IAG Commission 4, 'Positioning & Applications'

The IAG is organised into Commissions, Services, the Global Geodetic Observing System (GGOS) and the Inter-Commission Committee on Theory (ICCT). Details can be found in the *Geodesists' Handbook* [1]. The four Commissions, their goals and their activities are being highlighted in a series of articles in *GIM International*.

Commission 4 promotes research that leverages current and emerging positioning techniques and technologies to deliver practical and theoretical solutions for engineering, scientific and mapping applications. It carries out its work in close cooperation with the IAG Services and other IAG entities, as well as via linkages with relevant entities within scientific and professional sister organisations. In fact, the Commission 4 Steering Committee includes representatives of the International Federation of Surveyors (FIG), International Society for Photogrammetry and Remote Sensing (ISPRS) and the Institute of Navigation (ION).
Recognising the central role of GNSS in providing high-accuracy positioning information today and into the future, Commission 4 maintains a focus on developing tools that enhance and assure the positioning performance of GNSS-based positioning solutions for a range of geodetic and other scientific and engineering applications. Significant activities involve the development of theory, strategies and tools for modelling and/or mitigating the effects of interference, signal loss and atmospheric effects as they apply to precise GNSS positioning technology. It also addresses technical and institutional issues necessary for developing backups to GNSS, integrated positioning solutions, automated processing capabilities and quality control measures.

President Dorota Brzezinska.

Vice president Allison Kealy.

In the past few years, the scope of Commission 4 has broadened to include geodetic remote sensing using Synthetic Aperture Radar (SAR), Lidar and Satellite Altimetry (SA) systems for a variety of applications. One of the primary goals of Commission 4 is to promote research collaborations across various science and engineering disciplines, and to organise joint professional workshops and seminars with its sister organisations FIG, ISPRS and ION.

Commission 4 is grouped into a number of sub-commissions as below (with the chairpersons listed in brackets):
- SC4.1 Alternatives & Backups to GNSS (Guenther Retscher, Austria)
- SC4.2 Geodesy in Geospatial Mapping & Engineering (Jinling Wang, Australia)
- SC4.3 Remote Sensing & Modelling of the Atmosphere (Marcelo Santos, Canada)
- SC4.4 Applications of Satellite & Airborne Imaging Systems (Zhenhong Li, United Kingdom)
- SC4.5 High-Precision GNSS Algorithms & Applications (Yang Gao, Canada)
- SC4.6 GNSS-Reflectometry & Applications (Shuanggen Jin, China)

The Commission 4 Steering Committee comprises president Dorota Brzezinska; vice president Allison Kealy; the chairs of the six sub-commissions; representatives of sister organisations: Charles Toth (ISPRS), Gethin Roberts (FIG) and Larry Hothem (ION); representative of the Services: Andrzej Krankowski; and a member-at-large: Pawel Wielgosz.
The main tasks of Commission 4 in the future will include:
- Participation in conferences, seminars, workshops, symposia and schools as session chairs, conveners, workshop instructors, committee members and presenters
- Conducting research activities in multi-sensor navigation, cooperative positioning and disaster monitoring and management
- Acting as co-editors for several special journal issues
- Maintaining a dedicated website for all Commission 4 activities [2].

Commission 4 will coordinate a number of sessions at the upcoming IAG Scientific Assembly to be held in Potsdam, Germany, 1-6 September 2013, to celebrate the 150th anniversary of the IAG [3].

MORE INFORMATION
1. http://bit.ly/XYhh8e
2. http://bit.ly/16W6J4m
3. www.iag2013.org/IAG_2013/Welcome.html
4. www.iag-aig.org

The mission of the Association is the advancement of geodesy.

IAG implements its mission by:

- advancing geodetic theory through research and teaching,
- collecting, analysing and modelling observational data,
- stimulating technological development, and
- providing a consistent representation of the figure, rotation and gravity field of the Earth and planets, and their temporal variations.

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Since the predecessor of the IAG, the 'Mitteleuropäische Gradmessung', was established back in 1862, IAG is celebrating its 150th anniversary in 2012. Celebrations will climax in September 2013 at the IAG Scientific Assembly in Potsdam, Germany. This location is particularly significant since the first ever meeting, in April 1862, was organised by General Baeyer, as representative of the Kingdom of Prussia, in Berlin. The participants were several geodesists from the Kingdom of Saxony and the Austrian-Hungarian Empire.