

MINUTES



INTERNATIONAL UNION OF GEOLOGICAL SCIENCES
66th EXECUTIVE COMMITTEE MEETING
February 19-22, 2013

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Room XIII Second basement

INTERNATIONAL UNION OF GEOLOGICAL SCIENCES
66th EXECUTIVE COMMITTEE MEETING
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PARTICIPANTS

IUGS Executive Committee: Roland Oberhänsli (RO; IUGS President), Ian Lambert (IL; IUGS Secretary General), Dong Shuwen (DS; IUGS Treasurer), Marko Komac (Vice President), Peter Bobrowsky (Past Secretary General), Councillors: Wesley Hill, Hassina Mouri, Yujiro Ogawa, Sampat Kumar Tandon.

Regrets: Alberto Riccardi (AR; resigned January 2013) and Vice President Yildirim Dilek)

UNESCO: Gretchen Kalonji (Welcoming Speech), Patrick McKeever, Robert Missotten, Margaret Patzak

OBSERVERS (attending parts of the meeting): Ruth Arlington (Task Group on Geoscience Professionalism and EFG), Daniel Barnardo (35th IGC), Jean-Paul Cadet (CGMW), William Cavazza (Past IUGS Treasurer), Marie-Lise Chanin (French Academy of Sciences), Jacques Charvet (France National Committee), Stephane Chevrel (GEO-GEOSS), Luca Demicheli (Eurogeosurveys), Patrick DeWever (Task Group on Geoheritage), Giuseppe Di Capua (IAPG), Laurance Donnelly (Initiative on Forensic Geology), Wolfgang Eder (Earth Science Matters), Fareeduddin Fareeduddin (Episodes), Isabelle Fernández Fuentes (EFG), Stan Finney (International Commission on Stratigraphy), John Hess (GSA), Alik Ismail-Zadeh (IUGG), Mudlappa Jayananda (Episodes), Patrick Leahy (AGI), Sarmad Sh Mahmood (AGA), Brian Marker (IUGS Publications Committee), Stuart Marsh (Geological Applications of Remote Sensing), Santiago Martin (Spanish National Commission), Jesús Martínez-Frías (Chair, IUGS-COGE and President, IAGETH), Edmund Nickless (Geological Society of London), Silvia Peppoloni (IAPG), Dolores Pereira (Heritage Stone Task Group), Anthony Reedman (AGID), Phillip Rossi (CGMW), Magdalena Scheck-Wenderoth (International Lithosphere Programme), Reimar Seltmann (IAGOD), Manuel Sintubin (Commission on Tectonics and Structural Geology), Carthage Smith (International Council of Science), Felix Toteu (UNESCO Nairobi Office), Jacques Touret (International Commission on the History of Geological Sciences), José Ignacio Valenzuela Ríos (IGCP Project Leader), Igor Villa (IUGS-IUPAC Task Group on Isotope Chronology), Wang Meng (Young Earth Scientists), Yang Zhenyu (Episodes). (Regrets: Francois Robida, Commission on Geoscience Information)

IUGS SECRETARIAT: Zhijian Li (Director), Wei Wang (Assistant Director), Chen Zhu, Anne Liinamaa-Dehls, Song Youquan, Nancy Zeigler (Past Office of Secretariat)

1. Opening and Welcoming Addresses

Roland Oberhänsli (RO), IUGS President, welcomed the participants to the 66th IUGS Executive Committee (EC) meeting, and passed on the regrets of Alberto Riccardi (Past President), Yilek Dilderen (Vice Present) and Francois Robida (CGI).

Gretchen Kalonji, Assistant Director-General for Natural Sciences, welcomed the participants. She pointed out that UNESCO respects the collaboration with IUGS and named specifically the activities of GARS, Geoparks and IGCP. In the coming years UNESCO will revisit the role of geosciences in Society and the ICSU Future Earth programme will be prioritized. She noted that interdisciplinary activities are being addressed in the current Agenda. In addition, she informed the Executive that UN Member States had become more positive about the Geoparks activity and therefore there is more room than ever for collaboration. She wished the participants a productive meeting.

2. Discussion and Approval of Agenda

Agenda Approved with one change to the Item Applying Affiliated Organizations.

3. 2012 Executive Committee Meetings

3.a. Executive Committee Meeting, Feb. 2012, San Sebastian, Spain

The previous EC had approved the Minutes earlier. All Actions had been completed or were nearly completed before the ending of the term of the past officers.

3.b. 64th and 65th Executive Committee Meetings, Aug. 2012, Brisbane, Australia

The EC approved of Minutes and Status of Actions arising from the 64th and 65th EC Meetings. No action list had been prepared.

4. Executive Committee Reports

4.a. President's Report (Roland Oberhänsli)

RO referred the EC to his submitted report. He had an inaugural visit at UNESCO and met with Mme Kalonji, Margarete Patzak and Patrick McKeever. He also attended the Geological Society of Africa meeting in Addis Abba, GGI Initiative meetings, and visited the new office of the Secretariat in Beijing. He pointed out that IUGS' declining visibility would be a challenge in the coming term. He suggested IUGS could improve its visibility by reinforcing its current contacts with UNESCO, and advised continued discussion on matters like Geoparks and IGC. RO reflected upon IUGS' continued support for the successful program One Geology (BRGM, BGS) and raised his concern over the lack of support of the OneGeology consortium. The IUGS President officially thanked the USGS, Richard Calnan and Nancy Ziegler, for their work with the IUGS Secretariat.

4.b. Past President's Report (Roland Oberhänsli)

In acknowledging the resignation of Alberto Riccardi (AR) as Past President, RO gave thanks for his service to IUGS.

4.c. Secretary General's Report (Ian Lambert)

Ian Lambert (IL) referred the EC to the IUGS reference manual where he has compiled the key documents required for operation of the Union; this will be updated as appropriate and will be a source of information for benefit of the next EC starting in 2016. He gave recognition to China's increased involvement in IUGS, and thanked USGS and its staff for its effective management of the Secretariat during the last term.

He summarized EC activities since August 2008, which included participating in meetings with the European Geoparks Network and IUCN in Portugal (Wesley Hill), and the appointment of Brian Marker as new chair for Publications Committee. He informed of the scoping activities for an IUGS initiative on mineral resources for future generations (Ian Lambert and Dong Shuwen) and a joint international workshop on tsunamis (Councillor Yujiro Ogawa for Geological Society of Japan). Reviews were conducted of the joint IUGS-UNESCO programs, International Geoscience Program (IGCP) and Geoscience Applications of Remote Sensing (GARS). (The panel included Yildirim Dilek, Marko Komac, Peter Bobrowsky) IUGS President Oberhänsli held discussions with UNESCO ADG on future collaboration, including the topic of Global Geoparks. The EC gave its approval for the International Commission for Stratigraphy's recommendation of the type section for the Santonian Stage. Also, IUGS signed an agreement with OneGeology. Finally, IUGS plans to achieve high visibility at the GSA Annual Assembly in Denver in late October and to contribute to discussions at the ICSU Unions Meeting in April 2013.

Future challenges for IUGS include developing and implementing new programs which address major issues: to improve collaborations in major global initiatives, enhance relationships with UNESCO and ICSU and rationalize its budget and introduce new meetings/activities. Major consideration will be given to revamping the IUGS journal Episodes, identifying external funding sources and reversing declining membership.

4.d. Treasurer's Report (Dong Shuwen)

The Treasurer reported that IUGS financial status has been compromised by the global economic crisis and the low funding level could threaten future development of the Union. The current balance is \$1,148,531; \$894,858.28 of which is reserves in investment accounts. Dong Shuwen pointed out the imbalance between income USD\$514,604.84 expenditures USD\$553,011.36 in 2012. The USD\$38,406.52 deficit was mainly due to 1) higher expenses for the last Congress, and 2) delays caused by the transfer of accounts (some payments for 2012 did not go through). The total amount of unpaid dues by the end of 2012 was \$194,114.00; including \$115,338.00 from active members. He suggested that IUGS should make note of the imbalance between input and output of some IUGS-

funded projects, particularly those who have not submitted annual reports or made progress as required.

4.e. Permanent Secretariat's Report (Li Zhijian)

Li Zhijian reported that in its MoU with IUGS, the Chinese government has committed to providing finances to operate the IUGS Secretariat. With full financial support from the Ministry of Land and Resources and the backing of the Chinese Academy of Geological Sciences (CAGS), the new Office of the IUGS Secretariat began operations December 1st. On December 11, 2012, an Opening Ceremony was held at Ministry of Land and Resources, and was attended by officers of the Ministry and IUGS. On December 10-12, 2012 the Secretariat provided clerical support for the first official meeting of the Bureau. By January of 2013 Ms. Anne Liinamaa-Dehls, the former Secretariat from Norway, had joined the Secretariat as the Executive Secretary.

In 2013-2014, the Secretariat will work to improve and develop the contact database and set up a secure and reliable two-way digital file sharing platform for the main documents used by the Secretariat, the Bureau and the EC and other relevant users. The Secretariat will continue to strengthen its links with IUGS counterparts, Affiliated Organizations with particular focus on IUGS Adhering Organizations. For this reason, the Secretariat will give priority to updating the directory, general out-reach and establishing of direct contacts. Li Zhijian reminded the Executive Committee that the staff at the new Secretariat is still in the process of learning, and welcomed suggestions and advice.

4.f. Reports by other EC members

RO thanked all for the reports that were distributed ahead of the meeting. Therefore, instead of reading the reports, he invited Councilors and Vice Presidents to report on key issues during related agenda items.

5. IUGS Bodies: Annual Reports and Future Plans

5.a. Commissions

5.a.1. International Commission on Stratigraphy (ICS) (Stan Finney)

SF reported that in 2012, the current ICS executive officers were re-elected and two new subcommissions, Ediacaran and Cryogenian, replaced the subcommission on Neoproterozoic. The GSSP for the base of the Santonian Stage (Upper Cretaceous Series) was ratified and GSSP for Toarcian Stage (Lower Jurassic Series) was proposed.

The 2012 edition of the International Chronostratigraphic Chart/Geologic Time Scale was distributed to all participants of the 34th IGC (printing financed by 34th IGC and CGMW). Collaboration with CGMW and others on the translation of this Chart into Chinese, Japanese, French and Spanish

continued in 2012. Online archives for the ICS Chronostratigraphic Chart and Table of GSSPs, the global geostandards, were developed by ICS, were incorporated in the online thesaurus of the IUGS Commission, CGI. The continuously updated ICS website contains the latest January 2013 version of the ICS Chart and updated Table of GSSPs.

On behalf of ICS, IUGS submitted a grant proposal to the US National Science Foundation: "The International Commission on Stratigraphy: developing global geostandards through international collaboration and consensus". \$75,000 was requested over 3 years to fund field investigations, field meetings, updating of subcommission websites and supporting of young scientists and those from under-represented regions to attend field meetings and symposia of subcommissions.

In 2012, the commission Chair attended the 17th Field Conference of the Cambrian Stage Subdivision Working Group and the celebration of the 30th Anniversary of the Discovery of the Kaili Biota, Guizhou. In Wuhan-Yichang he attended the Symposium and Field Workshop on Ediacaran Stratigraphy of South China. He also gave ICS presentations at the China University of Geology (Wuhan) and the Nanjing Institute of Geology and Palaeontology (CAS). In Brisbane, the chair led a workshop and sessions and attended the Joint 3rd Council meeting in the dual capacity of commission chair and USNC delegate. Finally, he responded to media requests for interviews on the Anthropocene.

Goals and issues for 2013-2014 include further development of the ICS website and updating of subcommission websites, establishing executive Task Groups on Websites and Geochronology, preparing the US National Science Foundation grant, attending varied subcommission events, and preparing an invited manuscript for the Special Publication on the Anthropocene (Geological Society of London). The first International Congress on Stratigraphy (STRATI 2013), Lisbon, July 2013 will be co-sponsored by ICS. Also, the group plans sponsorship of two theme sessions at the 2013 Annual Meeting of the Geological Society of America: "Earth Deep Time Revolution by Global Chronostratigraphic Correlation" and "Impact of GSSPs on Evolution of North American Chronostratigraphy". ICS has established formal collaboration at the Nanjing Institute to develop the Geobiodiversity database, with the goal of make a widely used site for archiving and use of stratigraphic data produced in developing GSSP proposals.

During the discussion that followed, the ICS Chairman pointed out that the Commission members have considered developing iPhone and Android apps for ICS charts, which are currently being developed and sold by 3rd parties. With regards to representation RO suggested contact with land-based stratigraphers in Russia in order to keep track of classical "continental" stratotypes. The ICS chair responded that the NSF grant is open to be used to sponsor participation from this and other groups.

5.a.2. Education, Training and Technology Transfer (COGE) (Jesus Martinez Frias)

The Chairman, Jesus Martinez Frias (JMF), reported that the commission's new officers have considered new activities that further the group's objectives within global geo-education: identifying

gaps, coordination and development of new programmes, organizing meetings, and identifying gaps in the teaching material and textbooks.

Following the recommendations of the 2011 Advisory Board Review, COGE has invited representatives from Africa to develop the “GeoEra Education Roadmap” project (GEO-ERA), in collaboration with the Geological Society of Africa (GSA). GEOERA will aim to provide the entire African continent with a roadmap that will serve to advance geoscience education, training and technology transfer. UNESCO requested that IUGS-COGE and IGEO establish a strategy to promote school-level geoscience education across Africa. The proposal suggested a 'Launchpad' symposium, which invites representatives from all of Africa. Integral to the success of the plan is the development of school-level geoscience educational solutions by teams of countries, based on their experiences and expertise. Officers from UNESCO, COGE and IGEO who have experience from similar initiatives, will provide support. The project will be led by Prof. Chris King, Vice-Chair of IUGS-COGE. Please see the 2012 Episodes article “The need for a geoscience education roadmap for Africa.”

During the 34th IGC, the IUGS-COGE Chair participated in the official business meeting of the AGID International Working Group of Geoethics and in the founding of the International Association for Geoethics (IAGETH). IUGS-COGE was responsible for two symposia during the 34th IGC “Geoscience Education” and “Developing geoscience education and awareness for the benefit of society.” Following IUGS-COGE recommendations, Professor Nir Orion (Israel) was presented with the IUGS Award on the basis of his outstanding contribution to Geoscience education.

5.a.3. Management & Application of Geoscience Information (CGI) (IL for François Robida)

IL reported on behalf of the Commission and summarized the group’s aims: to provide the means for transferring knowledge on geoscience information and systems; to stimulate international dissemination of best practice in geoscience information; to support initiatives that develop standards; to establish an accepted position in the international geoscience information community; and, represent IUGS on geoscience information matters.

In 2012, CGI continued to develop Geoscience ML (GeoSciML), a database operation language used by the global OneGeology project and the past European EC project OneGeology-Europe, which makes geological data interoperable and accessible via web portals. Discussions at the CGI Council in Brisbane included the sustainability of CGI vocabularies, CGI’s participation in the OGC, CGI’s role within the data, and specifications of the European INSPIRE Directive. Long-term members of the Council met (Ian Jackson - Secretary General, Koji Wakita, Bruce Simons, Australia, John Broome) and new members started their work after the Council meeting (Robert Tomas -Treasurer, Michael Frame, Richard Hughes, Kazuhiro Miyazaki, and Oliver Raymond).

Included in the work plan for 2013 for CGI: to continue development of GeoSciML and Earth Resource ML; to further formalize the relationships of the CGI with the OGC; to organize a geo-information session in Africa at the 24th African Geological Colloquium (CAG 24) in Ethiopia; to

organize a one-week Workshop of Geo-information in Africa (GIRAF2013) in Ghana; to make the ISC Chart web accessible in cooperation with the ICS; to publish more of CGI related issues in [Episodes](#); and finding funding partners.

5.a.4. History of Geological Sciences (INHIGEO) (Jacques Touret)

Jacques Touret (JT) presented the two main objectives of the Commission: 1) the promotion of studies on the history of geological disciplines in an international context and 2) the encouragement of national and regional organizations that have the same purpose. To meet these objectives, the Commission annually holds a conference and prepares newsletters, quarterly circulars, and other publications (including [Episodes](#)).

Upcoming INHIGEO activities in 2013 include an annual conference - 22-28 July 2013, Manchester UK, in association with the 24th International Congress for History of Science, Technology & Medicine. Annual Ballots for new members have been sent out, with nominations closing on 31 March. Current INHIGEO issues and challenges include implementation of new byelaws, adopted in August 2012 and accommodating a growing membership as (restriction removed of 11 members per country rule). INHIGEO Conference venues for 2014 – 2018 have been established: California, USA (2014); Beijing, China (2015); Cape Town, South Africa (2016); Yerevan, Armenia (2017) and Mexico City, and Mexico (2018).

JT requested that the EC give special consideration to the 50th anniversary of INHIGEO in 2017, which is being celebrated at the birthplace of the Commission in Yerevan, Armenia. The Commission Chairman asked the EC to consider holding the 2017 IUGS Executive Meeting in conjunction with the INHIGEO conference.

5.a.5. Tectonics and Structural Geology (TecTask) (Manuel Sintubin)

Manuel Sintubin (MS) reported on the TecTask's new leaders: Prof. Alison Ord (Chair); Prof. Manuel Sintubin Leuven (Vice-chair) and Hermann Lebit (re-elected Secretary). Attention has been given to establishing and maintaining a diversified group of officers, in terms of demographics, geographical origin, gender and cultural background. In 2012, its membership covered 71 countries.

Tectask officers have developed two new websites, [Outcropedia](#) (Passchier et al. 2009) and [Glacier Watch](#) (Mancktelow & Pennacchioni, 2011), along with its central portal [tectask.org](#). In the Outcropedia database, officers will aim to include the most important and beautiful outcrops in the world. Manuel Sintubin confirmed that "Outcropedia" will also include crucial and possibly threatened geological outcrops. Outcropedia uses 3D imaging and has been integrated with OneGeology and the GSSP database established by the International Commission on Stratigraphy. Glacier Watch, whose website will soon be launched, will give an overview of recently exposed geological structures, which after exposure are likely to rapidly deteriorate, due to surface weathering, lichen growth, mechanical damage and accumulation of sediment cover.

Other activities include Geo-Heritage, which helps raise awareness of the problem of Geo-vandalism, and Standards and Terminology within structural geology (using a Wikipedia-like format). Activities in capacity building (Short Courses, field trainings, workshops) continued throughout 2012 providing financial support when most needed.

Meetings sponsored in 2013 include the Precambrian evolution and deep exploration of the lithosphere (October, China), DRT2013 - Deformation, Rheology and Tectonics (September Leuven) and the first International Meeting of Young Researchers in Structural Geology & Tectonics (Oviedo).

5.a.6. Geoscience for Environmental Management (GEM) (Brian Marker)

The GEM Chairman thanked IUGS for having approved an additional final term of activity for GEM until 2016. The objective of the Commission continued to be knowledge creation and problem solving in relation to sustainability and environment. Six Working Groups continue on the topics of: 1) Land Subsidence and Groundwater 2) Drinking water 3) Dust 4) Gold and mercury 5) Climate Change Adaptation and 6) Man-made Strata and Geo-pollution. The Working Group on Communicating Environmental Geosciences ended and had been replaced by a group on Natural Hazards in Relation to Territorial Sustainability (Adriana Níz, Chair). GEM has corresponding members from 118 countries

In 2012, business meetings were held in Bangkok (February) and Brisbane (August). Publications included two books on Climate Change Adaptation and a paper in Episodes on Man-made Strata and Geo-pollution. At the EGU, GEM led a session on Communicating Environmental Geosciences and contributed to two sessions at the 34th IGC.

Planned for 2013 is a book on groundwater studies and assessment (WG on Drinking Water). The Work Group on Dust will hold sessions at the EGU (Vienna) and IMGGA Conferences (Washington DC); a meeting on dust from mineral workings (London); launch a survey of impacts of dust; and submit a proposal for a Special Publication of the Geological Society. The working groups on Gold and Mercury will continue to provide input to the UNEP/Artisanal Gold Council initiative. The group on Natural Hazards in Relation to Territorial Sustainability will attend an International Congress in Argentina. The Land subsidence and Groundwater group will hold a workshop on flooding and land subsidence in Thailand and begin preparation for a book. The Man-made Strata and Geopollution working group had a paper in review for Episodes, will hold a workshop meeting in Japan and commence preparation of a book.

5.a.7. Discussions of possible new IUGS bodies – e.g. Mineral and Energy Resources for Future Generations (Ian Lambert, Roland Oberhänsli, Dong Shuwen)

IL reported that during its last meeting the IUGS Bureau had decided to begin its investigation on possible new IUGS initiatives. One proposal was "Resources for Future Generations," an initiative that could provide focus for the significant number of ad hoc requests for funding activities. This initiative's activities could fall under the ICSU-led Future Earth programme. IL also suggested IUGS support of the Tsunami Workshop in Sendai, in association with the G-EVER meeting in October

2013. At this workshop, participants would focus on whether there were important gaps in information/measurements that needed to be addressed in order to reduce the risks of future disasters.

In the discussion that followed Manuel Sintubin stated that geoscience communication is the primary issue, not facts. How can geologists avoid communication disasters? RO and others proposed and supported the idea of geo-governance education for policy makers available at universities or as a symposium where good practices from each country are brought together. Mudalappa Jayananda supported addressing the need of increasing public awareness of the pollution being created in large cities in India and rapidly depleting fresh water supplies due to the contamination of ground water (arsenic).

All new projects have a set of criteria to go through to be accepted. In order to determine the viability of any suggested new initiatives IL proposed a new activities “Strategic Implementation Committee”. Amongst other tasks, this group could look at the proposals, discuss how to progress them including partnerships, potential funding, how interested countries would be involved, and the expertise required.

Edmund Nickless (EN) agreed partnerships would be necessary and the role of IUGS should be clear. Brian Marker (BM) pointed out that integration with other geoscience groups is already difficult, but in addition to this new IUGS initiatives should be more in line with social sciences and other groups, which used completely a different set of semantics. Reimar Seltmann (RS) pointed out that many initiatives on resources already existed across the world, and suggested that IUGS’ role could be to assemble and provide guidelines to existing initiative. RO agreed with RS that the existing networks were important and should be identified. IL asked if it was a role for IUGS to improve knowledge of mineral potential globally. EN cautioned that this task was the application of science, and the core work of national geological surveys. EN added that the IUGS role should be to guard scientific integrity. It was AGREED that a “Strategic Implementation Committee” would be established to assist IUGS in setting the framework the any new initiative on resources.

5.b. Task Groups

5.b.1. Global Geochemical Baselines (TGGGB) (Sampat Tandon)

Sampat Tandon (ST) served as rapporteur for this group and referred the EC participants to the 2012 report for its aims: 1) to prepare a global geochemical database and its representation in map form and 2) to document the chemical elements and species in the Earth’s near surface environment. Currently there are 126 members from 69 countries. Leading this group are Dr. David Smith (USGS) and Dr. Xueqiu Wang (IGGE). Shaun Reeder is the Scientific Secretary.

In pursuit of its aim, TGGGB has aided partners by providing geochemical mapping training, consultation, organizing meetings, establishing criteria for inclusion of data into global database, as well as acting as a data repository. Many geological surveys now financially support continental-scale

geochemical mapping projects that support TGGGB's aim. TGGGB members continued to interface with the EuroGeoSurveys Geochemistry Expert Group, the International Atomic Energy Agency, the Global Terrestrial observing Systems, the Geochemical Survey (Australia) and the North American Soil Geochemical landscapes project.

In 2012, a geochemical mapping seminar was held in Nanjing for CCOP countries and the group contributed to a special issue of *Geoscience Frontiers* (2012; papers from 2009 symposium). There was a delay in the start of the International Geochemical Mapping project by member countries of Coordinating Committee for Geoscience Programmes in East and Southeast Asia (CCGP) because funds were lacking for training, additional analytical services and quality control of data. ST reported that IUGS held an ARC on the geochemical group in May 2012 at Institute of Geophysical and Geochemical Exploration Langfang, China. ARC Members included Sampat Kumar Tandon (Chair), Peter Bobrowsky (Secretary), Dong Shuwen, and Li Xiangdong . The ARC had applauded TGGGB for its successful training programs for developing countries.

TGGGB future plans included the launch of the UNESCO International Center for Global-Scale Geochemistry; the proposed geochemical mapping program for CCOP countries; possible training session for geochemical mapping programs in Iran and Brazil and the completion of soil geochemical survey of US and Mexico. There are also tentative plans for the revision and publishing of FOREGS Geochemical Mapping Field Manual; training courses in geochemical mapping in Brazil and Iran; technical sessions on international-scale geochemical mapping planned for Goldschmidt Conference and a new website.

5.b.2. Geoheritage (GTG) (Patrick de Wever)

Patrick de Wever (PW) informed the IUGS Executive that this group was created at the initiative of IUGS Bureau (Peter Bobrowsky). GTG has aimed to facilitate the development of national and international awareness and understanding of the underlying concepts of geoheritage. The Task Group also has aimed to help better understand and recognize the various types of geosites around the world and to promote within less developed countries the will to develop their own geoheritage.

Three main objectives of the task group have been to develop an inventory of geoheritage sites; to compile the regulations on trade of ex-situ objects existing in different countries on a website; and, to provide a single point of reference and coordination for the current diverse and disparate activities in geoheritage being undertaken by the IUGS family.

GTG leaders attended various meetings in 2012, including Montceau-les-Mines Lagerstätte & Autunien stratotype (20-21 September 2012), the meeting IUGS-ProGEO Geoheritage: Protecting and Sharing (24-28 September, Bari, Italy), Forum "Geoheritage, Geoconservation & Geotourism" (15 November, Brussel). In addition, GTG was a member of the organizing committee of the Arouca 11TH European Geoparks Conference Portugal 19-21 September.

GTG continued with development of a database for regulations on geoheritage occurring in different countries. An important objective of Geoheritage Task Group was to display an international list of the most important sites for geological science.

5.b.3. Heritage Stone (TGHS) (Dolores Periera)

Dolores Periera (DP) outlined the objectives of the group: 1) to facilitate formal designation of natural stones that have achieved widespread recognition in human culture; 2) to create the “Global Heritage Stone Resource” (GHSR) as a term for this designation and 3) to promote the adoption and use of the GHSR designation by international and national authorities.

In 2012, TGHS officers gave presentations in Borba, Brisbane, and Santiago de Compostela. The Task Groups work resulted in IUGS’ first involvement in dimension stone (= hard rock used for building, decorative, ornamental or other similar purposes) and the first ever international geological (as opposed to technical/mechanical) standard associated with dimension stone. Specific achievements in 2012 included: the distribution of 5 circulars; launching of the website (www.globalheritagestone.org) and publishing two papers in *Episodes*. A draft citation for a GHSR recommendation has been prepared for Portland Stone (UK) and submitted to *Episodes*, a citation which will provide a model for further GHSR proposals. An “Interim or Standing List of potential GHSRs” has been created. As of 1 February 2013 this has 49 entries. A general “Check List of GHSR characteristics” is being finalised. The network of correspondents continues to expand. On 1 February 2013 it numbers 168 geologists from 42 countries, which represents the largest known association of dimension stone geologists.

For the future HSTS will 1) expand its list correspondents; 2) expand its list of potential GHSRs; 3) continue communication via its circulars website and possibly an international dimension stone newsletter; 4) facilitate research papers on GHSR proposals; 5) provide a formal approval of draft GHSR citations to formally establish the GHSR designation; 6) maintain a publicly accessible register of approved GHSR designations. Finally, the task group hopes to begin preparation of an international guide to heritage stone designation. HSTG will be present at the EGU with 32 presentations.

5.b.4. Global Geoscience Professionalism and related matters; [incorporates discussion of future of TG Global Geoscience Workforce] (Ruth Arlington, Pat Leahy)

Ruth Allington (RA) began by introducing the EC to the role of professional geological organizations (PGOs). As a whole, PGOs have assisted governments, industry and academic institutions set standards for 1) communication of geoscience information relevant to public resafety; 2) use of geoscience information in relation to sustainable development and capital investment and 3) content of academic training and experience required for safe and competent geoscience practice. Some PGOs have focused solely on professionalism licensing and standards and although some combine this role with more traditional roles of scientific societies and institutions, all professional geological organizations have codes of professional conduct/professional ethics and a disciplinary code binding on all members.

RA informed the Executive that the group she chaired (Task Group on Geoscience Professionalism - TGGP) preferred the broader definition of the term “professional” that included not only applied practitioners, but also educators and researchers. The main sponsors of this Task Group are the European Federation of Geologists (EFG); Geoscientists Canada; American Institute of Professional Geologists (AIPG); Australian Institute of Geoscientists (AIG); Geological Society of South Africa (GSSA) and El Colegio de Geólogos de Bolivia (College of Geologists of Bolivia). TGGP, along with its members, aims to identify and include more professional geoscience organizations representing countries/continents to share experience and define best practice. In addition, PGOs together could work towards mutual recognition of standards and titles to facilitate global mobility of geoscientists. For this, collaboration with organization with similar aims is necessary, and IUGS Task Group on Geoscience Professional could as a focal point for necessary dialogue and shared experience.

RA continued by describing the purpose of the TGGP website. For individual geoscientists the website would provide access to information regarding careers geoscience; professional standards and qualifications; expected standards of professional conduct and ethical codes; educational pathways and requirements and support for working in a different country or a different sector. For the public, the website would give an overview of the wide range of work that professional geoscientists do and how it relates to everyday life, the importance of geoscience for the protection of the public and sustainable use of natural resources and standards that should be expected from professional geoscientists.

Patrick Leahy (PL), Executive Director of the American Geological Institute (AGI) provided a brief overview of the AGI Global Workforce on Professionalism seeks to establish definitions for the profession; to establish a global baseline of quantity and diversity and identify capacity-building strategies. Its activities have resulted in the 2012 Directory of Geoscience Departments, which includes as many geoscience departments internationally as possible. Leahy points out that the IUGS logo was used on the directory and that the work of this group would not have been possible without the grant from IUGS. He identified major challenges, one being that they lacked information from Latin America and data quality issues continued to be an impediment in 2012.

5.c. Initiatives

5.c.1. Initiative on Forensic Geology (Laurance Donnelly)

Laurance Donnelly (LD), IFG Chair, informed the participants that the group aimed to globally advance forensic geology and promote its applications. LD first provided an overview of the topic of Forensic Geology, which has been defined as ‘the application of geology to criminal investigations which may come before a court of law.’ By their knowledge and understanding “evidence from the earth”, the forensic geologist can provide assistance to criminal investigators and the court. LD reported that interest this field has been increasing and leading forensic geologists participate in the Initiative. In 2006, the first professional body was formed by the Geological Society of London. Then,

in 2008, a IUGS-GEM Working Group on Forensic Geology was formed, which subsequently became an IUGS Initiative in 2011.

There has been greater interest and awareness within the law enforcement for geological knowledge. Much of the core activity of geologists is the transfer of skills that will lead to better understanding of geological evidence collected at the crime scene, and from objects and collected from a suspect or victim. This “trace evidence” can be strictly geological material like soils, sediments, rock fragments and microfossils, or geologically derived materials such as glass, bricks, tiles, plasterboard, concrete and cement. Burial grounds have been investigated by geological methods as pollutants/contaminants. Mining fraud is another example of where forensic geologists have been involved.

By 2012, 40 countries were involved in the initiative and dozens of events were held (see report). Highlights included presentations held at the Annual Meeting of the Geological Association of Canada (GAC), and training courses for officers of the “Servicio de Criminalística of Guardia Civil”, the Australian Federal Police (AFP) in Brisbane and the Colombian Police in Bogota. Principal challenges for the initiative and forensic geology are related to accreditation, funding, confidentiality, press and media, publications, and conferences. Most of the expenditures for the initiative go to outreach, knowledge transfer and training.

5.d. Adhering Organizations

5.d.1. Reports of Adhering Organizations (Marko Komac)

MK said that 31 reports from IUGS Adhering Organizations had arrived: Australia, Azerbaijan, Belgium, Bulgaria, China, Peoples Republic of, Croatia, Cyprus, Czech Republic, Estonia, Finland, France, Hungary, India, Iraq, Ireland, Italy, Korea North (PDR), Latvia, New Zealand, Russia, Serbia, Slovak Republic, Slovenia, South Africa, Spain, Switzerland, Tajikistan, Uganda, United Kingdom, USA, Vietnam, (Norway’s report arrived 24 February). A summary of the highlights of these reports was prepared by the IUGS Secretariat and distributed to the EC.

Jacque Charvet (JC), the past IUGS Vice-President, encouraged the new executive to be pro-active in its relations with the IUGS National Committees, which are appointed by the Adhering Organizations. Dedication is required for this task and IUGS should develop and communicate a clear statement on value of membership.

5.d.2. Inactive Countries (Sampat Tandon)

ST reported that in the last 10 years, the number of inactive countries has varied between 23% and 34%. Between 85% and 93% of the inactive countries belong to category 1, total annual fees of the inactive countries represent fees contribution \$15000 or just about 5% of the IUGS annual income. ST emphasized the importance for IUGS to be inclusive and maintain a wide global constituency.

Recently, Bulgaria, Iran, Mexico, Nigeria, Sri Lanka and Ukraine have moved into an inactive status as defined under IUGS Statutes. At the same time, three Category 1 members (Chile, Jordan, and Vietnam) and one category 2 country (Iraq) have been reinstated. Also, The Netherlands has been recently re-applied after withdrawing from IUGS in 2012.

According to the most recent assessment there were 72 countries that were not yet members of IUGS, and letters were sent in 2012 to select countries: Armenia, Bhutan, Cambodia, Ethiopia, Fiji, Kyrgyzstan, Laos, Nepal, Sierra Leone, Zimbabwe for enrolling as members of the IUGS.

Strategies that had been discussed were to encourage lower category membership countries to move up to higher category membership. Also there could be a focus on member countries that have non-member status or have only recently become inactive. Finally, for those member countries/regions who have been inactive for longer periods (5-10 years), the Executive Committee should prioritize locating contacts in the earth science community in the region that are influential and can persuade them to be reinstated or rejoin the IUGS. Tandon encouraged the inclusive approach to membership and a first priority, target about 10-15 of the non-member countries to join the IUGS: Armenia, Bahrain, Bhutan, Brunei, Burma, Cambodia, Chad, El Salvador, Eritrea, Ethiopia, Gabon, Grenada, Kuwait, Kyrgyztan, Liberia, Maldives, Nepal, Oman, Qatar, Sierra Leone, Singapore, Zimbabwe.

5.e. Affiliated Organizations

5.e.1. Applications for Affiliation

- **Earth Science Matters (Wolfgang Eder)**

Wolfgang Eder (WE) presented the model for the Earth Science Matters Foundation for Geoscience outreach organization. He pointed out the need for policy makers to recognize that geoscientists and geosciences are crucial to dealing with resources and sustainability. The problem has been that given geoscientists are often poor communicators, outreach has a low priority as a result funding to geological organizations is waning. The outreach group of ESM offers organization structure (Board and Secretariat, Partners, Senior Advisors and National Points). ESM also offers partnerships with the International Association for Mathematical Geosciences (IAMG), International Lithosphere Program (ILP), International Soil Data Centre (ISRIC) and the Geological Society of Africa (GSAf). Current ESM projects include: IUGS-COGE: GEO-ERA; Groundwater for Food Security; GFZ-SHIP, Shale Gas; Joint project with the YES Network; GEOschools Geo-Education, Disaster Risk; a Book series: Geoheritage, Geoparks, Geotourism (Springer); Int. Year of Global Understanding; Joint booth displays and the role of Outreach partner for IAMG, ILP, GSAf. WE welcomed discussion from the Executive Committee regarding “a fit” for ESM in the IUGS organizational structure.

IL pointed out that people involved have long established links with IUGS, which is a source of confusion for some groups. For that reason ESM is not seen as autonomous from IUGS. WE viewed the history of this association as a strength. ESM would work as IUGS’ Outreach machine.

- **International Association for Promoting Geoethics (IAPG; Sylvia Peppolini)**

SP explained IAPG did not have a scientific platform, and that its focus was ethics in relation to Geosciences. By the end of 2013, it is expected that IAPG will have legal organizational status. Currently, individuals in the group have been involved with the question of how to relate ethics with hazard, and the need to make geological knowledge part of the social knowledge. The approach will be to assimilate the best procedures for operation. The topic of geoethics was present at the last EGU, and will be present at the next. This group requested that the Executive accept IAPG as an affiliated organization.

EN asked if RA saw that there was an overlap between this group and the work of the professional geological organizations. RA replied that the groups will work together and avoid overlap.

- **International Association for Geoethics (IAGETH; Jesus Martinez Frias)**

As this group's President, JMF presented its request for affiliation with IUGS. JMF reported that the International Association for Geoethics (IAGETH) was founded during a meeting of AGID's International Working Group of Geoethics in August 2012 in Brisbane (Australia), and the Founding Executive Committee sent a request for affiliation to IUGS on 20 August 2012. JMF informed the participants that the topic of Geoethics grew out of a partnership between Ethics and Geology and named Dr. Vaclav Nemec, Vice President for the AGID (Europe) as its father. By 2010, geoethics began to be a fundamental subject in the context of the activities of the IUGS Commission on Geoscience Education, Training and Technology Transfer.

The aims of the IAGETH are to promote and encourage the advancement of geoethics; to foster geoethical ways of thinking and acting, and to improve teaching and training in geoethics. After less than one year since its foundation, the IAGETH has developed relations to more than a dozen geoscience associations and societies, and consists, at present, of 30 National Chapters led by recognized experts from different geoscientific disciplines (natural hazards, mining geology, natural resources, sustainability, environmental issues, climate change, geoeducation, geoconservation and geoheritage, planetary sciences, etc).

IL stated that Executive would consider the applications by both geoethics associations during its closed session.

5.e.2. Reports from Affiliated Organizations

Reports from the following Affiliated Organizations were received and distributed to all meeting participants:

1. AFRICAN ASSOCIATION OF WOMEN IN GEOSCIENCES (AAWG) <http://www.aawg.org/>
2. AMERICAN GEOPHYSICAL UNION (AGU) <http://www.agu.org>
3. ASSOCIATION INTERNATIONALE POUR L'ETUDE DES ARGILES (AIPEA) <http://aipea.org/>
4. AMERICAN GEOSCIENCES INSTITUTE (AGI) <http://www.agiweb.org>
5. ASSOCIATION OF GEOSCIENTISTS FOR INTERNATIONAL DEVELOPMENT (AGID) <http://www.bgs.ac.uk/agid/>

6. CARPATHIAN BALKAN GEOLOGICAL ASSOCIATION (CBGA) <http://www.cbga2014.org>
7. COMMISSION FOR THE GEOLOGICAL MAP OF THE WORLD (CGMW) http://ccgm.free.fr/index_gb.html
8. EUROPEAN ASSOCIATION OF SCIENCE EDITORS (EASE) <http://www.ease.org.uk>
9. EUROPEAN FEDERATION OF GEOLOGISTS (EFG) <http://www.eurogeologists.de>
10. EUROPEAN GEOLOGICAL SURVEYS (EGS) <http://www.eurogeosurveys.org>
11. GEOLOGICAL SOCIETY OF AFRICA (GSA) <http://www.geologicalsocietyofafrica.org/>
12. GEOLOGICAL SOCIETY OF AMERICA (GSA) <http://www.geosociety.org>
13. GEOLOGICAL SOCIETY OF INDIA (GSI) <http://www.geosocindia.org>
14. GEOLOGISCHE VEREINIGUNG (GV) <http://www.g-v.de>
15. INTERNATIONAL ASSOCIATION FOR MATHEMATICAL GEOSCIENCES (IAMG) <http://www.iamg.org>
16. INTERNATIONAL ASSOCIATION OF GEOCHEMISTRY (IAGC) <http://www.iagc-society.org/>
17. INTERNATIONAL ASSOCIATION OF GEOMORPHOLOGISTS (IAG) <http://www.geomorph.org>
18. INTERNATIONAL ASSOCIATION OF HYDROGEOLOGISTS (IAH) <http://www.iah.org>
19. INTERNATIONAL ASSOCIATION OF SEDIMENTOLOGISTS (IAS) <http://www.sedimentologists.org/>
20. INTERNATIONAL ASSOCIATION ON THE GENESIS OF ORE DEPOSITS (IAGOD) <http://www.iagod.org>
21. INTERNATIONAL CENTER FOR TRAINING AND EXCHANGES IN THE GEOSCIENCES (CIFEG) <http://www.cifeg.org>
22. INTERNATIONAL CONSORTIUM ON LANDSLIDES (ICL) <http://icl.iplhq.org/category/home-icl/>
23. INTERNATIONAL FEDERATION OF PALYNOLOGICAL SOCIETIES (IFPS) <http://geo.arizona.edu/palynology/ifps.html>
24. INTERNATIONAL GEOSCIENCE EDUCATION ORGANISATION (IGEO) <http://www.geosced.org/>
25. INTERNATIONAL MEDICAL GEOLOGY ASSOCIATION (IMGA) <http://www.medicalgeology.org/>
26. INTERNATIONAL PERMAFROST ASSOCIATION (IPA) <http://www.ipa-permafrost.org/>
27. INTERNATIONAL SOCIETY OF SOIL MECHANICS & GEOTECHNICAL ENGINEERING (ISSMGE) <http://www.issmge.org/>
28. SOCIETY FOR GEOLOGY APPLIED TO MINERAL DEPOSITS (SGA) <http://www.e-sga.org/>
29. SOCIETY FOR SEDIMENTARY GEOLOGY (SEPM) <http://www.sepm.org/>
30. SOCIETY OF ECONOMIC GEOLOGISTS INC. (SEG) <http://www.segweb.org>
31. YOUNG EARTH SCIENTISTS NETWORK (YES) <http://www.networkyes.org/>

5.e.3. Short presentations from representatives present

- **EuroGeoSurveys - EGS (Luca Demicelli)**

Luca Demicelli, EGS Secretary General, informed the EC that currently the Association represented 33 national geological surveys (and the regional surveys of three countries). As with IUGS, they coordinate a number of projects with geological surveys. Criteria for approving an activity include: future viability after EGS supports ends, connectedness and interoperability, and value of collected data for the EU community. Current Projects include: *PanGeo* (a free Geohazard Information Service for Europe), *Promine* (Pan-European database of Mineral Deposits), *ThermoMap*, *SARMa* (Sustainable Aggregates Resource Management), *GS Soil*, *EO-Miners* (Earth Observation for Monitoring and Observing Environmental and Societal Impacts of Mineral Resources Exploration and Exploitation), *EuroGeoSource* (Information portal for sustainable use of energy and minerals), *TransEnergy*, *OneGeology-Europe*, *Geo Seas* (Pan-European marine geoscientific e-infrastructure), *EMODNET-Geology* (European Marine Observation Data NETwork), and *I2Mine* (zero impact, environmental mining).

In the near future, EGS shall try to pursue the development of an ERA-NET project on geoscience, under the EC Horizon 2020 framework programme for research.

The EGS Secretary General welcomes IUGS involvement and support in this and other projects.

- **European Federation of Geologists (Isabela Fernandez Fuentes)**

IFF reported that EFG is a non-governmental organization established in 1981 and today has 21 national association members. It is the representative body for the geological profession in Europe. The organization has operated through a Board (5 Officers) and Council of 42 Delegates. To administer EurGeol Accreditation Structure there are four National Licensed Bodies (minimum 3 members each); an International Licensed Body (3 members) 17 National Vetting Committees (minimum 3 members each), a Disciplinary Committee and a Registration Authority (3 members).

The main achievements in 2012 include EFGs participation in the EGU meeting theme Geodiversity and Geoheritage in University Education and Research"; a Workshop on "Managing Natural Hazards"; and a stand at the European Commission's Green Week 2012 "Every drop counts".

EFG continued to maintain a Panel of Experts (9 Panel of Experts Coordinators and over 150 experts) and a central office (2 staff). In 2012 the EFG Panel of Experts continued to contribute to the development of European Policies of interest to geologists and geological issues around Europe (Education, Geothermal Energy, CO2 Geological Storage, Hydrogeology, Natural Hazards & Climate Change, Resources and Reserves – Minerals and their sustainable use, Geological Heritage and Soil Protection).

- **International Association on the Genesis of Ore Deposits (Reimar Seltmann)**

Reimar Seltmann (RS) reported that IAGOD promotes international cooperation in the study of the genesis of ore deposits and participates closely with other international bodies in the field of ore deposits research in a range of international programmes, including several active IGCP projects. Re-launch of the "Global Tectonics and Metallogeny" journal (Schweizerbart Publ.) has been protracted, and focus is set now on submissions from BRIC countries. The official society journal "Ore Geology Reviews" (Elsevier) is a showcase for IAGOD. Current contact is Secretary Dr Sergey Cherkasov, SGM RAS (Russia), iagod@sgm.ru.

In 2012 the "Metallogenic map of Europe" project was complete and delivered to CGMW in August by the Russian-French group headed by Academician Dmitry Rundqvist (SGM RAS Moscow; IAGOD Honorary Life Member). The Project "Quantitative evaluation of predictive criteria for mineral deposits" was completed by the group headed by Dr S. Cherkasov with support of Russian Ministry for Science and Education. One of the project's results is software "Prognoz RM 1.0" for evaluation of predictive criteria and deposits targeting.

For the 34th IGC, IAGOD sponsored the Symposium 9.7 "Mineral deposits: Episodes, accumulation of metals and related geodynamic processes in China and adjacent regions"

- **Commission for the Geological Map of the World (Philippe Rossi)**

PR reported that CGMW was initiated during the 2nd IGC in Bologna (Italy) in order to create a geological map of Europe, which was later expanded to include all the continents and ocean basins. Geological Surveys of countries and territories around the world are statutory members. The CGMW has been responsible for designing, promoting, coordinating and publishing small-scale thematic earth science maps of the continents, oceans and the world. CGMW programs have been carried out in partnership with geological surveys, universities, oceanographic institutions and industrial firms, and with the support of IUGS and UNESCO. Like IUGS, CGMW is an associated body of OneGeology, whose aim has been to create dynamic digital geological map data for the world.

- **Young Earth Scientists Network (YES) (Wang Meng)**

WM reported that YES had grown to 3000 members from 120 countries 44 National Committees. Its website www.networkyes.org is currently hosted by the American Geological Institute and accounts are hosted by GSL. In 2012, YES received support from IUGS, IGC, BHP, and CAST in China. The 2012 Yes Congress was held in conjunction with the 34th IGC in Brisbane, Australia, and achieved over 700 registrants. YES had worked with several international and national organizations in 2012 and other joint events were held. A Young Working Committee of Geological Society of China was set up and has been named YES-China. The First Chinese Young Geologist Congress took place with more than 500 attendees nation-wide. The YES-India event was held in conjunction with The 49th Convention of Indian Geophysical Union (IGU) and young geologists contributed to 27 presentations. Publishing continued with papers accepted in "Geoscience frontiers", and Acta Geologica Sinica (English Edition).

For 2013, an International Meeting is planned "3rd YES Meeting Outreach for publics for Earth Sciences". Also planned or envisioned are working groups on career development, continuing geoeducation, CV workshop, online interviews and professional meetings. Stages for presentations from young geologists will be sought through various meetings: EGU 2013, IGCP596 – Malaysia, AGU 2013 and the YES South American Event. In addition, the website for Yes will be developed by improving the database, developing its forums and creating a message board.

5.e.4. Strengthening links between IUGS and Affiliated Organizations through IUGS sessions and functions at major meetings (Roland Oberhänsli)

RO presented his observation that currently, the IUGS and its Affiliated Organizations were loosely connected. He encouraged the Executive and participating affiliated organization representatives to maintain stronger links. IUGS should communicate to its organizations the benefits of being affiliated to IUGS. He was assigned to draft a motivation text. He was assigned to draft a motivation text.

6. Reports on Joint and Other Programmes

6.a. IUGS-IUCN (World Conservation Union) Geological World Heritage (Wesley Hill)

WH informed the participants that in 2006 IUGS signed an agreement with the World Conservation Union (IUCN) offering to provide geologic desktop reviews of newly nominated World Heritage site applications. IUCN has been the advisory body to the UNESCO World Heritage Committee on natural World Heritage Sites. Nominations that best represent major stages of Earth's history, on-going geological processes resulting in landforms, or geomorphic or physiographic features have been forwarded for review. Each year IUGS has invited experts within its membership community to volunteer to be desktop evaluators for new geologic based site applications. The IUGS Liaison provides names of approximately 10 desktop evaluators, with qualified expertise, per nominated site to write scientific reviews of the WH application materials/dossier.

In the near future IUGS should discuss and implement a better recognition system for the desktop volunteer reviewers. Also, the June 2006 agreement (IUGS-IUCN) needs to be updated to better reflect the working relationship and to increase IUGS visibility within the partnership. Finally, IUGS should discuss avenues to partner with Geopark evaluators, which is a very similar kind of partnership. WH pointed out that the IUCN recently adopted a new resolution on geological heritage – Valuing and Conserving Geoheritage, within the IUCN Programme 2013-2016.

6.b. IUGS-IUPAC Task Group on Isotopic Geology (TGIG) (Igor Villa)

IV provided the history of this group, from the 1960- 1970s, during which time Steiger and Jäger, both with the Subcommittee on Geochronology (under ICS) recommended the adoption of a standard set of decay constants and isotopic abundances in isotope geology. The values set out in the convention had not been revised since approval in 1976. However, IUPAC and IUPAP have been using a different convention, which has been updated every 2 years. It was decided later that a common IUG -IUPAC convention was required to update half-lives and to resolve terminology issue.

During the year 2011, the group submitted a recommendation on the half-lives of ^{238}U , ^{235}U and ^{234}U to a leading commercial peer-reviewed journal, *Geochimica and Cosmochimica Acta*. In February 2012, there was a meeting with IUPAP members at the National Physics Laboratory, Teddington, UK to coordinate the definition and use of time units between IUPAP and the accepted IUPAC-IUGS recommendation. The IUPAP side has expressed a great interest in a joint effort. In September 2012, there was a plenary meeting of the TGIG in Antwerpen, Belgium. In addition to the coordination of the time unit recommendations, the half-life of ^{87}Rb was evaluated and a recommendation is being drafted for publication in a leading commercial peer-reviewed journal. Periodic updates in the IUGS and IUPAC official journals are also being considered.

6.c. OneGeology (Marko Komac, Roland Oberhänsli)

MK reported that OneGeology has become a fully operational initiative. The current Internet portal and catalogue is fully accessible (view, zoom, pan, search, download etc.) and linked and viewable using Google maps. OneGeology has provided many data services and has continued to offer a help desk. Site users, who have included researchers, educators and entrepreneurs, totaled 25 million visitors from all over the globe when the website was launched. Organizations from 117 nations have participated, including 250 data services from 54 surveys.

MK pointed out that despite OneGeology success, financial limitations and differences in national priorities have meant that the best data available nationally has not always been delivered. At the time of the report, 63 surveys had not yet made their data available. For OneGeology this would mean more work in capacity building and that its participants improve their understanding of the challenges faced by the developing world (and sometimes the so-called developed world). There was massive media attention and public interest when OneGeology was launched, however, it has generally proved to be difficult to continue to attract funding for standards and information management. MK suggested that increasing efforts in outreach and communication in OneGeology will help improve its outcome.

He pointed out factors that could explain the success of OneGeology:

- Short simple mission and vision: 4 simple objectives
- Uncomplicated plan, start simple and build up
- Inclusivity: all geological surveys welcome (different nations have differing abilities to participate)
- Minimal intrusion into local systems
- A pragmatic approach to coordination and governance – those prepared to lead drive it forward
- A “let’s do it” ethos, not excessively strategize about it!
- A “buddy” system to help those who need it
- Putting significant effort into outreach and media profile
- Pre-existence of international network of geoscientists and geological surveys

MK gave an overview of where the OneGeology Consortium stood (as of 19 February). The 1G Consortium Agreement was finalized in December, 2012, however it has only been signed by eight National Survey Organizations and IUGS. The main technical partners, BGS & BRGM, will wait until the end of February, 2013 for more NGSOs to sign up before making the decision of whether to continue “OneGeology” in other form or terminate.

RO encouraged participants to communicate information regarding OneGeology to their National Committees. Many years of effort could be lost.

6.d. IUGS-IUGG International Lithosphere Programme (ILP) (Magdalena Scheck - Wenderoth)

MS-W, ILP Secretary General, provided the overall objectives of ILP:

- Elucidate the nature, dynamics, origin and evolution of the lithosphere through international multidisciplinary research projects and coordinating committees.
- Promote multidisciplinary research projects of interest to geological (IUGS) and geophysical (IUGG) communities
- Achieving a fine balance between: “addressing societal needs” –understanding solid earth processes, providing information for improved hazard assessment, sustainable resource exploration, geomedicine, and “satisfying scientific curiosity”
- Promoting young scientists

ILP is financed by contributions from IUGS, IUGG, 12 national committees, with the substantial support from Deutsches GeoForschungsZentrum, GFZ Potsdam, who has run the ILP Office. In 2012, ILP Task forces and regional committees held successful meetings and workshops and enlarged their networks. The Joint Programme gave significant input and gained visibility at several large meetings (EGU, AGU, GSA, IGC), and its member produced large number of ILP publications and several special volumes, MS-W outlined the main task forces of the programme, referring the Executive to the annual report for more detail.

For 2010-2014, the group had planned to launch new task forces and regional committees as well as activate the research councils to attract more funds for targeted programs. ILP will continue to improve visibility by maintaining a presence at international meetings and disseminating its research results. Cooperation (possibly financing) will be broadened by strengthening links with industry. Young scientists will be encouraged to become involved and they will be promoted through an active award system, such as the The Flinn-Hart Award.

MS-W outlined the 2013 Work Plan for ILP, which included further publications in EOS, Episodes and Earth Science Reviews. Its task forces will contribute to several sessions EGU-GA Vienna, at which time the ILP Council will also meet, and a joint booth of ILP, IAMG and Earth Science Matters was also planned.

6.e. Global Geoscience Initiative (GGI) (Edmund Nickless, Pat Leahy)

EN gave some background for the concept. Representatives from the GSA, AGI, BGS and the GSL had been in frequent dialogue due to their involvement in IYPE. What they envisioned was a community-based global geoscience research programme addressing issues of contemporary societal concern. This programme would engage many, across geoscience subdisciplines, and the social sciences, to provide a focus, which could unite these groups.

EN drew attention to drivers of this research-focused initiative: 1) population growth and increasing demand for resources; 2) applied geoscience to deal with consumption related issues and 3) natural hazards. In addition, geoscientists would need to ensure that knowledge about the impact of certain human activities on the natural world is convincingly conveyed to the public.

EN reported that a series of five town hall meetings were organized by GGI, which included presentations from internationally-recognized geoscience leaders. These produced a broad consensus that solid earth scientists should “do something” about understanding geological processes that have impact on society, particularly in relation to : Deltas; Natural hazards; Energy and mineral resource development (with minimal adverse environmental impact); Water resources (especially groundwater); and Ecological concerns and the quality of life. These topics are contemporary and engage the public in geosciences.

The leaders of this initiative considered GGI can act as a unifying focus for the geoscience community, attract significant amounts of research funding from a range of providers, address the ‘grand challenges’ of geosciences and contribute to geoscience capacity building in developing countries. EN noted that, as the proposers of this initiative are an informal group without a mandate, IUGS take on the role of developing research programmes based on the GGI findings and engaging other geo-unions and other organizations (ICSU, UNESCO, IGCP) and such as and initiatives such as Future Earth, the Belmont process)

During the discussion, Councillor Yujiro Ogawa (YO) supported the concept, and asked if a framework had been developed. EN suggested a multi-decade research programme, which required a topic that transfers across various geological disciplines and social sciences. The message is that geoscience is useful to society, but that it must begin with the science. RO agreed with GGIs direction. IYPE had been an outreach year, but without science. This could be a follow up programme. However, how IUGS could support this is unclear.

6.f. General discussion on Joint and Other Programmes

RO invited further comments and questions. There was no further discussion.

7. International Geological Congress (IGC)

7.a. 34th IGC in 2012 (Brisbane) (Ian Lambert)

The 34th IGC had 6000 participants from 112 countries, and experienced strong engagement from all sectors of the geoscience community. There was also a positive financial outcome, despite the global financial crisis and the strong Australian dollar. “Firsts” achieved for the IGC in Brisbane included that it was held over only 5 days, which lowered costs and made the event more attractive to many people. Also, all circulars were published exclusively in electronic form. This IGC hosted the Young Earth Scientists (YES) international conference and the majority participants at IGC were from

“new-world”. There was a significant focus on the private sector and a successful event called the “International Resource Ministers Forum” was held.

Many lessons were learned during this Congress, IL said. For example, it was necessary to remain flexible for the duration of the organizational period in order to better respond to economic and political issues. Organizers had observed that the traditional sources of participants had been under challenge globally as academic and government budgets tighten. Due to these financial challenges, it would be increasingly necessary for meeting organizers to engage with the commercial and industry sectors to obtain delegates and funding. Other measures to gain attendees included global marketing (start early and end late) and facilitation of business meetings of IUGS-related groups.

7.b. 35th IGC in 2016 (Cape Town) (Danie Barnardo)

The 35th IGC Foundation had been formed to act as Legal Entity and the PCO was appointed. DB, the Congress Secretary General, informed the Executive that Geoheritage will be an important theme at the Congress, and that organizers envisage publishing a volume on the Geoheritage of Africa. Therefore, the committee hoped to see several Global Geopark(s) in Africa registered by 2016. A Field Trip Committee has also been established, and they anticipate sponsorship through industry and government departments. A map and details of themes and routes of various field trips is being prepared.

The organizers expected to attract a substantial number of Geohost participants to IGC35. This will require substantial funds. The organizers have planned to promote the Congress as an African congress, rather than a South African Congress. Therefore they anticipate good cooperation with African Surveys and Societies. Contacts have already been made with many potential Field Trip Leaders. The Congress will be a good venue to promote geoscience and science on the continent.

During the 34th IGC, the South African Minister of the Department of Mineral resources gave an address at the closing function, and the “Presidents Cup” was passed on to South Africa. CGS formally transferred responsibility for the 35th IGC to the Foundation, support of 5 million rand was pledged, and three CGS staff members were transferred to the Foundation. At the time of reporting, sponsorship constituted 17.5% of the total revenue budgeted. The Foundation has been pursuing a principal (Foundation) sponsor, and they also have envisioned other sponsorship levels.

7.c. 36th IGC in 2020 (Delhi) (Sampat Tandon)

In the five months since the award of IGC 2020 to India, some initial steps have been taken. So far, the National Core Committee has been established and two preparatory meetings have been held in the premises of the Indian National Science Academy (INSA) and the Ministry of Mines. They will invite the Prime Minister of India to be the patron of the meeting. A meeting with the Presidents of the Academies of Pakistan, Nepal, Bangladesh and Sri Lanka was held in Delhi during the “Summit of South Asian Academies” on September 8, 2012 to discuss their participation. Full cooperation was

assured by each country representative. A follow up meeting in Colombo with Prof. Locana Gunaratna of Sri Lanka Academy of Sciences as Chair, was held on October 16, 2012 where each participating country was advised to appoint a sub-committee to plan and organize field trips in the respective countries and take appropriate steps to obtain funding from their government. Also they planned to follow up on “Expression of Interest” for active participation from Afghanistan, Iran, Japan, Mauritius and Korea.

The Ministry of Earth Sciences will provide rooms for the IGC 2020 Secretariat. Dr. N. Khare has been nominated for the IGC Secretariat. Contacts have been initiated with the Canadian IGC bid group for the transfer of the domain www.igc2020.org. Once agreed to, the formal website of IGC-2020 will be launched. Taking into account the inputs India had received during the Council meeting, the dates of the Congress will now be five days during the period Feb. 23-29, 2020.

Until the appointment of President and Secretary General, IGC 2020, the Chairman, INSA- IUGS National Committee, presently Prof. D. M. Banerjee (dhirajmohanbanerjee@gmail.com) and Dr. Alok Moitra, Executive Director, Indian National Science Academy (icsu@insa.nic.in) are the main contacts.

7.d. International Geological Congress Committee (IGCC) (Ian Lambert)

IL described the composition and function of this group. The IGC Committee (IGCC), which comprises Presidents and Secretary Generals of the past and pending IGCs as well as the Bureau members of the IUGS, looks after the ongoing interests of the IGC. In general, it has had two face-to-face meetings between recent IGCs, as well as meeting during each IGC. South Africa is to host the next IGCC meeting at a date to be confirmed in 2014.

7.e. Council Meeting at 34th IGC (Peter Bobrowsky, Roland Oberhänsli, Ian Lambert)

The Joint IGC-IUGS Council met in Brisbane where the new Executive offices were selected. Dehli was selected as venue of the 36th IGC. New Commission officers were ratified and after ongoing revisions since 2004, the Statutes of IGC and IUGS were approved.

7.e.1. Recommendations of the Statutes and Bylaws Task Group (Pat Leahy)

The Task Group provided a report to IUGS leadership Oct. 24, 2011 and presented its full report to the Executive Committee February 2012. The Statutes were approved at the last Congress. Leahy presented a set of recommendations for future task groups:

- Develop a single set of Statutes and Bylaws after approval of the harmonized IGC & IUGS set
- Move towards an annual IGC with strategic partnerships with other GeoUnions
- Move to permanent meeting staff as annual meeting evolve
- Long-term recommendations to be distributed
- Replacement of Past-President on EC 39 (b)
- Dual Positions on IGCC (IGC 16)?

- The future of Finance Committee and other committees
- Small committee to oversee implementation of new statutes and bylaws
- Must have EC member leadership

WC presented his concern that Committee appeared not to have followed the decision of Florence Council (2004) which was not to combine the statutes.

8. UNESCO

8.a. Earth Sciences at UNESCO (Patrick MCKEEVER, Roland Oberhänsli)

PM informed the Executive that he had joined UNESCO in May 2012 as the new Chief of Section at the Earth Sciences and as Executive Secretary of IGCP. Many of the activities within the Section have had the theme "Science for Sustainable Development." This theme is compatible with projects addressing factors such as climate change, population increase, and diminishing resources (incl. fresh water).

Activities in Earth Science in UNESCO in 2012 included the Earth Science Initiative in Africa (ANESI Launch, Mobile Geological Mapping Unit, Earth Science in schools, SIDA Abandoned Mines) and Remote Sensing (HIST, SIDS Pilot, GARS). In 2012, Geoparks reached 90 members. For 2013, 11 new applications and 25 revalidations are expected. UNESCO is also in the process of reviewing the link between the Global Geoparks Network and UNESCO with a view to formalising it through a decision of the Member States. With regards to Geohazards, it is hoped that there will be cooperation with DRR unit.

8.b. IUGS-UNESCO International Geoscience Programme (IGCP) (Patrick McKeever (PM), Roland Oberhänsli)

PM reported that IGCP, which has now entered its 42nd year, started as a programme to promote correlation of geology across the world in the wake of the plate tectonics revolution. He suggested that IGCP has demonstrated its ability to evolve and adapt, just as geoscience continues to evolve and advance. Now, in the 2nd decade of the 21st century, our Earth and human society are facing unprecedented challenges. IGCP will once again need to evolve and adapt to help society face these challenges.

In 2012, key events for IGCP included the 40th anniversary event and the IGC Brisbane. Changes in personnel in both IUGS and UNESCO in 2012 will pose administrative challenges for 2013. In 2012, UNESCO contributed \$88,500 from the new Emergency Fund (a reduction of \$35k) IUGS contributed \$70,000, PR of China contributed \$20,000 and SIDA contributed \$125,000. These funds helped run 29 projects, 7 of which were funded exclusively through SIDA.

Trends indicate that visibility, and as a result funding, has been decreasing. In 2012 only 12-13 proposals were received. Also, a declining number of reports are sent in by IGCP National Committees. More are needed as these reports give visibility for IGCP. For the future, IGCP faces challenges of:

- Relevance for Society
- Sustainable Development
- Peace-Building The Way Forward
- Increased North-South Cooperation
- Increased South-South Cooperation
- Cross-disciplinary projects beyond geoscience
- Really looking at the global challenges for society
- Greater involvement of national committees
- Improved gender balance across all aspects of IGCP Creation of a joint UNESCO-IUGS Task Force

In the discussion that followed, YO asked about whether or not the IGCP structure (UNESCO plus IUGS) resulted in conflicts in opinion. PM maintained that UNESCO and IUGS are equal partners within IGCP. Hassina Mouri (HM) pointed out that there seemed to be the same people leading projects, and that particularly young people appeared to be excluded. PM replied that many evaluators viewed the science as excellent in many projects, but that the results could be better communicated. MK pointed out the IUGS and UNESCO are not yet at the stage to sign a Memo of Understanding. PM confirmed this to be correct, but said that UNESCO was willing to move in that direction.

8.b.1. Report on IGCP ARC (Marko Komac, Margarete Patzak)

MK reported on the behalf of the ARC, whose meeting was held 3-4 January 2013 at UNESCO, Paris. Representing IUGS were Yildirim Dilek (Chair), Marko Komac (Secretary), Peter Bobrowsky, Eduardo F.J. de Mulder, and Mioara Manda. UNESCO representatives were Patrick McKeever, Executive Secretary IGCP, Robert Missotten, and Margarete Patzak. The formal, IUGS-led ad-hoc review of the IGCP was requested at the Annual EC Meeting in San Sebastian (Spain) in February 2012.

The report presented by IUGS to the participants summarized IUGS concerns about its visibility in the programme and the decreasing amount of involvement (proposal submissions, national committee reports) of the geological community. Funding had increased over the last years from SIDA, China, and IUGS but UNESCO funding had not. MK read the list of recommendations from this ARC for the IGCP. The IGCP Secretariat, MP, remarked UNESCO's comments or edits needed to be incorporated. RO proposed an iterative process, the results of which will be distributed at a later date to the Executive Committee. PM agreed this as important and it was AGREED by the Executive.

8.c. Geoparks and Geoheritage

8.c.1. Global Geopark Network (GGN) (Wesley Hill)

WH reported on the 11th European Geoparks Network Meeting (EGN) and Global Geoparks Bureau Meeting in Auroca, Portugal (September) where 5 new Global Geoparks were presented. It had been decided that Marko Komac will represent IUGS at the 12th EGN in Italy next September. WH will represent IUGS at the Pacific Geoparks Network Meeting and Global Geoparks Bureau meeting both to be held in South Korea in September.

In 2013, UNESCO has planned to coordinate approximately 70 evaluators for on-site review of applications or revalidations. IUGS has TORs for collaboration with the Global Geoparks Network (GGN) to assist with the geological assessment of new Geopark nominations. For 2013, there are 11 new Geopark applications and IUGS will identify at least 22 scientific evaluators for these applications. WH pointed out that Geoparks are also more than the geology: social, economic and cultural factors also are assessed. IUGS assists only with evaluation of the geological criteria.

WH pointed out that there have been efforts proposed from the regional Geopark Networks to formalize the Geoparks Initiative. Currently, sites are referred to as “Geoparks Supported by UNESCO.” Formal conditions must be met within UNESCO to allow sites to be named UNESCO Geopark. Hence in April 2013, the UNESCO Executive Board will again discuss the formalization of UNESCO Geoparks.

8.c.2. Opportunities for additional IUGS-UNESCO collaboration on Geoparks (Wesly Hill)

WH reported that she and Marko Komac had met with Patrick McKeever and Margarete Patzak, who coordinate the Geopark efforts at UNESCO to discuss potential future expanded IUGS partnership avenues: a) scientific or geo-education award given to an outstanding Global Geopark; b) certification workshop for on-site and application evaluators; and c) capacity building workshops to assist African Geoparks.

WC pointed out that at one time, some people did not consider Geoparks as science but this view has gradually changed. UNESCO has plans to increase its involvement in this initiative, so IUGS should also consider increasing its involvement. RO agreed that Geoparks is important for IUGS, but the rules and regulations regarding the evaluation process must be better formulated. Also he noted that Geoparks did not have the same visibility as World Heritage. PM informed the meeting participants that the Earth Science Division expected that Geoparks would eventually have equal visibility to the Biosphere and World Heritage, except that Geoparks would continue to be entirely self-funded.

8.d. IUGS-UNESCO Programme on Geological Application on Remote Sensing (GARS)

8.d.1. Current and proposed activities for GARS (Stuart Marsh)

SM informed the Executive that for 30 years IUGS and UNESCO have mandated GARS to assess the value and utility of remote sensing for geosciences, and to build capacity in developing countries by assisting geoscience institutes apply remote sensing techniques and technologies to their research. The GARS Programme has been steered by geoscience institutes and space agencies, ground-based geological community, geological remote sensing applications specialists and space agencies with programmes. GARS has been successful in linking the in-situ and space based geological communities, through the Integrated Global Observing Strategy (IGOS) Partnership. GARS has led in the development, publication and implementation of IGOS Geohazards and has positioned IUGS in the Group on Earth Observations.

In 2012 GARS lead and contributed to a symposium at the IGC in Brisbane. In addition, GARS collaborated with the IUGG Georisk Commission at its meeting “Extreme Natural Hazards and Their Impacts”, at Chapman University, USA, leading the topic on “Extreme Geohazards: Reducing Uncertainties and Disaster Risk”. Robert Missotten (RM) suggested that GARS could become involved in the future with Geohazard activities developed by IGOS Geohazards in ESA. Also there are opportunities to increase the minerals activity in GEO; hence, GARS and IUGS should be part of the workshop on this that will be convened by the FP7 Project EO-MINERS during 2013. For this, GARS members should meet in 2013 to develop a programme and identify the future leadership and governance structure.

In the discussion that followed Alik Ismail-Zadeh (IUGG) commented that there seemed to be a overlapping with the International Society Remote Sensing (under ICSU), and encouraged GARS officers to establish contacts with this group.

8.d.2. Report on GARS ARC (Marko Komac)

The IUGS Ad hoc Review Committee (ARC) meeting for GARS was held 3-4 January 2013 at UNESCO Headquarters. Stuart Marsh, GARS Chair, was at the meeting to represent the Programme. Representing IUGS were Yildirim Dilek (Chair), Marko Komac (Secretary), Peter Bobrowsky, Ed de Mulder and Mioara Manda. UNESCO representatives were Patrick McKeever, Robert Missotten, and Margarete Patzak.

MK informed the GARS Chair that communication between IUGS and GARS has not been effective, and that there has been a low visibility of IUGS in GEO (IUGS seat in the GEO platform not utilized effectively since 2009). IUGS has played an integral part in GARS by providing financial support to the programme for several years, whereas UNESCO has committed no funds. MK reported ARC members raised the question as to whether IUGS should terminate its involvement in the GARS Program, and instead appoint a qualified scientist to represent it in the GEO platform of GEOSS.

SM noted that there were a number of misunderstandings and undertook to provide comments to address them. The final ARC report (taking account of comments from SM and UNESCO) will be distributed at a later date to the Executive Committee.

8.e. Group on Earth Observations (GEO) – GEOSS (Stephan Chevrel)

SC reported that GEO was launched on July 31, 2003 after a call from the G8 and the 2002 World Summit for coordinated efforts to build a Global Earth Observation System of Systems (GEOSS). GEOSS has focused on users' needs; developed new access systems and standards/interoperability, and engaged in capacity building. 88 countries are members and there are 67 participating organisations (e.g. IUGS and EuroGeoSurveys). By end of 2015, GEOSS will go open source. Two new components were added in 2012: EN-01 Energy and Georesource Management" and SB-05 Impact Assessment of Human Activities, a task group coordinated by Theiry Ranchin.

IL proposed and it was AGREED that RO be IUGS' Principal Representative on GEO, while SM would continue in his role and Robert Missotten would complete his role on the GEO future planning committee.

8.f. Earth Sciences Education on Africa (Felix Toteu)

FT, (Earth Sciences Unit, UNESCO Office, Nairobi) provided the participants with an overview of UNESCO's Earth Sciences Education Initiative in Africa, beginning with the African Network of Earth Sciences Institutions (ANESI). ANESI aims to increase cooperative research between Africans and African institutions, and to increase bi-continental collaboration (Africa-Europe or Africa-North America). Currently, the Journal of African Earth Sciences (JAES) is dominated by 10 countries; with top four countries (South Africa, Egypt, Morocco and Cameroon) contributing to about 62% of the articles.

In addition ANESI has aimed to promote gender equality, to improve the involvement of African earth scientists in international research projects, to improve connections between universities/research institutions and industry, and to mobilize resources through international cooperation. Currently, entirely funded by UNESCO, a working group comprising 6 Earth scientists who represent the whole of Africa met January 2013, in Addis Ababa to develop the ANESI business plan. This group aimed to finalize the plan by November 2013 and then request endorsement by African Conference of Vice-Chancellors and Deans of Science, Engineering. Partners will include UNESCO, the African Union and the Economic Commission for Africa. Amongst other things, this initiative plans to implement geological field mapping training; strengthen Earth science education in primary and secondary schools, and develop a database of programme content available in various universities.

In 2012, some 80 Africans attended a Training Workshop on Sustainable Mining, organized by the 34th IGC Brisbane and financially supported by AusAID. Also, many dozens of Africans attended two

training courses in Beijing on Geochemical Mapping Methodology and Technology of Geological Survey and Mineral Resources Assessment. ANESI has planned to partner with Council for Geoscience to start the first Geological Field Mapping School. These activities are expected to result in the 4th Edition of the Geological Map of Africa. The geological field mapping school is recognised as a capacity building component of the World Bank project on geological mapping in Africa. With the aim of finding financial support for a workshop in Djibouti on introducing the topic Earth Science to school pupils, ANESI has partnered with the International Geoscience Education Organisation (IGEO) and the IUGS Commission for Geo-education (COGE).

UNESCO will continue to support the WG on the preparation of the business plan started in Addis Ababa and its support the training of teachers. Funding has been sought to bring more participants from other Sub-Saharan African countries to the AfricaArray Field Training Course (geophysics and structural geology).

8.g. Relations with UNESCO Regional Offices (Patrick McKeever)

PM reported that a capacity building workshop had been organized in 2012 to teach Africans how to build successful IGCP proposals. In particular, UNESCO had plans to facilitate more participation and leadership of geologists from French-speaking African countries.

9. International Council for Science (ICSU)

9.a. Relations with ICSU and ICSU Grant Programme (Carthage Smith, Roland Oberhänsli)

CS made reference to ICSU's banner "International Science for the Benefit of Society" and its goal of building of global scientific community on the basis of non-discrimination and equity. The Future Earth programme will be soon implemented, after many years of planning with partners such as UNU, Belmont Forum, ISSC, WMO, UNEP, IGFA and UNESCO. The Programme's approach will be both trans-disciplinary and interdisciplinary and aim to provide solutions to problems of sustainability. Projects under this programme should demonstrate links between human and natural drivers, and aim to disclose new pathways to sustainability.

CS outlined the proposed Research Themes: 1. *Dynamic Planet* (earth, environmental and societal system trends, drivers and processes and their interactions; anticipating global thresholds and risks); 2. *Global development* (secure and fair stewardship of food, water, biodiversity, health, energy, materials etc.) 3. *Transformation towards Sustainability*: (transformation processes and options, human values, technology and economic development, and evaluating strategies for governance of the environment). CS pointed out that "Future Earth" will embrace the systems approach, which recognized that there was no single determinant to problems. Results will be used to advise decision makers.

Governance of the Future Earth Programme will be achieved through a Council, Science and Engagement committees and Executive Secretariat, which is underneath an Executive Board. By April 2013, Science committee members will have been appointed and later in the spring a competitive call will be sent out for funding and hosting the executive secretariat. It is planned that by April 2014 Future Earth will be fully operational. The first projects will be funded by the end of 2013. CS reported that ICSU Executive Board requested that the Geo-unions be consulted to scope a proposal for intergovernmental assessment process for disaster risk.

Issues “Freedom and Responsibility” continued to be a challenge for ICSU in 2012 and they have received concerns and followed cases in several countries, including Turkey, Iran and Russia. ICSU has distributed a statement related to the L’Aquila case in 2012. In addition, a watchful eye has been kept on the implications of the ‘Arab spring’ for scientific freedom. There have been extended visa delays including for transit visas via USA and Europe.

The next Unions meeting will be held 29-30 April, 2013 in Paris with the theme “ICSU and the Unions – maximising our mutual benefit”. CS listed those from GeoUnion people on key ICSU committees:

- Executive Board: Orhan Oltan (ISPRS)
- CSPR: Tom Beer (IUGG); Hubert Savenije (IUGG/IAHS)
- IRDR: Irasema Alcántara-Ayala (IGU); Kuniyoshi Takeuchi (IUGG);
- Urban Health: Luuk Reitsema (IUGG); Gerard Salem (IGU)

9.b. Relations with Other ICSU Unions (GeoUnions) (Peter Bobrowsky)

PB reported on the history of the ICSU Geo-union alliance that began in 2004.

Ed de Mulder invited senior representatives of IUGG, IGU and IUSS to an informal meeting in Paris. This informal “GeoUnions” consortium has tried to meet annually to review and discuss selected ICSU matters and deal with global topics (eg. IYPE). PB pointed out that at their meetings, each of the following GeoUnion has one vote in all issues. The current IUGS GeoUnions are:

- International Union of Geological Sciences (IUGS)
- International Union of Geodesy and Geophysics (IUGG)
- International Geographical Union (IGU)
- International Union for Quaternary Research (INQUA)
- International Astronomical Union (IAU)
- International Society for Photogrammetry and Remote Sensing (ISPRS)
- International Union of Soil Sciences (IUSS)
- Union Radio Scientifique Internationale (URSI)

PB noted that the GeoUnions resembled an ICSU “cluster”, therefore at their meetings they nominate and elect a single representative to the ICSU Executive Board (which consists of 4 cluster representatives). Their candidate, past ISPRS President Orhan Altan (Turkey) was successfully elected for the 3 year position in October 2011. During the past few years one or more of the Executive

Committee members met the GeoUnions in Maputo (October 2008), Paris (April 2010), Rome (October 2011) and Istanbul (April 2012). PB pointed out that the difference between the ICSU defined “geo-cluster” and the informal GeoUnions consortium was that IGU belongs to a different ICSU cluster. Nevertheless, IGU has continued to participate also in the GeoUnion consortium, which was a voting problem that should be resolved.

PB encouraged all Executive Members of the GeoUnions to participate in events organized by other GeoUnions. The following Unions were represented at the IUGS Annual Executive Meetings: in 2009 (IUGG), in 2010 (IAU, IUGG and URSI), and in 2011 (IUGG). Similarly, IUGS Executive Committee representatives actively participate in the Congress and General Assemblies of sister unions. More importantly IUGS has been a leader or collaborator on several recent ICSU grant applications submitted collectively by the GeoUnions.

The next opportunity for representatives of the GeoUnions to meet will be in late April 2013 in Paris during an ICSU organized all Union meeting. The next ICSU General Assembly will take place in 2014 in New Zealand.

9.c. Unions Meeting, late April 2013 (Ian Lambert)

IL informed the Executive that RO and IL would represent IUGS in the upcoming ICSU meeting, 29 -30 April, 2013 in Paris and would actively participate in discussions of the theme “ICSU and the Unions – maximizing our mutual benefit”.

9.d. Relations with ICSU Regional Offices (Ian Lambert)

IL suggested that contacts be made with all Regional Offices of ICSU and that this start at the April ICSU meeting in Paris.

10. Publications

10.a. New Publications Committee (PC) (Brian Marker)

- BM, Chairman presented the current composition of this Committee:
- Brian Marker (Chair, UK)
- Yildirim Dilek (representing IUGS EC, USA)*
- Peter Bobrowsky (Webmaster, Canada)*
- Fareeduddin Fareeduddin (Editor of Episodes, India)
- Yang Zhenyu (P.R.of China)*
- Susana Damborenea (Argentina)*
- Lola Pereira (Portugal)

* = continuing members

BM informed the audience that PC would continue to work under the Terms of Reference passed on by the previous committee and prepare a detailed list tasks and responsibilities, and a summary of IUGS publications policy for use in carrying out duties.

The Chairman informed that Episodes visibility is improving. Nevertheless, increased awareness could be achieved by increasing and diversifying submissions to Episodes. In cooperation with the Episodes editor, the PC would need to develop a strategy for diversification of Episodes. Consistent good use of English should be encouraged in order to reduce time spent editing. The online journal Elements could be approached for ideas about the development of Episodes. The PC also recognized that an online-only publication of Episodes would reduce costs, therefore an on-line management system for publications should be investigated. The rotation of Episodes associate editors would soon be required. The PC would work to provide recommendations to the EC regarding the current and potential future publication and distribution strategy for Episodes.

IUGS has had a Memo of Understanding with its publisher Geological Society Publishing House (GSPH) since 2004. Since this time, only 37 titles have been published. Marker requested that the Executive remind group leaders to offer books initially to GSPH. He also suggested that a list of materials be produced of works that are not published by the GSPH, along with their copyright information.

10.b. Episodes (Fareeduddin Fareeduddin, Mudlappa Jayananda)

The newly appointed Editor, FF, briefly introduced himself before former Editor MJ presented the 2012 highlights. MJ reported that more than 10,000 people visited the Episodes web page, and that previous complaints about the slowness of the site had been addressed. All the issues of Episodes published from 1978 to 2012 are available as pdf files for free online access. Since the beginning of 2012, every issue of Episodes has been uploaded to the website simultaneously with printing. A total number of 117 articles have been published during 2009-2012, in addition to conference/workshop reports, book reviews and IGCP project reports.

The impact factor of Episodes has fluctuated over last four years, and the editors discovered that 2011 was missing from the Science citation index. There was a decline of impact factor in the last four years (.80 in 2008, 2.13 in 2009, 2.04 in 2010 and 1.28 in 2011). It was discovered in 2012 the articles in one of the issues of 2011 was not listed in Science citation index. Furthermore, none of the issues of 2012 were listed. Thompson Reuters has been contacted and sent web page links as well as hard copies of Episodes as per their requirement. For 2012, 4 issues of Episodes were published (one special issue for 34th IGC + 3 regular issues). 2500 copies were printed of the Special issue (1000 copies were distributed at 34th IGC), and 1200 distributed to IUGS Adhering Organizations, committee members and subscribers. For each regular issue, 1300 were printed and 1200 were distributed to subscribers, Adhering Organizations and committee members.

Episodes has an Editorial Board or Panel of Associate Editors consisting of 15-20 members appointed for fixed terms but on a rotational basis to ensure continuity. Members are selected to provide a good spread of disciplinary interest, geography and key languages. At the 63rd EC meeting (San Sebastian, 2012), a list of 15 potential Associate Editors, endorsed by the Publications Committee, was provided.

10.c. E-Bulletin (Hassina Mouri)

The IUGS Bulletin has been widely distributed. The challenges remaining have been that IUGS groups often do not provide precise details of their meetings and they need to be reminded. Also, in some cases the Bulletin is caught up by central spam filters and individual spam boxes. It would be left to the Secretariat to deal with technical issues regarding distribution. It was agreed that the E-Bulletin should be published monthly even if there is little content on some occasions.

10.d. Website (Peter Bobrowsky)

PB reported that website content has been revised and is updated frequently, but there were difficulties in obtaining content. Visitors to the website had increased by 51%, with 47,000 hits in 2012 (increase of 45%). PB concluded that the new web design and changes have been a success, and that the consulting IT company, Fleiva, is reliable and efficient. The most popular hits are the directory, adhering organizations, publications, calendar, documents, what is IUGS, and activities and links. PB gave the opinion that updating of text on the web should be the task of the Publications Committee.

11. IUGS Strategic Matters

11.a. IUGS Reference Manual (Ian Lambert)

11.a.1. Agreement on EC Priorities and Responsibilities (Ian Lambert)

During the closed meeting, the responsibilities of the EC members were discussed. These are incorporated in the Reference Manual available through the Executiveonly link on the IUGS website.

11.a.2. Agreement on Approach(es) to Developing New Collaborative Global Initiatives (Ian Lambert)

IL re-addressed the role of the Union and what it could actually do with its limited resources. IUGS should maintain its core mission of maintaining standards while at the same time increase visibility of geology in society and developing new activities in geological education. The Union should strive to increase level of funding by finding new partnerships, while also improving cooperation with existing partners.

IL pointed out that IUGS' Statutes Committee had raised strategic issues related to the long-term future of the IUGS and IGC, including whether it was sustainable to have only one major meeting

every four years. IL pointed out that a mid-Congress meeting could help increase the Union's visibility and generate funds for IUGS. The mid-congress meeting, would be distinct from IGC, having a particular or restricted number of themes, and involving of other geounions. IUGS has already received a proposal for a 2018 meeting in Vancouver. Also, IUGS has received a request for support for a tsunami workshop in Sendai (below), which could be a good opportunity to assess whether it is important that there be additional geoscience inputs to help reduce disasters. Others have requested workshops, summer schools and training activities for small communities.

11.b. International research activity on natural hazards and georisk and proposed workshop within GSJ Meeting, Sendai, September 2013 (Yujiro Ogawa and others)

YO pointed out that most people looked toward the IUGG for matters related to geohazards. IUGS could support the Tsunami workshop, which is supported now by the G-EVER Consortium (at Geological Society of Japan), and the Science Council of Japan, as there is a need to assess whether there are needs for more geological activities.

11.c. Potential Initiative on Mineral and Energy Resources for Future Generations and participation in ICSU's Future Earth programme (Dong Shuwen, Ian Lambert and others)

IL pointed out that the theme "future resources" discussed under 5.a.7, was a potential theme for a mini-Congress, two years after the Cape Town meeting. IUGS has a broad international membership and strengths in running international collaborative projects. IL had applied to present a keynote address at the GSA General Assembly in Denver, CO, USA in late October 2013 to possibly "launch" this initiative.

The Future Earth Initiative has potential synergies with ICSU Future Earth Programme. As explained earlier by Carthage Smith, Future Earth is an important new 10-year international research initiative designed to develop the knowledge for responding effectively to the risks and opportunities of global environmental change and for supporting transformation towards global sustainability in the coming decades. The initiative could potentially mobilize thousands of scientists and social scientists while strengthening partnerships with policy-makers and other stakeholders to provide sustainability options and solutions in the wake of Rio+20.

Resourcing the future could provide a focus for ad hoc funding requests. Roland Oberhänsli has been nominated for the FE Scientific Committee. As mentioned earlier, a small strategic committee will provide guidance in the development of the framework of this and other proposed initiatives.

Danie Barnardo raised his concern that the International Geological Congress is IUGS's big meeting and that a mid-meeting would compete with the IGC. RO suggested bringing the meeting to where the expertise was needed. He did view that a meeting a sole focus on Future Resources theme/focus would not challenge the main Congress. IL reinforced the reasons why an intermediate meeting

would not impact on IGCs, and pointed out the meeting would also be a source of income for the Union.

11.d. Mid-term Summer Schools/meetings

RO and IL mentioned that these were another initiative to be considered in the future.

12. IUGS Visibility

12.a. Annual Report 2012 (Ian Lambert, Secretariat, Peter Bobrowsky)

It was decided that the Secretariat would compile the first draft of the report, which would be reviewed by the PC and EC.

12.b. New Promotional Products – Who Do We Want to Reach and How? (Brian Marker)

A few suggestions for products were discussed, but none agreed upon. The Secretariat in China will assess costs for new ties, golf shirts, etc.

12.c. IUGS Exposure/Visibility (Roland Oberhänsli, Ian Lambert, Peter Bobrowsky)

The IUGS will share a booth with the 35th IGC at the GSA meeting in Denver in 2013. The Bureau will approach IUGS Affiliates about making a short presentation at their business meetings at the GSA. The potential Pardee Keynote Symposium will provide further visibility for the Union. Such activities should be repeated as appropriate. WH offered to assist in Exhibit Booth and coordination for our participation in GSA Meeting.

13. Any Other Business

13.a. Next EC meeting

The Indian National Academy of Science was initially positive to hosting a meeting. Tandon offered to follow-up.

13.b. Bureau meeting (At GSA meeting Denver, late October 2013)

Tasks and activities for the Bureau attending the GSA meeting were discussed. Similar opportunities will be sought for future Bureau meetings, combined with promotion of the Union.

14. Free Discussion

The IUGS President invited free discussion. There were no contributions.

15. Review of Actions Arising and Key Issues

Discussion of this closed session resulted in Budget for 2013 and decisions on allocations to IUGS Commission, Task Groups, Initiatives and other joint programmes. The draft action list prepared by the Secretariat was discussed and edited during and after the closed session of the meeting.

The Action List, as finally agreed, is attached.

Attachment 1: ACTION LIST - 66th EC Meeting, Paris, 19-22 February 2013

- Action Item 1: President Roland Oberhänsli to thank Alberto Riccardi for the submission of his annual report and his past contributions to the IUGS by 1 April 2013.
- Action Item 2: Executive Committee to communicate information regarding the status of OneGeology to their respective National Committees by 1 July 2013, with the aim to minimize the threat of lost data and effort associated with OneGeology.
- Action Item 3: IUGS Secretariat to draft and circulate a brief document for the Executive Committee which summarizes the various past procedures that have been used for reactivation/replacement of Adhering Organizations to IUGS by 1 July 2013.
- Action Item 4: All Executive Committee members and the Secretariat to assist the IUGS Treasurer to locate contact details for Inactive Adhering Organizations. Details to be sent to the Bureau by 1 July 2013.
- Action Item 5: Secretariat to update the directory for Adhering Organization contacts with information available by 30 April 2013.
- Action Item 6: President Roland Oberhänsli to draft a “white paper” for further development by the Bureau on the benefits of IUGS (for Adhering Organizations and Affiliated Organizations) and forwarding to the Publications Committee for editing by 15 April 2013. The Publications Committee to forward edited “white paper” by 30 April 2013 to the Executive Committee for further action.
- Action Item 7: PC Chair Brian Marker to provide a report by 1 August 2013 to the Executive Committee regarding various online publication options for the journal Episodes.
- Action Item 8: Councilor Hassina Mouri to continue producing the IUGS E-Bulletin on a monthly basis, focusing on highlights only. The PDF version of the E-Bulletin to be posted on line.
- Action Item 9: Secretariat to assist IUGS Councilor Hassina Mouri with formatting and distribution of the monthly E-Bulletin.
- Action Item 10: Secretariat to send contact details for the Adhering Organization for Kazakhstan to Reimar Seltmann as soon as possible.
- Action Item 11: Secretary General Ian Lambert to reconsider the current annual reporting forms to IUGS and distribute a new draft version to the Executive Committee by 1 July 2013.
- Action Item 12: Episodes Editor Fareeduddin to distribute a questionnaire to all current Episodes hard-copy subscribers by 1 May 2013 to determine if an electronic version of the journal would be adequate. Fareeduddin to send the results of the survey to the Executive Committee by 1 August 2013.
- Action Item 13: IUGS Bureau to identify members of the Strategic Implementation Committee to assess the viability of the various proposals for IUGS initiatives by 31 March 2013.

- Action Item 14: Webmaster Peter Bobrowsky to send minutes of past GeoUnions meetings by 31 March 2013 to the Bureau in preparation for the upcoming ICSU Unions Meetings.
- Action Item 15: By 1 April 2013 the Chair of the IGCP and GARS ARCs Yildirim Dilek to revise and submit to the Bureau the final reports after requesting comments on current version from UNESCO.
- Action Item 16: By 1 May 2013 the Secretariat to distribute the finalized ARC meeting reports to the Executive Committee and to Episodes for publication.
- Action Item 17: Secretariat under the guidance of the Bureau to draft by 1 July 2013 the 2012 IUGS Annual Report using the 2011 Annual Report as a template. The distribution of the 2012 Annual Report will be electronic and print on demand.
- Action Item 18: Episodes Editor Fareeduddin to implement by 1 May 2013 the assignment of DOI numbers to each article published in the journal.
- Action Item 19: PC Chair Brian Marker to revise the list for Associate Editorial Board members for Episodes by 1 May 2013 and send to the Executive Committee for approval and further action.
- Action Item 20: PC Chair Brian Marker to contact Wang Meng by 1 April 2013 regarding implementation of IUGS social media options.
- Action Item 21: Councilor Sampat Tandon to follow up on the INSA's offer to host the 67th Executive Committee Meeting of IUGS in the first quarter of 2014.
- Action Item 22: IUGS Bureau to hold its next meeting at the GSA meeting in October 2013, where Bureau members are to give presentations, meet with IUGS-related bodies and be present at the IUGS booth.
- Action Item 23: Secretariat and Treasurer Dong Shuwen to follow up by 1 April 2013 on the booking and payment details for the 2013 GSA.
- Action Item 24: Secretary General Ian Lambert with the assistance of Councilor Wesley HILL, to follow-up on the IUGS reception and proposed invitees details for the 2013 GSA.
- Action Item 25: Secretary Ian Lambert with the assistance of Councilor Wesley HILL to schedule Bureau participation in the GSA Business meetings for Affiliated Organizations and other IUGS relevant groups that will be attending the 2013 GSA.
- Action Item 26: Councilor Wesley Hill to send the Secretariat the cross-reference list of IUGS Affiliated Organizations that will be attending GSA by 30 June 2013.
- Action Item 27: Secretariat to contact all IUGS Affiliated Organizations by 1 July 2013 to inform them that the IUGS Bureau will be attending the 2013 GSA meeting and is willing to give short presentations as necessary. Include final draft of the "white paper" describing the benefits of being an IUGS Affiliated Organization.
- Action Item 28: Secretary General Ian Lambert to prepare a draft power-point presentation to be used at society meetings during the GSA and elsewhere by 1 July 2013.

Power point to be shared with the Executive Committee for edits and comments.

- Action Item 29: The IUGS Secretariat to ensure that the booth for 2013 GSA meeting is populated and cost shared in cooperation with the IGC35.
- Action Item 30: The IUGS Secretariat to draft letter according to the minutes of 66th Executive Committee Meeting to the leaders of IAPG, IAETGH, ESM to inform them of the Executive Committee's response to their application to become IUGS Affiliated Organizations, and that Council ratification is pending.
- Action Item 31: Secretary General Ian Lambert to inform GEO and Stuart Marsh by 1 April 2013 that President Roland Oberhänsli will be IUGS principal representative to GEO and Stuart MARSH the alternate. Robert Missotten will remain on the GEO Post-2015 planning committee.
- Action Item 32: Secretary General Ian Lambert to inform UNESCO that future letters from the IGCP clearly stipulate the conditions of funding whereby projects must give visible recognition to both the IUGS and UNESCO on their website, all published materials, etc.
- Action Item 33: Secretary General Ian Lambert to inform IGCP Project leaders that the Geological Society of London should be given first right of refusal for the publication of all books derived from IGCP activities and that a condition of annual funding requires an annual contribution{s} (articles, workshop reports, announcements, etc.) from the project to the IUGS journal Episodes.
- Action Item 34: Treasurer Dong Shuwen to assume the role of primary IUGS contact for Eastern Asia issues related to the Union.
- Action Item 35: IUGS Secretariat to distribute the final draft of the "white paper" describing the benefits of being an IUGS Adhering Organization to all current active and inactive groups with the 2013 dues requests.
- Action Item 36: President Roland Oberhänsli to inform all applicants for IUGS financial support of the Executive Committee decisions and their respective allocations by 1 April 2013.
- Action Item 37: PC Chair Brian Marker to organize a face-to-face meeting of the Publications Committee to develop and implement a new Union strategy for the Committee.
- Action Item 38: President Roland Oberhänsli to write a letter of thanks to UNESCO management for their assistance in facilitating the IUGS Annual Meeting in Paris.
- Action Item 39: Secretary General Ian Lambert with the assistance of the Secretariat to write a letter of thanks and response to all Adhering Organizations who submitted an annual report.

- Action Item 40: Secretary General Ian Lambert with the assistance of the Secretariat to write a letter to all IUGS Adhering Organizations to facilitate improved interaction and reporting, and include information on benefits of IUGS membership.
- Action Item 41: Bureau to table to the Executive Committee a proposed schedule for the next year of Union visibility (list of conferences/events/meetings) where official representatives of the IUGS should/will be in attendance. The official IUGS power-point presentation should be used at these events.
- Action Item 42: Secretary General Ian Lambert to inform Canadian Marc D'lorio by 1 April 2013 regarding the positive decision of the Executive Committee to sponsor an inter-congress international IUGS conference in 2018.
- Action Item 43: The Executive Committee to evaluate and appoint new official representatives from IUGS as appropriate to the following ICSU activities: Committee on Data for Science and Technology; Scientific Committee on Antarctic Research; Priority Assessment on Capacity Building; Committee on Space Research; Scientific Committee on Oceanic Research; Committee on Problems in the Environment; Committee for the International Geosphere-Biosphere Program.
- Action Item 44: The IUGS Secretariat to propose and implement the production and distribution of new "promotional" items (ties, scarves, etc.) by 1 July 2013.
- Action Item 45: The Publication Committee to submit a strategy report on visibility to the Executive Committee by 1 November 2013.
- Action Item 46: Bureau to confirm and announce the venue, date and time of the 2014 Annual Meeting of the IUGS Executive by 1 July 2013.
- Action Item 47: Councillor Sampat Tandon to assume responsibility for the IUGS National Committee Highlights that should appear on the IUGS website.