account of the views expressed.
9. No member of Council shall be a member of the Financial Commission.
10. The Presidents and Vice-Presidents of Technical Commissions shall be nominated by the Ordinary Members seeking responsibility for Technical Commissions. The General Assembly selecting the Ordinary Member responsible for a Commission shall confirm the Commission President and the Vice-President. In case of necessity, a Commission President may be confirmed by the Council.

BYLAW IX - Congress

1. The Congress site shall be selected by the General Assembly from proposals made by Ordinary Members to the Secretary General not later than four months prior to the meeting of the General Assembly at which the decision is to be taken. Such proposals shall include the dates, physical facilities, preliminary financial plans, and the name of the proposed Congress Director.
2. The Ordinary Member organizing the Congress shall sign a contract with the Society and be responsible for ensuring that adequate provisions are made for the Congress. The Ordinary Member shall obtain the necessary financial support for this purpose. The Ordinary Member shall be responsible for financing the Congress, including the preparation and publication of *The International Archives* and the *ISPRS Annals of the Photogrammetry, Remote Sensing and Spatial Information Sciences* relating to the Congress. For

this purpose, it shall have the cooperation of the Technical Commissions and of the Council.

3. The activities of the Congress shall be prepared and carried through by a Congress Committee chaired by the Congress Director. All other members of the Congress Committee shall be appointed by the Ordinary Member organizing the Congress. The Congress Committee shall have the responsibility for organizing the Congress on the administrative and financial levels.
4. The scientific-technical programme shall be supported by an International Programme Committee, chaired by a person of high scientific reputation appointed by Council. The other members of the International Programme Committee comprise the Congress Director, the Presidents and Vice-Presidents of the Technical Commissions and further qualified individuals as deemed necessary.
5. Only persons in the following categories may take part in the activities of the Congress:

(a) Persons who are associated with a Member and have paid the Congress fee;
(b) Honorary Members of the Society;
(c) Persons specially invited by the President, either on account of their personal standing or as representatives of other scientific organizations. They shall not be required to pay the Congress fee;
(d) Persons who have received the general invitation and have paid the Congress fee.

6. Congress meeting in plenary session shall:

(a) review the decisions of the General Assembly;
(b) witness the award of Medals and other distinctions of the Society;
(c) elect the Honorary Members of the Society.

7. The Technical Commissions shall meet during the Congress for the purpose of:

(a) reports by the Presidents on activities of the Commissions during the inter-congress period;
(b) presentation of technical papers, tutorials and/or poster sessions on topics covered by the Commissions, in programmed technical sessions determined by Commission Presidents and the Council;
(c) formulation of Resolutions.

8. Congress considerations for students.

(a) Fees for students should be set at a level which will enable a good attendance by students and should be no more than 50% in general of the early registration fee.
(b) The Congress should include appropriate activities proposed by the Student Consortium. These could include a Youth Forum during the Congress and a `Summer School' before or after the Congress.

Commission I: Sensor systems

Commission I is concerned with the design, construction, characterization, calibration and use of imaging sensors, sensor systems and sensor networks for photogrammetry, remote sensing and spatial information science, such as air- and space-borne digital cameras (frame and video) and laser scanners, and thermal, hyperspectral and radar sensors. It investigates the different platforms for data acquisition, including, but not restricted to, UAS, mobile mapping systems, aircraft, satellites including small satellites and satellite constellations. Commission I also cooperates with the related industry sector.

Commission II: Photogrammetry

Commission II deals with the theory and methodology for extracting and analyzing spatio-temporal information of objects from terrestrial, aerial and satellite images, image sequences and point clouds, by using approaches from photogrammetry, image analysis and computer vision, with emphasis on accurate and reliable geometric information. Applications include image-based 3D measurement in geospatial data acquisition, extra-terrestrial mapping, engineering and industrial metrology, heritage recording, forensic analysis, robotics, driver assistance systems, surveillance, medical applications, gaming and movie industries, and other fields. Commission II cooperates with international societies in computer and machine vision and related industry and is the point of contact for CIPA.

Commission III: Remote sensing

Commission III is concerned with research, development, investigation and operational use of methods and systems for the analysis of remotely sensed observations of the Earth from air- and space-borne sensors, in synergy with in-situ and hand-held measurements. Examples include physical modeling of electromagnetic radiation, the analysis of spectral signatures, image classification, data fusion and pattern recognition. Applications dealt with in Commission III include environmental monitoring for sustainable development and global change; mapping of human and natural activities including land cover, land use and biodiversity; physical and empirically based process monitoring; assessment and mitigation of disasters; identification and assessment of renewable and non-renewable resources; and the monitoring of temporal changes in weather and in land and sea cover. Commission III cooperates intensively with national Space Agencies and is the point of contact for ICORSE.

Commission IV: Spatial Information Science

Commission IV deals with theoretical and practical aspects of modeling, management, analysis, dissemination and visualization of geospatial data, including interoperability, web services and geospatial data infrastructure. It is also concerned with applications and operational use of spatio-temporal information in areas such as environmental monitoring, disaster management, mobility, 3D city models, Building Information Systems (BIM), social media,

location-based services and health. Commission IV also provides links to international bodies and to National Mapping and Cadastre Agencies.

Commission V: Education and Outreach

Commission V deals with education, training, capacity building and outreach in all areas related to ISPRS. In carrying out its tasks, Commission V cooperates intensively with Commissions I - IV and with other international geospatial societies.

1. An Ordinary Member (or Ordinary Members) seeking responsibility for a Technical Commission shall submit to the Secretary General an application which includes the activities and the names of the proposed Commission President and Commission Vice-President. Ordinary Members are encouraged to consider proposing a Commission Vice-President from another Ordinary Member and seek the support of this other Ordinary Member for the application to host a Commission. This application shall be submitted at least four months prior to the commencement date of the Congress.
2. In choosing the Ordinary Member or group of Ordinary Members to be entrusted with the responsibility for the work of a Commission, the General Assembly shall take into consideration all relevant factors, including in particular:
   - the various Ordinary Members willing to undertake the responsibility;
   - the scientific and technical ability available to each candidate;
   - the professional standing and ability of the persons proposed as Commission President and Commission Vice-President;
   - the ability and willingness of each Ordinary Member and other organizations in its country to support a Commission;
   - the program of Commission activities proposed by the Ordinary Members and in particular the Working Groups, their chairpersons and the events contemplated.
3. The Ordinary Member (or Ordinary Members) entrusted with a Technical Commission shall assume responsibility for the technical and financial management of the Commission. They shall prepare the Commission and Working Group reports and be responsible for production of the proceedings of its Symposium for publication in the Archives and/or Annals.
4. A Technical Commission shall be autonomous in scientific matters but the Commission President shall keep the President of the Society and the Council fully and promptly informed of all its activities and the progress of its work. The Presidents of Commissions shall meet with the Council as and when necessary to coordinate the work of the Commissions.
5. Commissions I, II, III and IV are expected to organize an International Symposium in the period between two Congresses. Commission V is encouraged to cooperate with the other Commissions and organize events during their Symposia and/or during other ISPRS events. Before arranging an International Symposium, the Commission shall obtain the consent of the Council. Ordinary Members organizing an International Symposium shall sign a contract with the Society and be responsible for ensuring that adequate provisions are made for the Symposium. Such Symposia shall be devoted to the field of the Commission and preparation for the ensuing Congress. Two or more Technical Commissions may collaborate to organize a joint Symposium as a single event. The Symposium should include appropriate activities designed to attract students and the fee for students should be set at a level which will enable a good attendance by students and should be no more than 50% in general of the early registration fee.
6. The Commission President, in accordance with the Commission Vice-President, shall have the right to invite a limited but sufficient number of persons to join the Commission Board for a particular field of interest to the Commission. Board members shall be chosen entirely at the President's own discretion, for the special knowledge or facilities they may possess which will enable them to give the assistance desired. They may be invited from any country and international representation shall be encouraged.
7. Each Ordinary Member and Associate Member shall be entitled to appoint one Correspondent to each Commission. It may change its Correspondent or appoint a substitute at any time.
8. The Commission Board shall review the Resolutions approved by the Congress and identify subjects requiring detailed study, trials or experimental research. It shall establish Working Groups to undertake these investigations and it shall ensure that all measures outlined in the Resolutions are covered by Working Group activities. If, in this connection, important divergences of opinion should arise within or between Commissions, the Council shall determine the course of action. The terms of reference and duration of the Working Groups shall be clearly defined and must be approved by Council.
9. The Working Group shall consist of:
   - the Chairperson of the Working Group;
   - optionally one or two Co-Chairpersons and one Working Group secretary;
   - a group of specialists chosen by the Chairperson, not in consideration of country but of qualification and commitment;

- other interested, competent specialists who have indicated a commitment to contribute and participate.

10. A Working Group may be established to study a subject pertinent to the fields of more than one Commission. It shall then be called an Inter-Commission Working Group. The President of the initiating Commission shall notify the Council of the intention and reach agreement with the Presidents of other Commissions concerned. The Council shall pronounce on the advisability of setting up such an Inter-Commission Working Group and designate the Commission which it most concerns and within which it shall make its report.
11. Each Working Group shall report annually to the Commission President concerned, in addition to reporting through the appropriate Commission at the Congress. When a Working Group has treated its subject sufficiently for the time being, or has been found to be inactive, the Council shall dissolve the Working Group, normally on the initiative of the Chairperson of the Group or the President of the Commission concerned.
12. At least six months in advance of a Congress, the President of each Technical Commission shall form a committee to prepare Resolutions for the Commission. This Committee shall identify the more important problems requiring solution and submit to Council Resolutions on the work needed to solve them, no later than three months in advance of the Congress.
13. Prior to the Congress, the Past President shall form the Resolutions Committee, which shall coordinate the Resolutions of all Technical Commissions, Members and Committees with regard to practicality, shall ensure that they are set down in suitable standard form and are presented in at least one of the official languages of the Society.
14. During a Congress or Symposium all photogrammetric, remote sensing and spatial information specialists rightfully present shall be free to participate in all activities of a Technical Commission.

BYLAW XIV - Financial Commission

1. Each member of the Financial Commission shall be of a different nationality. No member of the Financial Commission shall be of the same nationality as any member of Council. Delegates to the General Assembly shall not be excluded from serving as members of the Financial Commission. In this context, nationality shall be that of the Ordinary Member which nominates the candidate.
2. The Financial Commission shall advise the Council on all financial matters at any time upon the request of the Council.
3. The outgoing Financial Commission shall continue to serve after the Congress until the review of the financial report of the Congress year is finalised. The Council shall ensure that the outgoing Treasurer hands over the accounts and funds of the Society to the new Treasurer within two months of the Congress. The new Financial Commission shall be responsible for advising on the budget for each year after the Congress year. The new Financial Commission shall fully replace the outgoing Financial Commission after the review of the financial report of the Congress year has been finalised, and shall report to the Council that the changeover has been satisfactorily accomplished.
4. The Financial Commission shall examine and audit accounts of the Treasurer once every year, and submit its recommendations to the Council.
5. In the event that a member of the Financial Commission becomes unable to continue in office, on the advice of the remaining members of the Commission, the Council may approve a replacement.

BYLAW XV - Finances

1. The fiscal year of the Society shall be 1st January to 31st December. All annual subscription fees of Ordinary Members, Associate Members, Regional Members and Sustaining Members shall be paid before the end of the fiscal year. If admission is established after June 30, the new member only has to pay 50% of the annual fee for that year.
2. The annual subscription fee paid by an Ordinary or Associate Member shall be defined through the number of units of subscription assigned to its category of Membership in accordance with the following table:

Category	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
	Subscription Units							
Ordinary Member	1	2	6	10	16	24	32	48
Associate Member	1	6	12	24				

3. The value of the subscription unit shall be fixed by the General Assembly.
4. The subscription fees of Individual Members, Sustaining Members and Regional Members, established by the Council, shall be ratified by the General Assembly.
5. Bank accounts of the Society shall be held in the names of two persons, normally the President and the Treasurer.
6. Gifts and legacies offered to the Society may be accepted by The ISPRS Foundation Board of Trustees and ratified by the General Assembly.
7. Finances of the Society shall be controlled as follows:

(a) An annual budget for revenues and expenditures for each fiscal year shall be prepared by the Treasurer, examined in detail by the Financial Commission, and passed on to the Council for

approval, one month prior to the end of the previous fiscal year.

(b) Recommendations for grants to support philanthropic activities of the Society shall be prepared by the Council and forwarded to the Board of Trustees of The ISPRS Foundation for action.

(c) Additional expenditures for routine operations can be approved by the Treasurer. Expenditures for extraordinary items must receive Council's approval.

BYLAW XVI - *Voting*

1. A quorum for convening a General Assembly shall require that the Ordinary Member delegates representing fifty percent (50%) of the total sum of eligible votes be present at the commencement of the General Assembly at which the voting is taking place.
2. Members who raise their category at a General Assembly shall receive voting rights at the higher category if they have paid their annual membership subscription fee at the higher category for the fiscal year of the General Assembly.
3. When a vote by correspondence is required, voting papers shall be sent electronically or by airmail to every Ordinary Member eligible to vote. The final date for the return of the vote is set at three months after the mailing, and the position of Council with respect to the vote will be included. All ballots not returned by the time limit set will be recorded as considered to be in support of the Council position.
4. When a remote or a hybrid vote is required, a system must be used for the remote part, in which anonymous voting, adequate measures against fraud and transparency with respect to the results are ensured. Eligibility to vote for remote attendees will be determined one month before the General Assembly at which the vote is to take place.

BYLAW XVII - Regulations and Directives

1. The decisions of the Plenary Session of a Congress and the decisions of the General Assembly shall be made known to Members and Technical Commissions of the Society without delay.
2. Except where specified otherwise, a quorum of fifty percent (50%) of the total sum of eligible votes at the commencement of the General Assembly at which voting is taking place, shall be required for decisions at the General Assembly.
3. Decisions taken by the Council shall be promptly communicated to Members by the Secretary General.
4. *Conflict of Interest*. All individuals acting on behalf of ISPRS, whether they are on the Council, Technical Commission Presidents, Working Group officers, ISPRS Committee members, awards jury members or other individuals appointed by ISPRS to act on its behalf, shall disclose to the Council any duality of interest or possible conflict of interest, whenever the duality or conflict pertains to a matter for which this individual is required to make a decision. The Council shall decide on whether the individual can take part in further discussion or vote on the item where duality or conflict occurs, or whether the individual should be replaced.

BYLAW XVIII - *Languages*

During a Congress, or a Symposium of a Technical Commission, the host Ordinary Member may offer, entirely at its own expense, translation to the language of the host country.

BYLAW XIX - Dissolution or Amalgamation

In the instance of dissolution of the Society, the funds shall be donated to a recognized international charitable organization selected by the Council and the Financial Commission. The records of the dissolution shall be deposited with the organization that has assumed responsibility for *Archives and Annals*.

In the instance of amalgamation of the Society into a new organization, the funds shall be donated to that new organization.

BYLAW XX - Amendments to Statutes and Bylaws

Amendments to Statutes and Bylaws shall take effect at the times set by the General Assembly.

Original Bylaws adopted by the General Assembly of the 11th Congress, July 1968, at Lausanne, Switzerland.
Bylaws amended by the General Assembly of the 12th Congress, August 1972, at Ottawa, Canada.
Bylaws amended by the General Assembly of the 14th Congress, July 1980, at Hamburg, Federal Republic of Germany.
Bylaws amended by the General Assembly of the 15th Congress, June 1984, at Rio de Janeiro, Brazil.
Bylaws amended by the General Assembly of the 16th Congress, July 1988, at Kyoto, Japan.
Bylaws amended by the General Assembly of the 17th Congress, August 1992, at Washington, D.C., USA.
Bylaws amended by the General Assembly of the 18th Congress, July 1996, at Vienna, Austria.
Bylaws amended by the General Assembly of the 19th Congress, July 2000, at Amsterdam, The Netherlands.
Bylaws amended by the General Assembly of the 20th Congress, July 2004, at Istanbul, Turkey.
Bylaws amended by the General Assembly of the 21st Congress, July 2008, at Beijing, China.
Bylaws amended by the General Assembly of the 22nd Congress, August 2012, at Melbourne, Australia.
Bylaws amended by postal vote, May 2014.

Bylaws amended by postal vote, May 2015.
Bylaws amended by the General Assembly of the 23rd Congress, July 2016, at Prague, Czech Republic.
Bylaws amended by postal vote, October 2019.
Bylaws amended by the General Assembly of the 24th Congress, June 2022, at Nice, France.
President: Christian Heipke (2016-2022) Secretary General: Lena Halounová (2016-2022)

Award Policy

In recognition of the value and prestige associated with ISPRS Awards, in 1998 the Council developed the following ISPRS Awards Policy, which was ratified by the ISPRS General Assembly in Amsterdam and revised in 2009, in 2015 and in 2024.

1. ISPRS Awards shall recognize outstanding contributions and achievements by an individual or individuals in the pursuit of, or for a major realization of, the objectives of ISPRS.
2. The Terms of Reference of ISPRS Awards shall be in accordance with the Statutes and Bylaws of the Society.
3. The Terms of Reference of ISPRS Awards shall be specified in written form in the English language. They are subject to approval by Council.
4. The Terms of Reference and background shall be communicated to ISPRS members through official documents of the Society.
5. ISPRS Council shall appoint an Awards Nomination Committee which will ensure that the Awards are well publicized and that at least two nominations are received for each Award for submission to the jury for each Award. The Nomination Committee may make nominations themselves.
6. All new ISPRS Awards shall consist of a reward of substantial monetary value, or an item of high intrinsic value (a minimum of Swiss francs 2,500 or equivalent), together with a certificate or plaque of recognition.
7. In order to establish a new long-term award (for a minimum of 12 years), the sponsoring organization shall make a commitment for a minimum period of support of 12 years in the formal proposal for the award to the President of ISPRS, for approval by Council.
8. The funding and preparation of ISPRS Awards shall be provided by the sponsoring organization(s) and delivered to the Congress Director and Treasurer after the Awardee(s) have been identified.
9. Each new ISPRS Award shall be granted for a specific purpose, which shall not overlap significantly the purpose of another ISPRS Award.
10. Presentations of ISPRS Awards shall be made at an appropriate event, preferably a plenary session, General Assembly of the Congress, or Gala Dinner.
11. Amendment to the Terms of Reference of an ISPRS Award shall require agreement of Council with the Award sponsor. The sponsor shall then prepare the amended Terms of Reference in final form for Council approval.
12. It is expected that the recipient will attend the Congress to receive the award

Information on awards offered by ISPRS incl. the Terms of Reference of each award can be found **here**.

Terms of Reference of Awards Nomination Committee

1. The Awards Nomination Committee shall be appointed by Council and shall include two Council Members (SG and PP), two Honorary Members, a representative of the Editors in Chief of the ISPRS journals and two other persons. The ISPRS Past President will chair the Committee.
2. The Committee shall, in cooperation with the Secretary General, ensure that information about the ISPRS Awards is widely disseminated amongst Members, academic institutions and other organisations involved the photogrammetry, remote sensing and spatial information sciences.
3. The Committee shall canvass Members, academic institutions and other organisations involved in the photogrammetry, remote sensing and spatial information sciences in an endeavour to ensure that all deserving candidates are considered for nomination for each Award, and that nominations are made for all awards. Nominations may be made by the Committee.
4. The Committee shall ensure that appropriate biographical information is compiled on each nominee, and made available for consideration by the jury for each Award.

The Brock Gold Medal Award

Preamble

The periodic Award of a gold medal was instituted in 1952 by the ISP to encourage the advancement of photogrammetry. The funds for the provision of medals were given in memory of Arthur and Norman Brock. On 22nd May, 1954 and 25th March, 1955, the Council of the ISP adopted unanimously certain rules governing the Award of the medal and further resolved that those rules should remain in force until altered by the unanimous vote of the Council which provision is still valid. On 8th May 1957, on 20th April 1999 and on 9th September 2009, the Council considered alterations to the rules and subsequently by correspondence agreed by unanimous vote to alter them and rewrite them as follows:

Rules governing the award

1. The medal shall be known as the Brock Gold Medal Award and shall be awarded at the sole discretion of the Council of the ISPRS in accordance with the following rules.
2. The person to whom the Award is to be made shall be selected irrespective of nationality and solely in respect of contribution to the accomplishment to be signalized by the Award.
3. The medal shall be awarded only in respect of an outstanding landmark in the evolution of the photogrammetry, remote sensing and spatial information sciences, which shall be a proven contribution to these sciences and technologies of whatever form, whether a major completed project or program, some fundamentally new equipment, system or fundamentally new technique, or other new departure.
4. The landmark in the evolution of the photogrammetry, remote sensing and spatial information sciences to be thus signalized by the Award of the medal shall have proven its worth as a contribution to the advancement of these fields at least two years prior to the Congress at which the Award is to be made and in general not more than some twelve years prior to the Congress.
5. Recommendations for the Award of the medal shall be made in accordance with the following rules:
   a. The Council shall, two years prior to each Congress, invite the member societies to submit recommendations for recipients of the Award.
   b. Every recommendation for the Award shall be made by two individuals who adhere to the ISPRS through any of the forms of membership and who are neither of the same nationality as their candidate nor of the same nationality as one another.
   c. Recommendations shall be in respect of an individual and not of a group of individuals nor of any organization or commercial firm. However, as many advances in the photogrammetry, remote sensing and spatial information sciences, and in the execution of projects and programs, may be largely due to team work, it shall be allowable to recommend the leader or the leading spirit of a team of workers, or such person as the team itself may think has made the most important or outstanding or fundamental contribution to their work.
   d. Every recommendation shall be made in writing to the President of the ISPRS and shall be accompanied by documentation and an explanation of the grounds of the recommendation that shall be sufficiently full to enable the Council to evaluate them.
   e. The nominators may consult organizations or individuals of the country in which their candidate has been working, who are involved in the photogrammetry, remote sensing and spatial information sciences, and if they do so, they must include in their documentation the advice they have received.
   f. Recommendations shall be made only during the period between the close of one Congress and nine months before the opening of the next.
   g. All recommendations made prior to one Congress shall lapse at the conclusion of that Congress, whether or not any medal was awarded at it. It is permissible to revive a recommendation that has lapsed by making a fresh recommendation.
6. The selection of the person to receive the medal shall be made by the Council in accordance with the following rules:
   a. Any member of the Council who has been recommended for the Award shall not, while their name remains one that can still be considered, take part in the proceedings of selection or be counted as a member of Council for the purpose of calculating the proportion of votes cast under this rule.
   b. Nine months before each Congress the Council shall begin to consider all recommendations received to date, and may at the same time consider the merits of the work of any other person (except a member of Council) that the Council itself deems worthy of consideration for the Award. The Council shall complete its consideration and reach its conclusion in sufficient time to permit the preparation of

the medal and its presentation at the Congress.

c. The Council may use whatever procedure it thinks fit to reach its conclusions, provided a final selection is made by vote. In such voting a Councillor of the same nationality as a candidate not yet eliminated shall have no vote and a candidate to be successful must receive the votes of not less than two thirds of those entitled to vote. Votes may be cast in person or by post.

7. The Council shall normally expect to Award one medal at each Congress. It may abstain from awarding a medal at any particular Congress, in which case it may award an additional medal at the Congress next following but not later.
8. The name of the recipient of the medal shall be announced at the Congress, and the medal shall, whenever practicable, be presented in person at the Congress by the President.
9. The medal shall not be awarded posthumously, other than in the exceptional event of the candidate dying after having been selected for the Award, in which case the Council shall decide whether to award the medal posthumously or not at all or to some other candidate.
10. The ASPRS Foundation, Inc. (the Foundation) shall establish a trust fund for providing the Brock Award medals. The terms of the trust deed and any modifications thereof shall be subject to the approval of the Foundation and the Council of the ISPRS. The trust fund established by the Foundation shall contain provisions for safeguarding the capital value of the assets and for all accrued interest to be used for the provision of medals. The Foundation Board of Trustees is appointed by the President of the American Society for Photogrammetry and Remote Sensing, which Society shall be responsible to report periodically to the Council of the ISPRS for the proper conduct of the affairs of the trust.

Amendments approved by the ASPRS and the ISPRS Council on 9th September 2009

The winners of the award

1956 L. Bertele, Switzerland
1960 W. Schermerhorn, Netherlands
1968 H. Schmid, USA
1972 U.V. Helava, Canada
1976 F. Ackermann, Germany
1980 G. Hobrough, Canada
1984 F.J. Doyle, USA
1988 D. Brown, USA
1992 G. Brachet, France
1996 Y.S. Tjuflin, Russia
2000 J. Dangermond, USA
2004 K. Kasturirangan, India
2008 A. Grün, Switzerland
2012 F. Leberl, Austria
2016 W. Förstner, Germany
2020 Deren Li, China

The Otto von Gruber Award



Preamble

On the initiative of Dr. Ir. W. Schermerhorn, the Board of the ITC Foundation decided on 26th September 1961 to set aside funds for the assignment of a periodic award in memory of Otto von Gruber. In 2015 the responsibility for the award was transferred to the Netherlands Center of Geodesy and Geo-informatics (NCG). The award will be made in accordance with the following amended regulations which have been approved by the Board of the NCG and the Council of The International Society for Photogrammetry and Remote Sensing.

Regulations

Article 1

The Award shall be known as the Otto von Gruber Award and consist of a medal and a monetary grant. It will be made every four years to the author of a paper of outstanding merit in the photogrammetry, remote sensing and spatial information sciences. A person may be given the Award only once.

Article 2

An applicant for the Award must meet the following requirements:

The Award will be made for one or more papers appearing in published editions of a peer reviewed journal.

Submitted papers shall be written by the applicant only, or, when the applicant is author of a multi authored paper, when evidence is received that the main concept of the paper and the guidance of the co-authors are primarily the work of the applicant.

The papers shall be published within the four years immediately preceding the year of the Congress of the International Society for Photogrammetry and Remote Sensing (ISPRS) at which the Award is to be presented.

The applicant should not be older than 40 years on the opening day of the Congress and should have an

academic degree in one of the disciplines relevant for scientific fields of ISPRS.

Article 3
An applicant for the Award shall submit the paper to the President of the ISPRS at least six months before the opening of the Congress. The paper may be written in any language, but must be submitted to the President in one of the official languages of ISPRS.

Article 4
A jury of individuals shall appraise the papers submitted to the President and, on the basis of a majority vote of the jury members, select the best paper, the author of which shall be the recipient of the Award. The jury shall be composed as follows:

The President of ISPRS (who will have no vote except in the event of a tied vote);
Three qualified individuals designated before each Award by the following authorities:
The Council of the Deutsche Gesellschaft für Photogrammetrie, Fernerkundung und Geoinformation e. V. (DGPF).
The Council of the United Kingdom Remote Sensing and Photogrammetry Society (RSPSoc).
The Chairman of the Netherlands Center of Geodesy and Geo-informatics (NCG).
If two of the jury members mentioned in paragraph b. wish to increase the number of members of the jury, the President of the ISPRS and the previous incumbent of the office each shall name a supplementary member who shall be of nationalities different from each other and different from German and British.
No member of the jury, except the President of ISPRS, shall be from the same institution as any applicant for the Award.

Article 5
The jury is free to decide:

- to invite applications from persons, who did not submit an application, provided that the requirements stated in Article 2 are complied with;
- that no Award be made when, in its judgment, there is no paper of sufficient merit;
- that two Awards be made at one Congress when, in its judgment, the papers of two candidates are of equal merit.

Article 6
The decision of the jury is final.

Article 7
The result of the jury's decision shall be announced at a Plenary Session of the Congress and the Award shall then, whenever practicable, be presented to the recipient in person by the Secretary General or the President.

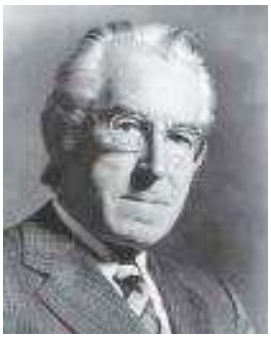
Article 8
In case any translation of the above regulations gives rise to ambiguity, the English text will be decisive.

Amendments approved by the Board of Governors of the ITC Foundation on 23rd January, 1986 and the ISPRS Council on 16th April, 1987.
Further amendments approved by the ITC Foundation, the UK RSPSoc and ISPRS Council on 17June 2004
Further amendments approved by the ITC Foundation, the UK RSPSoc and ISPRS Council on 9th September 2009.
Further amendments approved by the Board of the NCG and ISPRS Council on July 08, 2015.
Further amendments approved by the Board of the NCG and ISPRS Council on September 16, 2021.

The winners of the award

1964 F. Ackermann, Germany
1972 H. Ebner and J. Hoehle, Germany
1976 F. Leberl, Austria
1980 A. Gruen, USA
1988 P. Curran, Great Britain
1992 C. Heipke, Germany
1996 H.G. Maas, Switzerland
2000 H. Mayer, Germany and M.G. Vosselman, The Netherlands
2004 S. Heuel, Switzerland
2008 M. Butenuth, Germany
2012 Jan-Henrik Haunert, Germany
2016 Wai Yeung Yan, Canada
2020 not awarded
2022 Chenglu Wen, China

The Schwidefsky Medal



The *Deutsche Gesellschaft für Photogrammetrie, Ferner-kund-ung und Geoinformation* (DGPF) decided to present an award in memory of Prof. Dr. rer. techn. Dr.-Ing. E.h. Kurt Schwidefsky, honorary member of the International Society for Photogrammetry and Remote Sensing (ISPRS), which is called the (Schwidefsky Medal).

This medal will be awarded according to the following conditions:

Rules governing the award
This medal will be awarded according to the following conditions:

Article 1
Normally, the medal shall be awarded at each Congress of the International Society for Photogrammetry and Remote Sensing.

Article 2
At any Congress the medal may be awarded to no more than two candidates.

Article 3
The medal will be presented to the recipient together with a certificate issued by the Deutsche Gesellschaft für Photogrammetrie, Fernerkundung und Geoinformation.

Article 4
Nominations shall be submitted to the ISPRS President no later than six months prior to the Congress at which it will be presented. Candidates may self nominate.

Article 5
Recipients shall be persons who have made significant contributions to the photogrammetry, remote sensing and spatial information sciences, either through the medium of publication as author or editor, or in the preparation of educational or promotional material in any media, in the area of photogrammetry, remote sensing or spatial information science.

Article 6
The Award is decided on by a selection committee consisting of the President of the Deutsche Gesellschaft für Photogrammetrie und Fernerkundung (Chair), the President of ISPRS and the Secretary General of ISPRS.

Article 7
The medal will be awarded at an appropriate event of the Congress.

Bonn, November 1986
Amendments approved by the DGPF and the ISPRS Council on 1 April 2004
Amendments approved by the DGPF and the ISPRS Council on 9th September 2009

The winners of the award

1988	K. Rinner, Austria
	G. C. Tewinkel, USA
1992	K. Atkinson, United Kingdom
	W. Hofmann, Germany
1996	J. B. Case, USA
	A. P. Cracknell, United Kingdom
2000	G. Ducher, France
	L. R. A. Narayan, India
2004	E. Baltsavias, Switzerland
	Z. Li, Hong Kong
2008	G. Kemper, Germany
	K. Szangolies, Germany
2012	G. Vosselman, The Netherlands
2016	C. K. Toth, USA
	C. Mallet, France
2020	Derek Lichti, Canada

The Schermerhorn Award



In 1988 the "Nederlandse Vereniging voor Foto-grammetrie" instituted the Schermerhorn Award in memory of Prof. Dr. Ir. Willem Schermerhorn for the promotion of international activities in various areas of special-ization of the photo-grammetry, remote sensing and spatial information sciences.

Rules governing the award

Article 1
The scientific, technical and professional achievements of ISPRS depend to a very large extent on the results presented by working groups at symposia and congresses. Activities of working groups are the corner-stone of the functioning of ISPRS. The Schermerhorn

Award will recognize contributions on the working group level and can be made to a Working Group Chair, Co-chair, Secretary or member of a working group.

Article 2
The Schermerhorn Award is granted to a member of a working group who, through his/her commitment, has achieved extremely worthwhile and successful scientific meeting(s) of a very high level, gaining sufficient interest (participation by a broad range of countries worldwide) and high level of reporting throughout the four-year period up to an ISPRS Congress.

Article 3
The Schermerhorn Award shall consist of a plaque and monetary grant of 1,250 CHF provided by the Society "Geo-Information Netherlands."

Article 4
Normally, the award shall be presented to the winner at each quadrennial Congress of ISPRS.

Article 5
The Jury of five individuals is composed of the President of ISPRS (Chair), a board member of Geo-Information Netherlands, the Rector of ITC, and a professor in the field of Photogrammetry, Remote Sensing and GIS of Wageningen University and Research Centre, and of Delft University of Technology.

Article 6
Nominations for the Award shall reach the President of ISPRS not later than six months prior to the Congress at which it will be presented. The Jury may itself nominate candidates. Candidates may not self-nominate.

Article 7
The Jury may decide not to present any award. Decisions are made by simple majority vote. In case of a tie, the vote of the Chairman shall be decisive. The decision of the Jury is final.

Amendments approved by GIN and ISPRS Council in April and ratified by ISPRS GA in July 2004.
Amendments approved by GIN and ISPRS Council in September 2009 and ratified by ISPRS GA in August 2012

The winners of the award

1988 G. Guyot, France
1992 I. Dowman, United Kingdom
1996 D. M. McKeown, USA
2000 T. Woldai, The Netherlands
2004 M. Madden, USA
2008 S. Zlatanova, Netherlands
2012 C. Ö. Kıvılcım, Turkey
2016 U. Stilla, Germany
2020 M. Yang, The Netherlands

The Samuel Gamble Award



Preamble
In 1984 the Canadian Institute of Surveying and Mapping resolved to sponsor an award in honour of Dr. Samuel G. Gamble, former President of the International Society for Photogrammetry and Remote Sensing and Director of the 1972 Congress. Establishment of the award was approved by the Council of the International Society for Photogrammetry and Remote Sensing in March 1985. The award is to be granted according to the following regulations:

Article 1
The award shall be known as The Samuel Gamble Award, and it will be granted at each Congress of the International Society for Photogrammetry and Remote Sensing (ISPRS).

Article 2
Up to three awards may be made at each ISPRS Congress.

Article 3
A recipient of the award shall be a person who, like Dr. Gamble, has contributed significantly to the development, organization or professional activities of photogrammetry and/or remote sensing, at the national or international level.

Article 4
The award shall consist of a certificate, issued by the Canadian Institute of Geomatics.

Article 5
The recipient(s) of the award shall be selected by a selection board consisting of the President of the Canadian Institute of Geomatics, or his or her nominee, and two individuals appointed by the Council of ISPRS.

Article 6
No member of the Council of ISPRS shall be eligible to receive the award while serving on the Council.

Article 7
The award shall be presented during a General Assembly of the ISPRS Congress.

The winners of the award

1988 O. Coker, Nigeria
B.A. Sikilo, Kenya

J. van der Weele, The Netherlands
1992 M. Carbonnell, France
G. Hildebrandt, Germany
S. Vibulsresth, Thailand
1996 P. Waldhäusl, Austria
M. Araya Figueroa, Chile
2000 A. Abiodun, Nigeria
B. Forster, Australia
2004 R. Harris, UK
H. Nyalopa, Kenya
V. Savinkykh, Russia
2008 W. K. Ottichilo, Kenya
J. Kufoniyi, Nigeria
Li D., China
2012 K. Cho, Japan
2016 N. El Sheimy, Canada
2020 Jan Skaloud, Switzerland
Jonathan Li, Canada
2022 Ruisheng Wang Canada

The Eduard Doležal Award



In memory of Prof. Dr. Eduard Doležal, the Austrian Society for Surveying and Geo-information in 1992 has established an award which will be presented according to the following regulations on the occasion of the Congress of the International Society for Photogrammetry and Remote Sensing, beginning with the 18th Congress in Vienna.Prof. Dr. Eduard Doležal was born the son of a weaver on 2 March 1862 in Moravské Budějovice (Budwitz, Moravia), studied mathematics and physics in Vienna and in 1889 became a teacher of mathematics at the Technical Secondary School in Sarajevo, Bosnia. In 1905, he was offered a chair in practical geometry at the Technical University in Vienna. Three years later, in 1908, he was elected president of the University.

As early as 1896 he wrote a paper about "The Application of Photography to Practical Measuring Tasks". On 5 May 1907, he founded the Austrian and on 4 July 1910 the International Society for Photogrammetry. He served as first president of ISP until 1926. Doležal founded the International Archives for Photogrammetry and edited the first six volumes (1908 - 1923). He also organized the first International Congress for Photogrammetry (24 to 26 September 1913) in Vienna. He died, showered with honours, on 7 July 1955 in Baden near Vienna. Those who knew Doležal also spoke highly of his social awareness, his visions, his methodical work, all of which aimed at international cooperation. Thus, it is fitting that this award, named after the founding father of ISP(RS), should acknowledge these qualities.

The Eduard Doležal Award specifically encourages activities which in a well-organized way, permanently and effectively promote photogrammetry, remote sensing or GIS. His social awareness will be emphasized by considering only candidates from developing and reform countries.

Regulations

Article 1
The Eduard Doležal Award is a grant for furtherance, aimed to assist individuals or representatives of institutions, from developing or reform countries, to participate in the ISPRS Congress.

Article 2
The Eduard Doležal Award consists of a certificate provided to ISPRS by the Austrian Society for Surveying and Geoinformation, complimentary registration provided by the respective Congress organizer, and a limited travel and expense grant from the Eduard Doležal Fund. The grant is to cover travel and residence expenses for at least one participant to attend the Congress. In the case of short distance journeys, two grants may be awarded.

Article 3
The Austrian Society for Surveying and Geoinformation shall serve as trustee to the Eduard Doležal Fund. The amount of grant funds available for distribution will be communicated to ISPRS Secretary General nine months before each ISPRS Congress.

Article 4
Applications or nominations must include all the particulars noted in Article 5 and must be filed with ISPRS Secretary General no later than seven months before the beginning of an ISPRS Congress.

Article 5
Candidates for the Eduard Doležal Award must meet the following requirements:

1. They shall have completed their studies in one of the branches represented by the ISPRS Commissions, with the foundation of their education in the subjects covered by photogrammetry, remote sensing, and GIS.
2. They must present documentary evidence which demonstrates that they have permanently

implemented a practical application of photogrammetry, remote sensing or GIS in an efficient manner; or which documents their outstanding success in a field that supports photogrammetry, remote sensing or GIS.

3. They must be citizens of a developing or reform country.

Article 6
If two Eduard Doležal Awards are granted, the winners must be of different citizenships.

Article 7
The jury for the Eduard Doležal Award shall consist of:

1. The President of ISPRS (head of jury).
2. The Secretary General of ISPRS.
3. The President of the Austrian Society for Surveying and Geoinformation or its delegate to the ISPRS General Assembly.
4. A representative of the United Nations.

The jury shall decide no later than five months before the beginning of an ISPRS Congress. Decisions will be made by a majority. In the case of a tie, the head of jury casts the deciding vote.

Article 8
The Eduard Doležal Award will be granted on the occasion of the ISPRS Congress by the President of ISPRS jointly with the delegate of the Austrian Society for Surveying and Geoinformation. The founding of ISPRS by Prof.Dr. mult. Eduard Doležal shall be called to mind during presentation of the Award.

The winners of the award

1996	K. Sukup (Czech Republic)
2000	P. Tarikhi (Iran), U.R. Rao (India)
	I. Katzarsky (Bulgaria)
2004	Jiang J. (China)
2008	N. Dinh Duong (Vietnam)
2012	G. Sithole (Zimbabwe)
2016	P. V. Radhadevi (India)
2020	Damdinsuren Amarsaikhan (Mongolia)

The U.V. Helava Award



Preamble
The publisher of the *ISPRS Journal of Photogrammetry and Remote Sensing* (herein referred to as 'the Journal'), Elsevier B.V., and Leica Geosystems AG, have agreed to jointly present "The U.V. Helava Award"* to encourage and stimulate submission of high quality scientific papers by individual authors or groups to the Journal, to promote and advertise the Journal, and to honour the outstanding contributions of Dr. Uuno V. Helava to research and development in Photogrammetry and Remote Sensing. The award will be made in accordance with the following regulations.

Regulations
The award will be made in accordance with the following regulations:

Article 1
The award, which consists of a plaque and a grant of SFr. 10,000, will be presented every four years to the author(s) of an outstanding paper on one of the topics included in the scope of the Journal. The recipient(s) of the U.V. Helava Award shall receive the award only once.

Article 2
Candidates for the award shall be authors of a paper written in English, and published exclusively in the Journal during the four-year period from 1 January of a Congress year, to 31 December of the year prior to the next Congress (referred herein as 'the evaluation period'). For multiple authored papers, the grant shall be split equally among the authors; only one plaque will be given.

Article 3
A five-member jury of high scientific standing, whose expertise covers the main topics included in the scope of the Journal, comprising four experts proposed by the Editor-in-Chief of the Journal and one scientist proposed by Leica Geosystems AG, shall be appointed by the ISPRS Council. Jury members shall be designated by ISPRS Council at its last meeting of the year prior to the Congress, for the four-year evaluation period of the award. The Editor-in-Chief of the Journal shall serve as secretary of the jury, without voting rights.

Article 4
The Jury shall select the best paper published in the Journal for each year of the evaluation period (referred to herein as 'best papers'). The author(s) of the best papers shall be announced annually in the Journal, *ISPRS eBulletin* and ISPRS WEB site. Individuals may receive recognition as authors of best papers more than once. At the end of the four-year evaluation period, the Jury shall select the most outstanding paper of the four best papers of the evaluation period, for receipt of the U.V. Helava Award. The authors of the three runner-up best papers shall receive a certificate and a one-year free subscription to the Journal.

Article 5

Members of the Jury and the Editor-in-Chief shall not be eligible to receive the U.V. Helava Award or 'best paper' award.

Article 6
The Award shall be presented to the recipient(s) by the President of ISPRS and a representative of each sponsor at a plenary session of the Congress.
* The name "U.V. Helava" is used with kind permission from Mrs. Inkeri Helava and Dr. Heikki Helava

Amendments approved by the Award Sponsors and ISPRS Council on 5 April 2004.
Amendments approved by the Award Sponsors and ISPRS Council on 9th September 2009.

The winners of the award

Period 2020-2021

The U. V. Helava Award 2020-2021 and Best Paper 2020
Cloud removal in Sentinel-2 imagery using a deep residual neural network and SAR-optical data fusion
by Andrea Meraner a, Patrick Ebel b, Xiao Xiang Zhu b,c and Michael Schmitt d
a Data Science in Easrth Observation, Technical University of Munich, Germany
b Data Science in Earth Observation, Technical University of Munich, Germany
c Remote Sensing Technology Institute, German Aerospace Center (DLR), Germany
d Data Science in Earth Observation, Technical University of Munich, Germany

The Best Paper 2021
ULSD: Unified line segment detection across pinhole, fisheye, and spherical cameras
by Hao Li, Huai Yu, Jinwang Wang, Wen Yang, Lei Yu, Sebastian Scherer

Period 2016-2019

The U. V. Helava Award 2016-2019 and Best Paper 2017
Bundle adjustment with raw inertial observations in UAV applications
by Davide Antonio Cucci, Martin Rehak and Jan Skaloud
École Polytechnique Fédérale de Lausanne, Switzerland

The Best Paper 2019
Design and evaluation of a full-wave surface and bottom-detection algorithm for LiDAR bathymetry of very shallow waters
by Roland Schwarz a,b, Gottfried Mandlburger b,c, Martin Pfennigbauer a and Norbert Pfeifer b
a Riegl Research, Austria
b Technische Universität Wien, Austria
c University of Stuttgart, Germany

The Best Paper 2018
From Google Maps to a fine-grained catalog of street trees
by Steve Branson a1, Jan Dirk Wegner b1, David Hall a, Nico Lang b, Konrad Schindler b, and Pietro Perona a
a Computational Vision Laboratory, California Institute of Technology, USA.
B Photogrammetry and Remote Sensing, ETH Zürich, Switzerland.
1 joint first author

The Best Paper 2016
Understanding human activity patterns based on space-time-semantics
by Wei Huang, and Songnian Li
Ryerson University, Toronto, Canada

Period 2012-2015

The U. V. Helava Award 2012-2015 and Best Paper 2015
Multiclass feature learning for hyperspectral image classification: Sparse and hierarchical solutions
by Devis Tuia, University of Zurich, Switzerland
Rémi Flamary, Université de Nice Sophia Antipolis, France, and
Nicolas Courty, Université de Bretagne Sud/IRISA, France

The Best Paper 2014
Indoor scene reconstruction using feature sensitive primitive extraction and graph-cut
by Sven Oesau, Florent Lafarge and Pierre Alliez
Inria Sophia Antipolis – Méditerranée, Sophia Antipolis, France

The Best Paper 2013
Urban accessibility diagnosis from mobile laser scanning data
by Andrés Serna and Beatriz Marcotegui
MINES ParisTech, CMM – Center for mathematical morphology, Fontainebleau, France

The Best Paper 2012
CityGML – Interoperable semantic 3D city models
by Gerhard Gröger and Lutz Plümer
Institute for Geodesy and Geoinformation, University of Bonn, Germany

Period 2008-2011

The U. V. Helava Award 2008-2011 and Best Paper 2010
Automatic detection and tracking of pedestrians from a moving stereo rig
by Konrad Schindler Photogrammetry and Remote Sensing, ETH Zürich, Switzerland
Andreas Ess Computer Vision Lab, ETH Zürich, Switzerland

Bastian Leibe UMIC Research Centre, RWTH Aachen, Germany and
Luc Van Gool ESAT/PSI–VISICS, IBBT, KU Leuven, Belgium

The Best Paper 2011

Modelling and analysing 3D buildings with a primal/dual data structure

by Pawel Boguslawski, Department of Geoinformatics, Universiti Teknologi Malaysia, Malaysia
Christopher M. Gold, Department of Computing and Mathematics, University of Glamorgan, Wales, United Kingdom and
Hugo Ledoux, GIS technology group, Delft University of Technology, The Netherlands

The Best Paper 2009

SPIRIT. SPOT 5 stereoscopic survey of Polar Ice: Reference Images and Topographies during the fourth International Polar Year (2007–2009)

by Jérôme Korona 1, Etienne Berthier 2, Marc Bernard 1, Frédérique Rémy 2, Eric Thouvenot 3
1 Spot Image, 5 rue des Satellites, BP 14359, F31030 Toulouse Cedex 4, France
2 Université de Toulouse; UPS (OMP-PCA); LEGOS; 14 Avenue Edouard Belin, F-31400 Toulouse, France and CNRS; LEGOS; 14 Avenue Ed. Belin, F-31400 Toulouse, France
3 CNES, 18 Avenue E. Belin, 31401 Toulouse Cedex 9, France

The Best Paper 2008

On-line boosting-based car detection from aerial images

by Helmut Grabner, Computer Vision Laboratory, ETH Zurich, Switzerland
Thuy Thi Nguyen, Institute for Computer Graphics and Vision, University of Technology, Graz, Austria
Barbara Gruber, VRVis Research Center for Virtual Reality and Visualization, Graz, Austria and
Horst Bischof, Institute for Computer Graphics and Vision, University of Technology, Graz, Austria

Period 2004-2007

The U. V. Helava Award 2004-2007 and Best Paper 2007

Time geography for ad-hoc shared-ride trip planning in mobile geosensor networks

by Martin Raubal1,3, Stephan Winter2, Sven Teβmann3,4 and Christian Gaisbauer2
1 Department of Geography, University of California at Santa Barbara, 5713 Ellison Hall, Santa Barbara, CA 93106-4060, U.S.A.
2 Department of Geomatics, The University of Melbourne, VIC 3010, Australia
3 Institute of Geoinformatics, University of Münster, 48149 Münster, Germany
4 German Remote Sensing Data Center (DFD), German Aerospace Center (DLR), 82234 Wessling, Germany

The Best Paper 2006

Range determination with waveform recording laser systems using a Wiener Filter

by Boris Jutzi, FGAN-FOM Research Institute for Optronics and Pattern Recognition, 76275 Ettlingen, Germany and
Uwe Stilla, Photogrammetry and Remote Sensing, Technical University Munich, 80290 Munich, Germany

The Best Paper 2005

Recent developments on direct relative orientation

by Henrik Stewénius, Christoph Engels, and David Nistér, Center for Visualization and Virtual Environments, Computer Science Department, University of Kentucky, U.S.A.

The Best Paper 2004

A layered stereo matching algorithm using image segmentation and global visibility constraints

by Michael Bleyer, Margrit Gelautz, Interactive Media Systems Group, Institute for Software Technology and Interactive Systems, Vienna University of Technology, Favoritenstrasse 9-11/188/2, A-1040 Vienna, Austria

Period 2000-2003

The U. V. Helava Award 2000-2003 and Best Paper 2003

Extraction, modelling, and use of linear features for restitution of airborne hyperspectral imagery

by Changno Lee, Spatial Imagery Information Research Team, ETRI, 161 Gajeong-dong, Yuseong-gu, Daejeon, 305-350, South Korea
James S. Bethel, Geomatic Engineering, 1284 Civil Engineering Building, Purdue University, West Lafayette, IN, USA

The Best Paper 2002

The shuttle radar topography mission - a new class of digital elevation models acquired by spaceborne radar

by Bernhard Rabus, Michael Eineder, Achim Roth, Richard Bamler, German Aerospace Center (DLR), Oberpfaffenhofen, D-82234, Wessling, Germany

The Best Paper 2001

Seamline detection in colour orthoimage mosaicking by use of twin snakes

by Martin Kerschner, Institute of Photogrammetry and Remote Sensing, Vienna University of Technology, Gusshausstrasse 27-29, A-1040 Vienna, Austria

The Best Paper 2000

Fuzzy spatial objects and their dynamics

by Martien Molenaar , International Institute for Geo-Information Science and Earth Observation (ITC), Enschede, Netherlands and

Tao Cheng, Joint Laboratory for GeoInformation Science, The Chinese University of Hong Kong, Shatin, NT, Hong Kong, China

Period 1996-1999

The U. V. Helava Award 1996-1999 and Best Paper 1996

3D City Models for CAAD-Supported Analysis and Design of Urban Areas

by Martina Sinning-Meister, Armin Grün, Hanbin Dan Institute of Geodesy and Photogrammetry, Swiss Federal Institute of Technology (ETH), Zurich

The Best Paper 1999

Automated Reconstruction of 3D Models from Real Environments

by V. Sequeira 1, K. Ng 2, E. Wolfart 1, J.G.M. Gonçalves 1, D. Hogg 2

1 European Commission - Joint Research Centre, Ispra (VA), Italy

2 School of Computer Studies, University of Leeds, Leeds, UK

The Best Paper 1998

Errors and Accuracy Estimates of Laser Data Acquired by Various Laser Scanning Systems for Topographic Applications

by E. Jeroen Huising, Luisa M. Gomes Pereira

Ministry of Transport, Public Works and Water Management, Rijkswaterstaat, Survey Department, Delft, Netherlands

The Best Paper 1997

Automatic Aerotriangulation - Concept, Realization and Results

by Liang Tang, Technical Consulting and Software Development for Photogrammetry, Remote Sensing and Geoinformatics, Munich, Josef Braun and Rasmus Debitsch, Carl Zeiss, Oberkoche

The Jack Dangermond Award



Preamble

The publisher of the ISPRS International Journal of Geo-Information (herein referred to as 'the Journal'), MDPI AG and ESRI, have agreed to jointly present "The Jack Dangermond Award"[1] to encourage and stimulate submission of high quality scientific papers by individual authors or groups to the Journal, to promote and advertise the Journal, and to honour the outstanding contributions of Jack Dangermond to research and development in Geospatial Sciences.

Regulations

The award will be made in accordance with the following regulations:

Article 1

The award, which consists of an ISPRS certificate and a grant of USD 10,000, will be presented every four years to the author(s) of an outstanding paper on one of the topics included in the scope of the Journal. The recipient(s) of the Jack Dangermond Award shall receive the award only once.

Article 2

Candidates for the award shall be authors of a paper written in English, and published exclusively in the Journal during the four-year period from 1 January of a Congress year, to 31 December of the year prior to the next Congress (referred herein as 'the evaluation period'). For multiple authored papers, the grant shall be split equally among the authors; certificates will be given to each.

Article 3

A five-member jury of high scientific standing, whose expertise covers the main topics included in the scope of the Journal, comprising four experts proposed by the Editor-in-Chief of the Journal and one scientist proposed by ESRI, shall be appointed by the ISPRS Council. Jury members shall be designated by ISPRS Council at its last meeting of the year prior to the Congress, for the four-year evaluation period of the award. The Editor-in-Chief of the Journal shall serve as secretary of the jury, without voting rights.

Article 4

The Jury shall select the best paper published in the Journal for each year of the evaluation period (referred to herein as 'best papers'). The author(s) of the best papers shall be announced annually in the Journal, ISPRS eBulletin and ISPRS WEB site. Individuals may receive recognition as authors of best papers more than once. At the end of the four-year evaluation period, the Jury shall select the most outstanding paper of the four best papers of the evaluation period, for receipt of the Jack Dangermond Award. The authors of the three runner-up best papers shall receive a certificate.

Article 5
Members of the Jury and the Editor-in-Chief shall not be eligible to receive the Jack Dangermond Award or 'best paper' award.

Article 6
The Award shall be presented to the recipient(s) by the President of ISPRS and a representative of each sponsor at a plenary session of the Congress.

[1] The name "Jack Dangermond" is used with kind permission from Jack Dangermond.

Approved by the Award Sponsors and ISPRS Council on March 19, 2017

The winners of the award

Period 2020-2021

The Jack Dangermond Award 2020 – 2021 and Best Paper 2021
Analysis of OpenStreetMap Data Quality at Different Stages of a Participatory Mapping Process: Evidence from Slums in Africa and Asia
By Yeboah G, Porto de Albuquerque J, Troilo R, Tregonning G, Perera S, Ahmed SAKS, Ajisola M, Alam O, Aujla N, Azam SI, Azeem K, Bakibinga P, Chen Y-F, Choudhury NN, Diggle PJ, Fayehun O, Gill P, Griffiths F, Harris B, Iqbal R, Kabaria C, Ziraba AK, Khan AZ, Kibe P, Kisia L, Kyobutungi C, Lilford RJ, Madan JJ, Mbaya N, Mberu B, Mohamed SF, Muir H, Nazish A, Njeri A, Odubanjo O, Omigbodun A, Osuh ME, Owoaje E, Oyebode O, Pitidis V, Rahman O, Rizvi N, Sartori J, Smith S, Taiwo OJ, Ulbrich P, Uthman OA, Watson SI, Wilson R, Yusuf R.
https://doi.org/10.3390/ijgi10040265

The Best Paper 2020
Cartographic Vandalism in the Era of Location-Based Games – The Case of OpenStreetMap and Pokémon GO.
By Juhász L, Novack T, Hochmair HH, Qiao S.
https://doi.org/10.3390/ijgi9040197

Period 2017-2019

The Jack Dangermond Award 2017 – 2019 and Best Paper 2019
Voxel-based 3D Point Cloud Semantic Segmentation: Unsupervised Geometric and Relationship Featuring vs Deep Learning Methods
By Florent Poux and Roland Billen
https://doi.org/10.3390/ijgi8050213

The Best Paper 2018
Generative Street Addresses from Satellite Imagery
By Ilke Demir, Forest Hughes, Aman Raj, Kaunil Dhruv, Suryanarayana Murthy Muddala, Sanyam Garg, Barrett Doo and Ramesh Raskar
https://doi.org/10.3390/ijgi7030084

The Best Paper 2017
Evaluation of Feature Selection Methods for Object-Based Land Cover Mapping of Unmanned Aerial Vehicle Imagery Using Random Forest and Support Vector Machine Classifiers
By Lei Ma, Tengyu Fu, Thomas Blaschke, Manchun Li, Dirk Tiede, Zhenjin Zhou, Xiaoxue Ma and Deliang Chen
https://doi.org/10.3390/ijgi6020051

The Giuseppe Inghilleri Award



In 2008 the Italian Society for Surveying and Photogrammetry (SIFET) established an award in honour of Professor Giuseppe Inghilleri. Giuseppe Inghilleri (1924-1982), full Professor of Geodesy and Photogrammetry, was Head of the Institute of Geodesy at the Politecnico di Torino from 1962 until 1977. His scientific work greatly enhanced the mathematical and statistical foundations of photogrammetry, surveying and mapping science. In 1972, at the ISP Congress in Ottawa, he presented an innovative analytical stereo-plotter, produced in the following years by Officine Galileo. He served as President of the ISPRS Technical Commission II from 1972 – 1976 and President of the SIFET from 1979 to 1982.

Regulations

Article 1
The award shall be known as the "Giuseppe Inghilleri Award" and shall normally be granted at each Congress of the International Society for Photogrammetry and Remote Sensing (ISPRS).

Article 2
The Giuseppe Inghilleri Award shall consist of a certificate and SwF 2,500, from the Italian Society for Surveying and Photogrammetry. Presentation shall be made at an appropriate event, preferably a plenary session or General Assembly of the Congress.

Article 3
The recipient shall be a person who has significantly enhanced the applications of photogrammetry, remote sensing or spatial information sciences in the 4 years preceding the Congress. All nominations shall be supported by appropriate documentary evidence of the candidate's work.

Article 4
Nominations for the "Giuseppe Inghilleri Award" shall reach the President of ISPRS not later than 6 months prior to the Congress at which it will be presented. Candidates may not self-nominate.

Article 5
The Jury of the "Giuseppe Inghilleri Award" shall consist of:

- The President of ISPRS (Chair of Jury)
- The Secretary General of ISPRS
- The President of SIFET or its nominee.

The Jury shall decide no later than 4 months before the ISPRS Congress. The decision shall be made by simple majority. The Jury may decide not to present an award. The decision of the Jury shall be final.

Article 6
No Members of ISPRS Council or the Jury shall be eligible to receive the award.

The winners of the award

2012 Yun Zhang, Canada
2016 Sander Oude Elberink, The Netherlands
2020 Cheng Wang, China
2020 Marc-Pierrot Deseilligny, France

The Wang Zhizhuo Award



Preamble

The Chinese Society of Geodesy, Photogrammetry and Cartography (CSGPC) decided, in 2004, to present a periodic award for encouraging advancement of the spatial information sciences in memory of Prof. Dr. WANG Zhizhuo, initiator of photogrammetry and remote sensing in China, Professor and Honorary President of Wuhan Technical University of Surveying and Mapping, a senior Academician of the Chinese Academy of Science, and elected Honorary Member of the International Society for Photogrammetry and Remote Sensing (ISPRS) in 1988.

Regulations

Article 1
The award shall be known as The Wang Zhizhuo Award and shall consist of a medal and a monetary grant (SwF 2,500). It will be granted at each quadrennial ISPRS Congress to a person who has made significant achievement or innovation in the spatial information sciences.

Article 2
The significant achievement or innovation in the spatial information sciences shall be a proven contribution in whatever form; whether a fundamentally new theory or algorithm, a major completed program or project, or a fundamentally new application. The value of the achievement or innovation should be proven not less than two years, and no more than twelve years prior to the Congress at which the award is to be presented.

Article 3
The ISPRS Council shall issue an invitation for nominations of candidates to all Ordinary, Regional and Associate Members two years in advance of each Congress. Nominations are to be submitted in writing to the President of ISPRS at least six months in advance of the Congress and shall be accompanied by documentation describing the proven contribution in sufficient detail to enable full evaluation by the jury. Candidates may not self-nominate.

Article 4
The selection of the person to receive the award shall be decided by the jury. The jury shall consist of the President of ISPRS, the Secretary General of ISPRS, and the President of the Chinese Society of Geodesy, Photogrammetry and Cartography (CSGPC) or its nominee. The selection shall be made by unanimous vote. The decision of the jury shall be final.

Article 5
The name of the recipient of the award shall be announced at the Congress, and the award shall be presented to the person at an appropriate event of the Congress by a member of ISPRS Council and a representative of the CSGPC.

Approved by Council, March 19, 2018

The winners of the award
2008 Christopher Gold, UK
2012 John Shi, Hong Kong
2016 Andrew Hudson-Smith, UK
2020 Wolfgang Kainz, Austria

The President's Honorary Citation

Terms of Reference

1. Purpose

The President's Honorary Citation is a certificate of recognition, presented by the President of the International Society for Photogrammetry and Remote Sensing (ISPRS), to one or more officers (chairperson, co-chairperson or secretary) of one working group, from each ISPRS Technical Commission. The citation is to recognize special, personal and meritorious contributions to the operation of the relevant Technical Commission's activities and advancement of its interests, during the quadrennial term of the Society.

2. Nomination

Only Technical Commission Presidents have the right to nominate, and only officers of one single working group shall be nominated. Each individual may receive the citation only once. Neither, the Technical Commission President, the Vice-President, nor the Secretary, is eligible for nomination. The nomination shall consist of a brief written citation, submitted to the ISPRS President by the Technical Commission President six months prior to the ISPRS Congress.

3. Decision

The final decision of the recipients is made by the President of ISPRS, in consultation with the ISPRS Council.

4. Certificate

The President's Honorary Citation is in the form of a certificate signed by the President and the Secretary General of the Society.

5. Presentation

The President's Honorary Citation shall be presented by the President of the Society to the recipients at the closing Plenary Session of the Congress.

Approved by the ISPRS Council on March 19, 2017

The winners of the award

1996
- TC I: Petros Patias (Greece)
- TC II: Jeff Labonte (Canada)
- TC III: Ismael Colomina (Spain)
- TC IV: Ryutaro Tateishi (Japan)
- TC V: Mark Shortis (Australia)
- TC VI: Kohei Cho (Japan)
- TC VII: Gerard Guyot (France)

2000
- TC I: Karsten Jacobsen (Germany)
- TC II: Christian Heipke (Germany)
- TC III: Bea Csatho (USA)
- TC IV: Emmanuel Baltsavias (Switzerland)
- TC V: Sabry El- Hakim (Canada)
- TC VI: Tanya Maria Sausen (Brazil)
- TC VII: Ake Rosenqvist (Sweden)

2004
- TC I: Karsten Jacobsen (Germany)
- TC II: Christian Heipke (Germany)
- TC III: Helmut Mayer (Germany)
- TC IV: Monika Sester (Germany)
- TC V: Gabriele Fangi (Italy)
- TC VI: Manos Baltsavias (Switzerland)
- TC VII: Karl Staenz (Canada)

2008
- TC I: Karsten Jacobsen (Germany)
- TC II: Monika Sester (Germany)
- TC III: Juha Hyyppa (Finland) and Volker Roderhort (Germany)
- TC IV: Christian Heipke (Germany)
- TC V: Derek Lichti (Australia) and Norbert Pfeiffer (Austria)
- TC VI: Mojca Fras (Slovenia)
- TC VII: Zhang Jixia (China)
- TC VIII: Piero Boccardo (Italy) and Amelia Budge (USA)

2012
- TC I: Ayman Habib (Canada)
- TC II: Cheng Tao (UK)
- TC III: Franz Rottensteiner (Germany)
- TC IV: Jiang Jie (China)
- TC V: Fabio Remondino (Italy)
- TC VI: Manos Baltsavias (Switzerland)
- TC VII: Uwe Sörgel (Germany)
- TC VIII: Amelia Budge (USA)

2016
- TC I: Görres Grenzdörffer (Germany) Costas Armenakis (Canada)
- TC II: Monika Sester (Germany)
- TC III: Michael Yang (Germany)
- TC IV: Sisi Zlatanova (The Netherlands)
- TC V: Mark Shortis (Australia)
- TC VI: Anyana Vyas (India)
- TC VII: Batuhan Osmanoğlu (USA)
- TC VIII: Fazlay Faruque (USA)

2022
- TC I: Rupert Müller (Germany)
- TC II: Devis Tuia (China)
- TC III: Mitsunori Yoshimura (Japan)
- TC IV: Zhizhong Kang (China), Kourosh Khoshelham (Australia), Lucía Díaz Vilariño (Spain)
- TC V: Sultan Kocaman (Turkey)

ISPRS Best Young Author Award

Terms of Reference

The ISPRS Best Young Author Award (est. 1988), sponsored by donor organizations and ISPRS, recognizes authors who are less than 35 years old on the opening day of the Congress and are the sole or 1st author of a high quality paper accepted for oral presentation at the Congress. Typically, two awards are presented for each ISPRS Commission. Each award consists of a certificate and a SFr. 2,500 grant to enable the awardee to participate in the Congress. To be eligible, young authors must submit their paper by the submission deadline, indicating it should be considered for this award.

One jury for each of the ISPRS Technical Commissions, each appointed by the respective Technical Commission President, evaluates all submissions and selects the awardee for their commission based on the scientific merit of the contribution. The decision of the jury is final.

Approved by Council, September 16, 2021

The winners of the award in 1992
Holger Zielinski, Sweden
Auke de Haan, Italy
Elena M. Filipova, Russia
Stuart L. Barr, UK
Ilkka A. I. Niini, Finland
Sun Lixin, China
Werner Heckel, Germany
Rongxing Li, USA

The winners of the award in 1996
Xiuxiao Yuan, China
Naser El-Sheimy, Canada
Woosug Cho, USA
Reda Ezzat Fayek, Canada
Jefferey A.Shufelt, USA
Christine Pohl, Netherlands
Yingchun Zhou, USA
Gaudenz Danuser, Switzerland
Chuang Tao, Canada
Xiaojun Yang, USA

The winners of the award in 2000
Babak Ameri, Germany
Ansgar Brunn, Germany
Marc Honikel, Switzerland
Jun Li, Canada
Satya Priya, Japan
Jochen Schiewe, Germany
Garry Zalmanson, USA

The winners of the award in 2004
Devrim Akca, Switzerland
Tinghua Ai, China
Michele Crosetto, Spain
Andrea Forberg, Germany
P.-H. Hsu, China Taipei
Derek D. Lichti, Australia
Camillo Ressl, Austria
Axel Wendt, Germany

The winners of the award in 2008
Marta Blazquez, Spain
Margarita Kokla, Greece
Min Deng, Hong Kong, China
Sander Oude Elberink, Netherlands
Pengfeng Xiao, China
David Belton, Australia
Francesco Dell'Endice, Switzerland
Long-Qi Zhang, China
Yuan Li, China

The winners of the award in 2012
Maryam Mohammadi, Germany
Rongfu Tang, Germany
Shun Hirose, Japan
Gay Jane P Perez, Philippines
Janja Avbelj, Germany
Xiaoliang Meng, China

The winners of the award in 2016
Yuanxin Ye, China
Christian Kehl, Norway
Andreas Ley, Germany
Constantin-Ioan Nandra, Romania
Ana Djuricic, Austria
Raechel Bianchetti, USA
Benson Kipkemboi Kenduiywo, Germany
Katalin Kiss, Finland

The winners of the award in 2020
Emmanuel Cledat, Switzerland
Stefan Blaser, Switzerland
Dennis Wittich, Germany
Eleonora Maset, Italy
Rory Clifford Pittman, Canada
Jiangyuan Zeng, China
Patrick Hübner, Germany
Xiaoli Li, China
Priyanka Singh, India
Recep Can, Turkey

The winners of the award in 2021
Jiayuan Li, China
Rahima Djahel, France
Milad Niroumand-Jadidi, Italy
Oskar Wage, Germany
Clemence Dubois, Germany

The winners of the award in 2022
Kyriaki Mouzakidou, Switzerland
Corinne Stucker, Switzerland
Mirjana Voelsen, Germany
Xiaodan Shi, Japan
Juan Fernando Toro, Italy

ISPRS Best Poster Award

Terms of Reference

At the Congress a total of two awards per Technical Commission are sponsored by ISPRS. Each award consists of a certificate and a gift from the Congress Director. A nomination for this award is not possible and not necessary, as all presented posters will be considered for the award.
A jury for each of the ISPRS Commissions, appointed by the respective Technical Commission President, evaluates the poster presentations and selects the two best posters from the Commission based on content and presentation of the posters. The decision of the jury is final. The awards are presented at the Closing Ceremony of the Congress.

Approved by Council, March 19, 2018

The winners of the award in Kyoto, 1988

TC	Names
I	Neville, Gauthies, Schwarz and Till
I	G. Schreier, Kosmann and A. Roth
III	O. Kölbl
III	A. M. G. Tommaselli and J. B. Lugnani
III	J. A. R. Blais and M. Boulianne
III	Li M.
III	H. Sawada, M. Watanabe, K. Tomiyama and T. Fujiwara
III	M. Kuniyasu, A. lwashita, H. Watanabe, Y. Mizuochi and Y. Maruyama
IV	M. Michaelis
IV	P. Kasiwat, N. Hongstong and K. Edwards
IV	Liu C.
V	C. L. Ogleby, R. B. Grayson and R. D. Barling
V	E. Baj and G. Bozzolato
V	K. Kimata
V	M. Kureya
VII	S. M. Berhe
VII	A. Hoyano and Y. Komatsu
VII	R. M. Hofferand F. Lozano Garcia
VII	H. Andrianasolo
VII	K. Tanaka, Y. Matsumoto, M. Takaba

The winners of the award in Washington, 1992

TC	Names
I	R. C. Malhotra
I	M. Schroeder
II	K. Novak
II	Q. Zhou and A. H. Evans
III	R. Shibasaki
III	L. Bin-yi
IV	A. G. Engberg and B. Malmström
IV	Huang Q., Huang R., Zhang X., Lai R. and Zhu H.
V	R. Pallaske, W. Marten and L. Maueishagen
V	H.-G. Maas
VI	K.-K. Artimo
VI	J. R. Jensen and S. Narumalani
VII	K. Dabrowska-Zielinska, A. Ciolkosz, M. Gruszczynska and S. Lewinski
VII	E. Shimizu

The winners of the award in Vienna, 1996

TC	Names
I	W. Walcher
I	M. Maresch, P. Duracher
II	F. Savopol
II	A. Georgopoulos
III	A. Krupnik
III	U. Stilla, K. Jurkiewicz
IV	H. Hasegawa, A. Okamoto, S. Hattori, T. Ono, K. Tachibana, M. Gildengorin
IV	M. O. Cherkaoui, F. Barkan, M. Gay
V	B. Pollak
V	H. Schewe, E. Moncrieff, L. Gründig
VI	B. Singh Chaudhary
VI	H.-P. Bähr
VII	J. R. dos Santos, D. R. Scales, M. Keil, H. J. H. Kux, M. S. P. Lacruz
VII	J. Clevers, H. Kramer, H.J.C. van Leeuwen, D.H. Hoekman

The winners of the award in Amsterdam, 2000

TC	Names
I	P.-H. Chen & l. Dowman
I	S.-Y. Hong, K.-S. & I.-. Yo
II	H. Hild, N. Haala & D. Fritsch
II	J.F.C. Silva, P.O. Camargo, R.A. Oliveira, M.G. Guardia, M.L.L. Reiss & R.A.C. Silva
III	H. Zhao
III	E. Michaelsen & U. Stilla
IV	J. Delgado, J. Gardena & A. Gomez
IV	L. Lehto & T. Kilpelainen
V	J. Hrabacek & F. van den Heuvel
V	Z. Ming
VI	J. Gardenal, J. Delgado & M. Torres
VI	K. Cho, R. Matsumoto, H. Shimada & T. Sakata
VII	A. Wimmer, M. Scharelt, M. Ziegler, G. Ruppert, K. Granica, U. Schmidt, H. Gallaun & H. Hyyppa
VII	J. H. M. Hakvoort, J. F. de Haan, R. Jordans, R. J. Vas, S. Peters & M. Rijkeboer (Netherlands)

The winners of the award in Istanbul, 2004

TC	Names
I	H. Raggam and K.H. Gutjahr
I	C.H.Liu
II	S. N. Mahapatra, V. K. Mahindru, A. K. Swain, A. Upadhyaya
II	A. Habib, R. Al-Ruzouq
IV	A. Hincq, M. Idrissa, V. Lacroix, H. Bruynseels, O. Swartenbroekx
IV	M. F. Buchroithner, O. Waelder, B. Koenig, T. Gruendemann, G. Neukum, K. Habermann
V	N. Watanahe
V	D. Winterhalder
VI	S. Phem, K. Grabmaier
VI	C. Katterfeld, M. Sester
VII	Y. Imai, M. Setojima, Y.Yamagishi, N. Fujiwara

The winners of the award in Beijing, 2008

TC	Names
I	W. Jung, J. S. Bethel
I	L.-C. Chen, T.-A. Teo, C.-Y. Lo
II	H. Chen, V. Walter, D. Fritsch
II	O. Sojung, I. Lee, J. Hong
III	T. A. Teo
III	C. Wu, F. Fraundorfer, J.-M. Frahm, Jack Snoeyink, M. Pollefeys
IV	T. Fuse, T. Wayama, E. Shimizu
IV	A. Ajmar, F. Perez, O. Terzo
V	T. Kakiuchi, H. Chikatsu
V	S. Soudarissanane, R. Lindenbergh, B. Gorte
VI	E. McGovern, A. Martin, R. Moore
VI	J. L. Perez-Garcia, J. Delgado, J. Cardenal, M. A. Ureña
VII	L. Ochirkhuyag, R. Tsolmon
VII	S. Abdikan, F. Balik Sanli, F. Bektas Balcik, C. Goksel
VIII	A. Ahmed, M. Nagai, C. Tianen, R. Shibasaki
VIII	J. Hernández Palma

The winners of the award in Melbourne, 2012

TC	Names
I	J. Kelcey and A. Lucieer
I	M. Thiele
II	J. Lesparre and B. Gorte
II	J. Chen et al
III	S. Külür, M. Temiz and S. Dogan
III	A. Schmidt, F. Rottensteiner and U. Sörgel
IV	F. Menna, E. Nocerino and F. Remondino
IV	D. Buchmueller, M. Kroepfl and F. Leberl
V	T.O. Chan and D. Lichti
V	H. Hastedt and T. Luhmann
VII	M. U. Altin, E. Tari and L. Ge
VII	S. Kim, I. Lee and M. Lee
VIII	E. M. Morse-McNabb
VIII	N. Costa Penatti

The winners of the award in Prague, 2016

TC	Names
I	M. A. Boon, R. Greenfield, S. Tesfamichael
I	J. Kang, F. Deng, X. Li
II	A. Zlinszky and A. Kania
II	A. Suhaibah, U. Uznir, F. Anton, D. Mioc, and A. A. Rahman
III	W. Nguatem, M. Drauschke, H. Mayer
III	M. Mezian, B. Vallet, B. Soheilian, N. Paparoditis
IV	F. Yildiz
IV	N. Maheshwari
V	M. Mueller and T. Voegtle
V	J. Wang, R. Lindenbergh, Y. Shen, and M. Menenti
VI	F.-J. Behr
VI	A. M. C. Perez
VII	R. Zhang
VII	A. Vaiopoulos
VIII	M. Nishio and M. Mori
VIII	C.-H. Lu

The winners of the award in Nice, 2022

TC	Names
I	Rahima Djahel, Pascal Monasse, Bruno Vallet
I	Federica Marotta, Luca Perfetti, Francesco Fassi, Cristiana Achille, Giorgio Vassena
II	Fabio Remondino, Luca Morelli, Elisavet Konstantina Stathopoulou, Mostafa Elhashash, Rongjun Qin
II	Hristina Hristova, Meinrad Abegg, Christoph Fischer, Nataliia Rehush
III	Noorlaila Hayati, Noorkomala Sari, Rahmat Arief, Maulida Annisa Uzzulfa
III	Paraskevi Mikeli, Katerina Kikaki, Ioannis Kakogeorgiou, Konstantinos Karantzalos
IV	Oskar Wage, Lasse Bienzeisler, Monika Sester N. Maheshwari
IV	Hao Li, Alexander Zipf
V	Maria Grazia D'urso, S. Rasera

ISPRS - CATCON Award
Computer Assisted Teaching CONtest

Preamble

CATCON, initiated by the Japan Society for Photogrammetry and Remote Sensing, is the name of a software contest organized by ISPRS. The main objective of the contest is to promote the development and dissemination of effective and user-friendly, open-source and preferably non-commercial software designed and used specifically for computer assisted teaching for multimedia courses and tutorials for e-learning, simulations and virtual environments, web information packages or data sets, in one of the areas of interest of ISPRS. CATCON was first organised at the 1996 ISPRS Congress in Vienna, Austria.

Regulations

Article 1

The ISPRS computer assisted teaching contest shall be known as CATCON. The contest will be organised by an appropriate ISPRS working group at each ISPRS Congress. There are three prices: Gold award (3.000,- SFr.), a Silver Award (2.500,- SFr.) and a Bronze Award (1.500,- SFr.) and a certificate. The award is sponsored by TIF - The ISPRS Foundation.

A software, which was presented at one Congress, can only be presented again at another Congress after having undergone substantial changes.

Article 2

Any participant registered and admitted for an ISPRS Congress can submit a proposal and preliminary work for CATCON. The contest is open to individuals and teams. Each group can only submit one proposal.

The proposal must be submitted in written form, addressed to the ISPRS Congress Director. It should include the name, affiliation, country and E-mail address of every team member. In addition, it should contain a title, details about the design concept and purpose, a brief description of functions and system requirements, a URL where the material can be accessed (if available), and other helpful material.

Applicants who have passed an initial evaluation of submitted proposals by the jury, will be asked to present their development in the contest held during the Congress. The contestants are required to bring suitable hard- and software to demonstrate their materials.

Article 3

The jury is composed of the working group officers of the WG dealing with computer assisted teaching and the President of the corresponding ISPRS Technical Commission. The Technical Commission President can delegate his responsibility to somebody else. The jury can ask additional individuals to help in the selection process.

Article 4

The jury will select the winners based on the following criteria:

- General usefulness and importance of output.
- User-friendliness.
- Scalability and elegance of design.
- Clarity, efficiency and portability of implementation.
- Originality.

The decision of the jury is final.

Article 5

The result of the jury's decision shall be announced at the Closing Ceremony of the Congress and the Award shall, whenever practicable, be presented to the recipient in person by the Secretary General or the President during that ceremony.

Approved by Council, November 20, 2017

Contest	Place	Gold Award Winner
CATCON 8	Nice 2022	Maria Chizhova, Germany *VRscan3D: ELearning software for Simulation of Terrestrial Laser Scanning and Photogrammetry*
CATCON 7	Prague 2016	Thomas Luhmann, Germany *Learning Photogrammetry with Interactive Software Tool PhoX*
CATCON 6	Mel-bourne 2012	Mark P. Imhof, Mathew T. Cox, Wayne Harvey, G.E. Heemskerk, and Christopher J. Pettit, Australia *Landscape Visualisation on the Internet*
CATCON 5	Beijing 2008	Robert Kaden, Germany *CityGML*
CATCON 4	Tokyo 2006	Parvatham Venkatachalam India *E-Tutot for GIS*
CATCON 3	Istanbul 2004	Jonathan Haig, Germany *Integrated Sensor Orientation Module*
CATCON 2	Amster-dam 2000	Pierre Grussenmeyer and Pierre Drap, France *ARPENTEUR*
CATCON 1	Vienna 1996	Joachim Höhle, Denmark *LDIP and ORTHO*

The Karl Kraus Medal



The "Karl Kraus Medal" is a prize to honour the authorship of excellent textbooks in the scientific fields of Photogrammetry, Remote Sensing, and Spatial Information Sciences. The prize is dedicated to the memory of Professor Karl Kraus, a passionate teacher and author of a number of textbooks.

Regulations

Article 1
The "Karl Kraus Medal" is awarded to authors of excellent textbooks in the fields of Photogrammetry, Remote Sensing, and Spatial Information Sciences, written in one of the official languages of the ISPRS, and published no more than eight years prior to the commencement of the ISPRS Congress at which the textbook is to be awarded. On each occasion a maximum of two prizes can be awarded.

Article 2
The prize shall consist of a medal and a certificate.

Article 3
The prize shall normally be awarded at each ISPRS Congress by the President of the ISPRS and a representative from the donating organizations: the German Society of Photogrammetry, Remote Sensing, and Spatial Information Sciences (DGPF), the Austrian Society of Surveying and Geoinformation (OVG), and the Swiss Society of Photogrammetry, Image Analysis, and Remote Sensing (SGPBF).

Article 4
Nomination of authors of textbooks from an Ordinary Member of the ISPRS, or by authors themselves, together with three copies of the nominated textbook, shall reach the General Secretary of ISPRS not later than six months prior the ISPRS Congress at which the textbook shall be awarded.

Article 5
The jury for the prize shall consist of:

1. a person, nominated by ISPRS Council and the President of the ISPRS Technical Commission, which is responsible for education in one of the areas of activity of ISPRS,
2. the chair of the Student Consortium of ISPRS, and
3. The chair, who shall be nominated by the three donating societies.

Article 6
The jury may consult experts prior making its decision, which shall be final. The jury is free to decide that no prize shall be made if there are no textbooks of sufficient merit.

The winners of the award

2010:
The winner of the award for 2010 is ***Close Range Photogrammetry: Principles, Techniques and Applications*** by
Thomas Luhmann, (Institute of Applied Photogrammetry and Geoinformatics, University for Applied Sciences, Oldenburg, Germany),
Stuart Robson, (University College London),
Stephen Kyle, (Consultant; Hon. Research Fellow, University College London), and
Ian Harley, (Emeritus Professor, University College London).
Published by Whittles Publishing, Dunbeath, Scotland.

2012:
The winner of the award for 2012 is ***Airborne and Terrestrial Laser Scanning*** edited by
George Vosselman, (ITC, University of Twente, The Netherlands),
Hans-Gerd Maas, (Dresden University of Technology, Germany).
Published by Whittles Publishing, Dunbeath, Scotland.

2016:
The winner of the award for 2016 is ***High Resolution Optical Satellite Imagery*** edited by
Ian Dowman, (University College London, UK),
Karsten Jacobsen, (Retired Academic Director at University of Hannover, Germany),
Gottfried Konecny, (Emeritus Professor, University of Hannover, Germany),
Rainer Sandau, (Retired from the German Aerospace Center (DLR), Adj. Professor at Baylor University, USA, Director of Satellites and Space Applications at IAA).
Published by Whittles Publishing, Dunbeath, Scotland.

2020:
The winner of the award for 2020 is ***Photogrammetric Computer Vision - Statistics, Geometry, Orientation and Reconstruction*** by
Wolfgang Förstner, (Emeritus Professor, University of Bonn, Germany),
Bernhard P. Wrobel, (Retired Professor, Technical University of Darmstadt, Germany).
Published by Springer International Publishing, Switzerland.

The Frederick J. Doyle Award



The ISPRS White Elephant "Knowledge Transfer" Committee and the ITC Foundation decided in 2010 to honour the exemplary career of Frederick J. Doyle as a role model to inspire followers and newcomers in the photogrammetry, remote sensing and spatial information sciences and technologies. Highlights of Fred's illustrious career included: As a Civil Engineer on a Fulbright Fellowship he attended the International Training Center (ITC) for Aerial Survey as the first student of ITC under Rector Schermerhorn. He was Chairman of the Department of Geodetic Sciences at Ohio State University. He received the NASA Exceptional Scientific Achievement Medal for the development of the Apollo Orbital Photo Science systems; was principal investigator on Landsat and Skylab; and led the scientific development and deployment of the Large Format Camera. As ISPRS President he diplomatically led international cooperation and collaboration within ISPRS and with its sister societies. For his many outstanding achievements and articulative roles in the profession as university educator, industry expert, government scientist, and professional society leader, he was granted Honorary Doctor Degrees in engineering, science and technology by four Universities, elected Honorary Member by ASPRS and ISPRS, and Honorary Fellow by ITC.

Regulations

Article 1
The Award shall be known as The Frederick J. Doyle Award and shall consist of a silver medal and a monetary grant. It will be bestowed every four years to an individual who, like Fred Doyle, has exhibited outstanding and sustained qualities in the profession worthy of being emulated for inspiring new engineers and scientists to the ISPRS disciplines and has made significant accomplishments in advancing the photogrammetry, remote sensing and spatial information sciences and technologies. Inspirational qualifications should ideally include achievements in research/development and education/training. A recipient of the award should typically be less than 50 years of age and have outstanding stature within the ISPRS community.

Article 2
Candidate nominations shall be made by an individual or organization adherent to the ISPRS. Every nomination shall include a brief description of the inspirational qualifications that the candidate has exhibited to merit the award. Nominations shall be submitted to the ISPRS President at least six (6) months preceding the Congress at which the award will be presented. Candidates may not self-nominate.

Article 3
The jury for the Frederick J. Doyle Award shall consist of the President of ISPRS (head of jury), Chair of the ISPRS International Science Advisory Committee, and the President of the ISPRS Commission responsible for Education and Outreach. The jury shall select only one candidate to receive the Frederick J. Doyle Award at each ISPRS Congress.

Article 4
The donated funds have been entrusted in a restricted investment account which shall be maintained by The ISPRS Foundation. The award shall consist of a silver medal and US$ 2,500. As appropriate and with joint approval of Council and Foundation Trustees, the monetary grant may be increased in units of US$ 500 based on accrual of interest and further donations in accordance with conservative endowment principles.

Article 5
The Frederick J. Doyle Award shall be awarded during an appropriate event at each ISPRS Congress by the ISPRS President and an ISPRS Honorary Member.

The winners of the award

2012 Christian Heipke, Germany
2016 Wolfgang Wagner, Austria
2020 Konrad Schindler, Switzerland

ISPRS WEC Kennert Torlegård Travel Grant



Deed of Award

Article I. Description of Award and Fund

ISPRS is the International Society for Photogrammetry and Remote Sensing.

The White Elephant Club (WEC) was founded on the occasion of the 60th birthday of Professor Armin Gruen. Its founding meeting was held at Yildiz Hisar Club, Istanbul, Turkey on 18 July 2004 in conjunction with the XXth ISPRS Congress. WEC consists of previously or still active senior officers of ISPRS and other recognized persons with close relations to ISPRS. WEC has become recognized as an ISPRS ad hoc committee with the brief "knowledge transfer".

The aims of WEC are to support the missions and goals of ISPRS and to communicate and encourage young people to grow into potential "elephants" through their own activity. This should be based on friendship among the members. Meetings are convened on special occasions of commemorative events of the members, in conjunction with ISPRS Congresses, symposia and other related meetings.

The Award is known as the ISPRS WEC Kennert Torlegård Travel Grant.

The purpose of the Award is to support attendance at an ISPRS congress by a young scientist.

The Fund from which the Award is financed is known as the White Elephant Restricted Kennert Torlegård Travel Grant Fund, hereafter "the Fund".

The Fund was established as a restricted grant category in TIF to support young people to attend ISPRS events and especially the quadrennial ISPRS Congresses. This restricted grant category is financed by senior members of ISPRS who are members of WEC and wish to demonstrate their continued commitment to the aims and goals of ISPRS. It is named after the late Prof. Dr. Kennert Torlegård, a renowned Swedish photogrammetrist and President of ISPRS 1988-1992, who made substantial contributions in the areas of digital terrain models and surface modeling. By supporting outstanding young scientists worldwide to attend ISPRS congresses, the Fund will demonstrate the commitment of WEC to the future of ISPRS. The support for these young people will encourage and equip them to take over leadership in ISPRS in the future. Members of WEC donate generously to the Fund to enable TIF to support as many young people as possible to attend ISPRS events.

The first awards financed by the Fund were made at the XXIIIrd ISPRS Congress in Prague in July 2016.

Awards financed by the Fund are administered and presented by The ISPRS Foundation (TIF).

Acknowledging the contributions of late Kennert Torlegård to the further developments of ISPRS, WEC has undertaken to donate every year at least USD 1000 to sustain the Fund for the period 2020-25. In 2024 the financing of the Fund will be reviewed.

The Fund may be supplemented from TIF unrestricted donations if necessary, provided that this step is approved by TIF's Executive Committee.

The goal is to make at least one Award to support attendance at each ISPRS Congress.

The number of Awards is decided by TIF Executive Committee. Hereafter, whenever, "Award", "candidate", "recipient" etc. are written, they should be construed as being plural where appropriate.

The Award will consist of a certificate and a cash grant in US dollars.

Awards will continue to be made as long as they are supported by the Fund. The Fund will continue as long as restricted donations are made to TIF.

Article II. Eligibility

The Award is made to a young scientist, whose eligibility is determined by the Selection Committee defined in Article IV below.

The candidate must attend the ISPRS congress for which the Award is being made.

To be eligible for the Award, the candidate must have produced a high-quality paper in the areas of digital terrain modelling, surface modelling or related topics. This paper can be the one that the candidate plans to present at the ISPRS congress for which he/she is applying for the Award, provided that it has been accepted by the congress organizers for presentation and inclusion in the ISPRS Archives or Annals.

Article III. Application

Applicants must submit an application in accordance with the instructions given by TIF when the Award is announced or marketed.

The paper(s) referred to in Article II.C above must be provided as part of the application. The candidate may provide more than one such paper in support of the application.

The deadlines for applications are given on TIF's web pages.

Article IV. Selection Committee

The Award Selection Committee consists of three persons: a TIF trustee, who will be chosen by ISPRS Council; the President of WEC; and the Chair of the Board of Trustees of TIF.

The Committee evaluates each applicant. The applicant(s) who, in the opinion of the majority of the Committee, has/have the highest overall ranking is/are designated as the winner(s).

The Operations Officer of TIF will communicate the name(s) of the successful applicant(s) to ISPRS by whatever predetermined deadline will be in effect.

Article V. Presentation
The winner of the Award will be promptly notified of their selection, prior to the date of the Award presentation, by the Operations Officer of TIF.
The presentation of the Award will take place during the ISPRS congress.

Article VI. Management
The title of the Award is the property of TIF.
TIF is responsible for managing the Fund and the total investment return derived therefrom.

Article VII. Changes
At such time as any part of this Deed of Award is found inapplicable to existing conditions, TIF may consider and establish appropriate modifications to this Deed. TIF requires the approval of ISPRS and WEC for these changes.

Article VIII. Other
It is expected that the recipient will prepare a report about his/her experience at the congress for publication in ISPRS/TIF websites and newsletters. The deadlines for this report is published on TIF's web pages to allow for timely publication in the above media. If there is more than one recipient, a joint report is required.

Approved by TIF and ISPRS Council on February 19, 2021

2022 not awarded

ISPRS Guidelines

Guidelines for Candidates for Members of Council

Individuals from any Member organization are eligible for nomination and election to positions on Council, but there are some practical considerations which must be taken into account.

1. Service as a member of the ISPRS Council is considered an honour. That means that it does not provide any salary to the incumbent. It is also a time-consuming function. The President, the Secretary General, and the Congress Director could easily spend full time on the tasks. However, realistically, one quarter to one half time is required by these positions. The Vice President and the Past President and the Treasurer find that somewhat less time is required. Potential members of Council must be prepared to make these commitments of time.
2. It is essential that Council Members, particularly the President and Secretary General, are provided with secretarial assistance, preferably multilingual, but at a minimum, fluent in English. Experience has shown that about half time help is required. In general, it has been very difficult for the Society to pay salaries for secretarial assistance. Consequently, it is desirable that the Member association or the Council member's employer is prepared to provide this amount of secretarial help.
3. Council members are required to attend two Council meetings per year. These will usually rotate between the home locations of the officers and or the location of major ISPRS events. It is also desirable that Council members, particularly the President, Secretary General and Congress Director attend some or all of the inter-Congress Technical Commission symposia. This means that Council members must be free to undertake international travel.
4. The Society operates on a very limited financial basis. It is therefore very useful if the officer's Member association or employer is prepared to support the international travel expenses required. However, no worthy individual would be rejected as a Council member because of inability to provide his/her own travel expenses.
5. Financial arrangements for the Society's Congress are the total responsibility of the host member. The Congress Director's related expenses for travel, secretarial assistance, communications, etc. cannot be borne by the Society and should therefore be part of the Congress budget.
6. Annual fees of Members to the Society are paid in Swiss francs, Euros or US Dollars. These funds are currently deposited in a Swiss bank account. It may also be feasible to have a bank account under the name of the Treasurer, and in his/her home location. Because the Society expenditures are international in scope, it is essential that the Treasurer be from a nation having freely convertible currency.

Members planning to nominate Council members should keep these considerations in mind.

(3. Jan. 2024, CH)

Guidelines for Members Planning to Host an ISPRS Congress

Member organizations willing to host a Congress of the International Society for Photogrammetry and Remote Sensing should consider the following items which are looked upon as prerequisite for a successful Congress operation:

1. The Member organization should designate an individual to serve as Congress Director who will have final responsibility for all aspects of the Congress operation. The Congress Director will establish a Congress committee which will organize the scientific-technical programme, all financial aspects, the secretarial work, the scientific exhibit, the technical tours, the social events, the program for family members, and attend to special tasks such as press relations, travel bureau relations, etc.
2. The scientific-technical programme shall be supported by an International Programme Committee, chaired by a person of high scientific reputation appointed by Council. The other members of the International Programme Committee comprise the Congress Director, the Presidents and Vice-Presidents of the Technical Commissions and further qualified individuals as deemed necessary.
3. The Member organization will have complete financial responsibility for all aspects of the Congress organization. The Society does not provide any funds for this purpose. Although budgeting arrangements will differ from one member to another, it has been customary that

one-third of the Congress expenses is met by registration fees for individual participants, one-third by the fees paid by commercial exhibitors, and one-third by government subsidies with a total budget of about 3.5 million Swiss Francs.

4. The Member organisation will be expected to attract funds from sponsoring organisations to support the attendance at the Congress of a significant number of participants from developing countries.

5. The Member organisation and the ISPRS will sign a contract for Congress. A sample contract can be found **here**.

6. In order to accommodate the Congress, the following physical facilities are required (more details can be found in the sample contract):

- Hotel accommodation and restaurant facilities for approximately 2,000 persons with access to the meeting facility by public transport.
- One large meeting room for the opening ceremonies and plenary sessions to accommodate approximately 2,000 persons.
- At least two meeting rooms for technical sessions with a capacity of approximately 500 persons in each room.
- One room with capacity of 200 to 300 for the General Assembly. This room may also be used for technical commissions provided there is no time conflict.
- Several smaller meeting rooms for other technical commission meetings.
- A small office for each of the Technical Commission presidents and secretaries.
- Small meeting rooms or offices to conduct the business of the Council of ISPRS. Typing, copying and clerical service for the President and Secretary General.
- An exhibit hall to accommodate a net commercial exhibit of about 3000 m²

ISPRS Financial Policy including ToR for Financial Commission

Background

Financial planning and management within ISPRS consist of the establishment of an annual budget, regular reports by the Treasurer to the Council and the General Assembly, and formal operating policies and procedures.

This document is divided into two parts: Part 1. Financial Planning and Budgeting , and; Part 2. General Accounting and Operating , and shall be used to document ISPRS's financial philosophies.

Oversight and review of the financial policy is ultimately the responsibility of the Council and the Financial Commission, and an outside auditor may periodically be requested to review and/or approve this document.

This document reflects policies and procedures in effect at the time of preparation. Routine modifications to ISPRS systems, processes and officers may affect future policies and procedures, and, as a result, this document should be reviewed at least on a quadrennial basis.

Part 1. Financial Planning and Budgeting

A. Fiscal Accounting Method: ISPRS uses the cash basis of accounting to recognize income when it is earned and expenses as they are incurred. In addition, ISPRS utilizes monthly cash flow analysis, to forecast resource availability and to minimize the use of custody accounts (reserve funds) during the period of the year with minimal cash flow income.

B. Fiscal Year Cycle: ISPRS operates on a calendar year of 01 January to 31 December. Annual budget preparation begins with Council input and preparation during the late summer and fall. Using current-year income and expense reports, the Treasurer projects income and expenses in a conservative manner. In addition, budget projections are reviewed and modified at mid-year by the Treasurer and approved by all Council members with highlighted changes (compared to the budget).

C. ISPRS Custody Accounts: ISPRS has four custody accounts which are investments designed as reserved accounts, and not intended for general operational expenses. Use of these funds may be used only by documented approval from Council.

D. Timely Payment of Invoices: Although more of an accounting policy than a planning tool, it is critical that invoices be routinely paid on time. The Treasurer's goal is to pay invoices within 30 days of the invoice receipt.

E. Conservative Budgeting: It is prudent financial planning to under-budget for income and over budget for expenses. With this philosophy as a general guide, ISPRS has elected to budget expected revenue flow from meetings, including Congress, Geospatial Week and mid-term

Commission Symposia, in a conservative manner. Similarly, membership retention estimates will be made conservatively, with the result that dues income will not be overestimated. All budgeting will take into consideration the prior year actual figures, with adjustments made as appropriate. Expenses will be analysed by category and programme as a percentage of expected revenue, and amounts to be held in reserve will be identified as a budgeted item.

F. Memorandums of Understanding and Long Term Agreements: While it may be desirable from time to time to enter into long term relationships with other organizations and individuals, including those for the conduct of meetings and conferences, publications, professional development, etc., it is critical that ISPRS address the financial and fiscal implications of those relationships. In order to ensure that the full organizational interests are addressed by these arrangements, and to maximize organizational buy-in to any agreement, such agreements must be documented in writing, include a budget that projects reasonable net proceeds, and be approved by the Council and/or the General Assembly (GA), as appropriate.

G. Publications: Historically, ISPRS has published many titles of great importance to the photogrammetry, remote sensing, and spatial information sciences community. These publications have involved significant contributions by ISPRS members, and have generated some income for the organization.

H. Reserve Cash Account: It is the desire of the Council to maintain a cash reserve account as a buffer to minimize the need to access the Custody Accounts. Based on typical Society recommendations, the target level for total operating reserves is six to twelve months of expenses based on the previous two-year cash levels (i.e. approximately 12.000 CHF, 5.000 USD, 6.000 EUR).

I. Custody Accounts: It is the desire of the Council to maintain a reserve within the custody accounts equivalent to the full, unhindered operation of the Society for a quadrennial term. Based on the four-year budgeting process, the target level for total custody account reserves is a minimum of CHF 500k.

J. Financial Commission (FC): The appointment of a volunteer Financial Commission separate from the Council and the Treasurer is intended to provide volunteer oversight to the financial policies of the Society. The role of the Financial Commission of ISPRS shall be advisory and consultative, and shall involve the following responsibilities:

- To annually examine/inspect the financial records, the annual financial reports to ensure that all the financial records are well documented (maintenance of records, bank statements, expenses, etc.), that revenues and expenses are based on appropriately taken decisions and that all the required documentation is in order and available. The findings are reported to Council no later than 31 May of each year.
- To advise Council and the GA on Guidelines of financial policy as well as on setting up a four-year Budget Programme and categorize expenses and assigning upper limits of each expense category as percentage of the projected income.
- To advise Council on all financial matters, including placement of investments and size of reserve, at any time upon the request of the Council.
- To advise Council of the appropriateness of the annual budget prepared by the Treasurer and approved by Council.
- To perform random sample checks on expenditure when it is considered necessary.
- To meet the Treasurer and Council at least once during its four-year term to discuss financial policy.
- To advise Council on proposals for new expenditure or new proposals that incur additional expenditure by the Society.

K. Financial Review Process: The Treasurer shall recommend and Council shall approve a periodic financial review process; the Treasurer shall communicate with the reviewing body the scope of work and desired evaluation documents. Electronic or telephonic meetings are acceptable. The Treasurer shall have the authority to engage other advisors (for example, legal services) as deemed necessary. The Treasurer shall provide a report to FC, and after FC's approval, a report to Council prior to any action.

L. Certification of Financial Information: The Treasurer is required to certify that the financial information prepared for any internal or external use fairly presents, in all material respects, the Society's financial conditions and is free of misstatements and/or omissions. The Treasurer must also acknowledge responsibility for, and represent that the system of internal control is adequate and appropriate for the organization and in compliance with this policy document. The Treasurer must also certify annually that there

have not been any breaches of fiduciary duty or similar violationPart 2. Accounting and Operating

A. Financial Review and Internal Controls: A Financial Review may be conducted by a third party at the discretion of Council. The resulting review should be completed by 31 July, with a report issued to the Council. Adequate internal controls are to be maintained to routinely provide for the deliverance of a clean Financial Review.

B. Chart of Accounts and Cash Flow Projection: An automated cash flow document will be maintained which accounts for the cash available to pay invoices and cover all items on the Chart of Accounts on a monthly basis. The document is currently a spreadsheet and utilizes data from the annual budget. The document is made available to Council members using electronic transmission prior to Council meetings.

C. Income Projection: It is critical that income projections for publications, advertising, subscription payments, and miscellaneous income be monitored at least monthly. This review will be done by the Treasurer, and adjustments to income projections will be made, as necessary; the Cash Flow document will be updated at the same time.

D. Accounts Receivable: At least three times per year, a full summary of Subscriptions in arrears (or deep arrears) and accounts receivable (AR) will be reviewed by the Treasurer, with the goal of reducing the aged accounts receivable to a minimum. A standard set of letters is employed in the follow-up to this process. Where good efforts at collection have failed, aged accounts will be reviewed by Council, and actions and policies will be developed concerning the appropriate status of delinquent parties.

E. Purchase Approvals: All purchases must have a written request (email is acceptable) on file prior to the actual order or acquisition. Exceptions to this policy are only for purchases under CHF 500, for purchases using credit cards during meeting and travel events, or for purchases covered by pre-signed (contractual) agreements of an ongoing nature. Non-recurring expenditures over CHF 500 or unbudgeted purchases (for example, contract services, publications, advertising, etc.) of any amount must have the approval of the Treasurer (or designated alternate).

F. Debt: It is the policy of ISPRS to maintain a debt-free operation. Instances where execution of deficit budgeting making good fiscal sense are to be brought to the attention of the ISPRS Treasurer and Council at the earliest opportunity.

G. Communication with Council: The Annual Report will be approved by all members of Council and FC. Financial problems, both extant and potential, are identified and highlighted for the Council as soon as they become known to enable Council to work jointly to address those problems.

H. Accounting for Meetings and Conferences: In order to clearly understand the fiscal impact and budget of Congress, Geospatial Week and Commission Mid-term Symposia, separate accounting for all meeting revenue and expenses shall be established. A copy of every finalized contract will be provided to the Treasurer. Accurate accounting of staff effort as well as general and administrative expense is made so as to isolate the individual costs of the conduct of meetings and to clearly account for any resulting net income. Meeting account balances are clearly defined on the cash management reports to allow distinction of those expenses to be paid from general operating funds from those payable from meeting funds.

I. Reimbursement of Travel Expenses: Travel expenses for Council and designated individuals are kept to the minimums required to effectively conduct business, and are reimbursed at actual expense. Travel expenses for approved volunteers are reimbursed in accordance with Reimbursement Policy (See Attachment A) for attendance at Meetings. Other volunteer travel will typically be at actual expense for transportation and hotel, with meals either provided by ISPRS or reimbursed at actual basis. Original receipts are required whenever possible for all expenses claimed. Where possible, complimentary or staff rate hotel rooms should be utilized at conferences. Travel resulting in expense reimbursement must be via memorandum or email (budget estimate) for all days where ISPRS meetings or business requires the individual's attendance. When appropriate, intervening days between meetings may also be covered. Auto mileage will be reimbursed at the currently defined US-IRS rate.

J. Donations of support should be provided to the Treasurer for accounting, the year-end reports, and the ISPRS tax return.

K. Contracting Authority: Contracting authority is limited to budgeted activities, as modified and approved by the Council throughout the year.

L. Credit/Debit Card Expenditures: A credit/debit card is issued to the Treasurer as authorized by the Council. The Credit card is to be used only for ISPRS-related expenses; statements are reviewed monthly by the Treasurer prior to payment. Credit card statements and supporting documentation

are available for inspection by the ISPRS Council at any time.

M. Accounting for Programme Activities: Where economically and logistically feasible, expenses will be tracked by programme areas (i.e. Subscriptions, Publications, etc.). Tracked expenses will include, but not be limited to postage, long distance telephone charges, shipping, and printing.

N. Records Retention: It is the policy of ISPRS to retain business records in accordance with federal and state requirements (as per incorporation instructions) and in compliance with good business practices, as advised by legal counsel, the auditor and/or outside accountants. Prior-year's ISPRS records are managed by the current Treasurer.

O. Required Compliance Reporting: To comply with US-IRS and the State of Maryland Federal and State taxation regulations, several forms must be filed by the Treasurer on a yearly basis to maintain ISPRS's tax-exempt status. Copies of these reports are available for Council review at any time. The minimum required forms are:

    a. Federal Form 990 (Organization Exempt from Income Tax)

    b. State of Maryland (Annual Update of Registration)

    c. State of Maryland (Annual Update, Exempt Organization for Fund Raising)

    d. Federal Form TD F 90-22.1

P. Conflict of Interest: It is the policy of ISPRS that the Council and designated volunteers representing ISPRS are expected to avoid any actual or apparent conflict between their own personal interests and the interests of the Society. A conflict of interest can arise when someone participates in decisions, takes actions, or has personal interests that may interfere with his or her objective and effective performance of work for the Society.

Attachment A

SUBJECT: ISPRS Reimbursement Policy for Council and Approved Volunteer Travel

The following is the Society's policy for reimbursing Council members and approved volunteers for their travel expenses associated with attending an ISPRS supported meeting. This document restates and updates existing policies.

- ISPRS will reimburse 100% of round-trip economy airfare and ground transportation costs (e.g., airport shuttle, airport parking, and ground transportation to and from airport to a meeting facility).
- Airline (or other types of transportation) ticket receipts (documented proof of payment) for travel expenses **MUST** accompany the request for expense reimbursement.
- If a Council member opts to drive to the meeting location as a cost-saving measure, ISPRS will reimburse for mileage at the US-IRS business-expense rate in effect at the time of the incurred travel.
- ISPRS will reimburse documented on-site expenses (e.g., food and lodging). Additional expenses, for example, laundry during extended meetings, taxis and other transportation must be clearly itemized on the Expense Report.
- Expenses involving spouses or travel companions are not reimbursable, and must be separated out and documented as necessary on the applicant's expense report. Expenses involving social gatherings, special events, guest meals, and non-Council person expenses will not be reimbursed without adequate documentation supporting the goals of ISPRS business.
- In accordance with the 15 October 2008 Council action, Council or other Approved Travel reimbursement requests and receipts must be submitted to the ISPRS Treasurer within 180 Calendar Days after the meeting's conclusion in order to be eligible for reimbursement. This policy is firm, and only the full Council may issue a waiver.

Any questions regarding the ISPRS travel expense reimbursement policy should be directed to the Treasurer.

Approved by ISPRS Council – Antalya, 14 November 2013

ISPRS Spending Policy

The limited financial means of the Society require a restrictive spending policy concerning all officers of the Society and other persons charged with the conduction of ISPRS business. Spending shall always be directed at achievements of aims of the Society. These guidelines have been compiled in order to ensure a consistent spending policy for ISPRS.

1. Service as a Member of ISPRS Council is considered an honour. Therefore, no salary or honorarium payment shall be provided to Council Members.
2. The payment of salary / honoraria to other persons charged with the conduction of ISPRS business should be justified by a full business case and approved by ISPRS Council.
3. Each Council Member should actively seek the support of his/her association or employer, or other appropriate third-party, for travel and Council related expenses. The Congress Director's expenses are to be totally covered in the Congress budget and/or by the host member of the Congress.
4. Any person charged with the conduction of ISPRS business should seek alternative sources of funding to support travel and related expenses wherever feasible. Travel resulting in expense reimbursement must be authorised by Council in advance as part of the budgeting process. ISPRS does not reimburse expenses incurred by a person's spouse or partner accompanying them on ISPRS business travel.
5. With the growth of the Society, Council's tasks are increasing and widening over time, both in depth and extent. In the interest of optimal use of Society funds, the number of Joint Meetings of Council with Commission Presidents should be restricted to one per year. Similarly, Council should strive to convene its formal Council Meetings only twice per year.
6. The support of Council by local organizers of Congress, Symposia and Working Group events is strongly encouraged and both Joint and Council Meetings should preferably be held in conjunction with other events, such that tasks can be combined and travel time and money saved.
7. Council is encouraged to maximize the use of remote communications (e-mail, facsimile, tele-conferencing, Skype, etc.) to conduct its business.
8. ISPRS supported Council travel should be limited to the Society's core business. Attendance of Council Members at non-ISPRS meetings should be approved by the President and considered with care.
9. If ISPRS funds are used for travel support, the most cost-efficient option should be chosen in order to minimise travel expenses for airline tickets, ground transportation, accommodation, subsistence, etc. All flights must be Economy class, bar in exceptional circumstances with the prior written approval of the President.
10. Receipts are required for all expenses claimed, bar in exceptional circumstances with the written approval of the President.
11. Expenses, honoraria etc. are reimbursed by bank transfer and may incur charges by the recipient's bank. The payment of any such charge is the responsibility of the recipient.
12. In their budget projection and accounting of spending, each Council Member should itemize expenses separately into categories of communications, travel, and miscellaneous. Budget projections of each Council member should include their planned travel for the forthcoming year

These guidelines have been approved by the ISPRS Financial Commission on November 11, 2013.

Strategic Plan for ISPRS Publications

ISPRS publications

ISPRS Journal of Photogrammetry and Remote Sensing (IJPRS)
ISPRS Open Journal of Photogrammetry and Remote Sensing (IOJPRS)
ISPRS Journal of Geo-Information (IJGI)
ISPRS Annals of the Photogrammetry, Remote Sensing and Spatial Information Sciences
The International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences
ISPRS Book Series
ISPRS eBulletin
ISPRS Web Site
GIM and Geoinformatics Pages
ISPRS Social Media

The Role of ISPRS Publications to Fulfil the Vision and Mission of ISPRS

Vision

Publications of the International Society for Photogrammetry and Remote Sensing (ISPRS) will be the scientific voice of the Society for the acquisition, processing and analysis of geospatial information addressing technical, commercial, environmental and

societal benefits. Our journals will be peer-reviewed, indexed and recognized among the top five journals of our field. We will promote open access of our publications with a full paper and abstract reviewing, a state-of-art web site and active use of social media for broadest dissemination of information on emerging technologies, innovative methods, landmark research, best practices and activities of ISPRS Commissions and Working Groups. We envision our publications as the highest quality representations of our society and best means of global communication, recognizing ISPRS as the foremost international scientific society in the fields of photogrammetry, remote sensing and spatial information sciences.

Mission

Publications of the International Society for Photogrammetry and Remote Sensing (ISPRS) support its mission to advance geospatial science through international cooperation in research, development and education for the benefit of society and for environmental sustainability. Three aspects of this mission addressing publications are:

1. to support our peer-reviewed international journals (*IJPRS*, *IOJPRS, IJGI*) with excellent editorial resources, expert reviewers and best publishers to ensure highest quality, integrity and cutting-edge content of reported science.
2. to ensure wide international circulation of the results of research and the records of discussion by publication of the abstract-reviewed *ISPRS Archives* and the full paper double-blind peer-reviewed *ISPRS Annals*, which shall form the record of Congresses, Symposia and other scientific meetings of the Society;
3. to publish and circulate an e-Bulletin, maintain a web site and actively pursue other communications such as social media to remain relevant to the interest of the Society and the community at large; and
4. to publish books of a variety of types including edited collections of high-quality scientific papers, authored research monographs, textbooks and tutorials (*ISPRS Book Series*).

Implementing the Vision – Ongoing Functions and Actions

Promote excellence in quality of the flagship peer-review journal of ISPRS, the *ISPRS Journal of Photogrammetry and Remote Sensing (IJPRS)*

- Aim to top the Thompson Reuters Remote Sensing league table.
- Support the *IJPRS* Editors-in-Chief (EiC) to ensure the selection of manuscripts of the highest international scientific quality through optimal management of Associate Editors, liaison with the chosen publisher and close communication with Commission Presidents.
- Support an adequate number of *IJPRS* Associate Editors (AEs) to ensure the highest quality of manuscript review in terms of scientific content, presentation and timeliness of processing from submission to publication.
- Provide opportunities for Commission Presidents and other interested individuals to be Guest Editors of special issues focussed on critical, emerging and beneficial scientific topics.
- Provide global access to IJPRS articles through hybrid publication of the journal, with close monitoring of the rapidly developing open access market.
- Provide benefits to ISPRS Sustaining Members through the opportunity for Journal/Web advertising.
- Encourage a geographic diversity of submissions without compromising the quality of the journal, e.g. through special issues with focus on currently underrepresented areas such as Eastern Europe, Africa and South America, in order to enhance our readership and contribution to society worldwide.

Promote excellence in quality of the open-access, peer-review journal of ISPRS, the *ISPRS Open Journal of Photogrammetry and Remote Sensing (IOJPRS)*

- Aim to have the new open access journal included into the relevant database indices within the next few years.
- Support the *IO JPRS* Editors-in-Chief (EiC) to ensure the selection of manuscripts of the highest international scientific quality through optimal management of Associate Editors, liaison with the chosen publisher and close communication with Commission Presidents.
- Support an adequate number of *IOJPRS* Associate Editors (AEs) to ensure the highest quality of manuscript review in terms of scientific content, presentation and timeliness of processing from submission to publication.
- Provide opportunities for Commission Presidents and other interested individuals to be Guest Editors of special issues focussed on critical, emerging and beneficial scientific topics.
- Develop a competitive pricing strategy for authors to maintain societal interest and ability to publish in the open-access *IOJPRS*.
- Provide authors of developing regions with financial assistance to assist with author costs of publications associated with the online, open access publication format.

- Provide benefits to ISPRS Sustaining Members through the opportunity for Journal/Web advertising.
- Encourage a geographic diversity of submissions without compromising the quality of the journal, e.g. through special issues with focus on currently underrepresented areas such as Eastern Europe, Africa and South America, in order to enhance our readership and contribution to society worldwide.

Promote excellence in quality of the open-access, peer-review journal of ISPRS, the *ISPRS Journal of Geo-Information (IJGI)*

- Ensure high quality publications in *IJGI* to promote citations, reviews and database indexing leading to an Impact Factor above 3.0 and high ranking among geospatial journals.
- Support IJGI Editor-in-Chief (EiC) and the Associate Editors (AEs) to allow excellence in selection of manuscripts of the highest quality and best scientific information, liaison with publisher and close communication with Commission Presidents.
- Provide opportunities for Commission presidents and other interested individuals to be Guest Editors of special issues focussed on critical, emerging and beneficial scientific topics with special emphasis on spatial information science.
- Develop a competitive pricing strategy for authors to maintain societal interest and ability to publish in the open-access *IJGI*.
- Provide authors of developing regions with financial assistance to assist with author costs of publications associated with the online, open access publication format.
- Provide benefits to ISPRS Sustaining Members through Journal/Web advertising.
- Encourage a geographic diversity of submissions without compromising the quality of the journal, e.g. through special issues with focus on currently underrepresented areas such as Eastern Europe, Africa and South America, in order to enhance our readership and contribution to society worldwide.

Ensure global circulation and access of research results presented at Congresses, Symposia and other scientific meetings of the Society in the peer-reviewed *ISPRS Annals of the Photogrammetry, Remote Sensing and Spatial Information Sciences*

- Promote indexing of the *ISPRS Annals*.
- Provide assistance to Commission Presidents to allow excellence in selection of manuscripts of the highest quality and best scientific content through a full paper double-blind review process.
- Promote wide access to the Annals through online, open access on the ISPRS website.
- Provide benefits to ISPRS Sustaining Members through Journal/Web advertising.

Ensure global circulation and access of research results presented at Congresses, Symposia and other scientific meetings of the Society in *The International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences*

- Promote indexing of the *ISPRS Archives*.
- Provide assistance to Commission Presidents to allow high quality publication of manuscripts presented at meetings of the Society through an abstract review process.
- Promote wide access to the Archives through online, open access on the ISPRS website.
- Provide benefits to ISPRS Sustaining Members through Journal/Web advertising.

Promote excellence in quality of the ISPRS Book Series

- Provide the opportunity for Commissions and Working Groups to publish research results, monographs and reviews in high quality book publications.
- Promote wide access to the ISPRS Book Series through publication of eBooks and online distribution on the ISPRS website.
- Provide benefits to ISPRS Sustaining Members through Journal/Web advertising.
- Provide financial return to ISPRS Book Series authors through royalties.

Promote excellence in quality of the ISPRS eBulletin

- Provide the opportunity for Council, Commissions, Working Groups and other interested individuals to publish announcements, meeting reports and other society news.
- Promote wide access to the ISPRS eBulletin through online distribution on the ISPRS website and distribution through email lists, comprising all ISPRS members and other individuals.
- Provide benefits to ISPRS Sustaining Members through Journal/Web advertising.

Promote the creation and maintenance of an excellent web site

- Provide resources for an ISPRS Web Master to design and maintain a state-of-art web presence for access to information about ISPRS, publications, activities of Commissions and Working Groups and opportunity for Sustaining Member advertisement.

Promote wide spread information distribution through relevant and timely contributions in GIM and Geoinformatics

- Provide high quality short articles to the geospatial magazines GIM (bi-monthly) and Geoinformatics (twice a year) on topics relevant to the readership of the two magazines and to ISPRS.

Make use of Social Media

- Maintain an ISPRS presence on Social Media (e.g., Facebook, LinkedIn, Twitter and Instagram) to broaden communication and remain relevant.
- Identify individuals within ISPRS leadership (Council, TCPs, WG Chairs) willing to submit content to ISPRS Social Media outlets in advance of, during and immediately following ISPRS events.
- Coordinate Social Media activity with the ISPRS Student Consortium to encourage student and young professional involvement in ISPRS events, awareness of opportunities and recognition for awards and achievements.
- Coordinate Social Media activity with ISPRS Sustaining Members to provide additional opportunities for advertisement, announcements and recognition for donations and support.

ISPRS Council, November 27, 2021

ISPRS Policy with Respect to the Pre-Publication of Papers submitted to

- ISPRS Journal of Photogrammetry and Remote Sensing
- ISPRS Open Journal of Photogrammetry and Remote Sensing
- ISPRS International Journal of Geo-Information
- ISPRS Annals of the Photogrammetry, Remote Sensing and Spatial Information Sciences (ISPRS Annals)
- The International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences (ISPRS Archives)

The issue

There is a growing tendency in neighbouring disciplines to post manuscripts in public repositories such as arXiv (or indeed the home page of the author) before, during or after submitting the manuscript for publication to a conference and/or scientific journal. The reasons are not exactly clear, but certainly include:
authors want to prove that they are the originator of a certain idea,
the formal reviewing process is at times very long, too long for some PhD students,
public repositories are part of the open-access publication policy.
This policy is encouraged (and sometimes enforced) by many donors and universities, partly due to the high price of scientific journals, partly with the argument that research results which are obtained with public money need to be available to the public free of charge, while at the same time authors need publications with a high impact factor. As a consequence, there is a need for ISPRS to formulate a policy on how to deal with such cases. In order to assess the views of the community, ISAC was asked for comments, and so were the editors of the ISPRS scientific journals.

ISPRS policy on pre-prints in public repositories

ISPRS recognizes the increase in popularity of publishing technical reports in public, non-commercial repositories such as arXiv. As a result, a paper submitted to an ISPRS Journal or an ISPRS scientific meeting may already be available to the community, and during the review process the authors of a paper may be known to the reviewer. As decided during the ISPRS Council Meeting on March 19, 2017, papers posted in arXiv and similar repositories, including the home page of the authors, are not considered prior work. As a consequence, authors are not required to declare whether or not they have posted a paper in such repositories, however, they can declare a posting if they wish to do so. A reviewer should review such a paper as if the paper in the repository did not exist. Citations to papers in the repository are not required and failing to cite them or beat the performance of algorithms etc. described therein are not grounds for rejection. Reviewers should make every effort to treat papers fairly whether or not they know (or suspect) who wrote them, while at the same time not giving away their own identity.

Rationale

While formulating this policy, ISPRS Council was guided by the following four considerations:
If one sets up rules, one needs to be able to enforce them and reprove anybody working against them. As a consequence, ISPRS should not ask authors whether or not they have posted their manuscript on the repository at the time of submission. Exact timing is irrelevant, and while the answer may have been correct at the time it was given, the author may still post the manuscript shortly afterwards (and before the end of the review process).
Rules must be simple. Otherwise, everybody will lose the overview. This also means that ISPRS needs

identical rules for the journals and the scientific meetings. As a consequence, ISPRS should not differentiate between the different publications, but treat them all equally; although the review process for the journals is single-blind (meaning that the author does not know the reviewer, but the reviewer does know the author), while for the Annals it is double-blind. If authors want to maintain anonymity, they can do so by not posting the manuscript on a public repository.
Compared to computer vision, (visual) robotics and remote sensing (beyond topographic mapping), the ISPRS core community is relatively small. There are already ample indications that in particular young scientifically minded authors prefer the other communities because of better visibility and career opportunities. If ISPRS imposes policies that authors do not like, and that other outlets do not impose, authors will publish somewhere else, and this will harm the ISPRS publications and consequently the ISPRS community.
ISPRS obviously needs to honour the legal contracts with journal publishers. In this regard, Elsevier allows authors of the ISPRS Journal of Photogrammetry and Remote Sensing to put manuscripts on public repositories at any time, as long as the layout is not identical to that of the final journal paper. For the open access journals run by ISPRS the same applies.

Published in the ISPRS eBulletin No. 3, 2017
Amended March 26, 2021 and January 03, 2024

Guidelines for Hosting a Technical Commission

Version June 2024

1. Introduction

Technical Commissions (TCs) are hosted by Ordinary Members. Members wishing to host a TC should submit an application to ISPRS according to the instructions given in this section. Council will welcome applications from two members to jointly host a TC, or for separate hosting of TCs, but joint organisation of Symposia. Members making an application must be fully conversant with the responsibilities of hosting a TC and of the responsibilities and the duties of the Technical Commission President (TCP) and the Vice-President of the Commission (Vice-TCP) as set out below.

2. Major Responsibilities of Technical Commissions

The responsibilities and the main tasks of a Technical Commission are defined in Statute XIII and Bylaw XIII of ISPRS.
The member organisation will have complete financial responsibility for all expenses incurred by the work of the Commission. When submitting an application to ISPRS for hosting a Commission, the member must demonstrate that the necessary resources are available.
Technical Commissions are expected to host a Symposium between Congresses.
The TCP and the Vice-TCP should be able to spend considerable time on Commission work, especially during the months prior to the Symposium and the next Congress. TCP and Vice-TCP agree on how the work load is to be shared. The overall responsibility for running the TC rests with the TCP.
It is essential that the Commission be provided with English speaking secretarial assistance. About 30% of the secretary's time will be needed for Commission affairs. The tasks of the Commission Secretary should be undertaken by a person who can work in close cooperation with the TCP.
The TCPs and the Vice-TCP must be free to undertake international travel. Once of them is expected to attend annual joint meetings (JM) with the ISPRS Council between Congresses. They will also be expected to attend a planning meeting of one or two days immediately after the Congress and all applicants must plan their travel schedules to allow for this possibility. In addition, it may be necessary to hold Commission Board meetings with Working Group officers. All travel expenses of the TCPs and Vice-TCPs must be financed by the host member(s).
The host member(s) will be required to sign a contract with ISPRS. This will set out the responsibilities of both parties. A model contract is provided in appendix 1.

3. Applying to Host a Technical Commission

Members wishing to host a Technical Commission for the next four-year period shall submit an application to the ISPRS Secretary General at least four months before the Congress. The application shall contain the following information:

- name(s) of Ordinary Member(s) making the application;
- names of the proposed Technical Commission President (TCP) and Vice -President (preferably from another Ordinary Member) and the Scientific Secretary (max. one each);
- a provisional plan for financial and management arrangements;
- a provisional plan for technical meetings (Symposium, contribution to Geospatial Week, workshops etc.);

Before the General Assembly of ISPRS decides to allocate a Commission to an Ordinary Member, the

proposed TCP shall present to the General Assembly the details of the proposal as set out above.
In electing the Ordinary Member or group of Ordinary Members to be entrusted with the responsibility for the work of a Commission, the General Assembly shall take into consideration all relevant factors, including in particular:

- the various candidate Ordinary Members willing to undertake the responsibility;
- the scientific and technical ability available to each candidate;
- the professional standing and ability of the persons proposed as TCP and Vice-TCP;
- the ability and willingness of each Ordinary Member and other organisations in its country to support the Commission;
- the programme of Commission activities proposed by the Ordinary Member(s) and in particular the Working Groups, their officers and the events contemplated.

Council will review the applications for hosting a Technical Commission and may interview applicants in person or by telephone conference prior to the Congress, in order to clarify aspects of the proposal and to ensure that their proposals meet the expectations.
Elected TCPs and Vice-TCPs will be required to attend a joint meeting with Council immediately after the Congress. Applicants will be notified of the dates of that meeting before the Congress.

4. Symposia

Technical Commissions are required to hold a Symposium between Congresses (see appendix 1). TCPs are encouraged to consider joint Symposia with other TCs and to consider whether the Symposia can be organised together with a regional event.
The subject matter is to be related to the field of the Commission(s).
A technical exhibit may be arranged, preferably within the scope of the Commission.
The financing of the Symposium is the sole responsibility of the Ordinary Member hosting the TC. Registration fees may be charged as appropriate. An ISPRS surcharge equivalent to 10% of all paid Symposium registrations will be imposed to contribute to the costs of running the Society and improving ISPRS activities.
The schedule of all Symposia is approved by Council at the post Congress Joint Meeting. Council requires a draft programme for Symposia and major workshops to be presented and approved at that Joint Meeting which will be held in the autumn of the Congress year.
An international programme committee ensures a high and homogenous scientific quality of the Symposium. The committee is chaired by the TCP and is composed of WG officers of the Commission, members of the Commission Board and other qualified individuals. It needs approval by the ISPRS Council.
It is recommended to use ConfTool Conference Management System for the Symposium. If this system is used, and a list of participants incl. names and addresses is provided to ISPRS with agreement of the participants, ISPRS will pay for the cost of the system.
Each commission shall publish the scientific and technical contributions submitted to the Symposium. Both a review process based on submitted abstracts and a full-paper double-blind review process are to be offered to the authors. Abstract reviewed proceedings shall be published in *The International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences*,contributions accepted after full-paper double-blind review shall be published in the*ISPRS Annals of the Photogrammetry, Remote Sensing and Spatial Information Sciences*. Instructions for publication are given in appendix 4.
ISPRS Council has signed a contract with the publisher Copernicus GmbH. The contract covers the publication of camera-ready pdf-files of all papers on the ISPRS web page. These papers need to be formatted according to the ISPRS Guidelines for Authors (see appendix 5); TCPs are responsible that the guidelines are followed.
This contract is binding for all organisers of ISPRS events, including Congress, Symposia and the Geospatial Week, to ensure consistent publication of ISPRS proceedings. A separate agreement must be established between organisers of each ISPRS event and Copernicus GmbH.

5. Working Groups

Once elected, TCPs are responsible for the preparation, planning, management and reporting of the Commission's work for the following four years. Much of this work is carried out through Working Groups (WGs).
Each WG may have a 'Chair', one or two 'Co-Chair(s)' and a 'Secretary'; these are the WG officers. Preparation for selection of WG officers and the determination of Terms of Reference (ToR) must commence at the Congress at which the TCs have been elected, taking into consideration the Resolutions approved at the Congress for the Commission, and preferably in consultation with the outgoing TCPs. The selection of WG officers and WG ToR must be finalised for presentation and approval by Council at the JM of TCPs and Council in autumn following the Congress.
All candidates for WG Chairs and Co-Chairs must sign a letter (see end of this section) accepting these guidelines as conditions of appointment by Council for a period of four years.
TCs should take advantage of the inter-disciplinary nature of ISPRS scientific activities and the resulting opportunities for enhancing the activities of their Commission by encouraging their WGs to include researchers from related inter-disciplinary areas. Inter-disciplinary keynote papers and/or sessions should also be included in Commission Symposia. TCs should also

encourage joint activities with other WGs and with other cognate organisations.
WG officers should be selected on the basis of:

- recognition of their talents and scientific achievements;
- their ability to manage and direct the activities of the WG for the four-year period;
- their ability to independently fund the operations of the WG, including holding WG meetings during the years between Congresses and Symposia;
- their acceptance of the requirement to attend the Symposium of their Commission, The Geospatial Week and the Congress during their period of tenure of the WG and to present papers on the topics of the WG;
- an inter-continental representation.

WGs will be numbered according to their Commission in Roman numerals, followed by the WG number in Arabic numbers. For example, WG II/6 refers to Working Group 6 in Commission II.
Inter-Commission (IC) WGs may be approved if considered useful by Council; in this case the responsibility for the management of the ICWG must be taken by a nominating TC. the number of this TC will come first, e.g. the responsibility of IC WG IV/I is with TC I.
In the process of approving the plans for the WGs, Council will take into consideration the overall structure of the WGs, their ToR and the selection of WG officers according to the above requirements. The proposed WGs, modified where appropriate, will normally receive Council endorsement at the JM following the Congress.
TCs shall review and evaluate the activity of each WG and report to the Council annually. TCs may replace, in consultation with the Council, any WG officer who has not been active and who has not contributed to the work of the Commission. TCs may also reorganise the WGs in consultation with Council.

6. Geospatial Week

The ISPRS Geospatial Week (GSW) is a combination of workshops organised by various ISPRS Working Groups and possibly other parties active in areas of interest of ISPRS. It is convened by a local organisation, led by the GSW Director, at a common location. The GSW is held biennially in odd years, preferably in the September/October timeframe.
TCs are expected to contribute to the programme of the GSW by helping to attract scientific papers and by encouraging their WGs to organise workshops as part of the GSW.

7. Reporting and Communication

TCPs must attend the annual JM of the Technical Commissions and the Council to report on Commission activities and problems that may arise in the operation of the WGs, and to coordinate plans for the Symposia and the Congress. If necessary, the Vice-TCP can attend the meeting in place of the TCP.
TCs must report on the implementation of the Resolutions of their Commission at the JM held in the year of the Symposia.
TCs are required to contribute to the Biennial Report (see appendix 6), and are to ensure that summary reports of their Commission and WG events are submitted promptly for publication in *ISPRS eBulletin.*

8. Publications and ISPRS Home Page

The proceedings of the Symposia must be published as a Volume of *The International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences* (for submissions accepted based on abstracts) and/or the *ISPRS Annals of the Photogrammetry, Remote Sensing and Spatial Information Sciences* (for submissions based on full-paper double-blind review), see also appendices 4 and 5.
The TCP and Vice-TCP are expected to seek high quality scientific papers suitable for publication in the *ISPRS Journal of Photogrammetry and Remote Sensing* and the *ISPRS International Journal for Geo-Information* at their Symposia and WG meetings, and provide, in consultation with the journal Editor-in-Chief, papers for at least one theme issue on topics related to their Commission during the four-year period of their tenure.
TC and WG officers are expected to collaborate with the journal editors in publicising the journals at Symposia and workshops and to assist the participation of the editor in these meetings.
The TC and WG officers are expected to submit news items for publication in the *ISPRS eBulletin* to the Secretary General, who edits the ISPRS *eBulletin*. TCPs are entitled to place up to five free advertisements of their Symposium in the *ISPRS eBulletin.*
TCs are required to develop and maintain their own home pages, see appendix 7 for details. The provision of links between Commission, potential WG home pages and the ISPRS Home Page, and vice versa, must be coordinated with the ISPRS Web Master.

9. Recommendations on ISPRS Awards

The ISPRS presents major awards at each Congress, including Young Author Awards for authors of papers at the Congress who are younger than 35 years of age, the Best Poster Award and The President's Honorary Citation to WG officers for outstanding performance during the four-year period.
TCPs are expected to propose recommendations for candidates for the major awards in accordance with the ISPRS Awards documentation provided at the following link: www.isprs.org/society/awards/awards_policy.aspx.
TCPs are required to assess papers submitted for the Young Authors Awards, to select best posters per Commission based on presentations during the Congress

and to nominate candidates for The President's Honorary Citation, for details see the ISPRS web page.

10. Resolutions for the Congress

TCs are responsible, in cooperation with the ISPRS Past President, for the compilation of scientific and technical resolutions that are presented to the General Assembly at the Congress for approval. The TC shall organise a Commission Resolutions Committee in cooperation with WG officers and prepare draft scientific and technologic Resolutions for consideration at the last JM before the Congress. TCs shall submit a final draft of Resolutions to the ISPRS Past President in due time for review by the ISPRS International Science Advisory Committee (ISAC) prior to the Congress. The format and schedule for the preparation of the resolutions are outlined in appendix 8.

11. Other Responsibilities of TCPs

TCPs are to keep the Secretary General promptly informed of all address changes of officers in their Commission and its WGs.

ISPRS Council and Honorary Members, the Chairperson of the Financial Commission and the editors of the *ISPRS Journals* are entitled to register at TC Symposia and WG meetings free of charge. It is expected that free accommodation will be provided to Council during the TC Symposium.

One of the TCs is expected to invite Council and TCPs to convene a Joint Meeting in conjunction with its Symposium. These meetings are normally scheduled for the last Symposium in the year and last for three to four days. Reports on Symposia, assessment of the performance of the Commissions and planning for the forthcoming Congress are important items of consideration at that JM.

TCs are responsible for ensuring conformance by WG officers to the "Guidelines for Conducting a Working Group", see below.

TCPs are also expected to help with the selection of projects to be supported under the Scientific and the Educational and Capacity Building Initiatives of ISPRS.

The TC II President, or a Council designee, will be an ex-officio member of the CIPA Committee, and as such will be required to attend the biannual meetings of the CIPA Committee.

Working Group Officer Commissioning Form

Working Group Responsibilities and Tasks

ISPRS Working Groups (WGs), under the direction of the respective Technical Commissions, are responsible for the scientific work of the Society. Chairs and Co-Chairs of WGs are expected to lead the activities of the WG according to its Terms of Reference, which have been approved by the ISPRS Council. Responsibilities and tasks of WG Chairs and Co-Chairs are described in the 'Manual of Operation for ISPRS Technical Commissions and Working Groups' (Orange Book). They are summarised as follows:

- organisation of the scientific work of the WG according to its Terms of Reference;
- development and coordination of WG programs of study amongst interesting parties, covering the areas of interest of the WG, such as defining specific topics of research, preparation of tests, detailing case studies or distribution of questionnaires on issues relevant to the WG;
- communication with people who have a strong interest in the activities of the WG, and an ability to progress its scientific work;
- distribution of ISPRS news to people interested in the WG, e.g. by forwarding the ISPRS *eBulletin*;
- regular communication on the activities of the WG to the TCP, including the submission of WG contributions for ISPRS Biennial reports;
- attendance and active participation in the technical sessions of the Symposium of the relevant Technical Commission, the Geospatial Week and the Congress, incl. review of submitted abstracts and full papers;
- organisation of WG workshops including management of abstracts and papers according to the contractual arrangements made with Copernicus GmbH, if possible in conjunction with one of the two Geospatial Weeks being organised in the odd years of the inter-congress period.

Signature of Agreement

All candidates for the WG positions of Chair and Co-Chair are requested to sign this Commissioning Form prior to their appointment by the Council. By signing this form, candidates demonstrate that they are aware of the responsibilities and tasks of the office, as detailed in the Manual of Operation for ISPRS Technical Commissions and Working Groups, and are willing to undertake these responsibilities and tasks to the best of their ability.

Name of WG officer :

……

Current Position :

……

Nominated ISPRS Working Group Position (Chair/Co-Chair):

……

I have informed myself of the responsibilities and tasks of ISPRS WG Chairs and Co-Chairs as detailed in the 'Manual of Operation for ISPRS Technical Commissions and Working Groups' and hereby agree to serve in the above WG position.

Signature……

Date: ……
I attach my biographical details , incl. name, full postal address, phone number, fax, e-mail, nationality, education, professional positions held and a brief summary of work undertaken in the area of the WG. A more complete CV may also be attached.

Guidelines for Conducting a Working Group

Version June 2024

1. WG Officers and Activities

ISPRS Working Groups (WGs), under the direction of the respective Commissions, are responsible for the scientific work of the Society. Working group officers are one Chairperson, a maximum of two Co-Chairs and one WG secretary. The responsibility for running the WG rests with the Chairperson. The Co-Chair and the Secretary assist the Chairperson in carrying out the activities.

WG officers organise the scientific activities of the WG, covering its areas of interest, according to the Terms of Reference (ToR) prepared in coordination with their TCP and approved by Council. WG activities may include specific research topics, tests, case studies, questionnaires, and other tasks of interest to the TC and ISPRS.

The Council and TCPs entrust each WG with the responsibility to address those Resolutions that have been approved by the General Assembly and are relevant to the WG. WG ToRs should be developed, addressed and status reported so that they reflect the essence of Resolutions and previous work in the area.

The officers shall be financially capable of attending the Symposium of the relevant TC (or TCs in the case of Inter-Commission WGs), the two Geospatial Weeks and the following Congress, to report on WG activities.

A WG can select individual members according to their expertise in the area of interest of the WG. In selecting individual members, WG officers should strive to include researchers from related inter-disciplinary areas.

All candidates for WG Chairs and Co-Chairs must sign a letter (see end of last section) accepting these guidelines as conditions of appointment by Council. Council has the final say in the composition and ToRs of WGs and may override decisions of the TC if needed.

2. Meetings, Symposium and Congress

WG officers are expected to organise ISPRS events and ISPRS co-sponsored events, preferably during the odd-numbered years between Congresses and Symposia. These events may take the form of a workshop, tutorial, seminar, or colloquium, see also appendix 2. Due consideration should be given to the possibility to organise the event as part of the ISPRS Geospatial Week. All events organised under the name of ISPRS must be approved by Council through the Secretary General prior to their announcement (see appendix 3 for the related form). This approval process will avoid clashes of dates of ISPRS meetings of like topics.

Events can be held in conjunction with other events provided they have their own identity, or they may be organised as separate events.

It is recommended to use ConfTool Conference Management System for these events. If this system is used, and a list of participants incl. names and addresses is provided to ISPRS with agreement of the participants, ISPRS will pay for the cost of the system.

Council requires a draft programme for Symposia and major workshops to be presented and approved at the Joint Meeting which will be held in the autumn of the Congress year. WG officers should submit their draft programme to their TCP in due time.

All WG officers are expected to attend the Symposium, the two Geospatial Weeks and the Congress, and to assist the TCP in preparing the technical programme of the Symposium and Congress sessions of the TC incl. reviewing abstracts and full papers.

3. Publications, Reports, and Communication

All contributions submitted to an ISPRS event are published online and under the Creative Commons licence in the Archives (if abstract reviewed) or the Annals (if full-paper double-blind reviewed), see also appendices 4. Specifications for preparation are given in the ISPRS Guidelines for Authors (see appendix 5); organisers of ISPRS events are responsible that these guidelines are followed. Publication must occur through Copernicus GmbH, see also appendix 2.

Except for rare cases such as an event organised by an ISPRS Committee, e.g. CIPA, proceedings of ISPRS co-sponsored events do not appear in either Archives or Annals and they are not handled through Copernicus GmbH; publication should instead be coordinated with the main event organiser.

A report on all ISPRS events and ISPRS co-sponsored events must be submitted by the WG

officers to the Secretary General for publication in the *ISPRS eBulletin* no later than three months after the event.
Upon request WG Chairs/Co-Chairs should submit contributions to their TCP for inclusion into the ISPRS Biennial Report, as described in appendix 6.
WG officers should publicise their activities through the *ISPRS eBulletin*. The text for these entries, prepared by the WG, should be submitted to the Secretary General.
To ensure regular communication with all parties interested in the WG activities, WG officers are encouraged to develop and maintain their own home pages, see appendix 7 for details. The provision of links between Commission, WG home pages and the ISPRS Home Page, and vice versa, must be coordinated with the ISPRS Web Master.
WG officers should also distribute the *ISPRS eBulletin* to all interested parties.
It is essential for the progress of the scientific activities of ISPRS, that WG officers maintain contact with Council through their TCP. The first contact point for WG officers should be the appropriate TCP. However, if there are issues that will involve the Council the Secretary General should be contacted.

4. Changes to Working Group Officers
If a WG officer is unable to continue serving in the position he/she must notify the TCP promptly, preferably with a recommendation for replacement.
If a WG has been found to be inactive, it will be dissolved on initiative of the President of the Commission concerned, or the Council.

Guidelines for Planning an ISPRS Symposia

Version June 2024

1. Introduction
Planning for the midterm Symposium should begin immediately after the Congress. A proposed schedule is given in this appendix. ISPRS shall be the primary sponsor of the Symposium. Additional sponsors are welcome. Details of Symposium organisation are agreed upon between Council and Ordinary Member running the Symposium in a written contract. A sample contract can be obtained from the Secretary General.

2. Conference Management
Conference facilities should be selected according to the most suitable options for the host country. They may be in a hotel, rented facilities, or within the host's facilities, e.g. university lecture theatres. The location of housing and the conference in the same venue ('residential format'), in a hotel or in a university college, is a suitable option, since it facilitates contact and discussions between the participants, and generates a good workshop-like atmosphere. Common lunches further add to exchange between the participants.
As many of the ISPRS Council members as possible will attend the Symposia. TCPs should plan their budgets for the Symposium and other events to be hosted by the Commission in a way that that Council can be provided with complimentary registration and accommodation.
TCs must organise a meeting of the TC and WG officers and the Council during the Symposium to review progress of the Commission.
As a result of a contract signed by ISPRS Council with Copernicus GmbH, a publishing service is available. It is binding for all ISPRS events including Congress, Symposia and the Geospatial Week, to ensure consistent publication of ISPRS proceedings.
A separate agreement must be established between organisers of each ISPRS event and Copernicus GmbH. More details of the Contract can be provided by the Secretary General. Contact details are as follows: info@copernicus.org, www.copernicus.org.

3. Programme and Symposium Structure
The programme should be determined by the TPCs in consultation with the WG officers. The final programme should be distributed on the Web and by e-mail.
Organisers should ensure that all speakers attend the Symposium by communicating with them by e-mail and/or a process of advanced registration.
The Symposium Opening Session should include a keynote speaker who identifies the important developments in the Commission's activities. Keynote papers and/or sessions on relevant inter-disciplinary topics through other international bodies should be included in the Symposium.
The Symposium programme may be single-track or based on parallel sessions *(preferably not more than two)*, or a mix of both, depending on the number of papers presented.
Oral Sessions should normally last 90 minutes, preferably comprising four speakers. Poster sessions should also be included in the programme.
A final session, comprising summary reports by the WG Chairs and the TCP on the content of the technical sessions, is a good approach for presenting the main issues of the Symposium.

4. Exhibition

An exhibition may be included in the Symposium. An *"Exhibitor's Showcase Session"* provides the exhibitors with an opportunity to present themselves to the participants, and hence integrates them into the symposium.

5. Announcement and Advertising

Modern means of communications should be used for the distribution of announcements on the Symposia.
Advertisements should also be placed in *ISPRS eBulletin*, the *ISPRS Journal for*, *Photogrammetry and Remote Sensing*, the *ISPRS International Journal for Geo-Information* as well as other journals and especially during other conferences.
TCPs are responsible for keeping Council informed of the plans and progress for the Symposium and for providing multiple copies of Symposium brochures to Council.

6. Paper Submission and Publication

The submission of abstracts and full papers must follow the ISPRS publication policy (see appendix 4). Papers must be prepared according to ISPRS Guidelines (see appendix 5); TCPs are responsible that these guidelines are followed. Paper submission should be in electronic form to enable production of the Archives or Annals on an appropriate electronic medium. Only those papers for which the author will attend the Symposium should be included in the proceedings.
All Symposium proceedings must be published as a Volume of *The ISPRS International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences* and/or *The ISPRS International Annals of the Photogrammetry, Remote Sensing and Spatial Information Sciences*.
Proceedings in digital form must be available to registrants upon arrival to the Symposium.

7. Registration Fees

On-site full-registration fees will vary according to local conditions. Registration fees for students and seniors should be about half the full fee. Developing countries may find it appropriate to offer a much-reduced registration fee for local participants.
Symposium planning will be facilitated by offering a reduced fee for advanced full-registration and by including the price of the conference dinner.
Organisers may request authors to submit an advanced registration fee with their full paper to ensure publication of the paper in the proceedings.
The Society surcharge equivalent to 10% of all paid registrations shall be rebated to the ISPRS Treasurer.

8. Awards

Best poster awards and young authors' awards are encouraged. The decision of the awards can be made in advance of the Symposium based on the submitted papers, or during the symposium based on the papers and its oral presentations. Awards should be presented at a plenary session.

9. Reports and Publication of Symposium Papers in ISPRS Journals

A Commission rapporteur should be identified to the Secretary General three months in advance by the TCP of each Commission for the preparation of a Symposium report for publication in the last issue of *ISPRS eBulletin* of the Symposium year.
TCPs and WG officers should identify about 5 suitable papers for consideration by the Editor-in-Chief for publication in the *ISPRS Journal of Photogrammetry and Remote Sensing or the ISPRS International Journal for Geo-Information*.

10. Suggested Schedule for Symposium Planning

according to the contractual arrangements made with Copernicus GmbH

Site selection	within 3 months of Congress
Finalise and sign contract with Council	15-18 months prior to Symposium
First Announcement and initial call for Exhibits	15-18 months prior to Symposium
Second Announcement and Call for Papers	9-12 months prior to Symposium
Deadline for paper submission	4 months prior to Symposium
Notification of paper acceptance	3 months prior to Symposium
Early Registration	3 months prior to Symposium
Deadline for submission of manuscripts	1,5 months prior to Symposium
Final Programme	about 2 weeks prior to Symposium

Terms of Reference for Sustaining Members

1. Sustaining Members are individuals, organizations, institutions or agencies who manufacture or distribute instruments, equipment or supplies, or who operate or provides services in the fields of photogrammetry, remote sensing and/or GIS, or who are engaged in research and/or education, and who contribute to the financial support of the Society.

2. Sustaining Members shall pay an annual fee according to the invoice from the Treasurer at the beginning of each calendar year. There shall be 5 categories as follows:

Category	Num.Specialists	Annual Subscription
A	more than 750 employees	3450 CHF
B	100 - 750 employees	1725 CHF
C	25 - 100 employees	920 CHF
D	1 - 25 employees	460 CHF
E	Educational Institutes	250 CHF

   Sustaining Members are encouraged to increase their contribution but such additional contributions will not change the category of membership. A Sustaining Member who is more than two years in arrears shall be dropped from the rolls.

3. Applicants for status as Sustaining Members shall file with the Secretary General a written statement (less than 1000 words) describing their photogrammetric and/or remote sensing activities. Applicants shall commit to membership for a minimum of four years. Application shall be approved unless two or more members of Council submit objections in writing. Any such objections shall be forwarded to the applicant who shall have right of rebuttal.

4. The Secretary General will maintain a list of current Sustaining Members and the description of their activities. This information will be printed in appropriate Society publications. A Sustaining Member may revise the description of activities whenever it may be necessary.

5. At an appropriate time near the end of each Congress, the current Congress Director will schedule a meeting of the Sustaining Members to review the exhibit and other congress activities. The current Congress Director or his representative shall preside at this meeting. The incoming Congress Director will be an observer.

6. Approximately two years before each Congress, the Secretary General will schedule and invite to a meeting of the Sustaining Members at an appropriate time and place. A preliminary agenda for the meeting will be attached to the invitation. A member of the ISPRS Council, preferably the Congress Director, shall preside at this meeting. Not less than 8 weeks before this meeting the Congress Director will distribute to the Sustaining Members a written description of the plans for the next Congress.

7. Not less than 4 weeks before the inter-Congress scheduled Meeting, Sustaining Members shall inform the Secretary General in writing of any items they wish included on the agenda and the name of their delegate. Voting by proxy shall be allowed provided it is designated in writing to the Secretary General in advance of the meeting. For the Congress meeting, designation of delegates and proxies may be made during the Congress.

8. At any meeting of the Sustaining Members, the number of votes will be determined by membership category as follows:

Category	A	B	C	D	E
Votes	8	4	2	1	1

   In matters related to the Congress, deliberations of Sustaining Members shall be advisory only; the Congress Director has final authority for all Congress plans.

9. Sustaining Members will be provided with a suitable Certificate and shall have the right to indicate in their business and professional publications that they are Sustaining Members of ISPRS.

10. Amendments to these Terms of Reference which do not result in conflict with articles in the Statutes and Bylaws may be adopted by majority vote at any meeting of the Sustaining Members.

11. The Council recommends that the Congress Director provide exhibition space at the Congress to Sustaining Members at a discount rate

Approved by Sustaining Members Meeting at XVI ISPRS Congress in Kyoto, July 1988.
Categories amended by General Assembly mail ballot, February, 1993.
Amendments approved at Sustaining Members Meeting at XVIII ISPRS Congress in Vienna, July 1996.
Amendments approved by the General Assembly at XX ISPRS Congress in Istanbul, July 2004.

ISPRS Individual Membership Policy

How to become an ISPRS Individual Member

- An **application** for ISPRS Individual Membership shall be addressed in writing to the ISPRS Secretary General and shall include a statement of the applicant's role in the fields of photogrammetry and/or remote sensing and/or spatial information.
- ISPRS Individual Membership is free of charge. An annual donation to The ISPRS Foundation is encouraged.
- Council shall consider each application and make the final decision on admission of an applicant. If the individual comes from an area with an active Ordinary Member, Council will inform that Ordinary Member about the decision as soon as possible.
- Whilst ISPRS Individual Membership is available for everybody, ISPRS particularly strives to make sure individuals in areas, where an active Ordinary Member does not exist, have the possibility to join ISPRS on an individual basis
- ISPRS Individual Membership is to be renewed every calendar year.

Advantages of ISPRS Individual Membership

- ISPRS Individual Members will receive regular information from ISPRS Headquarters through the ISPRS eBulletin and other correspondence on news and events.
- On joining the Society, ISPRS Individual Members will be issued with a membership certificate.
- Preference will be given to ISPRS Individual Members who apply for travel grants offered by ISPRS and The ISPRS Foundation.
- ISPRS Individual Members can purchase volumes of the ISPRS book series at a reduced rate.

The role of ISPRS Ordinary Members with respect to Individual Membership

- The right to nominate candidates for positions in Council, as Technical Commission President, for the Financial Commission and for similar positions within ISPRS, remains exclusively with the ISPRS Ordinary Members.
- Every individual who is a member of an ISPRS Ordinary Member is accepted by ISPRS for ISPRS Individual Membership. The Ordinary Member will establish whether Individual Membership will be by default or by explicit approval of the individuals concerned and will inform ISPRS accordingly.
- The ISPRS Ordinary Members are asked to handle the administration of ISPRS Individual Membership as far as their members are concerned. In the event that the Ordinary Member decides not to deal with this administration, it will inform Council and ISPRS Headquarters will handle the membership administration.
- For members of the ISPRS Ordinary Members wishing to become ISPRS Individual Members and to regularly obtain information from ISPRS, e.g., through the eBulletin, the Ordinary Member is asked to provide contact details to ISPRS, if possible with regard to national privacy laws.
- If any person wants to become an ISPRS Individual Member without joining an ISPRS Ordinary Member, this person is free to do so. In countries and regions, in which an active ISPRS Ordinary Member exists, which handles the administration of ISPRS Individual Membership, that Ordinary Member will also handle such ISPRS Individual-only Memberships in a manner that is suitable to the Ordinary Member. The Ordinary Member is entitled to charge the individual a handing fee for its services. The amount of that handling fee is to be decided at the discretion of the Ordinary Member.
- In areas, in which an active ISPRS Ordinary Member does not exist, ISPRS Headquarters will handle membership administration.