













22-26 April, Hanoi, Vietnam





Commission Work Plans

Commission 3, 4, 5, 6 and 10









Presentation of

Commission 3 Workplan

Hartmut Müller, Germany, Chair of Commission 3 FIG 42nd General Assembly, Hanoi, Vietnam, 22 April 2019



FIG COMMISSION 3

Spatial Information Management

Handover



WORKSHOP AND ANNUAL MEETING

SPATIAL INFORMATION IN THE ERA OF DATA SCIENCE: CHALLENGES AND PRACTICAL SOLUTIONS

NAPOLI 316 DECEMBER 2018









FIG COMMISSION 3

Spatial Information Management

Handover



WORKSHOP AND AMNUAL HEETING SPATIAL INFORMATION IN THE ERG OF DATA SCIENCE. ORDER HER SACROCK SOLUTIONS

HAPOLI SIG DECEMBER 2018





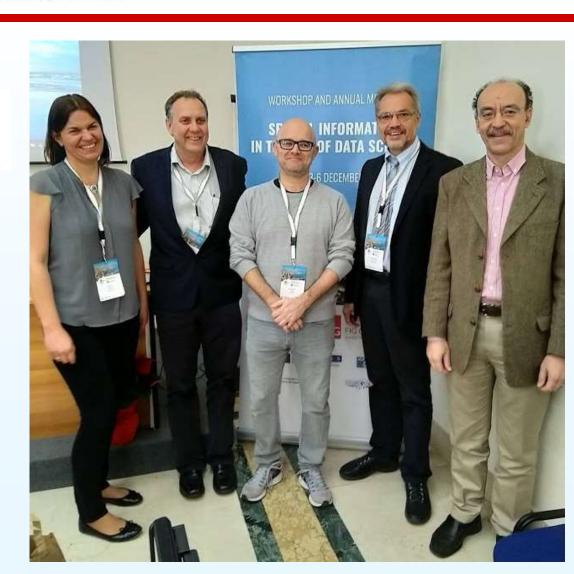




FIG COMMISSION 3

Spatial Information Management

The new team

Sagi Dalyot, Israel Vice Chair, WG 3.3

Kevin McDougall, Australia Vice Chair, WG 3.1

Hartmut Müller, Germany
Chair



Ulrike Klein, Germany
Vice Chair of Admin

Charalabos Ioannides, Greece Vice Chair, WG 3.2



FIG COMMISSION 3

Spatial Information Management

Working Groups

WG 3.2

Geospatial Big Data: collection, processing, and presentation

WG 3.1

Geospatial Information Infrastructure for Smart Cities

Joint COM3/COM7 WG 3.4
3D Cadastres

WG 3.3

User-Generated Spatial Content Empowering Communities

Commission 3 2019 - 2022

Joint COM3/YS WG 3.6

Geospatial Next

Joint COM3/COM8 WG 3.5
GIS Tools for Spatial Planning

FIG COMMISSION 3

Spatial Information Management

Mission of Commission 3

- Increase awareness about successful SIM approaches and achievements within the e-Society by showing good practice like availability, reliability, efficiency and accessibility of spatial information for better decision making and processes.
- Support the use of spatial information and SIM-tools by surveyors and by all participants in decision-making to serve the goals of good governance.
- Share good practice on managerial processes and infrastructure required for data handling, using information and distributing knowledge.
- Share good practice and develop high-level methods and techniques for merging and managing updated spatial information at various levels according to market requirements.
- Establish and maintain data and data-quality-standards relevant to SIM, while cooperating with international spatial data standard committees.
- Encourage the use of spatial information within e-government and e-commerce.
- Cooperate and coordinate with the related United Nations Committees and other geospatial information societies and organizations active in the field based on request from the Council, they key focus will be in co-operation with ISPRS (Commission IV on Geodatabases and Digital Mapping), ICA (commission on Geospatial Data Standards), UN-GGIM, EUROGI.



FIG COMMISSION 3

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WG 3.1 Specific Topics

WG 3.1

Geospatial Information Infrastructure for Smart Cities

Joint COM3/COM7 WG 3.4 3D Cadastres (ok with com7?)

- Geospatial information infrastructure challenges
- Integrating authoritative and crowdsourced data
- Data sharing and data openness: open source, open standards, open data.
- Managing geospatial information for smart cities and sensor integration
- Applications for geospatial information infrastructure in smart cities
- Semantic technologies, geospatial ontologies, geospatial data analytics
- Crowdsourced geospatial data, citizen geoparticipation, empowerment and decision making for smart cities.
- Future ICT and geospatial technologies to support geospatial information infrastructure and smart cities



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WG 3.2 Specific Topics

WG 3.2

Geospatial Big Data: collection, processing, and presentation

- Hardware and Software for GBD collection and processing
- IoT and surveying activity
- Spatial computing techniques/methodologies
- Algorithms of GBD processing
- Visualization of GBD
- GBD and mobile devices
- GBD handling methods in storing, managing, processing, analyzing, visualizing, verifying the quality of data, data security
- Cloud computing and cloud storage for efficient access and process of GBD
- Methodological/Theoretical/Technical developments in modelling, processing, analyzing, visualizing GBD
- Data mining for decision support
- Knowledge discovery from GBD
- Cluster-based systems for processing GBD



FIG COMMISSION 3

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WG 3.3 Specific Topics

WG 3.2

Geospatial Big Data: collection processing, and presentation

WG 3.1

Geospatial Information Infrastructure

for Smart Cities

WG 3.3

User-Generated Spatial Content Empowering Communities

- Utilization of crowdsourced user-generated spatial content in SDI, SIM and environmental knowledge
- Working methodologies of user-generated spatial content in developing countries
- User-generated spatial content collection, analysis, and visualization
- Crowdsourced land administration management tools
- Initiatives of spatial information solutions addressing global and national challenges
- User-generated spatial content standards, uncertainty, ethics, authenticity, validity
- Applications making use of user-generated spatial content in managing the built environment
- Case studies and processes



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Joint WG 3.4 Specific Topics







FIG joint commission 3 and 7 Working Group on 3D Cadastres

News

FIG Publication Best Practices 3D Cadastres - Extended version, Editor: Peter van Oosterom, International Federation of Surveyors, Copenhagen, Denmark, March 2018 (ISBN 978-87-92853-64-6, ISSN: 2311-8423)

Joint COM3/COM7 WG 3.4
3D Cadastres

Joint COM3/YS WG 3.6
Link com3/YS (to be discussed YS)

Joint COM3/COM8 WG 3.5
GIS Tools for Spatial Planning



FIG COMMISSION 3

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Joint WG 3.5 Specific Topics

WG 3.2

- Examine current GIS tools used in spatial planning practice and consider the potential role for future applications.
- Develop guidelines based on best practices regarding data standards, functionality and usability of GIS tools.
- Encourage the use of spatial information and public participation in spatial planning by using e-government.
- Foster transparency, inclusiveness and legal certainty in decision-making by providing tools for stakeholders to access information and participate in spatial planning processes.

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S WG 3.6

Joint COM3/COI 3D Cadastres (ok v

Joint COM3/COM8 WG 3.5
GIS Tools for Spatial Planning



FIG COMMISSION 3

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Joint WG 3.6 Specific Topics





VG 3.1 ormation Ir

Cemre Sahinkaya • 1.

- Maintain the link with the changing role of surveyor in the society based on the near future geospatial technologies and next generations within the scope of Commission 3
- Bring along a synergy of young professionals into Com. 3 activities, an awareness of the new professional perspectives with good applications in industry
- Platform for the continuum of the members of the new generation of geospatial professionals who are aware of the society through various ways and FIG Young Surveyors Network and who are willing to take next level of experiences by contributing to FIG under Commission 3 topics.



Cemal Özgür KIVILCIM • 1.

Chief Engineer at Istanbul Metropolitan Municipality

Joint COM3/YS WG 3.6 Geospatial Next



FIG COMMISSION 3

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Specific Commission 3 Events

- FIG Working Week
 2019 Hanoi, Vietnam
- FIG Working Week 2020 Amsterdam, The Netherlands
- FIG Working Week
 2021 Accra, Ghana
- FIG Congress
 2022 Cape Town,
 South Africa

Advances in Geodata Analytics for Smart Cities and Regions

2019 Cluj-Naboca, Romania, 23-26 Sept

in conjuction with the Romanian Suryeying Week

2020 Berlin, Germany, Oct

in conjunction with INTERGEO

2021, to be discussed

2022, to be discussed







FIG COMMISSION 3

Spatial Information Management



FIG REPORT

New Trends in Geospatial Information:
The Land Surveyors Role
in the Era of Crowdsourcing and VGI



CURRENT STATE AND PRACTICES WITHIN
THE LAND SURVEYING, MAPPING AND GEO-SCIENCE COMMUNITIES
FIG Commission 3



New FIG Publication No. 73 available

online at http://fig.net/resources/publications/figpub/index.asp



FIG COMMISSION 3

Spatial Information Management





Professor and Head, Infrastructure Engineering | Chair, UN-GGIM Academic Network | Director, CSDILA and CDMPS

Special Session on FIG Publication No. 73

New Trends in Geospatial Information: The Land Surveyors Role in the Era of Crowdsourcing and VGI

FIG REPORT



CURRENT STATE AND PRACTICES WITHIN
THE LAND SURVEYING, MAPPING AND GEO-SCIENCE C
FIG Commission 3

Wednesday, 24 April 14:00–15:30 207abc ("FIG FOUNDATION ROOM"), Chair: Prof. Abbas Rajabifard, Australia Rapporteur: Prof. Hartmut Müller, Chair FIG Commission 3, Germany

In this session the new FIG Publication on New Trends in Geospatial Information is presented and formally launched. Since 2011 a Working Group under FIG Commission 3 has undergone a research study on the new trends Crowdsourcing and Volunteered Geographic Information VGI. The collection and dissemination of geographic data and knowledge has been shifting into a new era of human mapping efforts, especially in terms of data collection, but also for knowledge production.

Yerach Doytsher (Israel):

Crowdsourcing vs. Wisdom of the Crowd: The Implementation in the Geo-Science Domain (10190) [abstract] [paper] [handouts]

Chryssy Potsiou and Charalabos Ioannidis (Greece):

Why Crowdsourcing in Surveying (10191)
[abstract] [paper] [handouts]

Hartmut Müller (Germany):

Integration of Authoritative Geospatial Information and Crowdsourced Volunteered Geographic Information (10192)

[abstract] [paper] [handouts]

Charalabos loannidis and Chryssy Potsiou (Greece):

2D and 3D Crowdsourced Cadastral Surveys - Looking Ahead (10193) [abstract] [paper] [handouts]

Enrico Rispoli (Italy):

Search Path Towards the Era of Crowdsourcing and Big Data Management (10194) [abstract] [paper] [handouts]





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FIG Commission 4 (Hydrography) Work Plan 2019-2022

by
Mohd Razali Mahmud
Chair of FIG Commission 4









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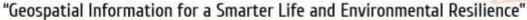




FIG COMMISSION 4 – GENERAL STATEMENT

Commission 4 is committed to achieving both the long term and immediate aims and objectives of FIG. Its strategy over the next four years is aligned with that of the FIG Council and among others will include:

- Support for the Hydrography profession internationally including development of best practice guides, certification pathways and advocacy;
- Support the International Hydrographic Organization (IHO) and associated United Nations programmes;
- Cooperation with other FIG Commissions, including joint working groups;
- Active support and participation in FIG regional events;
- Cooperation with sister organisations and other appropriate bodies;
- Cooperation with national surveying and mapping agencies.









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FIG COMMISSION 4 - WORKING GROUPS

- Working Group 4.1 Standards and Guidelines for Hydrography
- Working Group 4.2 Blue Growth & UN Sustainable Development Goal 14
- Working Group 4.3 Mapping the Plastic
- Working Group 4.4 Marine Development and Administration



ORGANISED BY







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"Geospatial Information for a Smarter Life and Environmental Resilience"



Working Group 4.1 – Standards and Guidelines for Hydrography

Focus in assisting in the development and recognition of standards of competency; assisting in the development of technical standards and guidelines.



Neil Hewitt - Chair

Example of Specific Project - Support the International Hydrographic Organization (IHO) through the work of its Hydrographic Services and Standards Committee (HSSC) by participating in HSSC working groups to review hydrographic standards and guidelines.









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Working Group 4.2 – Blue Growth & UN Sustainable Development Goal 14

The primary focus for Working Group 4.2 is the development and promotion of measures to manage the oceans and seas in a sustainable manner based upon accurate data, sound environmental principles and good management practices.



Gordon Johnston - Chair

Specific Project - To promote and engage with international government and non-governmental organisations to increase the understanding and awareness of the importance of the marine and ocean areas.









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Working Group 4.3 – Mapping the Plastic

(a combined initiative with the FIG Young Surveyors Network)

Focus on the dumping of plastics (and other waste) into major rivers, river systems and deltas at strategic locations around the world. Waste measurement in these water bodies using remote sensing, bathymetyric, current measurement and topographical surveys of plastic waste along the banks of rivers will enable a greater understanding of the quantum of plastic waste being transported to the oceans and inform the control and regulation of land use practices with an ultimate goal of eradicating the dumping of plastics into river systems.



Simon Ironside - Chair

Specific Project - A pilot project will focus on the Mekong River delta in the south of Vietnam at its outfall to the South China Sea. This project will be undertaken in conjuction with The Centre for Supporting Green Development (GreenHub), a Vietnamese, non-governmental, not-for-profit organisation and Australia's Commonwealth Scientific and Industrial Research Organisation (CSIRO).









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Working Group 4.4 – Marine Development and Administration

Focus in assisting in the development of institutional policy and framework; assisting in the development of conceptual and technical standards, guidelines and practice; assisting in the land and sea governance for a marine cadastre.



Abdullah Hisam Omar - Chair

Example of Specific Project - Development of Marine Cadastre Institutional Framework for participating countries (pilot project in ASEAN).









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Annual FIG Commission 4 Event

FIG Commission 4 Annual Meeting and International Seminar, November 2019, Kuala Lumpur, Malaysia.

- Commission 4 meeting
- Presentation by the Working Groups

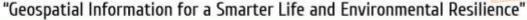








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Benefits of working together: Technical visit to IHO Secretariat, Monaco on 8 April 2019 – Commission 4 with the Director General of Department of Survey and Mapping Malaysia cum Chairman of Land Surveyors Board Malaysia, Director General of National Hydrographic Centre cum Chief Hydrographer of Malaysia, The Association of Authorised Land Surveyors Malaysia, and CEO/Secretary of Land Surveyors Board Malaysia









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Thank you









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Daniel Roman Commission 5 "Positioning and Measurement"









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Commission 5 - Overview

- Vice-Chair of Administration: Kevin Ahlgren, U.S.A.
- WG 5.1: Standards, Quality Assurance and Calibration: David Martin, France
- WG 5.2: 3D Reference Frames: Nic Donnelly, New Zealand
- WG 5.3: Vertical Reference Frames: David Avalos-Naranja, Mexico
- WG 5.4: GNSS: Suelynn Choy, Australia & Ryan Keenan, Australia
- WG 5.5: Multi-Sensor-Systems: Allison Kealy, Australia & Guenther Retscher, Austria
- WG 5.6: Cost Effective Positioning: Leonid Lipatnikov, Russia & Li Zhang, Germany









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Current Work and Collaboration

- Reference Frames in Practice Seminar April 2019
 - With 39 participants/ 7 UN-OOSA-sponsored/ 8 local Vietnamese
 - Supported BELS+ training on second day
- Meeting with International GNSS Service Control Board April 2019
 - Establishing liaisons between FIG and IGS for GNSS-related studies
 - IGS expressed interest in FIG WW/Congress scheduled for Accra and Capetown
- Best Paper Award (NavXperience Award) to be made TS07E: Multi-Sensor Positioning session on Thursday, 25 April, 14:00–15:30 in room 309b ("ESRI ROOM")
- Heading FIG Standards Network and contributing to ISO TC 172/SC 6 and ISO TC 211 (David Martin) including ISO 19161-1 adoption of the ITRS









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Current Work and Collaboration

- UN Office of Outer Space Affairs
 - Continuing to work with IGS in support of International Committee on GNSS
 - UN-OOSA support for RFIP
- UN Global Geospatial Information Management SubCommittee on Geodesy
 - Multiple work groups under UN SCoG
 - Working collaboratively with WG Education Training and Capacity Building
 - FIG YSN and Commissions 2 and 5
- Looking to tie ETCB in with aspects of the UN Integrated Geospatial Information Framework (IGIF)/World Bank work

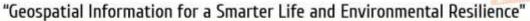








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Future Work and Collaboration

- Joint International Symposium on Deformation Monitoring in Athens May 2019
- UN-GGRF meeting in Buenos Aires September 2019
- FIG WW in Amsterdam May 2019
- Update to RFIP Manual in Amsterdam May 2019
- RFIP in conjunction with SIRGAS meeting in November 2020
- RFIP in conjunction with FIG WW in Accra in 2021
- RFIP in conjunction with FIG Congress in Cape Town in 2022
- Development of ETCB archive of courses/opportunities in conjunction with UN SCoG









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Message to GA/ Member Associations

- Positioning and Measurement is evolving
 - GNSS technologies are the key to this evolution
 - Access to this ITRF using multi-GNSS, PPP, RTK
- An International Terrestrial Reference Frame has been agreed upon by UN-GGIM
 - Smart Cities, Smart Roads, BIM all will be dependent on this frame
 - It will be dynamic and account for time variability
- All of FIG including Commission 5 seeks to enable Members to thrive during this change









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Commission 6 Engineering surveys









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- Support and accompany the development and the implementation of projects in several domains of civil, mechanical and industrial engineering as well as in highly topical domains like energy production and environmental safety.
- Promote the application of innovative and advanced methodologies and technologies during the design and construction phase as well as throughout the operation phase of the above-mentioned projects.
- Improve the collaboration between engineering surveyors and experts from neighbouring disciplines for a better sharing of knowledge and improvement of results.
- Contribute to the change of professional thinking in order to improve the awareness of our profession.









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Chair Maria Henriques



Vice-chair Corinna Harmening







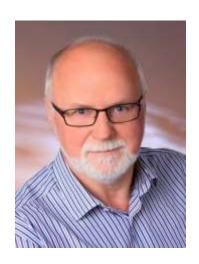


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WG 6.1 – Deformation Monitoring and Analysis



Chair Wolfgang Niemeier



Vice-chair Vassilis Gikas

support specialists in deformation studies with state-of-the art solutions and provide latest developments and future oriented concepts:









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WG 6.2 – Landslides Monitoring

to support specialists in landslides monitoring studies with state-of-the art solutions and provide latest developments and future oriented concepts



Chair Gilbert Ferhat









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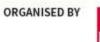


WG 6.3 – UAV in Surveying

UAV in construction sites, visual inspections and displacements monitoring



UAV for boundary detection













Upcoming events

4th Joint International Symposium on Deformation Monitoring, Athens, Greece

Board meeting in Athens

Geodecision 2019 Meeting, Porto, Portugal

(6th FIG Young Surveyors European Meeting, Porto, Portugal)

8th International Conference on Engineering Surveying, ?, Croatia









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Commission 10









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Commission 10 Work Plan: Construction Economics and Management

Chair: Alan G Muse, UK

Vice-Chair: Mercy T lyortyer, Nigeria









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Context

- Global construction spend 85% growth by 2030 (source: PWC)
- Performance and delivery 86% probablity of overruning (source: Flyvbjerg)/performance gap
- New technologies









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Mission statements

- Cost Engineering, Cost and Commercial Management and Quantity Surveying
 - Improving global cost management through standards and new technology across the building and infrastructure sectors
- Project and Construction Managment
 - Establishing best practice management methods, for application to the dynamic team environment of construction, and to ensure full benefits realisation for projects









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Working groups

- ICMS
 - Support and adoption of ICMS 2 to be published in August 2019
- Digital construction
 - BIM/AI/Blockchain
 - Profession/technology interface
 - BIM workshop
- Education and Research
 - Developing the financial management of constrcution as a unified and cohesive profession worldwide

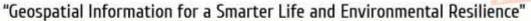








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Key partners

- UN SDG
- World Bank
- ICEC
- PAQS
- CEEC
- IPMA
- PMI
- RICS





