



International Federation of Surveyors
Fédération Internationale des Géomètres
Internationale Vereinigung der Vermessungsingenieure
Commission 5
Positioning and Measurement (2002-2006)
www.fig.net/figtree/commission5

Newsletter

Report on the Symposium
Monitoring and Understanding a Dynamic Planet with Geodetic and
Oceanographic Tools.
By Georgia Fotopoulos

The Dynamic Planet 2005 Symposium was held in the beautiful city of Cairns, Australia on August 22 - 26, 2005. This was a joint assembly of the International Association of Geodesy (IAG), the International Association for the Physical Sciences of the Ocean (IAPSO), and the International Association for Biological Oceanography (IAGO). Over 750 participants representing 60 countries were present and participated in an impressive program consisting of 27 scientific sessions. Papers have already been submitted for peer-review and will appear in a Springer-Verlag proceedings volume.

The conference truly was a 'joint' meeting with oral and poster sessions spanning topics related to the new gravity field missions, oceanography and geodesy in polar regions to pelagic biogeography, to name a few. Of particular interest to Commission 5 members were the open FIG/IAG forums on the Dynamic Datum and Vertical Reference Frames. These discussions were attended by a mix of participants from theoreticians to practicing hydrographers and surveyors and resulted in very fruitful discussions on making the transition from conventionally defined (static) vertical reference frames to a modernized approach that incorporates the effects of dynamic Earth systems. Future cooperation with IAG on the topic of a Dynamic Datum is planned in a joint FIG/IAG technical session at the upcoming FIG Congress Meeting in Munich next year.

Finally, before closing it is important to note one of the highlights of this conference which was a session dedicated to IAG's project on the Global Geodetic Observing System (GGOS). Details of the program can be found at www.ggos.org. For FIG members and the global geosciences community in general, it is something to look for in the near future as high quality services, standards and references will become available for theoretical and practical applications alike.

Special thanks to the local organizing committee and Chris Rizos, the chairman, for a very successful symposium - Great Barrier Reef and sunshine included!

Refer to website - <http://www.dynamicplanet2005.com/> for conference abstracts and proceedings.

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Update on the Various Commission 5 Liaisons

With International Association of Geodesy (IAG_

The IAG held its Scientific Assembly in Cairns, Australia in August 2005. FIG cooperated with IAG to run joint forums on the topics of "Dynamic Datum" and "Universal Vertical Reference Surface for Hydrography". Each forum created robust discussion about some of the technical and policy issues. The relevant FIG Working Groups will now consider those discussions and use it to influence their future work and publications. In some cases issues were also identified that could be areas for further cooperation with IAG. For example, the topic of Dynamic Datum will be addressed in joint FIG/IAG technical sessions associated with the FIG Congress in Munich in October 2006.

The IAG Scientific Assembly in Cairns also enabled the first meeting of the FIG-IAG Liaison Committee with the following people participating:

From IAG:

Gerhard Beutler (President IAG)
Hermann Drewes (Chair IAG Com 1)
Ruth Neilan (IGS)
Chris Rizos (Chair IAG Com 4)

From FIG:

Ruth Adams (Com 4)
Georgia Fotopoulos (Com 5)
Matt Higgins (Chair Com 5)
Mikael Lilje (Vice Chair Com 5)
Gethin Roberts (Vice Chair Com 6)

Dorota Brezinska and Larry Hothem were also present as observers representing the American Institute of Navigation (ION); both are also active in FIG and IAG.

The meeting reviewed the existing working document that identifies potential areas for liaison between FIG IAG. It is the reference document giving substance to the Memorandum of Understanding (MoU) between FIG and IAG. An important step was to agree contact points in both organisations to work on common issues in topics such as Reference Frames, Geodynamics, Positioning and Applications. Other issues discussed included the role of the IAG's new Global Geodetic Observing System (GGOS) and how FIG might help in ensuring the products from that overarching service are put to optimal use by practicing surveyors. The meeting also discussed cooperation on existing symposia series and explored topics that may be suitable for future jointly sponsored events.

Based on the meeting in Cairns, Matt Higgins Chair of FIG Commission 5 will update the liaison document so it can be used by office bearers in both FIG and IAG to continue to strengthen cooperation in the future.

With US Institute of Navigation (ION)

While Dorota Brezinska was visiting Australia in August and September 2005, she met with Matt Higgins and they were able to agree the final wording of a Cooperation Agreement between FIG Commission 5 and the American Institute of Navigation (ION). The Cooperation Agreement recognizes that each is an organization with many complementary activities serving similar professional constituencies involving research, development and education into varied aspects related to navigation, surveying, and positioning techniques.

Since September, the Cooperation Agreement has been signed by Matt (representing the FIG President) and in coming months it will be signed by James Doherty, the President of ION. Once the Cooperation Agreement comes into force, Dorota and Matt will begin to work on concrete steps to give the Cooperation Agreement substance. One possible action identified as warranting further discussion is for FIG, ION and IAG to work more closely on future conferences, especially in relation to application and infrastructure issues in Global Navigation Satellite Systems (GNSS).

NEW COMMISSION REPs

Welcome to

Sultan Al Sultan - the Correspondent from Saudi Arabia and the Arabian Gulf region

A Must READ !

The follow is the abstract from the paper on "[New GNSS Developments and their Impact on Survey Service Providers and Surveyors](#)" by Chris Rizos (President of IAG Commission 4), Matt Higgins (Chair FIG Commission 5) and Steve Hewitson. This paper was presented at Spatial Sciences Institute Conference - Spatial Intelligence, Innovation and Praxis: September 2005. Melbourne, Australia. Have a read !

The surveying and mapping industry has been revolutionised by the use of Global Navigation Satellite Systems (GNSS), involving satellites, ground reference station infrastructure and user equipment to determine positions around the world. The Global Positioning System (GPS) from the USA is the best known, and currently fully operational, GNSS. Russia also operates its own GNSS called GLONASS. Fuelling growth in the coming decade will be next generation GNSS, and space augmentations of these, that are currently being developed. The USA is modernizing GPS, Russia is revitalising GLONASS, and Europe is moving ahead with its own Galileo system. Watershed advances in a major technology like GNSS only occur in 20 to 30 year cycles therefore it is now an opportune time to explore potential opportunities and issues for the spatial information industry. The first part of the paper outlines how the next generation of GNSS will bring extra satellites and signals to deliver better accuracy, reliability and availability. Extra satellites will make possible improved performance for all applications, and especially where satellite signals can be obscured, such as in urban canyons, under tree canopies or in open-cut mines. In its various modes, modernized GNSS will also deliver higher accuracy and improved speed-to-first-fix for carrier phase-based positioning. For example, the European Union's (EU) Galileo system will offer a Commercial Service that will be capable of delivering 0.1m accuracy without a direct link between the user and ground reference stations. The extra satellites and signals will improve the performance and reliability for all applications right down to the centimetre accuracy techniques used in surveying and geodesy. The second part of the paper looks at some of the implications of these improvements for the service providers of

continuously operating reference stations (CORS), as well as for survey users. For example, the EU's Galileo system is much more open to civilian and commercial involvement, and allows for regional and local augmentation to the core system. How will current CORS infrastructure be able to cope providing differential positioning services to users tracking a combination of GPS, Galileo and perhaps GLONASS signals? What is the benefit of the modernized GPS L2C signal? Will mixed GPS/Galileo RTK services be possible?

For more of this paper and information on GNSS Developments and Modernisation go to <http://www.fig.net/commission5/gnss/index.htm>

Coming Events

3-5 October, Vienna, Austria

7th International Conference on Optical 3 - D Measurement Techniques. Co-sponsored by FIG Commission 5 and Commission 6 WG 6.2 and WG 6.4.

Contact: conf@pop.tuwien.ac.at

Web site: <http://info.tuwien.ac.at/ingeo/optical3d/o3d.htm>

Call for papers in .pdf-format.

4-5 November, Sofia, Bulgaria

Modern Technologies, Education and Professional Practice in Geodesy and Related Fields. International Symposium co-sponsored by FIG.

Web site: <http://www.gis-sofia.bg/sgzb>

21-25 November, Bandar Seri Begawan, Brunei Darussalam

8th South East Asia Survey Conference (SEASC). Co-sponsored by FIG.

Website: <http://www.seasc2005.org.bn/>

Deadline for full papers: 30 September 2005

8-10 December, Hong Kong SAR, China

The 2005 International Symposium on GPS/GNSS. Co-sponsored by FIG Commission 4 and 5.

Web site: <http://www.lsgi.polyu.edu.hk/GNSS2005>

5th FIG Regional Conference for Africa.

8-11 March, Accra, Ghana

Web site: www.fig.net/accra

There is a call for abstracts and they are requested to be submitted in electronic format, if possible in MS-Word. The deadline for abstracts is 10 November 2005. The authors will be informed by 10 December 2005 of acceptance of their paper. The deadline for full papers (not exceeding 15 pages)

is 10 January 2006. Detailed guidelines on submitting the papers are available on FIG web site - fig@fig.net

Also Commission 5 will be intending to hold a full Steering Committee meeting at this regional conference.

FIG XXIII Congress and XXIX General Assembly
8-13 October, Munich, Germany
Web site: <http://www.fig2006.de>

There is an open Call for Papers for the FIG Congress 2006 in Munich. The topics of the technical part of the congress will cover each of the ten commissions of FIG. The number of abstracts will be limited to up to two per author. All abstracts should be submitted by email to the FIG Office under fig@fig.net. Full papers are to be provided in English and include an English summary. An additional summary can be prepared in German and any other language.

Deadlines for papers:
 15 March 2006 Deadline for the abstracts
 31 May 2006 Confirmation for papers to the authors
 15 July 2006 Deadline for full papers

..... **For your interest**

To all Commission 5 Delegates please note that the Comm 5 Steering Committee will be holding a "GNSS RTK Network Providers Forum" in Munich. This forum would include invited overview papers, papers / posters and a panel discussion around this topic. So organise to be there to discuss this hot topic.

Commission 5 2006-10 Workplan

To all Commission 5 participates - active or non active.....if you have any ideas for this Commissions work plan, term 2006-10, please email your thoughts, comments, proposals to Rudolf Staiger (Chair -Elect) -

rudolf.staiger@uni-essen.de

Commission 5.2 Website

FIG Commission 5.2 Working Group Reference Frame in Practice needs your ASSISTANCE. We are rebuilding the Commission 5.2 website to be a more useful tool for the practical and operational surveyor by presenting information on reference frame issues and giving links to key

web sites and other resources on the topic. So HELP out by supplying some websites from your Region that relate to reference frame issues OR fit into the following categories -

MUST VISIT SIGHTS
REGIONAL REFERENCE FRAME
NATIONAL MAPPING AGENCIES
GEODETIC INFRASTRUCTURE
ON-LINE GPS PROCESSING
GEODETIC ASSOCIATIONS

Please email your information to
Mikael Lilje - mikael.lilje@lm.se

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Robert Sarib - robert.sarib@nt.gov.au

OR

Cyril Romieu - romieu@ensg.ign.fr

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

Please note the next Commission 5 newsletter is scheduled for January 2006.