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The *IAG Newsletter* is under the editorial responsibility of the *Communication and Outreach Branch (COB)* of the IAG.

It is an open forum and contributors are welcome to send material (preferably in electronic form) to the IAG COB (newsletter@iag-aig.org). These contributions should complement information sent by IAG officials or by IAG symposia organizers (reports and announcements). The *IAG Newsletter* is published monthly. It is available in different formats from the IAG new internet site: <http://www.iag-aig.org>

Each *IAG Newsletter* includes several of the following topics:

- I. news from the Bureau Members
- II. general information
- III. reports of IAG symposia
- IV. reports by commissions, special commissions or study groups
- V. symposia announcements
- VI. book reviews
- VII. fast bibliography

Books for review are the responsibility of:

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General Announcements

GOCE Announcement of Opportunity by ESA

The European Space Agency (ESA) has recently announced the opportunity to conduct research and application development projects using data from the first core Earth Explorer satellite "GOCE". This call is open to any user throughout the world.

This announcement is seeking proposals principally covering the GOCE mission objectives.

Additionally it is open to proposals covering:

- a) Wider uses of the GOCE level 1b and level 2 data
- b) Innovative uses of the GOCE gradiometer data in a low Earth orbit
- c) Technology and tools development.

According to the formal framework for AO, approved by Member States' Earth Observation Programme Board and reflected in the Terms and Conditions for use of data for research and application development (Category-1 data use):

- ESA will provide a limited and agreed amount of data free of charge to accepted AO Principal Investigators (PI)
- The data provided through the AO can be used only for the purpose defined in the accepted proposal
- The Principal Investigator will provide regular progress reports and widely publish his results.

Should you be interested in participating this Opportunity, please submit your proposal directly onto the following web site: <http://eopi.esa.int/GOCE>

The deadline for submission of proposals is **8 December 2006**.

For any further information, please contact ESA either by e-mail or fax at: eohelp@esa.int or Fax: +36 06 94 180 272/292.

SOURCE: [HTTP://EOP1.ESA.INT/GOCE](http://EOP1.ESA.INT/GOCE)

Meeting Announcements

"Scientific and Fundamental Aspects of the Galileo Programme"

2-4 October 2007, Toulouse, France.

An international colloquium on fundamental aspects and scientific applications of Galileo and GNSS will be held in Toulouse in October 2007. ANAE (Académie Nationale de l'Air et de l'Espace), Bureau des Longitudes, Académie de Marine and ESA (European Space Agency), are the main instigators of this colloquium meant to contribute to the 50th anniversary celebrations of the launch of Sputnik.

The colloquium will address three major issues:

- The fundamental aspects of navigation by satellites and Galileo: geodetic and temporal reference frames, relativistic frame, on board and ground clocks, orbits, radiative environment in orbit, intersatellite links, fundamental aspects of propagation, tropospheric and ionospheric corrections, calibration and validation, relations with international organisations (BIPM, IGS).

- Scientific applications in meteorology, geodesy, geophysics, space physics, oceanography, land surface and ecosystem studies, using either normal or reflected signals, differential measurements, phase measurements, occultations, in real or delayed modes, using receivers placed on the ground, in airplanes or in scientific satellites.
- Scientific developments in physics and dealing with future systems, particularly in testing fundamental laws, in astronomy, in quantum communication, and in developing clocks or experiments based on GNSS.

This colloquium intends to bring together leading members of the European scientific community and their international partners. One of its aims is to propose to Galileo partners means of enhancing the scientific use of Galileo and to contribute to GNSS development based on scientific approaches.

Contact Points:

Organisation Committee: Martine.Segur@anae.fr

Scientific Committee: Clovis.de.Matos@esa.int

SOURCE: [HTTP://WWW.CONGREX.NL/07A06/](http://www.congrex.nl/07A06/)

Symposium on Terrestrial Gravimetry: Static and Mobile Measurements

St. Petersburg, Russia, 20 - 22 August 2007.

The meeting is being organized by Leonid Vitushkin, Chair of the Study Group 2.1 (Comparison of Absolute Gravimeters) of Commission 2. The symposium is officially sponsored by the IAG, co-sponsored by the Institute of Earth Physics of the Russian Academy of Sciences, Moscow; and the BIPM.

The topics of the conference will include the design and investigations of the measuring instruments for the absolute and relative measurement of the gravity field, their applications for terrestrial, shipboard and airborne platforms, and in the metrology of gravimetry. Traditional free-fall, superconducting, and spring-type gravimeters, gradiometers, and new technologies, such as based on atom interferometry, will be especially welcome, as will results and methodologies of static and mobile campaigns, as well as current and future networks. Geophysical interpretation of results and connection with space-borne systems are of limited interest, since the emphasis is on terrestrial (including airborne) instrumentation and methods to extract gravity field measurements for a variety of applications.

More details about the symposium will soon be available on the website of the meeting. Contact person of the Local Organising Committee is Mrs. Margarita Grishina (mgrishina@eprib.ru).

CHRISTOPHER JEKELI AND
LEONID VITUSHKIN

IAG Sponsored Meetings

International Symposium "Modern Technologies, Education and Professional Practice in Geodesy and Related Fields

9-10 November 2006, Sofia, Bulgaria

The symposium (with a special session for young specialists and students) will be held at the House of Science and Techniques, 108 Rakovski Str., Sofia, 09-10 November 2006, from 9 a.m. to 6 p.m. For up-to-date information please, visit the symposium website at: <http://www.gis-sofia.bg/sgzb/>.

24th General Assembly of the IUGG

2 - 13 July 2007, Perugia, Italy

The XXIV IUGG General Assembly will be held in Perugia from July 2nd to July 13th 2007. The conference events (sessions, workshops, lectures, symposia) will take place on the campus of the University of Perugia. The poster session and special events will take place in the historical center of the city. The deadline for early bird registration is April 15, 2007, for electronic submission of abstracts: January 31, 2007. The website of the Assembly is <http://www.iugg2007perugia.it/>.

Symposium on Terrestrial Gravimetry: Static and Mobile Measurements

20 - 22 August 2007, St. Petersburg, Russia.

The topics of the conference will include the design and investigations of the measuring instruments for the absolute and relative measurement of the gravity field, their applications for terrestrial, shipboard and airborne platforms, and in the metrology of gravimetry. Traditional free-fall, superconducting, and spring-type gravimeters, gradiometers, and new technologies, such as based on atom interferometry, will be especially welcome, as will results and methodologies of static and mobile campaigns, as well as current and future networks. More details about the symposium will soon be available on the website of the meeting.

IAG Related Meetings

State of the Art of Issues related to Engineering Education in Europe

Athens, Greece 30 November – 1 December 2006

The workshop aims to record in the form of “white Bible” the actual present status in Europe about issues related to Higher Education, such as quality assurance and courses’ accreditation processes, academic mobility, alternative methods in teaching and learning, and relevant issues. The emphasis is for Engineering Education and particularly to issues that have been included in the activities and achievements of Erasmus / Socrates Networks. Further information on Workshop is available on the web site: <http://www.top.upv.es/eegecs/news.asp>.

UN/China/ESA Training Course on the Use and Applications of GNSS

4 – 8 December 2006, Beijing, China

This training course is being organized in cooperation with the Government of China and the European Space Agency (ESA), as part of the activities of the United Nations Programme on Space Applications, for the benefit of the developing countries in Asia and the Pacific region. The training course will be hosted by the National Remote Sensing Centre of China and China-Europe GNSS Technology Training and Cooperation Centre in Beijing from 4 to 8 December 2006. The website link of the above planned training course is <http://www.unoosa.org/oosa/en/SAP/gnss/index.html>.

GEOS 2007

1-3 March 2007, Prague, Czech Republic

The 2nd International Trade Fair of Geodesy, Cartography, Navigation and Related Informatics will take place in Prague during March 1st to 3rd 2007. Other information dealing with the accompanied conference that will take place during March 1st and 2nd 2007 will be found at the following URL <http://www.igeos.cz/pages/conference.html>.

Munich Satellite Navigation Summit 2007

6 - 8 March 2007, Munich, Germany

The Munich Satellite Navigation Summit 2007 – the fifth one – to be held 6-8 March, 2007 in the famous “Residenz München”, Germany, has been established as the European and international conference with global impact featuring invited high-ranking worldwide speakers from industry, science and governments dealing with the directions of satellite navigation now and in the future. Further information is available on the website <http://www.munich-satellite-navigation-summit.org>.

First Asia workshop on superconducting gravimetry

12-16 March 2007, Hsinchu, Taiwan

The promotion of superconducting gravimetry research includes, among others, exchange of gravity data, software, research personnel and inter-comparison of absolute gravimeters. The workshop is open not only to scientists in Asia, but also to scientists in the world. The abstract submission deadline is December 31, 2006. Please visit http://space.cv.nctu.edu.tw/SG/Asia_workshop.html for details.

WMSCI 2007

8-11 July, 2007, Orlando, Florida, USA

The 11th World Multi-Conference on Systemics, Cybernetics and Informatics (WMSCI 2007) will take place in Orlando, Florida, USA, from July 8-11, 2007. WMSCI 2007 is an international forum for scientists and engineers, researchers and consultants, theoreticians and practitioners in the fields of Systemics, Cybernetics and Informatics. The topic of the conference is related to the area of Geographical Information Systems. Visit the conference homepage at <http://www.iis-cyber.org/wmsci2007> for further details.

“Scientific and Fundamental Aspects of the Galileo Programme”

2-4 October 2007, Toulouse, France

An international colloquium on fundamental aspects and scientific applications of Galileo and GNSS will be held in Toulouse in October 2007. ANAE (Académie Nationale de l’Air et de l’Espace), Bureau des Longitudes, Académie de Marine and ESA (European Space Agency), are the main instigators of this colloquium meant to contribute to the 50th anniversary celebrations of the launch of Sputnik. For more information please visit <http://www.congrex.nl/07A06/>.

IAG Sister Societies’ General Assemblies

XIIIth ISM Congress

September 24-28, 2007, Budapest, Hungary

The XIIIth Congress of International Society for Mine Surveying (ISM) will be held at Budapest University of Technology and Economics, Budapest, Hungary. The preliminary program is available from the ISM website: <http://www.ism.rwth-aachen.de>.

Meeting Report

1st AFREF Technical Workshop

Cape Town, South Africa

9-13 July 2006

Introduction and Background

AFREF is designed to unify the co-ordinate reference systems of Africa to create an environment in which all activities requiring sound geo-spatial information such as surveying, mapping, geographical information systems, navigation, engineering projects, atmospheric and geophysics research and applications and disaster monitoring and mitigation are based on a uniform modern international co-ordinate reference system. The project has been initiated from within Africa and is being implemented, managed and executed by African geodesists, surveyors and scientists with assistance from the international community.

Although the ideals and concepts of AFREF have been debated for a number of years, the scientific and technical aspects of the project have not been highlighted in a dedicated workshop. In order to close this gap, a technical workshop was held in Cape Town, South Africa between from 9 to 13 July 2006.

Aims and Objectives

The primary objective of the workshop was to introduce representatives of National Mapping Organisations (NMO’s) and academic institutions of African countries to the scientific and technical aspects of the AFREF project. To achieve this, a number of internationally recognised geodesists and Global Navigation Satellite Systems (GNSS) specialists were invited to give presentations on scientific, technical and practical topics of importance to the project. An equally important objective

was to facilitate the interaction between the representatives of NMO's and presenters in an informal atmosphere.

Sponsorship

Direct and indirect sponsorship for the workshop was provided by a number of organisations. Airfares and/or accommodation for delegates from Africa, the general running costs of the workshop and social events were paid through direct sponsorship. Indirect sponsorship for the workshop was provided by the home organisations of presenters who paid for their airfares and accommodation. The following government or non-government organisations provided sponsorship for airfares, accommodation or logistic costs (in alphabetical order):

- Chief Directorate: Surveys and Mapping of the Department of Land Affairs of South Africa (CDSM);
- International Association of Geodesy (IAG);
- National Research Foundation of South Africa (NRF);
- University of Cape Town (UCT);
- University NAVSTAR Consortium Inc. (UNAVCO); and
- United Nations Office for Outer Space Affairs (UNOOSA).

The following suppliers of GNSS equipment provided sponsorship for the two social events (in alphabetical order):

- Leica Geosystems Africa (Pty) Ltd;
- OmniSTAR Pty Ltd (South Africa);
- Optron (Pty) Ltd;
- Sokkia-RSA (Pty) Ltd; and
- VI Instruments Division of Hudaco Trading Ltd.

The willingness of the above organisations to support the workshop is indicative of their support for the AFREF project and is to be commended.

Country Representation

There was a good geographical distribution of the 17 African countries represented by 38 delegates. In addition, 4 representatives from 2 of the 3 regional centres for mapping in Africa also participated in the workshop viz. the Regional Centre for Mapping of Resources for Development (RCMRD) based in Kenya and the Nigerian based Regional Centre for Training in Aerospace Surveys (RECTAS). 15 speakers gave presentations.

Programme

Apart from an introductory session of formal welcomes and preamble speeches, the programme was divided into 10 sessions covering 4 broad themes viz.:

Background and reports	(6 presentations)
Reference systems and frames	(7 presentations)
Geodetic stations and permanent GNSS stations	(9 presentations)
Data processing and analysis	(2 presentations)

The presentations were all of a very high quality and were extremely informative and useful in content. Of great interest to participants was a presentation on the SIRGAS project and the lessons that could be learnt from it. SIRGAS is a project to unite the geodetic reference systems and frames in South America and is very similar to AFREF in its objectives.

A visit was arranged to the offices of the Chief Directorate: Surveys and Mapping in which the control centre for the South African network of permanent GNSS stations (TrigNet) is situated. Another visit was arranged to the Hermanus Magnetic Observatory where, besides being the location of one of the TrigNet remote sites, research is being carried out on ionospheric mapping using TrigNet GNSS data.

Objectives achieved

It is believed that the primary objective of the AFREF Technical Workshop was achieved. The AFREF Steering Committee of the United Nations Economic Commission for Africa's Committee on Development Information-Geo (CODI-Geo) confirmed this at their meeting held on Friday 14 July. It is believed that the delegates who attended the workshop sessions responded well and learned a great deal of the aims and objectives of AFREF as well as the theoretical, technical and practical implications of the project. It is also believed that delegates will continue to strongly support the

project. A critical factor in succeeding in these aims and objectives, however, will rest with the AFREF Steering Committee who will have to maintain the high level of interest in the project through continuing communication, seminars and workshops.

RICHARD WONNACOTT
Chair IAG Sub-Commission 1.3d Africa
30 September 2006