

FIG Commission 3 – Spatial Information Management

Report of Activities 2020-21

to the 44th General Assembly

FIG e-Working Week 2021, Utrecht, The Netherlands

The role of FIG Commission 3

- bring together organisational, legal, and technical aspects of (geo)spatial information
- provide a synoptic view and synergy of
 - governmental data (online maps and services, typically formalized and updated in predefined intervals)
 - commercial data (earth observation, remote sensing, potentially near real time) and
 - crowdsourced data (volunteers, citizen participation, often unstructured and near real time)
- monitor the state-of-the-art in a highly dynamic field of development
- collect case studies of exemplary applications
- identify opportunities, draw conclusions and give recommendations
- publish reports and research of related aspects
- constitute sharing of ideas for scholars and experts



Cloud Computing for Big Geospatial Data

Adapted from Yang et al (2017): Utilizing Cloud Computing to address big geospatial data challenges, Computers, Environment and Urban Systems, Volume 61, Part B, January 2017, Pages 120-128

Overarching objectives for the term 2019 to 2022

Commission 3 seeks to both maintain the continuity of its work and to master new challenges. To achieve these goals, Commission 3 preserved four Working Groups from the previous term with updated titles (WG 3.1, 3.2, 3.3, 3.4) and established two new Working Groups (WG 3.5, 3.6).

Commission 3 considers cross-commission work to be a fundamental cornerstone of its success. Therefore, in addition to the joint WG 3.4 already existing together with Commission 7, two new WG's were established, WG3.5 joint with Commission 8 and WG3.6 joint with the Young Surveyors Network.

Both new WG's are performing very well from the beginning of the current term. WG3.5 already achieved remarkable results of their work, including two joint publications.

Encouraging the involvement over generations is a key issue of FIG strategy for the years to come. WG3.6 implements this strategy into Commission 3's concrete work. The clearest evidence of progress is the newly established collaboration of WG3.6 with the Volunteered Community Surveyor Program (VCSP), which has already led to joint events and publications. Members of the VCSP regularly participate in the bimonthly Steering Committee meetings of the Commission. In this way, young and seasoned land surveyors are brought together. Land surveyors can be kept actively engaged in FIG over longer time periods, thus paving the way for the transition from one generation to the next.



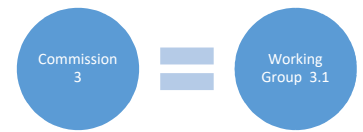
Bimonthly FIG Commission 3 Zoom Meeting, Members of the Steering Committee

Traditionally, the Commission's work has been strongly focused on the European region. Another goal is therefore to achieve a more balanced participation of colleagues from all world regions in the work of the Commission. A first initiative to achieve this goal was the assignment of an Australian colleague to chair a working group. Furthermore, in February 2020, Commission chair undertook a networking visit to Uganda and Rwanda, in particular to attract colleagues from Africa to FIG and the work of the Commission.

Activities of Working Groups

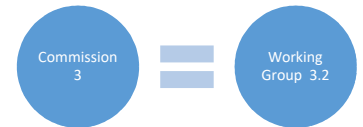
Working Group 3.1 – Geospatial Information Infrastructure for Smart Cities,

Chair Prof Kevin McDougall (Australia)



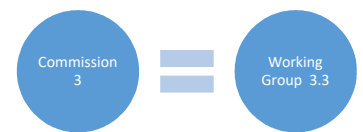
Working Group 3.2 – Geospatial Big Data: collection, processing, and presentation,

Chair Prof Charalabos Ioannidis (Greece)



Working Group 3.3 – User-Generated Spatial Content Empowering Communities,

Chair Prof Sagi Dalyot (Israel)



During the last year, the research focus given by WG3.3 was given to the investigation and identification of initiatives and projects that use of user-generated spatial content as an enabler to processes, infrastructures, and services to various communities. Main attention was given to impaired communities that require customized location-based services. Attention was also given to land administration and cadastre systems, investigating the use of these systems by users and stakeholders from other disciplines (e.g., urban planners), together with ethical analysis of incorporating contributed data into these systems. The above resulted in several academic publications.

WG3.3 continued its efforts in pursuing to work with citizens, communities, schools, land surveyors, scholars, local and regional organizations, aspiring to:

- Encourage the participation and collaboration of scholars and professionals from developing countries.
- Encourage the publication of high-quality research reports and papers in highly ranked publications.
- Strengthen the cooperation with sister FIG organizations, e.g., ISPRS and ICA.

Working Group 3.4 – 3D Cadastres (Joint Working Group with Commission 7),

Chair Prof Peter van Oosterom (The Netherlands)



**Working Group 3.5 – GIS Tools for Spatial Planning
(Joint Working Group with Commission 8),**
Chair Dr Enrico Rispoli (Italy)



Commission 3 and 8 chairs contributed the chapter ‘Spatio-temporal Information Management to Control the COVID-19 Epidemic: Country Perspectives in Europe’ to the UN GGIM Academic Network New Edited Volume ‘COVID – 19: Geospatial Information and Community Resilience’ to be published by Taylor & Francis Group.

Commission 3 and 8 chairs jointly published an article on ‘The Role of Spatio-Temporal Information to Govern the COVID-19 Pandemic: A European Perspective’ in ISPRS International Journal of Geo-Information.

At the e-Working Week in 2021 a joint session is organized focusing on the role of spatial data and GIS applications related to spatial planning in view of sustainable development.

In 2021, July – provided the circumstances – an international summer school for Young Surveyors supported by commission 3 and 8 will be organized in Italy. Two sessions will be organized by both commissions. The sessions will be held on July 20 and 21. The theme will be "territorial data and planning policies: best practices of planning resulting from the research of degraded areas and case study of reuse of degraded building sectors and soil saving". The workshop will have a hybrid character (face to face and online), depending from the situation due to COVID-19.

**Working Group 3.6 – Geospatial Next
(Joint Working Group with Young Surveyors Network),**
Chair Cemal Özgür Kivilcim (Turkey)



The working group has formed a close relationship with the Volunteer Community Surveyor Program (VCSP) in 2020 for the purpose of joint activities. The VCSP is run by the FIG Young Surveyors Network, in partnership with the Global Land Tool Network (GLTN) which is facilitated by UN-Habitat. Meanwhile, leading VCSP members have become permanent members of the Commission 3 Steering Committee and are actively involved in shaping the Commission’s work.

At eWW 2021, the WG 3.6 will organize a one-day workshop together with VCSP on an eVolunteering project, followed by 24 hours of practical work by the workshop participants. Authors from both WG3.6 and VCSP will present a joint paper ‘e-Volunteering in Unprecedented Times: New Synergies to Address Environmental Challenges’ to the eWW 2021.

Considering the common targets of connecting, promoting, and sharing knowledge, the VCSP and WG 3.6 Geospatial Next seek to collaborate together to create training resources and encourage e-volunteering projects in the future.

Publications

Müller H, Louwsma M. The Role of Spatio-Temporal Information to Govern the COVID-19 Pandemic: A European Perspective. *ISPRS International Journal of Geo-Information*. 2021; 10(3):166. <https://doi.org/10.3390/ijgi10030166>

Louwsma, M., Müller, H. Spatio-temporal Information Management to Control the COVID-19 Epidemic: Country Perspectives in Europe. Book chapter in Rajabifard, A., Paez, D., Britton, I., Foliente, G. (Eds.): COVID – 19: Geospatial Information and Community Resilience (Open Access). Taylor & Francis Group, to be published.

Müller, H. Spatial Information Management, a Key Discipline for Managing Spatial and Temporal Dynamics. GIM International, 8 May 2020, Geomares <https://www.gim-international.com/content/article/spatial-information-management-a-key-discipline-for-managing-spatial-and-temporal-dynamics>

Joint Article by the FIG Commission Chairs. Key Global and Technology Drivers Impacting Surveying. Reflections by the FIG Commission Chairs. GIM International, 4 Feb 2021, Geomares <https://www.gim-international.com/content/article/key-global-and-technology-drivers-impacting-surveying>

Talia Dror, Yerach Doytsher, and Sagi Dalyot (2021). Investigating the Use of Historical Node Location Data as a Source to Improve OpenStreetMap Position Quality. In Open Source Geospatial Science for Urban Studies (pp. 55-73). Springer, Cham.

Ruba Jaljolie and Sagi Dalyot (2020). Multi-Dimensional Land Management Systems: A Delphi Study of the Expert Community. FIG Working (from home) Week, May 10-14, Amsterdam.

Ruba Jaljolie and Sagi Dalyot (2019) Formalizing a multi-dimensional land management system: the stakeholders' perspective. International Archives of the Photogrammetry, Remote Sensing & Spatial Information Sciences. 14th 3D GeoInfo, September 23-27, 2019, Singapore.

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April 2021