



International Association of Geodesy

Newsletter

July 2014

Editor: Gyula Tóth

IGAG Communication and Outreach Branch
Department of Geodesy and Surveying
Budapest University of Technology and Economics
H-1521 Budapest, Hungary

Information Service of the International Association of Geodesy

<http://www.iag-aig.org>

newsletter@iag-aig.org

Contents

General Announcements	3
Minutes of the Sixth Meeting of the IAG EC 2011-2015.....	3
Newton's Bulletin Calls for Papers on Assessment of GOCE Geopotential Models	8
Release of Reference Frames in Practice Manual.....	9
Meeting Announcements	10
Meetings Calendar	10
AOGS 11 th Annual Meeting	10
40th COSPAR Scientific Assembly.....	10
XXXI General Assembly and Scientific Symposium of the URSI	11
3rd International School on "Least Squares Approach to Modelling the Geoid"	11
18th WEGENER General Assembly: Measuring and Modelling our Dynamic Planet	11
Summer school on "GRACE/GRACE-FO applications for the terrestrial water cycle"	11
Journées 2014 "Systemes de reference spatio-temporels"	11
Eighth FORMOSAT-3/COSMIC Data Users' Workshop	11
INTERGEO / Geodätische Woche.....	11
European VLBI Network (EVN) Symposium	11
REFAG2014.....	11
The Climate Symposium 2014	11
8 th Coastal Altimetry Workshop.....	11
SARAL/AltiKa Workshop.....	11
IDS Workshop.....	11
19th International Workshop on Laser Ranging	11
Ocean Surface Topography Science Team (OSTST) meeting	12
Digital Earth Summit 2014	12
Third International VLBI Technology Workshop	12
ISPRS Technical Commission I Symposium Sustaining Land Imaging: UAVs to Satellites.....	12
PECORA 19.....	12
ICSU GRC Conference "Improving Geophysical Risk Assessment, Forecasting and Management"	12
Symposium SIRGAS 2014.....	12
11th International Conference on Location-based Services	12
AGU 2014 Fall Meeting.....	12
18. Internationale Geodaetische Woche Obergurgl	12
European Geosciences Union General Assembly 2015.....	12
SPACOMM 2015.....	12
22nd Meeting of the European VLBI Group for Geodesy and Astrometry (EVGA)	12
TransNav 2015	12
XXVI IUGG General Assembly	13
XXIXth IAU General Assembly.....	13
ISDE 2015.....	13
18th Geodynamics and Earth Tide Symposium 2016	13
41th COSPAR Scientific Assembly.....	13
Reports	13
The 3rd International Gravity Field Service General Assembly (IGFS2014)	13

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:

C.C Tscherning
University of Copenhagen
Dept. of Geophysics
Copenhagen, Denmark
Fax: +45 35365357
E-mail: cct@gfy.ku.dk

General Announcements

Minutes of the Sixth Meeting of the IAG EC 2011-2015

Place: Techn. University, Inst. Geodäsie & Geophysik, Gusshausstr. 27-29, Vienna, Austria

Time: Saturday, April 26, 2014, 10:30 – 18:00

Attendees: (voting Members)	IAG President	Ch. Rizos (also GGOS CB member)
	IAG Vice-President	H. Schuh
	IAG Secretary General	H. Drewes
	President Commission 2	U. Marti
	President Commission 3	R. Gross (also GGOS CB member)
	President of the COB	J. Ádám
	Chair of GGOS	H. Kutterer (also GGOS CB member)
	Representatives of the Services	R. Barzaghi
		T. Herring (also GGOS CB member)
		R. Neilan (also GGOS CB member)
(non-voting Members)	ICCT Vice-President	P. Novak (stand-in for N. Sneeuw)
	Representative of Commission 4	A. Singleton (stand-in for D. Brzezinska)
	IAG Assistant Secretary	H. Hornik
(GGOS CB Members)	Head GGOS Coordinating Board	G. Bianco (also Chair of GGOS WG)
	Directors of GGOS Bureaus	D. Angermann, M. Pearlman
	Chairs of GGOS Working Groups	M. Thomas, D. Thaller
Guests:	GGOS Officers	S. Bachmann (GGOS, BKG)
		J. Ceva (NASA / JPL)
		A. Craddock (IGS, NASA / JPL)
		T. Johnson (NASA Hq.)
		C. Luceri (GGOS Coordinating Office, ASI)
	E. Pavlis (Univ. of Baltimore County)	
Regrets:	Immediate IAG Past President	M. Sideris
	President Commission 1	T. van Dam
	President Commission 4	D. Grejner-Brzezinska
	Members at Large	C. Brunini, R. Wonnacott
	ICCT President	N. Sneeuw

Agenda: Joint meeting with the GGOS Coordinating Board

1. Welcome and adoption of agenda
2. Report and discussion of the GGOS status and future development

IAG Executive Committee Meeting

3. Report of the Services and of the IAG Services Assessment
4. Report of the ICCT
5. Report of the COB
6. Report of the Members at Large on developing countries
7. Report of the Journal of Geodesy Editor in Chief
8. Report of the Commissions
9. Report from the IUGG
10. IAG Symposia Series Publications
11. Sponsorship of Symposia
12. Any other Business
13. Adjourn

Minutes of the IAG EC – GGOS CB joint meeting

1. Welcome and adoption of agenda

The meeting took place on the occasion of the EGU General Assembly, Vienna, April 28 – May 03, 2014. It was split into two parts, the first part as a joint meeting with the GGOS CB, the second part as a regular IAG EC meeting. *Ch. Rizos* welcomed the members of the IAG Executive Committee (10 out of 15 voting members, 3 non-voting members), 5 members of the GGOS Coordinating Board, and 6 guests). He referred to the session on the IAG Services Assessment (ISA) which was held the day before. Nearly all the Services had sent delegates to the meeting and gave presentations on their structure, objectives and activities. It was stated that a successful work of GGOS can only be achieved by the continuous and efficient cooperation of all the IAG bodies. Thus, the main task of the Services is to contribute to the work of GGOS. An ISA coordinating team consisting of the IAG Bureau, the Representatives of the Services in the EC, and the GGOS Chair had prepared the meeting.

The agenda had been distributed previously by e-mail and was unanimously adopted. The minutes of the last IAG EC meeting (Potsdam, September 1, 2013) had also been distributed and made available in the password protected section of the IAG Office Homepage <http://iag.dgfi.badw.de/>.

2. Report and discussion of the GGOS status and future development

H. Kutterer gave an overview on the GGOS session which took place just before this meeting. He emphasised that within GGOS an intensive exchange of information is maintained by monthly telecons of the Coordinating Board, bi-annual meetings, annual meetings of the Consortium and others. *J. Ceva* then explained the newly formulated strategic plan for the GGOS; this plan will be discussed and should be adopted at the next meeting in San Francisco, December 2014. The text explicitly refers on the fact that GGOS is a component of the IAG and acts as an integrator of all the other components (Services, Commissions, etc.). Referring to a remark of *H. Drewes*, *H. Kutterer* confirmed that the text will be modified such that active work and products of GGOS are explained in detail. Concerning the alignment of GGOS, *H. Kutterer* explained the present structure installed in 2012 and emphasised that this structure will not be changed in the near future. *R. Neilan* moved to adopt the draft of the presented GGOS strategic plan now; it was seconded by *Ch. Rizos*, and approved by the EC.

H. Schuh proposed to make the information flow - especially with the GGOS Coordinating Office - more comprehensible, e.g. by a permanent link with the IAG COB. *M. Pearlman* supported this plan and proposed the integration of a kind of “information incubator”. *G. Bianco* emphasised the need to conduct the outreach to the scientific community and the public more professionally. *H. Kutterer* assured that this would be discussed at the next telecon. Concerning the interaction of the IAG Commissions and GGOS, *U. Marti* mentioned that the Commissions’ integration within the GGOS is already ensured by their representation on the Coordinating Board. However, these formal structures have still to be exercised with actual work tasks. *R. Gross* agreed and mentioned that the Commissions are not yet integrated as much as would be desirable. *H. Kutterer* thanked everyone for the proposed ideas and agreed to improve the present status. *R. Neilan* explained then ICSU’s World Data System (WDS). There are four types of WDS membership: Network Members, Regular Members, Partner Members, and Associate Members. IGS, ILRS, IVS, and IDS are network members, IERS is a regular member, the IUGG is a partner member, GGOS has applied as a partner member, and it could also be affiliated via IAG as an associate member.

Minutes of the regular EC meeting

3. Report of the Services and of the IAG Services Assessment

T. Herring gave a summary report on behalf of the “Geometric IAG Services”: BIPM –Department Time and Frequency, IERS, IVS, and PSMSL. He mentioned in particular the planned World Radio Conference 2015, in preparation of which BIPM and ITU organised a workshop on the future of the international time scale in September 2013, where in particular the omission of the leap second was discussed. The IERS underwent a retreat in 2013, the IVS held its 8th General Meeting in Shanghai, March 2014, and the PSMSL continues its activities with regard to workshops/conferences and with data acquisition and analysis.

R. Barzagli reported on the “Gravity Field Services”: IGFS, BGI, IGeS, ICGEM, ICET, and IDEMS. The activities are coordinated by the IGFS, supported by an Advisory Board, a Central Bureau, as well as a Technical Centre. He mentioned the 3rd IGFS General Assembly, Shanghai, 30.06.-06.07.2014 (<http://202.127.29.4/meetings/igfs2014/>) and the 11th IGeS International School on Geoid and Height Datum, Loja, Ecuador, 07.-11-2013 (<http://202.127.29.4/meetings/igfs2014/>). For legal reasons in Italy, the IGeS changed its name to the “International Service for the Geoid” (ISG). Special attention was given to the present situation and future of the IDEMS. The former director of this Service, P. Berry, has retired some time ago. The web page is presently managed by R. Smith (EAPRS Laboratory Faculty of Technology, Gateway House, De Montfort University), the actual work, however, has practically ceased. There are two expressions of interest for

a possible renewal of IDEMS: (1) Curtin University, Australia (Dr. *C. Hirt* (director) and Dr. *M. Kuhn* (deputy director). A formal proposal has been submitted to Commission 2 and IGFS; (2) ESRI, USA (contact person Dr. Kevin M. Kelly). Contacts started in Potsdam at the latest IAG Assembly. The ESRI “Content Team” would like to initiate a detailed discussion on a possible ESRI participation in IDEMS. *R. Barzaghi* explained the two proposals and expressed his opinion to merge both proposals, thus achieving an optimal solution with the scientific topics being managed at Curtin University, and data storage / management at ESRI.

R. Neilan presented reports on the remaining Services: IAS, IDS, IGS, and ILRS. The IAS shows little activity at the moment because the chairman has retired. DGFI has indicated its wish to re-activate the service and nominate a new chairperson. Concerning the IDS, *R. Neilan* referred to the detailed presentation at the ISA meeting the day before. The IGS will hold its 20 year anniversary workshop in Pasadena, USA, in June 2014. A new chair will be elected during the upcoming elections. The ILRS will celebrate its 19th International Workshop with an event “Celebrating 50 Years of SLR: Remembering the Past and Planning for the Future”. This celebration will take place together with the National Aeronautics and Space Administration (NASA) and the Smithsonian Astrophysical Observatory during 27.-31.10.2014 in Annapolis, Maryland, USA.

Concluding these reports *Ch. Rizos* gave a detailed report on the IAG Services’ Assessment (ISA) meeting the day before. He pointed out that the activity of all IAG Services is a basic requirement for a successful work of GGOS. He presented the ISA Terms of Reference and the list of teams of three reviewers for each Service which has been set up during the ISA meeting: A lead person and another member from the ISA coordinating team and an additional member from the IAG Commissions. It is not the intention to punish or criticise the Services, but actually to work to improve their performance. *H. Schuh* warned against setting the expectations too high as the work is done in nearly all cases on a voluntary basis. The Services have also been urged to update their websites regularly. Some of them are rather out-of-date giving an unfavourable impression.

It was concluded to formulate a list of important standard criteria by May, this list then will be submitted to the respective teams of reviewers as basis for their evaluation and further decisions. In September / October a telecon or meeting should take place to discuss further actions. *J. Ádám* added to urge all Services to present regularly detailed reports for the IAG Travaux, newsletters and the IAG Website. These texts should not only repeat already existing facts or the structure and ToR, but they should reflect real scientific progress.

4. Report of the ICCT

By proxy of *N. Sneeuw*, *P. Novak* reported on the latest achievements of the Inter-Commission Committee on Theory (ICCT). The ICCT comprises 9 SSG’s, each of them is affiliated to 1 or 2 Commissions, some of them also to GGOS. The presentation gave an overview of their activities. As further documentation of this work, the mid-term report to the IAG Scientific Assembly 2013 was mentioned. From 17–21.06.2013, the VIIIth HotineMarussi Symposium was held in Rome, Italy, where about 100 participants contributed with 70 oral presentations and 15 posters, 40 of them were selected for publication in the proceedings in the IAG Symposia series. The symposium has taken place in the past every 4 years, but according to a discussion in the EC the next one will be held in 2016 in order to avoid a temporal collision with the IAG General Assemblies.

5. Report of the COB

J. Ádám gave a short report on the work of the Communication and Outreach Branch. The monthly IAG Newsletter is regularly sent to ca. 900 addresses, and parts of the contents are published in the JoG. He asked all colleagues to contribute relevant information to this important information tool, which also reflects the activity of the IAG to the scientific community in other fields of geoscience. The IAG Website is maintained and updated by the COB. *H. Drewes* claimed that the website is lacking relevant information, therefore all IAG bodies as well as individuals engaged in the IAG are urgently asked to contribute in order to keep the website updated with actual information in the same way as the IUGG Webpage. All EC members are invited to contribute to the IUGG Website as well. *H. Schuh* added that the IAG Website should also report on all relevant conferences, also external ones as far as they have any relation to geodesy.

6. Report of the Members at Large on developing countries

As a Member at Large *C. Brunini* had sent a written report on developing countries which was presented by *H. Drewes*. It describes in particular the activities of South and Central America. The report especially mentions the “School on Reference Systems, Crustal Deformation and Ionosphere Monitoring” and the “SIRGAS General Meeting 2013”, both held in Panama City in October 2013. Both conferences were well attended. Moreover the transfer of the Transportable Integrated Geodetic Observatory (TIGO) from its present location in Concepción, Chile, to Villa Elisa close to La Plata, Argentina, was mentioned. The instrument is a fundamental station of the

global geodetic networks (GNSS, SLR, VLBI, absolute and relative gravimetry, etc.). The transfer is planned for autumn 2014.

7. Report of the Journal of Geodesy Editor in Chief

H. Drewes presented an overview prepared by *R. Klees* on the Journal of Geodesy. Fortunately the journal ranking have again increased and have now reached the highest level ever. As *R. Klees* writes, it will be hard to maintain this level unless new initiatives on topical special issues or new initiatives for topical special issues are launched. The number of article submissions has also reached the highest number ever. However, the number of rejections is also rather high.

8. Report of the Commissions

There was no report of **Commission 1**.

U. Marti presented the recent developments within **Commission 2**, in particular mentioning some conferences. The next Commission 2 meeting will take place in Shanghai, China, July 2014. Moreover the mid-term report of the IUGG project “Detailed Geoid Model for Africa” was mentioned. In this context a complaint of *H. Abd-Elmotaal* was cited that the BGI does not make available the relevant gravity data to the project, despite it being available in the BGI data base. Therefore large areas are without good data and the African Geoid cannot be computed with the required precision. *U. Marti* will discuss this item once more with *S. Bonvalot* and *H. Abd-Elmotaal*. The African Geoid is a project of the IAG and the BGI is a component of the IAG, therefore it will give a bad impression to IUGG that the data flow is blocked.

R. Gross reported that the Sub-Commissions of **Commission 3** have recently been quite active. In particular he mentioned the forthcoming “International Symposium on Geodesy for Earthquakes and Natural Hazards” in Matsushima, Miyagi, Japan, in July 2014. Concerning the conference proceedings *H. Drewes* emphasised that according to the IAG Bylaws the proceedings of every IAG Symposium should be published in the Springer series. On the other hand not every Symposium must be documented as a printed volume if there are not sufficient worthy contributions. Thus it was proposed to modify the Bylaws in an appropriate way, e.g. to document the papers and results in the web or in any other way.

By proxy of *D. Grejner-Brzezinska*, *A. Singleton* gave a detailed overview of the activities of **Commission 4**, in particular those executed by the six Sub-Commissions and other sub-components. Commission 4 is closely cooperating with the IAG Services and other IAG entities, as well as via linkages with relevant entities within scientific and professional sister organizations such as Commission 1 “Sensors and Platforms for Remote Sensing” of the International Society for Photogrammetry and Remote Sensing (ISPRS), Commission 5 “Positioning and Measurement” of the International Federation of Surveyors (FIG), as well as the U.S. Institute of Navigation (ION). Moreover *A. Singleton* reported on several symposia organised by the Commission.

Summarising the Commissions’ reports, *H. Drewes* referred once more the IAG Statutes and Bylaws which state that all IAG entities have to report biennially at the IUGG General Assemblies and the IAG Scientific Assemblies by sending written reports to be published in the *Travaux*. These activity reports may not be replaced by general reports on conferences, etc. He referred to the latest IAG Scientific Assembly 2013 in Potsdam, when 3 Working Groups were discontinued due to inactivity. Therefore the Commission Presidents are asked to regularly review the activities of the sub-components (Sub-Commissions, Projects, Study and Working Groups).

9. Report from IUGG

H. Drewes reported on the preparations for the coming 26th IUGG General Assembly which will be held in Prague, Czech Republic, June 22 - July 3, 2015. The scientific programme will be discussed the next day in a meeting of the Scientific Organising Committee. In two weeks the programme shall be published on the internet together with a Call for Papers. Altogether more than hundred symposia are planned. He then presented the list of all IAG-related Symposia. *H. Schuh* was invited as the IAG speaker in the Union Lectures with one presentation from each Association. In the 11 Union Symposia there will be only oral presentations of invited speakers. For the 16 Inter-Association Symposia with IAG participation, everybody is invited to contribute. In the previous EC meeting it was decided that there shall be 8 IAG Association Symposia, each one organised by Commissions 1, 2 and 4, two by Commission 3 due to the presently large number of papers and posters on gravity, and a further three by the GGOS Themes. *H. Drewes* presented the proposed list of conveners and one co-convenor per Symposium, and he requested the conveners to prepare the descriptions of the Symposia for publication on the

internet, and to include additional co-conveners to cover all continents. The experience has shown that people feel more attracted to submit a paper if they are approached by a colleague from their own region.

H. Drewes then communicated that IUGG offers a grant programme every two years with a financial support of max. US\$ 20000. Each project has to be proposed by at least two IUGG Associations, and one of them has to apply as the lead partner. Only one project per Association may be submitted. The IAG is engaged in two projects, one on the geoid in Africa together with IASPEI, and another one under the leadership of IASPEI, together with IAMAS, on crustal deformation and the ionosphere in the Caribbean.

10. IAG Symposia Series Publications

Ch. Rizos presented a list prepared by *P. Willis*, showing details of the 5 volumes of the IAG Symposia Series published / in print, and several others being planned. The volume for the IUGG General Assembly will again be edited by the IAG President with *P. Willis* as the Assistant Editor and all conveners as co-editors. As already mentioned in the report of Commission 3, the EC discussed to limit the number of volumes to an adequate number per year in relation to the importance of the respective conferences held. The number of issued volumes should be limited to 2 - 3 per year. The selected Symposium should have been attended by a considerable number of participants from a large number of countries and the theme should be broad enough to be of interest for the whole scientific community. *H. Drewes* pointed out that according to the IAG Bylaws a new Editorial Board as well as an Editor in Chief has to be nominated before the next IUGG General Assembly. Therefore all colleagues are urgently requested to submit relevant proposals to the IAG Bureau.

11. Sponsorship of Symposia

H. Drewes presented the list of upcoming IAG symposia not yet approved by the EC:

- Geodesy for Earthquake and Natural Hazards, Matshushima, Japan, 2014-07-22/25;
- Journées 2014 Système de Référence Spatio-temporels, St. Petersburg, Russia, 2014-09-22/24;
- 18th WEGENER General Assembly, Leeds, UK, 2014-09-01/04;
- 11th Symposium on Location-Based-Services, Vienna, Austria, 2014-11-26/28;
- Reflectometry using GNSS and Other Signals, Potsdam, Germany, 2015-05-11/13.

12. Any other business

H. Drewes presented a letter signed by numerous colleagues from the GFZ requesting a more open access to gravity data (cf. also Commission 2 report). In the discussion it was pointed out that the BGI, although being a Service of the IAG, has a considerable number of contracts restricting data access. *H. Kutterer* objected that a lot of these classifications might really be out of date and better should be withdrawn. The EC decided to send the presented letter together with an official letter by the IAG to the BGI with the request to act in a positive manner. The topic will be put on the agenda of the next meeting and will be discussed in detail.

The United Nations (UN) General Assembly 68th Session has proclaimed 2015 as the International Year of Light and Light-based Technologies (IYL 2015). *H. Drewes* presented an announcement and asked to discuss whether the IAG should support this project (see <http://www.eps.org/light2015> or [spie.org/x105138.xml](http://www.spie.org/x105138.xml)).

The Advisory Board on the Law of the Sea (ABLOS) as a body of the International Hydrographic Organisation (IHO) and the International Association of Geodesy (IAG) has sent a letter concerning a change of its ToR and requesting the IAG's agreement. *H. Drewes* explained the details and moved to adopt this application. *Ch. Rizos* seconded and the EC approved this unanimously.

The EC decided to hold its next meeting on occasion of the coming 2014 AGU Fall Meeting in San Francisco. *R. Neilan* was asked to propose asap an appropriate date.

13. Adjourn

With thanks for all presenters and speakers as well as the organisers, the IAG President, *Ch. Rizos* closed the meeting at 18:10 (6:10 pm).

Respectfully submitted
HERMANN DREWES, IAG Secretary General
HELMUT HORNIK, Assistant Secretary

Newton's Bulletin Calls for Papers on Assessment of GOCE Geopotential Models

The Gravity field and steady-state Ocean Circulation Explorer (GOCE) satellite by European Space Agency (ESA) was launched on March 17th, 2009, and re-entered the Earth's atmosphere falling into the ocean on November 11th, 2013. Its objectives were to measure the Earth's gravity field with an accuracy of 1 mGal (one millionth of the Earth's gravity) and geoid with an accuracy of 1-2 cm at a spatial resolution of 100 km. Up to date, five generations of GOCE-only and joint GRACE and GOCE models have been developed and released since the first release in 2010.

In order to achieve a complete, inclusive and realistic assessment of the GOCE models, the Joint Working Group (JWG 2.3) between the International Gravity Field Service and the IAG Commission 2 will coordinate the publication of a dedicated issue of the Newton's Bulletin in 2015. This is an open call for papers. All scientists of interest are invited to contribute to this special issue of Newton's Bulletin. Key questions for the assessment to answer are what new and improved gravity information GOCE has brought in, how accurate GOCE satellite-only models are in terms of both commission and omission errors, and how the combined models with other satellite and terrestrial data have improved our overall knowledge on the Earth's gravity field. Independent validation data include but are not limited to:

1. GPS and levelling data;
2. Terrestrial and airborne gravity data;
3. Deflection of the vertical;
4. Satellite orbits;
5. Digital topographical models
6. Satellite altimetry data;
7. Physical oceanographic observations and models;
8. Geophysical data;
9. Other gravity-related earth observation data.

Please submit your manuscripts to us before **December 1st, 2014** for peer reviews. Once a manuscript is accepted, it will be posted online first, and published in the special issue of Newton's Bulletin on **March 1st, 2015**.

We are looking forward to your contribution to the assessment of GOCE geopotential models.

Sincerely yours,

Jianliang Huang, E-mail: Jianliang.Huang@rncan-nrcan.gc.ca

Christopher Kotsakis, E-Mail: kotsaki@topo.auth.gr

Thomas Gruber, E-Mail: Thomas.Gruber@bv.tu-muenchen.de

The Joint Working Group 2.3 of IAG Commission 2 and IGFS on Assessment of GOCE Geopotential Models

Useful links:

1. ESA GOCE :

<http://www.esa.int/esaLP/LPgoce.html>

2. International Centre for Global Earth Models:

<http://icgem.gfz-potsdam.de/ICGEM/>

- 3: International Service for the Geoid (ISG):

<http://www.isgeoid.polimi.it/Newton/newton.html>

4. International Gravimetric Bureau (BGI):

http://bgi.omp.obs-mip.fr/publications/newton_bulletin

<http://www.iag-commission2.ch/>

JIANLIANG HUANG

Release of Reference Frames in Practice Manual

At the XXV International Federation of Surveyors (FIG) Congress, in Kuala Lumpur, Malaysia, 16-21 June, the “*Reference Frames in Practice Manual*” was released. Fundamental to any geodetic system is the spatial reference frame upon which it is based. Historically these were locally or regionally based, however through the use of Global Navigation satellite Systems (GNSS) such as GPS and GLONASS, increasingly reference frames have become much more global in nature. The IAG’s International Earth Rotation and Reference System Service (IERS) has for over two decades been responsible for defining the International Terrestrial Reference Frame (ITRF). ITRF2008 is the latest realisation, with the release of ITRF2013 imminent. GNSS technology, when used in combination with geodetic products from the International GNSS Service (IGS) – such as precise satellite orbits and clocks, and GNSS tracking data from its global network of permanent reference stations – has made connecting to the ITRF easier than ever. This means that a nation’s spatial reference frame – which allows a location to be unambiguously identified through a set of coordinates – can be aligned to the ITRF through services such as the IERS and IGS.

Within FIG Commission 5 “Positioning and Measurement”, during the 2010-2014 period, the Reference Frames Working Group 5.2 identified a strong need to provide training on the topic “Reference Frames in Practice”, to provide practical advice on how nations could use the IAG services to modernise their spatial reference frames. Three successful Technical Seminars on Reference Frames were held. The inaugural meeting was held as part of the 2012 FIG Working Week in Rome, the second was held following the 2013 South East Asia Survey Congress in Manila, and the third was held as part of the joint FIG/UN-GGIM-AP Pacific Small Islands Developing States Symposium, Fiji in September 2013.

Following the first seminar a need was identified to develop and publish a manual on reference frames, in the format of two page fact sheets that could be easily updated and used individually. The Manual covers the following topics:

- Introduction
- Geodesy and Global Reference Frames
- Global Terrestrial Reference Systems and Frames
- Regional and National Reference Frames
- Height Systems
- Transforming Between Datums
- Transforming Between Datums in Non-Static Reference Frames
- Reference Frame Parameter Estimation via the Technique of Least Squares
- Least Squares Parameter Estimates
- Global Navigation Satellite Systems
- GNSS CORS Networks and Linking to ITRF
- The International GNSS Service (IGS)
- Standards and Quality of Terrestrial Reference Frames

An extremely important aspect of this Reference Frame in Practice activity is as a concrete demonstration of the value of the close cooperation in recent years between the IAG and the FIG. Contributions to the Technical Seminars and the Manual have been made by IAG and FIG experts in their specific fields of interest, and it is hoped that such collaboration will continue to grow and deepen in the future. The Manual can be downloaded from the FIG website (URL given below).

Website: <http://www.fig.net/pub/figpub/pub64/Figpub64.pdf>



XXV FIG Congress, Kuala Lumpur, Malaysia, 16-21 June 2014

Advances in GNSS precise positioning, the availability of geodetic products from the IGS, and the easy access to the ITRF, means that national geospatial reference frames or datums can be more easily aligned with the highest fidelity global reference frame than ever before.

CHRIS RIZOS

Meeting Announcements

Meetings Calendar

AOGS 11th Annual Meeting

July 28-August 1, 2014, Sapporo, Japan

URL: <http://www.asiaoceania.org/aogs2014/public.asp?page=home.htm>

40th COSPAR Scientific Assembly

August 2-10, 2014, Moscow, Russia

URL: <http://www.cospar-assembly.org/>

XXXI General Assembly and Scientific Symposium of the URSI

August 16-23, 2014, Beijing, China

URL: <http://www.chinaursigass.com/>

3rd International School on "Least Squares Approach to Modelling the Geoid"

August 18-22, 2014, Stockholm, Sweden

URL: <http://www.kth.se/en/abe/inst/som/avdelningar/geo/geodesi/handelser-1.78120>

18th WEGENER General Assembly: Measuring and Modelling our Dynamic Planet

September 1-4, 2014, Leeds, UK

URL: <http://see.leeds.ac.uk/wegener/>

Summer school on "GRACE/GRACE-FO applications for the terrestrial water cycle"

September 15-19, 2014, Mayschoss, Germany

URL: <http://www.massentransporte.de/?summerschool>

Journees 2014 "Systemes de reference spatio-temporels"

September 22-24, 2014, Pulkovo Observatory, St. Petersburg, Russia

URL: <http://journees2014.gao.su/>

Eighth FORMOSAT-3/COSMIC Data Users' Workshop

September 30 – October 2, 2014, Boulder, USA

URL: www.cosmic.ucar.edu/workshop_2014/

INTERGEO / Geodätische Woche

October 7-9, 2014, Berlin, Germany

URL: <http://www.intergeo.de>

European VLBI Network (EVN) Symposium

October 7-10, 2014, Cagliari, Italy

URL: <http://www.evlbi.org/meetings/meetings.html>

REFAG2014

October 13-17, 2014, Luxembourg

IAG Commission 1 Symposium 2014 "Reference Frames for Applications in Geosciences"

URL: <http://iag.uni.lu/index.php?id=189>

The Climate Symposium 2014

October 13-17, 2014, Darmstadt, Germany

URL: <http://www.theclimatesymposium2014.com>

8th Coastal Altimetry Workshop

October 23-24, 2014, Lake Constance, Germany

URL: <http://www.coastalaltimetry.org/>

SARAL/AltiKa Workshop

October 27, 2014, Konstanz, Germany

URL: <http://www.ostst-altimetry-2014.com/>

IDS Workshop

October 27-28, 2014, Konstanz, Germany

URL: <http://www.ostst-altimetry-2014.com/>

19th International Workshop on Laser Ranging

October 27-31, 2014, Greenbelt, MD, USA

URL: <http://ilrs.gsfc.nasa.gov/about/meetings.html>

Ocean Surface Topography Science Team (OSTST) meeting

October 28-31, 2014, Konstanz, Germany

URL: <http://www.ostst-altimetry-2014.com/>

Digital Earth Summit 2014

November 9-11, 2014, Nagoya, Japan

URL: <http://gis.chubu.ac.jp/summit2014/>

Third International VLBI Technology Workshop

November 10-13, 2014, Groningen/Dwingeloo, Netherlands

URL: <http://www.jive.nl/ivtw2014/>

ISPRS Technical Commission I Symposium Sustaining Land Imaging: UAVs to Satellites

November 17-20, 2014, Denver, Colorado, USA

URL: <http://www.commission1.isprs.org/>

PECORA 19

November 17-20, 2014, Denver, Colorado, USA

URL: <http://pecora.asprs.org/>

ICSU GRC Conference "Improving Geophysical Risk Assessment, Forecasting and Management"

November 18-21, 2014, Madrid, Spain

URL: <http://www.icsu.org/>

Symposium SIRGAS 2014

November 24-26, 2014, La Paz, Bolivia

URL: <http://www.sirgas.org>

11th International Conference on Location-based Services

November 26-28, 2014, Vienna, Austria

URL: <http://www.lbs2014.org/>

AGU 2014 Fall Meeting

December 15-19, 2014, San Francisco, CA, USA

URL: <http://sites.agu.org/meetings/>

18. Internationale Geodaetische Woche Obergurgl

February 8 – 14, 2015, Obergurgl, Austria

URL: <http://www.mplusm.at/ifg/>

European Geosciences Union General Assembly 2015

April 12 – 17, 2015, Vienna, Austria

URL: <http://www.egu.eu>

SPACOMM 2015

April 19 – 23, 2015, Barcelona, Spain

URL: <http://www.iaria.org/conferences2015/SPACOMM15.html>

22nd Meeting of the European VLBI Group for Geodesy and Astrometry (EVGA)

May 17 – 21, 2015, Ponta Delgada, Azores, Portugal

URL: <http://evga2015.raege.net/>

TransNav 2015

June 17 – 19, 2015, Gdynia, Poland

URL: <http://transnav2015.am.gdynia.pl>

XXVI IUGG General Assembly

June 22 – July 2, 2015, Prague, Czech Republic

Information about registration and accommodation will be available from June 2014. Call for abstracts will be open during summer 2014. Deadline for abstract submission is January 31, 2015.

URL: www.iugg2015prague.com

XXIXth IAU General Assembly

August 3 – 14, 2015, Honolulu, Hawaii, USA

URL: http://www.iau.org/science/meetings/future/general_assemblies/1024/

ISDE 2015

October 6 – 10, 2015, Halifax, Nova Scotia, Canada

URL: <http://isde2015halifax.ca/>

18th Geodynamics and Earth Tide Symposium 2016

June 6 – 9, 2016, Trieste, Italy

URL: <http://www.lithoflex.org/g-et/>

41th COSPAR Scientific Assembly

July 30 – August 7, 2016, Istanbul, Turkey

URL: <http://www.cospar-assembly.org/>

Reports

The 3rd International Gravity Field Service General Assembly (IGFS2014)

June 30 – July 6, 2014, Shanghai, China

The 3rd International Gravity Field Service General Assembly (IGFS2014) was held in Shanghai, June 30th - July 6th, 2014, at the Shanghai Astronomical Observatory (SHAO), Chinese Academy of Sciences, which was devoted to methods for observing, estimating and interpreting the Earth gravity field as well as its applications. The Assembly is organized by SHAO, the International Gravity Field Service (IGFS) and the Commission 2 of the International Association of Geodesy (IAG). IGFS is an official IAG Service, which coordinates and harmonizes the activities of other "Level 1" gravity related Services, namely the Bureau Gravimetric International (BGI), the International Geoid Service (IGeS), The International Center for Earth Tides (ICET), the International Center for Global Earth Models (ICGEM) and the International Digital Elevation Model Service (IDEMS).

The IGFS2014 successfully provided a forum for space geodesy and gravimetry and presented recent results and applications as well as future satellite gravimetry missions. Over 130 participants attended the IGFS2014 with about 80 oral talks and 30 posters. More information can be found at <http://202.127.29.4/meetings/igfs2014>



SHUANGGEN JIN
July 8, 2014