

ISPRS Technical Commission IV

Spatial Information Science

PROPOSAL FOR HOSTING BY AUSTRALIA: 2022 - 2026

Introduction

The ISPRS Commission IV deals with theoretical and practical aspects of the modelling, management, analysis, dissemination and visualisation of spatial and spatio-temporal data, including interoperability, web services and geospatial data infrastructure. Commission IV is concerned with applications and operational use of spatio-temporal information in areas such as environmental monitoring, water management, disaster management, mobility, 3D city models, Digital Twins, Building Information Systems, social media, location-based services and health. Commission IV also provides links to international bodies such as UN-GGIM, ISO and OGC and to National Mapping and Cadastre Agencies.

The text below is a proposal for Australia to host the Commission for the period of 2022 to 2026 and the associated structure and the activities.

Commission Leaders

President: Prof Dr Sisi Zlatanova, University of New South Wales, Sydney, Australia

Vice-president: Prof Dr Maria Antonia Brovelli, Polytechnics Milano, Italy

Secretary: Dr Hao Wu, National Geomatics Center of China, Beijing, China

Biographies

Sisi Zlatanova is a Professor and the Head of the Geospatial Research Development and Innovation (GRID) lab, the University of New South Wales (UNSW), Sydney, Australia. She has been involved in the work of ISPRS since 1995. She became an ISPRS WG chair in 2004. Her research interest has always been related to 3D GIS: 3D data modelling, topology, semantics, integration of indoor and outdoor information and recently 3D indoor modelling. Therefore, she has been always closely related to Commission IV and a short period of time to Commission II. She was president of TC IV 'Spatial Information Science' (2016-2022) ISPRS and chair of WG IV/7 '3D indoor modelling and navigation' (2012-2016), WG IV/8 '3D Spatial Data Integration for Disaster Management and Environmental Monitoring' (2008-2012), WG IV/8 'Spatial data integration for Emergency services' (2004-2008). She has received the ISPRS Schermerhorn award (2008), given for the most significant contribution to a working group in the 4 years preceding the Congress for her work within the WP IV/8 (2004-2008). She has organised many successful conferences under ISPRS umbrella and co-authored several books. She has been actively working with international organizations such as ICA, OGC, FIG, IRDR, CODATA and ISCRAM.

Maria Antonia Brovelli is Professor of GIS and Geospatial Web, Geo Big Data and Citizen-generated Content at the Politecnico di Milano (PoliMI), Italy. From 2001 to 2011 she was the Head of the Geomatics Laboratory of PoliMI and from 2011 to 2016 she was Vice Rector of PoliMI for the Como Campus. She has been involved in the activities of ISPRS since 2008 (2008-2012: Co-chair of WG IV/5 "Distributed and Web-Based Geoinformation Services and Applications; 2012-2016 Co-chair of WG IV/5 "Web and Cloud Based Geospatial Services and Applications"). Currently she is the chair of ISPRS WG IV/4 "Collaborative crowdsourced cloud mapping (C3M)". Moreover she is a member of ESA ACEO and of GeoForAll Advisory Board; chair of the OSGeo UN Committee and co-chair of the UN Open GIS Initiative, Deputy-Chair of the UN-GGIM Academic Network and mentor of PoliMappers, the

Politecnico di Milano chapter of YouthMappers. In 2020 she organized the first ISPRS WebMGS Conference and she organised many Academic Tracks of FOSS4G Europe and FOSS4G under the umbrella of ISPRS and OSGeo.

Dr Hao Wu is Professor Senior Engineer and the head of Research and Development department at National Geomatics Center of China (NGCC). He has been involved in the activities of ISPRS since 2008. In 2016, he became the co-chair of ISPRS WG (ICWG IV/III: Global Mapping: Updating, Verification and Interoperability) and was appointed as chair of this WG in 2018. He and his team had close collaborations with UN-GGIM and GEO. He has organised three successful workshops (2016 in Beijing, 2017 in Jinan, 2019 in Changsha) under the ISPRS umbrella. He has also proposed and completed two scientific initiative projects in cooperation with other WG.

Scientific and professional background

Together Prof Zlatanova, Prof Brovelli and Dr Wu possess a broad knowledge, experience and perspectives on the discipline of spatial information science, which will help them to lead the commission in the 2022-2026 term.

Prof Zlatanova specialises in 3D data modelling and data management in the context of Smart Cities and Digital Twins. She has led projects and participated in developing solutions for disaster management and urban planning and contributed to establishing of spatial information infrastructures for large companies and organisations.

Prof Brovelli has been developing her scientific activity within geodesy and geomatics since 1988, by participating and leading many national and international research projects. Initially devoted to research in physical geodesy, radar-altimetry and statistical analysis, since 1993 she has focused her interests on geographic information systems, free and open source GIS theory and applications representing one of her main research issues.

Dr Wu's research focuses on global land cover mapping, geospatially-enabled SDGs monitoring and dynamic service-oriented computing. He has led a national key research and development program and some other domestic research projects. In 2021, he was selected as one of the Young Scientific and Technological Talents by the Ministry of Natural Resources of the People's Republic of China.

Prof Zlatanova, Prof Brovelli and Dr Wu are based in Asia Pacific, Europe and Asia respectively. This will establish a presence for the Commission across three continents and allow for a more effective structure reflecting on spatial information needs in different parts of the world as well as spreading the commission's activities.

Responsibilities

The responsibilities of the Commission Leaders will be defined as follows:

President: Prof Sisi Zlatanova

- Attend the planned ISPRS meetings immediately after the Congress as well as the annual meetings Council meetings during 2022-2026.
- Host and organise a symposium of the Commission in 2024 in Australia
- Coordinate and contribute to the activities of the Commission
- Promote the Commission and its activities
- Communicate the business of the Commission to the Working Groups of the Commission
- Coordinate and organise other events and activities of the Commission

Vice-President: Prof Maria Antonia Brovelli

- Attend ISPRS meetings when the President is not available
- Coordinate and contribute to the activities of the Commission
- Promote the Commission and its activities
- Communicate the business of the Commission to the Working Groups of the Commission
- Support the organisation of the Commission symposium
- Coordinate and organise other events and activities of the Commission

Secretary: Dr Hao Wu

- Attend ISPRS meetings when requested by the President of the Commission
- Contribute to the activities of the Commission
- Keep records of the business of the Commission
- Manage the communications of the Commission
- Maintain the website of the Commission
- Support the organisation of the Commission symposium
- Coordinate and organise other events and activities of the Commission

Structure of the commission

In the period of 2022-2026, the Commission Leaders intend to further advance the research in spatial information sciences considering both theoretical and practical aspects in modelling, structuring, management, analytics and artificial intelligence, visualization and simulation of data.

The focus in the four-year period will be on novel methods for data integration and analytics considering a range of fields (indoor/outdoor, above/below the surface, design/real world), applying knowledge-based technology, semantics, linked data and artificial intelligence in support of Digital Twin, Digital Engineering and Smart Cities. Special attention will be given to technologies, methods and applications to support climate change activities and UN Sustainable Development Goals (SDG). In this respect, linking information about real-world physical phenomena with societal, organizational and legal information will be of primal importance.

We intend to further contribute to advancements in Smart Cities and Digital Twin developments and needed visualization (web-based, VR and AR) simulation and visual analytics. The Commission will cooperate with international organisations working towards UN SDG (e.g. 6,9,11,13,14 and 15) such as UN-GGIM Working Groups and UN-GGIM Academic Network, sister organisations and communities (ICA, OSGeo, OSM, HOT, GeoChicas, YouthMappers) and most importantly with standardization organizations such as OGC, ISO, W3C and IETF.

To be able to cover all these research topics, we propose the following nine WG:

1. Spatial Data Interoperability, Standards, Semantics, and Linked data
2. Spatial analysis, Spatial Statistics, Data mining and Artificial intelligence
3. Mobility, Navigation and Location-based services
4. Sensor web, Internet of Things, Crowdsourcing and Participatory Systems
5. Data management, NoSQL, Cloud databases, Data lakes, Autonomous Databases
6. Geo-Simulation, Augmented Reality, Virtual Reality and Visual Analytics
7. Spatially-enabled Digital Twins, BIM, GIS and sensor integration
8. Global Mapping, Land Cover mapping and Big Geospatial Data
9. Energy, Food and Climate Applications (SDG)

Some inter-commission WG will be discussed with the other commissions.

Activities

The Commission plans to organise the below activities in the 2022-2026 period.

Symposium

The symposium will be organised in Australia, by the Surveying & Spatial Sciences Institute (SSSI), the University of New South Wales (UNSW), Polytechnics Milano and the Geomatics Centre of China. Several Australian leading private sector companies and institutions have already expressed interest in supporting the symposium such as Geosciences Australia, Standards Australia, Data61, ESRI Australia, AAM and Aerometrex.

The host city of the symposium will be selected shortly with Sydney, Cairns, Canberra, Brisbane and Perth currently possibilities. Leading criteria for the location will be not only the accessibility and cost of the venue but also the possibilities to organise parallel professional and cultural activities.

Besides the scientific sessions, we will investigate options to organise:

- One day workshops and tutorials
- Panels/demos with practitioners
- Student competition or special student session
- Theme sessions on Climate Change
- Theme sessions on standards
- One day app development/hackathon
- Marathons and Mapping parties
- ISPRS council meeting.

ISPRS Geospatial week

The Commission will participate in the Geospatial week with several special sessions, which will be organised by the WGs. The specific sessions will be discussed with the WG officers.

WG conferences

Each WG would be encouraged to organise at least two conferences/seminars during the 4-year period, i.e. year 2023 and 2025. Special attention will be given to conferences that are of interest for Africa, Asia and Latin America. The conference organisers will be encouraged to include sessions on using geospatial technology for achieving UN SDG or discussions on Climate change activities.

Publications and dissemination of results

The Commission will stimulate the publication of:

- Joint papers between WGs on emerging topics (big data, indoor, semantic web, BIM/GIS, AV/AR, data and society, etc.)
- ISPRS books (at least one)
- Special issues (WG based, or across WG)
- Joint work on revisions, development of international standards.

Website, repositories, contacts with other organisations

- Information exchange via ISPRS iBulletin, news.
- Organisation of repositories for test data such as 3D models (BIM/GIS), assessments of citizens, or mobility data in support comparative research.
- Planning activities with international organisations such as OGC, ISO, UN-GGIM, ICA, OSGeo, OSM, HOT, YouthMappers, etc

Financial aspects

The Commission Leaders intend to investigate all possible options to reduce the cost of meetings, workshops and the symposium to allow participation from all regions of the world. The Commission will encourage videoconferencing, virtual presentations and discussions when appropriate and possible.

UNSW will support the Commission President in completing her responsibilities, most importantly to attend the annual meetings of the ISPRS council (up to 12 days).

Any other meetings which need presence of the Commission will be discussed with the Vice-president and the Secretary. Located on three different continents, it is expected the Commission Leaders will be able to attend many of the activities organised by ISPRS.

We intend to organise a low-cost symposium of sessions, presentations and posters, preceded by one day workshops and tutorials. The attachment shows a first approximation of the symposium budget.

29 April 2022

Lena Halounová
Secretary General
International Society for Photogrammetry and Remote Sensing
c/o Czech Technical University in Prague
Thakurova 7, Prague 6
Czech Republic
isprs-sg@isprs.org

Dear Prof Halounová

Support for Bid for Australia to Host ISPRS Technical Commission IV

Further to previous correspondence sent on 8 February 2020, the Surveying & Spatial Sciences Institute (SSSI) confirms its support for Australia, as an ISPRS Ordinary Member, to host the International Society for Photogrammetry and Remote Sensing Technical Commission IV *Spatial Information Science* for the period of 2022-2026.

If successful in this bid, SSSI nominates the following to be the leaders of Commission IV for the stated period:

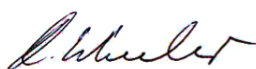
- President - Professor Sisi Zlatanova (University of New South Wales)
- Vice-President - Prof Maria Antonia Brovelli (Politecnico di Milano)
- Secretary - Dr Hao Wu (National Geomatics Center of China).

These nominations are also supported by the President of the Italian Society of Photogrammetry and Topography (SIFET).

As part of the hosting of the Commission in Australia for the four-year term, SSSI is pleased to specifically support the coordination of the TCIV Symposium in 2024 in Australia through the provision of event management services.

If you have any queries, please do not hesitate to contact me. SSSI is looking forward to further strengthening our relationship with ISPRS and the global remote sensing and photogrammetry community.

Yours sincerely



Tony Wheeler
Chief Executive Officer, SSSI

Am 22.04.2022 um 15:34 schrieb andrea.lingua@polito.it:

Dear President, dear All,

I sent an email on February 25th.

I'm afraid there have been problems with this.

The problem is that some emails contain fraudulent payment requests from an email address similar to the ISPRS president's email: the antispam tool filtered all the email from Annette and other ISPRS emails.

However, I inform you that, following the last board of directors, SIFET supports the proposal of prof. Sisi Zlatanova for ISPRS Technical Commission IV - Spatial Information Science with Maria Antonia Brovelli, from Italy, as Commission Vice-President.

Sincerely,

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Andrea M. LINGUA

Professore Ordinario (Full Professor) in Geomatica

POLITECNICO DI TORINO

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Coordinatore del Collegio di Ingegneria EDILE

Member of Management Board of PIC4SeR (PoliTO Interdepartmental Centre for Service Robotics)

<https://pic4ser.polito.it/>

Co-chair Working Group I/6 International Society of Photogrammetry and Remote Sensing (ISPRS)

Presidente della Società Italiana di Fotogrammetria e Topografia (SIFET) (<https://www.sifet.org/>)

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ISPRS Technical Commission IV 2024 Symposium - Draft Budget

| All figures are in AUD and include GST | | | | |
|--|-----|-------------|----------------------|---|
| Income | No. | Rate | Total | Notes |
| REGISTRATIONS | | | | |
| Three Days | | | | <i>Tech sessions, welcome reception & dinner</i> |
| Earlybird | 55 | \$ 800.00 | \$ 44,000.00 | |
| Standard | 50 | \$ 950.00 | \$ 47,500.00 | |
| Late/Onsite | 10 | \$ 1,100.00 | \$ 11,000.00 | |
| Students | 30 | \$ 250.00 | \$ 7,500.00 | |
| Four Days | | | | <i>Day 1 Tutorials/workshops, Tech sessions, welcome reception & dinner</i> |
| Earlybird | 30 | \$ 890.00 | \$ 26,700.00 | |
| Standard | 20 | \$ 1,040.00 | \$ 20,800.00 | |
| Late/Onsite | 4 | \$ 1,190.00 | \$ 4,760.00 | |
| Students | 15 | \$ 300.00 | \$ 4,500.00 | |
| Complimentary | | | | |
| Sponsors | 16 | \$ - | \$ - | |
| Speakers | 8 | \$ - | \$ - | |
| VIPs | 12 | \$ - | \$ - | <i>ISPRS Council and Honorary Members, Convenor, SSSI CEO & President</i> |
| <i>Sub-total</i> | 250 | | | |
| Individual tutorials/workshops | | | | <i>Day 1 Tutorials/workshops - can be purchased individually or with three day rego</i> |
| Regular | 0 | \$ 55.00 | \$ - | |
| Students | 0 | \$ 35.00 | \$ - | |
| <i>Registration Total</i> | | | \$ 166,760.00 | |
| SPONSORSHIP | | | | |
| Gold | 2 | \$ 5,500.00 | \$ 11,000.00 | |
| Silver | 2 | \$ 3,300.00 | \$ 6,600.00 | |
| Bronze | 2 | \$ 1,100.00 | \$ 2,200.00 | |
| <i>Sponsorship Total</i> | 6 | | \$ 19,800.00 | |
| TOTAL INCOME | | | \$ 186,560.00 | |

| Expenses | No. | Rate | Total | |
|--|------------|--------------|----------------------|-----------------------------------|
| VENUE | | | | |
| Room Hire (Day 1) | 1 | \$ 3,000.00 | \$ 3,000.00 | |
| Room Hire (Days 2 - 4) | 3 | \$ 4,000.00 | \$ 12,000.00 | <i>Plenary plus two breakouts</i> |
| AV (Day 1) | 1 | \$ 3,000.00 | \$ 3,000.00 | |
| AV (Days 2 - 4) | 3 | \$ 5,000.00 | \$ 15,000.00 | |
| Incidentals | 1 | \$ 500.00 | \$ 500.00 | |
| Morning Tea, Lunch, Afternoon Tea (Day 1) | 105 | \$ 50.00 | \$ 5,250.00 | |
| Morning Tea, Lunch, Afternoon Tea (Days 2-4) | 250 | \$ 150.00 | \$ 37,500.00 | |
| <i>Venue Total</i> | | | \$ 76,250.00 | |
| SOCIAL EVENTS | | | | |
| Welcome Reception | | | | |
| Canapes & drinks | 200 | \$ 60.00 | \$ 12,000.00 | |
| Dinner | | | | |
| BBQ Buffet | 200 | \$ 40.00 | \$ 8,000.00 | |
| Drinks | 200 | \$ 40.00 | \$ 8,000.00 | |
| Entertainment | 0 | \$ 1,500.00 | \$ - | |
| Theming | 0 | \$ 1,000.00 | \$ - | |
| <i>Social Events Total</i> | | | \$ 28,000.00 | |
| CONFERENCE MATERIAL | | | | |
| Nametags | 250 | \$ 2.50 | \$ 625.00 | |
| Printing | 1 | \$ 50.00 | \$ 50.00 | |
| Signage | 1 | \$ 200.00 | \$ 200.00 | |
| Speaker gifts | 1 | \$ 1,000.00 | \$ 1,000.00 | |
| <i>Conference Material Total</i> | | | \$ 1,875.00 | |
| PROGRAM EXPENSES | | | | |
| Speaker travel | 4 | \$ 2,000.00 | \$ 8,000.00 | |
| Posters | 10 | \$ 50.00 | \$ 500.00 | |
| Poster prize | 1 | \$ 100.00 | \$ 100.00 | |
| Conference proceedings | 150 | \$ 30.00 | \$ 4,500.00 | |
| <i>Program Expenses Total</i> | | | \$ 13,100.00 | |
| ISPRS | | | | |
| Council member travel | 6 | \$ 3,000.00 | \$ 18,000.00 | |
| Honorary member travel | 3 | \$ 3,000.00 | \$ 9,000.00 | |
| Share of Rego income to ISPRS | 1 | \$ 18,656.00 | \$ 18,656.00 | |
| <i>Other Total</i> | | | \$ 45,656.00 | |
| OTHER | | | | |
| Photography | 0 | \$ 2,000.00 | \$ - | |
| Stickytickets fees | 200 | \$ 5.00 | \$ 1,000.00 | |
| SSSI Staff & President travel | 3 | \$ 1,000.00 | \$ 3,000.00 | |
| Contingency | 1 | \$ 1,000.00 | \$ 1,000.00 | |
| <i>Other Total</i> | | | \$ 5,000.00 | |
| TOTAL EXPENSE | | | \$ 169,881.00 | |
| PROFIT/LOSS | | | \$ 16,679.00 | |