

IUGG – General Assembly, Melbourne, June 28-July 7, 2011

Report on Geodetic Activities (IAG) by F. Sansò (IAG National Delegate)

The following report highlights the IAG activities in Melbourne, divided into business meetings and scientific activities. This report follows the preliminary Report on Italian IAG activities in the period 2007-2011, which is attached in Appendix C.

Since official reports on Executive Committee and Council meetings will be made public by the Secretary General H. Drewes, on the IAG website, the present report will succinctly examine the main items.

Report on Business Meetings

They are Executive Committee meetings (old Executive: 27/06; 03/07; 05/07 and a new Executive meeting on 07/07). Agendas are appended in Appendix A.

Moreover two Council meetings have taken place (on 28/06 and 06/07). Also for Council meetings agendas are enclosed in Appendix B.

E.C. Highlights:

- Participation to the IUGG-GA: a first estimate of IUGG total participants is 3040 participants (with 2683 oral presentations and 5971 abstracts in general);
as for IAG the same estimate gives:
368 participants
i.e. IAG/IUGG ~ 12% which a stable number, important because it determines the transfer of IUGG budget to IAG.
- IAG budget: the secretary general has presented a budget and E.C. nominates an Audit Committee chaired by M.Poutanen (Finland). The A.C. will refer at the final Council meeting with the suggestion of spending part of the spare budget for awards for the participation to IAG activities.
- IAG resolutions: an ad hoc Committee chaired by Vice President C.Rizos (Australia) has been set up which will present two IAG resolutions to the final Council meeting (one concerning Gravity Field Satellite Mission, the other on the Adoption of the Int. Celestial Frame ICF2, in parallel with IAU).
- Levallois Medal: for special merits for the support of IAG work has been delivered to R.Neilan (USA)
- Prizes: the Bomford Prize goes to J.Boehm (Austria) and to E.Petrie (Nederland).
- List of elected officers for the E.C. 2011-2015 (44 National delegates have voted)

The results are:

Chris Rizos	(Australia)	President	
Hermann Drewes		Secretary General	
Harald Shuh	(Austria)	Vice President	
Tonie van Dam	(Luxemburg)	President of	Commission 1
Urs Marti	(Switzerland)	President of	Commission 2
Richard Gross (*)	(USA)	President of	Commission 3
Dorota Brzezinska	(USA)	President of	Commission 4

Representatives of the Services: Riccardo Barzaghi (Italy), Tom Herring (USA), Ruth Neilan (USA)

Communication and Outreach Branch (COB): József Ádam (Hungary)

Members at large: Claudio Brunini (Argentina), Richard Wonnacott (South Africa)

(*) Chair of Commission 3 was not fixed until new chair of GGOS was appointed by E.C., because R.Gross was also candidate to this chair. After GGOS appointment, R.Gross has been confirmed as President of Commission 3.

In addition the President of ICCT has been appointed by E.C.: Nico Sneew (Germany) to continue for another period. Also GGOS project chair has been appointed by E.C.: among three candidates (R.Gross, H.J. Kutterer, S.Zerbini) the E.C. has appointed Hansjorg Kutterer (Germany).

- **Status of IAG (Travaux)** for the past four years. In strong synthesis:
 - **Commission 1 (Reference Frames)**
Interactive website created, IAG school on Reference Frames in Mytilene, Greece (2010), REFAG meeting (2010) with 150 participants, strict relations with COSPAR – Sub-Commission B2.
 - **Commission 2 (Gravity Field)**
Meetings in Chania 2008 (GGEOS) and Buenos Aires 2009 (Geodesy for Planet Earth), project on a new Gravity Reference Frame, release of the global model EGM08, analysis of satellite gravity missions data (CHAMP, GRACE, GOCE).
 - **Commission 3 (Earth Rotation and Geodynamics)**
Creations of a new service GEaP, settling of ICET (Earth Tides Service) from Belgium Royal Observatory to GFZ in Potsdam.
 - **Commission 4 (Positioning and Applications)**
Underlined the strict cooperation with Sister Societies (FIG, ISPRS), with joint sessions at international meetings.
 - **Inter Commission Committee on Theory (ICCT)**
VII Hotine-Marussi Symposium (Rome, Italy 2009); cooperation with Commission 1 for the school on Reference Frames, workshop on The Quality of Geodetic Observations and Monitoring Systems (Munich, 2011); workshop on Deformation and Gravity Change (Lanzarote, 2009).
 - **Journal of Geodesy**: shortening of the time of reviewing (30 days for the first review, cut of Springer times from 200 days to 30 days); improvement of the impact factor from 1.6 to 2.4. The new Editorial Board will have 2 members more. The E.B. will in future assist the reviewing process of Symposia Proceedings to strengthen it, increasing rejection rate, also considering that the Proceedings collection is now in ISI list.
 - GGOS: new terms of reference have been submitted to E.C., increasing the radius of actions. E.C. Approves. IAG Services will form a Consortium to interact with GGOS.
- **Council Meeting**: the agenda items of Council meetings strictly double the items of E.C. Agenda, so I will not report on them here. Only four points have involved significant votes:
 - approval of the Audit Committee
 - approval of budget
 - approval of resolutions ^(*)
 - approval of next venue of the IAG Scientific Assembly ^(**)

^(*) Two resolutions have been approved on support to “Gravity Field Satellite Mission” adoption of the International Celestial Reference Frame ICF2, in parallel with IAU. The two resolutions have been passed over to IUGG Council for further approval.

^(**) Four candidates presented their proposals (Istanbul, Oporto, Potsdam, Prague). The Council has chosen Potsdam in consideration also of the celebration of 150th anniversary of the foundation of IAG.

Also the Council has decided to reconvene in Potsdam (2013).
- **IUGG delegates meetings**: two meetings have been performed (involving G.Panza, F.Sansò, A.Marcellini, L.Vigliotti, S.Sparnocchia) to decide about format of reports and possible future constitution of a true IUGG-Italy Committee.

Report Scientific Activity

The International IAG activity has been organized in 6 Symposia according to the following scheme:

CODE	SYMPOSIA	LEAD CONVENOR/S
G01	Reference Frames from Regional to Global Scales	Zuheir Altamimi
G02	Monitoring and Modelling of Mass Distribution and Mass Displacements by Geodetic Methods	Yoichi Fukuda
G03	Monitoring and Modelling Earth Rotation	Richard Gross
G04	Multisensor Systems for Engineering Geodesy	Dorota Brzezinska
G05	Geodetic Imaging Techniques	Sandra Verhagen
G06	Towards a Unified World Height System	Johannes Ihde
G07	High Precision GNSS	Ruth Neilan

In addition IAG has co-organized with other IUGG Association the following 6 Joint Symposia:

J-G01	Space Geodesy-based Atmospheric Remote Sensing as a Synergistic Link between Geodesy and Meteorology	Marcelo Santos
J-G02	Application of Geodetic Techniques in Cryospheric Studies	Reinhard Dietrich
J-G03	History of Geosciences from Terrestrial to Spaceborne Observations	József Ádam
J-G04	Structure and deformation of Plate Interiors	John Dawson
J-G05	Integrated Earth Observing Systems	Markus Rothacher
J-G06	Tectonic Geodesy and Earthquakes	Jeff Freymueller

These have all been chaired IAG. Moreover IAG has participated without leadership to other 10 Joint Symposia.

A short summary of the highlights of the G0x and partly of J-G0x Symposia follows:

- G01: 4 sessions, 21 oral presentations, 14 posters.
Hot items: combination of Terrestrial and Celestial reference Frames; combination of regional RF and blending to the global ITRF.
- G02: 8 sessions, 48 oral presentations, 25 posters.
Hot items: combination of precise gravimetry and GPS to detect deformation. Analysis of the time varying gravity field from CHAMP, GRACE and GOCE and determination of mass displacements in the hydrosphere and in solid Earth.
- G03: 3 sessions, 18 oral presentations, 14 posters.
Hot items: system interactions of the Earth constituents on rotation and shape of the Earth. Data from satellite missions.
- G04: 2 sessions, 10 oral presentations, 10 posters.
Hot items: deformation analysis in local areas/landslides, artificial intelligence and navigation. Pseudolights
- G05: 2 sessions, 10 oral presentations, 7 posters.
Hot items: the combination of InSAR (multitime) and GPS for deformation analysis.
- G06: 4 sessions, 19 oral presentations, 26 posters.
Hot items: from theory and methods to the application of the determination of a unified height system using existing global models and new satellite only models.
- G07: 3 sessions, 17 oral presentations, 19 posters.
Hot items: multi systems GNSS, Precise Point Positioning.

- J-G01: 4 sessions, 15 oral presentations, 19 posters.
Hot items: prediction of the refractivity field and its relation to weather forecasting and to correction of geodetic observations.
- J-G06: 4 sessions, 14 oral presentations, 11 posters.

Hot items: combination of geodetic observations (GPS, SAR) to analyze seismic and post seismic displacement and deformation. Gravity signals of earthquakes in GRACE and GOCE data.

Gravity Field Service Meeting: all services related to the Gravity Field have participated to meeting reporting on the last 4 years and on future plans. Italy is involved through the Bureau of GFS, run at present by OGS and through the International Geoid Service. The scientific meeting of GFS has been proposed in Venice, summer 2012; the proposal has been accepted.

Italian Delegation to IAG: this has been restricted to 6 persons only due to the venue. The scientific activity has been performed by 5 oral presentations and 4 posters. The business activity has been conducted by F.Sansò in Council and E.C. And by R.Barzaghi in new E.C.

Encl./

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