

THE INTERNATIONAL SOCIETY FOR PHOTOGRAMMETRY AND REMOTE SENSING



information from imagery

2016-17 Biennial Report



ISPRS MIDTERM SYMPOSIA 2018

COMMISSION I - SENSOR SYSTEMS

Innovative Sensing – From Sensors to Methods and Applications

9-12 October 2018

Karlsruhe, Germany

COMMISSION II – PHOTOGRAMMETRY

Towards Photogrammetry 2020

3-7 June 2018

Riva del Garda, Italy

COMMISSION III - REMOTE SENSING

Developments, Technologies and Applications in Remote Sensing

7-10 May 2018

Beijing, China

COMMISSION IV - SPATIAL INFORMATION SCIENCE

3D Spatial Information Science - The Engine of Change

1-5 October 2018

Delft, the Netherlands

COMMISSION V - EDUCATION AND OUTREACH

Pixels to People

20-23 November 2018

Dehradun, India

GEOSPATIAL WEEK 2019

LOCATION: Enschede, the Netherlands, 10-14 June 2019

HOST: The University of Twente

XXIV ISPRS CONGRESS 2020

WWW.ISPRS2020-NICE.COM

LOCATION: Nice, France, 14-20 June 2020

HOST: Société Française de Photogrammétrie et Télédétection (SFPT)

CONGRESS DIRECTOR: Nicolas Paparoditis

Head of Research and Education, French National Mapping Agency and

Head of ENSG-Géomatique, Engineering School

INTERNATIONAL SOCIETY FOR
PHOTOGRAMMETRY AND REMOTE SENSING

2016-17
BIENNIAL REPORT

ABOUT ISPRS - WWW.ISPRS.ORG

ISPRS is an international non-governmental organization that promotes international cooperation between the worldwide organizations with interests in the photogrammetry, remote sensing and spatial information sciences. Established in 1910, ISPRS is the oldest international umbrella organization in its field, which may be summarized as addressing “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 on less developed countries,
- promoting public recognition of the contributions from the photogrammetry, remote sensing and spatial information sciences for the benefit of humankind and the sustainability of the environment.

ISPRS MISSION

- To advance the photogrammetry, remote sensing and spatial information sciences through international cooperation in research, development and education for the benefit of society and for environmental sustainability.

ISPRS VISION

- To be the foremost scientific organization in its field,
- to speak for all people working in the field,
- to provide the necessary resources to develop the field.

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MESSAGE FROM THE PRESIDENT

ISPRS - the International Society for Photogrammetry and Remote Sensing - is an international non-governmental organization that promotes international cooperation between the worldwide organizations with interests in the photogrammetry, remote sensing and spatial information sciences, which may be summarized as addressing “information from imagery”.

With the XXIII ISPRS Congress, held in July 2016 in Prague, having closed its doors about 18 months ago, the new Technical Commissions are busy bringing life into their programmes for the coming term. Let me share with you some thoughts on shaping the future of our society in order to influence science and development in photogrammetry, remote sensing and spatial information science in a similar way as in the past.

ISPRS has always been influenced by both the mapping and the space sciences and technologies. This was visible, for example, in the Prague ISPRS Congress, through two events initiated to bridge the gap between science and application: the *ISPRS - UN-GGIM National Mapping and Cadastral Agencies Forum* and the *ISPRS - IAA Space Agency Forum*. Other recent improvements in the society include a new research agenda, the introduction of five new Commissions and a series of yearly high-level scientific meetings, including the new Geospatial Week in odd years; a Scientific Initiative, funding and thus strengthening research collaboration between groups within ISPRS; a new International Advisory Committee (I²AC) to give industry a stronger voice; and our two scientific journals, the *ISPRS Journal of Photogrammetry and Remote Sensing* and the *ISPRS International Journal of Geo-Information*, as well as the Archives and Annals proceedings series, being more attractive than ever, as they now are included in just about all scientific indices relevant for researchers around the globe, incl. the Web of Science and SCOPUS.

More changes have come about since the last Congress. A new award was established with the generous support of ESRI and MPDI – the *Jack Dangermond Award* which will be presented to the author of the best paper published in the *ISPRS International Journal of Geo-Information* in the 4-year period between congresses. This new award joins the very prestigious *U.V. Helava Award*, which ISPRS presents to the author of the best paper in *The ISPRS Journal of Photogrammetry and Remote Sensing*, in the same term. In addition, the Scientific Initiative has now been expanded. 2018 will see the first ISPRS Education and Capacity Building Initiative. Projects of relevance to more than a single ISPRS member will be financially supported, this time for education and outreach. ISPRS plans to continue both, the *Scientific Initiative* and the *Education and Capacity Building Initiative*, in even and odd years, respectively.

Given all these, to some extent, fundamental changes, one could conclude that it is now time for a consolidation of the society's activities and to observe and then evaluate these changes. Did they bring about the desired effects? Do we need to fine-tune any of the decisions we have made? And yes, we will no doubt do exactly that: observe, evaluate and fine-tune the effects of the changes we have introduced.

At the same time, however, we witness developments within and beyond ISPRS which may have a major effect on our work and our society. In our core disciplines, progress is continuing at a very fast pace. In *photogrammetry*, autonomous driving and robotics with influences from navigation and computer vision, but also high-precision and autonomous industrial measurement and the preservation of cultural heritage are very hot topics. For *remote sensing*, let me mention global change and sustainable development, and satellite constellations with hundreds of platforms for constant environmental monitoring of the whole earth. *Spatial information science* will increasingly deal with spatio-temporal modelling, social media and ubiquitous computing. Underlying concepts of these developments are big data, artificial intelligence and deep learning, parallel and cloud computing and the Internet of Things. The ISPRS tag line - *Information from Imagery* - can thus be interpreted as the digitisation of our planet in real time, and in many different scales and applications.

These developments also have an influence on the stakeholders in our field. Some scientific societies and companies for computer vision, remote sensing and GIS are becoming interested in ISPRS, while some more traditional players sometimes find it hard to compete or even to survive. In this sense, we are happy to welcome the companies Brilliant Remote

Sensing Labs of Dubai, nFrames of Stuttgart, Germany, and Phase One of Copenhagen, Denmark, as new ISPRS sustaining members.

We will face many scientific, technical and organisational challenges; it is my firm belief that these challenges can only be met in cooperation with groups beyond ISPRS. This brings me to a point which we will need to pay more attention to: we should increase our efforts to more closely cooperate with these groups - many of which, such as the robotics, the navigation and the computer vision communities, are much larger than ISPRS - to show them what we have to offer: high quality geospatial information services, reliable data acquisition schemes and geospatial knowledge across the whole value chain.

Science, and science in an international society such as ISPRS in particular, also has other roles, e.g. that of education and outreach. Given how ISPRS activities were distributed in the past, there are a few regions on the globe in which we should increase our presence. To this end, the Latin American Remote Sensing Week, LARS is now an ISPRS Regional Conference, it will be held in Santiago de Chile in April 2018 for the first time. Also, Muhammad Alrajhi was appointed the new Regional Coordinator for the Arab States in early 2017, and the ISPRS Geospatial Week 2019 will be held in Enschede, the Netherlands.

In a diverse world there is, of course, no single solution which fits all. Only the underlying concept is certainly similar for different areas around the globe: work together, learn from each other and then develop common projects and later perhaps also institutions in the geospatial domain.

In this spirit I hope to see all of you during the 2018 ISPRS Symposia, the 2019 Geospatial Week in Enschede, and the 2020 ISPRS Congress in Nice.



Christian Heipke
ISPRS President

MESSAGE FROM THE SECRETARY GENERAL

ISPRS is the oldest international society dedicated to photogrammetry, remote sensing and spatial science. Throughout the years, the elected Council, together with the General Assemblies, have continuously reviewed and refined the regulations and responsibilities to accommodate the ever evolving development within both the society and the science.

At the XXIII General Assembly in Prague, a new set of Commissions was approved; led not only by their Presidents, but also by Vice-Presidents. ISPRS has only five Technical Commissions now, although with the same number of Working Groups as in the previous period - sixty.

ISPRS scientists are very active and the ISPRS Secretariat accepted 50 applications for workshops held all over the world in 2017. The amount of scientific activity can also be seen in the increasing number of papers submitted to ISPRS journals – IJRS, with the highest impact factor among other journals of the same specialization, and IJGI, which is also very successful, with an increasing value of its impact factor. Twenty volumes of *The International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences* and nine volumes of the *ISPRS Annals of the Photogrammetry, Remote Sensing and Spatial Information Sciences* have been published since the XXIII Congress in Prague. ISPRS Council greatly appreciates the activities of its members. One way of showing this appreciation is to keep you informed on actual issues via the ISPRS web site, perfectly maintained by Markus Englich, and via the eBulletin, issued by the Secretariat five times per year. We always welcome news provided to us to share with the entire ISPRS community.

One of Council's duties is to highlight ISPRS among other international organizations. ISPRS is one of the Scientific Unions, i.e. members of ICSU (International Council of Scientific Unions). ICSU agreed to merge with another important organization, ISSC (International Council for Social Sciences) and to create an International Science Council in 2018. ISPRS is also a member of the GeoUnions, a group of societies active in „geo“ sciences within ICSU.

ISPRS is a member of UNOOSA and UN-GGIM, including its group UN-GGIM Geospatial Societies (previously named JB GIS), and also a member of a UN-SPIDER project GP STAR, focused on disaster risk reduction. All these activities bring a wider awareness of ISPRS in the world.

Council launched the first call for ISPRS Scientific Initiative projects within this term of office in 2016, with financing beginning in 2017. The second call - 2018 ISPRS Call for Educational and Capacity Building Initiative - is to encourage project proposals with goals in capacity building.

Eighteen months of everyday work of the Secretary General and ISPRS Headquarter has passed since the XXIII ISPRS Prague Congress. We have not kept count of the number of emails which have come to isprs-sg@isprs.org and we do not count those which were sent out from this address, but it is around 30 000.

I would very much like to thank my secretary, Annette Radtke, who has been working for ISPRS since 2013, and my colleagues from Council, for the fruitful and valuable cooperation since July 2016.



Lena Halounová
ISPRS Secretary General

MESSAGE FROM THE CONGRESS DIRECTOR

We are inviting you to attend the XXIVth ISPRS Congress (<http://www.isprs2020-nice.com>), which will take place in 2020 in the beautiful city of Nice, on the Mediterranean Sea, from 14-20 June.



Nice, the cosmopolitan and multicultural capital of the French Riviera is one of the greatest places in the world to host an unforgettable ISPRS Congress. Indeed, Nice is an outstanding location between the sea and the mountains, close to the Italian border, where culture and heritage meet with the cutting edge technology of Sophia Antipolis, the French Silicon Valley. The Acropolis Congress Centre is in the heart of the city, 4 minutes walk from the old town of Nice, 10 minutes walk from the beaches, and 15 minutes by tramway from the airport.

The congress will have a very rich scientific program that will enable one to remain at the state-of-the-art of science and technology, to meet and exchange with a large number scientists, and also to cross-fertilize with scientists coming from related fields. Indeed, this Congress will gather leading specialists, experts, researchers and students in the fields of photogrammetry, remote sensing, and spatial information sciences coming from universities, research foundations, mapping and spatial agencies, public organisations and private companies. A space agency forum, a national mapping and cadastral agency forum, an urban communities' forum, and a business forum will also address policy and economic issues in GeoInformation. A summer school will also be organized together with the ISPRS Student Consortium.

The ISPRS 2020 Congress will hold a strong industrial exhibition with both private and public companies. This exhibition will give you the unique opportunity to get updated in the advances of new geospatial technologies and solutions (satellite systems, lidar systems, hyperspectral imaging systems, mobile mapping systems, UAVs, virtual and augmented reality devices, serious games, 3D printing, GeoBigData processing, GIS technologies, geo-data warehouses, geo-visualisation, geo-services, VGI-technologies, Spatial Data Infrastructures, etc.) and their applications (digital globes and portals, web services for geo-platforms, very high resolution mapping, UAV data acquisition and mapping, road mapping, roadworks, underground and indoor mapping, cultural heritage, geodecision making, urban planning, smart and sustainable cities, 3D city models, 3D road and street models, virtual and augmented reality geovisualisation, autonomous navigation and driving, street mobility diagnosis for disabled, etc.).

The ISPRS 2020 Congress will be hosted by SFPT (the French Society of Photogrammetry and Remote Sensing), and will be organized with the support of the major French public institutions dealing with photogrammetry, remote sensing and spatial information sciences.



Nicolas Papanoditis
ISPRS Congress Director

COMMISSION I - SENSOR SYSTEMS

With view of the new ISPRS commission structure, Commission I “Sensor Systems” is concerned with the design, construction, characterization, calibration and use of imaging and non-imaging sensors, sensor systems and sensor networks for photogrammetry, remote sensing and spatial information science. This includes, on one hand, the development of new and innovative technological concepts, yet likewise, models and methods for optimally exploiting, calibrating and thoroughly evaluating new sensors, networks or single components of them. As it is also reflected by the new commission title “Sensor Systems”, an imaging or non-imaging sensor can never be seen as isolated unit, it is rather one of the core components of a comprehensive (geo-)data acquisition and exploration process. The commission’s internal structure follows this systemic approach. Sensor concepts are focal points of the commission. Yet methodological challenges arising from these concepts are on a par with them – especially regarding the exploitation, calibration and characterization of the recorded data with view on practical applications.

In the report period, Commission I was involved in the (co-)organization of numerous events – mainly with focus on science but occasionally also with focus on education. In the following, we highlight four specific events with strong involvement or even lead of Commission I, and shortly summarize various other events cooperatively organized by our commission together with other organizations.

The biennial ISPRS Hannover Workshop 2017, including HRIGI17 (High-Resolution Earth Imaging for Geospatial Information), CMRT17 (City Models, Roads and Traffic), ISA17 (Image Sequence Analysis), and EuroCOW (European Calibration and Orientation Workshop) was jointly organized by working groups I/2, I/4, I/8, I/9, I/10, II/4, II/5, II/6, III/3, III/7, IC I/IV, IC II/III, and held at the Leibniz Universität Hannover, Germany, June 6-9, 2017. The workshop, attended by more than 100 participants from all around the world, included four keynote talks (one of them given by Commission I Vice President Raul Feitosa), 26 accepted full paper presentations (published in the ISPRS Annals with an acceptance rate of 53%) and 110 accepted abstract submissions (acceptance rate of 91%).

The *Workshop on UAV-g 2017*, organized by ICWG I/II in Bonn, addressed the current issues in UAV/UAS technology. Over 100 papers were submitted with an acceptance rate of 50% for full papers published in the ISPRS Annals and 69% for abstract-based paper submissions published in the ISPRS Archives. In total, 76 presentations (oral and poster) were given. The next UAV-g event will take place at University of Twente, The Netherlands, June 4-7, 2019 and will be organized by Francesco Nex, chair of ICWG I/II.

Another major event was ISPRS Geospatial Week 2017 (GSW2017), to which Commission I contributed huge efforts. TC officers and WG officers of Commission I were involved in organizing (at least) three GSW events: Timo Balz, chairman of WG I/2, organized the very successful GSW event “SAR-CON”, focusing on new developments in Synthetic Aperture Radar (SAR) mission concepts, SAR processing and SAR image analysis. All in all, 55 papers have been submitted to SAR-CON, of which 10 were selected for publication in the ISPRS Annals and 22 for publication in the ISPRS Archives. Cheng Wang and Naser El-Sheimy (WG I/6 and I/7) were involved as co-organizers of the GSW event “INDOOR3D 2017”, and Martin Weinmann as co-organizer of “Laser Scanning 2017” (LS 2017). In total, 45 contributions were submitted to LS 2017, of which 21 were selected for publication in the ISPRS Annals and 18 for publication in the ISPRS Archives.

Furthermore, Commission I also co-organized an event that was, in particular, directed towards educational aspects in sensor systems and applications: Raul Feitosa and Antonio Tommaselli, vice president and board member of Commission I, organized the IEEE/GRSS-Young Professionals & ISPRS Student Consortium Summer School 2017, a joint event of IEEE-GRSS, ISPRS, and Brazilian Universities, that took place from Oct 2-6, 2017 in Lages, Brazil.

In an effort to seek new members and reach out to the geoscience community in general, Commission I has supported several meetings by providing keynotes, workshops, tutorials, and promoting Commission I activities. Several WGs provided major contributions to various meetings and events. A partial list includes the following events:

- WG I/1 and WG I/5 to *Frontiers in Spectral imaging and 3D Technologies for Geospatial Solutions*, October 25-27, 2017, Jyväskylä, Finland;
- WG I/1 to *10th EARSeL SIG Imaging Spectroscopy Workshop*, April 19-21, 2017, Zürich, Switzerland;
- WG I/2 to *UAS4Enviro - Small Unmanned Aerial Systems for Environmental Research*, June 28-30, 2017, Vila Real, Portugal;
- WG I/3 to *JURSE 2017 – Joint Urban Remote Sensing Event*, March 6-8, 2017, Dubai, UAE;
- WGs I/6 and I/7 to the *Mobile Mapping Technology 2017*, May 6-8, 2017, Cairo, Egypt;
- ICWG I/IV to *LowCost3D 2017*, November 28-29, 2017, Hamburg, Germany;
- TC officers Stefan Hinz and Boris Jutzi contributed keynotes to the *Photogrammetric Week*, September 2017, Stuttgart, Germany.

The activity level of Commission I WGs is well-represented by the fact that five applications were submitted to the new ISPRS Scientific Initiative and two applications for the ISPRS Educational and Capacity Building Initiative.

Looking at the future, the focus is on successfully organizing the Commission I Midterm Symposium in Karlsruhe, Germany, on *Innovative Sensing - From Sensors to Methods and Applications*, October 10-12, 2018. It will provide a unique inter- and multi-disciplinary forum for all the professionals involved in geospatial sensing and data acquisition from a variety of platforms.



Stefan Hinz
President
ISPRS Commission I



Raul Queiroz Feitosa
Vice President
ISPRS Commission I

COMMISSION II - PHOTGRAMMETRY

The ISPRS Technical Commission II deals, at various scales, with geometric, radiometric and multi-temporal aspects of the image- and range-based 3D surveying and modeling domains. In particular, Commission II focuses on image orientation, point cloud generation and processing, 3D feature extraction, scene understanding, sensor and data fusion, sensor characterization, machine learning for geospatial data analysis and big data techniques for massive data processing. Applications in the fields of mapping, industry, heritage, space, underwater and environment are considered.

The ISPRS Commission II scientific activities are organised through 10 Working Groups (Image Orientation, Point Cloud Generation, Point Cloud Processing, 3D Scene Reconstruction and Analysis, Dynamic Scene Analysis, Large-scale Machine Learning for Geospatial Data Analysis, Vision Metrology, Data Acquisition and Processing in Cultural Heritage, Underwater Data Acquisition and Processing, 3D Mapping for Environmental & Infrastructure Monitoring) and 2 Inter-Commission Working Groups jointly coordinated with Technical Commission I (UAS & Small Multi-Sensor Platforms: Concepts & Applications) and Commission III (Pattern Analysis in Remote Sensing).

In the first year and a half of activities, TCII organized 7 workshops, supported 13 scientific events and special sessions, planned 4 journal special issues and ran 8 summer schools.

In the 2017, TC II received funds for two Scientific Initiatives: SVSC – The UAV Semantic Video Segmentation Challenge 2017 (by Michael Ying Yang and Alper Yilmaz, WGII/5 officers) and ISPRS Benchmark Challenge on Large Scale Classification of VHR Geospatial Data (by Ribana Roscher, WGII/6 officer).

In 2018, TC II Symposium will be held in Riva del Garda (Italy) on 3-7 June. Riva del Garda, the main town in the Northern Garda Lake, has a mild climate which favours typically Mediterranean vegetation with lemon trees, olive trees, laurels and palm trees. Riva is a true Mediterranean island at the foot of the Dolomites and its center will fascinate you with its works of art and architecture, witnessing ancient history and a past rich in art and culture.

The Symposium will feature an initial day of tutorials (Sunday), 4 days with plenary and parallel sessions and an exhibition of the most important business players in the photogrammetric domain. There will be 4 invited speakers covering all aspects of the Photogrammetric and Geospatial fields: Jantien Stoter (3D Geoinformation group, Delft University of Technology, The Netherlands) on “Designing, Developing and Implementing better Systems to Model 3D Cities, Buildings and Landscapes”; Davide Scaramuzza (Robotics and Perception group, University of Zurich, Switzerland) on “Autonomous, Agile, Vision-controlled Drones: from Active to Event Vision”; Andre’ Streilein (Swisstopo, Switzerland) on “National Mapping Agencies in a Changing Period”; Camillo Ressel (Department of Geodesy and Geoinformation, Photogrammetry group, Technical University Vienna, Austria) on “Investigating Dense Image Matching”.

The event will provide ample opportunities for scientific exchange and discussion. All submitted papers, which will be handled electronically using Conftool, will follow two types of submissions: (1) full papers undergoing a double-blind peer-review process and (2) extended abstracts undergoing a review process. The event will be organized by FBK Trento in collaboration with ARIDA (Association for Real-time Imaging and Dynamic Analysis), JSPRS (Japanese Society of Photogrammetry and Remote Sensing) and SIFET (Italian Society of Photogrammetry and Topography).

TCII is in a very good shape, all officers are very active and motivated and we are looking forwards a successful Symposium and further scientific activities for the coming years.



Fabio Remondino
President
ISPRS Commission II



Takashi Fuse
Vice President
ISPRS Commission II

COMMISSION III - REMOTE SENSING

The terms of reference of ISPRS Technical Commission III include:

- Promote the advanced research, engineering development, and operational use of theories, methods and systems for the analysis of remotely sensed observations of the Earth from air-, space- and ground-borne sensors;
- 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, land use/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, cooperate intensively with national space agencies, alliance with the International Committee On Remote Sensing of Environment (ICORSE).

To address the above topics, TC III established ten working groups and six inter-commission working groups, with WG officers come from 21 countries/regions. All working groups became operational by the end of 2016, and have been active since then. The following provides some highlights of major activities carried out by the working groups:

- Organized 7 workshops and jointly-organized 5. Among them, 6 are combined with ISPRS GeoSpatial Week 2017. The workshops include:
 - ISPRS co-sponsored Workshop 'Sino-EU Workshop on Remote Sensing Observation and Quantitative Analysis of Landslide Hazard' - April, in China (by WG III/2),
 - 'ISPRS International Symposium on Geospatial Health- GeoHealth' July, in India (by ICWG III/IVc),
 - '2017 International Symposium on Planetary Remote Sensing and Mapping (PRSM 2017)' August, in Hong Kong (by ICWG III/II),
 - 'The 2017 International Workshop on Image and Data Fusion' in GSW 2017 (by WG III/6),
 - '2017 ISPRS Workshop on Cryosphere and Hydrosphere for Global Change Studies' in GSW2017 (by WG III/9),
 - 'Laser Scanning 2017' in GSW2017 (by WG III/1, III/5, III/6, III/10 and WGs of other TCs),
 - 'Advances in SAR: Constellations, Signal Processing and Applications' in GSW 2017 (by WG III/2, III/3 and WGs of other TCs),
 - '5th International Workshop on Web Mapping, Geoprocessing and Services' in GSW 2017 (by WG III/8 and WGs of other TCs),
 - '10th International Symposium on Spatial Data Quality' in GSW 2017 (by ICWG III/IVb and other organizations),
 - 'Air Environment Remote Sensing and Air Pollution Spatio-Temporal Analysis' September, in China (by WG III/8),
 - 'Frontiers in Spectral Imaging and 3D Technologies for Geospatial Solutions' - October, in Finland (by WG III/4 and III/1),
 - 'Geospatial Solutions for Structural Design, Construction and Maintenance in Training Civil Engineers and Architects' December in Ukraine (by WG III/5).
- Four Special issues were published. These special issues are:
 - 1) 'Frontiers in Spectral Imaging and 3D Technologies for Geospatial Solutions' in Remote Sensing;
 - 2) 'Laser Scanning' in Applied Sciences;
 - 3) 'Frontiers in Spectral imaging and 3D Technologies for Geospatial Solutions' in MDPI Remote Sensing; and
 - 4) 'Geospatial Technology in Environmental Health Applications' in Journal of Environmental Monitoring And Assessment. Four volumes of ISPRS Archive and one volume of ISPRS Annals were published.

- Support other events by organizing joint-sessions or submit papers, including:
 - ICA Congress 2017,
 - FOSS4G Europe 2017,
 - ACRS2017,
 - Interexpo Geo-Siberia 2017,
 - GEODATA 2017,
 - URSI 2017.
- The working groups have been collaborating with sister organizations and societies, for example EuroSDR, AARS, GEO, ICA, URSI, IUGG, IGU, IEEE, OGC, GnosisGIS, ASCI, AGU, APHA, ICORSE and UNGGIM-AP.
- With the support from the ISPRS Scientific Initiative, WG III/4 established a website to provide reliable and high quality hyperspectral datasets, and initiated a benchmark framework for validating novel processing and data analytics methodologies, trying to fill the existing gap in data availability from different sources and their limitations.
- WGIII/5 delivered two data sets to the scientific society to test new LiDAR mobile mapping and multi-spectral LiDAR technology. The data is collected using different sensors and platforms.

Cooperating with National Geomatics Center of China and UNGGIM-AP, TC III organized the International Seminar on Construction and Application of Spatial Data Infrastructure during September 15-22 in China. After 3 days lectures and technical visits, all of the participants attended the ISPRS GSW 2017. Special Funding from the Asian regional cooperation of the Ministry of Foreign Affairs of China was used to support more than 20 officers and experts from ASEAN and other developing countries to attend the Seminar, including accommodation, travel, and registration fees for GSW2017.



Jiang Jie
President
ISPRS Commission III

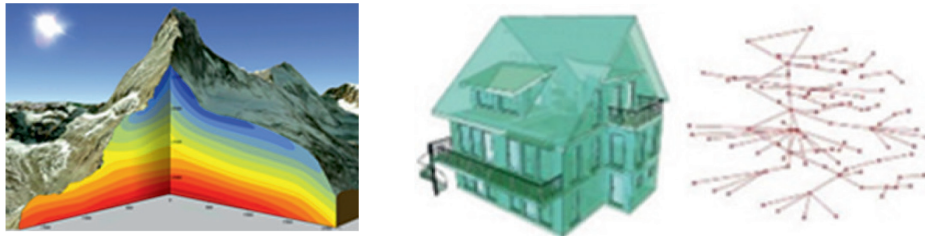


Ahmed Shaker
Vice President
ISPRS Commission III

COMMISSION IV - SPATIAL INFORMATION SCIENCE

The world's population is predicted to reach 7.5 billion in 2018, and by 2050, it is predicted to be 9.7 billion. Managing the social and economic changes brought on by this increasing population will require new ideas and spatial information decision making tools. Moreover, the pressures placed on the usage of spaces that people live and work in will necessitate decisions that are based on 3D and higher dimension spatial data. This demand poses challenges for research and development in Spatial Information Science.

The Commission intends to advance the research in spatial information sciences in modeling, structuring, management, analysis visualization and simulation of data. The focus will be on multiple representations (3D/4D), integration of data from different domains (indoor/outdoor, above/below the surface, design/real world), data storage and analysis and use of spatial information for a variety of applications. Special attention will be given to linking information about real-world physical phenomena with societal, organizational and legal information. We intend to contribute to advancements to visualization (web-based, VR and AR) simulation and visual analytics. The work will be done in cooperation with other international organizations such as OGC, ISO, Web3D, etc.



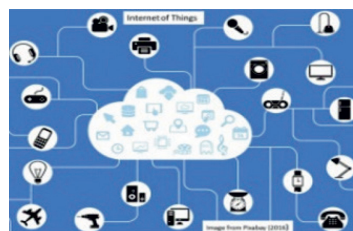
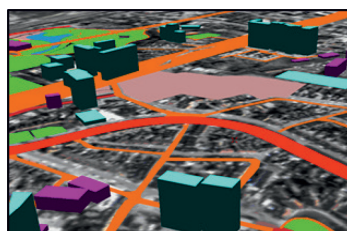
3D spatial information: the engine of change

The Commission has defined 10 scientific areas of research, which are coordinated by 10 working groups (WG) as follows:

- WG1: Strengthen the work on multidimensional spatial model and representations towards seamless data fusion;
- WG2: Advance the semantic modelling, development and linking of ontologies;
- WG3: Intensify research into data interpretation, quality and uncertainty modeling;
- WG4: Strengthen the research on crowdsourced data and public participation, towards community-driven and participatory applications, collaborative mapping and use/usability of maps;
- WG5: Stringent the research on seamless indoor/outdoor location-based services, navigation and tracking, and analysis of human movement;
- WG6: Advance interoperable Internet of Things, Sensor web, SDI and linked data;
- WG7: 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;
- WG8: Encourage the use of functional programming and streaming algorithms in development of demos and applications as well as parallel and distributed processing paradigms;
- WG9: Advance visual analytics, online multi-dimensional visualization on mobile and desktop devices, considering human-centered applications, privacy and security issues;
- WG10: Advance knowledge on use of spatial information (BIM/GIS) for urban modeling.

The intention of the Commission is not only to coordinate research activities and developments but also to increase the impact of ISPRS Spatial Information research by: Facilitating exchange of data sets and open software, acknowledging achievements and promoting them to commercial parties.; Improving the cooperation between the members of the Work-

ing Groups in the Commission, organising virtual sessions and discussion forums on emerging topics and eventually establishing repositories for open data and open software; Strengthening the contacts with International Scientific Organizations such as FIG, ICA, GSDI, IGU, and increasing the number of joint events and publications; Extending the presence of ISPRS society in world and especially in Africa by involving universities and local companies in ISPRS virtual sessions, organising training; Involving national mapping/cadastral organizations in ISPRS activities and organising professional session and panels.



Advanced analysis and geocomputation: knowledge for citizens

Commissions IV's Symposium will be held in 2018. The ISPRS Technical Commission IV symposium highlights the work of the commission and demonstrates its ambition for creating a broad forum for discussion and exchange of information, towards advancing of spatial information science. The symposium takes place in the period of 1-5 October, in Delft, The Netherlands (<http://www.isprs.org/tc4-symposium2018/index.html>). It will be jointly organized with the 13th 3D Geoinfo conference, 6th International FIG conference on 3D Cadastre and the 3rd International UDMS conference on Smart City Smart Data, as part of the Geo Delft 2018 event (<https://www.tudelft.nl/geodelft2018/>).

The ISPRS Technical Commission IV Symposium will provide a forum where researchers and practitioners can come together and share their work and ideas in the spatial information sciences and propose new developments for this important field for the progress of humanity. The programme of the joint event will include scientific sessions, workshops and hand-ons for students and professionals, dedicated panel discussions, and excursions to institutions and companies. Dutch local governments will present current implementation of 3D technologies and will discuss experiences and requirements. A standard dedicated session will be organized in cooperation with OGC. During the symposium the ISPRS scientific initiatives for the period 2016-2018 will be presented.



Sisi Zlatanova
President
ISPRS Commission IV



Suzana Dragicevic
Vice President
ISPRS Commission IV

COMMISSION V - EDUCATION AND OUTREACH

The mission of Technical Commission V is to support, promote and motivate Capacity building at different levels of professionals, educators and students and develop cost effective teaching methods which include distance learning programmes, international collaborative effort for sharing web-based resources – both material and trainers as well as best practices for effective transfer of knowledge and curricula development that meet regional needs, encourage open source software tools and innovative methodologies for urban infrastructure, citizen science and geospatial technology in various applications, and support youth forum and students consortium activities.

Since the 2016 Congress, TC V has finalized the Terms of References of the Commission based on the resolutions of ISPRS and set up eight working groups and their TOR. The WG officers come from 20 countries across 5 continents, namely Azerbaijan, Brazil, Canada, China, Czech Republic, Germany, India, Indonesia, Italy, Kenya, Kuwait, Nepal, Poland, Russia, South Africa, Taiwan, Turkey, UAE, Ukraine and USA. These 8 Working Groups are:

- WG V/1: Framework for Multi-level Education & Training – Curriculum Development and Methodology
- WG V/2 Promotion of International Collaborative Education Programs
- WG V/3: Promotion of Regional Collaboration in Citizen Science and Geospatial Technology
- WG V/4: Web-based Resource Sharing for Education and Research
- WG V/5: Promotion of the Profession to Young People
- WG V/6: Distance Learning - Education and Training Services
- WG V/7: Innovative Technologies in Training Civil Engineers and Architects
- WG V/8: Promotion of Open Source on Geospatial Technology



Summer School students busy preparing experiments, inaugural address by TCV President and lecture by Chair, WG V/3.

During the period of 2016-17, many activities were carried out by TC V and its working groups. These activities, mainly carried out through workshops, summer schools and special sessions in symposia and conferences, are:

- TC V, WG V/1 organised a workshop on Geores2017 Geomatics and Restoration – Conservation of Cultural Heritage in the Digital Era during May 22–24, 2017 at Florence, Italy.
- National Symposium on Industry Academia Collaboration was organized on December 15-16, 2017 at CEPT University, Ahmedabad, India by TC V/ WG 1, featuring invited talks from distinguished experts from industry, academia and government agencies.
- A special session was organised on October 26, 2017 on “Geospatial Education: Methods and Modalities; Issues and Challenges” during the ACRS 2017 at New Delhi by TC V, WG V/1.
- TC V, WG V/2 organised Scientific Committee 1° International Conference during, May 22-24, 2017 at Florence, Italy and
- TC V, WG V/2 also organised Scientific Committee and Chairman 62° Congress SIFET (Society Italian Photogrammetry and Topography) during June 21-23, 2017 at Ragusa, Italy.

- TC V, WG V/2 also organised Open Day 2017 Meeting with High School Students, 14 February 2107: “Instruments, Methods and Researches of Geomatics”.
- TC V, WG V/3 organised ISPRS Special Session on Citizen Science Methods and Applications on October 26, 2017 at New Delhi, India.
- TC V, WG V/3 also organised ISPRS Summer School - Geo-processing Tools and Technologies in Citizen Science, during October 30-November 3, 2017, at Dehradun.
- ISPRS Geospatial Hackathon was organized in Ankara, Turkey during Sept. 22-23, 2017 by WG V/3 and WG V/4 with the theme of “Citizen Science”.
- TC V, WG V/4 organised a workshop ‘5th International Workshop on Web Mapping, Geoprocessing and Services’ (WebMGS 2017), during ISPRS Geospatial Week 2017 at Wuhan, China.
- A special session was organised on October 26, 2017 on ‘Online Platforms for Education and Outreach’ during the ACRS 2017 at New Delhi by TC V, WG V/4 and V/6.

TC V, WG V/5 organised the following summer Schools:

- 15th ISPRS Student Consortium and WG V/5 SS, October 22-26, 2016, Sri Lanka.
- YP&SS - IEEE/GRSS - Young Professionals & 16th ISPRS Working Group V/5 and Student Consortium Summer School during Oct 2 - 6, 2017 in Brazil.
- India: 17th ISPRS SC and WG V/5 Summer School, Geo-Processing Tools and Technologies in Citizen Science during Oct 30 - Nov 3, 2017.
- Chile: 18th ISPRS SC and WG V/5 Summer School, Land Cover Assessment and Monitoring Using Google Earth Engine.
- TC V, WG V/6 organised a session in the ISRSE-37 during May 8-12 at Tshwane, South Africa: EO Education - Earth Observation Education and Distance Learning.
- TC V, WG V/7 organised ISPRS Workshop on “Geospatial Solutions for Structural Design, Construction and Maintenance in Training Civil Engineers and Architects” and ISPRS Seminar on “GIS-based Decision-making in Realizing Smart City Concept” during December 4-6, 2017 in Kiyv, Ukraine.
- TC V, WG V/8 organised Tutorial on Open Geomatics, 30 August 2017 at Tainan, Taiwan.
- ISPRS WG V/8 organised a Special Session in ICOIRS 2017 during October 31 - November 1, 2017 at Semarang, Indonesia.
- In addition WG V/8 collaborated with Inter commission working group on environment and health (ICWG III/IV) to host geospatial public health symposium on July 1-2, 2017 in Hyderabad and also made presentation on Advanced Geospatial Technological solutions.

The TC Education and Outreach is busy preparing the midterm Symposium on “Geospatial Technology – Pixel to People” to be organised at Indian Institute of Remote Sensing, Dehradun, during November 20-23, 2018. In addition, many more activities are planned for the remaining period before the term of the commission concludes with the Congress 2020 in Nice, France.

All the eight commissions of TC V are actively engaged to promote education and outreach activities through workshops and new scientific initiatives (under consideration of ISPRS Council).



Senthil Kumar
President
ISPRS Commission V



P.L.N.Raju
Vice President
ISPRS Commission V

INTERNATIONAL POLICY ADVISORY COMMITTEE (IPAC)

IPAC CHAIR, MEMBERS AND ORGANISATION

Mr. Gunter Schreier, deputy director of the German Remote Sensing Data Center at DLR in Oberpfaffenhofen, Germany, was appointed by the ISPRS Council in 2012 as Chair of the International Policy Advisory Committee (IPAC).

Amongst the first tasks was to review IPAC structure and the membership composition of its committee. The ISPRS council accepted a proposal by the IPAC Chair to renew the terms of reference and the membership list. A few members have also been added in 2016. As of end 2017, the IPAC membership is as follows:

| | |
|---------------------------|--|
| 1 Gunter Schreier (chair) | DLR, Germany |
| 2 Rock Jeng-Shing CHERN | China University of Science and Technology, Taiwan |
| 3 Sias Mostert | Space Advisory Company, South Africa |
| 4 Irmgard Niemeyer | Forschungszentrum Jülich, Germany |
| 5 Frans Von der Dunk | University of Nebraska-Lincoln, USA |
| 6 George Cho | University Canberra, Australia |
| 7 Michael Rast | ESA ESRIN, Italy |
| 8 Mathias Schardt | University Graz, Austria |
| 9 Barbara Ryan | GEO Secretariat Director, Switzerland |
| 10 Olga Gershenzon | Vice President, RBC Signals, Russia |
| 11 Marcello Maranesi | Ex-CEO, eGEOs, Italy |
| 12 Einar Bjorgo | UNITAR-UNOSAT, UN - Switzerland |
| 13 Andre Nonguierma | UN Economic Commission for Africa, UN- Ethiopia |

IPAC WORK PLAN

In 2012, IPAC discussed a new work plan for the coming years. Apart from the standard duties to provide the ISPRS council with early warning of relevant international policy issues, and the representation of ISPRS in international organizations and fora, the work plan proposed IPAC to be more active on establishing fora for exchange and publishing relevant papers and documents. Specifically, the work plan asked for the conduction of an IPAC specific workshop, addressing a variety of topics.

Following the work plan established in 2012, IPAC reviewed and updated the workplan for the period 2016 – 2020. The workplan includes the following major issues:

- 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

Within the workplan “Organize and conduct topic workshops and conferences” was a major issue to follow up. A highlight was the ISPRS UN-GGIM National Mapping and Cadastre Agency (NMCAF) and ISPRS-IAA Space Agency (SAF) Forum, 14 – 15 July 2016, Prague.

REPRESENTATION AT INTERNATIONAL ORGANIZATIONS AND CONFERENCES

Amongst the duties of the IPAC chairs is the representation of ISPRS in selected international organizations. The representation at the UNOOSA meetings in Vienna in 2016/17 was taken care of by other ISPRS committee members.

The IPAC Chair is also active as the Chairman of the Earth Observation Committee of the International Astronautical Federation (IAF) and therefore is looking for synergies between ISPRS and IAF.

Within the reporting period, the IPAC Chair took – amongst others – care of ISPRS issues during the following conferences and events:

- European Space Policy, Brussels 12-13 Jan 2016
- RSCy2016, Paphos, Cyprus, 4-8. April, 2016
- EARSEL 36th Symposium, Bonn, 21. June 2016
- Digital Earth Symposium, Beijing, 7-8. July 2016 – Keynote for ISPRS
- IAC Guadalajara, 26-30. Sept. 2016
- GRASF, Dubai, 6-9 March 2017 - Keynote for ISPRS
- GEO Workshop on data providers, Florence, Italy, 20-21. April 2017
- ISRSE Tshwane, South Africa, 8-12 May 2017
- IAC 2017, Adelaide, Australia, 25-29 Sept 2017
- EUSI/ Digital Globe User Conference, Munich, Germany 10. Oct 2017
- GEO Plenary and GEO Week, Washington, USA, 23-27 Oct 2017

ISPRS UN-GGIM NATIONAL MAPPING AND CADASTRE AGENCY (NMCAF) AND ISPRS-IAA SPACE AGENCY (SAF) FORUM, 14 – 15 JULY 2016, PRAGUE.

The International Society for Photogrammetry and Remote Sensing (ISPRS) together with United Nations Initiative on Global Geospatial Information Management (UN-GGIM) conducted the first ISPRS – UN-GGIM National Mapping and Cadastral Agency Forum.

Sessions of these two fora comprised invited and presented papers. One session of the Forum was a joint session of the National Mapping and Cadastral Agencies and Space Agencies. The two dedicated questions were discussed:

- How do NMCAs use satellite remote sensing data, what would they like to see improved, etc.?
- What are the plans of Space Agencies in the sphere of data for NMCAs, how can this cooperation be strengthened?

Ian Dowman and Gunter Schreier (supported by Lena Halounova and Christian Heipke) specifically contributed to the definition of the agenda and the invitation of the speakers for the Space Agency Forum.

As of May 2016, the four sessions dedicated to the Space Agency Forum featured the following invited speakers:

Perspectives on International Earth Observation Missions

- Lawrence Friedl, NASA
- Volker Liebig, ESA
- Haiyi Cao, CAST
- Shizuo Yamamoto, JAXA

Remote Sensing for Environmental Monitoring and Societal Benefit

- Barbara Ryan, GEO Secretariat;
- Stephen Briggs, GCOS,
- Hussein Farah, Regional Centre for Mapping of Resources for Development, Kenya;
- Kyaw Sann Oo (ID 2220), Myanmar Peace Center,

New Earth Observation Technologies and Applications: The Commercial Perspective

- Robbie Schingler, Planet Labs
- Wade Larson UrtheCast
- Wei Sun, 21Aerospace Technology, China
- Geoff Sawyer, EARSC

Earth Observation Data Policy and long-term Data Continuity

- Pascale Ehrenfreund, DLR
- Mario Hernandez, ISPRS Regional Coordinator for Latin America & Future Earth
- Andreas Veispak, European Commission European Commission, DG GROW I3
- Peter Baumann, Jacobs University, Bremen

The second day was a joint session with the National Mapping and Cadastral Agency Forum concluded by a round table discussion.

IPAC SUPPORT TO ISPRS COUNCIL

Upon the request of the ISPRS Council, IPAC commented the “Prague declaration”, which was approved by delegates at the XXIII ISPRS Congress and calls on international communities to work together and promote multi-disciplinary collaboration towards providing reliable global geospatial information to support Future Earth. IPAC reviewed the text of the declaration and noted issues on sharing of resources, computing cloud providers and in general the consideration of the European Copernicus programme as a potential policy driver.

IPAC also supported the Council in responding to a question from UN OOSA (OOSA/2017/19 12 CU 2017/351(D)/OOSA/CPLA September 2017) requesting opinion from ISPRS to the following issues:

- Matters relating to the definition and delimitation of outer space and the character and utilization of the geostationary orbit, ...
- Information on the activities of international intergovernmental and non-governmental organizations relating to space law
- Status and application of the five United Nations treaties on outer space
- Capacity-building in space law

IPAC, specifically the IPAC member experienced in international space law, Frans van der Dunk, responded extensively to the first question, highlighting the legal and regulatory implications of the delimitation of “outer space” to Earth observation activities.

ISPRS Secretary General relayed the answer compiled by IPAC on December 11th 2017 officially to UNOOSA.

PLANNING FOR AN ISPRS IPAC WORKSHOP ASIDE UNISPACE 50+

From 20 to 21 June 2018 the international community will gather in Vienna for UNISPACE+50, a special segment of the 61st session of the Committee on the Peaceful Uses of Outer Space (COPUOS). UNISPACE+50 will celebrate the fiftieth anniversary of the first United Nations Conference on the Exploration and Peaceful Uses of Outer Space. It will also be an opportunity for the international community to gather and consider the future course of global space cooperation for the benefit of humankind. See for details: <http://www.unoosa.org/oosa/en/ourwork/unispaceplus50/index.html>.

ISPRS IPAC would like to take the opportunity at this international event to raise issues of interest for both the UNISPACE participants and ISPRS within a workshop conducted aside the UNISPACE conference. Plans are to conduct an ISPRS/IPAC Earth Observation policy and/or technical development related workshop/panel during (or immediately before/after) UNISPACE 50+.

Since early 2017, the IPAC chair undertook several efforts to get in contact with the relevant staff at UNOOSA. Thanks to the involvement of the ISPRS Secretary General, we now (December 2017) have response from Simonetta Di Pippo, Director of UNOOSA, that side events during the two days UNISPACE+50 are not foreseen, however there is a possibility to organize events before and after.

Further point of contacts for these activities¹⁾ were given. IPAC – supported by ISPRS Secretary General - will follow up this opportunity and inform the ISPRS Council accordingly.



Gunter Schreier
IPAC Chair

¹ Sharafat Gadimova and Markus Woltran; shirish.ravan@un.org; markus.woltran@un.org

INTERNATIONAL SCIENCE ADVISORY COMMITTEE (ISAC)

TERMS OF REFERENCE AND MEMBERSHIP

The terms of reference for 2016 -2020 are unchanged from the previous four years but in the ISAC report to the GA in 2016 it was recommended that the committee should be more proactive in advising Council on developments which may not have been identified by Council. It was also suggested that ISAC should meet on convenient occasions for discussion of such issues. After the Congress the membership was reviewed and some changes made. The terms of reference and membership of ISAC can be found at <http://www.isprs.org/structure/isac.aspx>.

ACTIVITY IN 2016/17

Proposals for working groups of the Technical Commission Presidents

Council asked ISAC to comment on these proposals and did so with general comments and comments to specific TCs.

Publications

Council asked ISAC for advice on how to deal with pre-publication of papers submitted to ISPRS publications. Based on the information provided and the opinions of ISAC members and others, it was concluded that ISPRS should adopt a policy of allowing posting of papers on open websites prior to the completion of the review process in all cases except possibly The Annals where double blind review is required. This advice was incorporated into an ISPRS policy document which has now been distributed.

GSW 2017

The chair of ISAC was appointed as Chair of the Scientific Committee of the ISPRS Geo-spatial Week 2017.

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. There is definitely a feeling that Council needs to address this issue and look for new strategies. On a more individual level it was suggested that people who had received TIF grants could be targeted to become involved with ISPRS.

FUTURE ACTIVITY

Strategies discussed at Prague include continuing to advise Council when requested and to raise issues with Council when identified. ISAC will also work with IPAC in identifying external organisations to collaborate with developing policies for education and training, and particularly how ISPRS should handle standards.

Ian Dowman
ISAC Chair



THE INTERNATIONAL COMMITTEE ON REMOTE SENSING OF ENVIRONMENT (ICORSE)

The International Committee on Remote Sensing of Environment (ICORSE) is a standing ISPRS subcommittee. ICORSE membership is composed of representatives from Earth science, geospatial, and environmental agencies of countries represented in ISPRS. The ICORSE goal is to advance the use of remote sensing to address priority issues of the environment including scientific, policy, management, and other pursuits. The primary function of ICORSE is to provide guidance to the biannual International Symposium on Remote Sensing of Environment, (ISRSE).

The 37th International Symposium on Remote Sensing of Environment (ISRSE-37) was convened on 8-12 May 2017 in Tshwane (Pretoria), South Africa. The South African National Space Agency (SANSA) and the Council for Scientific and Industrial Research (CSIR) hosted this highly successful and productive symposium. The event website was <http://isrse37.org/>.

Highlights of the symposium include:

| ISRSE 37 SUMMARY | | Most representatives | |
|----------------------------|-----|----------------------|-----|
| Abstracts submitted | 638 | South Africa | 231 |
| Papers presented | 463 | Germany | 53 |
| Paper sessions | 91 | United States | 47 |
| Posters | 80 | China | 24 |
| Registrants | 539 | France | 24 |
| Countries represented | 56 | Australia | 19 |
| Exhibitors | 27 | Italy | 18 |
| Agency, Corporate Sponsors | 7 | Canada | 14 |
| | | Switzerland | 14 |
| | | United Kingdom | 14 |

The ICORSE met on May 9, 2017, in Tshwane in association with ISRSE-37. Mr. I. Saloojee (SANSA) and Dr. K. Wessels (CSIR) provided an overview on the very successful ISRSE-37. ICORSE also discussed in-depth the place and value of ISRSE. They felt that ISRSE was unique with respect to (1) the continuing commitment of the world's space agencies to ISRSE, (2) its close and complementary relationship with GEO, (3) its unique focus on application themes rather than technology alone, and (4) the sustained involvement of international actors drawn from scientific, policy and management sectors. Looking to the future, the potential host and venue for ISRSE-38 was discussed. ICORSE agreed that it would be appropriate to convene the next symposium in North America and that NASA should take the lead in organizing that meeting. In light of the leadership role he would assume in ISRSE-38, Lawrence Friedl (NASA) indicated his desire to step down as chair of ICORSE. The committee thanked Mr. Friedl for his service and agreed to seek another chair. After consultation with the ISPRS Council, Professor Guo Huadong (RADI) agreed to serve as the chair of ICORSE.



Guo Huadong
ICORSE Chair

INTERNATIONAL COMMITTEE FOR DOCUMENTATION OF CULTURAL HERITAGE (CIPA)

GENERAL

CIPA is a hybrid International Scientific and Technical Committee, established by ISPRS and ICOMOS in 1969 and has the following clearly defined missions:

1. To promote recording, documentation, information management and monitoring of cultural objects, monuments, groups of buildings and their environment, villages, towns, sites and cultural landscapes by the means and further development of applications of traditional surveying methods, photography, photogrammetry, laser scanning, remote sensing information technology and management, including and integrating related disciplines and techniques.
2. To actively pursue programs which define research needs, stimulate and support research activity, and increase exchange and dissemination of relevant information in order to promote a greater understanding in the discipline.
3. To actively pursue international co-operation in that domain with:
 - The Commissions and Members of ISPRS,
 - The other International Scientific and National Committees of ICOMOS, specially with respect to ICOMOS' tasks and needs for UNESCO's Cultural Heritage Division and World Heritage Centre, - other co-operation partners of ICOMOS, for example ICCROM, ICOM, IUCN, DOCOMOMO,
 - Other international bodies.

As can be seen from previous reports, CIPA is one of the most active scientific committees in ICOMOS, with several volumes of publications and activities organized for the promotion and implementation of adequate scientific research and practice in the field of heritage documentation. For the upcoming plans, CIPA is involved in the publication and organization of activities internationally.

EXECUTIVE BOARD ACTIVITIES

The International Committee on Heritage Documentation (CIPA) held its annual meetings in Taiwan (2015) and in Ottawa (2017) together with the CIPA International Symposia. In addition, the Executive Board (EB) convened in Prague (2016) during the ISPRS Symposium. In Taiwan, EB held two meetings and discussed internal business, the restructuring of the EB accepting three new Associate Members in the place of members that stepped down, in order to (1) renew the webpage, (2) adapt the statutes and by-laws to the changes decided by ICOMOS and (3) form an "Emerging Experts Group" to attract younger members to the Committee. These decisions were specifically implemented during the Prague meeting. Financial planning, outreach activities, planning of future activities and joint events with other organizations and committees of ICOMOS and ISPRS have also been discussed during the meetings. In particular, in Ottawa, the EB discussed in great detail a planned drastic restructuring of the EB function, always according to ISPRS and ICOMOS mandates. This will be elaborated by a specific task group and will be presented for final approval in Riva del Garda (Italy), where the next EB meeting is going to be held during the ISPRS TCII Symposium.

ORGANIZED AND CO-ORGANIZED EVENTS IN 2016/2017

CIPA recently organized and/or embarked on the following events/activities:

- CIPA Workshop on Protecting Cultural heritage in Syria during the ICAANE Conference, Vienna, Austria, April 2016.
- CIPA Special Session at ISPRS Congress, July 2016, Prague, Czech Republic.

- CIPA provided also letters of support for European and international research programme proposals for its members.
 - CIPA Masterclass for interested professionals in Leiden (Netherlands), June 2016.
 - 3rd International Symposium on Cultural Heritage Conservation and Digitization, July 2016, Beijing (China).
 - 3rd CIPA Summer School “Cultural Heritage 3D Surveying and Modelling”, Aug-Sep 2016, Valencia (Spain).
 - ARQUEOLÓGICA 2.0 - 8th International Congress on Archaeology, Computer Graphics, Cultural Heritage and Innovation, September 2016, Valencia (Spain).
 - 6th EUROMED Conference, November 2016, Limassol (Cyprus).
 - 3D-ARCH'2017 “3D Virtual Reconstruction and Visualization of Complex Architectures”, March 2017, Nafplio, Greece.
 - 4th CIPA Summer School “Cultural Heritage 3D Surveying and Modelling”, July 2017, Paphos, Cyprus.
 - 26th CIPA Symposium, August-September 2017, Ottawa, Canada.
- Supported the 2nd Panhellenic Symposium for the Digitization of Cultural Heritage in Volos, Greece.

RECENT PUBLICATIONS

The CIPA Heritage Documentation movie can be found on CIPA webpage.

CIPA is active on various social media.

The CIPA Newsletter appears every four months since 2014 and now it is in its 13th edition. All issues can be found on CIPA web page (cipa.icomos.org).

CIPA also encouraged and published a book entitled “3D RECORDING, DOCUMENTATION AND MANAGEMENT OF CULTURAL HERITAGE”, which was edited by E. Stylianidis (CIPA Secretary General) and Fabio Remondino (CIPA Vice President). The book was published in 2016 by Whittles Publishing, has 388 pages and ISBN 978-184995-168-5.

The proceedings of the co-organized 3DARCH Workshop are published as ISPRS Archives and can be downloaded free of charge from the CIPA website <http://cipa.icomos.org/>. They are also available from the ISPRS publications web page.

The 26th Symposium proceedings from Ottawa, published as ISPRS Archives and Annals, can be downloaded free of charge from the CIPA website <http://cipa.icomos.org/>. They are also available from the ISPRS publications web page.

PARTNERS - MEMBERS

The main cooperation is that with ISPRS. The cooperation is defined by the CIPA Statutes, controlled by Society Delegates. CIPA has the status of a permanent ISPRS Committee as well as of an International Scientific ICOMOS Committee. Historically, CIPA is also an ICOMOS International Scientific Committee with fruitful cooperation with its other ISCs. CIPA is always striving to attract Sustaining Members in order to support its activities. At this time, CIPA has already 11 Sustaining Members, 57 Expert and 180 Regular members. Membership is free for the time being.



Andreas Georgopoulos
CIPA President

GEOSPATIAL WEEK 2017

From September 18th to 22nd of 2017, ISPRS Geospatial Week 2017 (hereinafter referred to as GSW2017), hosted by ISPRS and Wuhan University was held in the Wuhan East Lake International Conference Center (China). Over 1200 scholars from 31 countries and regions arrived in Wuhan to participate in this great gathering. Among all the participants, there are almost 300 people (25%) from China's overseas. GSW2017 was sponsored by 37 foreign and domestic institutions, and supported by 7 media institutions. The GSW2017 was locally organized by State Key Laboratory of Information Engineering in Surveying, Mapping and Remote Sensing (Wuhan University), School of Remote Sensing and Information Engineering (Wuhan University), Collaborative Innovation Center for Geospatial Information Technology, as well as co-organized by 3SNews.



GSW2017 lasted for 5 days in total, composed of 10 workshops and each one has its own independent committee. By means of keynote speeches, invited speeches, oral paper presentations, poster paper presentations and session discussion, the latest development of geospatial information and smart city construction was focused in GSW2017. During the conference period, there were also several related academic activities and social programs, such as the tutorials, commercial exhibitions, awards & honors, social parties, etc.

Preparation work of visa procedure, conference location selection, conference materials and volunteer service started from one year ago.

In the October of 2016, according to the scale and demand of the conference, representatives of ISPRS and Wuhan University inspected and investigated various eligible sites in Wuhan, and Wuhan East Lake International Conference Center was finally selected as the main conference location of GSW2017. In this conference center, Jingchu Hall is for the opening ceremony and GIS SmartCity 2017, Qingchuan Hall is for the closing ceremony, and Dingxiang Hall, Moli Hall, Qianjiang Hall, Shennongjia Hall, Tianmen Hall, Xiantao Hall, Ezhou Hall are for other workshops and activities, the open Gallery Hall is for the poster session and commercial exhibition.

Wuhan University prepared the business invitation letter for a part of important experts and participants to apply for China visa. Most participants applied for business or tourist visa by themselves to come to China. Wuhan University and 3SNews provides necessary assistance.

Conference Materials were designed and made by ISPRS, Wuhan University and 3SNews, including the conference manual, participant ID, souvenir USB disk, academic poster, souvenir reticule and ISPRS activity pamphlet, etc. The volunteer recruitment and training work was started from the June of 2017 by Wuhan University. Nearly 80 volunteers were recruited from Wuhan University students for GSW2017. Volunteers successfully finished the work of vehicle transportation, registration, conference room arrangements, equipment management, photography, conference service and record, etc.

Good service of urban transportation and registration was also provided for the conference participants. For a part of participants and guests, Wuhan University provided the vehicle

transportation between airport and hotels, between hotels and conference location, as well as the temporary transportation task.

According to the general conference and accommodation arrangements, there were 4 registration spots for GSW2017. Hotel registration spots were established on Sep. 17th (the day before the opening ceremony), including Hongyi Hotel, Binhu Hotel Wuhan, Chutian Guandong International Hotel. The conference main registration spot as established outside the Jingchu Hall (the main conference room) for the whole conference period.



THE OPENING CEREMONY

In the morning of Sep. 18th, the opening ceremony is held in Jingchu Hall. A number of distinguished guests participated in the opening ceremony and delivered welcome address, including Prof. Li Deren, GSW2017 Chairman, Prof. Dou Xiankang, President of Wuhan University, Mr. Li Tao, Deputy Secretary General of Wuhan Municipality Government, Prof. Li Pengde, Deputy Director General of National Administration of Surveying, Mapping and Geoinformation, and Prof. Christian Heipke, ISPRS President. The U.V. Helava Award was awarded in the ceremony. Teachers and students from Wuhan University College Students Art Troupe and Departments of Arts (Wuhan University) were invited to make warming-up performance for the ceremony.

ACADEMIC CONFERENCE

The academic conference lasted 5 days, composed of “1+9” independent workshops: GIS-SmartCity 2017, Web Mapping, Geoprocessing, and Services 2017 (WebMGS2017), ISPRS Workshop on Laser Scanning 2017 (LS2017), ISPRS Workshop on Indoor 3D 2017(Indoor 3D 2017), 10th International Symposium on Spatial Data Quality (ISSDQ 2017), International Workshop on Image and Data Fusion 2017 (IWIDF 2017), Third International Conference on Spatial Data Mining and Geographical Knowledge Services (ICSDM 2017), Advanced in SAR: Constellations, Signal processing, and Applications 2017 (SARCON 2017), Photogrammetric 3D Reconstruction for Geo-Applications 2017 (PhotoGA 2017), Cryosphere and Hydrosphere for Global Change Studies 2017 (CHGCS 2017).



On Sep. 18th, after the opening ceremony, GIS-SmartCity 2017 was held in Jingchu Hall. This workshop lasted for a whole day. Six world-class top experts were invited to deliver the keynote speech. They are Prof. Li Deyi, academician of Chinese Academy of Engineering, Steven Ramage, the leader of global stakeholder engagement and external relations for the intergovernmental group on Earth Observation, Prof. Michael Batty, Bartlett Profes-

sor of Planning at University College London, Prof. Armin Gruen, from Federal Institute of Technology Zurich, Prof. Meng Liqiu from Technical University of Munich, and Lawrie Jordan, Director of Imagery and Remote Sensing for Esri. Nearly one thousand people participated in this summit.

Then other nine workshops were held in parallel in following four days. From Sep. 19th to 20th, WebMGS2017, LS2017, Indoor 3D 2017, ISSDQ 2017 were respectively held in Dingxiang Hall, Tianmen Hall, Shennongjia Hall, Qianjiang Hall and Moli Hall. From Sep. 21st to 22nd, IWIDF 2017, ICSDM 2017, SARCON 2017 and PhotoGA 2017 were respectively held in Dingxiang Hall, Xiantao Hall, Qianjiang Hall, Tianmen Hall and Shennongjiang Hall. CHGCS 2017 was held in Ezhou Hall on Sep.20th and 21st.

There were 59 sessions, 34 invited speeches and 240 oral presentations in total for these 9 workshops. GSW2017 selected about 300 papers from over 600 submissions. ISPRS included 386 papers and among them, 69 papers were included in Annals and 317 papers were included in Archives. Over 1100 scholars participated in the paper review.

POSTER SESSION

On Sep. 20th afternoon, in the open gallery hall of Wuhan East Lake International Conference Center, 102 scholars showed their achievements and ideas by means of poster paper to participate and exchange in the poster session.

THE CLOSING CEREMONY, AWARDS & HONORS

The closing ceremony was held in Qingchuan Hall on Sep. 22nd afternoon. Prof. Anthony G.O. Yeh from University of Hong Kong, Prof. Paul Longley from University College London and Dr. Chuan Tao, the founder of Z Ventures Group and Wuhan University alumnus, delivered the invited speeches. 17 participants were awarded travel grants by ISPRS and GSW2017. 18 authors were awarded best poster (oral) paper awards. The 2016 best paper of GIS, the English academic journal hosted by Wuhan University, was also awarded. The representative of Dubai made the announcement for ISPRS GSW2019 and the ISPRS Congress Director (2016-2020) delivered an address for the 2020 ISPRS Congress Conference held in Nice, France. Prof. Li Deren, the GSW2017 president, made a review and summary for GSW2017 and Prof. Christian Heipke, ISPRS president, made the closing remark.

COMMERCIAL EXHIBITION

Commercial exhibition was held in the opening gallery hall during the whole conference period. More than 30 institutions and enterprises exhibited their latest technology achievements.

ACADEMIC TUTORIALS BEFORE GSW 2017

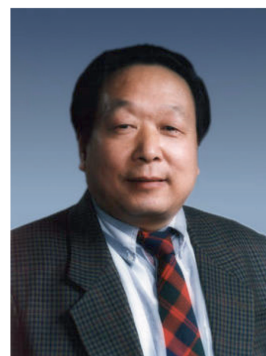
On Sep.17th, the day before the opening ceremony, Jiang Bin from University of Gaevie and Prof. Huang Bo from Chinese University of Hong Kong respectively gave the academic tutorials for GSW 2017 participants about TOPO in space cognition and Temporal-spatial data analysis.

ESRI TUTORIAL

In the afternoon of Sep. 20th, ESRI held the series tutorial about the future of the technology of GIS in Shennongjia Hall.

GSW2019 BIDDING

In the noon of Sep. 20th, in Shennongjia Hall, GSW2019 bidding was held. Dubai government and ITC competed for the right to host GSW2019. Finally Dubai government won.



Deren Li
GSW2017 Director

ISPRS SCIENTIFIC INITIATIVE 2017

In accordance with the statutory mission and activities of ISPRS, the Society shall provide funds to support scientific and other initiatives, which will further improve its international status in the field of the photogrammetry, remote sensing and spatial information sciences, and will therefore benefit all ISPRS members. After 2 rounds of calls for Scientific Initiatives projects for 2014 and 2016 physical years, the Council issued a new call in September 2016 for 2017 projects, with an original total budget of 40,000 Swiss Francs. By the submission deadline, twenty-two proposals were received from the five Technical Commissions. Comments were sought from the relevant Technical Commission Presidents, and a sub-committee of three Council members was convened to perform independent review of the proposals based on their scientific merits as well as value to and promotion of ISPRS. The sub-committee's recommendation of the seven top-ranked applications, with a total budget of 53,400 Swiss Francs, was approved by the ISPRS Council.

The following briefly describes the outcomes of each project, with full reports available on the ISPRS website.

BENCHMARK DATABASE FOR TROPICAL AGRICULTURAL REMOTE SENSING APPLICATIONS

PI: Ieda Del'Arco Sanches, *National Institute for Space Research, Brazil* (supported by TC I)

The project Benchmark Database for Tropical Agricultural Remote Sensing Application is being developed to foster the advance of remote sensing technology focused on agricultural application by creating and sharing a benchmark database that can be used by the remote sensing community.

The area selected for this project is Luiz Eduardo Magalhães (LEM) municipality, which is an important Brazilian agricultural area in the Northeast of the country. The first field campaign was successfully conducted in June 2017, period of second agricultural harvest. Information over 600 points was gathered (including geographic coordinates, type of crop and phenology phase and photographs). The second field campaign is already planned for March 2018, to collect information about crops cultivated during the first agricultural harvest. Based on information collected in situ and remote sensing time series images, we will create field references maps covering one crop year. Moreover, in the database we will make available a set of multi-temporal remote sensing images, from both active and passive orbital sensors (Sentinel-1, Sentinel-2, LANDSAT/OLI), correspondent to the LEM area, along the development of the main annual crops.

ISPRS BENCHMARK ON UAV SEMANTIC VIDEO SEGMENTATION

PI: Michael Ying Yang, *University of Twente, the Netherlands*; Alper Yilmaz, *Ohio State University, USA* (supported by WG II/5)

Visual understanding of complex urban scenes is an enabling factor for a wide range of applications. ISPRS Benchmark on UAV Semantic Video Segmentation aims to promote and advance the video segmentation task of VHR UAV sequences. The computer vision community has relied on several centralized benchmarks for performance evaluation of numerous tasks. Such benchmarks have proved to be extremely helpful to advance the state-of-the-art in the respective research fields. There has been rather limited benchmark effort on the ISPRS community. With this benchmark we would like to pave the way for a unified framework towards meaningful quantification of semantic segmentation from UAV imagery and videos.

Currently, 10 videos have been captured by DJI Phantoms. In total, 75,000 frames have been acquired in Germany and China. We select eight classes, i.e. building, road, tree, low vegetation, moving car, static car, human and background. Annotation and quality control require more than 2 hours for one frame. So far, two videos has been labeled. The rest of the videos will be labeled later in this year.

We will provide a comprehensive benchmark suite later this year by: (i) creating the largest dataset of UAV scenes with high-quality annotations; (ii) developing a sound evaluation methodology for pixel-level semantic labeling; (iii) setting up a corresponding challenge.

ISPRS BENCHMARK CHALLENGE ON LARGE SCALE CLASSIFICATION OF VHR GEOSPATIAL DATA

PI: Ribana Roscher, *University of Bonn, Germany* (supported by ISPRS WG II/6)

The goal of our scientific initiative was the generation of a publicly available, large-scale, VHR, multi-spectral dataset for training and evaluation of sophisticated machine learning models to tackle challenges like instance segmentation and change detection.

We chose two Worldview II satellite images from April 2011 and February 2016 covering an area of 25km² of the greater city center of Toulouse. The images were annotated into 6 land cover classes and splitted into smaller tiles, which are divided into training and test data (see Fig. 1).

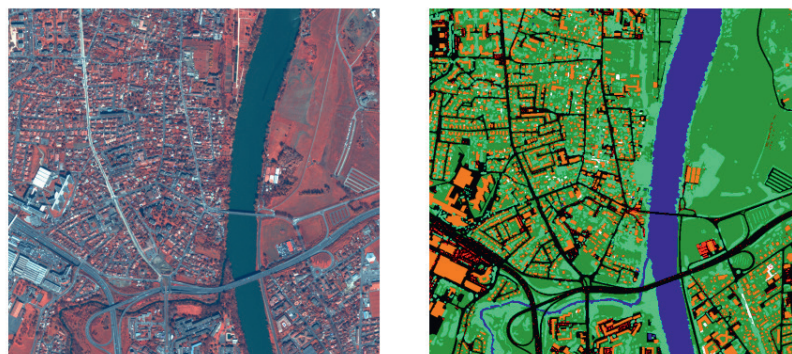


Figure 1: Left: NIR-R-G image, right: annotation with 'impervious surface' (dark gray), 'building' (brown), 'pervious surface' (dark green), 'high vegetation' (light green), 'cars' (red), and 'water' (blue).

The dataset is provided in the context of a benchmark challenge to researchers from various communities. As first challenge we decided for instance segmentation, with potential to further challenges such as change detection. Currently, final post-processing steps are performed, and the website <https://semcity.ipb.uni-bonn.de/> is prepared (release planned for February 2018). Moreover, an evaluation tool is implemented at the moment, since the results shall be submitted via the website and will be compared with reference information.

Our SI will be presented at the mid-term symposium of ISPRS TC II in June 2018. Moreover, a cover paper will be prepared, which will comprise baseline results of state-of-the-art methods and submitted results to the challenge.

BENCHMARK FOR MUTLI-PLATFORM HYPERSPECTRAL IMAGE PROCESSING

PI: Konstantinos Karantzas, *National Technical University of Athens, Greece* (supported by WG III/4)

The main objective of the new ISPRS hyperspectral dataset and benchmark, named HyRANK, is to fill the current gap regarding the limited availability of hyperspectral datasets and benchmarking frameworks for validating new classification methods against the state-of-the-art. In order to do so, we have collected a set of hyperspectral datasets from different platforms (e.g., satellite, airborne) and existing ground truth. The emphasis was on datasets with a relative large size and several terrain classes. We have manually annotated both existing and new collected datasets in order to form an adequate set for training and testing procedures. Users can download the hyperspectral datasets along with the corresponding reference/ labelled data and apply offline their training and prediction frameworks. Then, they can upload the resulting classification map, at a predefined format and the online calculated overall accuracy is reported on benchmark's website. The back end of the platform consists of an Apache web server responsible for the delivery of a

Django (python) application powered by a PostgreSQL database. The python application is responsible for serving the results and for the evaluation of the submitted predictions/maps. The benchmark platform is currently at the final validation phase with a number of selected users and will be released online on February 2018.

AN ISPRS CONTRIBUTION TO TRANSFORMING OUR WORLD: AUGMENTATION OF GLOBELAND30 WITH ADDITIONAL DATA FOR MONITORING UNITED NATIONS SUSTAINABLE DEVELOPMENT GOALS

PI: Jon Mills, *Newcastle University, UK*; Hao Wu, *National Geomatics Center of China, China* (supported by ICWG IV/III)

This Scientific Initiatives project aims to stimulate the ISPRS community's interest in contributing to the United Nations' Sustainable Development Goals (SDGs) by assessing the potential of GlobeLand30, when combined with other geospatial and socio-economic datasets as deemed appropriate, to measure, monitor and manage the SDGs. The primary project participants met in Beijing, China, from 23 to 30 June 2017 to begin the scientific work. A subsequent meeting was held in Beijing from 12 to 15 September 2017 to coincide with a workshop on GlobeLand30 validation and prepare for the project workshop in Jinan on 16 September. The Jinan workshop, entitled "Collaborative and Dynamic Land Cover Information Services Supporting UN Sustainable Development Goals", was a great success and acted as a platform to announce two important project activities: (a) the prototype dynamic knowledge map (see: <http://www.globeland30.org/knowledgemapen.html>), and (b) the call for participation in the Atlas Challenge competition. An abstract describing the project was accepted for poster presentation at the 2017 Geospatial Week in Wuhan and a manuscript, arising from collaborative research conducted during the two Beijing meetings, was submitted to the planned Special Issue of ISPRS Journal on the SDGs. Based on the promising research outcomes, Newcastle University's Institute for Sustainability is advertising a fully-funded international PhD studentship to continue the work. This Scientific Initiatives project will conclude in 2018 with the winning entry in the Atlas Challenge being showcased at the ISPRS Commission IV symposium.



Photo: delegates at the Jinan ISPRS Workshop, 16 September 2017.

ISPRS BENCHMARK ON INDOOR MODELLING

PI: Kourosh Khoshelham, *University of Melbourne, Australia* (supported by WG IV/5)

The ISPRS Benchmark on Indoor Modelling was launched in February 2017 with the aim of providing a benchmark dataset and an evaluation framework to enable comparative evaluation of algorithms for automated modelling of indoor environments. The scientific initiative provided five point clouds captured by different sensors in indoor environments of various complexities. These data are made publically available via the ISPRS website: <http://www2.isprs.org/commissions/comm4/wg5/benchmark-on-indoor-modelling.html>. We also generated reference models from the point clouds, and proposed an evaluation

framework based on the reference models and appropriate quality evaluation criteria. A detailed description of the data, reference models, and the evaluation framework can be found in Khoshelham et al. (2017).

As part of the scientific initiative, we also aim to organise a benchmark test to evaluate and compare existing indoor modelling algorithms. To this end, we have issued a call for participation inviting interested researchers to participate in the benchmark test by applying their methods to the benchmark dataset and submitting the results for evaluation. We will evaluate the submitted models from a geometric, semantic and topologic point of view, and publish the results on the ISPRS website.

Reference:

Khoshelham, K., Vilariño, L.D., Peter, M., Kang, Z., Acharya, D., 2017. The ISPRS Benchmark on Indoor Modelling. *International Archives of the Photogrammetry, Remote Sensing & Spatial Information Sciences XLII-2/W7*, 367-372.

SMALL UAV IN CIVIL ENGINEERING APPLICATION SCENARIOS

PI: Roman Shults, *Kyiv National University of Construction and Architecture, Ukraine*; Laxmi Thapa, *Survey Department Ministry of Land Reform and Management, Nepal* (supported by WG VI/7)

The technology of low-cost photogrammetry considered in this project proved effective enough to meet the challenges for tasks of civil engineers and architects. The following tasks were realized: analytical review and selection of rotary and fixed wing SUAS platforms suitable for the project; analytical review and selection of commercial-off-the-shelf and open source software systems; preparation of the SUAS-CAS syllabus; preparation and multimedia recording of the SUAS-CAS lectures; establishing of SUAS-CAS hands-on components; development of SUAS-CAS web-portal; SUAS-CAS approbation at ISPRS Kyiv workshop; creation of SUAS-CAS outreach and data dissemination strategy.

The core of this project was the development of an educational module for civil engineers and architects. This module was implemented as a part of a course on “Architectural photogrammetry” for the second year students at Kyiv National University of Construction and Architecture. During the lessons, students carried out all necessary operations step-by-step, in order to transform their own in-room models or historic structures into 3D digital form. These 3D models were used for analysis in software for construction modelling. For instance, finite element model analysis for each 3D model was done. This approach allows students to better understand the whole process of building design. The final step of this project will be the creation of an educational on-line resource devoted to using small UAS in civil engineering and architecture applications.



Songnian Li
ISPRS Treasurer

ISPRS EDUCATION AND CAPACITY BUILDING INITIATIVE 2018

In accordance with the statutory mission and activities of ISPRS, the Society shall provide funds to support educational and capacity building initiatives, which will further improve its international status in the educational area in the field of the photogrammetry, remote sensing and spatial information sciences, and will therefore benefit all ISPRS members. Calls for funding will be made on a two yearly basis (in odd-years), and dependent on the budgetary restrictions at the time of the call for proposals.

In view of ISPRS resources, Council is making up to CHF 40.000 available to support the first Education and Capacity Building Initiative in 2018. The maximum funding assigned to any one scientific project shall be SFr. 10,000. Projects are expected to commence on or after 1st February 2018 and can be of any duration up to a maximum of 12 months, to be completed on or before 31st January 2019. If possible, results should be presented at the ISPRS Com. V Symposium to be held in India in late 2018 (see www.isprs.org for details).

ISPRS Working Group Officers are invited to submit applications to their respective Technical Commission President by the deadline below. Further details, including information on the topics and the application process, are available in Appendix 9b of the Orange Book at: <http://www.isprs.org/documents/orangebook/app9b.aspx>.

By the submission deadline, sixteen proposals were received from the five Technical Commissions. A selection committee of all Technical Commission Presidents and three Council members was formed to perform independent review of the proposals based on overall benefits to ISPRS and community, merit of the proposal, competence of the team, contribution to education and capacity building, and budget and feasibility. The committee's recommendation of the seven top-ranked applications, with a total budget of 43,000 Swiss Francs, was approved by the ISPRS Council.

The seven accepted projects are, with project descriptions available on the ISPRS website:

| Title | Project Team | TC/WG |
|---|--|-------------------------------|
| GeoInformation Science Pedagogical Outreach Pilot Program: 3S-4-Schools | Timo Balz, Stephen C. McClure, Norman J. Meres, Jianya Gong, Jinsong Tao, Jingjin Wang | TC I |
| Camera Calibration and Performance Database | Mark R. Shortis | TC II |
| Spreading out the Knowledge from ISPRS Educational Events using a Dissemination Internet Platform | Marco Scaioni, Roderik Lindenbergh, Francesco Pirotti, Martin Rutzinger, Bernhard Hofle | WG III/5, WG II/10, WG III/10 |
| Capacity Building for High-Resolution Land Cover Inter-comparison and Validation | Maria Brovelli, Hao Wu, Marco Minighini, Xinyan Chen, Msilikale Msilanga, Mark Iliffe, Maria D'Urso, Sisi, Zlatanova, Phoebe Oduor, George Sithole | ICWG IV/III, WG IV/4 |
| Establishing an Open Repository and Catalogue for Geospatial Educational Resources | Victoria Rautenbach, Serena Coetzee, Arzu Coltekin, Chris Pettit, Marguerite Madden, Sidonie Christophe, Ochiroo Lkhamjav | WG IV/6, WG IV/9, ICA |
| Education and Training Resources on Digital Photogrammetry | Grazia Tucci, Anjana Vyas, Vikram Sorathia, Satwant Rihal | TC V |
| MOTIVATE Learning: Making Opportunities to Initiate Valuable Alliance through Experiential Learning | Sheryl Rose Reyes, Tanita Suepa, Krzysztof Sterenczak | SC, WG V/5, GISTDA |

Songnian Li
ISPRS Treasurer

ISPRS AWARDS 2020

ISPRS AWARDS GIVEN IN 2017

ISPRS recognizes individual accomplishments through the sponsorship of awards and honours, which are granted at various ISPRS events, the majority at each quadrennial ISPRS Congress. In 2017, the U. V. Helava Award for the year 2016 was granted at the 3rd ISPRS Geospatial Week, and a new award, the **Jack Dangermond Award**, was established.

The **U. V. Helava Award** for the year 2016 was awarded to Wei Huang and Songnian Li for their paper entitled "Understanding human activity patterns based on space-time-semantics", which has been published in the ISPRS Journal of Photogrammetry and Remote Sensing. The award was presented at the opening session of 2017 ISPRS Geospatial Week in Wuhan, China.

The new award, **Jack Dangermond Award**, jointly sponsored by ESRI and MDPI, was established in 2017. This award will be presented to the most outstanding paper published in the ISPRS International Journal of Geo-Information during the four years preceding each Congress, with a grand prize of USD 10,000. The first award will be selected and presented at the 2020 ISPRS Congress in Nice, France.

The ISPRS council has also worked together with sponsors to revise the terms of references of a few awards that are given out in congress years, including the Best Young Author Award, the ISPRS Best Poster Award, and the **Wang Zhizhuo Award**.

The ISPRS Student Consortium has proposed a new type of award, the **Young Authors' Best Paper Award**, aiming at the young authors who publish an outstanding paper in either the ISPRS Journal of Photogrammetry and Remote Sensing or the ISPRS International Journal of Geo-information. The award, if approved, will be sponsored by ISPRS.

ISPRS AWARDS 2020

Deadlines for the 2020 awards are listed in the below table. Awards not listed do not require a formal submission.

| Award | Deadline |
|-------------------------------|-------------------------------|
| Fellows | 1 st October 2019 |
| Brock Gold Medal Award | 1 st October 2019 |
| Eduard Doležal Award | 1 st January 2020 |
| ISPRS Best Young Author Award | 1 st February 2020 |
| Otto von Gruber Award | 1 st February 2020 |
| Samuel Gamble Award | 1 st February 2020 |
| Willem Schermerhorn Award | 1 st February 2020 |
| Schwidefsky Medal | 1 st February 2020 |
| Wang Zhizhuo Award | 1 st February 2020 |
| Karl Kraus Medal | 1 st February 2020 |
| Frederick J. Doyle Award | 1 st February 2020 |
| Giuseppe Inghilleri Award | 1 st February 2020 |
| President's Honorary Citation | 1 st March 2020 |



Chen Jun
ISPRS 1st Vice President

ISPRS PUBLICATIONS AND EVENTS SINCE THE XXIII ISPRS CONGRESS 2016 IN PRAGUE

THE INTERNATIONAL ARCHIVES OF THE PHOTOGRAMMETRY, REMOTE SENSING AND SPATIAL INFORMATION SCIENCES

| Title | Date/Place | Volume |
|---|--|-----------|
| ISPRS TC II 5th International Workshop LowCost 3D – Sensors, Algorithms, Applications | 28-29 Nov, 2017 Hamburg, Germany | XLII-2/W8 |
| ISPRS WG IV/1, WG IV/5 & WG IV/10 12th 3D Geoinfo Conference 2017 | 26-27 Oct, 2017 Melbourne, Australia | XLII-4/W7 |
| ISPRS WG IV/1 4th International GeoAdvances Workshop – GeoAdvances 2017: ISPRS Workshop on Multi-dimensional & Multi-scale Spatial Data Modeling | 14-15 Oct, 2017 Safranbolu, Karabuk, Turkey | XLII-4/W6 |
| ISPRS WG III/4, WG III/1 & WG I/5 Frontiers in Spectral imaging and 3D Technologies for Geospatial Solutions | 25-27 Oct, 2017 Jyväskylä, Finland | XLII-3/W3 |
| ISPRS WG IV/1 International Conference on Geomatic and Geospatial Technology 2017 "Geospatial and Disaster Management" | 4 Oct, 2017 Kuala Lumpur, Malaysia | XLII-4/W5 |
| 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, 2017 Tehran, Iran | XLII-4/W4 |
| 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, 2017 Puebla, Mexico | XLII-4/W3 |
| ISPRS Geospatial Week 2017 | 18-22 Sep, 2017 Wuhan, China | XLII-2/W7 |
| International Conference on Unmanned Aerial Vehicles in Geomatics | 4-7 Sep, 2017 Bonn, Germany | XLII-2/W6 |
| ICOMOS/ISPRS International Scientific Committee on Heritage Documentation (CIPA) 26th International CIPA Symposium – Digital Workflows for Heritage Conservation | 28 Aug - 1 Sep, 2017 Ottawa, Canada | XLII-2/W5 |
| ISPRS ICWG III/II 2017 International Symposium on Planetary Remote Sensing and Mapping | 13-16 Aug, 2017 Hong Kong | XLII-3/W1 |
| ISPRS WG IV/4 FOSS4G-Europe 2017 – Academic Track | 18-22 June, 2017 Marne La Vallée, France | XLII-4/W2 |
| ISPRS Hannover Workshop: HRIGI 17 – CMRT 17 – ISA 17 – EuroCOW 17 | 6-9 June, 2017 Hannover, Germany | XLII-1/W1 |

| | | |
|---|--|-----------|
| ISPRS WG V/1, WG V/2, WG II/8 & CIPA GEOMATICS & RESTORATION – Conservation of Cultural Heritage in the Digital Era | 22-24 May, 2017 Florence, Italy | XLII-5/W1 |
| ISPRS WG II/10, II/5 International Workshop on "Photogrammetric and computer vision techniques for video surveillance, biometrics and biomedicine" | 15-17 May, 2017 Moscow, Russia | XLII-2/W4 |
| 37th International Symposium on Remote Sensing of Environment | 8-12 May, 2017 Tshwane, South Africa | XLII-3/W2 |
| TC II & CIPA 3D Virtual Reconstruction and Visualization of Complex Architectures | 1-3 Mar, 2017 Nafplio, Greece | XLII-2/W3 |
| TC IV 11th 3D Geoinfo Conference | 20-21 Oct, 2016 Athens, Greece | XLII-2/W2 |
| 3rd International GeoAdvances Workshop | 16-17 Oct, 2016 Istanbul, Turkey | XLII-1/W1 |
| TC IV International Conference on Geomatic and Geospatial Technology (GGT) 2016 | 3-5 Oct, 2016 Kuala Lumpur, Ma- laysia | XLII-4/W1 |

ISPRS ANNALS OF THE PHOTOGRAMMETRY, REMOTE SENSING AND SPATIAL INFORMATION SCIENCES

| Event/Title | Date/Place | Volume |
|---|---|---------|
| ISPRS WG V/7 ISPRS Workshop "Geospatial Solutions for Structural Design, Construction and Maintenance in Training Civil Engineers and Architects" | 4-6 Dec, 2017 Kyiv, Ukraine | IV-5/W1 |
| ISPRS WG IV/1, WG IV/5 & WG IV/10 12th 3D Geoinfo Conference 2017 | 26-27 Oct, 2017 Melbourne, Australia | IV-4/W5 |
| ISPRS WG IV/1 4th International GeoAdvances Workshop – GeoAdvances 2017: ISPRS Workshop on Multi-dimensional & Multi-scale Spatial Data Modeling | 14-15 Oct, 2017 Safranbolu, Karabuk, Turkey | IV-4/W4 |
| 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, 2017 Puebla, Mexico | IV-4/W3 |
| ISPRS Geospatial Week 2017 | 18-22 Sep, 2017 Wuhan, China | IV-2/W4 |
| International Conference on Unmanned Aerial Vehicles in Geomatics | 4-7 Sep, 2017 Bonn, Germany | IV-2/W3 |
| ICOMOS/ISPRS International Scientific Committee on Herit- age Documentation (CIPA) 26th International CIPA Symposium – Digital Workflows for Heritage Conservation | 28 Aug - 1 Sep, 2017 Ottawa, Canada | IV-2/W2 |
| ISSC 2017 2nd International Symposium on Spatiotemporal Computing 2017 | 7-9 Aug, 2017 Cambridge, USA | IV-4/W2 |

| | | |
|--|-------------------------------------|---------|
| ISPRS Hannover Workshop: HRIGI 17 – CMRT 17 – ISA 17 – EuroCOW 17 | 6-9 June, 2017 Hannover, Germany | IV-1/W1 |
| ISPRS TC IV 11th 3D Geoinfo Conference | 20-21 Oct, 2016 Athens, Greece | IV-2/W1 |
| ISPRS TC IV 1st International Conference on Smart Data and Smart Cities, 30th UDMS | 7-9 Sep, 2016 Split, Croatia | IV-4/W1 |

ISPRS EVENTS WITHOUT PUBLICATIONS

| Event | Date/Place |
|---|---------------------------------------|
| ISPRS Workshop on Collaborative and Dynamic Land Cover Information Services Supporting UN Sustainable Development Goals | 16-17 September, 2017 Jinan, China |

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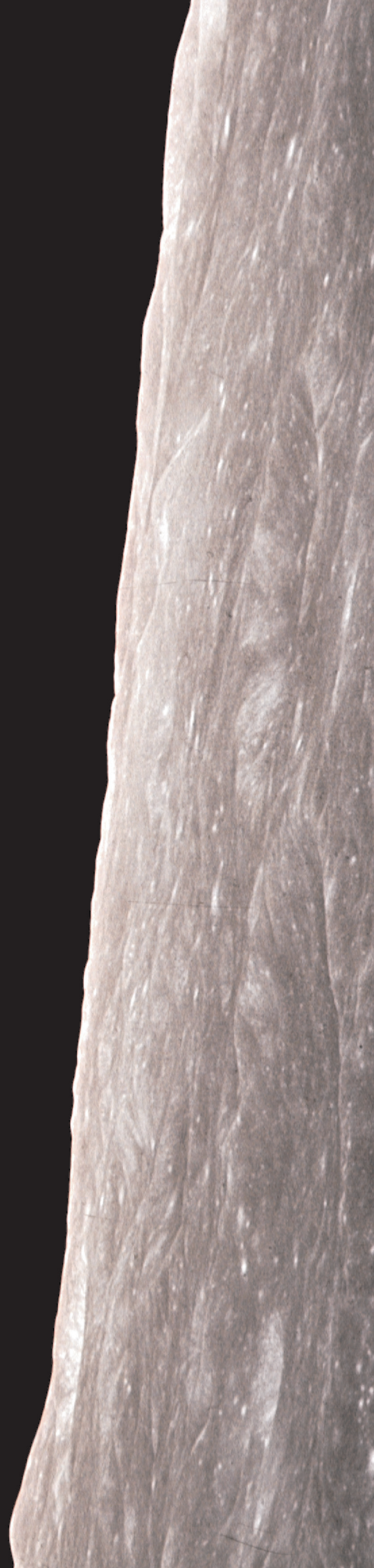
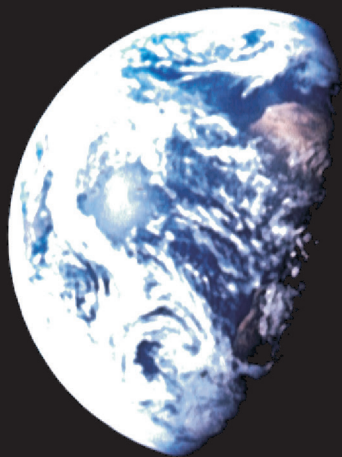
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