

# SPECTRUM

THE OFFICIAL NEWSLETTER OF THE  
ISPRS STUDENT CONSORTIUM  
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**Know the Working  
Groups Under Technical  
Commission II**

Important-Focused-Outstanding-Valuable:  
**Dr. Fabio Remondino  
& Dr. Isabella Toschi**

**ISPRS Congress  
2020**

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## Join the SPECTRUM Team!

We are constantly in search for passionate volunteers to be part of the ISPRS-SC Newsletter team. If you are a student or a young professional (ages 20 – 35 years old), willing to lend your time and skills with the passion to tell stories, share knowledge and experiences, then join us as a CONTRIBUTOR to the Spectrum.

Have a passion for design, layouts and infographic? Be one of the volunteers of our CREATIVE DESIGN TEAM and help us tell stories through pictures and images.

Take the opportunity to work with an international array of experts to bring the latest stories and developments in the field of Remote Sensing, Geomatics and Photogrammetry.

Click here to register as a Volunteer TODAY!

<https://goo.gl/QcsABN>

Or you can email us at [sc@isprs.org](mailto:sc@isprs.org)



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# NEWSLETTER

**ISPRS**  
STUDENT  
CONSORTIUM

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FROM THE BOARD

Dear ISPRS SC Members,

First and foremost, I would like to extend my deepest gratitude for your support for SpeCtrum – we have published one volume! And to start Volume 12, it is my great pleasure to introduce the SpeCtrum Midterm Symposia Special Issue. This special issue will be released in line with the dates of each of the midterm symposium and will feature the Technical Commissions (TCs) and their corresponding Working Groups (WGs). SpeCtrum aims to provide ISPRS SC members with further information about ISPRS and the TCs as well as WGs that comprise the Society. This is the continuation of the first two issues of SpeCtrum and I sincerely hope that this issue will be informative and useful for many of you who are deciding which specific research interest to pursue in the fields of photogrammetry, remote sensing and geospatial information sciences.

This special issue features some of the articles we published in SpeCtrum's first issue – to provide our readers the opportunity of looking at the Society from the broader perspective to the details of each TC and WG, and to a realization of what ISPRS is all about and what it aims to contribute to the scientific community. This special issue also aims to help many of you understand the ISPRS as a Society through feature articles and interviews with the Council and Technical Commission Presidents. I hope that you will find inspiration from these articles and interviews, and further motivate you to continue pursuing the advancement and development of our profession.

In addition to this special issue, the midterm symposia also includes activities for the youth – so if you are attending one of the five, I hope that you will participate in these events and meet some of the great people from ISPRS!

To all the Technical Commissions, the ISPRS SC

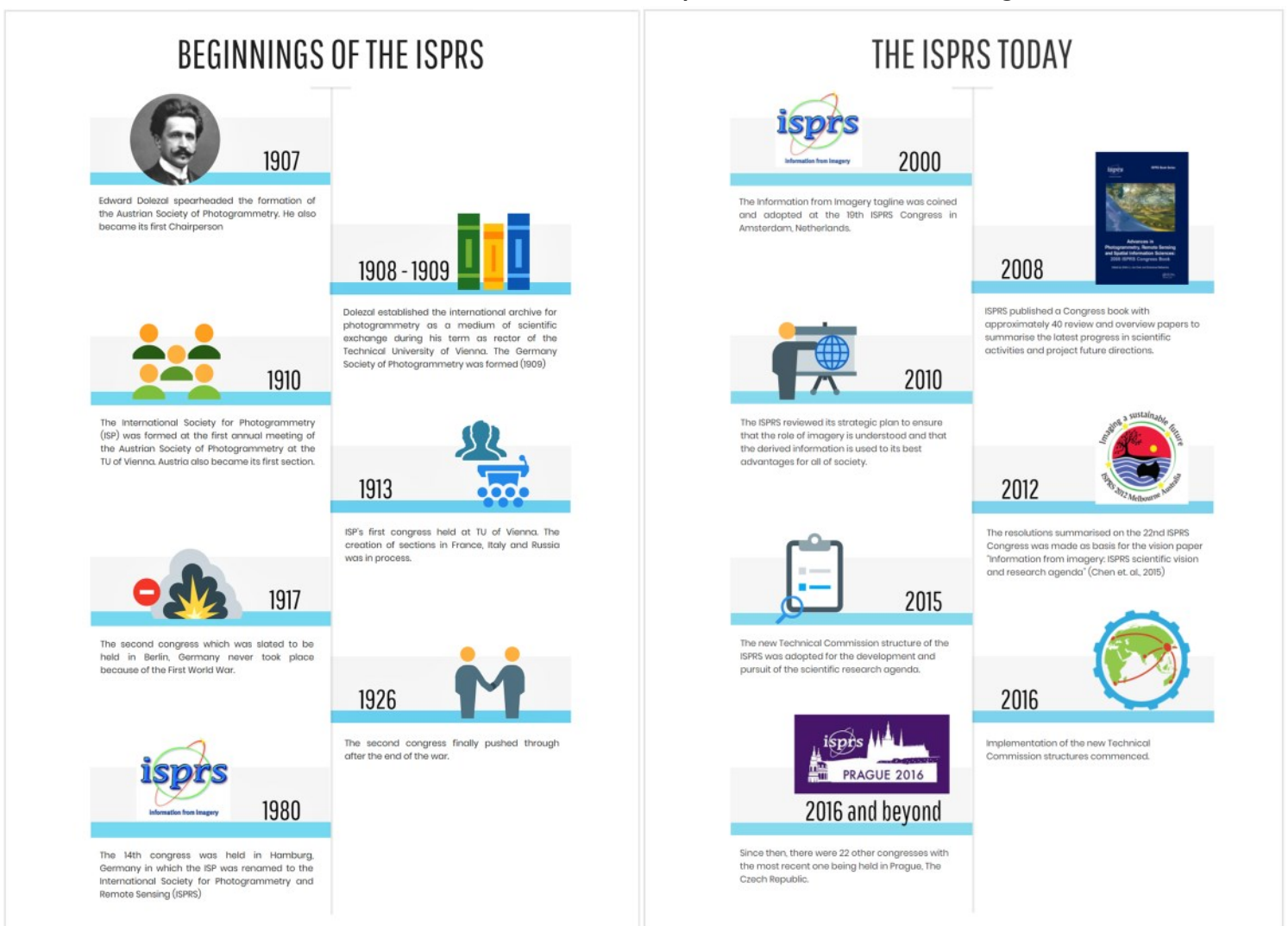
**Sheryl Rose Reyes**  
ISPRS-SC Chair  
2016 - 2020

# A Peek Into the Society's History

Written by Charles Jjuuko and Angelica Monzon

ISPRS stands for International Society for Photogrammetry and Remote Sensing. It is an international non-governmental organisation that enhances international cooperation between the worldwide organisations with interest in photogrammetry, remote sensing and spatial information science.

The Society promotes extraction and utilization of information from imagery by encouraging and facilitating research and development in its scientific activity; advancing knowledge through scientific networking; strengthening international cooperation; education and capacity development, and; persistent exploration on how to expand and enhance its application for the needs of society. Established in 1910 as the International Society for Photogrammetry (ISP), renamed to ISPRS in 1980, ISPRS is the oldest international professional umbrella organization in its field.



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Every four years (quadrennial Congress), resolutions are formulated and approved to address new and rapidly evolving topics to set the course of scientific activities. The Society has managed to hold a total of 23 congresses with the most recent one being held in Prague, The Czech Republic last 2016. The 24th ISPRS Congress will be held in Nice, France on the 28th June to 4th July 2020 in which many are already eager to participate.

# WHAT THE SOCIETY IS MADE OF

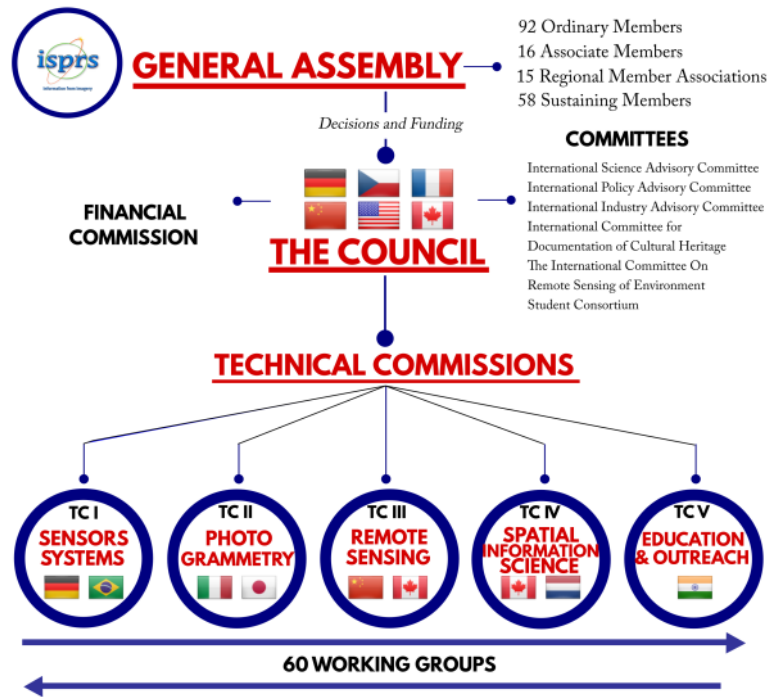
by Charles Jjuuko and Angelica Monzon

ISPRS is a society of societies whose direction and management is undertaken through the following components: Congress, General Assembly, Council, Financial Commission, Technical Commissions and Sustaining Members.

The General Assembly acts as the supreme authority of the Society for all decisions and it determines the general policy of the Society. While the Congress consists of all the photogrammetrists and remote sensing specialists present who are affiliated with a member organisation and others who have been invited. The General Assembly meets after four years at the Congress.

The ISPRS Council conducts the day to day affairs of the Society in the interval between meetings of the General Assembly in accordance with the statutes and bylaws and with the decisions and directives of the General Assembly and Congress. The Council holds a meeting at least every year. The Council consists of six members; the President, Secretary General, Congress Director, First Vice President, Second Vice President and the Treasurer.

The Technical Commissions (TCs) are responsible for the scientific work of the Society. They are hosted by an Ordinary Member or between two Ordinary Members through the election of the General Assembly. The TCs is headed by the Technical President (TCP) with a Vice Technical president (V-TCP) who comes from an Ordinary Member different from that of the president. This ensures that a large multi-national participation and Ordinary Members that believe organising the symposium is beyond their capability or interest, may still become active in the Society. Each TC is supposed to host a symposium between the Congresses. They are also tasked with establishing Working Groups (WGs) basing on topics related to the TC's Terms of Reference (ToR), which are responsible for the scientific work of the Society. Each WG is made up of one chair person, a maximum of two co-chairpersons and a WG



secretary. WG officers are tasked with organising scientific activities of the WG covering its areas of interest according to the ToR prepared in coordination with their TCP and approved by the Council. WGs organise activities like, specific topics of research, tests, case studies, and other activities of interest to the TC and ISPRS.

In 1948 details of six Technical Commissions were defined with the seventh TC added in the year 1952. Since then the ISPRS has had seven TCs which have been just changing topics a case in example is TC VI, in 1993 it was “Economics, Professional Matters and Education”, but in 2004 it was “Education and Communication”. Due to overlap in topics between the TCs and the advance in the science of photogrammetry and Remote Sensing, the TCs were reduced to five at the XXIII in 2016 in Prague, Czech Republic. The current TCs are under the following themes:

- Commission I – Sensor Systems
- Commission II – Photogrammetry
- Commission III – Remote Sensing
- Commission IV – Spatial Information Science
- Commission V – Education and Outreach

# The Leaders Behind the Society - the ISPRS Council

Questions prepared by Angelica Monzon and Sheryl Rose Reyes

Get to know the driving force behind the ISPRS Council through learning how they started their involvement with the ISPRS and how being part of the society helped them achieve the career they have today.

## CHRISTIAN HEIPKE

ISPRS President 2016 – 2020

Leibniz University Hannover

Institute of Photogrammetry and GeoInformation (IPI)  
GERMANY

<https://www.ipi.uni-hannover.de/257.html?&L=1>



**“..it is not enough to carry out the right projects and find the right partners for co-operations today. We also need to make sure that there will be people with appropriate skills eager to take over from the current leadership generation in the not so distant future.”**

How did you start with your engagement with the ISPRS?  
What were your motivations for actively participating in the organization?

*In the early 1980's I had studied abroad and learnt English rather fluently. I had also travelled internationally a bit and had been fortunate enough to participate in the ISPRS Congress in Kyoto in 1988. I thus didn't think twice when my PhD supervisor, Prof. Heinrich Ebner, offered me the job of secretary in an ISPRS working group entitled "Design and algorithmic aspects of Digital Photogrammetric Systems". I was excited about the additional travel opportunities and could sense that building up an international scientific network would be both rewarding and useful for my future.*

How important is the representation of the younger generation through the Student Consortium in the overall vision of the ISPRS? What was your most memorable experience working with the members of the Student Consortium?

*Very important, indeed - for the simple reason that the students of today are the leaders of tomorrow. Thus, if ISPRS wants to have a bright future, it is not enough to carry out the right projects and find the right partners for co-operations today. We also need to make sure that there will be people with appropriate skills eager to take over from the current leadership generation in the not so distant future. The Student Consortium is an ideal group for acquiring these skills through "learning by doing". Young people gain leadership experience on a global level by teaming up and working together. They initiate, plan and carry out real projects, analyse the results and come up with suggestions for improvement, all while having a lot of fun and the ability to explore the world. To a large degree they work independently from ISPRS, thus they take on responsibility for their actions and learn from their mistakes. And when necessary, some ISPRS officers are happy to give general directions or act as mentors.*

*I have had a few very positive encounters with members of the Student Consortium. I can't single out a particular one, but each time I was thrilled by their fresh ideas for approaching just any issue, coupled with a very serious engagement towards the society.*

What encouragement can you give to the members of the ISPRS Student Consortium to actively participate in the organization's activities as well as with the general activities of the ISPRS?

*Working on an international level brings excitement and is fun and will shape your own perception of people towards a*

*better understanding of different opinions. Only then can misunderstandings be identified, explained and eventually overcome. In particular, the development of the world as we are witnessing it over the last few years, such moderation is indispensable to come to lasting solutions and developments. We only have one world - we need to take care of it and of its people.*

*While most people will agree on these general statements, ISPRS as a whole, and the Student Consortium in particular, is a way people in our profession can contribute to these overall goals. In ISPRS, we are aware of the importance of supporting the young generation, and we thus offer financial support to those who need it.*

*On a more personal level, engagement in international organisations such as ISPRS widens your horizon, makes you aware of job opportunities you would otherwise not know about, lets you meet interesting people who you can ask to act as referees for your next job application, just to mention a few advantages - all that while enjoying international travel and making lots of new friends, hopefully for a life-time.*

**“the development of the world as we are witnessing it over the last few years, such moderation is indispensable to come to lasting solutions and developments. We only have one world - we need to take care of it and of its people.”**



## LENA HALOUNOVÁ

ISPRS Secretary General 2016 – 2020

Czech Technical University

Faculty of Civil Engineering

CZECH REPUBLIC

[http://gama.fsv.cvut.cz/gwiki/Doc.\\_Ing.\\_Lena\\_Halounov%C3%A1,\\_CSc.](http://gama.fsv.cvut.cz/gwiki/Doc._Ing._Lena_Halounov%C3%A1,_CSc.)

**“The milestone in my life was to become Congress Director. It completely changed my life. I have gained a lot from the science, from the organization of the event, and from international contacts.”**

How did you start with your engagement with the ISPRS?  
What were your motivations for actively participating in the organization?

*I was a member of the Czech Society for Photogrammetry and Remote Sensing. I found it useful to be involved in a group of people who work in the same branch. Shortly after becoming a member, I was elected a chairperson of the Czech Soci-*

ety. One year later, I attended my first ISPRS Congress in Istanbul and as a chairperson I represented the Czech Republic at the ISPRS GA. So, it just happened.

**How important is the representation of the younger generation through the Student Consortium in the overall vision of the ISPRS? What was your most memorable experience working with the members of the Student Consortium?**

*Student Consortium should make an entrance for young generation to ISPRS.*

**What encouragement can you give to the members of the ISPRS Student Consortium to actively participate in the organization's activities as well as with the general activities of the ISPRS?**

*I would like to encourage all members of the younger generation working in remote sensing, photogrammetry and GIS to become a member of their local ISPRS Ordinary Member. I would like them to participate in ISPRS activities by attending ISPRS events, ISPRS summer schools, publishing in ISPRS journals, etc. It is the way to find new contacts, new friends and new colleagues, and participate in an interesting research and practice.*

**“A continuous implication within ISPRS can give you a spine or a thread during your professional career in the field of photogrammetry, remote sensing and spatial information sciences. At minima, it will help you being aware of latest developments and technologies that will impact our professions.”**

### NICOLAS PAPARODITIS

ISPRS Congress Director 2016 – 2020  
MATIS Laboratory Congress Director  
Institut Géographique National  
FRANCE

<http://recherche.ign.fr/labos/matis/cv.php?nom=Paparoditis>



**How did you start with your engagement with the ISPRS? What were your motivations for actively participating in the organization?**

*I was initially involved with the International Federation of Surveyors, FIG (I was a chair of a working group on best practices in digital photogrammetry) which I found not sufficiently scientific. I started attending scientific events in 1997 and I attended my first ISPRS event in 1998 (a symposium chaired by past president Ian Dowman) and I - as a researcher of the French national mapping agency - very quickly felt at home in ISPRS events and I naturally became a member of the ISPRS community (I thereafter focused my publications on ISPRS events). I soon after became a chair of a working group in 2000, then the commission secretary in 2004, a president of commission in 2008, a member of the ISPRS Scientific Advisory Board in 2012, before becoming the ISPRS 2020 Congress Director. I have myself an international background with a Greek father and an English mother (but brought up in France) thus I always felt comfortable in the very international and friendly atmosphere of ISPRS.*

**How important is the representation of the younger generation through the Student Consortium in the overall vision of the ISPRS? What was your most memorable experience working with the members of the Student Consortium?**

*I have no experience working with the student consortium myself but I am looking forward to working with the student consortium to co-organise the youth forum of the ISPRS 2020 congress in Nice. Nevertheless, I believe that programs to encourage the integration of a new generation and new talents in our organisation are one of the key pillars to continue developing ISPRS and to make ISPRS stronger.*

**What encouragement can you give to the members of the ISPRS Student Consortium to actively participate in the organization's activities as well as with the general activities of the ISPRS?**

*A continuous implication within ISPRS can give you a spine or a thread during your professional career in the field of photogrammetry, remote sensing and spatial information sciences. At minima, it will help you being aware of latest developments and technologies that will impact our professions. It can also be (and has often been) a booster for a stronger motivation and help making important choices in a scientific and technical career in our field.*

**“I learned the academic tradition of a society with more than one century's history, the cultures from different countries, the scientific spirit from ISPRS members, and management skills from ISPRS officers.”**



### CHEN JUN

ISPRS First Vice President 2016 – 2020  
National Geomatics Centre of China  
PR CHINA  
<http://ngcc.sbsm.gov.cn/article/en/ls/cj/>

**How did you start with your engagement with the ISPRS? What were your motivations for actively participating in the organization?**

*The ISPRS Technical Commission VII Symposium was held in Toulouse, France, in September, 1982. I was a visiting student at the Institute Geographic National (IGN) in France, and our class was asked to attend the Symposium by our supervisor, Prof Max Guy. During that event, I got to know more about ISPRS and met a number of famous ISPRS scientists, such as Frederick J. Doyle, Sherman Wu, Gottfried Konnechny, John Trinder, and Mr. Guanhua Xu (who became China's Minister of Science and Technology in 2000s).*

**How important is the representation of the younger generation through the Student Consortium in the overall vision of the ISPRS? What was your most memorable experience working with the members of the Student Consortium?**

*The Student Consortium (SC) is a good entry point for young students and professionals who are interested in participating in ISPRS. I was invited to the ISPRS summer school, organized by SC in Myanmar, immediately after the Asia Remote Sensing Conference in 2014. I gave a lecture on global land cover mapping and had received good questions from the students.*

**What encouragement can you give to the members of the ISPRS Student Consortium to actively participate in the organization's activities as well as with the general activities of the ISPRS?**

*As a community of young professionals, ISPRS SC is a good platform for you to learn and contribute. I would suggest the SC members to make the best use of the platform, by stimulating academic discussions, moderating technical sessions during ISPRS events, making friends and establishing liaisons. I believe that you could certainly benefit from being an ISPRS SC member.*

**CHARLES TOTH**  
ISPRS Second Vice President 2016 – 2020  
Department of Civil, Environmental  
and Geodetic Engineering  
The Ohio State University (OSU)  
USA  
<https://ceg.osu.edu/people/toth.2>



**“While there are no limits in communication and in access to information these days, no geospatial, or any other, professional can be successful in isolation. Being part of an organization is essential for advancing a career, in many respects.”**

How did you start with your engagement with the ISPRS?  
What were your motivations for actively participating in the organization?

*When I started as postdoc at OSU, there was no Internet and no easy communication, so the library and professional meetings represented the primary options to learn from others and get feedback on our work. Shortly after my arrival, I became an American Society for Photogrammetry and Remote Sensing (ASPRS) member, and thus indirectly connected to ISPRS. Then attending my first ISPRS Symposium, organized by Technical Commission V (TC V) was an unforgettable experience for me; I can still sharply recall presentations and the excitement of meeting famous people of our profession, whom I knew only from publications until that time. This was a true milestone in my professional career and I already felt that it would be a lifetime commitment. The attention, support and kindness from the well-established ISPRS people were just overwhelming, and made me feel like that I was accepted in a family.*

How important is the representation of the younger generation through the Student Consortium in the overall vision of the ISPRS? What was your most memorable experience working with the members of the Student Consortium?

*For the future of ISPRS, I think it is absolutely essential to actively include and engage the younger generation in ISPRS. To maintain its long-term relevance, ISPRS has to proactively attract young professionals and keep them committed to ISPRS, which can only be achieved by providing meaningful representation to them in the organization. The Student Consortium plays an essential role to that end in many aspects. Most importantly, the Student Consortium helps the professional developments of the younger generation, including their scholarly career but also preparing them for leadership. In addition, the activities by the Student Consortium may serve as compass for future directions, which is valuable to ISPRS management.*

What encouragement can you give to the members of the ISPRS Student Consortium to actively participate in the organization’s activities as well as with the general activities of the ISPRS?

*While there are no limits in communication and in access to information these days, no geospatial, or any other, professional can be successful in isolation. Being part of an organization is essential for advancing a career, in many respects. Professional societies provide scholarships, travel grants for students, and then later various merit-based awards that will certainly advance the career of any young professional. Networking with peers is another important aspect of being involved in a society. The Student Consortium is an excellent starting point for young people, and represents a smooth transition to general ISPRS membership. In short, connect to the ISPRS Student Consortium! The earlier the better.*

**“..the Student Consortium helps the professional developments of the younger generation, including their scholarly career but also preparing them for leadership. In addition, the activities by the Student Consortium may serve as compass for future directions..”**



**SONGNIAN LI**

ISPRS Treasurer 2016 – 2020

Geomatics Engineering  
Department of Civil Engineering  
Ryerson University  
CANADA

<http://www.ryerson.ca/civil/FacStaff/Faculty/snli2/>

**“Being the President of ISPRS Technical Commission II certainly allowed me more room to serve the ISPRS society, which I consider is one of the important milestones of my professional life.”**

How did you start with your engagement with the ISPRS?  
What were your motivations for actively participating in the organization?

*My first connection to ISPRS was back to 2002 when I attended the ISPRS Technical Commission IV Symposium held in Ottawa, Canada. Later, I had attended a few more ISPRS events, including the ISPRS Congress held in Istanbul, Turkey in 2004, where I was selected as the Co-Chair of WG IV. Since then, I had been serving this WG as the Co-Chair and Chair for eight years, until I was elected as the President of ISPRS Technical Commission II in 2012 in Melbourne, Australia. This increased level of engagement with ISPRS also encouraged me to take the lead of the Canadian National Committee for ISPRS over the last eight years to help coordinate the relationship between Canadian ordinary member – Canadian Institute of Geomatics, and ISPRS.*

*As for my motivation, it has always been professional development, connection to people in the field under ISPRS umbrella, and opportunities to serve the Society.*

How important is the representation of the younger generation through the Student Consortium in the overall vision of the ISPRS? What was your most memorable experience working with the members of the Student Consortium?

*I have not had many chances to work more with the members of the Student Consortium, but strongly believe that its representation of younger generation in ISPRS is as important as the future of the society.*

What encouragement can you give to the members of the ISPRS Student Consortium to actively participate in the organization’s activities as well as with the general activities of the ISPRS?

*ISPRS represents the highest international learning society in the fields of photogrammetry, remote sensing and spatial information sciences. Participating in its various activities and events will allow students and young professionals great exposure to a wealthy network of scientists, researchers and professionals, and learning opportunities. It will also help develop their professional identity in ISPRS designated fields of interest.*

For contact information, please go to the official webpage of the ISPRS Council

[ <http://www.isprs.org/structure/council.aspx> ]

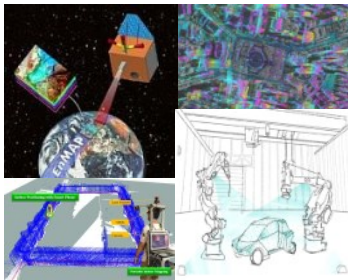


# The Technical Commissions: An Overview

Written by Angelica Monzon

The ISPRS community has taken on the challenge to address various societal needs for information from imagery. Some of the major challenges include earth system modeling, global change studies, environmental monitoring, sustainable development, disaster management, topographic mapping, cultural heritage, industrial metrology, traffic monitoring, visual navigation, among many others. The scientific research agenda and strategy of the ISPRS community aim to develop technological solutions to these challenges through information from imagery.

To operationalise these strategies, the ISPRS adopted a new structure for the ISPRS Technical Commissions (TCs) in 2015 and started its implementation in 2016.

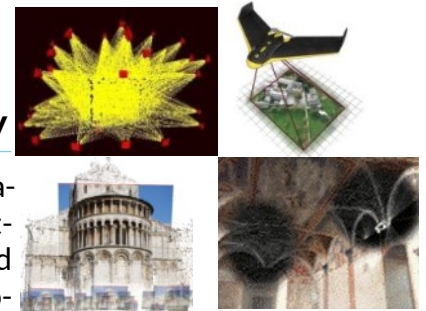


## Technical Commission I: Sensor systems

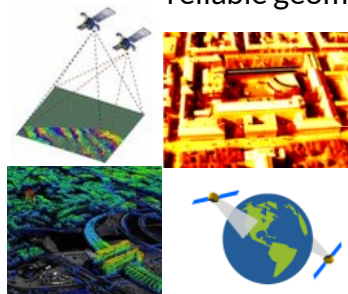
TC 1 focuses with the design, construction, characterisation, calibration and use of imaging sensors, sensor systems and sensor networks for photogrammetry, remote sensing and spatial information science. It explores the different platforms for data acquisition and is in the perfect position to collaborate with the related industrial sector.

## Technical Commission II: Photogrammetry

Commission II deals with the theory and methodology for extracting and analysing spatio-temporal information of objects from terrestrial, aerial and satellite images, image sequences and point clouds. It emphasises accurate and reliable geometric information using the approaches from photogrammetry, image analysis and computer vision.



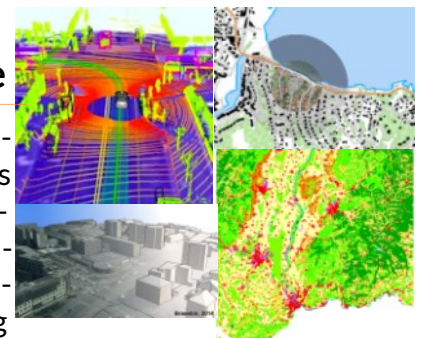
## Technical Commission III: Remote Sensing



Commission III is concerned with research, development, investigation and operational use of methods and systems for the analysis of remotely sensed observations of the Earth. Observations from air- and space-borne sensors are analysed together with site-based measurements.

## Technical Commission IV: Spatial Information Science

Commission IV deals with theoretical and practical aspects of modelling, management, analysis, dissemination and visualisation of geospatial data. It covers areas including interoperability, web services and geospatial data infrastructure. Additionally, it puts particular interest in the applications and operational use of spatio-temporal information in areas such as transportation, environmental monitoring, disaster management, mobility, 3D city models, Building Information Systems (BIM), social media, location-based services and health.



## Technical Commission V: Education and Outreach

TC V is the only non-technical commission but is equally significant as the other commissions because the sustainability of the expertise and the strength of the professional network of the ISPRS community

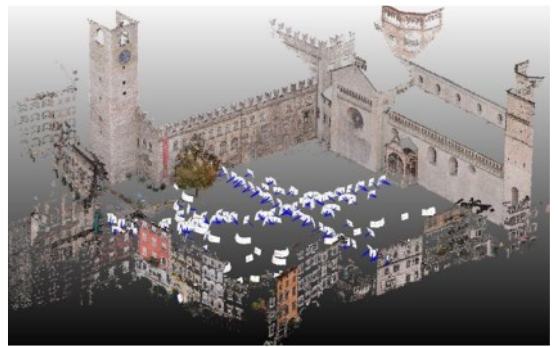


# KNOW THE WORKING GROUPS

WG II/1

## Image Orientation

Working Group II/1 focuses mainly on the various research dealing with image orientation, including the promoting the development new methodologies and algorithms, as well as investigating novel applications through fostering collaborations among photogrammetry, computer vision and robotics. The WG II/1 provides a platform for verifying and validating state-of-the-art ideas, concepts and methodologies on image orientation through the use of synthetic and real sets of data in order to identify their reliability, performance and general applicability. Furthermore, WG II/2 also helps identify the scope and limitations of new research, and to determine opportunities for refinement and robustification.



WG II/2

## Point Cloud Generation

Working Group II/2 specializes in the generation and evaluation of 3D point clouds captured by terrestrial, airborne and spaceborne platforms, focusing on image-based surface reconstruction. The research also expands to filtering, fusion and integration of point clouds from different sensors and data sources for mesh generation during surface reconstruction. In addition, the WG II/2 also provides benchmark datasets and pipelines to evaluate and verify different methodologies.

WG II/3

## Point Cloud Processing

Working Group II/3 addresses the development of new methodologies, algorithms and applications for point cloud processing. The focus of WG II/3 includes the various processing from low-level feature extraction, segmentation, classification, registration and fusion of point clouds acquired by photogrammetry, LiDAR or other scanning technologies and a new class of ubiquitous 3D sensors. The group also aims to promote the use of cloud computing and other big data techniques for massive data processing as well investigating new developments in point cloud rendering and streaming. Moreover, point cloud processing for building information modelling (BIM) and its potential applications is one of the major research focus of this WG.

WG II/4

## 3D Scene Reconstruction and Analysis

Working Group II/4 aims to make progress in the automatic recognition and 3D reconstruction of objects in complex scenes from images, point clouds, and other sensor data. The emphasis is on scenes characterized by the occurrence of different object classes, e.g. urban scenes including vegetation, buildings, roads, street furniture, cars and pedestrians, or indoor scenes. One of the major interest of the WG is the generation of high-resolution 3D City Models, and the scope of the WG also extends to any form of object detection in complex environments, e.g. in the context of robotics or autonomous driving. WG II/4 also evaluates methods for object extraction and the suitability of different sensors for such task.

WG II/5

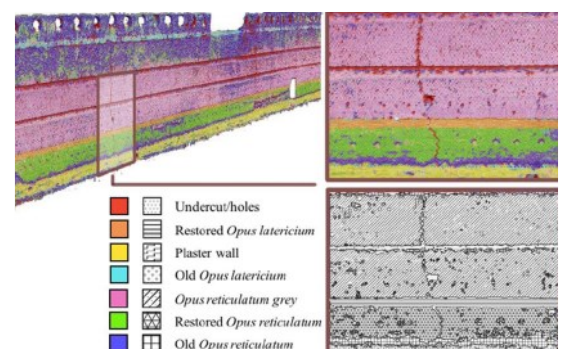
## Dynamic Scene Analysis

Working group II/5 aims to promote the development of new methodologies, algorithms and applications related to the processing of dynamic scenes acquired for object tracking, ego-motion determination, detection and characterization of dynamic and multi-temporal processes, deformation measurements, monocular or stereoscopic mapping of the environment with a UAV or an autonomous robot, autonomous navigation in dynamic and static scenes, biomedical motion analysis and detection of changes in land-cover/land-use mapping.

WG II/6

## Large-scale Machine Learning for Geospatial Data Analysis

Working Group II/6 aims to promote large-scale machine learning methods to analyze geo-referenced data. Nowadays, a multitude of different sensors provide an ever increasing amount of observations at varying scale, temporal, and spatial resolution, making the processing pipelines strive for methods able to process such large amounts of data. Data can either be acquired with dedicated campaigns like aerial/satellite imaging campaigns and mobile mapping or be collected from crowd-sourced, publicly available data sets



like OpenStreetMap. An important aspect is the combination of multiple complementary views (e.g., street view panoramas and aerial images) from different sensors, and acquisitions made at different times. Multi-modal, multi-temporal, and multi-scale image analysis are therefore of particular scientific relevance.



WG II/7

## Vision Metrology

ISPRS Working Group II/7 aims to establish and promote best practice in vision metrology, validation methods and freeform engineering surface measurement systems. The WG II/7 research interests deals with industrial, engineering and medical systems and their application where accuracy, performance evaluation, standards, calibration and integration with state-of-the-art computer models and simulations feature strongly. Examples of applications of interest include structural deformation analysis, robot control, comparison between as-built and designed, best practice and traceability.

WG II/8

## Data Acquisition and Processing in Cultural Heritage

Working Group II/8 aims to promote the integration of data and measurement techniques supporting metric, remote sensing, and monitoring survey requirements for archaeological, architectural, urban and natural landscape, conservation, restoration and archiving communities. To facilitate these aims, WG II/8 participates within and/or organizes workshops to exchange the latest developments in metric and remote sensing documentation of cultural heritage assets. Furthermore, the WG II/8 provides best practice protocols and the promotion of low-cost, rapid, innovative, automated, commercial and open-source approaches for documentation, metric and remote sensing survey of heritage assets.

WG II/9

## Underwater Data Acquisition and Processing

ISPRS Working Group II/9 aims to develop, evaluate and promote methods for underwater photogrammetry data acquisition and processing in the fields of environmental monitoring, heritage recording and industrial measurement. WG II/9 will foster the interdisciplinary exchange of the latest developments and achievements in 3D sensors, image and range techniques for measurement and modeling, the effective use of autonomous and human guided vehicles, and applications of photogrammetry underwater.

WG II/10

## 3D Mapping for Environmental & Infrastructure Monitoring

Working Group II/10 aims at promoting research on and applications of 3D mapping for environmental and infrastructural monitoring as well as 3D biomedical. WG II/10 also explores existing and new contacts with industry and governmental organizations with the potential to contribute to standards, and realize best practices on 3D change detection and monitoring for environmental, infrastructural and biomedical applications in cooperation with the different stakeholders.

ICWG I/II

## UAS & Small Multi-sensor Platforms: Concepts & Applications

This inter-commission working group on UAS & small multi-sensor platforms: concepts & applications aims at the progress and promotion of UAS applications in the Photogrammetry and Remote Sensing domains. The Working Group deals with the introduction of innovative UAS platforms as well as the development of sensors and their smart integration for geospatial data collection. The improvement of algorithms and software for the automated processing, analysis and assessment of UAS data are a fundamental part of the Working Group research mission too.

ICWG II/III:

## Pattern Analysis in Remote Sensing

Inter Commission Working Group II/III aims at closing the gap between remote sensing and computer vision in pattern recognition and image analysis. The group aims to foster the introduction and adaption of new methodologies and algorithms of pattern analysis into the field of remote sensing.

Questions prepared by Angelica Kristina Monzon and Sheryl Rose Reyes

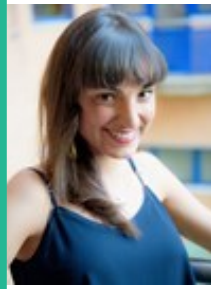


## DR. FABIO REMONDINO

President, Technical Commission II  
3D Optical Metrology Unit  
Bruno Kessler Foundation  
Trento, Italy

## DR. ISABELLA TOSCHI

Secretary, Technical Commission II  
3D Optical Metrology Unit  
Bruno Kessler Foundation  
Trento, Italy



Can you give us a brief introduction about ISPRS TCII and what makes it unique?

Commission II covers all aspects of measurement and information extraction in Photogrammetry, with special focus on the geometric, radiometric and multi-temporal aspects of 3D imaging techniques. The uniqueness of TCII mainly comes from its multi-scale perspective - encompassing theory and methods to derive accurate and reliable information from terrestrial, aerial and satellite images and point clouds, and various application fields - industrial metrology, heritage, geosciences, etc. These aspects make TCII a perfect reference for all researchers involved in the fields of mapping, industrial measurements, heritage documentation, environmental monitoring, etc.

What makes the midterm symposium of ISPRS TCII out of the ordinary and what are you looking to achieve?

The TCII midterm symposium will transform Riva del Garda (Italy) into a fabulous meeting point for researchers, practitioners and companies working in the field of photogrammetry, computer vision, geospatial data analysis and point cloud processing. The symposium will feature 4 days (4-7 June) with plenary and parallel sessions, oral and poster presentations as well as keynote speakers from research and commercial domains. An exhibition with the most important business players in the photogrammetric and geospatial domain will be also available. Additionally, there will be four tutorials scheduled for June 3rd that will provide participants with an exceptional insight into the fields of camera calibration, deep learning, scene analysis and advanced network orientation. As organizers, we are looking to achieve a successful event where a rich scientific program will give attendants a unique opportunity to be informed of the latest advances in photogrammetry and to meet leading specialists and experts working in both research and industrial domains.

What can students look forward to in joining the ISPRS TCII symposium?

We are looking forward to welcome students and young professionals in the field of photogrammetry, computer vision, geospatial data analysis and point cloud processing to present and discuss their results and activities. This will enable them to meet and exchange knowledge with more experienced scientists coming from universities, research centres, mapping agencies and private companies. A particular attention will be given to specific initiatives that may support the linking between young generation and the research/industry. Among the others, we are planning a Youth Forum with oral presentation given by students and early stage researchers, where they will discuss their on-going activities and receive critical feedbacks from both young and more experienced colleagues. Furthermore, a welcome party, as well as the traditional social dinner, will be included in the registration fees, thus offering unique occasions to meet other researchers and support an inter-generation exchange.

How do you see ISPRS TCII supporting the students and young members of ISPRS in the next two years before the ISPRS 2020 Congress in Nice? What encouragement can you give the ISPRS SC members?

The Riva Symposium will offer students and early stage researchers a fantastic and unforgettable experience from both a technical and social points of view. The ISPRS inter-generation community will welcome young people and encourage them to join the ISPRS family in its activities and large future events, such as the 2019 Geospatial Week in Dubai or the 24<sup>th</sup> ISPRS Congress in 2020 in Nice, France. Furthermore TCII, within its Working Group activities, will organize workshops, summerschools and scientific initiatives to widespread the latest developments in photogrammetry, to support the education of young generations and to raise visibility of new initiatives. These activities will always try to involve the ISPRS SC in order to reach a larger audience of young people.

## Venue

Italy will host the midterm symposium of Technical Commission II (<http://www.isprs.org/tc2-symposium2018/>). Specifically, it will be held in **Riva del Garda** on **June 3-7, 2018**. Riva del Garda, the main town in the northern part of the Garda lake, represents a perfect location where to experience a unique event, an unprecedented opportunity to meet young and experienced colleagues working in the field of photogrammetry, computer vision and image processing. Indeed, Riva del Garda is an outstanding location between the Garda Lake and the Dolomites: its mild climate, that favors a typically Mediterranean vegetation with lemon trees, olive trees, laurels and palm trees, makes Riva del Garda a true Mediterranean island at the foot of mountains. The center of Riva del Garda will fascinate you with its works of art and architecture, witnessing to ancient history and a past rich in art and culture. Indeed, the town hosted in the past famous names such as Nietzsche, Kafka and the Mann brothers. This exclusive yet familiar reception is still part of the tradition of the shores of Garda Lake.

The Technical Commission II Symposium venue will be the Congress Center (<https://www.rivadelgardacongressi.it/en/>) of Riva, which is located by the lake and few minutes from the historic center of the town. This venue combines the most extraordinary lake-side setting with a strategic position, that makes it easily reachable on foot from the hotels. The Center consists of a congress area, where the plenary and parallel sections will be held using three comfortable rooms, and a Pal-meeting, where posters sessions and companies exhibition will take place. The exterior of the Center features beautiful Italian-style gardens, where most of the social events of the conference will be organized. With its breath-taking lake views, the Congress Center will host an unforgettable TCII midterm symposium!



Congress Center,  
RIVA DEL GARDA,  
ITALY

<https://www.rivadelgardacongressi.it/en/>



## What To Expect

The Technical Commission II midterm symposium will transform Riva del Garda (Italy) into a unique meeting point for researchers, practitioners and companies working in the field of photogrammetry, computer vision, geospatial data analysis and point cloud processing. We have built a very rich scientific program, that will enable all participants to be informed about the latest advances in both research and industry domains. Particularly, the TCII symposium will feature 4 days (4-7 June) with plenary and parallel sessions, oral and poster presentations as well as keynote speakers, who will present the latest developments, and their future vision, in the fields of 3D city modelling, robotics, nationwide mapping and dense image matching. Furthermore, the symposium will hold a large industrial exhibition, including more than 10 among the most important business players in the photogrammetric and geospatial domains. Besides visiting the dedicated booths, participants will discover the latest innovations and products of companies by attending the short business presentations, scheduled within each plenary session. Additionally, there are four tutorials scheduled for June 3rd that will provide participants with an exceptional insight into the fields of camera calibration, deep learning, scene analysis and advanced network orientation. This great scientific program will give attendants the unique opportunity to get updated in the advances of the new methods/solutions in photogrammetry (including image orientation, point cloud generation and processing, 3D scene reconstruction and dynamic scene analysis, machine learning), and their multi-scale applications (vision metrology, cultural heritage, underwater photogrammetry, UAV, BIM, environment and infrastructure monitoring). Furthermore, we are planning an oral session specifically dedicated to students and young researchers, where they will discuss their on-going activities and receive critical feedbacks from both young and more experienced colleagues. Last but not least, a particular attention will be given to all those social events, that may support networking and exchanges between research and industry from one hand, students and experienced researchers on the other hand. Particularly, a welcome party, a social dinner and a bye-bye party will take place in the breathtaking setting of the Congress gardens, situated right on the lakeside. These social events, included in the registration fees, will facilitate at the same time the connections between participants, and give them the opportunity to appreciate the added value that Riva del Garda's healthy lifestyle and feel-good factor can offer.

The latest news about the TCII symposium, with its rich technical and social programs, are available at the conference website: <http://www.isprs.org/tc2-symposium2018/>.

We are looking forward to welcome you in Riva del Garda for the TCII midterm Symposium!

## FROM BEGINNINGS &amp; BEYOND

ASST. PROF. MOJCA KOSMATIN FRAS, PH.D.



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**How do you see your role and contribution to the formation of the ISPRS student consortium?**

In 2006 I was invited to chair WG VI/5: Promotion of the Profession to Students. One of the objectives of this working group was to support the Student Consortium. I chaired this working group till the ISPRS Congress in Beijing, 2008. During this period, we organized two SC summer schools (2007 in Ljubljana, Slovenia; 2008 in Nanjing, China), developed new design and contents format of SC Newsletter, and organized events dedicated for youth during the Congress in Beijing (Youth Forum, Social Events and Excursions, preparation and adoption of the first version of SC Statutes).

**What were the major challenges in the development and growth of the Student Consortium?**

As the Student Consortium was at the very beginning of its existence, we had to further develop the vision, mission, and organization scheme. In my opinion, crucial was to attract students to join the SC with interesting activities and the contents. We decided for two main and regular activities: SC Newsletter with 4 issues per year and organization of summer school at least once per year, in addition to special activities for youth during the ISPRS Congresses. When organizing the 2<sup>nd</sup> summer school in Ljubljana, a new 'format' of the event was developed, which remains thus far. The main idea was to organize the event with highly a professional program, a lot of social activities and excursions, for a fee affordable to students. However, the most important was the support of ISPRS president and council members, and of course the enthusiastic initial group of students that contributed to successful start of the SC.

**Please tell us one memorable experience you had working with the member/s of the ISPRS-SC (e.g. student activities, project, summer school, etc). What made it memorable?**

For me, the visit to the Great Wall of China during the ISPRS Congress in Beijing was the reward after hard work before and during the Congress. This trip was organized specially for the group of students and young professionals who participated in the Congress, together with supporting professors. We all enjoyed the relaxing atmosphere and felt like a large family.

**What is your vision for the ISPRS-SC, say in the next 10 years?**

I think, the most important is continuation and stability of Student Consortium. The activities and events that are already successful should remain as the basic pillars—in particular, the Student Consortium Newsletter and Summer Schools. There

are still some geographic areas that are not yet covered, so there's room for the growth of membership. As the differences between well-developed and under-developed countries in the world become even greater, it is important to attract more students from under-developed countries for cooperation, and to encourage them to enter the scientific society.

DR. IAN DOWNMAN

Emeritus Professor, University College London

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**How do you see your role and contribution to the formation of the ISPRS student consortium?**

The ISPRS Student Consortium was initially formed at the Istanbul Congress on the initiative of Orhan Altan, the Congress Director. I was Secretary General from 2000 to 2004 and President from 2004 to 2008 and saw the Student Consortium as an important way for students to become involved in ISPRS and to understand the objectives and structure of the organisation. I fully supported the establishment of the SC and helped draw up the statutes which were approved at the General Assembly in Beijing in 2008.

**What were the major challenges in the development and growth of the Student Consortium?**

The students were always enthusiastic about setting up the SC, so that was not a problem. A major challenge was working out a structure which would integrate the SC into ISPRS but allow independent governance, and planning of activities with support from ISPRS. I believe that this was achieved through the links with Commission V. Another issue was ensuring continuity as students don't remain students for ever, but individuals have always been available to ensure that the SC remains strong and active.

**Please tell us one memorable experience you had working with the member/s of the ISPRS-SC (e.g. student activities, project, summer school etc). What made it memorable?**

I have always found it very satisfying to attend the students' awards ceremonies and to see the enthusiasm and quality of the students. Meeting students, past and present, who are or have been involved in the Student Consortium is also very rewarding.

**What is your vision for the ISPRS-SC, say in the next 10 years?**

My vision is for the ISPRS Student Consortium to expand, to work with other student organisations such as FIG and ICA, and to attract members from regions such as Africa and Latin America that, at present, have only limited involvement with ISPRS.

# The 2020 ISPRS Congress: Imaging Today, Foreseeing Tomorrow

June 28th – July 4th, 2020  
Nice, France

By Nicolas Paparoditis  
ISPRS 2020 Congress Director



France will host the 24th ISPRS Congress (<http://www.isprs2020-nice.com>), which will take place in 2020 in the gorgeous city of Nice, on the Mediterranean Sea, from June 28 to July 4.

Nice, the cosmopolitan and multicultural capital of the French Riviera, is one of the best places in the world to host an unforgettable ISPRS Congress. Indeed, Nice is an outstanding location between the sea and the Alpes mountains, close to the Italian border, where culture and heritage meet with the cutting-edge technology of the French Silicon Valley, Sophia Antipolis. 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.

We will build a very rich scientific program that will enable you to be informed of the latest develop-

**“Nice is an outstanding location between the sea and the Alpes mountains... where culture and heritage meet with the cutting-edge technology of Sophia Antipolis, the French Silicon Valley.”**

ments in science and technology, to meet and exchange with experienced scientists, to discover the latest innovations and products of companies, 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 and a cadastral and mapping agency forum will also address policy issues in GeoInformation.

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 the disabled, etc.).

“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.”

A particular attention will be given to specific events

**“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.”**

(pursuing existing ones and creating new ones) that will develop the link between students and industry on the one hand, and between students and experienced ISPRS members on the other hand. Indeed, these are essential to prepare the future and to encourage the involvement of a new generation of young scientists coming from all continents in ISPRS.

In addition to the traditional gala dinner, a free congress party will be included in the registration fees to facilitate inter-generation exchanges. A new edition of the summer school will be organized by the ISPRS student consortium with the help of the congress organising committee as well as France's engineering schools and universities involved in the congress organization. Meetings in a speed dating format will also be organized to facilitate the connections between companies and masters or Phd thesis students.

“A new edition of the summer school will be organized by the ISPRS student consortium with the help

**“A new edition of the summer school will be organized by the ISPRS student consortium with the help of the congress organising committee and the French engineering schools and universities involved in the congress organization.”**

of the congress organising committee and the French engineering schools and universities involved in the congress organization.”

The ISPRS 2020 Congress is being organised under the direction of Nicolas Paparoditis, member of the ISPRS council and the director of research and education at IGN-France, with the support of major French public institutions dealing with photogrammetry, remote sensing, and spatial information sciences, and will be hosted by the Société Française de Photogrammétrie et de Télédétection (SFPT).

To learn more about the upcoming congress, visit <http://>





# ISPRS MIDTERM SYMPOSIA 2018



## I II III IV V

**ISPRS TC I**  
Sensor Systems  
*"Innovative Sensing - From Sensors to Methods and Applications"*

**ISPRS TC II**  
Photogrammetry  
*"Towards Photogrammetry 2020"*

**ISPRS TC III**  
Remote Sensing  
*"Developments, Technologies and Applications in Remote Sensing"*

**ISPRS TC IV**  
Spatial Information Science  
*"3D Spatial Information Science - The Engine of Change"*

**ISPRS TC V**  
Education and Outreach  
*"Geospatial technology - Pixel to People"*

**PLACE**

Karlsruhe, Germany

Riva del Garda, Italy

Beijing, China

Delft, The Netherlands

Dehradun, India

**TERM**

October 9-12

June 4-7

May 7-10

October 1-5

November 20-23

**APPLICATION DEADLINE**

July 31, 2018

March 19, 2018

March 19, 2018

July 31, 2018

Sept 30, 2018

## ACKNOWLEDGEMENT

We would like to thank the Technical Commissions and their corresponding presidents for their active participation and contribution to this special issue.

Technical Commission II would also like to thank all the sponsors of the midterm symposium



Please visit our SC web page [sc.isprs.org](http://sc.isprs.org) where you will find more information about Student Consortium, our previous Newsletter issues, SC activities, photo galleries from previous Summer Schools, interesting links etc.

