



INVITATION

FIG is excited to invite you to the FIG Congress 2022 that will take place 11-15 September in Warsaw, the capital of Poland. At the FIG Congress 2022 we are dedicated to once again being able to gather experts, scientists, policy- and decision-makers, students, and stakeholders from all over the world to join discussions on issues affecting the international surveying and spatial community - face-to-face!

We are all still learning to navigate in our new reality of both digital and “normal” lifestyle, but the desire to see and hear from colleagues and friends becomes even more powerful when we have been forced to be apart. FIG is determined to bring our global community together - physically (and virtually). We have come to terms with our new reality, but we still crave experiences and our desire to connect face-to-face has never been stronger.

FIG and the local organisers from Poland, SGP, are looking very much forward to seeing you at the FIG Congress to a face-to-face experience fitting with the needs of the FIG community, combined with online elements. And our aim is that FIG Congress 2022 will

- be a global event
- provide an attractive technical programme
- provide a forum to exchange knowledge and learn your field or interest
- uncover new learnings and reinforce existing best practices
- provide an opportunity to meet, get new contacts and network

In other words: After attending FIG Congress 2022 you will be: inspired, (re)connected, energized, gained knowledge and be part of the surveying community.

***We are pleased to invite you to submit an abstract for consideration
at the FIG Congress 2022.***

THEME OF THE FIG CONGRESS

The theme for FIG Congress 2022 will be:

VOLUNTEERING FOR THE FUTURE - GEOSPATIAL EXCELLENCE FOR A BETTER LIVING



This overall theme is addressing two aspects. The first part “Volunteering for the future” is the overall motto for the current term of Office from 2019 to 2022. It reflects the urgent need for volunteers and volunteers’ work and the understanding for and impact on the tasks that are undertaken by International Professional Organisations like FIG.

The second aspect is underlining the significant change in our profession. Decades ago, the standard product of a land surveyor was a topographic map or a cadastral plan. Typically, this product was only partly accessible and often reserved for military and state administration purposes only. This has changed radically.

Today geo-information and all related products are seen in a much broader context and as public goods and beneficial for the well-being and betterment of the entire society. In addition to this, we can observe that the current geo-data-products are gaining in quality and are becoming more and more available free of charge for the user.



SUB-THEMES OF FIG CONGRESS 2022

The overall theme *Volunteering for the future – Geospatial excellence for a better living*, is built up by the following sub-themes:

1. Surveyor 4.0: future applications for cadastre, environmental questions, engineering and mining



The expression “Surveyor” is here used as a generic term comprising all occupations and professions in conjunction with Geospatial data such as land surveyors, quantity surveyors, construction surveyors, cadastral surveyors, mining surveyors, photogrammetrists, topographers, cartographers, hydrographers, valuers, geo-informaticians, land and town planners.

The technologists say that we are at the beginning or even in the middle of the 4th industrial revolution. And our profession is of course affected or in a positive wording profiting from these latest developments like Internet of Things (IoT) or Artificial Intelligence (AI). The numbering “4.0” wants to remind us here of this strong connection between the technical advancements in general and our geospatial activities. Surveyors have always been strongly associated with the most modern ways of presenting data, so they fit perfectly into the IoT and AI. Development of sensors lead us to more detailed and accurate measurements providing innovative surveying tools and methods. Automation in workflow that we deal with every day allow us to work more effective and to be competitive. Are we able to use this potential in connection with other fields of science and engineering to continue to stay on the top of technology?

2. Our profession in and after covid times



COVID 19 changed the global life radically at all levels. It changed our personal and private life, but also our professional customs and activities. The pandemic created new limitations but at the same time it offered also new opportunities.

Because every crisis brings new chances, it would be wonderful to share during the Congress the new experiences and approaches related to digitalization, automation in professional work, teamwork, customer relations and document certification.

3. *Open data and open access: are these the bullet points of the future roadmap?*



Open Data and Open Access are promoted by industry and politics not only in our professional field. What are the aspects, consequences, benefits and disadvantages of this approach? On the other hand, the verification of data in repositories is fundamental for sharing reliable data for making decisions. Does authoritative data in repositories compete to open access? What should have open access.

How should we deal with crowdsourcing being the opportunity to involve society in geospatial data collection and how it can be useful for surveyors?

4. *Surveying competence for other disciplines*



Today we do not only measure and "deliver" a map as the final product. Together with other disciplines new geospatial products which are often of a multi-purpose-use are designed and developed according to the specific needs of the potential users. What is our role in improving not only the methods of sharing geodata, but also in specialized obtaining in terms of other disciplines?

How do we convince our partners from other disciplines that despite progress and automation of measurement techniques with tools and methods available for everyone, they still should need surveyors?

SPECIFICATION OF TOPICS AND THEMES

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

SPECIFIC TOPICS

- 3D Cadastre
- Best practices in continuing professional development
- Blended learning for Geodesy and GNSS education
- Deformation monitoring and analysis - impacts to long term projects
- Digitalization of the construction industry and the interface with land surveying
- Education, training, and capacity building for the future of geodetic surveying
- ETCB ties for regions
- Geodetic data sharing and standards - the key to interoperability and integration
- Geospatial Real Estate Market Data for Valuation and Transparency
- Globalizing ethical imperatives and cultural barriers
- Housing markets – transparency and affordability
- Workshop Low-Cost AI in BIM, Augmented Reality
- Planning the development of geodetic survey capabilities in Africa by sharing / exchanging knowledge and experiences
- Scaling up GIS in spatial planning – barriers and success factors
- Sustaining a Global Geodetic Reference Frame - GGRF
- Sustaining Creation of a Global Geodetic Centre of Excellence (GGCE)
- Transformative power of GIS in Spatial Planning
- Good practice in collaboration of surveyors a National Mapping and Cadastral Agencies (NMCA)

FIG COMMISSIONS

Professional Standards and Practice – FIG Commission 1

- Advocacy and promotion of the surveying profession through trustworthy organisations
- Need for high ethical standards for volunteer contributions in the surveying profession
- Case sharing of the implementation of international ethical standards
- Need for international boundary maintenance in support of sustainability for promoting peace
- Case sharing of women in surveying to promote gender diversity and equality



Professional Education – FIG Commission 2

- The challenges and benefits of Blended Learning for surveying education
- Best practices in blended learning
- Blended learning curriculum
- Blended learning technology and infrastructure
- Lifelong learning.



Spatial Information Management – FIG Commission 3

- Current and Future Trends in Spatial Information Management
- Geospatial Data and Analytics
- Spectrum of GIS Applications in support of other disciplines
- Open Data and Open Source for Spatial Information Management



Hydrography – FIG Commission 4

- Hydrographic Surveys in/after the Covid
- Mapping the Plastic



Positioning and Measurement – FIG Commission 5

- Standards
- Reference Frames: open data ties to common reference frames
- Vertical reference frame: integrating physical heights and datums
- GNSS: precision navigation
- Multi-sensor-systems: precision navigation – GBAS tied to GNSS to provide robustness
- Cost-effective positioning: precision navigation – making it work on smaller scales



Engineering Surveys – FIG Commission 6

- Technology, data acquisition and applications in Surveying: Total stations and levels; Laser scanners; Radar/SAR; Unmanned aerial or underwater vehicles (UAV & UUV)
- Deformation monitoring and analysis: Engineering structures and environment; Mines and other geo-resources (including of energy); Landslides and other geohazards



Cadastre and Land Management – FIG Commission 7

- Land rights, surveyors the private sector and Covid-19
- Digital twins, open data and the future of innovation in land administration
- SDGs: are we meeting them?



Spatial Planning and Development – FIG Commission 8

- Better participation, better outcomes in spatial planning: including land right holders perspectives
- On the edge of spatial sustainability: how to balance land use and developments
- Land policy for a better living for all: instruments for implementing land management



Valuation and the Management of Real Estate – FIG Commission 9

- Transparency on Real estate markets: What are the main requirements in a today's world?
- Effects of Real estate markets due to Corona Pandemic
- Housing markets: transparency and affordability
- Real estate market data as geospatial data for valuation and transparency



Construction Economics and Management – FIG Commission 10

- International Cost Management Standard: Third Edition (2021), and the incorporation of carbon metrics
- Digital twins and building information model: what is the difference?
- What is the role of Construction Economics and Management as we build back better?



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:

Young Surveyors Network invites contributions from young surveyors in all ten Commissions.

Standards Network invites contributions on standards related to the surveying and geospatial profession. Possible topics include:

- What are standards and how are they created,
- What technical standards / best practices exist,
- Establishing standards / best practices networks in a region, and how these can facilitate sharing of data to provide solutions to regional problems such as sea level rise etc,
- Standards and their influence on capacity development.

Regional Capacity Development Networks: Africa and Asia/Pacific

Asia/Pacific Capacity Development Network with the following topics:

- Developing geodetic capability and capacity - the why, what, and how.
- Reconnecting, reflecting, refining, and resetting geodetic and positioning strategies post Covid-19
- Linking the GGRF and the Integrated Geospatial Information Framework (IGIF) through a Geodesy and Positioning Thematic Layer
- Findings from the Global Reference Frame Competency Survey 2021
- Status, updates, reports, and case studies on geodetic capacity development and reducing the digital divide (country or regional)

PRE-EVENTS

- Young Surveyors Conference
- History symposium: "From Copernicus to Kosciusko - And to the South Land!"
- Reference frames in practice seminar
- Workshop on multi-sensor systems
- Workshop on mining surveying



FIG CONGRESS CONCEPT

The FIG Congress 2022 will take place in Warsaw, Poland. It is the hope that all will be able to meet in person in Warsaw. The travel situation for the coming year is still unclear and the Congress will as an addition offer some hybrid elements. We do however hope to meet as many as possible in Poland.

The Congress will be a mixture of sessions within the overall theme-, subthemes- and related to the work of the ten FIG Commissions and Networks and other FIG activities, following our overall aims that FIG Conferences shall provide: learning, connecting, and networking. The technical programme will consist of sessions and meetings, such as key-note, high level and partner sessions, technical sessions and workshops and also through networking/social activities that have the aim to once again bring participants together in the FIG Community.

The FIG Congress will offer you intensive learning, and an opportunity to exchange and experience during pre-workshops/seminars, sessions, and to be part of the FIG Community. The onsite congress fee will give you access to the technical sessions and various social networking possibilities. Online attendance will give access to keynote sessions (live and recorded) and a selection of technical sessions.

PRIZES

THE SURVEY REVIEW BIENNIAL PRIZE 2022



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 Survey Review prize will, again this year, be offered to the author and presenter of an outstanding selected peer-review paper. Papers submitted by young surveyors will be prioritized. (under the age of 35 or within 10 years of qualifying). In the abstract submission form you can tick a box indicating that you want your paper to be taken into consideration for the Prize.



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www.fig.net/fig2022

The paper will be clearly marked in the proceedings as the Survey Review prize paper and will be presented onsite in a suitably high profile session. Survey Review Ltd will fund the prize of € 2,000. Payment will be made to the individual once the paper has been presented. 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.

The abstract of the paper will be included in the FIG proceedings, but the full text of the paper will appear on the SR publisher's website, to which the FIG proceedings will link. There will be permanent free access to the paper on the Survey Review publisher's website. FIG will also use the paper as a FIG Article of the Month in the FIG newsletter.

For more information on Survey Review see: www.tandfonline.com/loi/ysre20

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 an award of € 600. The condition is that the author/presenter will attend the Congress in presence.



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SUBMIT YOUR ABSTRACT

You are encouraged to submit an abstract. Abstracts will be reviewed and if your abstract is approved, you will be asked to submit a full paper and a video presentation. The video presentation must not be longer than 4 minutes. All abstracts, papers, presentation handouts and videos will be included in the final proceedings. All accepted papers and related video presentations will be included in a specific session as inspirational session material and will be available before the Congress starts.

The sessions will be designed so that they fit best to the topic, this can be e.g., presentation sessions, discussion panels, interview sessions, open discussion sessions or a mixture of different types. A selection of onsite participating authors from the open call for papers will be invited to directly take part in a session. All onsite authors connected to a session are encouraged to participate actively and engage in the discussions. Online participating authors will have their papers and video presentation included in the final proceedings as inspirational material for a session, but the video presentation will not be played onsite in a session.

DEADLINES

The deadlines are as follows:

Non-peer-review

Submission of:

- Abstracts: 31 January 2022
- Full paper: 10 April 2022
- Video presentation: 7 August 2022

Peer review

Submission of:

- Abstract AND full paper: 2 January 2022
- Video presentation: 7 August 2022

We encourage you to consider the overall theme of FIG Congress 2022: Volunteering for the future – Geospatial excellence for a better living, and the four 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.



SUBMISSION OF PROPOSALS

This Call for Papers is announced both for peer review papers and non-peer review papers.

If you would like to have your paper included in the proceedings, start by submitting an abstract. You will need the following: title, abstract, keywords and biographical information.

1. SUBMIT YOUR ABSTRACT

[Guide to submit an abstract.](#)
[Submit your abstract here.](#)

2. GET ACCEPTED

[See important deadlines](#)

After we receive your abstract, it moves to the evaluation step. We welcome the submission of abstracts for non-peerreview papers until 31 January 2022. Abstracts will be reviewed before mid-March. Deadline for the submission of full paper and abstract for peer review papers is 2 January 2022.

Once your abstract is accepted, you must register to ensure that your paper will be included in the programme and proceedings. Deadline for all authors to register for the Congress is 10 May 2022.

3. REGISTER FOR THE CONGRESS

[Register here.](#)

4. SUBMIT FULL PAPER & VIDEO PRESENTATION

[Paper Guidelines](#)
[Video presentation Guidelines](#)

When an abstract for non-peer-review papers is accepted, you must submit your max. 15 pages paper to fig@fig.net by 10 April 2022. Deadline for the submission of your maximum 4-minute video presentation is 7 August 2022.

Your paper and video presentation will be included in a session as inspirational and preparation material and will be available before the Congress starts.

5. PUBLICATION OF PROGRAMME

6. ATTENDING THE FIG CONGRESS

Enjoy the Congress and connect with fellow participants. A selection of authors from the open call will be invited as presenter/panellist in sessions.

SUBMISSION OF ABSTRACTS & PAPERS

We invite you to submit an abstract for the FIG Congress by 2 January 2022 for Peer Review Papers and 31 January 2022 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. 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. Please feel free to submit an abstract on any topic related to the specific topics of FIG Congress 2022. You can submit your abstract as "peer review" or "Non-peer review". The submission of abstracts must be in English.

Peer review paper

This review process is "double-blinded". At least two independent anonymous experts are reviewing your anonymized paper twice. To have your paper peer reviewed, there is a fee of € 50 plus an administration fee. The sum will be forfeited in the conference registration fees. After submitting your abstract, you will receive a confirmation email including a link to pay the fee. Please submit full paper and pay the fee by 2 January 2022, otherwise your paper will be dropped from the peer review process, and your abstract will be handled as a regular paper instead.

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

When preparing the paper, it is important to follow the guidelines outlined at https://www.fig.net/fig2022/presenter_practicalities.htm.

Authors for peer review papers will be asked to submit a video presentation of a maximum of 4 minutes. The video presentation will be included in the proceedings and the peer review journal. Peer review papers and video presentations will be connected to a session. Also note that only a selection of authors will be invited as panellist/presenter. This is a decision of the editorial board and cannot be influenced by the author. At least one author of a peer review paper must register and pay the registration fee to be included in the proceedings, journal, and technical programme.



Non-peer-review paper

A committee will make the final decision, whether an abstract will be accepted or rejected. The acceptance and inclusion in the proceedings are contingent on –

- Your full paper must be submitted to fig@fig.net by 10 April 2022. It is important to follow the guidelines outlined at https://www.fig.net/fig2022/presenter_practicalities.htm. Papers submitted with incorrect formats will be returned to authors. The full paper has a maximum length of 15 pages.
- At least one author of a paper is required to register and pay fees by 10 May 2022.
- You must submit a 4-minute video presentation that will be added to the proceedings by 7 August 2022.

Please note, your video presentation will be included in the proceedings and your paper will be connected to a specific session. Also note that only a selection of authors from the open call for papers will be invited as presenter / panellist directly in sessions.

SUBMIT YOUR ABSTRACT

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

<https://www.fig.net/abstractdb/submit.asp?id=29>.

SUBMISSION OF FULL PAPER AND VIDEO PRESENTATION

If you wish to submit a peer review paper at the FIG Congress 2022, please note the deadline for *peer review full paper* is 2 January 2022. For *non-peer review paper* the deadline is 10 April 2022. When preparing the paper, please follow the guidelines prepared for papers (paper guidelines and the specific paper template for FIG Congress 2022 that are available on the conference web site, https://www.fig.net/fig2022/presenter_practicalities.htm). Please include at the end of your paper all your contact details, including your name, organisation and phone number and email, so the participants of the FIG Congress can reach out for questions and a talk about your paper.

The deadline for submitting your video presentation is 7 August 2022. There are several tools available to easily record a presentation. The simplest is to create a Voice Over PowerPoint presentation. Full paper and video presentation shall be submitted in electronic format to FIG. Receipt of your abstract, paper and video presentation will be acknowledged electronically according to the time schedules.

When submitting a paper and video, the author(s) agree that FIG has the right to publish the paper and video 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).



SCIENTIFIC COMMITTEE

The Scientific Committee of the Technical Programme:

Winnie Shiu, China

David Mitchell, Australia

Hartmut Müller, Germany

Mohd Razali Mahmud, Malaysia

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Tomasz Lipecki, Poland

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Daniel Paez, Colombia

Marije Louwsma, the Netherlands

Ben Elder, United Kingdom

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Violetta Sokoła-Szewioła, Poland

The Scientific Committee of the Peer Review Papers:

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Review team of more than 100 reviewers. For the list of reviewers, please visit:
<http://fig.net/resources/publications/prj/index.asp>



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FURTHER INFORMATION

For any information see the conference web site: <http://www.fig.net/fig2022>.

Please note that if you have submitted a paper that is accepted for the proceedings you must register for the conference before 10 May 2022, or your paper and video presentation will otherwise not be included in the technical programme.

Any inquiries on call for Papers, abstracts, peer review process, technical programme or video presentation, please contact the FIG Office (Email: fig@fig.net, tel +45 9391 0813).

We are looking very much forward to meeting you in person in Warsaw, Poland

Yours sincerely,



Ms. Louise Friis-Hansen
FIG Director/
Co-Conference Director



Dr. Krzysztof Bakula,
Vice-president of the Association of Polish
Surveyors (SGP)/
Co-conference Director



IMPORTANT DATES

Deadlines for submitting abstracts, papers and registration are:

NON-PEER REVIEWED PAPERS	PEER REVIEWED PAPERS
31 January 2022	2 January 2022
Deadline for authors to submit non peer reviewed abstracts.	Deadline for authors to submit abstracts as well as full papers for peer review.
14 March 2022	28 February 2022
Confirmation to authors of acceptance of non-peer reviewed abstracts.	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.
10 April 2022	25 March 2022
Deadline for submission of full paper.	Deadline for authors to submit revised full paper for 2nd round of peer review (depending on proposed corrections from reviewers).
	22 April 2022
	Second notification to authors of acceptance of peer reviewed papers with the possibility of further modifications from the 2 nd round of peer review.
ALL PAPERS (PEER REVIEWED AND NON-PEER REVIEWED)	
10 May 2022	
Deadline for all authors to register. Early Bird registration closes	
16 May 2022	
First draft of the technical programme will be published on the web.	
7 August 2022	
Deadline for submission of video presentation/handouts Final deadline for registration	
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