

ISPRS Council  
Attn. CHRISTIAN HEIPKE  
Leibniz University Hannover  
Institute of Photogrammetry and GeoInformation Nienburger Str. 1  
30167 Hannover  
GERMANY

Nijkerk, November 30<sup>th</sup> 2015

**Subject:** Seeking responsibility for COMMISSION IV Spatial Information Science

Dear Mr. Secretary General Christian Heipke,

Geo-Information Netherlands (GIN) is representing The Netherlands as an Ordinary Member of the ISPRS.

Geo-Information Netherlands nominates Sisi Zlatanova (Delft University of Technology) as President of Technical Commission IV Spatial Information Systems. This recommendation was approved during a meeting of the Executive Committee.

Suzana Dragicevic (Simon Frasier University, Canada) has been recommended as a vice-president of the Commission IV.

If you have any questions or require additional information, please do not hesitate to contact us by e-mail at [peter.hoogwerf@kadaster.nl](mailto:peter.hoogwerf@kadaster.nl).

Yours sincerely,



Peter Hoogwerf MBA, LL.M  
President GIN  
The Netherlands



Wednesday, November 25, 2015

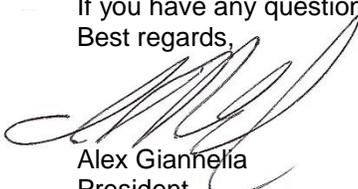
Peter Hoogwerf  
Geo-Informatie Nederland  
Postbus 1058  
3860 BB NIJKERK, Netherlands

SUBJECT: COMMISSION IV Spatial Information Science

Dear Mr. Peter Hoogwerf, Chair of the Geo-information Netherlands, representing the Netherlands as Ordinary Member of ISPRS, the Canadian Institute of Geomatics, representing Canada as an Ordinary Member of the ISPRS, supports the nomination for president and vice-president of the Commission IV Spatial Information Science (2016-2020):

President: Sisi Zlatanova, Delft University of Technology, The Netherlands  
Vice-president: Suzana Dragicevic, Simon Frasier University, Canada

If you have any questions, please do not hesitate to contact us.  
Best regards,

  
Alex Giannelia  
President

# **ISPRS Technical Commission IV Spatial Information Science**

Sisi Zlatanova,  
Suzana Dragičević, and  
George Sithole

14 February 2016

## Introduction

On 2<sup>nd</sup> of May, the ISPRS council announced that the Ordinary members of ISPRS have voted for a new ISPRS structure consisting of five commissions, one of which is Commission IV Spatial Information Science. 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, disaster management, mobility, 3D city models, 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 the structure and the activities of the Commission.

## Commission presidents

President: Dr. Sisi Zlatanova, Delft University of Technology, Delft, The Netherlands

Vice-president: Dr. Suzana Dragičević, Simon Fraser University, Burnaby, Canada

Secretary: Dr. George Sithole, University of Cape Town, Cape Town, South Africa.

### Short Biography

Sisi Zlatanova has been involved in the work of ISPRS since 1995. She became an ISPRS WG chair in 2004. Her research interests have 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 for a short period of time to Commission II. She has chaired WG IV/7 ISPRS 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) and 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 organized several conferences under the ISPRS umbrella and co-authored several books in cooperation with ISPRS. She has been actively working with international organizations such as ICA, OGC, FIG, IRDR, CODATA, ISCRAM etc.

Suzana Dragičević was involved with *ISPRS* since 2005 in the capacity of Secretary of *ISPRS* Technical Commission IV Working Group IV/5, then from 2012 as Vice-President of the Technical Commission II, Theory and Concepts of Spatial Information Science. She was the main organizer and the Chair for the *ICA-ISPRS 2011* Joint Workshops; co-chair and/or member of many conference program committees; guest edited 11 special issues for which seven was ISPRS work related; Dr. Dragičević has co-edited two books, published over 70 peer-reviewed papers, book chapters, conference papers, encyclopedia entries, journal editorials and book reviews.

George Sithole became involved in ISPRS since 2000, when he was working on his PhD. In the years 2004/2005 he has contributed to the ISPRS filter test. He has prepared test data sets and organised comparison of filtering algorithms, which was presented in a report which is widely used. He has been visiting various ISPRS events to present his research. He has co-chaired the ISPRS WG/7 '3D Indoor modelling and navigation' (2012-2016). He was a main organiser of the 1<sup>st</sup> conference in Southern Africa on 3D Indoor in Cape Town South Africa. He was awarded the Dolezal Award at the ISPRS congress in 2012.

### Scientific and professional background

Together Dr Zlatanova, Dr Dragičević, and Dr Sithole bring a variety of knowledge, experience and perspectives on the discipline of spatial information science.

Dr Sisi Zlatanova specialises in 3D data modelling and data management. She has worked on developing solutions for emergency response, urban planning, establishing of spatial information infrastructures for large companies and organisations.

Dr Dragičević specialize in the field of geographic information systems and science (GIS), more particularly in the areas of geosimulation and geocomputation for modeling complex dynamic geographical systems.

Dr Sithole specialises in point cloud processing and automated reconstruction from point clouds and imagery. He is currently working on developing solutions for automated creating of indoor models, and developing navigation paradigms for indoor areas, defining visualisation specification for indoor scenes on mobile devices.

Dr Zlatanova, Dr Dragičević, and Dr Sithole are based in Europe, America and Africa respectively. This will establish a presence for the commission on three continents, and allow a more effective division of the commission's activities.

### Responsibilities

The responsibilities of the commission presidents are defined as follows:

President: Dr. Sisi Zlatanova

- Attend the planned ISPRS meetings immediately after the congress as well as the annual Council meetings during 2012-2016.
- Host and organise the symposium of the commission IV
- Coordinate and contribute the activities of the commission
- Promote the commission and its activities
- Communicate the business of the with the Working Groups of the Commission

Vice-president: Dr. Suzana Dragičević

- Attend ISPRS meetings when the president is not available
- Support the organisation of ISPRS TCIV
- Contribute the activities of the commission
- Promote the commission and its activities
- Communicate the business of the with the Working Groups of the Commission

Secretary: Dr. George Sithole

- Commit about 25 percent of his time to the activities of the committee.
- Attend ISPRS meetings when requested by the president of the commission
- Keep records of the business of the commission
- Manage the communications of the commission
- Maintain the websites of the commission
- Assist the president of the commission with organising the symposium, conferences and other activities of the commission

### **Structure of the commission**

In the period of 2016-2020 we intend to further advance the research in spatial information sciences considering both theoretical and practical aspects in modelling, structuring, management, analysis visualization and simulation of data. The focus in the four year period will be on 3D representations, integration of data from different domains (indoor/outdoor, above/below the surface, design/real

world) and use of spatial information for a variety of applications. A 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 Commission will cooperate with other international organisations and most importantly with standardization organizations such as OGC, ISO, Web3D, etc.

To be able to cover all these research topics, we propose the following 10 WG:

1. Spatio-temporal and multi-resolution modelling
2. Ontology and semantics, and knowledge representation
3. Spatial statistics, spatial analysis, uncertainty modelling, data mining, and optimization
4. Crowd sourcing, cloud based mapping, social collaboration
5. Mobility, monitoring, tracking, and Indoor/Outdoor localization and navigation, and location based services
6. Internet of things and sensor web
7. Global and land cover mapping: updating and verification of big data
8. DBMS (Data management and indexing), spatial data interoperability and standards
9. Geocomputation and geosimulation (spatio-temporal modelling, cellular automate, agent based modelling, artificial intelligence, machine learning)
10. GeoVisualization, Augmented Reality, Virtual Reality and Visual Analytics
11. Spatial decision support systems, participatory systems

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

## Ambitions

In the term 2016-2020, the presidents aim to:

- Advance Spatial Information science by promoting research conducted within WG, facilitating exchange of data sets and open software, acknowledging achievements and promoting them to commercial parties.,
- Improve the cooperation between the members of the WG in the Commission, by organising virtual sessions, discussion forums on emerging topics and eventually repository for open data and open software
- Strengthen the contacts with the International organizations and increasing the number of joint events and publications
- Strengthen the presence of ISPRS society in world and especially in Africa by involving universities and local companies in ISPRS virtual sessions, organising training.
- Involve national mapping/cadaster organizations in ISPRS activities by inviting professionals to ISPRS conferences, organising professional session and panels.

## Activities

The Commission will organise the following activities:

### Symposium

*Organisation:* The symposium will be organised in the Netherland by GIN, RWS, NGG and Delft University of Technology. Several Dutch companies and institutions expressed interest to sponsor and support the organisation of the symposium: Cyclomedia, Brandweer Nederland, CGI Nederland and Fugro.

*Location:* The exact location of the symposium will be selected later, most probably it will be the area of Rotterdam. Leading criteria for the location will be not only the accessibility and cost of the venue but also the possibilities to organise parallel events.

Activities: Besides the scientific sessions, we discuss options to organise:

- Hands-on workshops and/or on-site events
- Discussions with practitioners
- Demos from practitioners/companies (in a set-up different than exhibition)
- Special student session
- Student competitions such as:
  - Developing of app on a specific theme or with a given set of data
  - OSM missing maps day
- ISPRS council meeting: all needed facilities for the ISPRS council meeting will be arranged.

The presidents will investigate options to organise the symposium with other conferences such as 3DGeoinfo, UDMS and Gi4DM, or appropriate activities of EuroSDR, FIG and ICA.

#### ISPRS Geospatial week

The Commission will participate in the Geospatial week with several special workshops, 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 during the 4-year period, i.e. year 2017 and 2019 and would be encouraged to organise joint sessions during the COMIV symposium, ISPRS geospatial week and the congress.

#### 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 journal issues (WG based, or across WG)
- Revision, development of standards

#### Web site, repositories, contacts with other organisations

- information exchange via ISPRS blog, news, etc.
- Organisation of repositories for test data, 3D models (BIM/GIS)
- Planning activities with international organisations such as OGC, ISO, JB GIS, etc.

All the activities of the Commission will be organised according to the ISPRS Orange book.

## **Financial aspects**

The Commission presidents intend to investigate all possible options to reduce the cost of meetings, workshops or the symposium. We will encourage teleconferencing, virtual presentations and discussions when appropriate and possible.

Delft University of Technology will ensure the Commission president can attend the annual meeting of the ISPRS council. Delft University of Technology will ensure the president can spend up to 12 days travelling to ISPRS meetings.

Any other meetings, which need presence of the Commission will be discussed with the vice-president and the secretary, but will be pending on availability of the travel funds at local institutions. Located on three different continents we believe we will be able to attend a large number of activities organised by ISPRS.

The first approximation of the symposium budget is 106 000 euro (in a university set up assuming 250 participants). Given a certain company sponsorship, we believe we can have a registration fee of 400 euro.