



International Association of Geodesy

Newsletter

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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

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General Announcements

Summary of the Fifth Meeting of the IAG EC 2011-2015

Place: GeoForschungsZentrum Telegrafenberg A17, Historic Library, Potsdam, Germany

Time: Sunday, 01 September 2013, 09:00 – 17:00

Attendees (voting): Ch. Rizos (IAG President), H. Schuh (IAG Vice-President), H. Drewes (IAG Secretary General), M. Sideris (Immediate IAG Past President), T. van Dam (President Commission 1), U. Marti (President Commission 2), R. Gross (President Commission 3), D. Grejner-Brzezinska (President Commission 4), J. Adam (President of the COB), H. Kutterer (Chair of GGOS), R. Barzaghi, R. Neilan (Representatives of the Services), C. Brunini, R. Wonnacott (Members at Large)

Attendees (non-voting): N. Sneeuw (ICCT President), I. Mueller (IAG Past President), C. Boucher (IAG Past Secretary General), H. Hornik (IAG Assistant Secretary)

Guests: G. Johnston (Vice-President Commission 1), A. Kealy (Vice-President Commission 4), P. Novak (ICCT Vice President), P. Willis (IAG Symposia Series Assistant Editor), St. Fisher (IGS CB Manager)

Regrets: T. Herring (Representative of the Service)

Summary of Agenda Items:

1. Welcome and adoption of agenda

Ch. Rizos welcomed the members of the IAG Executive Committee (14 out of 15 voting members, 4 non-voting members and 5 guests). The meeting took place on the occasion of the IAG Scientific Assembly, Potsdam, 02-06 September 2013, with the celebration of the 150th anniversary of IAG. *H. Schuh* welcomed the EC on behalf of the host, the German Research Centre for Geosciences (GFZ), in the historic library in the “Helmert Building” at the Telegrafenberg, the domicile of the IAG Central Bureau from 1892 to 1921. The agenda had been distributed previously by e-mail and was unanimously adopted.

2. Information on the IAG Scientific Assembly, Potsdam 2013

H. Schuh reported that a professional company, FU-confirm, Leipzig, had been engaged for the organisation of this Assembly. Moreover staff members of the GFZ and various student helpers were engaged. With 530 registered participants this Assembly has got the maximum number of all IAG Scientific Meetings up to now. Delegates from 50 countries attend this event. (Rem.: The final data are 533 participants from 47 countries). Concerning the finances *H. Schuh* said that the sponsorships from 15 sponsors could be collected. More than 500 contributions (300 oral, 200 posters) have been accepted for presentation. Three parallel sessions had to be scheduled to accommodate all oral presentations. Exceptions are the Opening, Closing and History Sessions without parallel events. *H. Schuh* outlined then the programmes of the opening, history and closing sessions.

3. Proceedings of the IAG Scientific Assembly in the Springer-Series

P. Willis gave an overview on the planned proceedings to be issued traditionally as a volume in the Springer series. Altogether 150 ... 200 manuscripts are expected to be submitted until the deadline 15 October 2013. On the question of *C. Boucher*, whether the registration fee includes a volume of the proceedings, *H. Drewes* answered that this option has been abandoned for several reasons. Many participants do not want to get the proceedings and feel forced to pay for an unrequested product; furthermore it has to be paid two to three years before the delivery. The price of the volumes depends on the number of pages which is difficult to predict. The delivery causes problems because many addresses have changed some years after the conference. Concluding this topic, *P. Willis* presented an overview of the Proceedings series under preparation or just becoming ready for publication. He emphasised that all relevant information is published in the IAG Website / Newsletter and all authors should be urged to study the news regularly.

4. IAG mid-term reports (Travaux de l'AIG)

Introducing this topic, *H. Drewes* emphasised the need to review the progress in the work of all IAG components. The first issue of the Travaux was published in 1923 and from then after each General Assembly. Since 2001 the

mid-term reports are issued as a certain verification that the groups are active. In case that a group is not sufficiently active, the EC may urge the group for more efforts or decide to dissolve a group. The Travaux for the period 2011 – 2013 are published as usual in the Office Website (<http://iag.dgfi.badw.de>) with a link from the IAG Homepage http://www.iag-aig.org/index.php?tpl=text&id_c=18&id_t=526.

Commission 1 “Reference Frames”

T. van Dam presented a series of slides showing the activities of Commission 1. She announced the organisation of a Workshop "Reference Frames for Applications in Geosciences (REFAG2014)" in October 2014 in Luxembourg. The EC recommended renaming the Workshop a Symposium. In the discussion it was stated that the report of Sub-Commission 1.2 “Global Reference Frames” should be updated. *H. Drewes* mentioned that the Chairman of SC 1.3f “Antarctica”, *R. Dietrich* has retired recently and has asked to replace him by *M. Scheinert* who is working in this field since a long time. *U. Marti* moved to entrust *M. Scheinert* with the chair of SC 2.4f for the next two years. *H. Drewes* seconded this proposal, the EC accepted unanimously.

Commission 2 “Gravity Field”

The report of Commission 2 was presented by *U. Marti*, the details of the slides are listed in the Travaux as well. He pointed out that *I. Panet*, Chair of JWG 2.5 “Physics and dynamics of the Earth's interior from gravimetry” said that she had no time to work on this topic, and she could not deliver a mid-term report. Therefore *U. Marti* proposed to close this JWG.

Commission 3 “Earth Rotation and Geodynamics”

With his slides *R. Gross* explained the main topics and activities of Commission 3 (cf. also in the Travaux. Concerning the numerous symposia and other meetings organised by the various sub-components, *J. Adam* urgently asked all colleagues to send the relevant information to the COB for the Webpage and the Newsletter. For the "International Symposium on Geodesy for Earthquake and Natural Hazards (GENAH 2014)", Matsushima, Miyagi, Japan, 22-25 July 2014 organised by Commission 3, *H. Schuh* proposed to contact *P. Willis* for publishing the proceedings in the IAG Symposia Series.

Commission 4 “Positioning and Applications”

By a series of slides *D. Brzezinska* explained the main objectives, structure and recent activities of Commission 4. She reported that WG 4.1.2 “Interference and jamming” and WG 4.1.4 “Imaging techniques” were not active and should be dissolved. The EC agreed to this proposal. Reports of other WGs were also regarded as poor and should be updated. *U. Marti* emphasised that some groups are linked to many other groups and thus appear to be quite busy, however, in reality there are minor activities. Although it is rather time consuming, such cases should be investigated carefully to determine the real level of activity.

Inter-Commission Committee on Theory (ICCT)

N. Sneeuw based his report on the publication in the Travaux where the activities of the ICCT are listed in detail. *H. Drewes* noted that the report of SG 0.9 is missing. *N. Sneeuw* looked then back to the discussion at last EC Meeting, Vienna, April 2013, to reflect whether to convert the ICCT into a permanent component of the IAG and to change the President to a voting EC member. *H. Drewes* mentioned that the EC may formulate corresponding recommendations, final decisions, however, have to be made by the IAG Council at the IUGG General Assembly. *H. Schuh* agreed, however, such a process has to be prepared carefully in the meantime. The EC discussed this intensively and concluded that the ICCT should be recommended to become a permanent component of the IAG. It was emphasised that this does not affect the Bylaws for all the Inter-Commission Committees.

Global Geodetic Observing System (GGOS)

H. Kutterer announced that the detailed report on the activities of GGOS 2011-2013 can be found in the Travaux and that he will give a general report on the status of GGOS in the next agenda topic. In the last period GGOS has continued completing the definition of its structure and planning of specific GGOS projects in anticipation of the GEOSS action plan. He further noted that the GGOS WGs in general are active, their work, however, is not always in full accordance with the goals of GGOS. The discussion on this topic was postponed to Topic 5.

Gravity-related Services

R. Barzaghi gave a summary report on the activities of BGI, IGFS, IGeS, ICGEM, ICET, and IDEMS. As already mentioned at the last EC meeting in April, IDEMS did not react in response to any call or email. The EC discussed whether it might be appropriate to dissolve this Service or to retain it and to look for a new chairperson. *M. Sideris* proposed to try at least to save the results which have been achieved in the past. The EC decided to formulate a general call for participation and for the chairperson in order to continue the IDEMS.

Other Services

By proxy of *T. Herring*, *R. Barzaghi* gave a report on the BIPM, IERS, IVS, IBS and PSMSL. *H. Drewes* emphasised that some of these Services are run not only by the IAG but with other Associations / Unions. Therefore the IAG has less influence on enforcing critical changes. There was a general agreement that the IAG should concentrate on keeping the activities successful (as far as the geodetic aspects are concerned) by enforcing the co-operation with the other concerned entities.

Geometry related Services

R. Neilan reported briefly on the IAS, IDS, IGS and ILRS. She then encouraged all the IAG Services to apply for membership in ICSU's World Data System (WDS) which is replacing the former Federation of Astronomical and Geophysical Services (FAGS) where most of the IAG Services were included. Now the applications have to be submitted by the corresponding Unions. One suggestion is to have a common application to ICSU via IUGG.

5. Report from GGOS

H. Kutterer gave an extensive report on the present status of GGOS starting with a summary of all meetings, telecons and retreats, and the strategic and operational planning (goals, objectives, actions). He referred to the GGOS2020 Strategic Plan, where GGOS is projected as a "system of systems". He highlighted the three phases 0 (Mission Analysis), A (Feasibility) and B (Preliminary Definition). The timeline is to finish phase A in 2014 and phase B in 2016. Then the implementation phases C and D shall be concluded by 2020. A Working Group on Performance Simulations and Architectural Trade-Offs (PLATO) shall be set up through a Call for Participation of the GGOS Science Panel by February 6th. An enormous amount of manpower will be needed to fulfil the tasks of GGOS, therefore this work cannot be done by a few institutions. The work load has to be distributed adequately to all relevant groups and GGOS shall mainly be concerned with organisational tasks. For this purpose the Themes, Bureaus and Working Groups should be revised.

6. Report from the 3rd UN GGIM meeting in Cambridge, 24-26 July 2013

H. Kutterer presented a report on the UN GGIM meeting in Cambridge, 24-26 July 2013. The Global Geospatial Information Management Initiative of the United Nations (UN GGIM) started in 2011 and aims at playing a leading role in setting the agenda for the development of global geospatial information and to promote its use to address key global challenges. One session topic of the meeting (http://ggim.un.org/ggim_committee.html) was the Global Geodetic Reference Frame. JBGIS with its societies FIG, IAG, ICA, ISPRS and others, are participants in this important international initiative. Considering the importance of this topic *H. Schuh* proposed to put this item on the agenda of the next EC Meeting, but to reserve a sufficient time span (e.g. up to 2 hours) for discussion.

7. Report of the COB

J. Adam reported on the COB activities. Together with the IAG Office the COB has been engaged in the planning for this Scientific Assembly. Various promotional items and information material have been prepared. A short meeting of the COB and the Office was held shortly before the Assembly in Melk, Austria. The IAG Website has been updated and the monthly IAG Newsletter is now distributed to approximately 900 addresses. *J. Adam* expressed again his urgent request to all colleagues to visit the website frequently and to comment and contribute to all aspects in order to keep it up to date. The same appeal concerns the Newsletter where the editors strongly depend on input from the whole community.

8. Report from Developing Countries

R. Wonnacott referred in his report to the Travaux as well as to the Commissions' reports. He mentioned that manifold co-operational activities exist in relation with the geodetic progress in developing countries, however, enormous efforts are still needed to convince the geodetic community to push on the work, e.g. for the development of AFREF.

9. ITU/BIPM Workshop on the future of the international time scale

C. Boucher is the IUGG liaison to the BIPM Consultative Committee for Time and Frequency (CCTF) and was invited to present the IUGG position paper on the redefinition of UTC at the Workshop of the International Telecommunication Union (ITU) together with BIPM in Geneva, September 20, 2013. The proposal is UTC as the recommended time scale (i.e. skip the leap second w.r.t. UT1), to redefine UTC correspondingly, to

disseminate it by GNSS, but to continue the UT1 estimations by the IERS. *H. Drewes* moved to give *C. Boucher* the authorisation to argue officially on behalf of IAG. *H. Schuh* seconded and the EC agreed to this proposal. The IUGG Secretary *A. Ismail-Zadeh* will be contacted by *C. Boucher* and will submit the proposal to the IUGG Bureau. An IUGG resolution is expected for the next General Assembly in 2015.

10. Report from IUGG

H. Drewes gave an overview on the preparations for the 26th IUGG General Assembly in Prague 22.06.-02.07.2015. The IAG Symposia, Joint Symposia with other Associations, and IUGG Symposia have to be defined, and the IAG convenors have to be nominated. Moreover *H. Drewes* reported on an offer of IASPEI to organise the next Scientific Assembly (2017) jointly. The decision of IAG has to be made by the Council, but the position of the EC has to be expressed. In the discussion there were pros and contras with a tendency to support the idea. Further *H. Drewes* reported on the financial support of the IUGG for IAG Symposia, Workshops and Schools. The IUGG gives an annual support for such events, and in addition every two years for projects which are carried out jointly by at least two IUGG Associations. At present there was a support for an IAG/IACS Symposium in Greenland and two IAG project supports for the geoid in Africa and for deformation and ionosphere studies in the Caribbean. *M. Sideris* reported on the initiative to install an Indo-Pacific Tsunami Warning System as a common IUGG project. This project could adequately be integrated into GGOS. He stated that some systems have already been installed, but not yet on the necessary level of accuracy. Therefore new steps should be discussed and prepared for joint actions in this field.

11. Report of the group for the services evaluation exercise

H. Schuh reported that the new IUGG Secretariat has been installed at the GFZ, *F. Kuglitsch* is acting as IUGG Executive Secretary. This will improve the contacts between IUGG and IAG. He mentioned that the GFZ is contributing to eight IAG Services. As this work is quite time (and personnel) consuming, evidence has to be collected that this work is of the highest quality and that it significantly advances the geoscientific research. In this context *H. Schuh* noted that the IAG Website does not list the services' work sufficiently. The IAG Services are encouraged to improve their Homepages. The IUGG Website was mentioned as an example.

12. IAG Young Authors Award: Results of voting

The 2011 IAG Young Authors Award was granted by unanimous voting during the last EC meeting to *T. Artz*, University of Bonn, and for 2012 by e-mail voting with 9 of 14 votes to *M. Seitz*, DGFI Munich.

13. Nomination Committee for officers 2015-2019

According to the IAG Bylaws the election of the IAG officers is done by the IAG Council before or at each General Assembly. A Nomination Committee has to be formed, consisting of a chairperson and three members. This chairperson has to send out a circular letter to all entities who can propose candidates (national representatives, officers, individual members). The Committee then has to compile a list of candidates for the final voting procedure. *H. Drewes* moved to elect *M. Sideris* as the chairperson of the Nomination Committee for the 2015 elections, *H. Schuh* seconded. The EC accepted and nominated *M. Sideris* as the chairperson. The other members will be nominated by the chairperson at the next EC meeting.

14. Sponsorship of symposia

H. Drewes reminded the EC of the previous decision that in general all symposia which are organised by at least one IAG component or two sub-components are approved as IAG symposia. He urged all colleagues to submit all relevant proposals in time to the IAG Office and COB as well in order to put it on the webpages in time.

15. Any other business

Next EC Meeting: Considering the urgent work to prepare the 2015 General Assembly, it was proposed to hold two meetings in 2014, one on the occasion of the EGU General Assembly in Vienna (26 or 27 April 2014) and one during the AGU Fall Meeting in San Francisco (15-19 December 2014).

16. Visit of the venue (Dorint Sanssouci Hotel)

After the meeting in the GFZ, the EC visited the venue of the IAG Scientific Assembly in the Dorint Sanssouci Hotel, Potsdam.

17. Adjourn

Concluding the fifth meeting of the IAG EC 2011-2015, *Ch. Rizos* expressed his cordial thanks to the participants for their contributions and to the GFZ for hosting the meeting.

Respectfully submitted
H. DREWES, Secretary General
H. HORNIK, Assistant Secretary

Minutes of the IAG Council Meeting at the Scientific Assembly 2013

Place: Hotel Dorint Sanssouci, Hall F2, Potsdam, Germany

Time: Tuesday, 3 September 2013, 18:00 – 20:00

Attendees

National Correspondents: S. Cimbaro (Argentina, deputy), Ch. Rizos (Australia), N. Höggerl (Austria), D. Blitzkow (Brazil), J. Henton (Canada), P. Holota (Czech Republic), O. B. Andersen (Denmark, deputy), M. Poutanen (Finland), M.-F. Lequentrec-Lalancette (France, deputy), J. Müller (Germany), I. Tziavos (Greece), J. Ádám (Hungary), K. Heki (Japan), D. Avalos (Mexico, deputy), M. Amos (New Zealand), O. Kristiansen (Norway, deputy), J. Krynski (Poland), J. Torres (Portugal), W. Kaftan (Russia, deputy), R. Cunderlik (Slovak Republic, deputy), J. Ågren (Sweden), A. Wiget (Switzerland), H. Özener (Turkey, deputy), J. Freymueller (USA)

IAG EC: C. Rizos (President, Australia), H. Schuh (Vice-President, Germany), H. Drewes (Secretary General, Germany), M. Sideris (Past President, Canada), H. Hornik (Assistant Secretary, Germany)

Guests: W. Carter (USA), L. Hothem (USA), E. Parseliunas (Lithuania), S. Mijidorj (Mongolia), M. Mojzes (Slovak Republic), H. Yildiz (Turkey)

Regrets of National Correspondents: C. Bruyninx (Belgium)

Agenda

1. Welcome and adoption of agenda
2. Organisational issues of the Scientific Assembly 2013
3. Scientific programme breakdown
4. Mid-term Report on IAG activities 2011-2013
5. Revision of IAG Statutes and Bylaws
6. Any other business
7. Adjourn

Minutes

1. Welcome and adoption of agenda

The President of the International Association of Geodesy (IAG), Ch. Rizos, opened the meeting of the IAG Council held on the occasion of the IAG Scientific Assembly 2013 in Potsdam, Germany. He welcomed all participants and thanked them for representing their respective countries. As there was no voting at this meeting, no official accreditation of delegates was required.

2. Organisational issues of the Scientific Assembly 2013

On behalf of the Local Organising Committee of the Scientific Assembly, H. Schuh gave some information on the general programme and organisational aspects. He informed the delegates in particular about the History Session on Wednesday afternoon which is the official celebration of the 150th anniversary of the foundation of IAG's forerunner, the Central European Arc Measurement (Mitteleuropäische Gradmessung), in Berlin. In 1892 its Central Bureau moved with the Geodetic Institute to Potsdam, Telegrafenberg, about 30-km from Berlin. Therefore, the presentations of the history lectures by W. Torge, C. Boucher and I. I. Mueller will be given in the

German Research Centre for Geosciences (GFZ) at Telegrafenberg. The lectures will be followed by a guided tour through the historic and modern buildings and a barbecue reception.

3. *Scientific programme breakdown*

Ch. Rizos reported on the scientific programme of the Assembly. Around 500 contributions (300 oral, 200 posters) were submitted. Three parallel sessions had to be scheduled to accommodate all oral presentations. 530 participants from nearly 50 countries have registered which is the maximum number of participants in IAG Scientific Assemblies up to now. He invited all participants to participate in the voting of the best students' talk and best students' poster awards. The awards will be presented at the closing session on Friday. This appreciation is seen as a good way to encourage young scientists to present their work in IAG meetings.

J. Müller complained of the lack of special poster sessions. Considering the general shortage of time, the posters might not be adequately taken into consideration. He proposed that extra poster sessions be reserved at future. H. Drewes agreed in principle, however, the time schedule for the large number of oral presentations with three parallel sessions did not allow additional poster sessions. However, instead the coffee breaks in the morning were extended to 45 minutes and announced as poster sessions.

4. *Mid-term report on IAG activities 2011-2013*

H. Drewes informed the audience that the IAG Reports (Travaux de l'AIG) have been published regularly since 1929. The volumes were published originally at the IUGG General Assemblies only, but since 2001 there were also mid-term reports. These were introduced to review the actual activity of the IAG components. All components are requested to report. The reports are reviewed by the IAG EC and in event of inactivity or insufficient results a component may be dissolved. Concerning the present period, the EC decided at its recent meeting to dissolve some Working Groups. Moreover, the German BKG stated that it was not able to continue operating the IAG Bibliographic Service (IBS). The IAG COB was asked to continue the IBS, but it declared that it was not able to take over this task. As no other institution could be found, the EC decided after an intensive discussion to dissolve this Service.

The present volume of the Travaux represents the considerable work done in the last two years. H. Drewesthanked all authors for their efforts. The complete text will be published digitally on the IAG Office Website <http://iag.dgfi.badw.de>. The Activity Report of the IAG Secretary General for the current period will be included. He further referred to the Geodesist's Handbook 2012, which has been published as Volume 86 No. 10 of the Journal of Geodesy (JoG). A permanently updated version is available at http://www.iag-aig.org/index.php?tpl=text&id_c=39&id_t=566.

H. Drewes presented an overview of the various IAG awards, in particular the Travel Award for young scientists to participate in IAG scientific meetings. Support was given to eight young scientists for participation in the present IAG Scientific Assembly. In addition he mentioned the annual Young Author Award for best publication in the JoG and the Bomford Prize and Levallois Medal presented to distinguished geodesists at the IUGG General Assemblies. Awards for the best presentation and best poster will be made at this Assembly.

Finally, H. Drewes invited all geodesists to become IAG individual members using the application forms available at the registration desk. He thanked all colleagues for their financial contributions as individual members or donating to the IAG Fund, and thus helping to finance in particular the awards for young scientists.

5. *Revision of IAG Statutes and Bylaws*

The Chairman of the Cassinis Committee, M. Sideris, gave an outline of the IAG Statutes and Bylaws. The recent version dates back to 2007 when it was adopted by the Council at the IUGG General Assembly in Perugia. According to the Statutes a review shall be done every eight years, i.e. it is due for the 2015 General Assembly. The present status of proposed updates had been sent to the IAG Correspondents in February 2013. M. Sideris explained the actual status in detail and invited the National Correspondents to send their proposals or comments to the Cassinis Committee.

In response of a question, H. Drewes explained the two terms "IAG Delegate" and "National Correspondent". The definition caused some misunderstandings in the past. The IAG Delegates are accredited by the National Committees for the IUGG as the official representatives of a country at the IUGG General Assemblies. The National Correspondents are acting as the contact persons in between the General Assemblies. M. Sideris proposed to unify these two positions, although approval has to be given by the IUGG.

6. *Any other business*

H. Drewes reported on an offer of IASPEI to organise the next Scientific Assembly (2017) as a joint IAG/IASPEI Assembly. Japan was proposed by IASPEI officials as the country of venue. The final IAG decision

has to be made by vote of the IAG Council, which is generally done at the IUGG General Assemblies, the next being in Prague 2015. In order to start the joint IAG/IASPEI planning at an appropriately early stage, a general decision should be made earlier. H. Drewes proposed that the Council decides on a possible earlier voting (early 2014). He will contact the National Correspondents in this regard.

Concluding J. Ādám reported on the activities of the IAG Communication and Outreach Branch (COB) and presented in particular the updated Website and the IAG Newsletter. He asked that all colleagues regularly visit the website and contact the COB regarding any information that could be put on the Website or in the Newsletter.

7. Adjourn

Ch. Rizos thanked all the participants for their cooperation and closed the meeting at 8 p.m.

Respectfully submitted
H. DREWES, Secretary General
H. HORNIK, Assistant Secretary

Meeting Announcements

4th International Colloquium Scientific and Fundamental Aspects of the Galileo Programme 4-6 December 2013, Prague, Czech Republic

At the end of the Galileo IOV satellites test phase and just before the launch of ESA's scientific GAIA mission with the goal of obtaining the largest, most precise three-dimensional map of our Galaxy by surveying more than a thousand million stars, the 4th International Colloquium on Galileo and GNSS Science, co-organized by the European Space Agency (ESA) and the European GNSS Agency (GSA), is inviting to an interesting programme, see <http://congrexprojects.com/2013-events/13c15/introduction>.

After Welcome Addresses by the host of the Colloquium, the Department of Transportation of the Czech Republic, and the co-organizers, the Director of Galileo and Navigation of ESA, Mr Didier Faivre and the Executive Director of the GSA, Mr Carlo des Dorides, the Keynote covers "*The Science Program of the European Space Agency: pushing science and technology towards excellence*", given by Prof. Alvaro Gimenez, ESA Director of Science and Robotic Exploration.

Two parallel session tracks will report and discuss recent results and ideas on the use of Galileo and GNSS in the atmospheric research on troposphere and ionosphere as well as in geodesy and remote sensing. The Clocks and time transfer session discusses the latest developments. Fundamental problems in satellite navigation will be tackled, like reference frames and orbits and also relativistic positioning. A poster session and a Round Table Discussion at the end of the Colloquium are also part of the programme.

Two social events will allow for networking among the international scientists, the Icebreaker reception at the Prague Major's Residence and the conference dinner at the Strahov Monastery Brewery. And don't forget to visit one of the many traditional Christmas markets in Prague, just opened in the first December days!

Do not forget to register soon on the website mentioned before. Those who forgot to take advantage of the Early Registration Rate before 1 Nov 2013 get still the chance to register with it until 10 Nov 2013.

EDYTA BOBEK
Administrative Assistant
EGNOS and GNSS Evolution Programme Department

Meetings Calendar

ICA Workshop

December 3-5, 2013, Wuhan, China

URL: <http://sres.whu.edu.cn/ICA-Workshop>

4th International Colloquium Scientific and Fundamental Aspects of the Galileo Programme

December 4-6, 2013, Prague, Czech Republic

URL: <http://congrexprojects.com/2013-events/13c15/introduction>

6th European Workshop on GNSS Signals and Signal Processing

December 5-6, 2013, Munich, Germany

URL: <http://ifen.bauw.unibw.de/gnss-signals-workshop/>

Gi4DM 2013

December 9-11, 2013, Hanoi, Vietnam

9th International Conference on GeoInformation for Disaster Management; Theme: Earth Observation for Disaster Management.

URL: <http://www.gi4dm2013.com>

AGU 2013 Fall Meeting

December 9-13, 2013, San Francisco, CA, USA

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

50th Annual Convention of IGU

January 8-12, 2014, CSIR-NGRI, Hyderabad, India

50th Annual Convention of IGU will be held during 8-12 January 2014 at CSIR-NGRI, Hyderabad, India. Online Deadline of submission of Extended Abstracts is 14.08.2013, closing of online submission of Extended Abstracts is 15.10.2013.

URL: <http://www.igu.in>

17. Internationaler Ingenieurvermessungskurs

January 14-17, 2014, Zurich, Switzerland

URL: <http://www.igp.ethz.ch/iv2014/>

EVN Technical and Operations Group Meeting

January 23-24, 2014, Bad Kötzting, Germany

URL: <http://www.fs.wetzell.de/veranstaltungen/vlbi/tog2014/index.html>

ION International Technical Meeting (ITM) 2014

January 27-29, 2014, San Diego, CA, USA

URL: <http://www.ion.org/meetings/?conf=itm>

SPACOMM 2014

February 23-27, 2014, Nice, France

URL: <http://www.iaria.org/conferences2014/SPACOMM14.html>

IVS General Meeting

March 2-7, 2014, Shanghai, China

URL: <http://ivs2014.csp.escience.cn/>

GEOProcessing 2014

March 23-27, 2014, Barcelona, Spain

URL: <http://www.iaria.org/conferences2014/GEOProcessing14.html>

Munich Satellite Navigation Summit 2014

March 25-27, 2014, Munich, Germany

URL: <http://www.munich-satellite-navigation-summit.org/>

Third International School on "The KTH Approach to Modeling the Geoid"

March 31-April 4, 2014, Johor Bahru, Malaysia

URL: <http://www.infra.kth.se/geo/events/geoidschool.html>

INGEO 2014

April 3- 4, 2014, Prague, Czech Republic

6th International Conference on Engineering Surveying

URL: https://www.svf.stuba.sk/generate_page.php?page_id=5061

European Navigation Conference ENC GNSS 2014

April 15-17, 2014, Rotterdam, The Netherlands

URL: <http://www.enc-gnss2014.com/>

European Geosciences Union General Assembly 2014

April 27 – May 2, 2014, Vienna, Austria

URL: <http://www.egu2014.eu/>

GNSS : Principles, Augmentation and Evolutions of EGNOS

May 12- 23, 2014, Toulouse, France

URL: <http://www.formationcontinue-enac.fr/co/WORKGNSSEXT.html>

ICC&GIS 2014

June 15-21, 2014, Riviera, Bulgaria

5th Jubilee International Conference on Cartography & GIS

URL: www.iccgis2014.cartography-gis.com

IGS Workshop 2014

June 23-27, 2014, Pasadena, CA, USA

URL: <http://igsch.jpl.nasa.gov/pipermail/igsmail/2013/008013.html>

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

June 30-July 6, 2014, Shanghai, China

URL: <http://202.127.29.4/meetings/igfs2014/index.html>

GENAH 2014

July 22-25, 2014, Matsushima, Miyagi, Japan

International Symposium on Geodesy for Earthquake and Natural Hazards

URL: <http://genah2014.jpn.org/index.html>

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/>

REFAG2014

October 13-17, 2014, Luxembourg

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

URL: <http://dgk.badw.de/index.php?id=775>

ILRS Technical Workshop

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

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

ICSU GRC Conference “Improving Geophysical Risk Assessment, Forecasting and Management”

November 18-21, 2014, Madrid, Spain

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

AGU 2014 Fall Meeting

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

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

European Geosciences Union General Assembly 2015

April 12 – 17, 2015, Vienna, Austria

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

XXVI IUGG General Assembly

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

URL: <http://www.iugg.org/assemblies/>

XXIXth IAU General Assembly

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

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

41th COSPAR Scientific Assembly

July 30 – August 7, 2016, Istanbul, Turkey

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

Reports

Report on the School on Reference Systems, Crustal Deformation and Ionosphere Monitoring in the Caribbean

Panama City, Panama. October 21 - 23, 2013

In the frame of the IUGG Grants Program, the project *Monitoring crustal deformation and the ionosphere by GPS in the Caribbean* was granted for the term 2012-2014. This project is sponsored by IASPEI, IAG, and IAGA. The main objective is to invite the Caribbean countries to participate actively in geodetic and geophysical projects going on in the Central and South American region, in order to enable the use the acquired data for practice and science in their countries, and to promote geosciences. This includes capacity building activities providing the basis for profound education and sustainable development as well as the establishment of international and interdisciplinary contacts to participate in research projects at regional and global scales.

According to these objectives, the *School on Reference Systems, Crustal Deformation and Ionosphere Monitoring* was carried out in Panama City, from October 21 to 23, 2013, so that the attendees could also participate in the SIRGAS 2013 meeting, held in the three following days (from October 24 to 26). The main topics treated during the school were:

- Types of coordinates, their definitions, relations and transformations.
- Geodetic reference systems and frames (celestial and terrestrial reference systems and frames, regional reference frames, SIRGAS, vertical reference frames).
- Installation and maintenance of observation instruments (in particular of GNSS), real-time data dissemination (via Internet), and data archiving and management.
- Coordinates determination from GNSS (observation equations, uncertainties in GNSS positioning, controlling errors in GNSS positioning, adjustment of GNSS networks).
- Crustal deformation observation and modelling (geodynamic processes, plate tectonics, intra- and inter-plate deformation, monitoring deformations by GPS)
- Ionosphere modelling and analysis (structure of the atmosphere, models of the ionosphere, observation techniques, analysis of the ionosphere).

The school was attended by 145 participants from 27 countries: Argentina, Barbados, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, Germany, Guatemala, Honduras, Jamaica, Mexico, Monserrat (UK), Nicaragua, Panama, Peru, Puerto Rico, Spain, St. Lucía, Suriname, Trinidad and Tobago, Turks and Caicos Islands, Uruguay, USA, and Venezuela. The main results of the school regarding this project are

- The intension of Dominican Republic, Puerto Rico, Suriname, Trinidad and Tobago, Jamaica, St. Lucia and Turks and Caicos Islands to join the IAG activities developed by SIRGAS. Representatives of these countries started the necessary contacts to be integrated in different working and research groups.
- Trinidad and Tobago and Dominican Republic are interested on hosting a similar school in order to disseminate these topics to those people who were not able to come to Panama.
- Costa Rica, Dominican Republic, Guyana, Nicaragua and Puerto Rico are now integrating their geodetic reference stations into the continental reference frame.
- The objective of Dominican Republic to install a high-level GNSS processing centre.
- Regarding other Caribbean countries, it should be mentioned that Colombia and Venezuela participate actively in SIRGAS since 1993; Costa Rica, Guatemala, Honduras, Mexico, Nicaragua and Panama joined SIRGAS in 2003, and Guyana joined SIRGAS in 2011.



Attendees of the School on Reference Systems, Crustal Deformation and Ionosphere Monitoring. Panama City, Panama, October 21 to 23, 2013.

CLAUDIO BRUNINI
SIRGAS President
LAURA SÁNCHEZ
SIRGAS Vice-president

Report on the SIRGAS 2013 General Meeting on the occasion of the 20th Anniversary of SIRGAS Panama City, Panama. October 24 - 26, 2013

Activities, advances, and new challenges of IAG Subcommittee 1.3b “South and Central America” (Sistema de Referencia Geocéntrico para las Américas, SIRGAS) are reported, discussed, and re-oriented (if required) in the annual SIRGAS General Meetings, which have been realized since 1993. In this series, the SIRGAS General Meeting 2013 was held in Panama City from October 21 to 23, 2013, hosted by the Panamanian *Instituto Geográfico Nacional Tommy Guardia*, and sponsored by the *International Association of Geodesy* (IAG) and the *Pan-American Institute of Geography and History* (PAIGH). 158 participants from 27 countries attended the meeting: Argentina, Barbados, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, Germany, Guatemala, Honduras, Jamaica, Mexico, Monserrat (UK), Nicaragua, Panama, Peru, Puerto Rico, Spain, St. Lucía, Suriname, Trinidad and Tobago, Turks and Caicos Islands, Uruguay, USA, and Venezuela. Thanks to the financial support of IAG and PAIGH, it was possible to provide 15 participants from 9 countries with partial travel grants. SIRGAS deeply acknowledges this support.

The main conclusions of the SIRGAS2013 meeting may be summarized as follow:

- The SIRGAS reference frame is officially adopted by most of the countries, which keep their national densifications updated for use in all types of positioning.

- The first SIRGAS analysis centre in Central America was established at the Escuela de Topografía, Cartografía y Geodesia of the Universidad Nacional in Heredia, Costa Rica.
- Complementary, the Registro Nacional of Costa Rica, national agency responsible for the geodetic reference frames, signed an agreement with SIRGAS to incorporate the GNSS reference stations of Costa Rica into the SIRGAS continental reference frame.
- The Instituto Geográfico Militar of Bolivia started as a SIRGAS experimental processing centre in October 2013. The SIRGAS objective of having one GNSS high-level processing centre in each of the Latin American Countries is thereby continued.
- Several countries reported improvements of their first order levelling networks and the corresponding height connections with neighboring countries as step forward to a unified vertical reference frame.

In the frame of the Meeting, one session was devoted to the history, development, and the past, current, and future challenges of SIRGAS. Three pioneers of SIRGAS summarized milestones and principal aspects of this initiative: Rubén Rodríguez (Argentina) as representative of PAIGH in 1993, presented the development of SIRGAS from the PAIGH perspective; Hermann Drewes (Germany), as representative of IAG since 1993, emphasized the SIRGAS scientific achievements and the role of the international cooperation under the coordination of IAG; and Melvin Hoyer (Venezuela), first president of the SIRGAS-WG1, showed the point of view of a South American scientist participating in the SIRGAS activities to guarantee its permanent development and sustainability. These three presentations were complemented by a talk of the current SIRGAS president, Claudio Brunini (Argentina), giving special importance to the participation of many Latin American geodesists in SIRGAS. More than the geodetic achievements, the real profit of SIRGAS is the human network which has been continuously growing during these twenty years. Without the persons involved in SIRGAS, it would not be possible to present SIRGAS as one the most successful international geodetic initiatives. They are the really *SIRGAS-makers*, thanks to their support and continuous work, these twenty years represent a very fruitful period in the Americas.

The celebration of the 20 years of SIRGAS were closed with a deep recognition, gratitude, and acknowledgment to Hermann Drewes, who was not only a pioneer of SIRGAS, but also has been a permanent *SIRGAS-maker* and over all, he is the father of SIRGAS!



Attendees of the SIRGAS 2013 General Meeting.
Panama City, Panama. October 21 to 23, 2013.

CLAUDIO BRUNINI
SIRGAS President
LAURA SÁNCHEZ
SIRGAS Vice-president

*150th Anniversary of the Austrian Geodetic Commission (ÖGK)
"150 YEARS DEVOTED TO THE ADVANCEMENT OF GEODESY"
Vienna, Austria, November 7, 2013*

On June 2, 1863 the Austrian Emperor Franz Josef I authorized Austria's accession to the "Commission for Central European Arc Measurement" and appointed Major General August von Fligely, head of the *Militärgeographisches Institut (MGI)*, Karl v. Littrow, head of *Wiener Universitätssternwarte*, and Dr. Josef Herr, Professor of Geodesy at the *Wiener Polytechnisches Institut*, Austria's authorized representatives within this commission.

Having recognized the importance of the determination of the figure of the Earth by means of geodetic methods and in international accordance, Austria thus followed the example of Prussia and Saxony, the two countries that had founded the commission in 1862, and became the 3rd European country to join this body. Only two years later, at the General Conference in Berlin in 1865, there were already 16 member states. In 1867 the Central European Commission of Arc Measurement had already grown into a European body, which – following the initiative of Lieutenant General Johann Jakob Baeyer - formed the political basis for the determination of the figure of the Earth by means of geodetic methods. Originally founded in 1863, the "Österreichische Kommission für die Mitteleuropäische Gradmessung" was renamed "Österreichische Kommission für die internationale Erdmessung (ÖKIE)" in 1887 and finally became the "Österreichische Geodätische Kommission (ÖGK)" in 1995.

The "Österreichische Geodätische Kommission" is to celebrate the 150th anniversary of its foundation in a commemorative event. The commemorative event to celebrate the 150th anniversary of the foundation of the Austrian Geodetic Commission took place at the Bundesamt für Eich- und Vermessungswesen (BEV) in Vienna on 7th November 2013.

As the ÖGK is an organisation that today comprises all the different geodetic fields, the lectures held by renowned scientists were intended to show the spectrum of research that is being done in geodesy nowadays. They covered a wide range of different topics from satellite geodesy and its manifold applications to applied geodesy, presenting rapid alert systems to warn of landslides and systems monitoring power plants and tunnels, and from the use of the cadastre as the basis of a modern administration of property to applications of geodesy in the field of archaeology. One lecture was also held to highlight the challenges that the formation of future geodesists and surveyors has to comply with.

In the course of the commemorative event the new head of the Austrian Geodetic Commission, Univ. Prof Dr. Norbert Pfeifer was introduced and presented with his decree. In addition, the ÖGK also welcomed two new members: President Dipl. Ing. Wernher Hoffman, head of the BEV, and Univ. Prof. Dr. Johannes Böhm of the Technical University, Vienna, who were also handed over their decrees.

More information: <http://www.oegk-geodesy.at/austria/news.html>

NORBERT HÖGGERL
Secretary of the Austrian Geodetic Commission
Vienna



Univ. Prof. Dr. Norbert Pfeifer



President Dipl. Ing. Wernher Hoffman
Head of the BEV



Univ. Prof. Dr. Johannes Böhm