

**CALL FOR PAPERS TO
FIG WORKING WEEK 2020
10 – 14 May 2020, Amsterdam, the Netherlands
at RAI Amsterdam Convention Centre**

INVITATION



In a few decades, the majority of the people will live in urban areas. Already now, most of the world's megacities are located in the coastal zone and many of these are situated in large deltas. It is there, where land and large water bodies meet, that sustainable development is under high pressure.

The host country for FIG Working Week 2020 the Netherlands has a long history of dealing with the challenges of building and managing a densely populated coastal country, with a land area of which nearly half is below sea level. The Dutch have an extensive experience in this field. Surveyors have played a crucial role in land and water management. Their role is even more crucial today when we have to protect our countries from the effects of sea-level rise, floods and droughts and other natural disasters caused by climate change. Protection of nature and natural resources demands our attention and asks us to act now. This requires smart surveyors and integrated approaches for sustainable land and water management.

The FIG Working Week 2020 in Amsterdam is addressing the following overall theme:

Smart Surveyors for Land and Water Management

This theme is both relevant for the Netherlands and internationally in a world where drinking water is a scarce resource, waste water needs to be recycled rather than seen as waste, where the sea needs to be better mapped and managed, where land resources need to be protected against sea-level rise, and where land-based fresh water habitats are threatened.

THE SPECIFIC TOPICS OF FIG WORKING WEEK 2020

The overall theme, Smart Surveyors for Land and Water Management, is built up by the following sub-themes:

1. Smart Surveyors

Rapid urban growth, smart energy, cleaner mobility, and 'land rights for all' are some of the challenges demanding innovative surveying approaches and technologies. Sensing technologies, spatial data processing technologies and related approaches are already available. Use and improve them to become future proof, Smart Surveyors!



2. Integrated Land and Water management

Without integrated land and water management, the Netherlands as also other coastal countries cannot sustain its agricultural and urban development. Climate change, though, increases the risks of sea and riverine floods and extended drought periods and complicates this management task. Unorthodox measures are called for. Get familiar with these measures and discuss them from your critical surveyor perspective.



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Rijkswaterstaat.*

3. Ten years to go to achieve the Sustainable Development Goals

The countdown begins, only one decade to go to accomplish the Sustainable Development Goals. The SDGs are the blueprint to achieve a better and more sustainable future for all and surveying professionals have a key role to play. How did we, as surveyors, contribute to ending poverty, improve health and education, reduce inequality, and spur economic growth – all while tackling climate change and working to preserve our oceans and forests? In addition, what will be our role for the coming 10 years?



Naga City Philippines by Saut Sagala, courtesy ITC, University of Twente.

SUBMIT YOUR ABSTRACT

FIG Working Week is the main event of the year for all ten FIG Technical Commissions, Networks, Task Forces and Permanent Institutions. The main objective of the FIG Working Week is to bring together experts from academia, governments/public administration and industry to report on recent developments, trends and research results. Technical session speakers will present their research selected through the open call for papers procedure. This is an exceptional platform for industry practitioners, innovators, scientists, researchers, academics and students to discuss current research which is shaping a new world society.

We invite you to submit:

1. **an abstract and full paper for peer review by: 1 October 2019**
2. **an abstract for non-peer-review by: 1 November 2019 (full paper 7 February 2020).**

We encourage you to consider the overall theme of FIG Working Week 2020: Smart Surveyors for Land and Water Management and the three main topics when you submit your abstract.

Many topics are multi-disciplinary and are relevant in both developing and developed world contexts. We encourage submissions of cross-disciplinary nature cutting across many disciplines/subject-areas.

Proposals for papers **non-peer review** and **peer review** are requested in all topics of interest of the following:

FIG COMMISSIONS

Professional Standards and Practice – FIG Commission 1

- International Ethical Standards
 - Case sharing on the implementation of the International Ethics Standards published by the International Ethics Standards Coalition in Dec 2016
 - Current and future role of ethics in surveying
 - Challenges for surveying professionals on how they practice and adapt to changes of ethics
 - Ethical dilemmas in land, property and construction around the world
 - Ethical enforcement of fire safety standards
 - Sharing of experiences on the compliance of fire safety standards

- Women in Surveying
 - Reaching SDG No. 5 Gender Diversity
 - Success stories regarding diversity in the surveying industry
 - Challenges to diversity and inclusion in the surveying workforce / industry
 - Women's full and effective participation and equal opportunities for leadership at all levels of decision making in the surveying industry
 - Women equal rights to economic resources, as well as access to ownership and control over land and other forms of property, inheritance and natural resources, in accordance with national laws
 - Enhance the use of enabling technology in the surveying industry to promote the empowerment of women
 - Contributions, recognition and promotion of women in the surveying profession
 - Overcoming unconscious bias in the surveying profession
 - Women making a difference in surveying
 - Women in surveying networks around the world

- International Boundary Settlement and Demarcation
 - Promote peace for sustainable development – SDG No. 2 Peace and Justice
 - International boundaries for peace
 - Moving borders and unstable International boundaries
 - Cases related to demarcation of maritime boundaries
 - Sharing of demarcation of international boundary cases

Professional Education – FIG Commission 2

Commission 2 promotes professional surveying education to support the three themes of this Working Week. We are looking for papers that highlight practices of continuous review in education, innovative teaching approaches and lifelong learning solutions. Sessions include:

- Enhancing Surveying Academic Networks

- Innovation in Surveying Pedagogy and Curriculum
- Innovation in training.

Spatial Information Management – FIG Commission 3

Submissions on the following topics are particularly welcome:

- Improved decision-making through advances in Geospatial Information Infrastructures for smart cities at the local, regional and global levels,
- Opportunities and challenges of Geospatial Big Data to be used in a complementary way to traditional surveying data,
- Use of user-generated spatial content for mapping, land surveying, GIS, land management and cadastre, navigation, etc.,
- Implementation of useful GIS tools for spatial planning, based on the different phases of the spatial planning cycle,
- Analysis of the role of user-generated content, Volunteered Geographic Information VGI and Geospatial Big Data GBD in achieving the UN Sustainable Development Goals 2030.

Hydrography – FIG Commission 4

In line with the overall theme of FIG Working Week 2020, Commission 4 focuses on the following topics with the motivations dedicated to the three sub-themes. Each of the topics embodies the aim of producing smart surveyors based on the use of cutting-edge technology with the challenges in the integrated land and water management, and the contribution of hydrography towards achieving the Sustainable Development Goals.

- Bathymetric Surveying on the Ellipsoid
- Integrated Land and Water Management at the Shoreline – with focus on tidal zone and transition from sea to shore (i.e., where's the storm surge going to flood?)
- Standards and Guidelines for Hydrography
- Blue Growth & UN Sustainable Development Goal
- Mapping the plastic
- Marine Development and Administration

Positioning and Measurement – FIG Commission 5

Commission 5 focuses broadly on practical aspects of surveying that support many of the UN Societal Development Goals (SDGs) including Clean Water and Sanitation (Goal 6); Industry, Innovation and Infrastructure (Goal 9); Sustainable Cities and Communities (Goal 11), Climate Action (Goal 13) and Life on Land (Goal 15). Sessions include:

- Standards and Best Practices for Smart Surveying
- Geospatial Reference Systems and for Integrated Land/Water Management
- Heights and Height Systems for Change Monitoring in Land/Water Systems

- Refinements in Multi-GNSS for Smarter Surveying
- Multisensor Systems for Integrated Land and Water Management
- Cost Effective Technology for Surveying with Smart Phones and Crowd Sourced Data
- Integrated Land and Water Management at the Shoreline (with commission 4)
- Deformation modelling in Reference Positioning and Measurement - Covers the change in coordinates of the reference frame and impact to land and water management systems (with commission 6)
- Vertical geo-localization of cadastral records: standards and strategies

Engineering Surveys – FIG Commission 6

The domains covered by Commission 6, include the support to the development and implementation of projects in several domains of civil, mechanical and industrial engineering, as well as energy production and environmental safety, and also the promotion of the application of innovative and advanced methodologies and technologies in the broad domain of engineering surveying. At FIG Working Week we want to highlight the themes:

- unmanned aerial (UAV) or underwater (UUV) vehicles: technology, data acquisition and applications - Surveying with UAV and UUV (jointly with several FIG Commissions)
- maritime environment, including the project-construction-monitoring of harbours, hydrographic surveying of the seabed and underwater maritime structures, industrial surveying of ships, monitoring and evaluation of the effects of sea-level rise in coastal areas (jointly with Commission 4).
- point cloud acquisition, efficient processing and advanced exploration for mapping and diagramming (jointly with Commission 5 and 10);
- Deformation measurements
- Terrestrial and aerial laser scanners
- Radar/SAR (spatial and ground based) applications
- Engineering survey in geohazards
- Engineering surveys for BIM, Augmented Reality and other emerging applications
- Images: contribution for changes detection and quantitative analysis

Cadastre and Land Management – FIG Commission 7

Commission 7 focuses on the relationship between people and land and the systems and technologies to administer land rights. Current key topics in the commission are:

- Land PPPs: Public-private partnerships for services in the land administration system
- Digital twin: strategies to link the virtual and real land use, occupation, right, responsibilities and restrictions existing in digital databases and in the real world
- Fit-for-purpose land administration: ensuring the collection, storage and publication of land information meets effectively and efficiently the needs of each specific country
- Cadastre template and SDGs: strategies to collect world-wide cadastre information as a way to track land related SDGs achievements and shortfalls

Spatial Planning and Development – FIG Commission 8

Land and water management is at the heart of spatial development. In view of global changes that have a local impact, a sustainable development requests a resilient approach towards for example the impact of climate change; environmental degradation; water, food, and energy scarcity; and economic uncertainty. Spatial planning touches upon the relation between land and people. From this perspective, we would like to invite papers (research, best practices or lessons learned) on the following themes:

- Land policy and land management tools:
 - To govern sustainable development and implement spatial plans
 - Zoning plans and land use regulations
 - Public land acquisition by voluntary or compulsory purchase / expropriation, land banking or otherwise
 - Land consolidation in rural areas or land readjustment in urban areas
 - Public participation
- Urbanisation challenges:
 - Liveability and a sense of community in high-density residential areas
 - Gentrification, social exclusion, strategic management of housing supply
 - Urban renewal, urban sprawl, informal settlements, greenfield and brownfield development
 - Valuation and compensation related to urban planning
- Rural transition:
 - Increasing and new societal demands on the use of land and its resources (e.g. renewable energy, sustainable agriculture, climate change)
 - Management of environmental resources, food production, freshwater resources and forests
 - Depopulation of rural areas
- Geo-information tools and applications:
 - currently used applications in spatial planning and potential of future applications
 - Governance aspects, such as adoption and use of GIS tools within organisations or participatory processes
 - Technical aspects, such as data management, design of interfaces, smart solutions, digital twins, or spatial analyses in urban or rural areas
- Water governance:
 - Contemporary and alternative future scenario strategies for managing water resources
 - Provide guidance to governments, municipalities, communities and professionals
 - Reflecting on potential futures into current practice for sustainable, spatially-informed water governance

- Effects of climate change, e.g. droughts, flooding, salination, and strategies to govern these effects

Without excluding other themes relevant to spatial planning and development in our profession, which are not mentioned above.

Valuation and the Management of Real Estate – FIG Commission 9

- Urban Challenges
- Valuation of Informal land & property
- Ensure valuation/appraisal remains relevant through the 4th Industrial Revolution and is key to achievement of UN SDGs

Construction Economics and Management – FIG Commission 10

- International Construction Measurement Standards (ICMS), 2nd Edition (incorporating life cycle costs)
 - Smart surveying and data standards
- Digital Construction
 - Smart surveying in construction – AI and cost prediction
 - UAV's in construction (with Commission 6)
- Education
 - New professional skills for the technology challenges

FIG PERMANENT INSTITUTIONS

The Permanent Institution of History for Surveying and Measurement invites contributions on the history of surveying and measurement, and the techniques and instrumentation involved.

FIG NETWORKS

Papers are also invited on the areas covered by FIG Networks:

FIG Young Surveyors Network would like to see contributions from young surveyors in all ten Commissions.

FIG Standards Network

The FIG Standards Network provides a connexion to the world of Standards bodies through:

- Liaison with standards bodies and NGOs
- Ensuring lead contacts to Technical Committees
- Proposing priorities on FIG's standardisation activities

- Advising and providing information on standards to FIG members

The Standards Network is particularly active in ISO/TC 211 (Geographic Information/Geomatics), ISO/TC 172 SC6 (Survey Instrument Standards) and non-ISO type Standards initiated by and/or which FIG is deeply involved: (International Property Measurement Standards Coalition, International Land Measurement Standards Coalition, International Construction Measurement Standards ...)

Regional Capacity Development Networks

- Africa
- Asia/Pacific

with the following topics:

- Geospatial Information Management, Capacity Development and the SDGs
- Collaboration – the key to developing Geospatial and Geodetic Capabilities
- Core Geospatial and Geodetic Competencies for the Surveyor
- Capacity Development and Organisational Planning for Sustainable Land and Water Management.

Additionally

This year, at the FIG Working Week, there will be French-speaking sessions. If you would like to contribute to these sessions, please send an email to fig@fig.net.

PRIZES

SMART SURVEYOR AWARD

The Local Organizing Committee of the FIG Working Week 2020 invites you to submit in particular a paper covering one or more of the sub-themes of the Working Week. For each sub-theme, the author of the best paper is awarded a typical Dutch prize.

NAVXPERIENCE AWARD



NavXperience and FIG would like to announce that the best peer review paper in the field of Positioning and Measurement (FIG Commission 5) will be chosen for the NavXperience award. The award winner will receive a complimentary registration for the next FIG Working Week in Accra, Ghana.

SURVEY REVIEW PRIZE



The Survey Review Biennial Prize is sponsored by Survey Review, a learned journal covering the fields of positioning and measurement, engineering survey, cadastre and land management, and spatial information management. The prize will be awarded to a Peer Review Paper written by a Young Surveyor (under the age of 35 or within 10 years of qualifying). In the registration form you can tick a box indicating that you want your paper to be taken into consideration for the Prize. Survey Review Ltd will fund the prize of £2,000 to cover travel, accommodation and registration for the Working Week. Payment will be made to the individual once the paper has been presented, with a Trustee of Survey Review presenting a certificate to the individual during the Working Week. If the paper is jointly authored and presented, the prize value remains £2,000 and can be paid to one of the individuals, or shared between them at their choice. For more information on Survey Review see <https://www.tandfonline.com/loi/ysre20>

SUBMISSION OF PROPOSALS

This **Call for Papers** is announced both for **peer review papers** and **non-peer review papers**. The submission of abstracts will be in English.

BECOME A PRESENTER

1 SUBMIT AN ABSTRACT

If you would like to present, start by submitting an abstract. You will need the following: abstract, presentation category, keywords and biographical information.

[View our Step-by-Step Guide to submitting a presentation proposal.](#)

[Submit your abstract here.](#)

2 GET ACCEPTED

After we receive your presentation proposal, it moves to the evaluation step. We welcome the submission of proposals 1 October for peer review papers / 1 November for non-peer papers. Proposals will be reviewed before mid December.

[See important deadlines here.](#)

3 REGISTER

Once your proposal is accepted, you must register before our Technical Committee can schedule your presentation.

[Submit your registration here.](#)

PLEASE NOTE

- When submitting your abstract, the number of abstracts is limited to **a maximum of one per author**. Further, an author can only once be a co-author in another abstract. It means an author can only be involved in two abstracts, once as first author and once as co-author.
- Further, an author can only **make one presentation**. The presenter should be indicated when submitting.

SUBMISSION OF ABSTRACTS

We invite you to submit an abstract for the FIG Working Week by **1 October** for Peer Review Papers and **1 November 2019** for Non-peer Review Papers. The abstract shall be between 250 and 500 words in length describing the objectives, results, conclusions and significance of your work. The abstract shall include the names and affiliations of all authors. Please feel free to submit an abstract on any topic related to the specific topics of FIG Working Week 2019.

You can submit your abstract for “peer review”, “regular” or “short” oral presentation:

A peer review or regular presentation

A regular presentation is a 10-15 minutes presentation. Presentations that work well: articulate interesting ideas, bring new issues forward for discussion and debate, and connect people with each other. The goal of presenters is to stimulate audience discussion (and desire to read the papers presented).

A short presentation

A short presentation means a 5-minute presentation. Short presentations will be scheduled in the popular Inspirational Short Sessions. The presentations are short, sharp and specific; hence maximize information and idea gathering. Following the inspiring presentations there will be a lively discussion. You have 5 minutes for your presentation. The session chair will afterwards encourage a discussion and ask strategic questions.

The scientific committee will make the final decision, whether the abstract is scheduled for a regular or short presentation.

All abstracts shall be submitted **online** to FIG on the following web site:

<http://www.fig.net/fig2020/submission.htm>.

Please note the deadline **7 February 2020** for submitting the full paper. For other important deadlines see **important dates**.

SUBMISSION OF FULL PAPERS

If you wish to present a peer review paper at the FIG Working Week 2020, submit your **full paper** by **1 October 2019**, for non-peer review paper the deadline is **7 February 2020**. When preparing the paper, please follow the guidelines prepared for papers (**paper guidelines** and the specific **paper template** for FIG Working Week 2020 that are available on the conference web site, www.net/fig2020/presenter_practicalities.htm). Please include at the end of your paper all your contact details, including your name, address, phone number and email address.

Full papers shall be submitted in **electronic format** to International Federation of Surveyors by email to **fig@fig.net**.

If you have problems emailing the paper you can contact FIG for assistance at fig@fig.net.

Receipt of your abstract and paper will be acknowledged electronically according to the time schedules.

When submitting a paper, the author(s) agree that FIG has the right to publish the paper in the conference proceedings (at the conference and on the FIG web site); in the FIG Surveyors Reference Library; and in the FIG online journal (if selected for this purpose) without any further agreement or compensation. The copyright of the paper remains by the author(s).

PEER REVIEW PAPER

The peer review process is double blind and deadlines for different steps can be seen below under **important dates**.

In the conference programme a paper that has been accepted by the peer review process will be marked “*This is a peer reviewed paper*”. Papers that are not accepted by the peer review process can be offered to the conference as non-peer reviewed papers.

Accepted peer review papers will be published in FIG Peer Review Journal (ISSN No 2412-916X). For the journal, please visit www.fig.net/resources/publications/prj/index.asp

Important: In addition to submitting the full paper, you shall also submit an abstract of your paper **online** to FIG database no later than **1 October 2019** on the following web site: www.fig.net/fig2020/submission.htm. Please mark “*This abstract is submitted for peer review*”.

SCIENTIFIC COMMITTEE

The Scientific Committee of the Technical Programme:

| | |
|------------------------------|---------------------------------|
| Winnie Shiu, China | Maria João Henriques, Portugal |
| David Mitchell, Australia | Daniel Paez, Colombia |
| Hartmut Müller, Germany | Marije Louwsma, the Netherlands |
| Mohd Razali Mahmud, Malaysia | Ben Elder, United Kingdom |
| Daniel Roman, United States | Alan Muse, United Kingdom |

The Scientific Committee of the Peer Review Papers:



WORKING WEEK 2020
10 – 14 MAY

Smart surveyors for land and water management

Chief Editor: Volker Schwieger, Germany

Members:

Chryssy Potsiou, Greece

Gerda Schennach, Austria

Hartmut Müller, Germany

Heidi Falkenbach, Finland

Maria João Henriques, Portugal

Marije Louwsma, the Netherlands

Yerach Doytscher, Israel

Jesper Paasch, Sweden

Review team of more than 100 reviewers. For the list of reviewers, please visit:

<http://fig.net/resources/publications/prj/index.asp>

FURTHER INFORMATION

For any information see the conference web site: www.fig.net/fig2020.

Please note that if you have submitted a paper that is accepted for oral presentation you must register for the conference before **7 February 2020**, or your presentation will otherwise not be included in the technical programme.

Any inquiries on call for Papers, abstracts, peer review process and technical programme, please contact the FIG Office (Email: fig@fig.net, tel +45 3886 1081).

We look forward to meeting you in Amsterdam, the Netherlands

Yours sincerely,

Paula Dijkstra

Co-conference/Director

Head of LOC

Louise Friis-Hansen

Co-Conference Director/

International Federation of Surveyors

IMPORTANT DATES

Deadlines for submitting abstracts, papers and registration are

NON PEER REVIEWED PAPERS

PEER REVIEWED PAPERS

1 November 2019

Deadline for authors to submit non peer reviewed **abstracts**.

1 October 2019

Deadline for authors to submit **full papers** for peer review.

16 December 2019

Confirmation to authors of acceptance of non peer reviewed **abstracts**.

10 December 2019

First notification to authors of acceptance of peer reviewed papers.
For accepted papers, authors will also be notified of any modifications required by the reviewers.
Authors of papers not accepted for peer review will be offered to convert the paper to the non peer review process.

6 January 2020

Deadline for authors to submit revised **full paper** for 2nd round of peer review (depending on proposed corrections from reviewers).

3 February 2020

Second notification to authors of acceptance of peer reviewed papers with the possibility of further modifications from the 2nd round of peer review.

ALL PAPERS (PEER REVIEWED AND NON PEER REVIEWED)

7 February 2020

Early bird registration closes
Deadline for all authors to register.

7 February 2020

Deadline for all authors to submit **Full Papers**.

28 February 2020

First draft of the technical programme will be published on the web.

3 April 2020

Deadline for normal registration.

10 – 14 May 2020

FIG WORKING WEEK – AMSTERDAM, THE NETHERLANDS



WORKING WEEK 2020
10 – 14 MAY

Smart surveyors for land and water management