



International Fédération of Surveyors
Fédération Internationale des Géomètres
Internationale Vereinigung der Vermessungsingenieure

FIG Commission 5 Position and Measurement e Newsletter - April 2011

Dear Colleague,

Welcome to FIG Commission 5's April 2011 e-Newsletter. In this edition you will find the latest information about our next event which is the Working Week in Marrakech. Please feel free to distribute this newsletter to colleagues and friends.

FIG Working Week 2011 - Bridging the Gap between Cultures - Marrakech, Morocco, 18-22 May 2011



To view the invitation navigate to – <http://www.fig.net/fig2011/index.htm>

To register on line for the FIG Working Week and General Assembly 2011 navigate to - <https://www.fig.net/registrations/regform.asp?eventid=74>

At this symposium Commission 5 will be facilitating the following sessions –

Thursday, 19 May

- 11:00–12:30 TS01A - AFREF in a Global Perspective
- 14:00–15:30 TS02A - GNSS CORS Infrastructure and Standards
- 14:00–15:30 TS02F - Remote Sensing I
- 16:00–17:30 TS03A - GNSS CORS Networks Case Studies (Flash)
- 16:00–17:30 TS03F - Remote Sensing II

Friday, 20 May

- 11:00–12:30 TS04A - National Geodesy I
- 11:00–12:30 TS04J - Geodetic Applications in Various Situations
- 14:00–15:30 TS05A - National Geodesy II (Flash)
- 16:00–17:30 TS06A - GNSS and Land Deformation (Flash)

Saturday, 21 May

- 11:00–12:30 TS07A - Geoid and GNSS Heighting
- 11:00–12:30 TS07F - Alternatives and Backups to GNSS
- 14:00–15:30 TS08A - GNSS Processing and Analysis
- 14:00–15:30 TS08F - Adjustment and Coordinate Transformation
- 16:00–17:30 TS09A - Mobile and Asset Mapping Systems

There will also be a **COMMISSION 5 OPEN Meeting** for all new, old and interested Commission 5 delegates to express their views and thoughts about the proposed Work Plan for the term 2011-14, and more importantly what the Commission could be doing better. The proposed meeting time is **Wednesday, 18 May at 15:00–17:00**. A room has not been allocated so please see room list at the Palais des Congress.

There will also be other Commission 5 related meetings and they are -

“Standards Network Meeting” – OPEN to all delegates

Date - Friday 20 May 2011

Time - 14:00 to 15:30

The Standards Network was formed in 2002. It works within Commission 1 and is composed of representatives from each of FIG's Commissions. It meets annually to discuss the following:

- liaison and relationships with standardisation bodies and other NGOs,
- FIG priorities related to standardisation activities, and
- relevant standards information for distribution to FIG Members, Delegates and Commission Officers.

“Revision of FIG Publication No. 9 Recommended Procedures for Routine Checks of EDM” Meeting - OPEN to all delegates

Date - Friday 20 May 2011

Time – 16:00 to 17:30

FIG publication No. 9 Recommended Procedures for Routine Checks of Electro-Optical Distance Meters - (http://www.fig.net/pub/figpub/pub09/FIG-Publication_Nr9_english.pdf) is under review. This guide was originally published in 1994 and edited in 2007. However its content has not had a major revision since its creation. This meeting is convened to discuss its scope and the following review options:

- maintain the guide as it is,
- re-edit it with minor or major modifications,
- consider withdrawing it definitively; and
- depending on what option we take, how FIG should proceed.

Steering Committee Meeting – by invitation only

Date – Tuesday 18 May, and Sunday 22 May 2011

Time – 1600 to 1730

For more information navigate to FIG Working Week web site: www.fig.net/fig2011 and www.onigt.ma (French and Arabic)

Overview of Our 2011-14, DRAFT Work Plan

For your perusal is a précis of our draft work-plan for the term 2011- 14. Comments on this work plan are welcomed, as it can be modified before being endorsed by the FIG General Assembly at the Working Week in Marrakesh.

General

FIG Commission 5 is about the development, use and integration of technologies for positioning and measurement and the associated standardisation, best practice and fundamental reference frame issues.

Many of the issues are global in nature and Commission 5 is well suited to tackle the technological challenges that we face. Commission 5 is tasked to address global problems such as climate change, sustainable development and humanitarian needs, where disciplines covered by Commission 5 are at the heart of delivering solutions for the spatial aspects of these important global problems.

Specific activities aimed at developing countries include examination of Low Cost Surveying Technologies, assistance with implementation of modern Geodetic

Reference Frames and associated infrastructure and contribution to appropriate Continuing Professional Development programs.

Our Terms of Reference

1. The science of measurement (instrumentation, methodology and guidelines).
2. The acquisition of accurate and reliable survey data related to the position, size and shape of natural and artificial features of the earth and its environment and including variation with time.

Our Commission 5 Chair for the 2011-14 Term

Mikael Lilje (Sweden), email: mikael.lilje@lm.se

Our Mission Statement

The FIVE " F " missions of Commission 5 are:

1. Focus on modern technologies, technical developments and assist surveyors, engineers and GIS/LIS professionals through guidelines and recommendations, to choose and utilise those methods, technologies and instruments that are most appropriate to different applications.
2. Facilitate and follow technical developments through collaboration with other FIG Commissions and other international organisations; participation in appropriate meetings; and the preparation of appropriate publications.
3. Foster and support research and development and stimulate new ideas in the fields of expertise represented within the commission.
4. Formulate and formalise collaboration with manufacturers on the improvement of instrumentation and associated software.
5. FIG Events - present and promote the work of the Commission and its working groups on an on-going basis at FIG Working Weeks, FIG Regional Conferences and other relevant technical meetings and in appropriate FIG and other media.

Working Group 5.1 – Standards, Quality Assurance and Calibration

Chair - David Martin (France), e-mail: david.martin@esrf.fr

Few people question the fact their banking card works when they use it to withdraw money from a banking machine. However this confidence would not be possible without standards. While driving we stop at hexagonal, not round or square-shaped stop signs. These are just two of a myriad of standards that impact on our everyday lives.

Surveyors as professionals must fulfil certain legal, regulatory and/or accuracy requirements for their clients. Typically they will strive to do this in an optimal cost effective way and with the most appropriate equipment for the job at hand. Naturally this requires a good understanding and assurance in the instrumentation employed. Clients want the most from what they pay for. Legislative authorities as well as private and public companies require confidence that the services rendered are in conformity with globally accepted best practice rules. Generally this involves the application of internationally recognized standards.

Working group 5.1 deals with standards, quality assurance, best practice and calibration aspects of surveying. We present and promote the use of standards and guidelines to the surveying community through workshops and technical

sessions at FIG events. We also provide an interface with ISO on standards related to positioning and measurement.

Working Group 5.2 – Reference Frames

Chair - Graeme Blick (New Zealand), e-mail: gblick@linz.govt.nz

Today more than ever we live in a global society that is making greater use of information and knowledge. An important component of this information is the accurate spatial relationships among places, resources and people at local, national and global levels. The world we live on is also a dynamic and changing place due to the forces of plate tectonics, the movement of the sun and earth and other forces. We are becoming more aware of this dynamic world and the need to monitor changes to it, such as changing sea levels.

To enable accurate measurements to be made to monitor global change and to enable the collection and management of data within a consistent spatial framework, we need stable spatial reference frames and systems. In this dynamic world it is important to have stable reference frames that can identify, and if necessary, accommodate changes in the environment. A focus of the 'Reference Frames' working group is to study how we might model effects such as plate tectonic motions and earthquakes and accommodate them into our reference frames so that they accurately reflect positions in the physical world.

In this working group we aim to bring together participants and organisations interested in sharing knowledge and developing a common approach on establishing regional reference frames. We also plan to provide information in printed material and via the web on reference frames, as well as explain basic concepts, and list activities in this field. If you are interested in these topics we would welcome your input and membership of this working group.

Working Group 5.3 – Geodetic and Positioning Infrastructure

Chair - Neil D. Weston (USA), e-mail: Neil.D.Weston@noaa.gov

With the advent of GNSS and its increasing popularity with numerous traditional and non-traditional users, the role of surveyors in the geodetic and positioning infrastructure arena has been amplified. Surveyors are now required to be the specialists with - positioning services using GNSS CORS, positioning techniques / practices / standards using GNSS, automated positioning software via the WWW, GNSS CORS real time networks, and the effect of GNSS advancements on the geospatial community. To address these trends this working group will develop specific projects or publications, and facilitate workshops and technical sessions at FIG related events. So if any of these topics are of significance to yourself or your organisation then you should consider becoming an active member of this working group.

Working Group 5.4 – Kinematic Measurements

Chair - Volker Schwieger (Germany), e-mail: volker.schwieger@ingeo.uni-stuttgart.de

Most surveyors can operate and manage their instruments if no movements occur. But what happens, if the instrument or the surveyed object is moving? New problems arise like e.g. synchronisation of the measurements and modelling of the movement. These and other related tasks, investigations and practical

solutions are summarized under the term “kinematic measurements”. Multi-sensor-systems and their application play an important part for kinematics.

If you are interested in this topic related to monitoring as well as machine guidance, then you should definitely join this group to share your experience or learn from others. We will organize sessions at FIG events, participate at symposia on related topics e.g. “Machine Guidance and Control” and “Mobile Mapping” and facilitate the interchange of knowledge among practitioners and researchers.

Working Group 5.5 – Ubiquitous Positioning

Co-Chairs - Allison Kealy (Australia), FIG, e-mail: a.kealy@unimelb.edu.au & Guenther Retscher (Austria), IAG, email: guenther.retscher@tuwien.ac.at

The challenge of delivering ubiquitous positioning capabilities i.e. geopositioning in all environments, has raised numerous philosophical, technical and operational questions, many of which are currently under investigation by a vast, multi-disciplinary, international research community. This working group has been established as a response to these questions and aims to draw together these international efforts under a common umbrella project of ubiquitous positioning.

In this working group we are keen to understand the scope of existing research programs in this area and to provide a forum through which the outcomes of these initiatives can be aggregated, and used in defining a current and future research agenda towards achieving the common goal of ubiquitous positioning.

We see this approach as minimizing the duplication of research efforts internationally as well as facilitating more rapid progress in this area by providing access to software, algorithms, data and other relevant resources.

Participation in this working group is open to anyone currently involved in the development of ubiquitous positioning systems, but extends to anyone with an interest in indoor/outdoor positioning, alternative positioning sensors and the broader philosophy underpinning the definition and use of ubiquitous positioning systems.

Co-operation with other FIG Commissions and Sister Organisations

Commission 5 also interacts and works with -

- Commission 4 – Joint working groups on the revision of FIG Publication 37 and a Vertical Reference Surface for Hydrography
- Commission 6 - Study Groups on Laser Scanning and Machine Guidance and Control
- ICG (a sub group of the UNOOSA) ; IAG ; ISPRS ; ION ; and PCGIAP - on topics such as
 - AFREF - African Reference Frame
 - APREF - Asia Pacific Reference Frame
 - Reference systems/ frames,
 - GNSS infrastructure and CORS
 - IGS products and services
 - Mobile Mapping Technology
 - Kinematic Measurements and Multi-Sensor-Systems
 - Optical 3-D Measurement Techniques
 - Deformation Measurement
 - Ubiquitous Positioning
 - Vertical Reference Systems

How to Participate in Our Commission

If any of the previously mentioned working or joint working groups are of interest to you then there are two levels in which you could actively contribute and they are –

- The first level of participation is as a “core member” of a working group contributing directly to discussions, publications, meetings, and facilitates technical sessions etc.
- The second level of participation is as part of a “reference group” to review publications, technical papers, provide feedback on issues and general assistance etc.

People interested in being involved in one of the working groups should contact the Chair of the relevant Working Group and send a copy to our Vice Chair for Administration, Rob Sarib (Australia) email: robert.sarib@nt.gov.au .

All responses should indicate the desired level of participation, either as a “core member” or as part of a “reference group” and also include a one or two paragraph biography of your professional career to date.

There is also another way to assist Commission 5 with their work and that is to become a National Delegate to Commission 5. Please note, we recommend that before you consider this option you will need to check with your FIG member association whether they already have a National Delegate for Commission 5 and if it has been officially listed on our website, location <http://www.fig.net/comm/natdel5.htm>.

Briefly, the role of a National Commission Delegate is to -

- establish networks within their countries to communicate information and obtain feedback for the Commission
- be actively involved in commission activities, including responding to questionnaires or correspondence and identifying topics and authors of papers for Commission symposia and FIG congresses
- seek and encourage funding support to attend FIG activities, including commission meetings
- should be writing at least one annual report for publication in a local newsletter or technical journal or for dissemination by some other means to individual members of their member association or organisation.

If you wish to be a National Delegate for Commission 5 your FIG member association must formally submit in writing to the FIG Office the name, professional title, address, telephone and fax numbers and email address of the nominated person.

Commission 5 look forward to your response and please do hesitate to ask any questions or if you have any further queries.

We look forward to greeting and speaking to you in Marrakesh!

FIG Commission 5 e-Newsletter

If you would like to circulate Commission 5 NEWS to all our members please email your item for consideration to the Vice Chair Administration – robert.sarib@nt.gov.au