

Welcome to the Open Commission 5 meeting



Outline

- Welcome
- FIG, FIG Commission 5, its work plan and officers
- Technical programme in Abuja
- Coming events
- Open discussion



The International Federation of Surveyors (FIG)

Founded in Paris in 1878;

Federation of national associations;

Represents all surveying disciplines;

UN-recognised non-government organisation (NGO);

Its aim is to ensure that the disciplines of surveying and all who practise them meet the needs of the markets and communities that they serve;

It provides an international forum for discussion and development aiming to promote professional practice and standards



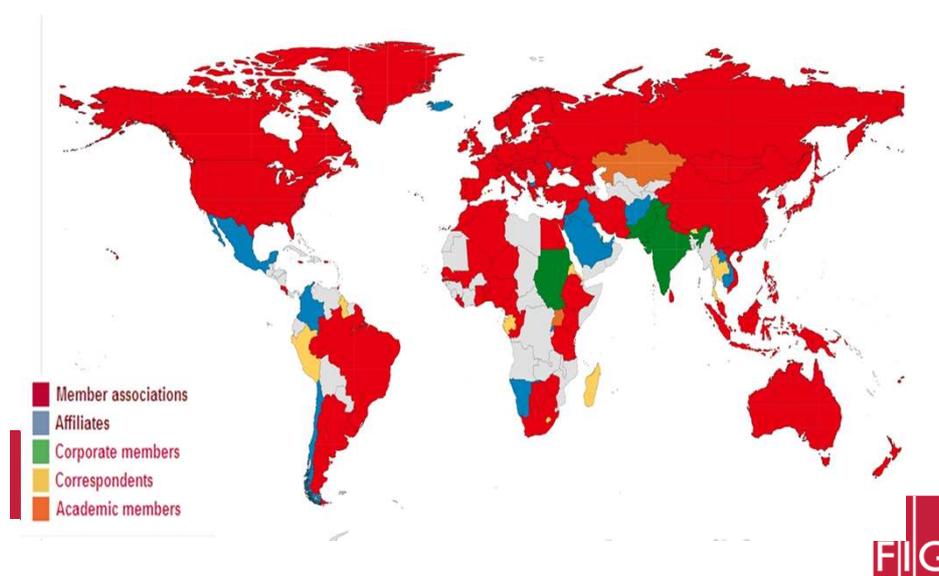
The FIG Profile
and the benefits of being a member



The International Council of Associations of Surveyors (ICAG) is the official representative of the International Federation of Surveyors (FIG) in the field of international relations.



103 FIG member associations from 87 countries
41 affiliates, 21 corporate, 4 correspondents, 90 academic members



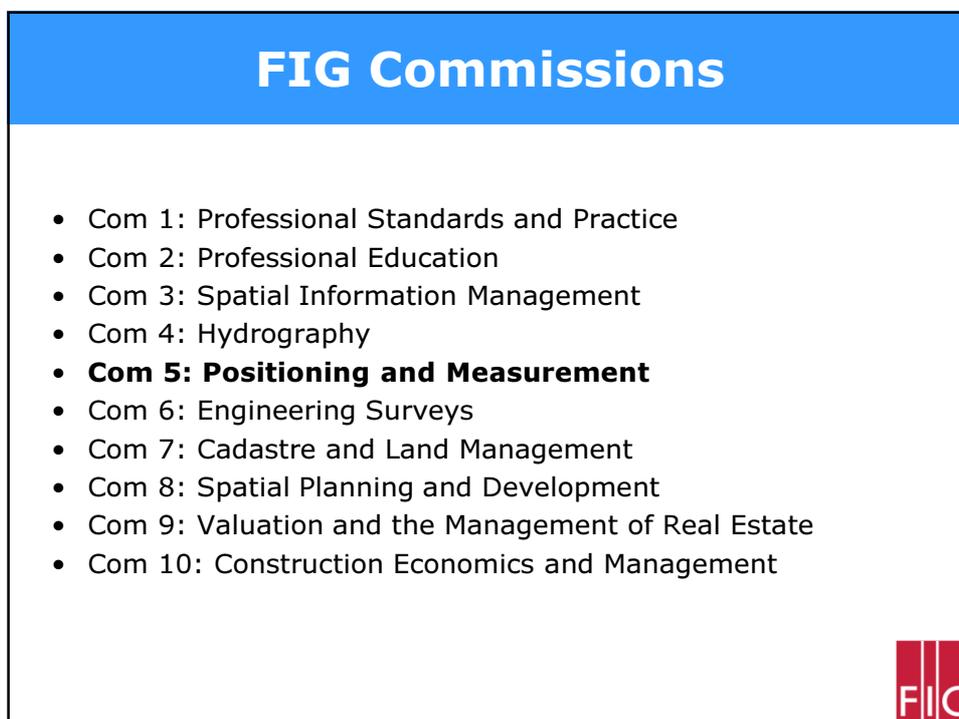
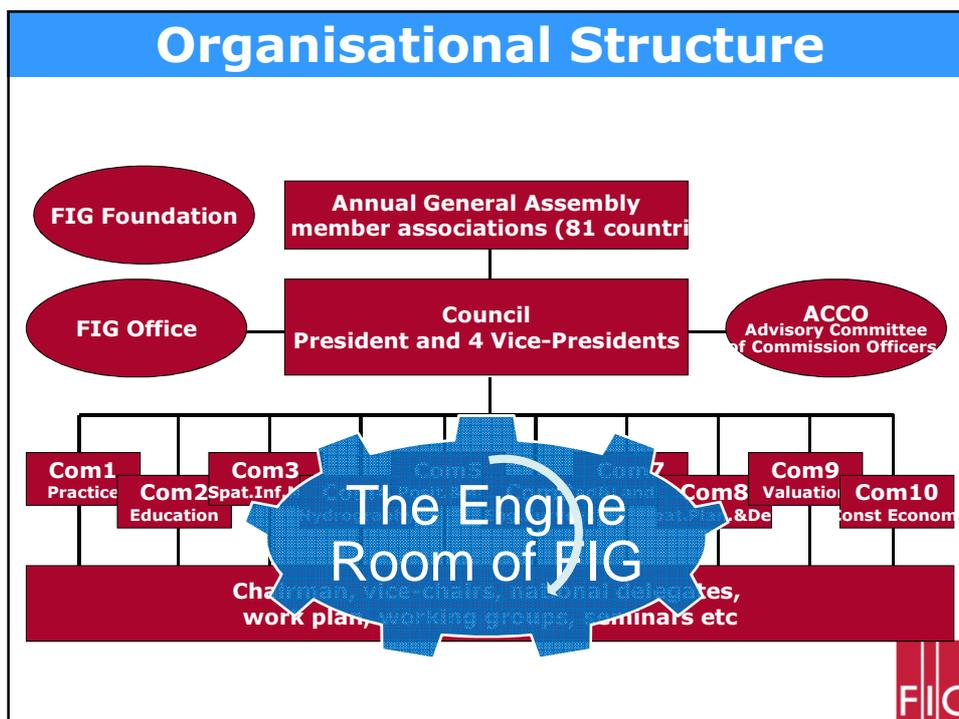


FIG International Cooperation

With **United Nations agencies**

e.g. UN Office for Outer Space Affairs (UN OOSA);
in particular the ICG – International Committee on GNSS

With **international professional organisations** in surveying disciplines as:

International Association of Geodesy (IAG);
 International Society for Photogrammetry and Remote
 Sensing (ISPRS) and
 The Institution of Navigation (ION)



FIG Commission 5 - Positioning and Measurement 2011-2014



WG 5.1: Standards, Quality Assurance and Calibration (David Martin (France))

WG 5.2: Reference Frames (Graeme Blick (New Zealand))

WG 5.3: Geodetic and Positioning Infrastructure (Neil D Weston (USA))

WG 5.4: Kinematic Measurements (Volker Schwieger (Germany))

WG 5.5: Ubiquitous Positioning (Allison Kealy (Australia)). Joint with IAG /Com. 6



Working Group 5.1 - Standards, Quality Assurance and Calibration



- Examine and review the relevant standards, quality assurance, best practice, testing and calibration aspects of surveying.
- Present and promote the use of positioning and measurement standards and guidelines to the surveying profession.
- Provide an interface to the various technical committees (TCs) within the International Standards Organisation (ISO), such as –
 - ISO TC 211 – Geographic Information / Geomatics,
 - TC 172 SC6 – Geodetic and Surveying Instruments
 - Guide to Uncertainty in Measurement (GUM) and its supplements



Working Group 5.2 - Reference Frames



Update on development of 4 dimensional datums

- active discussion group and Email forum discussing ideas
- focusing on time variable component of deformation models to account for the effects of crustal deformation
- the concept of a patch to model the deformation has been refined to incorporate the effects of earthquakes into deformation models
- formats for deformation models are also being refined, and a draft format has been circulated to interested parties for review.
- several papers on the topic were presented at the FIG Working Week meeting in Rome



Working Group 5.2 - Reference Frames



Reference Frames in Practice Workshop and Manual

- the inaugural Technical Seminar on Reference Frames in Practice was held as part of the 2012 FIG Working Week Rome meeting.
- the seminar was given as a series of short presentations covering a range of topics including the role of Geodesy – GGOS and future trends, regional and national reference systems, and gravity and world height systems.
- development of facts sheets and manual on Reference Frames in Practice topics is in progress



Working Group 5.3 - Geodetic and Positioning Infrastructure



E-geodesy - MEGA - Metadata Exchange for Geodetic Applications

- work has continued into the development of geodetic data models and data transfer formats and standards.
- the data model has been used to develop a Geography Markup Language (GML) compliant schema.
- the Use Case documentation has been developed, which outlines the major behaviours expected of an automated geodetic management system.
- Nic Donnelly (New Zealand) spent several months at JPL looking into the topic and he presented some preliminary findings in Rome.



Working Group 5.3 - Geodetic and Positioning Infrastructure



Policy issues

- GNSS Developments
 - Munich Satellite Navigation Summit
 - RTCM - Frankfurt, Washington D.C.
- Positioning Services using CORS
 - Access to data and products
 - Reference frames - global and regional
 - Coordinates - ITRF2008, IGS08, regional
- Automated Positioning Software on WWW
- Positioning Techniques



Working Group 5.3 - Geodetic and Positioning Infrastructure



Projects

- GNSS Advancements
 - GPS III
 - Galileo
 - Compass
 - QZSS
- New technologies for surveyors
- Workshops
- Special sessions at FIG regional conferences
- Collaboration - ION, IAG, ISPRS



Working Group 5.3 - Geodetic and Positioning Infrastructure



Outreach and Education

- Conferences, Seminars and Workshops
- Publications
- Regional Topics
- Consulting and Technology Transfer



Working Group 5.4 – Kinematic Measurements



Realised tasks

- **Facilitating Special Sessions on FIG Events** like FIG Congress, FIG Working Weeks, FIG Regional Conferences as well as on additional special events like the International Conference on Machine Guidance and Control.
 - ⇒ 27-29 March 2012, Stuttgart, Germany, 3rd International Conference on Machine Control Guidance.
 - ⇒ 18 – 19 September 2012, Almaty, Kazakhstan, Innovative Technologies of Efficient Geospatial Management of Earth Resources, Com. 5/6 Workshop
 - ⇒ 24-26 April 2013, Novosibirsk, Russian Federation, Interexpo Geo-Siberia-2013.
- Paper on **"Cost-Effective Positioning"** by Mikael Lilje and Volker Schwieger, **08th May, 9:00: Session TS03C - Positioning and Navigation - Today and Tomorrow**, here in Abuja, Nigeria



Working Group 5.4 – Kinematic Measurements



Foreseen tasks

- Realising **tutorials and workshops** on interesting topic related questions.
⇒ **during the whole period.**
- Facilitating **Special Sessions on FIG Events** like **FIG Congress, FIG Working Weeks, FIG Regional Conferences** as well as on additional special events.
- **March 2104, Braunschweig, Germany, 4th International Conference on Machine Control Guidance.**
- **April 2014, Novosibirsk, Russian Federation, Interexpo Geo-Siberia-2014.**
- Providing a **Special Issue of a well-known scientific journal** e.g. the **Journal of Applied Geodesy.**
⇒ **in 2013/14.**



Working Group 5.5 / IAG 4.1.1 Ubiquitous Positioning



Ubiquitous positioning systems typically rely on the fusion of multiple sensors, signals or measurements to deliver a position solution in environments that are 'difficult' for Global Navigation Satellite System (GNSS). To fully deliver a ubiquitous positioning capability requires an understanding of the performance capabilities of the sensors used to augment or replicate that of a GNSS. These activities are the focus of this Working Group.



Working Group 5.5 / IAG 4.1.1 Ubiquitous Positioning



Working Group Activities 2012/2013

- FIG Working week in Marrakech.
- **Mobile Mapping Technology (MMT) Symposium, Krakow Poland.**
- International Union of Geodesy and Geophysics (IUGG) General Assembly, Melbourne, Australia.
- **ION GNSS 2011: 24th Institute of Navigation GNSS Conference, Portland, Oregon.**
- International Symposium on Location-Based Services, Vienna, Austria.
- **International GNSS Symposium, Sydney, Australia.**
- Members of working group 5.5 undertook major collaborative endeavours at Ohio State University, USA and the University of Melbourne, Australia. These field based collaborations have generated significant data sets the analysis of which will form the basis of work in 2012. A priority of the group for the first quarter of 2012 is to have publications and data set available on the FIG official website.



Publication in Journal of Applied Geodesy

[Special Issue in Journal of Applied Geodesy](#)
jointly organized by WGs 5.4 and 5.5 as well as IAG 4.1.1

Topics: MEMS INS; Cooperative or collaborative positioning; Indoor positioning systems; Mobile Mapping systems; Multi-GNSS positioning systems; Pedestrian navigation; Land Mobile Applications; Kinematic positioning; GNSS Augmentations.

Submitted Papers: 7

Status: Currently in Review

Publication planned for 2013



Technical Programm in Abuja

TUESDAY			
TS01B – National Geodesy and Geospatial Infrastructure I	14:30	16:00	Hall I, NLH
TS02B – National Geodesy and Geospatial Infrastructure II	16:30	18:00	Hall I, NLH
WEDNESDAY			
Open Commission meeting	08:00	09:00	Conference Hall 3
TS03C – Positioning and Navigation – Today and Tomorrow	09:00	10:30	Hall I, NLH
TS04C – GNSS CORS	14:30	16:00	Hall I, NLH
TS05C – GNSS Positioning and Measurement I	16:30	18:00	Hall I, NLH
THURSDAY			
TS06B – GNSS Positioning and Measurement II and Remote Sensing	09:00	10:30	Hall I, NLH



Coming events

- 18-20 June 2013, Manila, Philippine, The 12th South East Asia Survey Congress
 - 21-22 June 2013, Manila, Philippine, FIG/IAG Technical Seminar
 - 1-6 September 2013, Potsdam, Germany, IAG Scientific Assembly
 - 9-11 September 2013, Nottingham, England, The Second Joint FIG/IAG International Seminar on Deformation Monitoring
 - 8-10 October 2013, Essen, Germany - INTERGEO 2013.
 - 18-20 March 2014, Braunschweig, Germany, Machine Guidance and Control Symposium
 - April 2014, Novosibirsk, Russia, Interexpo Geo-Siberia
 - 16-21 June 2014, Kuala Lumpur, Malaysia, XXV FIG Congress and General Assembly
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Coming events

**Commission 5 and 6 Technical Seminar –
Reference Frame in Practice,
21-22 June 2013, Manila, Philippines**

This event is co-sponsored by

- IAG (International Association of Geodesy),
- FIG (Fédération Internationale des Géomètres),
- UN Global Geospatial Information Management for Asia and the Pacific (UN-GGIM-AP),
- ICG (International Committee on GNSS) and
- PhilGEGS (Philippines Geodetic Engineering and Geomatic Society).

Information on: <http://www.fig.net/commission5/>



Discussion

