

IUGG

XXIV General Assembly

2-13 July, 2007

Perugia, Italy

Council Meeting Agenda Book

Session I: Wednesday 4 July 2-6 pm / Première Session : Mercredi 4 juillet 14h-18h
Venue: Rectorate Main Hall

Session II: Friday 6 July 4-7 pm / Deuxième Session : Vendredi 6 juillet 16h-19h
Venue: Sala dei Notari

Session III: Wednesday 11 July 4-7 pm / Troisième Session : Mercredi 11 juillet 16h-19h
Venue: Sala dei Notari

Council Agendas / Ordres du jour du Conseil

XXIV IUGG General Assembly, Perugia, Italy
XXIVième Assemblée générale de l'UGGI, Perugia, Italie

Session I: Wednesday 4 July 2-6 pm / Première Session: Mercredi 4 juillet 14h-18h
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Venue: Sala dei Notari

Greetings; Presentation of the credentials
Salutations ; Présentation des lettres d'accréditation

20. Elections of IUGG Officers (Ref. AGENDA ITEM 5)
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 - President / Président
 - Vice- President / Vice-Président
 - Treasurer / Trésorier
 - Bureau members / Membres du Bureau
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21. Selection of the venue of the XXV IUGG General Assembly (2011) (Ref: AGENDA ITEM 11) /
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Fin de l'ordre du jour

Agenda Item #1: Presentation of the Credentials

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as of 20 February 2007

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Agenda Item # 3:
Approval of the Minutes of the Council Meetings in Sapporo (2003)

The IUGG Council met in three separate sessions at the 23rd General Assembly in Sapporo, Japan, 30 June – 11 July 2003. The minutes of those meetings were circulated to all Council Members for comments and corrections, and then were published in the *Comptes Rendus* of the Assembly on pages 18-46. The minutes of the individual sessions and the entire *Comptes Rendus* are posted on the IUGG website: <http://www.IUGG.org> under General Assemblies, Sapporo. The 2003 Council Agenda Book is also posted on the website at the same location.

In addition, the 2003 *Comptes Rendus* is available in printed form from the Secretariat upon request.

2007 Council Members are urged to visit the website to read the minutes of the 2003 Council sessions, or to request a printed copy in order to be able to approve the minutes of the 2003 meetings in Perugia.

Agenda Item #4a: Quadrennial Report of the President

Following from the 2003 Sapporo General Assembly

In the years leading up to the Sapporo GA, IUGG was engaged in a process of self-examination, defining its goals and modus operandi, as reported by Past President Prof. Masaru Kono in his President's report to the Sapporo Council. The process was prompted by the sense that IUGG needs to change, in view of evolving conditions.

The process engaged the Associations and National Members, and was conducted and coordinated by members of the Bureau and the Executive Board. Some of the reasons that motivated the search for a change, which were covered by the report that Past President Kono presented to the Sapporo Council four years ago were:

- ♣ The emergence of regional geophysical societies, and how IUGG should maintain its role as the international geophysical organization.
- ♣ The increasing importance of the social context of our scientific work.
- ♣ The continuing revolution in Information Technology, and the effect that it has on scientific work.

An extensive survey of views was conducted among the Associations and National Members, using a structured questionnaire. The findings were debated at length in the Executive Committee and then summarized. The resulting document "IUGG Structure, Goals and Objectives" was adopted by the Sapporo Council. A draft of a "Long Range Vision Statement for the IUGG" was also presented. After some further refinement, the Executive Committee adopted the Mission Statement, which is posted on the IUGG web site. These documents have been and remain a valuable road-map for the Union.

Strategic Directions for IUGG during the last Quadrennium and into the Next

Commission for Cryospheric Sciences (CCS) – to become an Association (IACS)

Snow and Ice have been an integral part of IUGG's remit for many decades, and were located within IAHS. For a very long time, the cryo-scientists argued that the role of snow and ice in the hydrological cycle is but one aspect of the cryosphere, and the discipline deserves to be an IUGG Association. Lengthy discussions, over several years, finally culminated in a recommendation by the Executive Committee in 2004 to grant this status, while in the interim a Union level Commission on Cryospheric Sciences (CCS) was created by the Executive Committee. IAHS maintains its interest in snow and ice as a component of the hydrological cycle, and consequently will keep its International Commission on Snow and Ice (ICSI), which maintains strong links with the CCS.

In preparation for this Council meeting, the Statutes and By-Laws for the introduction of IACS have been prepared, as well as the budgetary aspects of adding an eighth Association. This Council will consider the recommendation to approve the conversion of the CCS into the International Association of Cryospheric Sciences (IACS). Our expectation is that the decision will be positive, and IUGG will henceforth have eight Associations.

Cooperation with our Sister GeoUnions

Beginning in early 2004, the GeoUnions got together to coordinate and cooperate. This was received with considerable enthusiasm by ICSU, and viewed as model for other Unions to follow. We now constitute a "cluster" of Unions within the ICSU family, of the following seven Unions: IAU (Astronomy, not fully engaged in the GeoUnions activities), IGU (Geography), INQUA (Quaternary Research), ISPRS (Photogrammetry and Remote Sensing), IUGS (Geology), IUGG (Geodesy and Geophysics), IUSS (Soil Sciences). We have met four times since 2004, and continue to cooperate closely.

A joint Science Program was agreed, with five topics, each led by one of the Unions: Cities and Megacities (IGU); Desertification (IUSS); Groundwater (IUGG); Hazards (IUGG); Health (IUGS). Teams were set up, with members from each of the Unions, to prepare a scientific program of action, and then develop research proposals which can be submitted to funding sources. Some of the teams progressed more than others, but none has so far reached the point where it is able to submit proposals. The idea has much merit, but implementation is not easy, and depends very much on the individuals involved, in particular the lead persons.

At its meeting in Sapporo, the Executive Committee decided to become a Founding Member of the International Year of Planet Earth (IYPE), whose title is "Earth Sciences for Society - an International Year of Planet Earth". IYPE (also dubbed Earth Science for Society) is a joint IUGS-UNESCO initiative, which is, in fact, a three year plan (2007-2009). It is one of several *YEARS* which are designed to celebrate the 50th anniversary of the 1957 IGY, and will be discussed below.

There is considerable overlap between the science topics of IYPE and those of the GeoUnions science programs. It is hoped that the GeoUnions joint program will lead to significant science projects, to greater recognition by society, and will help to create an attraction for young scholars to adopt a career in the geosciences.

For the ICSU General Assembly in China, in October 2005, the GeoUnions decided jointly to support me in the election for the ICSU Executive Board, which includes four members from the Unions, one from each "cluster", and four from among the National Members. Since there was only one candidate from our cluster, I was elected, and will serve on the ICSU-EB for a three year period, 2005-2008. It is important to note that members of the ICSU-EB are not representatives of their union, or even their cluster and its specific interests, but rather act jointly to guide ICSU as a whole.

Geosciences in Africa (GIA)

Upon taking office in Sapporo I launched an initiative for IUGG to become active in Africa. This was based on the observations that: (a) our colleagues in Africa suffer, more than others in the rest of the world, from shortage of resources, from lack of an adequate cadre of trained scientists, and from lack government recognition and support, and (b) geo-sciences cannot be complete without engaging scientists around the world, since the scientific basis is common and many of the processes are global.

The first move was to convince the Nigerian delegates to the Sapporo GA to hold a regional geosciences conference, and promised to attend it. They managed to do this, and in August 2004 I attended a workshop of the Nigeria Union of Radio and Planetary Sciences (NURPS, the IUGG Adhering Body) in Lagos. New officers of NURPS were elected, and although it has taken some time to complete the move, Nigeria has paid its dues and is again a full member of IUGG.

The GeoUnions joined the GIA initiative, so it is now part of our joint GeoUnions science program.

At its meeting in 2005, the Executive Committee approved my request to set aside \$50,000 to promote the GIA initiative. It was stipulated that these funds will be used to leverage much larger funds, from other funding sources, to enable large inter-disciplinary projects. To date, none of this money has been spent, since no proposals that satisfy this condition have been generated.

In 2004, ICSU decided to establish its Regional Offices, the first one for Africa, in Pretoria. Prof. Sospeter Muhongo (Tanzania) was appointed Director, and since the establishment of this ICSU Regional Office for Africa (ICSU-ROA) I have worked with and through this office to promote the GIA initiative. I attended two meetings – The African Geology Conference in Maputo (July 2006), and the Second Consultative Forum of the ICSU-ROA in Johannesburg and Pretoria (September 2006). At this latter meeting four science programs were initiated, and I tried to connect them to the ongoing activities of the GeoUnions and their science program. This process is still ongoing. A separate document will be available to this Council, titled "Geo-Sciences in Africa (GIA): An Initiative and Action Plan of the Geo-Unions", which is made available to participants of conferences, workshops and meeting in Africa.

Young Scientists – "Geosciences: The Future (GTF)" and beyond

During the previous quadrennium (1999-2003) a group of seven young (~30) scientists, one from each of the Associations, conducted a study, titled "Geosciences: The Future", considering where the Union should be going and what its future science program should be. I acted as initiator and mentor for the GTF group, and IUGG allocated \$12,000 for its work. This study culminated in a report and a Union Symposium in Sapporo. A summary paper appeared in EOS.

The underlying idea was to engage young geoscientists in setting the science agenda and of the Union, thereby promoting the next generation of leaders, while inviting them to present a fresh perspective on the future of our science. This experience was considered a success, and proposals were made by members of the Bureau and Executive Committee to find an appropriate mechanism to carry the idea forward, No plan was adopted as yet, and it remains for the next Bureau and Executive Committee to decide what to do.

ICSU will be holding a conference titled "Global Scientific Challenges: Perspectives from Young Scientists", in Lindau, Germany, in April 2007. IUGG is sending three young scientists to attend, and we hope to hear from them at the Perugia GA.

The IGY+50 *YEARS*

2007 marks the 50th anniversary of the International Geophysical Year (IGY), which was great success. IUGG decided to celebrate this anniversary at the Perugia GA. Several other *YEARS* have also been launched, around 2007, some have a duration longer than a single year.

IGY+50

An IGY+50 Committee was set up after the Sapporo GA. It is preparing a special celebration on Saturday, July 7, 2007.

eGY – The Electronic Geophysical Year

eGY is an initiative of IAGA, which has gained very wide acceptance and visibility. It aims to utilize the capabilities afforded by modern IT, and use them to manage geophysical data and information for the benefit of all. The barriers of policies and inadequate access to communication are to be overcome by a concerted international effort.

IPY – the International Polar Year

IPY constitutes a broad multi-disciplinary and trans-disciplinary program of inter-related projects which emphasize the polar regions. It has been approved by ICSU as a component of its program.

IHY – the International Heliophysical Year

IHY aims to advance the understanding of the fundamental Heliophysical processes that govern the Sun, Earth and Heliosphere. It also has a substantial outreach program.

IYPE – the International Year of Planet Earth

IYPE was created by the International Union of Geological Sciences (IUGS) in cooperation with UNESCO. IYPE is going via the political route, and has managed to get the UN to make a specific Proclamation, making 2008 the United Nations International Year of Planet Earth, whose activities will span the three years 2007-2009. IYPE has developed ten scientific topics, and continues to seek funding for implementation. In parallel, considerable effort is spent on outreach, to bring the message of the geosciences and their importance to man and society to the public and to decision makers.

IUGG and GeoUnions Relations with ICSU

ICSU has over 100 National Members and 29 Unions, seven of them in the Geo-Union cluster, and several Interdisciplinary Bodies. The Executive Board of ICSU has, in addition to the ICSU Officers, four members elected by the National Members and four elected by the Unions, one from each of the four "clusters" of Unions. At the ICSU General Assembly in Suzhou in October 2005, the Geo-Unions cluster decided to place my name as the sole candidate from our cluster, and I was elected to the ICSU-EB for the period 2005-2008. The next Geo-Unions meeting will take place in Rome on April 21-22, just prior to the next ICSU Unions meeting on April 23-24.

ICSU turns to its membership when it considers new programs, and, in particular, when it seeks nomination for special committees and task groups. Several IUGG officers and members have been and still are members of such groups. Still, IUGG has had some concerns about the manner

in which the interaction between ICSU and its Unions is conducted. In consultation with the other Geo-Unions, who felt the same, a letter of concern was addressed to ICSU (IGU did not join) in September 2006, titled "ICSU and its Unions: A Call for Closer Cooperation". The letter was also circulated to all other ICSU Unions, and several consenting answers were received. The ICSU-EB discussed the letter, and ICSU Executive Director, Prof. Thomas Rosswall, responded in a letter in November 2006. Copies of these two documents can be made available to members of this Council upon request. It is to be expected that these discussions have helped to improve the coordination between ICSU and its Unions.

ICSU decided to create a number of Regional Offices. The Regional Office for Africa (ICSU-ROA) was established in Pretoria in 2004. The Regional Office for Asia and the Pacific (ICSU-ROAP) was established in 2006, and an office for Latin America (ICSU-ROLA) is being established. Attempts to find a location for an ICSU office in the Arab world have not yet borne results. The Regional Offices have the task of dealing with issue that have regional relevance and of engaging local scientists, in collaboration with the international scientific community. They are led by Regional Committees.

IUGG Web Page (<http://www.iugg.org/>)

The IUGG web page has been improved substantially since Sapporo. It serves to provide all the essential documents of the Union, as well as current information regarding meetings, events and scientific programs.

IUGG E-Journal

The E-Journal is prepared monthly by the Secretary General, and, after receiving suggestions on its draft from the Bureau and Executive Committee, it is finalized, distributed and posted on the IUGG Web Site. Because some of our National Committees and colleagues around the world may not be able to download attachments, the E-Journal is also distributed by E-Mail.

Preparations for the Perugia General Assembly

Perugia, Italy, was selected by the Sapporo Council, after competition with Melbourne, Australia (which is bidding again for the 2011 General Assembly). Much work has gone into the planning the scientific program and making the organizational and logistical arrangements. Prof. Lucio Ubertini, Chair of the Local Organizing Committee, is aided by a large staff, headed by Dr. Salvatore Grimaldi. I had occasion to meet with these leaders and their support staff more than once, and admire their dedication. The web site for the General Assembly enables on-line registration and submission of abstracts, and hopefully all will be in good order by the time we arrive for the General Assembly.

The Science Program Committee

The Science Program Committee for this General Assembly is made of the Secretaries General of the Associations. We have included the SG of the Commission on Cryospheric Sciences (CCS), anticipating the approval by this Council of them becoming an Association. The SPC is chaired by Prof. Paola Rizzoli (MIT).

Union Lectures

I have invited the following four Union Lecturers (in the order of their lectures, indicating the connection with the corresponding Union Symposia and the responsible Association):

- ♣ Prof. Robert Corell - Global Change Program at the H. John Heinz III Center for Science, Economics and the Environment, and Senior Policy Fellow of the American Meteorological Society: "Our Changing Climate: A Policy Issue" (Monday, July 2, Symposium U1, IAMAS)
- ♣ Prof. Maria Zuber – Department of Earth, Atmospheric and Planetary Sciences, MIT: "Inside the Terrestrial Planets" (Thursday, July 5, Symposium U5, IAGA)
- ♣ Prof. Claudio Faccenna – Geological Sciences, University Roma III: "Subduction and Mantle Convection in the Mediterranean" (Tuesday, July 10, Symposium U9, IAPSO)
- ♣ Prof. Kenji Satake - Active Fault Research Center, Tsukuba, Japan: "Lessons from the 2004 Sumatra-Andaman Earthquake and the Asian Tsunami" (Friday, July 13, Symposium U12, IASPEI)

Special Committees for the General Assembly

I appointed four special Committees for the GA, after due consultation with members of the Bureau and the Executive Committee, drawing largely on past office holders and their relevant experience and seeking a geographical balance.

Nominating Committee

| | |
|-------------------------|---------|
| Soren Gregersen – Chair | Denmark |
| Attia Ashour | Egypt |
| Robert Duce | USA |
| Seiya Uyeda | Japan |

The Nominations Committee solicited nominations from all those eligible to nominate to the open Bureau and Finance Committee positions, and is seeking to strike a balance of experience, disciplines and geographical distribution in preparing its slate of candidates for each position. Further nominations are still possible, as provided by the Statutes and By-Laws of the Union.

Statutes and By-Laws Committee

| | |
|------------------------|--------|
| David Kerridge - Chair | UK |
| Jean-Pierre Barriot | France |
| Priscilla Grew | USA |
| Ronald Stewart | Canada |

The Statutes and By-Laws Committee has been examining various issues that have arisen over the quadrennium with respect to existing Statutes and By-Laws, especially matters that relate to the compatibility between Associations' Statutes and By-Laws and those of the Union. A special task has been to examine the proposed Statutes and By-Laws of the International Association of Cryospheric Sciences, the new Association which is to be brought to this Council for approval.

Resolutions Committee

| | |
|---------------------|-------------|
| Masaru Kono – Chair | Japan |
| Huw Davies | Switzerland |
| Pierre Hubert | France |
| Zev Levin | Israel |

The Resolutions Committee will solicit proposals during the General Assembly, examine and evaluate them, and then prepare the suggested resolutions for consideration by this Council.

Site Evaluation Committee

| | | |
|----------------------|---------|--------|
| Bob Engdahl – Chair | USA | IASPEI |
| Christian Tscherning | Denmark | IAG |
| Kathy Whaler | UK | IAGA |

The Site Evaluation Committee was established to respond to the Sapporo Council's request that the invitations to host IUGG General Assemblies should be evaluated and the results presented to Council, to facilitate its decision process. The members selected for this Committee have rich experience in the organization of large IUGG meetings, including past General Assemblies.

Funds for Support of Young Scientists and Scientists in Need

IUGG continues to place great importance on being able to support young scientists and those who have financial difficulties. Funds are made available by the Union, taken as part of the regular registration fee, and through solicitation by the LOC of support from external sources. The Italian invitation to host this GA included a commitment to raise funds to match the level which was available in Sapporo. I have made myself available to the LOC in its efforts to raise funds.

We have had several meetings with potential donors, and the LOC has attempted to mobilize Italian Municipalities to "adopt a scientist". At the time of this writing, my efforts to prompt the LOC to meet its original pledge have not borne the results we are still hoping for. It remains to be seen whether this will change by the time of the GA.

Meetings with the Associations and Unions Activities

While the Association leaders meet at the Executive Committee meetings, it is most important that the link between the Union and the Associations be as strong as possible. Presence of IUGG officers at Associations' Scientific Assemblies and at scientific symposia and workshops of disciplinary groups help to strengthen these links. I have attended the following meetings:

| | | | |
|------|---------------|--|-----------------------|
| 2004 | 05/02-07/02 | GeoUnions and ILP | Paris |
| | 09/02-10/02 | ICSU Unions Meeting | Paris |
| | 12/02-13/02 | Preparatory meeting for the Perugia GA | Perugia |
| | 24/05-27/05 * | ICSU Committee on Membership | Paris |
| | 07/07-09/07 | SEDI Workshop | Garmish-Patenkischcen |
| | 15/08-19/08 | NURPS Conference | Lagos |
| | 20/08-25/08 | Int. Geological Congress | Florence |
| | 26/08-28/08 | GeoRisk Committee | Stockholm |
| | | IUGG Bureau and EC, and Earth Unions | Boulder |
| 2005 | 30/03-09/04 | IAHS Scientific Assembly | Foz de Iguassu |
| | 18/07-20/07 | IAGA Scientific Assembly | Toulouse |
| | 06/09-07/09 | GeoUnions meeting | Rome |
| | 08/09-11/08 | IUGG Bureau, EC and SPC | Perugia |
| | 15/10-16/10 | GeoUnions Meeting | Shanghai |
| | 17/10-22/10 | ICSU General Assembly | Souzhou |

| | | | |
|------|---------------|--|------------------|
| 2006 | 20/04-23/04 * | ICSU Executive Board | Paris |
| | 10/05-12/05 * | UNESCO Review of Science Sectors | Paris |
| | 04/06 | * CMG | Zemach, Israel |
| | 03/07-06/07 | Geology in Africa | Maputo |
| | 24/09-30/09 | Forum - ICSU Regional Office in Africa | Jo'burg/Pretoria |
| | 16/10-18/10 | IUGG Bureau | Melbourne |
| | 25/10-26/10 * | ICSU Executive Board | Paris |
| | 05/12 | * Perugia GA-LOC and funding sources | Perugia |

* = Travel paid by ICSU or UNESCO, or no cost

Acknowledgements and Thanks

The end of the Perugia General Assembly will mark the end of a 12 year period during which I served on the Union Bureau as Vice President (1995-1999 and 1999-2003) and President (2003-2007). Preceding that, I was active in various capacities in IAHS and its President (1991-1995), during which I was member of the Executive Committee. It has been a challenge and a privilege, but it certainly does not bring to and end my deep involvement with the Union.

I am grateful to many individuals who have made my task easier and pleasurable. First among them is our most able Secretary General, JoAnn Joselyn, who will be stepping down after eight years of dedicated and most capable service to the Union. She has been my constant and wise council, while carrying the burden of the daily operation. Vice President Tom Beer shouldered his part of the responsibility and was available to provide advice and take action. Treasurer Aksel Hansen, who worked closely with the Finance Committee and its Chair Mike Hamlin, kept our finances in excellent shape. Members of the Bureau Yun-Tay Chen, Harsh Gupta and Ali Tealeb provided their perspective and advice. I am most grateful to the Presidents and Secretaries General of the Associations; their lively participation in setting and carrying out the programs of their Associations and of the Union were invaluable to the well-being of the Union. The Associations' Secretaries General, who were invited to attend the Executive Committee's meeting, also constitute the Science Program Committee for this Assembly, chaired by Paola Rizzoli. The SPC set the program and ascertained that it can be carried out successfully in this great venue of Perugia.

Special recognition is due to the Local Organizing Committee for this General Assembly, chaired by Lucio Ubertini and led by Salvatore Grimaldi. They have had a gigantic task, and we all hope that the Assembly will proceed to the full satisfaction of one and all.

Last, I wish to acknowledge the substantial financial support provided to me for my travels (except those paid by ICSU and UNESCO, as marked in the list) by the Israeli Academy of Sciences and Humanities and by my home institution, the Technion – Israel Institute of Technology, which also gave me permission to use my own travel funds for this purpose. Without this I could not visit as many of the Associations and Commissions activities, nor attended meetings to promote the GeoSciences in Africa (GIA) initiative.

February 15, 2007

Uri Shamir, President

Agenda Item #4b
Report of the IUGG Vice President
For the Period 2003-2007

When I took office as Vice-President I noted that there was no formal role for the Vice-President in the statutes or by-laws. During 2004 I reviewed the statutes and by-laws in relation to Union and Inter-Association Commissions and established guidelines for such commissions. During this review a specific duty was established for Vice-President. The relevant item reads:

“The Union Commissions will formulate their program of work and should report to the Vice-President of the Union at least on an annual basis. An annual financial statement based on the calendar year shall be provided to the IUGG Treasurer.”

I have maintained electronic liaison with CMG, SEDI, GeoRisk, CCS, SCL/ILP and SEDI.

In addition to attending Executive and Bureau meetings in Boulder 2004 and Perugia 2005, I hosted the Bureau meeting in Melbourne in October 2006. I also engaged in various other activities to represent IUGG to ICSU.

I represented IUGG at the first planning meeting for the ICSU Regional Office for Asia and the Pacific in April 2005, and then at the meeting to inaugurate the regional office in Kuala Lumpur in September 2006.

I was nominated by IUGG to be a member of the Scoping Group for the new ICSU research program on Natural and Environmental Hazards and Disasters. The Scoping Group report was accepted by the ICSU General Assembly and I was then nominated by IUGG to be on the Planning Group for the program. The Science Plan developed by the Planning Group will be outlined by the Chair (Gordon McBean) during his presentation in session U12 at the IUGG General Assembly. Other members of the IUGG family on the Planning Group are Harsh Gupta and Steve Sparks.

I was also asked to represent IUGG as Chair of the Hazards Theme of the GeoUnions Science Initiative. As I also chair the Hazards Theme of the International Year of Planet Earth I deal with them as a combined committee. We are in the process of arranging a major conference in 2008 (The UN designated Year of Planet Earth) hopefully to be held in association with ICSU and UN-ISDR.

Tom Beer
IUGG Vice President
February, 2007

Agenda Item #4c Report of the Secretary General

IUGG 24th GENERAL ASSEMBLY

Report of the IUGG Secretary General
for the Period from the 23rd General Assembly to 16 February 2007

OVERVIEW

The International Union of Geodesy and Geophysics (IUGG) is a not-for-profit scientific organization dedicated to promoting and co-ordinating world-wide studies of the Earth and its environment in space. It is a union of seven geophysical Associations, each dedicated to a specific scientific discipline, but with overlapping interests and complementary strengths. At present, there are four Unions Commissions that are dedicated to particular interdisciplinary topics. The Union is financially supported by Member Adhering Bodies that benefit from the knowledge, data, services, and scientific talent that are concentrated within each Association and inter-Association body.

The Activities of the Union during the past quadrennium are summarized below, but there are several activities worthy of special note.

A magnitude 9 great earthquake that occurred on 26 December 2004 off the west coast of northern Sumatra, South Asia, triggered tsunamis that inundated the coastal zones around the Indian Ocean resulting in tragic and historic loss of life and property. The IUGG Union Commission on Geophysical Risk and Sustainability (GeoRisk), in cooperation with the IAPSO/IASPEI/IAVCEI Tsunami Commission, wrote a statement including a list of recommendations for further analysis which can be found on the web-page of the GeoRisk Commission <http://www.mitp.ru/georisk>. An IUGG Resolution based on this document, published in a special issue (11 January 2005) of the IUGG E-Journal, was sent to the UN Inter-Agency Secretariat of the International Strategy for Disaster Reduction (ISDR) and was presented at the World Conference on Disaster Reduction in Kobe Japan (18-22 January 2005) by Tom Beer, IUGG Vice President and Past Chair of the GeoRisk Commission. Since then, the general topic of geohazards has been a priority both within IUGG, its Commissions and Associations, and the entire scientific community.

In a continuing effort to sharpen the focus of the Union, the officers of the Union agreed on a Mission Statement at the 2005 meeting of the Union Executive Committee. That statement, posted on the IUGG webpage (<http://www.IUGG.org>) follows.

The International Union of Geodesy and Geophysics (IUGG) is the international organization dedicated to advancing, promoting, and communicating knowledge of the Earth system, its space environment, and the dynamical processes causing change.

Through its constituent Associations, Commissions, and services, IUGG convenes international assemblies and workshops, undertakes research, assembles

observations, gains insights, coordinates activities, liaises with other scientific bodies, plays an advocacy role, contributes to education, and works to expand capabilities and participation worldwide.

Data, information, and knowledge gained are made openly available for the benefit of society – to provide the information necessary for the discovery and responsible use of natural resources, sustainable management of the environment, reducing the impact of natural hazards, and to satisfy our curiosity about the Earth's natural environment and the consequences of human activities.

A new Union Commission on Cryospheric Sciences was established at the 2004 meeting of the IUGG Executive Committee. This Union Commission was formed from an international commission of the International Association of Hydrological Sciences but includes appropriate scientific topics from other Associations (e.g. sea ice, from the International Association for the Physical Science of the Oceans (IAPSO). The IUGG Executive Committee recognized the unique scientific niche of the cryosphere and at its meeting in 2005, voted to recommend to the IUGG Council that this Union Commission should become the 8th Association of IUGG.

As a response to a call to plan a scientific activity that would build on the legacy of the 1957-1958 International Geophysical Year (celebrating its 50th anniversary in 2007-2008), the International Association of Geomagnetism and Aeronomy (IAGA) initiated a major project to provide an internationally coordinated framework and focus for a 21st-Century approach to geoscience data stewardship (including data preservation, data maintenance, data discovery, data release, ready access to data), and the development of virtual observatories, capacity building, and education and public outreach. This initiative, known as the Electronic Geophysical Year (eGY), was adopted as an IUGG initiative by the Executive Committee in 2005 and has been endorsed by a number of international bodies and programs.

In the past four years, a total of \$65,000 in grants to support meetings was allocated to the organizers of 32 symposia, workshops, schools or meetings in 25 different countries, most of them in developing countries. In addition, a total of \$50,000 in grants was allocated in the years 2004 and 2005 to support 8 inter-Association initiatives that benefited developing countries. These activities included support for the IAGA/IUGG initiative on the electronic Geophysical Year (eGY), distribution of a monograph *The State of the Planet* (resulting from the Union Symposia of the same name at the 2003 IUGG General Assembly), support for an assessment of Biomass Burning on Precipitation (resulting from an IUGG resolution passed at the Sapporo General Assembly), support for several activities of the WMO/GEWEX (Global Energy and Water Cycle Experiment) programme, and 4 other projects specifically aimed at geohazards (earthquakes, volcanoes, tsunamis). By action of the 2005 Executive Committee, the grants were suspended for 2006-2007 in order to build a reserve of \$50,000 that could be used to seed a potential major project in Africa.

IUGG has been an active participant in the International Council for Science (ICSU), including the nomination of persons for numerous panels and working groups. Those panels for which IUGG was successful included the Panel of Area Assessment on Environment and its Relation to Sustainable Development (Dr. Uri Shamir), an ad hoc Expert Panel on Priority Area Assessment on Capacity Building in Science (Dr. Harsh Gupta), an ad hoc Committee on Membership Issues (Dr. Uri Shamir), and both the scoping and planning group on Natural and Human-Induced Environmental Hazards (Dr. Tom Beer). IUGG wrote a letter endorsing the ICSU "Agenda for Action" with regard to Science in the Information Society, and wrote a statement and sent an observer to the December 8-9, 2003 conference in Geneva, Switzerland, on the Role of Science in the Information Society. During the quadrennium, IUGG officers attended an ICSU Unions meeting in Paris (2004) and an upcoming Unions meeting in Rome (April 2007), and the ICSU

General Assembly in Suzhou, China (2005). Prof. Charles Merry, Chairman of the South African National Committee for IUGG, represented IUGG at the First ICSU Regional Meeting for Africa in Harare, Zimbabwe in 2004. The meeting discussed how the ICSU Regional Office for Africa, to be located in Pretoria, South Africa, will contribute to the strengthening of African science. Drs. Tom Beer and Harsh Gupta represented IUGG at the meeting establishing the ICSU Regional Office for Asia and the Pacific held in Kuala Lumpur in 2005, and Dr. Luiz Paulo Fortes, Chairman of the Brazilian National Committee for IUGG, represented IUGG at the meeting establishing the ICSU Regional Office for South America, held in Panama City in 2006. Dr. Uri Shamir was elected to the ICSU Executive Board at the Suzhou General Assembly, and Harsh Gupta was selected as a member of the ICSU Committee on Scientific Planning and Review.

IUGG has appreciated the opportunity to propose initiatives for ICSU grants. In 2003, the International Association for Geomagnetism and Aeronomy (IAGA) received an award of \$35,000 for their proposal "Rescue of old analogue magnetograms by converting to digital images." The project's outcome was that 177 station-years of 64,650 old and historic magnetograms from 9 Russian, two Indian, and one German magnetic observatory were converted to digital images. The hardware purchased with the project support is now available for the staff at the World Data Centres in India, Russia, and Japan for the follow-on conversion of analogue magnetograms into digital images in their routine work, as well as for specific rescue projects. IUGG did not submit a proposal for funding in 2004, but supported several grant proposals including four that were selected. In 2005, IUGG submitted two ICSU project proposals, and supported 3 others. Two of the supported proposals were successful. ICSU suspended the Grants Programme for 2007 and beyond pending a review of the programme and efforts to find funding for it.

During the quadrennium, IUGG collaborated with sister Unions on an initiative led by the International Union of Biological Sciences on the general topic of Science for Health and Well-being. We also participated in a new consortium of "geo" Unions, now 7 in number. The GeoUnions have met 4 times and identified 5 topics of interdisciplinary interests for future collaboration as opportunities arise. Several of the GeoUnions perceived a deficiency in communication and transparency between the Executive office of the International Council of Science and its Unions and issued a statement of concern that will be discussed at an April meeting of the ICSU Unions. IUGG and the International Union of Geological Sciences (IUGS) now jointly administer a former ICSU Interdisciplinary Body, the International Lithosphere Programme, and IUGG is collaborating with the International Astronomical Union and (IAU) the Union of Radio Scientists International (URSI) as ICSU restructures its data and information portfolio, including the Federation of Astronomical and Geophysical Data Analysis Services and the Panel on World Data Centres.

IUGG became a founding Partner in 2003 of the International Year of Planet Earth, an initiative of the International Union of Geological Sciences and UNESCO. The initiative seeks to raise the awareness of the contribution to, and role of the Earth sciences in society in the minds of politicians, decision-makers, the media and the general public. In 2005, the General Assembly of the United Nations proclaimed The International Year of Planet Earth for 2008. Governments will be urged to pay greater attention to the Earth sciences as affecting many aspects of the everyday lives of their citizens, with particular reference to applications in educational systems, governmental legislation and civil regulations, so as to take full advantage of this extensive source of expertise and experience. The Year is one of several initiatives (e.g., the International Polar Year and the International Heliophysical Year) included under the general heading of IGY+50 programmes. These programmes are all invited to participate in the July 2007 IUGG General Assembly in Perugia, and special scientific sessions and public events are being planned.

The sections below summarize matters of Union membership, actions of the Bureau and Executive Committees, and the Secretariat itself. The work of the Associations, the inter-Associations Commissions, and other matters of scientific interest are included in other sections of the Council Agenda.

MEMBERSHIP IN THE UNION

As of January 2007, IUGG has 65 Member Countries with distribution throughout the world as follows:

Europe 31 North and Central America 3 Asia 16
Africa 6 South America 7 Oceania 2

This is two more than at the closing of the 23rd General Assembly (Sapporo, Japan, 2003) and does not include Serbia and Montenegro, a country that evolved from the Federal Republic of Yugoslavia in 2003. In 2006, Serbia and Montenegro divided and all attempts to sort out which, if either, of the countries has a national committee for IUGG have been unsuccessful. Therefore it does not seem reasonable to count either as a member of IUGG, although both would be welcome pending routine application procedures. One country, Algeria, has withdrawn from membership according to IUGG Statutes owing to non-payment of dues. Three new members, all in Associate status, have been provisionally added: Bolivia, the Democratic Republic of the Congo, and Ghana. Five countries, Albania, Armenia, Bosnia and Herzegovina, Pakistan, and Nigeria, that were in Associate Status in 2003 have begun or resumed payment of dues and are once again regular members of IUGG. Unfortunately, several countries are in observer status according to Statute 14 owing to serious arrears of payment. Bulgaria petitioned for Associate status to maintain IUGG membership. These matters are also discussed in the Report of the Treasurer, and will be reviewed by the Council under Agenda item 6.

The current membership history is summarized in the table below.

| MEMBERS | Dates of ADMISSION & TERMINATION | CATEGORY | UNITS |
|-------------------------------------|---|-----------------|--------------|
| ALBANIA | 1997-2002, 2003 | 1 | 1 |
| <i>ALGERIA</i> | <i>1971-2006</i> | | |
| ARGENTINA | 1927 | 4 | 5 |
| ARMENIA | 2000 | 1 | 1 |
| AUSTRALIA | 1919 | 5 | 7 |
| AUSTRIA | 1948 | 3 | 3 |
| BELGIUM | 1919 | 4 | 5 |
| BOLIVIA | 1960-2000, 2006 | A | 0 |
| BOSNIA & HERZEGOVINA | 2003 | 1 | 1 |
| BRAZIL | 1922 | 3 | 3 |
| BULGARIA | 1930 | A | 0 |
| <i>BURUNDI</i> | <i>1987-1995</i> | | |
| CANADA | 1919 | 6 | 10 |
| CHILE | 1924 | 2 | 2 |
| CHINA | 1977 | 6 | 10 |
| CHINA – Acad. Of Sciences in Taipei | 1995 | 4 | 5 |
| COLOMBIA | 1938-1971, 2000 | 1 | 1 |
| CONGO D.R. (**) | 2004 | A | 0 |
| CROATIA | 1992 | 1 | 1 |
| <i>CUBA</i> | <i>1960-1996</i> | | |
| CZECH REPUBLIC | 1993 | 2 | 2 |
| DENMARK | 1923 | 4 | 5 |

| | | | |
|---|------------------|---|----|
| <i>DOMINICAN REP.</i> | <i>1957-1971</i> | | |
| EGYPT | 1924 | 2 | 2 |
| ESTONIA | 1991 | 1 | 1 |
| <i>ETHIOPIA</i> | <i>1952-2000</i> | | |
| FINLAND | 1927 | 3 | 3 |
| FRANCE | 1919 | 7 | 15 |
| GERMANY | 1951 | 8 | 20 |
| GHANA | 1957-1987, 2006 | A | 0 |
| <i>GREECE</i> | <i>1922-2003</i> | | |
| <i>GUATEMALA</i> | <i>1957-2000</i> | | |
| <i>GUINEA</i> | <i>1987-1995</i> | | |
| <i>HAITI</i> | <i>1956-1971</i> | | |
| HUNGARY | 1930 | 2 | 2 |
| ICELAND | 1967 | 1 | 1 |
| INDIA | 1947 | 5 | 7 |
| INDONESIA | 1951 | 1 | 1 |
| IRAN | 1957 | 1 | 1 |
| <i>IRAQ</i> | <i>1983-1996</i> | | |
| IRELAND | 1946 | 2 | 2 |
| ISRAEL | 1951 | 1 | 1 |
| ITALY | 1919 | 6 | 10 |
| <i>IVORY COAST</i> | <i>1975-1996</i> | | |
| JAPAN | 1919 | 8 | 20 |
| JORDAN | 1979 | 1 | 1 |
| <i>KENYA</i> | <i>1975-1997</i> | | |
| KOREA | 1960 | 2 | 2 |
| <i>KOREA /DEM.REP</i> | <i>1967-2000</i> | | |
| <i>LEBANON</i> | <i>1967-2003</i> | | |
| <i>LIBYA</i> | <i>1979-1996</i> | | |
| LUXEMBOURG | 1971 | 1 | 1 |
| <i>EX-YUGOSLAVIAN REPUBLIC OF MACEDONIA</i> | <i>1995-2001</i> | | |
| <i>MADAGASCAR</i> | <i>1967-1995</i> | | |
| <i>MALAYSIA</i> | <i>1967-2002</i> | | |
| MAURITIUS | 2003 | A | 0 |
| MEXICO | 1922 | 2 | 2 |
| MONACO | 1967 | 1 | 1 |
| <i>MONGOLIA</i> | <i>1995-2001</i> | | |
| MOROCCO | 1924 | A | 0 |
| MOZAMBIQUE | 1983 | 1 | 1 |
| <i>MYANMAR (BURMA)</i> | <i>1957-2003</i> | | |
| <i>NEPAL</i> | <i>1975-1987</i> | | |
| NETHERLANDS | 1925 | 4 | 5 |
| NEW ZEALAND | 1927 | 1 | 1 |
| NIGERIA | 1971 | 2 | 2 |
| NORWAY | 1923 | 4 | 5 |
| PAKISTAN | 1952 | 2 | 2 |
| PERU | 1925-1979, 2000 | A | 0 |
| PHILIPPINES | 1951 | 3 | 3 |
| POLAND | 1924 | 2 | 2 |
| PORTUGAL | 1919 | 2 | 2 |
| ROMANIA | 1930 | 1 | 1 |
| RUSSIA*** | 1992 | 6 | 10 |
| <i>SAUDI ARABIA</i> | <i>1971-2001</i> | | |
| <i>SENEGAL</i> | <i>1960-1995</i> | | |
| <i>SERBIA & MONTENEGRO (*)</i> | <i>1996-2006</i> | | |
| <i>SIERRA LEONE</i> | <i>1967-1983</i> | | |

| | | | |
|-----------------|-----------|----|----|
| SLOVAK REPUBLIC | 1993 | 1 | 1 |
| SLOVENIA | 1994 | 1 | 1 |
| SOUTH AFRICA | 1924 | 3 | 3 |
| SPAIN | 1922 | 5 | 7 |
| SUDAN | 1955-2000 | | |
| SWEDEN | 1923 | 4 | 5 |
| SWITZERLAND | 1923 | 5 | 7 |
| SYRIA | 1948-1995 | | |
| TANZANIA | 1975-2000 | | |
| THAILAND | 1923 | 2 | 2 |
| TUNISIA | 1927-2001 | | |
| TURKEY | 1949 | 2 | 2 |
| U.K. | 1919 | 8 | 20 |
| URUGUAY | 1924-2000 | | |
| U.S.A. | 1919 | 11 | 35 |
| VENEZUELA | 1975 | 1 | 1 |
| VIETNAM | 1931 | 1 | 1 |
| ZIMBABWE | 1967-2000 | | |

(*) Adhesion in 1996 under the name of the Federal Republic of Yugoslavia which was changed in 2003 to Serbia & Montenegro. In 2006, Serbia & Montenegro divided, and attempts to confirm membership of either country have been unsuccessful.

(**) Adhesion in 1991 under the name Zaire, membership terminated in 1997.

(***) Adhesion in 1954 under the name of the U.S.S.R.

ADMINISTRATION

The Bureau

The Bureau of the Union consists of the President U. Shamir (Israel), Vice-President T. Beer (Australia), Secretary-General J.A. Joselyn (U.S.A.), Treasurer A. Hansen (Denmark), and 3 Members: Y-T. Chen (China), H. Gupta (India) and A.A. Tealeb (Egypt).

The Bureau met three times during the term :

- in Boulder, Colorado U.S.A. (30 – 31 August 2004)
- in Perugia, Italy (8 – 9 September 2005)
- in Melbourne Australia (16 – 18 October 2006)

The Bureau will meet again in Perugia in July.

The Boulder and Perugia meetings were followed by formal Executive Committee meetings.

Discussions at the Bureau meetings included the following :

- IUGG Membership. The number of Adhering Bodies and the extent of the arrears in dues has been a topic of concern at each meeting. Possible new members, especially developing countries, and efforts to encourage dues payments were discussed and actions were taken with varying degrees of success.
- IUGG Financial Health. The state of the budget was considered at each meeting, and was found satisfactory. A draft budget for the 2008-2011 term was discussed.
- IUGG Associations, in particular the formation and funding of the proposed new International Association of Cryospheric Sciences
- IUGG's relationship with ICSU, including the ICSU Regional Offices, the suspended Grants Programme, and the strategic initiative on data and information (including FAGS)
- IUGG relationship with sister geoscience Unions, in particular a joint Statement of

Concern to ICSU asking for great involvement in scientific affairs and more transparency in decision-making

- Adoption of the Terms of Reference for a reconstituted International Lithosphere Programme, to be jointly administered with the International Union of Geological Sciences (IUGS)
- IUGG support of the International Year of Planet Earth
- IUGG support of young scientists, in particular nominations of persons to attend the ICSU Young Scientist Conference in April 2007
- The 2007 General Assembly, including the chairs and members of the Nominations Committee, Statutes and By-Laws Committee, the Resolutions Committee, a new site selection committee, and arrangements for special events (IGY+50, GeoSciences in Africa, the opening and closing ceremonies, etc.).

The Executive Committee

The Executive Committee (EC) formally consists of the Bureau, the immediate past President of IUGG (M. Kono, Japan) and the Presidents of the Associations. Association Secretaries-General are always invited to attend as well, with voice but without vote. The Executive Committee met twice

- in Boulder, Colorado, USA, 31 August – 2 September 2004
- in Perugia, Italy, 9 – 11 September 2005

The Executive Committee will meet again in Perugia in July.

Decisions at the Executive Committee meetings included the following :

- Endorsed the IAGA initiative for an Electronic Geophysical Year (eGY) and adopted it as a Union initiative
- Adopted IUGG Guidelines for Union Commissions
- Established the Union Commission on Cryospheric Sciences; allocated \$5K/year, beginning in 2005, to support their work; formally endorsed a proposal that this Union Commission should become an Association at the 2005 Executive Committee meeting.
- Agreed to ask the Finance Committee to approve moving expenditures for CMG and SEDI from Budget line 15.1 to line 17.1
- Approved replacement of CMG (Committee on Mathematical Geophysics) Vice-Chair George Mochan (Russia) with Einat Aharonov (Israel).
- Approved nominations for changes to the GeoRisk Commission: Alik Ismail-Zadeh as President, Ramesh Singh as Vice-President, and Gerd Tetzlaff as Secretary.
- Voiced substantial objection to the suggestion of a unified format for Association web pages.
- Decided not to change the present 4-year schedule for General Assemblies, nor promote an interim Council meeting.
- Selected “Earth: Our Changing Planet” as the theme of the Perugia 2007 General Assembly.
- Approved a new mission statement
- Reaffirmed support of the concept of an IUGG project on GeoSciences in Africa and decided to suspend the call for interdisciplinary initiatives in developing countries (IUGG Budget line 18.1) for 2006-2007 in order to accumulate a fund of \$50K to be used to attract additional funding for a major project in Africa.

Secretariat

The Statutes and By-laws provide that the daily affairs of the Union are managed by an elected Secretary General who attends to correspondence, circulates information, preserves the records, prepares reports of the Union's activities, and arranges meetings of the General Assembly, the Council, the Executive Committee and the Bureau, including preparing and distributing the agendas and the minutes of all their meetings. Additional activities included the following.

- Maintained, redesigned and expanded the IUGG Web page
- Produced the monthly IUGG E-Journal, the annual Yearbook, and the annual Report
- Conducted ballots by correspondence concerning the admission of Bolivia, the Republic of Congo, and Ghana as Associate members, and corresponded with a number of countries (Azerbaijan, Cuba, Eritrea, Ethiopia, Georgia, Greece, Kenya, Libya, Lithuania, Macedonia, Malaysia, Mongolia, North Korea, Saudi Arabia, Singapore, Sri Lanka, Sultanate of Oman, Tunisia, Uzbekistan, Zimbabwe) regarding potential membership.
- Issued the calls for support of meetings and inter-disciplinary initiatives, and facilitated the awards
- Announced the death of Honorary Secretary General Paul Melchior (September 2005)
- Facilitated the work of the IUGG Nominations and Statutes and By-laws committee, reviewed the draft Statutes and By-laws for the proposed new Association; reviewed proposed changes to the Statutes and By-laws for other Associations
- Drafted the Guidelines on IUGG Administration
- Attended meetings of the Federation of Astronomical and Geophysical Data Analysis Services (FAGS) in 2005 and 2006, ICSU Unions meetings in 2004 and 2007, and the ICSU General Assembly in 2005
- Supported the Scientific Programme Committee and the Local Organizing Committee in preparations for the 2007 General Assembly

It has been an honor and a privilege to serve IUGG in this office since 1999. I have benefited enormously from the guidance and assistance of the members of the IUGG Bureau during the past eight years, especially Presidents Uri Shamir and Masaru Kono, Treasurer Aksel Hansen, Vice-President and Bureau member Tom Beer, and Bureau members J-T Chen and Y-T Chen, Harsh Gupta, Ali A.A. Tealeb, and L V. Shannon.

The office of the Secretary General has been hosted by the University of Colorado within CIRES – the Cooperative Institute for Research in Environmental Sciences, and was financially supported by a grant from the US National Research Foundation in cooperation with the Board on International Scientific Organizations within the National Research Council of the National Academies. The grant permitted the hire of part-time assistants who helped to manage the database, correspond with the Member Adhering Bodies and IUGG officers, and prepare reports and mailings. During the past 4 years, it has been my special pleasure to have worked with Katina Rogers, whose support of the duties of the Secretariat cannot be underestimated. I have appreciated her language skills, talent, dedication, humor and friendship.

My best wishes go to my successor, who will undoubtedly also benefit from the extraordinary experience of working with excellent scientists, worldwide, to promote the goals of IUGG.

Jo Ann Joselyn
February 16, 2007

Agenda Item #4d: Report of the Treasurer

Introduction

This report will be presented to the Council at the upcoming XXIV IUGG General Assembly in Perugia, Italy. It contains a financial part and some statistical information about the members of IUGG. Accounting and budget spreadsheets are enclosed as 3 attachments:

- 1) The final accounting of 2000 – 2003 quadrennial (each year + accumulated) compared to the budget (enclosure 1).
- 2) A preliminary accounting for the present quadrennial 2004 – 2007 (each year + accumulated) (enclosure 2).
- 3) The 2004-2007 budget from Sapporo 2003 with adjustments made in Boulder 2004.

This procedure for reporting on the finances is a continuation of what was done at the General Assembly in Sapporo in 2003. With the General Assemblies normally taking place in the last year of a budget period it is not possible to give a full report on the finances of the quadrennial. Instead it is accepted to present it at the next GA together with a preliminary accounting for the present quadrennial. Therefore in Perugia the final accounting for the quadrennial 2000 – 2003 will be shown. (1 page enclosed)

At the time of writing the preliminary report for 2004-2007 includes the year 2007 budget as a substitute for the accounting for the same year. In Perugia in July it will be possible to present a better estimate of the accounting for 2007.

The budget for the period 2004 to 2007 is presented in attachment no 3. At the Bureau meeting in Boulder, 2004, the Sapporo budget was adjusted slightly to accommodate decisions made prior to the meeting.

The final accounting for 2000 - 2003

The year 2003 turned out to be much better than anticipated at the General Assembly in Sapporo in July 2003. The balance ended up being more than USD 100,000. higher than presented as the estimate then. This was mainly due to improved payment of dues to the Union. The improved balance was incorporated in the budget in Boulder 2004 where also a few other other adjustments were added.

The preliminary accounting for the years 2004 to 2007

Income:

The first 3 years of the budget period 2004 – 2007 show higher income than given in the budget:

- 1: the members have paid more dues
- 2: IUGG received a significant surcharge in Sapporo
- 3: although IUGG didn't get interest in 2004 the overall interest is higher because of year 2006
- 4: a higher price of 1 unit: it increased from US\$ 1,485 in 2004 to US\$ 1,630, app. 10%

The number of members withdrawing from IUGG is only 3 in the present quadrennial as compared to 15 in the previous period. IUGG has got 3 new members, one in category 1 + 2 as associate members. This also contributes to a better economy.

In fact during the quadrennials 1992-1995, 1996-1999 and 2000-2003 the actual number of units paid to IUGG went down from 1170 over the first mentioned 4 year period to 1066 in the last. We hope that this decline in contributing member countries now will level off and maybe even reverse to an increase.

A small change in the way the price of 1 unit is calculated had to be introduced in 2004/2005 because the European Union stopped issuing the OECD inflator tables. Instead an US Labor Department inflator index has been used since then. The new index was calibrated against the old index for the last few years of overlapping.

Based on the above analysis one can conclude that it is very likely that IUGG will come out the quadrennial with a higher income than in the budget. However, the buying power of the income is of course lower following the inflation. In addition the US dollar is weak here in 2006/2007 which can affect the level of the union's activity, at least indirectly. Much of the IUGG expenditure is in US dollars so the exchange rate of US dollar is not felt explicitly.

Expenditure:

Generally speaking none of the expense lines show higher expenditure compared to the budget except line 13.1 (because of the payment in 2004 of the 2003 video production in Sapporo). For several lines the accounting and budget numbers follow each other closely: e.g. travel expenses, allocations to the associations/symposia and dues to ICSU and inter-union activities. One must however notice that we can already now see that allocation to the associations will be high in 2007 as a result of the high income from dues in 2006.

For a few of the lines the expenditure is lower than the budget: 1) the cost of personnel is lower than the amount allocated to this expenditure line. For the whole period only half the allocation is actually spent on personnel. 2) the cost of publishing the IUGG Yearbook does not appear in the IUGG accounting as it has been paid with money from other sources.

And finally a major difference between accounting and budget is seen in line 18, the so called initiative line introduced in Birmingham in 1999. There has been no allocation in 2006 and 2007 from this line.

As an union member of ICSU IUGG is paying dues to ICSU. In contrast to IUGG ICSU is strongly dependent on the value of EUR, but not on USD. ICSU is now requesting that payment of dues is paid in EUR. For IUGG this means EUR 13,472 instead of USD 13,472, an increase of app. 30% in one step. The dues for 2007 is not yet paid.

Balance:

As explained above the year 2003 turned out to be much better than estimated in July 2003. The improvement was of the order US\$ 130,000. However, an expenditure of 30.000 not included in the 2003 budget was committed to the support of the IYPE programme. In Boulder 2004 during

the Bureau meeting there the two numbers above were taken in to account in the budget as adjustments added to the budget from Boulder. This adjustment was cleared with the Finance Committee represented at the meeting.

At the time of writing the financial report the estimated balance for the whole period 2004-2007 is close to zero as opposed to the decrease of US\$ 92,000 in the budget including the adjustments. This is mainly due to the higher income in 2006. Compared to the budget without adjustments the outgoing balance in 2007 is expected to be significantly higher. The reason being the higher income plus the improved incoming balance in 2004.

In general, one can say that the economical situation of IUGG is sound and that the net balance allows IUGG some flexibility. However it is very important that IUGG will be able to keep its present members in the union and at the same time attract new members. The problem of keeping the members in the union is serious and needs the full attention of the union and the member countries. It is essential that we reverse the trend with increasing smaller number of paid units. For a long time the loss of member dues has been compensated by the increased price of 1 unit. Meaning the buying power of the more or less constant income is slowly decreasing.

As Treasurer of IUGG I want to thank every body I have been in contact with concerning IUGG business. In particular, I will send many thanks to Secretary General JoAnn Joselyn and her assistant Katina Rogers, with whom I have almost daily correspondence. Also thanks to the President and the entire Bureau and the Presidents and Secretary Generals of the Associations. I have had a close cooperation and many stimulating discussions with the IUGG Finance Committee, especially its chairman Michael Hamlin. Anders Svensson has been a very good assistant treasurer and he has made important contributions to the smooth running of the treasurer's office. Likewise Lise Gregersen until late 2005 and since summer 2006 Helle Eriksen have been very reliable assistants in running the general administration of my office.

Best regards

Aksel Walløe Hansen
Treasurer, IUGG

Appendix with statistical data on IUGG

In the following a summary of the relevant information about IUGG is given.

First of all as of January 1st, 2007, IUGG has 66 member countries (3 up as compared to 2003). IUGG has lost 3 members since 2003, but we have welcomed 6 new members.

The 66 members represent a total of 274 units. In early 2007 we have received payment from 242 units for 2006. The remaining 32 units are distributed over 13 members in observer status. On January 1st 2 more members were in observer status, but they have since paid their dues (20 units).

Membership tables 2006/2007

1) Payments for 2006 (the member distribution for 2007 is shown in boldface type)

| Category | Units in Category | Number of countries | Number of units | Paid 2006 | |
|-------------------|-------------------|---------------------|-----------------|----------------|---|
| | | | | numbers | units |
| A | 0 | 7/8 | 0 | | |
| 1 | 1 | 22/20 | 22/20 | 13 | 13 |
| 2 | 2 | 13 | 26 | 11 | 22 |
| 3 | 3 | 5 | 15 | 3 | 9 |
| 4 | 5 | 7 | 35 | 6 | 30 |
| 5 | 7 | 4 | 28 | 4 | 28 |
| 6 | 10 | 4 | 40 | 3 | 30 |
| 7 | 15 | 1 | 15 | 1 | 15 |
| 8 | 20 | 3 | 60 | 3 | 60 |
| 9 | 25 | | | | |
| 10 | 30 | | | | |
| 11 | 35 | 1 | 35 | 1 | 35 |
| 12 | 40 | | | | |
| Total | | 67/66 | 275/274 | 45 | 242 (number of units from paid-up members only) |
| USD (2006 values) | | | 440.000 | 446.620 | 384.000 |

Special consideration:

D.R. Congo did not pay for 2004 - 2006, they will get a new invoice for 2007, although they are considered A-member in 2007 until payment is received.

In 2007 Algeria is taken out of the table, therefore only 66 members on January 1st.

2) Countries in Observer Status (countries in arrears for 2006 and/or earlier) **January 1:** (*later changes shown in italics*)

| Cat. | Units | Countries |
|-------|----------|---|
| 1 | 7*1 | Colombia, Venezuela, Mozambique, <u>Croatia, Iran, Slovak Rep., Vietnam</u> |
| 2 | 2*2 | <u>Pakistan, Mexico</u> |
| 3 | 2*3 | Philippines, <u>South Africa</u> |
| 4 | 2*5 | <u>Argentina, Academica Sinica-Taipei</u> |
| 6 | 1*10 | <u>Russia</u> |
| 7 | 1*15 | <u>France</u> |
| Total | 52 units | 15 countries |

At the time of the writing of this report France and Academia Sinica, Taipei, *have paid their dues for 2006.*

In the next table we can see that the members in observer status are owing a total of \$89,424. as compared to \$108,937. one year earlier to IUGG. All the debt is for 2003 through 2006.

For the whole period 2000-06 the amount “lost” by members converting to Associate status or withdrawing from the union is a substantial amount of money that will not be recovered. As an example Algeria withdrew in 2007 from IUGG leaving behind a debt of app. US\$ 6,000. that is now lost.

3) Dues in arrears

| | 2003 | 2004 | 2005 | 2006 | Total |
|------------------------------|--------------|--------------|--------------|---------------|----------------------------|
| Colombia | 1.455 | 1.485 | 1.525 | 1600 | 6.065 |
| Mozambique | | | 1.525 | 1600 | 3.125 |
| Venezuela | 1.455 | 1.485 | 1.525 | 1600 | 6.065 |
| Philippines | | 947 | 4.575 | 4800 | 10.322 |
| Old observers | 2.910 | 3.917 | 9.150 | 9.600 | 25.577 |
| | | | | 2006 | Total |
| Croatia | | | | 1.600 | 1.600 |
| Iran | | | | 1.600 | 1.600 |
| Slovak Rep. | | | | 1.600 | 1.600 |
| Vietnam | | | | 1.600 | 1.600 |
| Pakistan | | | | 3.200 | 3.200 |
| Mexico | | | | 3.200 | 3.200 |
| South Africa | | | | 4.800 | 4.800 |
| Argentina | | | | 8.000 | 8.000 |
| Academica Sinica-Taipei | | | | 8.000 | 8.000 (February 12: paid) |
| Russia | | | | 10.230 | 10.230 |
| France | | | | 20.017 | 20.017 (February 12: paid) |
| New observers in 2007 | | | | 63.847 | 63.847 |
| Total | | | | 73.447 | 89.424 |

IUGG Members, January 1, 2007

| Member Country | Category | | |
|------------------------------|-----------------|-----------------|--|
| 8 adhering bodies in | A | | |
| Bolivia | | | |
| Ghana | | | |
| Morocco | | | |
| Peru | | | |
| Serbia and Montenegro | separated ? | | |
| Bulgaria | | | |
| Mauritius | | | |
| D. R. Congo | | | |
| 1 adhering body in | 11 | 35 units | |
| USA | | | |
| 3 adhering bodies in | 8 | 60 units | |
| Germany | | | |
| Great Britain | | | |
| Japan | | | |
| 1 adhering body in | 7 | 15 units | |
| France | | | |
| 4 adhering bodies in | 6 | 40 units | |
| Canada | | | |
| China | | | |
| Italy | | | |
| Russia | observer | | |
| 4 adhering bodies in | 5 | 28 units | |
| Australia | | | |
| India | | | |
| Spain | | | |
| Switzerland | | | |
| 7 adhering bodies in | 4 | 35 units | |
| Academy Sinica, Taipei | | | |
| Argentina | observer | | |
| Belgium | | | |
| Denmark | | | |
| Netherlands | | | |
| Norway | | | |
| Sweden | | | |
| 5 adhering bodies in | 3 | 15 units | |
| Austria | | | |
| Brazil | | | |
| Finland | | | |
| Philippines | observer | | |
| South Africa | observer | | |
| 13 adhering bodies in | 2 | 26 units | |
| Chile | | | |
| Czech Republic | | | |
| Egypt | | | |
| Hungary | | | |
| Ireland | | | |
| Korea, South | | | |
| Mexico | observer | | |
| Nigeria | | | |
| Pakistan | observer | | |
| Poland | | | |
| Portugal | | | |
| Thailand | | | |
| Turkey | | | |

| Member Country | Category |
|------------------------------|------------------------|
| 20 adhering bodies in | 1 21 units |
| Albania | |
| Armenia | |
| Bosnia & Herzegovina | |
| Colombia | observer |
| Croatia | observer |
| Estonia | |
| Iceland | |
| Indonesia | |
| Iran | observer |
| Israel | |
| Jordan | |
| Luxembourg | |
| Monaco | |
| Mozambique | observer |
| New Zealand | |
| Romania | |
| Slovak Republic | observer |
| Slovenia | |
| Venezuela | observer |
| Vietnam | observer |

Countries withdrawn 2000-2004

| | Category |
|----------------|-----------------|
| In 2003 | |
| Malaysia | 1 |
| Greece | 3 |
| In 2004 | |
| Myanmar | 1 |
| Lebanon | 1 |
| In 2007 | |
| Algeria | 1 |

New members

| | |
|---|---|
| In 2003 | |
| Bosnia-Herzegovina | A |
| Albania | A |
| Mauritius | A |
| In 2004 | |
| D. R. Congo | 1 |
| Until the end of 2007 considered A-member | |
| In 2006 | |
| Ghana | A |
| Bolivia | A |

**IUGG Accounting and Budget, 2000 - 2003,
Final**

Attachment to FINANCIAL REPORT, PERUGIA, 2007

| In US dollars | BUDGET | | | | Budget 2000-2003 | Accounting 2000-2003 | ACCOUNTING | | | | COMMENTS |
|---------------------------------------|---------|---------|---------|---------|---------------------|-------------------------|------------|---------|---------|---------|--|
| | 2000 | 2001 | 2002 | 2003 | | | 2000 | 2001 | 2002 | 2003 | |
| RECEIPTS | | | | | | | | | | | |
| 1. Membership Subscription | 363,528 | 370,798 | 378,213 | 385,777 | 1,498,316 | 1,497,327 | 339,072 | 366,244 | 353,207 | 438,804 | |
| 2. ICSU Grants | | | | | 0 | 102,000 | 52,000 | 15,000 | | 35,000 | 41000 paid to Association in 1999 was received in 2000 from ICSU |
| 3. Assembly Surcharge | | | | | 0 | 18,150 | 18,150 | | | | |
| 4. Contracts with ICSU | | | | | 0 | 0 | | | | | |
| 5. Sales of Publications | 1,500 | 1,500 | 1,500 | 1,500 | 6,000 | 6,516 | 1,522 | 1,884 | 1,571 | 1,539 | |
| 6. Miscellaneous | | | | | 0 | 0 | | | | | |
| a. Interest | 16,659 | 16,495 | 16,400 | 19,575 | 73,329 | 54,019 | 24,831 | 20,006 | 7,809 | 1,373 | |
| b. Gain on exchange | | | | | 0 | 6,094 | 18 | | 3,081 | 3,521 | |
| c. Other | | | | | 0 | 62,867 | 27,021 | 34,505 | | 1,321 | IAGA money from B'ham received in 2000 IUGG surplus in B'ham received in 2001 |
| 7. Total Receipts | 381,887 | 390,793 | 398,113 | 406,862 | 1,577,645 | 1,746,973 | 462,613 | 437,660 | 365,669 | 481,658 | |
| 8. Balance on 1/1 | 421,476 | 462,363 | 459,988 | 489,371 | 421,476 | 438,900 | 438,900 | 574,556 | 697,382 | 636,081 | |
| EXPENDITURES | | | | | | | | | | | |
| 11. Administration | | | | | | | | | | | |
| 11.1 Personnel | 20,000 | 20,600 | 21,218 | 21,855 | 83,673 | 25,742 | 7,024 | 6,060 | 6,088 | 6,570 | |
| 11.2 Quarters | | | | | 0 | 0 | | | | | |
| 11.3 Supplies and Equipment | 2,000 | 1,500 | 1,500 | 1,500 | 6,500 | 5,682 | 1,767 | 2,565 | 1,197 | 153 | |
| 11.4 Communications | 2,500 | 2,500 | 2,500 | 2,500 | 10,000 | 18,388 | 5,664 | 7,649 | 2,919 | 2,157 | |
| 11.5 Travel, Administration only | 38,000 | 76,000 | 41,000 | 71,000 | 226,000 | 176,643 | 17,673 | 52,975 | 20,607 | 85,388 | |
| 11.6 Miscellaneous | | | | | 0 | 39,109 | 3,444 | 1,650 | 27,524 | 6,491 | Includes the IAGA money, received in 2000, paid out in 2002 |
| 11.7 Travel, representation | | | | | 0 | 14,203 | 1,709 | 3,182 | 4,291 | 5,021 | as of 2003 no publication cost |
| 12. Publications, Printing | 12,000 | 12,300 | 12,608 | 12,923 | 49,831 | 17,586 | 7,470 | 6,592 | 3,524 | 0 | |
| 13. General Assemblies | | | | | 0 | 0 | | | | | |
| 13.1 Organization | | | 5,000 | 5,000 | 5,000 | 10,471 | 8,581 | | | 1,891 | |
| 13.2 Travel/grants | | | 30,000 | 30,000 | 30,000 | 30,000 | | | | 30,000 | |
| 14. Symposia | 15,000 | 15,000 | 15,000 | 5,000 | 50,000 | 50,043 | 17,500 | 12,500 | 13,000 | 7,043 | |
| 15. Annual allocations | | | | | 0 | 0 | | | | | |
| 15.1a Associations | 161,800 | 173,243 | 169,546 | 181,052 | 685,641 | 714,247 | 167,063 | 121,236 | 234,404 | 191,544 | |
| 15.1b Inter-Association Science | 19,700 | 11,700 | 19,700 | 11,700 | 62,800 | 62,800 | 23,700 | 11,700 | 14,700 | 12,700 | |
| 15.2 Assembly Surcharges | | | | | 0 | 0 | | | | | |
| 15.3 Grants from ICSU | | | | | 0 | 61,000 | 11,000 | 10,000 | 5,000 | 35,000 | the ICSU grant, worth 41,000, was paid in 1999 |
| 16. Dues and Grants | | | | | 0 | 0 | | | | | |
| 16.1 ICSU and APS | 13,000 | 13,325 | 13,658 | 14,000 | 53,983 | 53,490 | 13,207 | 13,339 | 13,472 | 13,472 | No EMI allocation as of 2003 |
| 16.2 Inter-Union Science | 34,000 | 34,000 | 34,000 | 34,000 | 136,000 | 131,000 | 34,000 | 34,000 | 34,000 | 29,000 | |
| 17. Countries in Need (Inter-As Act.) | 20,000 | 30,000 | 35,000 | 40,000 | 125,000 | 118,836 | 6,000 | 29,000 | 45,000 | 38,836 | |
| GA-participation | | | | 40,000 | 40,000 | 40,000 | | | | 40,000 | |
| 18. Miscellaneous | 3,000 | 3,000 | 3,000 | 3,000 | | 0 | | | | | |
| a. Fees | | | | | 12,000 | 6,064 | 1,273 | 1,743 | 1,243 | 1,805 | |
| b. Loss on exchange | | | | | 0 | 0 | | 645 | | | |
| 19. Total Expenditures | 341,000 | 393,168 | 368,730 | 473,530 | 1,576,428 | 1,575,305 | 327,076 | 314,834 | 426,969 | 507,072 | |
| 20. Balance on 31/12 | 462,363 | 459,988 | 489,371 | 422,693 | 422,693 | 610,568 | 574,438 | 697,382 | 636,081 | 610,568 | |

July 1, 2004

2004 - 2007 PRELIMINARY REPORT

Attachment to FINACIAL REPORT, PERUGIA, 2007

| US dollars | BUDGET + ADJUSTMENTS, BOULDER 2004 | | | | 2004-2007 | 2004-2007 | accounting | accounting | accounting | budget | |
|----------------------------------|------------------------------------|---------|---------|---------|-----------|-----------|------------|------------|------------|---------|---|
| | 2004 | 2005 | 2006 | 2007 | | | 2004 | 2005 | 2006 | 2007 | |
| RECEIPTS | | | | | | | | | | | |
| | 260 | 246 | 246 | 244 | | | | | | | |
| | 1,484 | 1,514 | 1,544 | 1,575 | | | 1,485 | 1,525 | 1,600 | 1,630 | |
| 1. Membership Subscription | 371,000 | 375,400 | 379,800 | 384,300 | 1,510,500 | 1,560,871 | 370,324 | 362,255 | 443,992 | 384,300 | |
| 2. ICSU Grants | | | | | | | | | | | |
| 3. Assembly Surcharge | | | | | | 15,646 | 15,646 | | | | |
| 4. Contracts with ICSU | | | | | | | | | | | |
| 5. Sales of Publications | 200 | 200 | 200 | 200 | 800 | 911 | 200 | 162 | 349 | 200 | |
| 6. Miscellaneous | | | | | | | | | | | |
| a. Interest | 5,000 | 5,000 | 5,000 | 5,000 | 20,000 | 35,007 | 0 | 6,167 | 23,820 | 5,000 | |
| b. Gain on exchange | | | | | | 524 | 524 | | | | |
| c. Other | | | | | | | | | | | |
| 7. Total Receipts | 376,200 | 380,600 | 385,000 | 389,500 | 1,531,300 | 1,612,959 | 386,694 | 368,604 | 468,161 | 389,500 | |
| 8. Balance on 1/1 | 610,568 | 631,168 | 615,668 | 618,368 | 610,568 | 610,568 | 610,568 | 672,027 | 563,783 | 726,453 | |
| EXPENDITURES | | | | | | | | | | | |
| 11. Administration | | | | | | | | | | | |
| 11.1 Personnel | 10,000 | 10,000 | 10,000 | 10,000 | 40,000 | 23,570 | 6,977 | 3,258 | 3,435 | 10,000 | |
| 11.2 Quarters | | | | | | 608 | 0 | 170 | 438 | 0 | |
| 11.3 Supplies and Equipment | 2,500 | 2,500 | 2,500 | 2,500 | 10,000 | 3,846 | 1,033 | 313 | 0 | 2,500 | |
| 11.4 Communications | 8,000 | 8,000 | 8,000 | 8,000 | 32,000 | 17,137 | 2,265 | 2,864 | 4,008 | 8,000 | |
| 11.5 Travel, Administration only | 40,000 | 60,000 | 40,000 | 60,000 | 220,000 | 196,161 | 31,335 | 65,735 | 19,090 | 60,000 | |
| 11.6 Miscellaneous | 1,000 | 1,000 | 1,000 | 5,000 | 8,000 | 7,283 | 1,382 | 456 | 444 | 5,000 | |
| 11.7 Travel, representation | | | | | | 26,969 | 7,995 | 12,220 | 6,752 | | |
| 12. Publications, Printing | 5,000 | 5,000 | 5,000 | 5,000 | 20,000 | 5,065 | 65 | 0 | 0 | 5,000 | |
| 13. General Assemblies | | | | | | 0 | | | | | |
| 13.1 Organization | | | | 10,000 | 10,000 | 34,556 | 24,556 | | | 10,000 | |
| 13.2 Travel | | | | 30,000 | 30,000 | 30,000 | | | | 30,000 | |
| 14. Symposia | 20,000 | 20,000 | 20,000 | 5,000 | 65,000 | 62,065 | 20,000 | 23,000 | 14,005 | 5,000 | |
| 15. Annual allocations | | | | | | 0 | | | | | |
| 15.1a Associations | 161,400 | 180,900 | 183,100 | 165,300 | 710,700 | 750,875 | 210,158 | 180,660 | 174,737 | 165,300 | |
| 15.1b Inter-Association Science | 12,700 | 4,700 | 4,700 | 4,700 | 26,800 | 22,800 | 8,700 | 4,700 | 4,700 | 4,700 | Since Boulder 2004 line 15.1b has been reserved EMSEV and WCRP |
| 15.2 Assembly Surcharges | | | | | | 0 | | | | | |
| 16. Dues and Grants | | | | | | 0 | | | | | |
| 16.1 ICSU and APS | 16,000 | 16,000 | 16,000 | 16,000 | 64,000 | 56,416 | 13,472 | 13,472 | 13,472 | 16,000 | |
| 16.2 Inter-Union Science | 29,000 | 29,000 | 29,000 | 29,000 | 116,000 | 116,064 | 29,000 | 29,000 | 29,064 | 29,000 | |
| 17. Union activities | 20,000 | 29,000 | 33,000 | 29,000 | 111,000 | 108,488 | 37,488 | 11,000 | 31,000 | 29,000 | Since Boulder 2004 this line include SEDI, CMG, UCCs and liaison Officers |
| SEDI, CMG, Liaison Off., UCCS | | | | | | | | | | | |
| 18. Countries in need | | | | | | | | | | | |
| 18.1 Inbitalive grants | 25,000 | 25,000 | 25,000 | 25,000 | 100,000 | 74,952 | 25,018 | 24,934 | 0 | 25,000 | |
| 18.2 Travel grants | | | | 40,000 | 40,000 | 40,000 | | | | 40,000 | |
| 19. Miscellaneous | | | | | | 0 | | | | | |
| 19.1 Miscellaneous | 3,000 | 3,000 | 3,000 | 3,000 | 12,000 | 3,908 | 908 | | 0 | 3,000 | |
| 19.2 Professional services | 2,000 | 2,000 | 2,000 | 2,000 | 8,000 | 10,568 | 2,492 | 2,941 | 3,135 | 2,000 | |
| 19.3 Fees | | | | | | 5,580 | 2,389 | 2,023 | 1,168 | | |
| 19.4 Loss on exchange | | | | | | 126 | | 62 | 43 | | |
| 19. Total Expenditure | 355,600 | 396,100 | 382,300 | 489,500 | 1,623,500 | 1,597,074 | 425,235 | 376,848 | 305,491 | 489,500 | |
| 20. Balance on 31/12 | 631,168 | 615,668 | 618,368 | 518,368 | 618,368 | 626,454 | 672,027 | 563,783 | 726,453 | 626,453 | |

February, 15, 2007

IUGG Budget 2004 - 07 + ADJUSTMENTS, BOULDER 2004

Attachment to Financial Report, Perugia, 2007

All figures, except the value and number of units, are in thousands of US dollars

| Year | 2003 | 2004 | 2005 | 2006 | 2007 | 2004 - 07 total |
|---|--------------|--------------|--------------|--------------|--------------|--|
| Estimated unit value | \$1,455 | \$1,484 | \$1,514 | \$1,544 | \$1,575 | |
| Estimated number of units | 250 | 248 | 246 | 244 | | |
| RECEIPTS | | | | | | |
| 1. MEMBERSHIP SUBSCRIPTIONS | 341.6 | 371.0 | 375.4 | 379.8 | 384.3 | 1510.6 |
| 2. ICSU GRANTS | | | | | | |
| 3. ASSEMBLY SURCHARGE | | | | | 0.0 | |
| 4. CONTRACTS, ICSU | | | | | | |
| 5. SALES OF PUBLICATIONS, ETC | 1.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.8 |
| 6. MISCELLANEOUS | 5.4 | 5.0 | 5.0 | 5.0 | 5.0 | 20.0 |
| 7. TOTAL RECEIPTS | 348.1 | 376.2 | 380.6 | 385.0 | 389.5 | 1531.4 |
| 8. BALANCE 1/1 | | 610.0 | 630.7 | 615.2 | 617.9 | Incoming balance adjusted according to actual value |
| EXPENDITURES | | | | | | |
| 11. ADMINISTRATION | | | | | | |
| 11.1 Personnel | | 10.0 | 10.0 | 10.0 | 10.0 | 40.0 |
| 11.2 Quarters | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 11.3 Supplies | | 2.5 | 2.5 | 2.5 | 2.5 | 10.0 |
| 11.4 Communication | | 8.0 | 8.0 | 8.0 | 8.0 | 32.0 |
| 11.5 Travel, organizational | | 40.0 | 60.0 | 40.0 | 80.0 | 220.0 |
| 11.6 Miscellaneous | | 1.0 | 1.0 | 1.0 | 5.0 | 8.0 |
| 11.7 Travel, representative | | | | | | |
| 12. PUBLICATION AND PRINTING | | | | | | |
| 12.1 Yearbook | 0 | 5.0 | 5.0 | 5.0 | 5.0 | 20.0 |
| | | | | | | Will be zero all years |
| 13. ASSEMBLIES | | | | | | |
| 13.1 Organization | | 0.0 | 0.0 | 0.0 | 10.0 | 10.0 |
| 13.2 Travel Grants | | 0.0 | 0.0 | 0.0 | 30.0 | 30.0 |
| 14. SYMPOSIA | | | | | | |
| 14.1 Symposia | | 20.0 | 20.0 | 20.0 | 5.0 | 65.0 |
| 15. ASSOCIATIONS | | | | | | |
| 15.1 Allocations | | 174.1 | 185.6 | 187.8 | 190.0 | 737.5 |
| 15.1a Associations | | 161.4 | 180.9 | 183.1 | 185.3 | 710.7 |
| 15.1b WCRP, EMSEV | | 12.7 | 4.7 | 4.7 | 4.7 | 26.8 |
| 15.2 Contracts, ICSU | | | | | | As of January 2005 SEDI and CMG are moved to line 17.1 |
| 16. DUES AND GRANTS | | | | | | |
| 16.1 ICSU | | 16.0 | 16.0 | 16.0 | 16.0 | 64.0 |
| 16.2 Inter-Union Science (CAGS & ILP) | | 29.0 | 29.0 | 29.0 | 29.0 | 116.0 |
| 17. UNION | | | | | | |
| 17.1 GeoRisk (6), IGY+50, Linton, SEDI, CMG | | 20.0 | 29.0 | 33.0 | 29.0 | 111.0 |
| | | | | | | ICSU added 2005-07 with 5k pr year |
| 18. COUNTRIES IN NEED | | | | | | |
| 18.1 Initiative Grants | | 25.0 | 25.0 | 25.0 | 25.0 | 100.0 |
| 18.2 Travel Grants | | 0.0 | 0.0 | 0.0 | 40.0 | 40.0 |
| 19. MISCELLANEOUS | | | | | | |
| 19.1 Miscellaneous | | 3.0 | 3.0 | 3.0 | 3.0 | 12.0 |
| 19.2 Professional Services | | 2.0 | 2.0 | 2.0 | 2.0 | 8.0 |
| 20. TOTAL EXPENDITURES | | 366.6 | 396.1 | 382.3 | 489.5 | 1623.5 |
| 21. BALANCE 12/31 | | 630.7 | 615.2 | 617.9 | 517.9 | -92.1 |

Agenda Item #5:

Guidelines on IUGG Administration

To be **Adopted at the 2007 XXIV IUGG General Assembly**
Perugia, Italy

The IUGG is governed by its Statutes and By-Laws, as well as quadrennial Assemblies of the Council of Delegates (the Council). Between meetings of the Council, the Bureau administers the affairs of the Union. This document consolidates the current administrative practices of the Union as mandated by the Statutes and By-Laws and as interpreted by IUGG Officers, the Bureau, and the Executive Committee. The Bureau is responsible for maintaining this document, which shall be posted on the IUGG website.

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I. UNIVERSALITY

IUGG and all of its component bodies adhere to the ICSU Principle of Universality, which states: “The practice of science should be equitable and without discrimination. A primary aim is to enhance the pluralism of science and reach out to all countries, by:

- Ensuring that scientists can freely associate and communicate
- Providing equitable access to data and information
- Enabling equitable access to research materials and facilities
- Building scientific capacity
- Bringing nations and disciplines together.” (ICSU Statute 5)

National diversity: by general consent, the members of the Bureau are from different countries.

II. MEMBERSHIP

A. How to Join IUGG

Every country in which “independent activity in geodesy and geophysics has been developed” is eligible for IUGG membership. We believe that IUGG membership contributes to the scientific well-being of our member countries, and may lead to economic benefits through enhanced exchange of scientific and technical expertise.

A copy of the IUGG Statutes and By-Laws is available on our Web site (<http://www.IUGG.org>). According to our Statutes, the following information is required and constitutes an application for membership. If you have specific questions, please contact the IUGG Secretariat (secretariat@iugg.org).

1. What body (known as the Adhering Organization) shall represent your country to IUGG? Please identify the mailing and e-mail addresses and the telephone and fax numbers of this Adhering Organization. This is usually the principal scientific academy or council for national research. However it can be any other institution or association of institutions, whether non-governmental or governmental, that represents your geodetic and geophysical activities. A country is represented by a single body except under extraordinary circumstances. For examples of Adhering Organizations, please consult the IUGG Yearbook posted on the IUGG web page.

2. The Adhering Organization must establish a National Committee for IUGG and identify at least one officer. Most National Committees identify the President and Secretary of the Committee, but some Committees identify additional officers. Please provide the mailing and e-mail addresses and telephone and fax numbers of all officers. The fax and e-mail address of the officer who will be the IUGG Correspondent on behalf of the National Committee should be identified. The term of these officers is generally, but not necessarily, the same as the IUGG Quadrennium (e.g., 2003-2007).

3. IUGG consists of 7 Associations, each representing a discipline of geodesy or geophysics. These Associations are as follows:

- International Association of Geodesy (IAG/AIG)
- International Association of Geomagnetism and Aeronomy (IAGA/AIGA)
- International Association of Hydrological Sciences (IAHS/AISH)
- International Association of Meteorology and Atmospheric Sciences (IAMAS/AIMSA)
- International Association for the Physical Sciences of the Oceans (IAPSO/AISPO)

-International Association of Seismology and Physics of the Earth's Interior (IASPEI/AISPIT)

-International Association of Volcanology and Chemistry of the Earth's Interior (IAVCEI/AIVCIT)

Each Association would like to be able to contact a single person who will then represent the interests of that Association within your National Committee. In so far as possible, please provide the mailing and e-mail addresses and telephone and fax numbers of a representative for each Association. In most countries, these individuals are appointed by the National Committee but a more formal election conducted by the Adhering Organization could be held.

4. Please indicate whether you wish to apply to be a regular member or an Associate member. The difference is explained below and in Section II.C.

Regular (paying) member: regular members may send a delegate to quadrennial meetings of the IUGG Council, and vote on matters of business. Scientists from member countries may hold office in the Associations and vote in their business meetings. A regular member pays dues annually according to a scale ("the category") established by the IUGG Finance Committee (shown below) and as explained further in Statute III and By-Law III. Your application should specify which category of membership you wish to take. Countries are expected to subscribe to a category that is consistent with their overall economy and participation at General Assemblies. As a guide to help choose the category, the IUGG Yearbook lists IUGG member countries and their category of membership. A regular member country that misses an annual payment temporarily falls into a special class of membership known as "observers." As of the Year 2007, a single unit of membership is valued at \$1630. The Treasurer uses an algorithm to determine the price of a unit of membership (Section III.C), and also reviews the category of membership of regular members at least every quadrennium.

| | | | | | | | | | | | | |
|-----------------------|---|---|---|---|---|----|----|----|----|----|----|----|
| Category | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| Units of Contribution | 1 | 2 | 3 | 5 | 7 | 10 | 15 | 20 | 25 | 30 | 35 | 40 |

Associate (non-paying) members: Associate members have no voting rights and persons from Associate countries may not hold office in IUGG or in any of the Associations. On the other hand, scientists are welcome to attend all scientific and social activities at all IUGG and Association meetings, and Associate members are welcome to attend IUGG Council meetings as Listeners. The scientific data and research done within Associate member countries is valued and the opportunities for networking and collaboration with other IUGG Members are enhanced. Associate members receive all of the ordinary correspondence of IUGG, such as notices of forthcoming meetings and information about applications for travel support. Associate membership is welcomed as a first step toward regular membership if a country's economic condition currently does not permit the payment of annual dues.

When the information requested above is ready, please submit your application as a letter to the IUGG Secretary General. The Application will be processed in the following steps (Statutes Section II, section 14):

1. Copies will be sent to the members of the IUGG Executive Committee who will determine the scientific merits of the application.

2. The application and the recommendation of the Executive Committee will be sent to the Adhering Organizations of the IUGG regular members via their National Committees, who will accept or decline the application.

If the vote by correspondence is affirmative, then the country's membership is accepted provisionally, with full rights and privileges of membership, until the next formal meeting of the

IUGG Council of member countries when a final vote will be taken. Annual dues are expected to be paid beginning with the year of provisional membership.

B. Role of National Committee and Adhering Body

The Adhering Body is the scientific organization that represents the country to IUGG, whereas the National Committee consists of individuals appointed by the Adhering Body in order to participate in Union activities. According to IUGG Statutes:

“Any country in which independent activity in geodesy and geophysics has been developed may adhere to the Union, provided that it takes an adequate share in the maintenance of the Union.

“That country shall be represented by a single body, known as the Adhering Body, which may be either its principal scientific Academy, or its National Research Council, or any other institution or association of institutions, whether non governmental or governmental, representing the geodetic and geophysical activities of the adhering country. Only under extraordinary circumstances, the Council of IUGG (defined in item 5 of the Statutes) may admit a suitably designated additional Adhering Body for a country, provided a corresponding Adhering Body of that country has already been admitted as a National Member of the International Council for Science. In this case, each Adhering Body will have a separate Council Delegate and will be treated separately in questions of Voting and Finances” (Statute 4.a).

“A country in which activity in geodesy and geophysics has been developed but which cannot participate financially in the maintenance of the Union may become Associate. That country shall be represented by a single body, as specified in 4.a” (Statute 4.b)

“Each Adhering Body shall form a Committee for Geodesy and Geophysics hereafter known as an IUGG National Committee. The function of the National Committee is, under the direction of the Adhering Body, to provide for the participation of the member country in the Union activities.

“During the interval between General Assemblies, the Bureau of the Union may directly consult by correspondence the National Committee of each member country on any question of scientific character or on administrative matters not involving finance. On matters of finance and on admission of new member countries, the Bureau of the Union shall communicate with the Adhering Bodies of paying members” (Bylaw 4).

C. Difference between Regular, Observer, Associate Members

- Regular members

Regular members of IUGG are countries (represented by their Adhering Body and National Committee) that pay dues and who therefore have voting rights. Most members are regular members.

- Observer status

According to Statute 14, if at the end of any calendar year an Adhering Body has not paid its subscription for that year, the Adhering Body enters Observer status and the privilege of participating in matters of IUGG business, including voting, will be denied until full payment has been made of that year's subscription. A country in Observer status will continue to accrue annual subscription obligations. Scientists represented by Adhering Bodies that have been in Observer status for two or more years are not eligible to be elected to positions in the Union or in its constituent Associations (By-Law 10d). If at the start of any year a paying member country has been [continuously] in Observer status for [the previous] four years, that member country shall be deemed to have withdrawn from membership unless a written request to be transferred to Associate membership (Category A) has been received by the Secretary General. The Bureau of the Union is authorized to grant requests for transfer temporarily to Category A, until the next meeting of the Council, to member countries in Observer status that provide evidence that efforts to pay all subscriptions in arrears are likely to be unsuccessful. (Statutes 14. a-e)

- Associate Members (Category A)

Countries that wish to enter IUGG but are not financially able to commit to dues payments may enter as Associate members. These members do not have voting rights, but may otherwise participate in IUGG scientific activities and are encouraged to do so. One person from each Associate member may attend any Council meeting, as Listener, without the right to speak. According to the IUGG Statutes:

“There shall be twelve categories of membership in the Union, numbered 1 to 12, plus a special category, called A” (Statute 12.a).

“For categories 1 to 12, each Member Country shall pay annually the number of units of contribution assigned to the category in which it adheres. In each country the Adhering Body shall be responsible for the payment of the contribution. Any member country may additionally donate contributions for travel support of scientists from countries of category A” (Statute 12.b).

“Category A is composed of the Associates. They do not pay an annual contribution to the Union” (Statute 12.c).

“A country which seeks to adhere to the Union must specify the category in which it proposes to adhere. Its application for admission may be refused if the category proposed is considered inadequate” (Statute 13.a).

“An Associate may enter a paying category, or a paying Member Country may raise its category at any time provided the Council agrees. A paying Member Country may lower its category or become an Associate only with the consent of the Council of the Union” (Statute 13.b).

III. FINANCIAL INFORMATION

A. Determination of price of 1 unit of dues

The price of 1 unit of dues to IUGG is given in USD and is based on a US Department of Labor inflator. The price is adjusted for every year based on the September value in the year prior to the year where the price is applied. However, the September index is normally not available at the time required, i.e. by the end of the year. The calculation must be ready by mid-December as the invoices are due around the beginning of the new year. Therefore, the calculation is actually based on the August index with an estimated value for September (the tendency up to August is added to this month). This is the reason for the interval shown below. Since 2005 the inflator index has been obtained from the following address.

<http://data.bls.gov/PDQ/outside.jsp?survey=cu>

| Year | Index September previous year | | Calculated price interval | Actual price of 1 unit used |
|------|----------------------------------|---------------|---------------------------------|-----------------------------------|
| | Old | New | | |
| 1995 | 114,3 | | 1200 | 1200 |
| 1996 | 117,3 | | 1232 | 1230 |
| 1997 | 120,8 | 100,5 | 1268 | 1270 |
| 1998 | 123,4 | 102,7 | 1296 | 1300 |
| 1999 | 125,3 | 104,2 | 1315 | 1320 |
| 2000 | | 106,0 | 1337 | 1340 |
| 2001 | | 110,5 – 111,5 | 1394-1407 | 1400 |
| 2002 | | 113,0 – 113,5 | 1426-1432 | 1430 |
| 2003 | | 115,2 – 115,7 | 1453-1460 | 1455 |
| 2004 | | 117,7 – 118,0 | 1485-1489 | 1485 |
| 2005 | | 189,9 | | 1525 |
| 2006 | | 198,8 | | 1600 |
| 2007 | | 202,9 | | 1630 |

B. Determination of allocations to the IUGG associations

Approximately half the income of IUGG, hereafter called TOT, is redistributed among the seven Associations. The annual allocation in a given year is calculated based on the income the previous year according to the following set of rules:

- 1) $TOT = _ * \text{net income}$
- 2) Total allocation to associations = sum of individual allocations + inter-association activities
- 3) Net income = dues to IUGG

Surcharge, interest and other sources of income are kept out of the calculation.

From 2) we obtain

- 4) $\sum \text{individual allocations} = _ * \text{net income} - \text{inter-association activities}$

and the distribution among the associations are given by

- 5) $\text{individual allocation} = \text{individual percentage} * \sum \text{individual allocations}$

The percentages are taken from a table calculated for every 4-year budget period.

Presently, the following table is applied for the period 2004-07:

| | |
|--------|----------|
| IAG | 14,16 % |
| IAGA | 20,01 |
| IAHS | 12,48 |
| IAMAS | 16,40 |
| IAPSO | 12,11 |
| IASPEI | 15,38 |
| IAVCEI | 9,46 |
| Total | 100,00 % |

The basis for the calculation of the percentages is this formula:

$$\text{individual percentage} = _ * (1/7 + \text{percent attendance}).$$

The percent attendance is an average over the three previous general assemblies,

The following table displays the attendance for the last 6 assemblies for each association. In 1999 and 2003 IUGG also received surcharge from participants not indicating any other affiliation.

| | Hamburg | Vancouver | Vienna | Boulder | Birmingham | Sapporo |
|--------|---------|-----------|--------|---------|------------|---------|
| IAG | 448 | 400 | 571 | 567 | 478 | 407 |
| IAGA | 603 | 798 | 952 | 1137 | 875 | 741 |
| IAHS | 365 | 452 | 433 | 462 | 335 | 381 |
| IAMAS | 570 | 655 | 610 | 773 | 749 | 823 |
| IAPSO | 422 | 425 | 430 | 145 | 332 | 410 |
| IASPEI | 507 | 525 | 593 | 777 | 527 | 658 |
| IAVCEI | 175 | 146 | 120 | 264 | 150 | 347 |
| IUGG | | | | | 605 | 384 |
| Total | 3090 | 3401 | 3709 | 4125 | 4051 | 4151 |

C. Evaluation of the category of a given member state

The statutes and By-Laws of IUGG require that new members suggest a category of the membership. In evaluating both these proposals and also present member categories the Finance Committee will apply the following basic criteria:

- a) the utility of membership
- b) the ability to pay

In order to access these criteria two surrogates are used:

- a) the number of attendees from the members scientific community at 3 of the 4 most recent General Assemblies.
- b) the gross domestic income of the country

Scores for each of these are computed for all Members by subtracting from the number for an individual Member the average of the numbers for all Members and then dividing the result by the standard deviation of those numbers.

The two surrogates are weighted and added together. The total scores are then plotted against units paid and when a Member appears to be 1 category or more below the regression line a suggestion is made to that Member to reconsider its level of support.

Carrying out this analysis the Finance Committee suggested at the General Assembly in Sapporo July 2003 several changes. At the time of writing increases of category are considered in at least 4 countries.

Data for attendance are given above and data for GNP are taken from a World Bank Atlas available in simple excel spreadsheet format. The analysis is easily done, but should of course be used with some care.

D. Relationship of Financial Committee and Bureau

The Finance Committee is a committee of 4 persons elected by the Council at General Assemblies according to Statute 11. It is independent of the Bureau and Executive Committees. The duties of the Finance Committee (By-Law 19) are to

- a. advise the Council on all financial matters of the Union;
- b. receive and review the audits of the accounts;
- c. report to the Council;
- d. advise the Treasurer on preparation of the budget;
- e. advise the Treasurer, the Bureau, and the Executive Committee on financial matters, including raising funds to support Union and Association activities.

The Chair of the Finance Committee shall normally be invited to meetings of the Bureau or Executive Committee when financial matters are on the agenda.

IV. VOTING RIGHTS

According to the IUGG Statutes:

“Associates have no voting rights” (Statute 16).

“On questions of scientific nature, or of administrative nature, or of a character partly administrative and partly scientific not involving matters of finance, the voting shall be in Council by Member Countries, each Council Delegate having one vote, provided that the subscription of the Adhering Body has been paid up to the end of the calendar year preceding the voting” (Statute 17a).

“On questions involving finance, the voting shall be in Council by Member Countries with the provision that a voting country must have paid its subscriptions up to the end of the calendar year preceding the voting in Council. The number of votes allotted to each Member Country shall then be equal to the number of its category of membership” (Statute 17b).

“Questions on admission of new Member Countries and appeals against denial of transfer to Associate membership shall be decided by a two-thirds absolute majority vote of the Council Delegates meeting in Council, each Council Delegate having one vote” (Statute 18).

“A Council Delegate may represent only one Member Country. No member of the Bureau shall serve as a Council Delegate of a country. No Member of the Executive Committee shall vote with the Council unless under exceptional circumstances he is also the Council Delegate of a Member Country.

“A paying Member Country which is not represented at a Council meeting may vote by correspondence on any specific question provided that the matter has been clearly defined on the final agenda distributed in advance to the Member Countries and that the discussion thereon has

not produced any new considerations or changed its substance and provided that said vote has been received in writing by the President prior to the voting.

“For the validity of the deliberations of the Council, at least one third of the Member Countries eligible to vote must be represented by their Council Delegates” (Statute 19).

“Before a vote in a Council meeting, the President shall decide whether the matter under consideration is scientific, administrative or financial in character and whether the procedure of voting by correspondence applies” (Statute 20).

“Decisions of the Council shall be taken by a simple absolute majority except as otherwise specified in the present statutes.

“If a tie should occur in a Council vote, the decision shall rest with the President.

“Simple or two-third absolute majorities are determined by the proportion of affirmative votes to the sum of votes (affirmative, negative, abstention), provided that the total number of delegates voting (affirmative, negative, abstention) is not less than one third of the total membership of the Union eligible to vote. Blank or invalid ballots and votes not cast by Delegates present are counted as abstentions” (Statute 21).

Additionally, the Executive Committee and the Finance Committee attend Council meetings with voice but without vote.

V. MODIFICATION OF THE STATUTES AND BY-LAWS

A. Statutes

The statutes of the Union may not be modified except with the approval of two thirds of the Delegates meeting in Council. (Statutes Section V, article 23)

Proposals by Member Countries for a change of any article of the statutes of the Union must reach the Secretary General at least six months before the announced date of the Council meeting at which it is to be considered. The Secretary General shall notify all Member Countries of any proposed change, at least four months before the announced date of the Council meeting. (Statutes Section V, article 24)

These statutes or any further modification to them shall come into force at the close of the Council meeting at which they are adopted. (Statutes Section V, Article 22)

B. By-Laws

The Council has the power to adopt By-Laws within the framework of the statutes of the Union. These By-Laws may be modified by a simple majority of votes cast at a Council meeting. These By-Laws, or any further modification of them shall come into force at the close of the Council meeting at which they are approved. (Statutes Section V, article 25)

VI. ALLOCATION OF SUPPORT

A. Allocation of Support for Meetings and Symposia

The guidelines below were adopted in 2000. The deadline for accepting applications is arbitrarily set for 31 October. The purpose of the deadline is to permit a fair distribution of funds among the Associations, Union Commissions, and inter-Union bodies who respond by the deadline. However, if the fund is undersubscribed, requests will be accepted after the deadline until the money is spent.

Awards to support symposia will generally be in the range of \$2000 ± \$1000. A short report is required within six months after the meeting. New awards to an organization will not be given until the report for a past award is submitted.

Association Secretaries General or appropriate officers of Union Commissions or Inter-Union bodies should send the following information to the IUGG Secretary General, preferably by e-mail (secretariat@iugg.org):

- Name of meeting, venue and dates, and primary sponsors and other known co-sponsors
- Name and address of the Chair of the Local Organizing Committee, and the meeting Web site
- Scientific Objective
- Estimated number of participants, abstracts, and sessions
- Level of support requested (in US\$) and how the money will be used
- Additional information as appropriate

The allocations will be suggested by the Secretary General and reviewed by the Members of the IUGG Bureau to assure impartiality. Awards will be announced as soon as possible, but no later than 30 November.

B. Allocation of Support for Representative Travel

Persons representing the scientific interests of the Union may request travel support with the approval of the IUGG President or Secretary General, and Treasurer. This support will typically be approved only once during the period between General Assemblies.

C. Allocation of Support for Union Commissions and Inter-Union bodies

Support for Union Commissions and Inter-Union bodies is recommended by the Executive Committee but is allocated from Union funds (not Association funds).

D. Allocation of Support for Inter-Association Commissions

Support for Inter-Association Commissions is recommended by the Executive Committee but is allocated from Association funds.

VII. IUGG RESOLUTIONS

A. Procedures for suggesting and approving IUGG Resolutions at General Assemblies

IUGG Resolutions will normally be approved during General Assemblies. No later than six months prior to a General Assembly, a Resolutions Committee will be formed by the IUGG President. Any Association or Member Country is invited to submit Resolutions, which must be received by the designated deadline. The Resolutions must be approved by both the Bureau and the Executive Committee before being presented to the Council.

B. Special Resolutions

Under rare circumstances, Special Resolutions may be adopted by the Bureau between General Assemblies.

VIII. GUIDELINES FOR UNION COMMISSIONS (adopted at the 2004 Executive Committee meeting, Boulder)

1. The IUGG Executive Committee may establish Union Commissions in order to examine scientific issues of mutual interest to at least four Associations.
2. A proposal to establish a Union Commission shall be put to the IUGG Executive Committee by an Association with the support of other (at least three) Associations. The proposal shall specify the aims and objectives of the Union Commission and include the names of the scientists comprising the Executive Body.
3. Each Association that supports the Union Commission is encouraged to designate a representative who will maintain liaison between the Union Commission and the Association. The Executive Body of the Union Commission should consist of appropriate scientists from the component Associations.
4. The Executive Body of each Union Commission will advise the IUGG Executive Committee on their choice of Officers, consisting of at least a Chair/President and a Secretary. Their term of office will be for one period of approximately four years, or until the next IUGG General Assembly. This term may be extended for a second period.
5. Prior to any scientific or business meeting of the Union Commission, the Commission Officers shall notify the IUGG Vice-President and the supporting Associations of the time and place of the meeting.
6. The Union Commissions will formulate their program of work and should report to the Vice-President of the Union at least on an annual basis. An annual financial statement based on the calendar year shall be provided to the IUGG Treasurer.
7. Union Commissions may establish sub-commissions and working groups.
8. Union Commissions are encouraged to work through their sponsoring Associations to lead or co-sponsor interdisciplinary workshops or symposia at IUGG General Assemblies.
9. Inter-Association Commissions, comprising representatives of less than four IUGG Associations, may be established by the relevant Associations. Such inter-Association Commissions are encouraged to adopt these guidelines.

IX. GENERAL PROCEDURES

A. Conduct of Meetings

Meetings shall be conducted according to *Robert's Rules of Order Newly Revised*. The edition in current use is the Tenth Edition (2000) (hardback ISBN 0-7382-0384-X; paperback ISBN 0-7382-0307-6; leatherbound ISBN 0-7382-0923-6).

B. Meetings of the Council, Bureau, Executive Committee, and Finance Committee

The Council shall meet at each IUGG General Assembly. In fact, according to Statute 5, the General Assembly is a meeting of the Council. General Assemblies shall normally be held once every four years at the call of the President of the Union (from By-Law 5). Notice of the date and of the place of the meeting of the next General Assembly shall be sent by the Secretary General to the Member Countries at least nine months before the Assembly (from By-Law 6). The Council is convened by the President of the Union, and shall meet at appropriate times during each Assembly. It may be convened between two General Assemblies when a written request is made by at least a third of the paying Member Countries or by a simple majority of the members of the Executive Committee, with notice of the questions to be placed on the agenda of the meeting; the discussions reached at such a meeting of the Council shall be subject to article 5 of the Statutes (from By-Law 11). Council meetings shall be open to Council Delegates, the Executive Committee, and the Finance Committee. One person from each Associate Member may attend any Council meeting, as Listener, without the right to speak. The IUGG President may invite guests to make presentations at Council meetings. Other individuals may, with concurrence of the President, attend Council meetings as Listeners only, except that a simple majority of Council Delegates present may declare part of any meeting closed to Listeners (from By-Law 11).

A plenary meeting of the participants in the General Assembly shall be held during each General Assembly for discussions of Union activities (By-Law 8). The Associations shall hold business meetings and scientific sessions at the General Assemblies of the Union (from By-Law 9).

The Bureau shall normally meet once a year, at the call of the President of the Union. In a meeting, no Member of the Bureau can be represented by any other person. For the validity of the deliberations, four Members at least must be present (from By-Law 13).

The Executive Committee is convened by the President of the Union. It shall meet at General Assemblies, and also at all sessions of the Council with voice but without vote. It shall also meet normally at least once between General Assemblies, two years ahead of the next General Assembly, in order to prepare an outline of the interdisciplinary scientific agenda and of the timetables for the Union and for the Associations during the next General Assembly (from By-Law 12). In recent practice, the Executive Committee has been convened twice between General Assemblies: in the first and the second years of each term. The expenses of the members of the Executive Committee to attend the meeting are borne by the Union.

At a meeting of the Executive Committee, no member of the Bureau, nor the Past President of the Union, can be represented by any other person. The Presidents of the Associations, in case of hindrance, may be represented by a Vice-President or the Secretary of their Association. The Past President has voice but no vote. For the validity of the deliberations of the Executive Committee, at least half of its members must be present or represented (from By-Law 12).

The Finance Committee shall elect a Chair from among its members. The Finance Committee shall meet, at the call of its Chair, and at least once during its term of office. The Chair of the Finance Committee shall normally be invited to meetings of the Bureau or Executive Committee when financial matters are on the agenda (from By-Law 19). The Finance Committee shall meet with the Council at sessions of the latter, with voice but without vote. (Statute 11)

C. Vade Mecum (Annual Notification to Associations and Union Commissions of documents required by the Union)

The notification of documents and deadlines for receipt of reports needed by Union Officers shall be issued by the Secretary General as soon as practical, and no later than 30 days following the first day of each calendar year.

D. E-Journal

An electronic newsletter, the IUGG E-Journal, intended to inform IUGG Adhering Bodies and IUGG component bodies of recent activities of the Union shall be issued by the Secretariat as close as possible to the first day of each month. The newsletter shall be in plain text and no longer than 5 pages (approximately) to assure that it can be scanned quickly. A draft should be circulated to the IUGG Executive Committee approximately one week before the first of the month, in order to assure accuracy of the material.

E. Yearbook

In order to facilitate contact between the Union and National Committees, and also among scientists internationally, IUGG compiles an updated Yearbook at the beginning of each year. The Yearbook is placed on the Website and may be updated more frequently than annually. The Yearbook contains general information about IUGG and its composition, details about each Association and National Committee, and complete contact information (as it is available) for each person who serves as an Association Officer or National Committee Member. The Yearbook was distributed in print form through 2007, and copies of the Yearbook from earlier years are archived on the website.

F. Annual Reports

Each year, IUGG requests a short annual report from each Association and Union Commission, outlining their work, major conferences, and other details of the previous year. These reports are collected mid-February and compiled into one cohesive document, which is then distributed to all of the Adhering Organizations and National Committees. The document is a concise way of keeping the members of IUGG informed of the projects and accomplishments of the Associations and Union Commissions.

G. Selection of Venues for General Assembly

A Call for proposals to host an IUGG General Assembly shall be issued by the Secretary General and published in the IUGG E-Journal approximately 2 years before the next General Assembly. Bids shall include the following information, and should be received 6 months before the General Assembly. Bids shall be reviewed by a committee of three persons appointed by the IUGG President, experienced in the logistics of convening Union or Association Assemblies.

A proposal to host an IUGG General Assembly should include:

- The inviting body/bodies, including:
 - The official host body;
 - Other supporting institutions;
 - Government support to assure free circulation of scientists, consistent with the International Council for Science “Principle of Universality.”
- Potential venue/venues, including:
 - Maximum number of participants who could attend;
 - Meeting facilities: number of halls; rooms of various sizes and technical equipments; poster facilities, etc.
 - Space and facilities for the Bureau, Finance Committee and Association offices;
 - Rooms for meetings of the Council, the Executive Committee, the Bureau and the Finance Committee;
 - Accommodations: range of lodging types and costs; distance from meeting facilities;
 - Proposed dates for an Assembly of two weeks in length, taking into account availability of facilities and suitability of weather.
- Financial aspects:

IUGG expects that the host will take full responsibility for the financial affairs of a General Assembly. However, it is desirable to have the following information:

- Resources available for the preparations leading up to the General Assembly and for preparing the Comptes Rendus following the Assembly;
- Possibilities for support from governmental, industrial, and commercial bodies in order to minimize registration fees;
- Possibilities for fund-raising to support young scientists from developing countries to attend the Assembly.

- **Deadline:**

Inquiries to the IUGG Secretariat regarding a potential invitation are welcome at any time. The official invitation should be received by the Secretary General at least six months before the next General Assembly (consistent with IUGG By-Law 6). The IUGG Council selects the winning invitation. All invitations will be evaluated by an impartial committee selected for that purpose, and a report will be given to the IUGG Council before their final vote.

H. Schedule of Deadlines before General Assembly

General Assemblies are normally held once every four years (By-Law 5)

GA – 18 months:

-The President appoints the Nominating Committee with the advice and approval of the Executive Committee. The Nominating Committee shall consist of a Chairman and three other members, not themselves members of the Executive Committee nor of the Finance Committee. (By-Law 10)

GA – 9 months:

-Ensure that the IUGG Adhering Bodies have been notified of the date and time of the General Assembly (By-Law 6)

GA – 8 months:

-Release the first list of persons nominated for IUGG Bureau and Finance Committee officers

GA – 6 months:

-Appointment of the Resolutions Committee
-Due date to receive proposals for modifications to the IUGG Statutes and By-Laws
-Due date to receive proposals for the agendas of both the Council meetings and the Executive Committee meetings (By-Laws 6 and 12)

GA – 4 months:

-Council must be notified of proposed changes to the Statutes and By-Laws
-Final agendas must be issued for the Council and Executive Committee meetings (By-Law 11)
-Council must be notified of any proposed change in the amount of a unit (By-Law 11)
-Reports on the administration and financial state of the Union must be sent to the Adhering Bodies

GA – 3 months:

Due date for names to be added to the ballots for officers (By-Law 10)

GA – 2 months:

Final ballots for officers must be sent to the Adhering Bodies/Council delegates (By-Law 10).

Agenda Item #6:
Preliminary Report of the IUGG Nominating Committee
Invitation for further nominations.

As announced in May 2006 by the IUGG Secretary General, the nominating committee has been collecting nominations for the positions in the IUGG Bureau and Finance committee. Nominations were received from 11 adhering bodies and from 2 officers of the union or associations.

Based on the nominations, a list of candidates has been assembled by the nominating committee. For each position either one or two candidates have been nominated, as required by the By-Laws (10b). The list was announced in the November IUGG E-Journal.

President: Tom Beer (Australia)

Vice-President: Harsh K. Gupta (India), and David Kerridge (U.K.)

Treasurer: Aksel W. Hansen (Denmark)

Secretary General: Alik Ismail-Zadeh (Germany)

Bureau Members

Position #1 Yun-Tai Chen (China)

Position #2 Ali Tealeb (Egypt)

Position #3 David Jackson (U.S.A.)

Finance Committee

Position #1 Jan Krynski (Poland)

Position #2 Kyoshi Suyehiro (Japan)

Position #3 Juan Francisco Vilas (Argentina)

Position #4 open*

The Curriculum Vitae (CV) of the candidates are posted on the IUGG Web site.

Additional nominations are invited from adhering bodies and from officers of the union and associations. The nominating committee can still add to this list of candidates during the next few months. If new candidates meet the general requirements for IUGG officers, and are supported by at least three presidents or equivalent officers of National Committees of Member Adhering Bodies, they will definitely be added to the list.

New candidates must signify their acceptance of the nomination and must prepare a resume outlining their position, research interests, and activities related to the Union. The deadline for adding nominations is 31 March 2007. The resulting final list of nominations will be completed and distributed by 30 April 2007. The By-Laws provide for re-nominations following the close of the first Council Meeting at the General Assembly.

If you have any question concerning the nomination procedure, please contact us.

On behalf of the members of the nominating committee:

Attia A. Ashour (Egypt), Robert Duce (USA), Seiya Uyeda (Japan),

Søren Gregersen (Denmark), sg@geus.dk, chair of the nominating committee.

*On 20 February 2007, a new nomination was received for the open position on the Finance Committee. That nomination is Prof. C. Baag (Korea). His CV will be added to the website.

Agenda Item #7: Matters of Membership

Regarding the items of business to come before the Council, the following paragraphs from the IUGG Statutes and By-Laws are appropriate:

STATUTES Section III. FINANCE

- 13• b) An Associate may enter a paying category, or a paying Member Country may raise its category at any time provided the Finance Committee agrees. A paying Member Country may lower its category or become an Associate only with the consent of the Council of the Union.

- 14• e) The Bureau of the Union with the advice and consent of the Finance Committee and of the Associations, is authorized to grant requests for transfer temporarily to category A, until the next meeting of the Council, to Member Countries in Observer status that provide evidence that efforts to pay all subscriptions in arrears are likely to be unsuccessful.

- h) Every Associate Membership will be reviewed at each General Assembly. Member Countries which have been Associates from the beginning of their membership, will be asked subsequently to consider entering a paying category.

STATUTES Section IV. VOTING

- 18• Questions on admission of new Member Countries and appeals against denial of transfer to Associate membership shall be decided by a two-thirds absolute majority vote of the Council Delegates meeting in Council, each Council Delegate having one vote.

BY-LAWS

- 14• Applications for membership of the Union, or for the transfer to Associate membership shall be referred to the Secretary General. The latter shall report thereon to the Executive Committee, which shall decide on the scientific merits of each application. The Secretary General shall then forward the proposals through the appropriate channels to the Adhering Bodies representing the paying Member Countries; these bodies will vote by correspondence and the results of the ballot will be communicated to them by the Bureau. Any admission accepted by a simple majority is provisional until approved by the Council. Simple majority is here determined by the proportion of affirmative votes to the sum of votes (affirmative, negative) provided that this sum is not less than one third of the total membership of the Union eligible to vote. Any case of refusal shall be referred to the Council.

(end of quotes)

The following Membership actions were taken by correspondence after the 2003 IUGG General Assembly and before 20 February 2007.

As required by Statute, each of these votes by correspondence is considered provisional until final approval by Council. A vote is therefore required on the following actions:

D.R. CONGO. The letter of request from the Democratic Republic of the CONGO to become a regular member of IUGG in Category 1 was received on 23 January 2004. The Adhering Organization is the Centre de Recherche en Geophysique (CRG), B.P. 10336, Kinshasa I, Democratic Republic of Congo. The President of the IUGG National Committee for D.R. Congo is Prof. Ndontoni Zana, the Vice President is Mr. J. Mavakala Waku, and the Secretary General is R. Lusienne Lubiku. A ballot was sent to the Adhering Bodies in February 2004 and in April, Prof. Zana was notified that the ballot was successful and that an invoice for dues would be sent. However, payment of that invoice for dues for 2004 was not received. Therefore, on 1 January 2005, the membership of D.R. Congo was converted to Associate status pending payment of dues. Invoices for payment of dues were subsequently sent for 2005, 2006, and 2007. Because payment has yet to be received, the Council is asked to formally affirm the membership of D.R. Congo in Associate status even though it is the intention of D.R. Congo to become a regular member (reaffirmed in December 2006). Membership will convert to regular status upon receipt of dues for 2007.

GHANA. An application requesting Associate membership in IUGG, sent by Dr. Benony K. Kortasi of the CSIR Water Research Institute in Ghana, was received on 28 October 2005. Ghana was previously a member of IUGG from 1957 to 1987. A ballot was sent to the Adhering Bodies in January 2006 and in February, Dr. Kortasi and Dr. Andah were notified that the ballot was successful. The Council is asked to ratify the provisional vote.

BOLIVIA. An application requesting Associate membership in IUGG, sent by Dr. José Luis Telleria-Geiger of the Academia Nacional de Ciencias de Bolivia, was received on 27 January 2006. Bolivia was previously a member of IUGG from 1960 - 2000. A ballot was sent to the Adhering Bodies in April and in May, Dr. Telleria-Geiger was notified that the ballot was successful. The Council is asked to ratify the provisional vote.

BULGARIA. Bulgaria adhered to the IUGG in 1930 as a Category 1 member but recently the dues payments became problematic. A request to transfer to Associate member status was sent on 6 December 2005 from the Bulgarian National Committee (D. Jordanov, Chair). They hope to regain Regular membership status as soon as they are able to resume payments. A ballot was sent to the Adhering Bodies in January 2006 and in February, Dr. Jordanov was notified that the ballot was successful. The Council is asked to ratify the provisional vote.

SERBIA and MONTENEGRO. Serbia and Montenegro evolved from the Federal Republic of Yugoslavia in 2003. In 2006, Serbia and Montenegro divided and all attempts to sort out which, if either, of the countries has a national committee for IUGG have been unsuccessful. Therefore it does not seem reasonable to count either as a member of IUGG, although both would be welcome pending routine application procedures. The Council is asked to vote on the proposal that Serbia and Montenegro be considered as withdrawn from IUGG membership.

A vote of the Council is not required on the following matters of membership, in which countries previously in Associate status have requested to receive an invoice for dues and thereby return to regular membership. We welcome each of these countries as regular members of the 2007 IUGG Council.

- Albania
- Armenia
- Nigeria
- Pakistan

Agenda Item #8: Proposal to Add New Constituent Association: The International Association for Cryospheric Sciences

The proposal:

Snow and Ice have been an integral part of IUGG's remit for many decades, and were located within IAHS. For a very long time, the cryo-scientists argued that the role of snow and ice in the hydrological cycle is but one aspect of the cryosphere, and the discipline deserves to be an IUGG Association. Lengthy discussions, over several years, finally culminated in a recommendation by the Executive Committee in 2004 and a vote in 2005 to grant this status. In the interim, a Union level Commission on Cryospheric Sciences (CCS) was created by the Executive Committee. A report on the activities of the UCCS since 2004 can be found under Agenda item 13. IAHS maintains its interest in snow and ice as a component of the hydrological cycle, and consequently has formed an International Commission on Snow and Ice Hydrology (ICSIH), which maintains strong links with the CCS.

In preparation for this Council meeting, the Statutes and By-Laws for the introduction of IACS have been prepared (Agenda item 10), as well as the budgetary aspects of adding an eighth Association. This Council must now consider the recommendation to approve the conversion of the CCS into the International Association of Cryospheric Sciences (IACS).

Sequence of Actions:

1. Discussion of the proposal. Dr. Georg Kaser, Chair of the Union Commission on Cryospheric Sciences will be available to answer questions
2. Vote on acceptance of the new Association
3. Vote to accept changes in the IUGG By-laws (to be conducted under Agenda item 9).
4. Vote to adopt the proposed IACS Statutes and By-laws, and, vote to appoint the IACS Officers for 2007-2011 (Agenda Item 10).

Agenda Item #9: Proposed Changes of Statutes and By-Laws

Report of the IUGG Statutes and By-Laws Committee

Membership and purpose of the committee

The Statutes and By-Laws Committee (abbreviated to ‘the Committee’ in what follows) was established by the IUGG President in November 2005 with the appointment of the following members:

Jean-Pierre Barriot
Priscilla Grew
David Kerridge (Chair)
Ronald Stewart

The Committee's task has been to receive proposals for changes to the IUGG Statutes and By-Laws (S&BL) from Member Countries and to prepare documents for presentation to and consideration by the IUGG Council (‘Council’ hereinafter).

Procedure for submitting proposals for changes to the Statutes and By-Laws

The call for proposals to modify the S&BL was published on the IUGG web site and in the February 2006 edition of the IUGG e-Journal. Member Countries were invited to submit proposals for changes to the S&BL to the Chair of the Committee by 1 November 2006. The Committee has since developed the accompanying documents to assist Council in its deliberations on the proposals received.

Documents prepared for Council

The 2003 revision of the Statutes and By-Laws

The Statutes and By-Laws as revised at the IUGG General Assembly in Sapporo, Japan in 2003 are attached for reference. In addition to receiving proposals for changes to the S&BL from Member Countries, the Committee has examined the wording of the 2003 S&BL to consider their clarity and consistency. A number of editorial changes are suggested as a result; these changes do not, at least intentionally, change the meaning of the Statute or By-Law concerned. The changes suggested are indicated in the accompanying text of the 2003 S&BL. (The only exception to this is that all instances of ‘statute(s)’ and ‘by-law(s)’ have been changed to ‘Statute(s)’ and ‘By-Law(s)’, respectively, without indicating where the changes have been made.) The Committee proposes that Council considers these editorial changes for approval as a single package. It is not proposed to explain individually the majority of the many changes shown, as they are expected to be non-contentious, but any questions will be answered during the presentation to Council.

However, the Committee notes that in three instances a change has been suggested that is more than simply editorial. These cases are indicated by the inclusion of comments in the text. The Articles affected are Statute 25 and By-Laws 10b and 10c. In the case of Statute 25, implementing the change would not change the interpretation of the Statutes and By-Laws; it would simply amount to an adoption of common practice.

Some editorial changes are suggested for Statutes or By-Laws where proposals for modification have been made by Member Countries. In these cases the editorial changes are shown only in the document, described in Section 3.2, giving details of the proposed modification to the relevant Statute or By-Law.

Proposals submitted by Member Countries.

There are six proposals from Member Countries, plus an exceptional item brought forward by the IUGG Executive Committee, which is required to accommodate the admission into IUGG of a new Association, the International Association of Cryospheric Sciences, if agreed by Council. The proposals are summarised in the table below.

Each of the proposals is described in detail in the second document accompanying this report. The 2003 text of the relevant article of the S&BL and the proposed revised text are presented, along with an explanation of the intention of the revision and, where thought helpful, commentary from the Committee.

The Committee suggests that Council considers the proposals in the order shown in the table below. There is a cross-reference from Proposal 6 to Proposal 5; this is the only case where the order of consideration is important. The Committee believes that Proposal 3 is of a financial nature and so the voting rules of Statute 17b apply.

| No | Proposer | S&BL affected |
|----|-----------------------|--|
| 1 | IUGG Executive | Statute 1a and By-Law 1. (International Association of Cryospheric Sciences) |
| 2 | US National Committee | Statute 11 and By-Law 10c. (Composition of the Finance Committee) |
| 3 | UK National Committee | Statute 12 and By-Law 18 (Financial categories) |
| 4 | US National Committee | By-Law 2. (Union Commissions) |
| 5 | US National Committee | By-Laws 13, 16b and 20. (Administrative guidelines document) |
| 6 | US National Committee | Statute 26. (Robert's Rules of Order) |
| 7 | US National Committee | Statute 27 (Official languages of IUGG) |



David Kerridge
for the IUGG Statutes and By-Laws Committee

16th February 2007

INTERNATIONAL UNION OF GEODESY AND GEOPHYSICS

STATUTES

OBJECTIVES AND COMPOSITION OF THE UNION

1. The objectives of the International Union of Geodesy and Geophysics are:
 - a) to promote the study of all problems relating to the figure of the Earth, and the physics and chemistry of the Earth's interior, surface, fresh waters, oceans and atmosphere, along with relevant studies of other planets;
 - b) to initiate, facilitate and co-ordinate research into, and investigation of those problems of geodesy and geophysics which require international co-operation or which are of international interest;
 - c) to provide, on an international basis, for discussion and publication of the results of the researches indicated in ~~paragraph~~ **Article 1.b) above**;
 - d) to promote co-ordination worldwide of scientific activities in the disciplines of interest to the Union;
 - e) to assist with scientific advice the study of practical problems of a geodetic or geophysical character when such problems present an international aspect or when they require international co-operation of specialists or facilities;
 - f) to promote and co-ordinate the scientific activities of several Permanent Services whose objectives are, on an international basis, to facilitate the standardization of measurements or to collect, analyze and publish geodetic or geophysical data, taking into account the results of planetary studies.
2. To achieve its scientific aims, the Union consists of a number of International Associations each of which deals with a discipline of geodesy or geophysics.
3. The Union adheres to the International Council for Science (ICSU).
4.
 - a) Any country in which independent activity in geodesy and geophysics has been developed may adhere to the Union, provided that it takes an adequate share in the maintenance of the Union.

That country shall be represented by a single body, known as the Adhering Body, which may be either its principal scientific Academy, or its National Research Council, or any other institution or association of institutions, whether non-governmental or governmental, representing the geodetic and geophysical activities of the adhering country. Only under extraordinary circumstances, the Council of IUGG (defined in ~~Item~~ **Article 5** of these Statutes) may admit a suitably designated additional Adhering Body for a country, provided a corresponding Adhering Body of that country has already been admitted as a National Member of the International Council for Science. In this case, each Adhering Body ~~will~~ **shall** have a separate

Council Delegate and ~~will~~ **shall** be treated separately in questions of Voting and Finances.

- b) A country in which activity in geodesy and geophysics has been developed but which cannot participate financially in the maintenance of the Union may become Associate. That country shall be represented by a single body, as specified in **Article 4.a.**
 - c) Hereafter adhering countries will be referred to as Member Countries.
5. The General Assembly shall consist of the duly accredited Delegates of the Member Countries and guests invited in accordance with the By-Laws.

The Council of the Union shall consist of the ~~D~~delegates known as Council Delegates, designated for each meeting of the Council by the ~~a~~Adhering ~~b~~Bodies of the Member Countries, one Council Delegate for each Adhering Body. Each Council Delegate shall be formally accredited by the Adhering Body in advance of each meeting of the Council. Adhering ~~b~~Bodies in Associate status are not entitled to appoint a Council Delegate.

II. ADMINISTRATION

6. Responsibility for the direction of the Union affairs shall be vested in the Council of the Union. Decisions of the Council shall be reported to the General Assembly.
7. Between meetings of the Council, the direction of the affairs of the Union shall be vested in the Bureau and the Executive Committee, of which the respective responsibilities are hereafter defined.
8. The Bureau of the Union shall consist of the President, Vice-President, Secretary General, Treasurer and three additional Members, all of whom shall be elected by the Council.

The duties of the Bureau shall be to administer the affairs of the Union in accordance with these Statutes and By-Laws and ~~with~~ the decisions of the Council.

9. The Executive Committee shall consist of the Bureau, the Presidents of the International Associations, and the immediate Past President of the Union. The Secretaries of the Associations ~~will~~ **shall** be invited to attend ~~any~~ meetings of the Executive Committee of the Union in an advisory capacity.

The duties of the Executive Committee shall be to further the scientific objectives of the Associations through effective co-ordination and through the formulation of general policies to guide the scientific work of the Union.

The Executive Committee shall meet with the Council at sessions of the latter with voice but without vote.

10. Within the framework of the Statutes of the Union, the International Associations of the Union may make their own Statutes and By-Laws and control their administration and finance.

III. FINANCE

11. During the meeting of a General Assembly the Council elects a Finance Committee for the next period comprised of four members:

- a) two members from among members of the Council
- b) two members from the previous Finance Committee.

If there are insufficient candidates from the previous Finance Committee, then an additional member or members shall be elected from among the members of the Council. No member of the Finance Committee may at the same time be a member of the Bureau or the executive body of the Union or of an Association or of a governing body of one of the permanent services or programs supported by the Union. No member shall serve more than three consecutive periods on the Finance Committee.¹

The Finance Committee shall meet with the Council at sessions of the latter, with voice but without vote.

12.

- a) There shall be twelve categories of membership in the Union, numbered 1 to 12, plus a special category called A.
- b) For categories 1 to 12, each Member Country shall pay annually the number of units of contribution assigned to the category in which it adheres. In each country the Adhering Body shall be responsible for the payment of the contribution. Any member country may additionally donate contributions for travel support of scientists from countries of category A.
- c) Category A is composed of the Associates. They do not pay an annual contribution to the Union.

13.

- a) A country which seeks to adhere to the Union must specify the category in which it proposes to adhere. Its application for admission may be refused if the category proposed is considered inadequate.
- b) An Associate may enter a paying category, or a paying Member Country may raise its category at any time provided the Council agrees. A paying Member Country may lower its category or become an Associate only with the consent of the Council of the Union.

14.

- a) The financial year shall be the calendar year.
- b) If at the end of any year a paying Member Country has not paid its subscription for that year, the benefits of membership in the Union will be denied to that Member Country until full payment has been made of that year's subscription and of any further subscriptions in arrears. Such Member Countries shall be deemed to be in Observer status.
- c) A Member Country in Observer status ~~will~~ **shall** continue to accrue annual subscription obligations.

¹ The election procedure for the Finance Committee, as outlined above, shall come into effect for the General Assembly of 2007.

- d) If at the start of any year a paying Member Country has been in Observer status for four years, that Member Country shall be deemed to have withdrawn from membership unless the Secretary General has received a formal written request from the Member Country ~~for being~~ **to be** transferred to Associate membership (category A).
 - e) The Bureau of the Union is authorized to grant requests for transfer temporarily to category A, until the next meeting of the Council, to Member Countries in Observer status that provide evidence that efforts to pay all subscriptions in arrears are likely to be unsuccessful.
 - f) A Member Country which has been denied a transfer to category A by the Bureau may appeal at the next meeting of the Council.
 - g) Any Member Country in Observer status that is denied a transfer to category A shall cease to be a Member Country following the next Council meeting after its request to the Bureau for a transfer.
 - h) Every Associate Membership ~~will~~ **shall** be reviewed at each General Assembly. Member Countries which have been Associates from the beginning of their membership, will be asked ~~subsequently~~ to consider entering a paying category.
15. In the event of the dissolution of any Association, its assets shall be ceded to the Union. In the event of the dissolution of the Union, its assets shall be ceded to ~~the International Council for Science (ICSU).~~

IV. VOTING

16. Associates have no voting rights.
- 17.
- a) On questions of scientific nature, or of administrative nature, or of a character partly administrative and partly scientific not involving matters of finance, ~~the~~ voting shall be in Council by Member Countries, each Council Delegate having one vote, provided that the subscription of the Adhering Body has been paid up to the end of the calendar year preceding the voting.
 - b) On questions involving finance, ~~the~~ voting shall be in Council by Member Countries with the provision that a voting country must have paid its subscriptions up to the end of the calendar year preceding ~~the~~ voting in Council. The number of votes allotted to each Member Country shall ~~then~~ be equal to the number of its category of membership.
18. Questions on admission of new Member Countries and appeals against denial of transfer to Associate membership shall be decided by a two-thirds absolute majority vote of the Council Delegates.
19. A Council Delegate may represent only one Member Country. No member of the Bureau shall serve as a Council Delegate of a country. No Member of the Executive Committee shall vote with the Council unless under exceptional circumstances he is also the Council Delegate of a Member Country.

A paying Member Country which is not represented at a Council meeting may vote by correspondence on any specific question provided that the matter has been clearly defined on the final agenda distributed in advance to the Member Countries and that the discussion thereon has not produced any new considerations or changed its substance and provided that said vote has been received in writing by the President prior to the voting.

For the validity of the deliberations of the Council, at least one third of the Member Countries eligible to vote must be represented by their Council Delegates.

20. Before a vote in a Council meeting, the President shall decide whether the matter under consideration is scientific, administrative or financial in character and whether the procedure of voting by correspondence applies.
21. Decisions of the Council shall be taken by a simple absolute majority except as otherwise specified in the present Statutes.

If a tie should occur in a Council vote, the decision shall rest with the President.

Simple or two-third absolute majorities are determined by the proportion of affirmative votes to the sum of votes (affirmative, negative, abstention), provided that the total number of delegates voting (affirmative, negative, abstention) is not less than one third of the total membership of the Union eligible to vote. Blank or invalid ballots and votes not cast by Delegates present are counted as abstentions.

V. GENERAL

22. These Statutes or any further modification to them shall come into force at the close of the Council meeting at which they are adopted.
23. The Statutes of the Union may not be modified except with the approval of two thirds of the Delegates meeting in Council.
24. Proposals by Member Countries for a change of any article of the Statutes of the Union must reach the Secretary General at least six months before the announced date of the Council meeting at which it is to be considered. The Secretary General shall notify all Member Countries of any proposed change, at least four months before the announced date of the Council meeting.
25. The Council has the power to adopt By-Laws within the framework of the Statutes of the Union. These By-Laws may be modified by a simple majority of votes cast at a Council meeting. These By-Laws, or any further modification of them shall come into force at the close of the Council meeting at which they are ~~approved~~ **adopted**. [*Comment: this article, on modifying the By-Laws, should be a By-Law rather than a Statute.*]
26. Conduct of meetings, except as otherwise specified in the Statutes, shall be according to Robert's Rules of order.
27. The French text of the present Statutes shall be considered the authoritative text.

END OF STATUTES

BY- LAWS

I. COMPOSITION

1. The following are the constituent Associations of the Union:
The International Association of Geodesy,
The International Association of Seismology and Physics of the Earth's Interior,
The International Association of Volcanology and Chemistry of the Earth's Interior,
The International Association of Geomagnetism and Aeronomy,
The International Association of Meteorology and Atmospheric Sciences,
The International Association of Hydrological Sciences,
The International Association for the Physical Sciences of the Ocean.
2. The Union may, through the Executive Committee, appoint, jointly with other Unions, or jointly between the Associations, or for special purposes, Scientific Commissions which shall themselves have power to create subcommissions as may be necessary. In the same way, it may sponsor Permanent Services. The list of Scientific Commissions or Committees and Permanent Services sponsored by the Union is reviewed by the Executive Committee at each General Assembly.

Scientists from all countries may attend scientific meetings of the Union and of the Associations. They may also act as observers in Commissions of the Union and in the Associations.
3. The President ~~shall~~ **will** normally represent the Union at the General Assemblies of the International Council for Science but may be represented, if necessary, by the Vice-President or Secretary General.
4. Each Adhering Body shall form a Committee for Geodesy and Geophysics hereafter known as an IUGG National Committee. The function of the National Committee is, under the direction of the Adhering Body, to provide for the participation of the Member Country in the Union's activities.

During the interval between General Assemblies, the Bureau of the Union may directly consult by correspondence the National Committee of each Member Country on any question of scientific character or on administrative matters not involving finance. On matters of finance and on admission of new Member Countries, the Bureau of the Union shall communicate with th Adhering Bodies of paying Members.

II. ADMINISTRATION

5. General Assemblies ~~shall~~ **will** normally be held once every four years at the call of the President of the Union. The interval of time between the closure of two successive ~~ordinary~~ General Assemblies shall be known as a "period-".

6. Notice of the date and of the place of the meeting of the next General Assembly shall be sent by the Secretary General to the Member Countries at least nine months before the Assembly.

Proposals concerning **the** agenda for meetings of the Council may be presented by the Adhering Bodies or National Committees; they must be received by the Secretary General at least six months before the meeting, Associates may make proposals of **a** scientific nature only. The Secretary General must place all proposals received on the final agenda for the Council meeting. This final agenda, with explanatory comments, shall be sent to all Member Countries at least four months prior to the meeting. An item which has not been thus placed on the agenda may be discussed at a meeting of the Council if a proposal to that effect is approved by ~~vote of~~ **a two-thirds absolute majority vote** of the Council Delegates.

7. The Secretary General may send notice of the date and place of the next General Assembly to individuals or scientific organizations in countries not adhering to the Union, but where there is evidence of activity in Geodesy and Geophysics.

Scientists from these countries will be invited to participate in the scientific programme of the General Assembly, with the status of Guest.

The President of the Union may on ~~his~~ **their** own initiative or at the request of an Association or Member Country invite representatives of scientific bodies to attend any General Assembly as Guests provided ~~that~~ there is no financial obligation for the Union.

8. A plenary meeting of the participants in the General Assembly shall be held during each General Assembly for discussions of Union activities.
9. The Associations shall hold business meetings and scientific sessions at the General Assemblies of the Union.

The scientific meetings at a General Assembly should include joint sessions of two or more Associations for the discussion of interdisciplinary topics. The programme of the meetings and the selection of these interdisciplinary topics shall be decided by the Executive Committee of the Union, about two years before the time of the General Assembly, on the basis of recommendations made earlier by the Associations.

Provided that the Executive Committee is informed, an Association may also arrange meetings of its own in the interval between the General Assemblies, either singly to deal with topics of specific interest, or jointly with another Association or other Associations.

10.
 - a) The President of the Union shall be elected for one period and is not immediately eligible for re-election. The Vice-President and the additional elected Members of the Bureau shall be elected for one period and may be re-elected for not more than one consecutive period in the same function.

The Secretary General shall be elected for two periods initially and should not normally be re-elected for more than two additional single periods.

The Treasurer shall be elected for one period initially and should not normally be re-elected for more than two additional single periods.

The Members of the Finance Committee shall be elected for one period and may be re-elected for two successive periods.

- b) At least ~~one year and a half~~ **eighteen months** before ~~the~~ a General Assembly, the President shall appoint a Nominating Committee with the advice and approval of the Executive Committee. The Nominating Committee shall consist of a Chairman and three other members, not themselves members of the Executive Committee nor the Finance Committee.

The Nominating Committee, after soliciting nominations from the Adhering Bodies of the Member Countries, and from the officers of the Union and the Associations, shall propose one or two candidates for each position in the Bureau, seeking to achieve a reasonable balance in their geographical and professional distribution. Candidates ~~shall be asked~~ **will be required** [*Comment: this suggested change does affect the meaning of the By-Law*] to signify their acceptance of nomination and to prepare a resumé outlining their position, research interests and activities related to the Union.

The officers of the Union and Associations and the National Committees shall be informed by the Nominating Committee of the list of nominations at least ~~8~~ **eight** months before the General Assembly. They may make further nominations and/or recommendations to the Nominating Committee at least ~~3~~ **three** months before the General Assembly. If new nominations for a given position are supported by at least ~~3~~ **three** Presidents or equivalent officers of National Committees of Member Countries, and if they are accompanied by the written acceptance of possible nomination and resumé outlining the position, research interests and Union related activities of the candidates, they shall be added to the list initially established. The Nominating Committee shall send the final list of nominations to the officers of the Union and Associations and to the National Committees at the latest ~~2~~ **two** months prior to the General Assembly.

Re-nominations, from those previously nominated for the Bureau, may also be made over a period of 48 hours, following the close of the first Council meeting at the General Assembly. Such nominations ~~shall~~ **must** be submitted in written form to the Secretary General, supported by at least three members of the Council and accompanied by the same documentation as required with the original nominations. The Council Delegates shall be informed of these additional nominations, together with their resumé, at least 24 hours before the elections.

No one can be a candidate for more than one position in the election. Elections shall be by secret ballot.

- c) The Nominating Committee shall, after soliciting nominations from the Adhering Bodies of the Member Countries, and from the officers of the Union and the Associations, propose a slate of candidates for the Finance

Committee: two positions from among the current members of the Finance Committee and two positions from among the accredited Council members at the previous General Assembly.

The officers of the Union and Associations and the National Committees shall be informed by the Nominating Committee of the list of nominations at least three months before the General Assembly. The Council may add to the list of nominations for the Finance Committee during the General Assembly until ~~3~~ **three** days prior to the elections.

Candidates ~~shall be asked~~ **will be required** [*Comment: this suggested change does affect the meaning of the By-Law*] to signify their acceptance of nomination and to provide a resumé outlining their suitability for serving on the Finance Committee.

- d) No one ~~shall~~ **may** be at the same time a Member of the Bureau or of the Finance Committee and President or Secretary of an Association.

The Bureau may appoint Assistant Secretaries General and one Assistant Treasurer who may be assigned specific tasks by the Secretary General and the Treasurer with the approval of the Bureau. They may attend meetings of the administrative bodies of the Union in an advisory capacity.

Scientists represented by Adhering Bodies that have Associate membership, or have been in Observer status for two or more years and scientists from countries not represented by an Adhering Body are not eligible to be elected to positions in the Union or in its constituent Associations.

11. The Council is convened by the President of the Union, and shall meet at appropriate times during each Assembly.

~~It~~ **The Council** may be convened between two General Assemblies when a written request is made by at least a third of the paying Member Countries or by a simple majority of the members of the Executive Committee, with notice of the questions to be placed on the agenda of the meeting; the ~~discussions~~ **decisions** reached at such a meeting of the Council shall be subject to article 5 of the Statutes.

Council meetings shall be open to Council Delegates, the Executive Committee and the Finance Committee. One person from each Associate Member may attend any Council meeting, as Listener, without the right to speak. The IUGG President may invite guest to make presentations at Council meetings. Other individuals may, with concurrence of the President, attend Council meetings as Listeners only, except that a simple majority of Council Delegates present may declare part of any meeting closed to Listeners.

The Council shall:

- a) decide upon the admission of new Member Countries;
- b) decide on an appeal against a decision by the Bureau to deny a transfer to Associate membership of a Member in Observer Status;
- c) elect the members of the Bureau and of the Finance Committee;

- d) receive reports from the Secretary General and the Treasurer of the Union and ratify the decisions or actions taken by the Bureau and the Executive Committee since the last Council meeting;
 - e) consider the budget submitted by the Treasurer and adopt the final budget;
 - f) determine the amount of the unit of contribution for the ensuing period (the unit cannot be changed at a General Assembly unless proposed on the agenda distributed four months in advance to the Member Countries);
 - g) review from time to time the categories of Member Countries; review the Associates at each General Assembly;
 - h) examine questions of general policy or administration in the business of the Union and appoint such Committees as may from time to time be deemed necessary for this purpose;
 - i) consider proposals for changes in the Statutes or By-Laws.
12. The Executive Committee is convened by the President of the Union. It shall meet at **each** General Assembly, and also at all sessions of the Council with voice but without vote. It ~~shall~~ **will** also meet normally at least once between General Assemblies, two years ahead of the next General Assembly, in order to prepare an outline of the interdisciplinary scientific agenda and of the timetables for the Union and for the Associations during the next General Assembly.

At a meeting of the Executive Committee, no member of the Bureau, nor the Past President of the Union, ~~can~~ **may** be represented by any other person. The Presidents of the Associations, in case of hindrance, may be represented by a Vice-President or the Secretary of their Association. The Past President has voice but no vote. For the validity of the deliberations of the Executive Committee, at least half of its members must be present or represented.

Proposals concerning the agenda for meetings of the Executive Committee may be submitted by Members of the Committee; they must be received by the Secretary General at least six months before the meeting.

The final agenda shall be sent to the Members of the Executive Committee at least four months prior to the meeting. No question which has not been placed on the agenda may be discussed at a meeting of the Committee unless a proposal to that effect has been approved by a ~~vote~~ of two-thirds **absolute majority vote** of the Members present.

The Executive Committee shall:

- a) initiate actions, as required, to co-ordinate the common interest of the Associations, such as by meetings between the Secretary General and the Secretaries of the Associations;
- b) guide the Treasurer regarding the financial needs of the Associations in achieving their objectives;
- c) fill any vacancy which may occur between General Assemblies among the Members of the Bureau and of the Finance Committee (when such

appointments are later confirmed by the Council, the period of office will be considered to begin ~~only~~ from the date of its confirmation by the Council);

- d) make recommendations to the Council on matters of general policy of the Union.
13. The Bureau ~~shall~~ **will** normally meet once a year, at the call of the President of the Union. In a meeting, no Member of the Bureau can be represented by any other person. For the validity of the deliberations, four Members at least must be present.

Between the meetings of the Council, the Bureau shall initiate procedures to attain the general objectives of the Union; it shall manage the finances, and ensure the adequate administration of the Union. It shall draw up the programmes for the meetings of the Council and of the Executive Committee.

14. Applications for membership of the Union, ~~or~~ **and** ~~for the~~ transfer to Associate membership shall be referred to the Secretary General. ~~The latter~~ **who** shall report thereon to the Executive Committee, which shall decide on the scientific merits of each application. The Secretary General shall then forward the proposals through the appropriate channels to the Adhering Bodies representing the paying Member Countries; these bodies will vote by correspondence and the results of the ballot ~~will~~ **shall** be communicated to them by the Bureau. Any admission accepted by a simple majority is provisional until approved by the Council. Simple majority is here determined by the proportion of affirmative votes to the sum of votes (affirmative, negative) provided that this sum is not less than one third of the total membership of the Union eligible to vote. Any case of refusal shall be referred to the Council.

15. The President of the Union shall:

- a) be the representative of the Union in its dealing with National or International Organisations or Institutions;
- b) convene and preside over the General Assembly and over all meetings of **the** Council, Executive Committee and Bureau;
- c) submit a report to the General Assembly on the scientific work of the Union during the current period.

In case of ~~his~~ **absence of the President**, the Vice-President shall act. If the President is incapable of remaining in office, the Vice-President shall become President and the Executive Committee shall elect a new Vice-President from the remaining Members of the Bureau.

16. The Secretary General shall:

- a) serve as Secretary of the General Assembly, the Council, the Executive Committee and the Bureau; arrange for meetings of these bodies; prepare and distribute promptly the agenda and the minutes of all their meetings;
- b) manage the affairs of the Union, attend to correspondence, preserve the records;
- c) circulate all information related to the Union;

- d) prepare reports on the Union's activities; at least three months before the General Assembly, forward to all the Member Countries a report on the administration of the Union since the last General Assembly, and present a summary of this to the General Assembly itself;
 - e) perform such other duties as may be assigned by the Bureau.
17. To assist the Secretary General and the Treasurer in the performance of their duties to the Union, they may be authorized by the Bureau to employ administrative and secretariat personnel as may be required to ensure orderly administration.

III. FINANCE

- 18.
- a) The Adhering Bodies to the Union shall pay annually the number of units of contributions assigned to the category in which they adhere, according to the following table

| | | | | | | | | | | | | |
|-----------------------|---|---|---|---|---|----|----|----|----|----|----|----|
| Category | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| Units of Contribution | 1 | 2 | 3 | 5 | 7 | 10 | 15 | 20 | 25 | 30 | 35 | 40 |

- b) Associates, in category A, do not pay.
19. The Finance Committee shall elect a Chair from among its members.
- The Finance Committee shall meet, at the call of its Chair, and at least once during its term of office.
- The Treasurer may be invited by the Chairman to attend a meeting of the Finance Committee. No Member ~~can~~ **may** be represented by any other person at a meeting of the Committee.
- The Finance Committee shall:
- a) advise the Council on all financial matters of the Union;
 - b) receive and review the audits of the accounts;
 - c) report to the Council;
 - d) advise the Treasurer on preparation of the budget;
 - e) advise the Treasurer, the Bureau, and the Executive Committee on financial matters, including raising funds to support Union and Association activities.
- The Chair of the Finance Committee ~~shall~~ **will** normally be invited to meetings of the Bureau or Executive Committee when financial matters are on the agenda.
20. The Treasurer of the Union shall be responsible for the financial administration of the Union in accordance with directions issued to him by the Bureau.

The Treasurer shall:

- a) in consultation with the Executive Committee and the Finance Committee, prepare a preliminary budget to be sent to the Adhering Bodies at least three months prior to the Assembly together with comments of the Finance Committee, then update it at the General Assembly and submit the budget to the Council for approval;
- b) arrange for an annual audit of the books;
- c) collect the funds of the Union and disburse them in accordance with the approved budget and instructions of the Council and of the Bureau;
- d) maintain records of all financial transactions of the Union and submit annual financial reports thereon to the Bureau and the Finance Committee;
- e) submit such other reports to the Financial Committee and to the Council as may be requested;
- f) assemble, at the end of the calendar year preceding a General Assembly, **a report on** the complete accounts of the Union (including those of the Associations and of all Union activities) for the ~~past~~ **previous** period, for presentation ~~of his report~~ to the Bureau and to the Finance Committee at least three months prior to the General Assembly, and at the General Assembly to the Council. ~~Such~~ **The** report shall be accompanied by statements concerning each account ~~administered~~ **administered** by the Union, its Associations, and other financially assisted bodies. Each account shall be audited by a qualified accountant;
- g) prepare a summary report of the Finances of the Union (including those of the Associations and of all Union activities) and arrange for the distribution of copies thereof to the Member Countries not later than three months prior to the General Assembly.

The President, the Treasurer and the Assistant Treasurer have the authority to draw from any bank accounts of the Union, but only as directed by the Bureau.

21. Travelling expenses and per diem subsistence may be paid by the Treasurer in accordance with rates established by the Bureau.

The following conditions must be satisfied:

- a) the meeting must be for specific Union business;
- b) those concerned must represent the Union and not Adhering Bodies;
- c) those concerned must be unable to obtain adequate allowances from sources in their own country.

END OF STATUTES AND BY-LAWS

Proposals for changes to the IUGG Statutes and By-Laws to be considered by the IUGG Council at the IUGG General Assembly in Perugia, Italy, 2007

Statutes and By-Laws Committee:

Jean-Pierre Barriot
Priscilla Grew
David Kerridge (Chair)
Ronald Stewart

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1. Statute 1a and By-Law 1. (International Association of Cryospheric Sciences)

Proposer

The IUGG Executive.

Intended effect of proposal

To add references to the International Association of Cryospheric Sciences in the Statutes and By-Laws, similar to those for the current Associations.

Explanation

This change to the Statutes and By-Laws is needed to accommodate the admission of the International Association of Cryospheric Sciences to IUGG, if agreed by Council in Perugia.

Changes proposed

Under Statutes Part I: Objectives and Composition of the Union

Modify Statute 1a to include the cryosphere. The revised Statute will read as follows:

1. The objectives of the International Union of Geodesy and Geophysics (**IUGG**) are:
 - a) to promote the study of all problems relating to the figure of the Earth, and the physics and chemistry of the Earth's interior, surface, fresh waters, **cryosphere**, oceans and atmosphere, along with relevant studies of other planets;

Under By-Laws Part I: Composition

Modify By-Law 1 to include 'The International Association of Cryospheric Sciences'. Re-order the sequence of Associations and include their acronyms so that they appear in alphabetical order as determined by their English acronyms. The By-Law will then read as follows:

1. The following are the constituent Associations of the Union:

The International Association of Cryospheric Sciences (IACS).

The International Association of Geodesy (**IAG**).

The International Association of Geomagnetism and Aeronomy (**IAGA**).

The International Association of Hydrological Sciences (**IAHS**).

The International Association of Meteorology and Atmospheric Sciences (**IAMAS**).

The International Association for the Physical Sciences of the Ocean (IAPSO).

The International Association of Seismology and Physics of the Earth's Interior (**IASPEI**).

The International Association of Volcanology and Chemistry of the Earth's Interior (**IAVCED**).

Comment by the S&BL committee

The introduction of (**IUGG**) is an editorial change recommended by the committee because the acronym IUGG is used several times in the Statutes and By-Laws but is not defined elsewhere.

2. Statute 11 and By-Law 10c. (Composition of the Finance Committee)

Proposer

The US National Committee.

Intended effect of proposal

To clarify who may be nominated for the Finance Committee.

Explanation

Statute 11 defines the membership of the Finance Committee for the next period as two members from among the (present) members of the Council, and two members from the previous Finance Committee. There is a provision that if not enough members from the previous Finance Committee are willing and able to be re-elected, then additional Council delegates can be elected.

By-Law 10c states that the Nominating Committee should propose a slate including two positions to be populated by current members of the Finance Committee and two to be populated by persons who were accredited Council members from the previous General Assembly. In order to maximize the number of candidates who are knowledgeable of Union activities and are otherwise eligible to serve, it is proposed that any person who has been an accredited Council delegate at any General Assembly should be eligible for nomination.

By-Law 10c does not now specify the number of persons who should be nominated for each position. It is proposed that the Nominating Committee be asked to propose one or two names for each of the 4 positions.

Changes proposed

Under Statutes Part III: FINANCE

Modify Statute 11 so that the details of the membership of the Finance Committee are specified in the By-Laws.

Current text:

11. During the meeting of a General Assembly the Council elects a Finance Committee for the next period, comprised of four members:

- a) two members from among members of the Council
- b) two members from the previous Finance Committee.

If there are insufficient candidates from the previous Finance Committee, then an additional member or members shall be elected from among the members of the Council. No member of the Finance Committee may at the same time be a member of the Bureau or the executive body of the Union or of an Association or of a governing body of one of the permanent services or programs supported by the Union. No member shall serve more than three consecutive periods on the Finance Committee.

The Finance Committee shall meet with the Council at sessions of the latter, with voice but without vote.

Proposed new text:

11. During the meeting of a General Assembly the Council **shall elect** a Finance Committee for the next period, **consisting** of four members **drawn from the previous Finance Committee and accredited Council Delegates as specified by By-Law 10.**

The Finance Committee shall meet with the Council at sessions of the latter, with voice but without vote.

Under By-Laws Section II: ADMINISTRATION

Modify By-Law 10c to include information from (current) Statute 11, to make it clear that a person who has been an accredited Council Delegate at any IUGG General Assembly and who meets the requirements of By-Law 10d is eligible for election, and specify that one or two candidates may be proposed for each position.

Current text:

c) The Nominating Committee shall, after soliciting nominations from the Adhering Bodies of the Member Countries, and from the officers of the Union and the Associations, propose a slate of candidates for the Finance Committee: two positions from among the current members of the Finance Committee and two positions from among the accredited Council members at the previous General Assembly.

The officers of the Union and Associations and the National Committees shall be informed by the Nominating Committee of the list of nominations at least three months before the General Assembly. The Council may add to the list of nominations for the Finance Committee during the General Assembly until 3 days prior to the elections.

Candidates shall be asked to signify their acceptance of nomination and to provide a resumé outlining their suitability for serving on the Finance Committee.

Proposed new text:

c) The Nominating Committee shall, after soliciting nominations from the Adhering Bodies of the Member Countries, and from the officers of the Union and the Associations, **propose one or two candidates for each of the four positions on the Finance Committee: two positions from among the current members of the Finance Committee and two positions from among the accredited Council delegates at the present or any previous General Assembly. If there are insufficient candidates from the previous Finance Committee, then an additional member or members shall be elected from among Council delegates. No member of the Finance Committee may at the same time be a member of the Bureau or the executive body of the Union or of an Association or of a governing body of one of the Permanent Services or programmes supported by the Union. No member may serve for more than three consecutive periods on the Finance Committee.**

The officers of the Union and Associations and the National Committees shall be informed by the Nominating Committee of the list of nominations at least three months before the General Assembly. The Council may add to the list of nominations for the Finance Committee during the General Assembly until 3 days prior to the elections.

Candidates ~~shall be asked~~ **will be required** to signify their acceptance of nomination and to provide a resumé outlining their suitability for serving on the Finance Committee.

Comment by the S&BL committee

The change indicated in the final paragraph (**will be required**) has been inserted by the committee. It seems necessary because *potential* candidates who do not comply with the requirement will not be considered for election (i.e. they will not become candidates). However, we acknowledge that this suggested change does affect the meaning of the By-Law.

3. Statute 12 and By-Law 18 (Financial categories)

Proposer

The UK National Committee.

Intended effect of proposal

To extend the range of categories to 14, such that category 13 carries 45 units and 14 carries 50 units.

Explanation

The aim is to extend the range of membership to enable the wealthier nations to make a more significant contribution to IUGG funds and thereby encourage the less well off to move from Associate Membership to Category One. Both these measures are proposed in order to halt the decline in the total number of units paid each year and thus maintain sufficient income to fund the work of the IUGG.

Changes proposed

This proposal requires changes to be made to Statute 12 and By-Law 18.

Under Statutes, Section III: FINANCE, Article 12

Current text:

- a) There shall be twelve categories of membership in the Union, numbered 1 to 12, plus a special category, called A.
- b) For categories 1 to 12, each Member Country shall pay annually the number of units of contribution assigned to the category in which it adheres. In each country the Adhering Body shall be responsible for the payment of the contribution. Any member country may additionally donate contributions for travel support of scientists from countries of category A.

Proposed new text:

- a) There shall be **fourteen** categories of membership in the Union, numbered 1 to **14**, plus a special category, called A.
- b) For categories 1 to **14**, each Member Country shall pay annually the number of units of contribution assigned to the category in which it adheres. In each country the Adhering Body shall be responsible for the payment of the contribution. Any member country may additionally donate contributions for travel support of scientists from countries of category A.

Under By-Laws, Part III: FINANCE, Article 18

Current text:

- a) The Adhering Bodies to the Union shall pay annually the number of units of contributions assigned to the category in which they adhere, according to the following table

| | | | | | | | | | | | | |
|-----------------------|---|---|---|---|---|----|----|----|----|----|----|----|
| Category | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| Units of Contribution | 1 | 2 | 3 | 5 | 7 | 10 | 15 | 20 | 25 | 30 | 35 | 40 |

Proposed new text:

a) The Adhering Bodies to the Union shall pay annually the number of units of contributions assigned to the category in which they adhere, according to the following table

| | | | | | | | | | | | | | | |
|-----------------------|---|---|---|---|---|----|----|----|----|----|----|----|-----------|-----------|
| Category | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| Units of Contribution | 1 | 2 | 3 | 5 | 7 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 |

4. By-Law 2. (Union Commissions)

Proposer

The US National Committee.

Intended effect of proposal

To clarify the definition of Union Commissions.

Explanation

To clarify the definition of those scientific bodies that are Union Commissions as decided at the 2004 (Boulder) meeting of the Executive Committee.

Change proposed

Under By-Laws Part I: COMPOSITION, modify By-Law 2 to clarify the establishment of Union Commissions.

Current text:

2. The Union may, through the Executive Committee, appoint, jointly with other Unions, or jointly between the Associations, or for special purposes, Scientific Commissions which shall themselves have power to create subcommissions as may be necessary. In the same way, it may sponsor Permanent Services. The list of Scientific Commissions or Committees and Permanent Services sponsored by the Union is reviewed by the Executive Committee at each General Assembly.

Scientists from all countries may attend scientific meetings of the Union and of the Associations. They may also act as observers in Commissions of the Union and in the Associations.

Proposed new text:

2. The IUGG Executive Committee may establish Union Commissions in order to examine scientific issues of mutual interest to at least four Associations. The Union may also, through the Executive Committee, sponsor jointly with other Unions or for special purposes, specific Programmes or Committees for the conduct of interdisciplinary science. Such bodies may create subordinate bodies as necessary. In the same way, the Union may sponsor Permanent Services. The list of Union Commissions, Programmes, Committees, and Permanent Services shall be reviewed by the Executive Committee at each General Assembly.

Scientists from all countries may attend scientific meetings of the Union and of the Associations. They may also act as observers in Commissions of the Union and in the Associations.

5. By-Laws 13, 16b and 20. (Administrative guidelines document)

Proposer

The US National Committee.

Intended effect of proposal

To add a responsibility to the duties of the Bureau, the Secretary General, and the Treasurer with regard to administration.

Explanation

A document summarizing the current administrative practices of the Union, both as mandated by the Statutes and By-Laws and as decided by the Executive Committee, has been written. These proposed changes to the By-Laws specify that the Bureau will be responsible for maintaining this document, and that the Secretary General and the Treasurer must refer to it for guidance.

(The document, 'Guidelines on IUGG Administration', is intended to be a simple handbook consolidating instructions otherwise distributed throughout the Statutes and By-Laws. It will also include some items of established business practice that are not in the Statutes and By-Laws. It will be a working document, constantly updated so that it reflects actual practice, and it will be a public document. It will be of particular value in guiding the work of the Secretary General and Treasurer.)

Changes proposed

Under By-Laws, Part II: ADMINISTRATION

Modify By-Law 13 to make the Bureau responsible for maintaining a reference document of guidelines on administrative matters. Modify By-Law 16 to require the Secretary General to conduct Union business using the guidance provided by the reference document.

(First change)

Current text:

13. The Bureau shall normally meet once a year, at the call of the President of the Union. In a meeting, no Member of the Bureau can be represented by any other person. For the validity of the deliberations, four Members at least must be present.

Between the meetings of the Council, the Bureau shall initiate procedures to attain the general objectives of the Union; it shall manage the finances, and ensure the adequate administration of the Union. It shall draw up the programmes for the meetings of the Council and of the Executive Committee.

Proposed new text:

13. The Bureau shall normally meet once a year, at the call of the President of the Union. In a meeting, no Member of the Bureau **may** be represented by any other person. For the validity of the deliberations, four Members at least must be present.

Between the meetings of the Council, the Bureau shall initiate procedures to attain the general objectives of the Union; it shall manage the finances, and ensure the adequate administration of the Union **including maintenance of a reference document**

‘Guidelines on IUGG Administration’. It shall draw up the programmes for the meetings of the Council and of the Executive Committee.

(Second change)

Current text:

16. The Secretary General shall:

b) manage the affairs of the Union, attend to correspondence, preserve the records;

Proposed new text:

16. The Secretary General shall:

b) manage the affairs of the Union **informed by the document ‘Guidelines on IUGG Administration’**, attend to correspondence, preserve the records;

Under By-Laws, Part III. FINANCE

Modify By-Law 20 to require the Treasurer to conduct Union business using the guidance provided by the reference document

(Third change)

Current text:

20. The Treasurer of the Union shall be responsible for the financial administration of the Union in accordance with directions issued to him by the Bureau

Proposed new text:

20. The Treasurer of the Union shall be responsible for the financial administration of the Union, **informed by the document ‘Guidelines on IUGG Administration’ and directions issued by the Bureau.**

Comments by the S&BL committee

The choice of **‘informed by’** in By-Laws 16 and 20 ensures that the content of **‘Guidelines on IUGG Administration’** cannot override the Statutes and By-Laws.

The proposed change to By-Law 20 removes the gender-specific language in the current text.

6. Statute 26. (Robert's Rules of Order)

Proposer

The US National Committee.

Intended effect of proposal

To modify Statute 26 to specify which revision of Robert's Rules of Order is to be applied at meetings.

Explanation

There are differences between the various editions and versions of Robert's Rules of Order. This change is intended to make it clear which edition is to be used to govern the conduct of IUGG meetings.

Change proposed

Under Statutes Part V: GENERAL, modify Statute 26 to specify that it is the Newly Revised edition of Robert's Rules that is being used.

Current text:

26. Conduct of meetings, except as otherwise specified in the Statutes, shall be according to Robert's Rules of order.

Proposed new text:

26. Conduct of **IUGG** meetings, except as otherwise specified in the Statutes, shall be according to Robert's Rules of Order, **Newly Revised. Details of the edition in current use shall be included in the reference document 'Guidelines on IUGG Administration' described in By-Law 13.**

Comments by S&BL committee

To formulate this revision to Statute 26 to achieve the desired effect has presented some problems.

a. There are several editions and versions of Robert's Rules of Order, so to properly specify the reference publication its International Standard Book Number (ISBN) must be given. However, it is not desirable to include an ISBN in the Statutes and By-Laws, as adoption of a new edition in the future would require further modification of the Statutes and By-Laws.

b. For comparison, the ICSU Rules of Procedure state: "The latest edition of Robert's Rules of Order shall be used for the conduct of all ICSU meetings". The use of 'latest edition' presents a possible (if largely theoretical) problem in the case that a new edition is published close to the time of a meeting.

The committee has suggested the inclusion of the second sentence in the proposed new text to largely overcome these difficulties by linking to the 'Guidelines on IUGG Administration'. Although the text lacks complete precision we believe it is a practical way to implement the desired change.

7. Statute 27 (Official languages of IUGG)

Proposer

The Danish National Committee.

Intended effect of proposal

To make it clear that French and English are the official languages of the Union, and to modify Statute 27 so that the English version of the Statutes becomes the definitive text.

Explanation

Currently the Statutes do not state which are the official languages of IUGG. It is the intention to specify that the official languages of the Union shall be English and French. Common practice in Union communications has demonstrated that at present, English is the primary operative language of the Union, its Associations, and its member countries.

Change proposed

Under Statutes Part V: General.

Current text:

27. The French text of the present Statutes shall be considered the authoritative text.

Proposed new text:

27. The official languages of the Union shall be English and French. In case of disparity between the texts, the English text shall be authoritative.

Comments by the S&BL committee

The ICSU equivalent (Statute 50) includes the sentence: ‘In case of conflict between the English and French versions of these Statutes, the English version shall prevail.’

(It would be possible to specify the ‘version’ of English (US or British). This has not been done as it only affects spelling not meaning. Spelling should, however, be consistent throughout the Statutes and By-Laws.)

**Agenda Item #10:
Adoption of IACS Statutes and By-laws**

DRAFT dated 14 February 2007

Proposed Statutes of the International Association of Cryospheric Sciences (IACS)

Statute 1; Objectives of the Association

- a) to promote studies of the cryosphere of Earth and other bodies of the Solar System and related physical processes;
- b) to encourage research on cryospheric sciences through collaboration and co-operation among individuals, institutions, and research programmes, both nationally and internationally;
- c) to provide opportunities for international discussion and publication of the results of research on cryospheric structures and processes;
- d) to promote education and public awareness about the cryosphere;
- e) to facilitate the standardisation of measurements and the collection of data on cryospheric systems and the analysis, archiving and publication of such data;
- f) to promote the scientific activities of any Permanent Service which may fall under IACS responsibility and scientific supervision.

Statute 2; Structure of the Association

- 2.1 The Association shall consist of a Bureau and other component bodies as specified in the By-laws of the Association.
- 2.2 The members of the Association shall be all persons engaged in scientific research on the cryosphere, or otherwise contributing to the objectives of the Association. Members include:
 - a) the elected Officers of the Association (the Bureau);
 - b) Correspondents to the Association that are appointed by the International Union of Geodesy and Geophysics (IUGG) Adhering Body National Committees (hereafter known as IUGG National Committees);
 - c) Delegates that are accredited by the IUGG Adhering Bodies for the purpose of attending Plenary Administrative Sessions (Accredited Delegates);
 - d) Representatives that are designated by the Bureau as liaisons to the cryospheric scientific community in their countries;
 - e) all other persons engaged in cryospheric research or otherwise contributing to the objectives of the Association.
- 2.3 The work of the Association shall be directed by the Plenary Administrative Session, which shall be convened at least once during each General Assembly of IACS and attended by members of the Association. Votes from at least one-third of the delegates representing IUGG Adhering Bodies eligible to vote are required to validate a decision. Delegates not present may forward a vote on any specific question as described in Statute 2.5.
- 2.4 The work of the Association consists of matters that are scientific, administrative, and financial in character. Prior to a Plenary Administrative Session the President shall decide the character of each agenda item and whether the procedure of voting by correspondence applies.
- 2.4 a On matters of scientific purpose, all scientific participants have a single vote.

- 2.4 b On matters of administration, including election of officers, only Accredited Delegates of IUGG Adhering Bodies in regular member status (dues paid) may vote; each delegate has one vote and may represent only one Adhering Body.
- 2.4 c On matters of finance, only Accredited Delegates of IUGG Adhering Bodies in regular member status (dues paid) may vote; each delegate has the number of votes corresponding to the Category of IUGG membership of the Adhering Body.
- 2.5 An IUGG Adhering Body eligible to vote that is not represented by a delegate at a Plenary Administrative Session may vote by correspondence, including post, fax, or electronic mail, on any voting matter provided that:
- a) the matter has been clearly defined in the final agenda distributed in advance to the members in accordance with the By-laws,
 - b) the substance of the matter has not been changed, and
 - c) the vote has been received by the Secretary General prior to the meeting.
- 2.6 Decisions on any voting matter, except for the modification of the Statutes, shall be determined by a simple majority of the votes cast. Simple majority shall be determined by the proportion of affirmative votes to the sum of the affirmative and negative votes, including correspondence votes, and excluding abstentions. If a tie should occur, the decision shall rest with the President.
- 2.7 The Plenary Administrative Session has the power to adopt and modify By-laws that include specification of the scientific components of the Association (Divisions).
- 2.8 The Bureau
- 2.8 a The Bureau shall consist of the President, the President-Elect or immediate Past-President, three Vice-Presidents, the Secretary General, and the Heads of the Divisions. The immediate Past-President will remain a Bureau Member during the period between the end of his/her office and the election of a new President-Elect. In order to maintain continuity, the terms of office of the President, the President-Elect and the immediate Past-President are staggered. Thus the four-year term of the President is split, with the first two years in office having the immediate Past-President on the Bureau and with the last two years having the President-Elect on the Bureau. The President-Elect will become President at the IACS Scientific Assembly held approximately mid-period between IUGG General Assemblies.
- 2.8 b Except for the resident President, all members of the Bureau shall be elected by the Plenary Administrative Session during a General Assembly of IUGG in accordance with the Statutes and By-laws.
- 2.8 c In the event of any vacancy occurring in the membership of the Bureau, a person will be appointed to fill the vacancy by the remaining members of the Bureau until the next election. The eligibility for election of a person so appointed shall not be affected by such an appointment. If the vacancy is that of the President, the President-Elect shall assume the office of President. If there is no President-Elect, then the Bureau shall appoint one of the three Vice-Presidents to act as President.
- 2.9 The Bureau may establish Standing Groups with specified terms of reference.
- 2.10 The Bureau may nominate persons who have given outstanding service to IACS, to a Plenary Administrative Session for recognition as “Honorary Members of IACS.”

- 2.11 The Association may create Joint Bodies with other IUGG Associations, components of other governmental and international scientific organisations such as the International Council for Science (ICSU) and organizations affiliated with the United Nations, to deal with topics of mutual interest, and may appoint appropriate leaders and representatives of the Association to these organizations. In dealing with other scientific organizations, IACS shall not commit the name of IUGG, or act on behalf of IUGG, unless prior approval has been secured from the IUGG Executive Committee.

Statute 3; Assemblies of IACS

- 3.1 An ordinary General Assembly of IACS shall normally be held in conjunction with each ordinary General Assembly of IUGG.
- 3.2 The interval between the end of one ordinary General Assembly and the end of the next one is, for the purposes of the Statutes, termed one Period.
- 3.3 A Scientific Assembly of IACS may be held between ordinary General Assemblies of IACS, in accordance with the IUGG By-laws.
- 3.4 An extraordinary General Assembly of IACS may be convened by the President with the approval of the Bureau, and must be convened at the request of not less than one-third of IUGG Adhering Bodies eligible to vote. Such an extraordinary General Assembly must be held no later than nine months after the request is received. An extraordinary General Assembly shall have the same powers and be subject to the same rules as an ordinary General Assembly.
- 3.5 Notice of the date and place of an ordinary General Assembly or a Scientific Assembly shall be sent by the Secretary General to the IACS Correspondents and Representatives at least nine months prior to that Assembly. The notice period for an extraordinary General Assembly shall be four months.
- 3.6 Between Assemblies, responsibility for the direction of the Association shall rest with the Bureau, which shall administer the affairs of the Association in accordance with these Statutes and By-laws and the decisions of the prior Plenary Administrative Session.

Statute 4; Dissolution of the Association

If the Association should be dissolved, its financial assets will revert to the Union to be used for the continuation of scientific and educational activities.

Statute 5; Languages

The present Statutes have been prepared in the official languages of IUGG. The English text shall take precedence if there is a question of interpretation.

Statute 6; Adoption and Modification of the Statutes

- 6.1 The Statutes of the Association must be approved by the IUGG Council at a General Assembly, and shall come into force at the close of the Council Meeting at that General Assembly.
- 6.2 A member of the IACS Bureau, an IACS Correspondent or an Accredited Delegate of an IUGG Adhering Body to a Plenary Administrative Session may propose a change to these Statutes. Any such proposal must reach the Secretary General at least six months prior to the announced date of the General Assembly at which it is to be considered. The Secretary General shall notify all IACS Correspondents and Accredited Delegates of any proposed change at least two months prior to the announced date of the General Assembly.

- 6.3 For adoption, modifications must be agreed by at least a two-thirds' majority of the votes cast by Accredited Delegates at a Plenary Administrative Session held during a General Assembly, and further approved by the IUGG Council. A two-thirds' majority shall be determined by the proportion of affirmative votes to the sum of the affirmative and negative votes, including correspondence votes, and excluding abstentions.
- 6.4 Modifications to these Statutes shall come into force at the close of the General Assembly at which they were adopted.

Proposed By-laws of the International Association of Cryospheric Sciences

By-law 1; Divisions

- 1.1 The scientific components of the Association shall be separated into Divisions as follows:
 - Division I: Snow and Avalanches
 - Division II: Glaciers and Ice-sheets
 - Division III: Marine and Freshwater Ice
 - Division IV: Cryosphere, Atmosphere and Climate
 - Division V: Planetary and other Ices of the Solar System
- 1.2 The role of Divisions shall be to further the scientific objectives of the Association through co-ordination of appropriate scientific research, organisation of scientific meetings, and promotion of the exchange of information and data.
- 1.3 Each Division shall be responsible for its role, structure, and mode of operation.
- 1.4 Each Division shall be represented on the IACS Bureau by a person elected to be the Division Head.
- 1.5 Divisions may establish working groups with specified terms of reference.
- 1.6 The role and effectiveness of each Division shall be reviewed periodically by the Bureau.

By-law 2; IACS Administration

- 2.1 The Bureau shall meet at least twice at each Assembly, and must meet at least once more between ordinary General Assemblies.
- 2.2 The Bureau shall meet at the call of the President, who will set the agenda in consultation with the Secretary General.
- 2.3 The quorum needed for an IACS Bureau Meeting shall be a majority of the members but must include the President or President-Elect, the Secretary General, and at least one of the Vice-presidents.
- 2.4 The President may invite representatives of scientific bodies or individuals to attend a Bureau Meeting in an advisory capacity.

By-law 3; Officers

- 3.1 President
 - 3.1 a The President shall be elected for one Period, and may not be re-elected to the same office. In accordance with Statute 2.8a, the term of office begins at the IACS Assembly held approximately mid-period between IUGG General Assemblies.
 - 3.1 b The duties of the President are:
 - i) to represent IACS in the IUGG Executive Committee and at other meetings, conferences, or functions where formal representation is requested or desirable;
 - ii) to convene Plenary Administrative Sessions and meetings of the Bureau and to preside over these meetings;
 - iii) to prepare and distribute the agenda of Bureau Meetings to Bureau members;

- iv) to submit a report on the work of the Association to a Plenary Administrative Session at each General Assembly;
 - v) to select the Chair of Standing Groups established according to Statute 2.9;
 - vi) to select, on behalf of the Bureau, persons ‘ex officio’ who maintain liaison between the Bureau and other scientific bodies and programmes according to specified terms of reference.
- 3.1 c If the President is not available, the President-Elect shall act on behalf of the President in accordance with the Statutes and By-laws. If there is no President-Elect, then the Bureau shall appoint one of the Vice-Presidents to act on behalf of the President in accordance with the Statutes and By-laws.
- 3.2 Vice-Presidents
- 3.2 a The Vice-Presidents shall be elected for one Period and may be re-elected for one Period.
- 3.2 b The duties of the Vice-Presidents are:
- i) to represent the interests of cryospheric scientists at-large;
 - ii) to advise the Bureau on IACS activities;
 - iii) to assist the President in furthering the objectives of the Association within IUGG and the International Scientific Community.
- 3.3 Secretary General
- 3.3 a The Secretary General shall be elected for one Period and may be re-elected for two successive Periods.
- 3.3 b The duties of the Secretary General are:
- i) to assist the Bureau in the management of the administrative and scientific affairs of the Association, to attend to correspondence, and to maintain and preserve the records of the Association;
 - ii) to arrange meetings of the Bureau, to assist the President in the preparation of the agenda for Bureau Meetings, and to prepare and distribute the minutes of these meetings;
 - iii) to organise Assemblies according to the instructions of the Bureau, to prepare and arrange publication of the Programme of each Assembly,
 - iv) to request and receive the names of the Accredited Delegates for each Plenary Administrative Session; to prepare and distribute the agenda; to prepare ballots and arrange for counting of votes; and to prepare and distribute the minutes of each Session;
 - v) to receive and take charge of such funds as may be allocated by IUGG to the Association, or as may be received from any other source; to disburse such funds in accordance with the decisions of Plenary Administrative Sessions or with the instructions of the Bureau; to keep account of all receipts and disbursements and to submit such account, audited by a qualified accountant, for approval by the Bureau and submission to a Plenary Administrative Session at each General Assembly;
 - vi) to maintain lists of IACS members for purposes of communication, including IUGG National Committee Correspondents, and IACS Representatives;
 - vii) to publish an internal Association bulletin (such as IACS News) containing information of general interest to the Association;
 - viii) to perform such other duties as may be assigned by the President or the Bureau.

3.3 c The Bureau may, at its discretion, appoint an Assistant Secretary General.

3.4 Heads of Divisions

3.4 a The Heads of Divisions shall serve for one Period but may be re-elected for two more Periods.

The duties of the Heads of Divisions are:

- i) to promote the interests of their respective divisions through participation in symposia, conferences, workshops and other activities, which receive the approbation of the Bureau;
 - ii) to select the Chair of any Working Group established by the Division according to By-law 1.5;
 - iii) to assist the Bureau in furthering the objectives of the Association in accordance with the Statutes and By-laws.
- 3.5 No person who has served on the Bureau for four Periods shall be eligible for further election to any position on the IACS Bureau.

By-law 4; Nominations and Election of the Bureau

- 4.1 The Bureau shall establish a Nomination Panel consisting of a Chair and not less than two other members at least ten months before an IUGG General Assembly. The Panel will receive and consider suggestions and shall prepare a list of candidates for each office, seeking to achieve reasonable balance in their geographical and professional distribution. Members of the Bureau may not be appointed to the Nomination Panel.
- 4.2 At least nine months before an IUGG General Assembly, the Secretary General shall solicit nominations for officers that must be received by the Chair of the Nomination Panel not later than six months before the General Assembly. Nominated persons must be from countries represented by IUGG Adhering Bodies in regular status (dues paid).
- 4.3 Each nomination for office must include a résumé of the candidate's qualifications relevant to the office for which the candidate is nominated. A signed statement of the candidate's willingness to stand for office must also be provided. The nomination shall not be considered without submission of the résumé and consent form.
- 4.4 A person may be a candidate for more than one office except in the case of a candidate for the office of President-Elect who may not be a candidate for any other office of the Association.
- 4.5 The list of candidates shall normally contain more than one name for each office. The Chair of the Nomination Panel shall distribute the list to Accredited Delegates at least three months before the General Assembly at which a Plenary Administrative Session will take place. The list submitted for voting shall contain both the candidates proposed by the Nomination Panel and the names of all other nominees submitted.
- 4.6 Voting for the election of Bureau Officers shall be by secret ballot. The President shall select two electoral officers from among the participants at the Plenary Administrative Session to oversee and compile the votes. The electoral officers shall not be members of the Bureau or members of the Nomination Panel nor candidates for the election.

- 4.7 Candidates who obtain a simple majority of votes shall be elected. If no candidate receives a majority of votes for a specific office, the two candidates receiving the most votes shall be named and a second vote shall be held. In the case of a tie in the second round the President shall decide.

By-law 5; Plenary Administrative Sessions

5.1 Attendance

5.1 a Plenary Administrative Sessions shall be open to all scientific participants at IACS Assemblies and to the general public.

5.1 b Participants who are Accredited Delegates of IUGG Adhering Bodies may vote on administrative and financial issues in accordance with the Statutes and By-laws. All other participants may have voice but may vote only on scientific issues.

5.1 c An Accredited Delegate may designate another participant from that country to be his or her representative at all or part of a Plenary Administrative Session provided that the Secretary General is informed in writing prior to the Plenary Administrative Session at which the designated representative is to act.

5.1 d A session attendee who is not a participant at the Assembly shall have voice only with permission of the President.

5.1 e The President may, on his or her initiative or at the request of an Accredited Delegate, invite individuals such as representatives of relevant scientific bodies to attend a Plenary Administrative Session in an advisory capacity.

5.2 Agendas

5.2 a A provisional agenda for a Plenary Administrative Session shall be prepared by the Secretary General and circulated to IACS Accredited Delegates, Correspondents and Representatives at least two months prior to the opening of an Assembly.

5.2 b The provisional agenda shall comprise all items submitted by Accredited Delegates for discussion at the Plenary Administrative Session together with questions included by the Bureau. Additional agenda items, for which notice has not thus been given, may only be discussed with the consent of the voting members of the Plenary Administrative Session.

By-law 6; Modifications to the By-laws

The By-laws may be modified by a simple majority of votes cast at a Plenary Administrative Session, held during a General Assembly, according to Statute 6.

Glossary: IACS Statutes and By-laws

Accredited Delegate: the Delegate appointed to attend a Plenary Administrative Session of the IACS Assembly by the National Committee of an IUGG Adhering Body. An Accredited Delegate may vote on all IACS scientific matters; an Accredited Delegate may also vote on all IACS administrative and financial matters if the IUGG dues of the Adhering Body are paid in accordance with the IUGG Statutes and By-laws.

Adhering Body: As defined in the IUGG Statutes, a single body is any country that represents the geodetic and geophysical activities of that country. Under extraordinary circumstances, there may be more than one Adhering Body for a country. Each Adhering Body forms a Committee for Geodesy and Geophysics known as an IUGG National Committee as specified in the IUGG By-laws.

Assembly: an ordinary General Assembly, an extraordinary General Assembly, or a Scientific Assembly of IACS.

(The) Association: IACS

(The) Bureau: the officers elected by a Plenary Administrative Session of an IACS General Assembly.

(The) By-laws: the By-laws of IACS.

Correspondent: the person named by an IUGG National Committee to serve as a liaison between the National Committee and IACS.

Divisions: The primary scientific components of IACS, named in By-law 1.

Extraordinary General Assembly: a General Assembly of IACS called by the President according to Statute 3.4

General Assembly (of IACS): an ordinary General Assembly or an extraordinary General Assembly of IACS.

IACS: the International Association of Cryospheric Sciences.

ICSU: the International Council for Science (previously called the International Council of Scientific Unions).

IUGG: the International Union of Geodesy and Geophysics.

IUGG Council: the Council of the Union as defined in the IUGG Statutes.

IUGG Executive Committee: the Executive Committee of the Union as defined in the IUGG Statutes.

IUGG General Assembly: the Assembly of accredited Delegates of the Union as defined in the IUGG Statutes.

IUGG National Committee: see 'Adhering Body'.

Nominating Panel: the committee appointed by the Bureau to solicit candidates and provide nominations for the election of Bureau Officers, to the Plenary Administrative Session.

Ordinary General Assembly (of IACS): an Assembly of IACS normally held in conjunction with an ordinary General Assembly of IUGG (i.e., every 4 years).

Period: the interval between the end of one ordinary General Assembly of IACS and the end of the next ordinary General Assembly of IACS.

Plenary Administrative Session: a formal meeting of IACS Bureau, Accredited Delegates, and *bona fide* scientific participants at IACS Assemblies. It is open to the public.

Representatives: scientists that are designated by the Bureau as liaisons to the cryospheric scientific community in their countries

Scientific Assembly (of IACS): an Assembly of IACS normally held between ordinary General Assemblies.

(The) Statutes: the Statutes of IACS.

The 'Proposed Statutes and By-laws of the International Association of Cryospheric Sciences' were prepared under the supervision of the Bureau of the IUGG Commission for the Cryospheric Sciences (UCCS). The texts were drawn up by H.Gerald Jones of the UCCS Bureau and JoAnn C. Joselyn, Secretary General of IUGG, ably assisted by UCCS Bureau Members Georg Kaser, Peter Jansson, Manfred A. Lang and Julian Dowdeswell.

The French translation of the above proposed Statutes and By-laws ('Projet de statuts de l'Association internationale des sciences cryospheriques, AISC') is the work of Linda S. Jones, B.A., Traductrice.

projet de
Statuts de l'Association Internationale des Sciences Cryosphériques (AISC)

1. Objectifs de l'Association

- a) promouvoir l'étude de la cryosphère de la Terre et des autres corps du système solaire, ainsi que l'étude des processus physiques qui y sont liés;
- b) encourager la recherche en sciences cryosphériques au moyen de la collaboration et de la coopération entre les personnes, les instituts et les programmes de recherche, à la fois sur le plan national et international;
- c) favoriser, à l'échelle internationale, la discussion et la publication des résultats des recherches sur les structures et les processus cryosphériques;
- d) promouvoir la diffusion des connaissances et la sensibilisation de la population relativement à la cryosphère;
- e) faciliter la normalisation des mesures et la cueillette des données relatives aux systèmes cryosphériques, ainsi que l'analyse, l'archivage et la publication de ces données;
- f) promouvoir les activités scientifiques de tout service permanent relevant de l'AISC et soumis à la surveillance scientifique de l'Association.

2. Composition de l'Association

- 2.1 L'Association est constituée d'un Bureau et d'autres groupements constitutifs visés dans les règlements de l'Association.
- 2.2 Les membres de l'Association sont des personnes qui mènent des recherches scientifiques sur la cryosphère ou qui contribuent d'autre façon aux objectifs de l'Association. Sont membres les personnes suivantes :
 - a) les dirigeants élus de l'Association (le Bureau);
 - b) les Correspondants de l'Association nommés par les Comités nationaux des Organismes adhérents de l'Union Géodésique et Géophysique Internationale (UGGI);
 - c) les Délégués accrédités par les Organismes adhérents de l'UGGI appelés à assister aux sessions administratives plénières;
 - d) les Représentants désignés par le Bureau pour maintenir le contact avec la communauté des chercheurs en sciences cryosphériques dans leurs pays;
 - e) toute autre personne engagée dans la recherche cryosphérique ou contribuant d'autre façon aux objectifs de l'Association.
- 2.3 Les travaux de l'Association sont dirigés par la session administrative plénière, qui doit être convoquée au moins une fois lors de chaque Assemblée générale de l'AISC et à laquelle participent les membres de l'Association. Au moins un tiers des voix des Délégués représentant les Organismes adhérents de l'UGGI dotés du droit de vote est requis pour valider une décision. Les Délégués qui ne sont pas présents peuvent, pour toute question mise aux voix, transmettre leur vote de la façon prévue à l'article 2.5 des présents statuts.
- 2.4 Les travaux de l'Association portent sur des questions de nature scientifique, administrative et financière. Avant une session administrative plénière, il revient au Président de déterminer la nature de chaque question à l'ordre du jour et de décider s'il est possible de voter par correspondance.

- 2.4 a) Pour les questions de nature scientifique, tous les participants scientifiques disposent d'une voix.
- 2.4 b) Pour les questions administratives, y compris l'élection des membres du Bureau, seuls les Délégués accrédités par les Organismes adhérents de l'UGGI qui sont membres en règle (dont la cotisation a été acquittée) ont droit de vote; chaque Délégué dispose d'une voix et ne peut représenter qu'un seul Organisme adhérent.
- 2.4 c) Pour les questions financières, seuls les Délégués accrédités par les Organismes adhérents de l'UGGI qui sont membres en règle (dont la cotisation a été acquittée) ont droit de vote, chaque Délégué disposant du nombre de voix correspondant à celui de la catégorie dont fait partie son Organisme adhérent en tant que membre.
- 2.5 Un Organisme adhérent disposant du droit de vote qui n'est pas représenté par un Délégué à une session administrative plénière peut voter par correspondance sur toute question mise aux voix, au moyen de la poste, du télécopieur ou du courrier électronique, si les conditions suivantes sont respectées :
- a) la question est clairement définie dans l'ordre du jour définitif communiqué à l'avance aux membres conformément aux règlements;
 - b) le fond de la question n'a pas été modifié;
 - c) le vote est parvenu au Secrétaire général avant la réunion.
- 2.6 Les décisions sur les questions mises aux voix, à l'exception des modifications apportées aux statuts, sont prises à la majorité simple. La majorité simple est déterminée par la proportion des votes positifs par rapport à la somme des votes positifs et négatifs, y compris les votes par correspondance et sans prendre en compte les abstentions. En cas d'égalité des voix, le Président a voix prépondérante.
- 2.7 La session administrative plénière peut adopter et modifier les règlements portant sur les composantes scientifiques de l'Association (Divisions).
- 2.8 Le Bureau
- 2.8 a) Le Bureau est constitué par le Président, le Président désigné ou le Président sortant, trois Vice-Présidents, le Secrétaire général et les Responsables de Divisions. Le Président sortant demeure membre du Bureau au cours de la période comprise entre la fin de son mandat et l'élection d'un nouveau Président désigné. Dans le but de maintenir la continuité, les mandats du Président, du Président désigné et du Président sortant sont échelonnés. Ainsi, le mandat du Président, qui est de quatre ans, se partage en deux périodes : durant les deux premières années du mandat du Président en fonction, le Président sortant est membre du Bureau, et durant les deux dernières années de ce mandat, le Président désigné est membre du Bureau. Le Président désigné devient ensuite Président lors de l'Assemblée scientifique de l'AISC, tenue approximativement à mi-chemin entre deux Assemblées générales de l'UGGI.
- 2.8 b) Tous les membres du Bureau, à l'exception du Président en fonction, sont élus par la session administrative plénière d'une Assemblée générale de l'UGGI, conformément aux statuts et règlements.
- 2.8 c) Si une vacance survient parmi les membres du Bureau, une personne est nommée par les membres restants du Bureau pour combler le poste jusqu'aux

- élections suivantes. L'éligibilité de la personne ainsi mandatée n'est pas modifiée par cette nomination. Si le poste de Président devient vacant, le Président désigné assume la charge de Président. S'il n'y a pas de Président désigné, le Bureau doit nommer l'un des trois Vice-Présidents pour que celui-ci agisse à titre de Président.
- 2.9 Le Bureau peut établir des groupes permanents dotés d'attributions déterminées.
- 2.10 Le Bureau peut proposer à une session administrative plénière de nommer certaines personnes ayant contribué de façon exceptionnelle à l'AISC à titre de « membres honoraires de l'AISC ».
- 2.11 L'Association peut créer des organismes conjoints en collaboration avec d'autres associations de l'UGGI, des composantes d'autres organismes gouvernementaux et organisations scientifiques internationales, comme le Conseil international pour la science (CIUS) et les organisations affiliées aux Nations Unies, pour traiter de sujets d'intérêt commun, et elle peut nommer des responsables et des représentants compétents de l'Association au sein de ces organismes. Dans ses échanges avec d'autres organisations scientifiques, l'AISC n'engage pas l'UGGI, ni n'agit en son nom, à moins d'avoir obtenu au préalable l'autorisation du Comité exécutif de l'UGGI.

3. *Assemblées de l'AISC*

- 3.1 L'AISC tient normalement une Assemblée générale ordinaire à l'occasion de chaque Assemblée générale de l'UGGI.
- 3.2 Pour l'application des statuts, le temps écoulé entre la clôture de deux Assemblées générales consécutives est désigné sous le terme « Période ».
- 3.3 L'AISC peut tenir une Assemblée scientifique entre deux Assemblées générales ordinaires, conformément aux règlements de l'UGGI.
- 3.4 Une Assemblée générale extraordinaire de l'AISC peut être convoquée par le Président avec l'approbation du Bureau, et elle doit être convoquée lorsque au moins un tiers des Organismes adhérents de l'UGGI ayant le droit de vote en fait la demande. Une telle Assemblée générale extraordinaire doit être tenue au plus tard neuf mois après la réception de la demande. Une Assemblée générale extraordinaire dispose des mêmes pouvoirs qu'une Assemblée générale ordinaire et est soumise aux mêmes règles.
- 3.5 Le Secrétaire général doit transmettre aux Correspondants et aux Représentants de l'AISC, au moins neuf mois à l'avance, un avis précisant la date et le lieu de la prochaine Assemblée générale ordinaire ou Assemblée scientifique. La période de préavis pour une Assemblée générale extraordinaire est de quatre mois.
- 3.6 Entre deux Assemblées, la responsabilité de la direction de l'Association est dévolue au Bureau, qui gère les affaires de l'Association conformément aux présents statuts et règlements et aux décisions de la session administrative plénière précédente.

4. *Dissolution de l'Association*

En cas de dissolution de l'Association, ses avoirs financiers doivent revenir à l'UGGI pour être utilisés à des fins scientifiques et pédagogiques.

5. Langues

Les présents statuts ont été rédigés dans les langues officielles de l'UGGI. En cas de problème d'interprétation, le texte anglais fait autorité.

6. Adoption et modification des statuts

- 6.1 Les statuts de l'Association doivent être approuvés par le Conseil de l'UGGI lors d'une Assemblée générale et entrent en vigueur à la clôture de la réunion du Conseil de cette Assemblée.
- 6.2 Tout membre du Bureau de l'AISC, Correspondant de l'AISC ou Délégué accrédité d'un Organisme adhérent de l'UGGI auprès d'une session administrative plénière de l'AISC peut proposer une modification aux présents statuts. Toute proposition doit parvenir au Secrétaire général au moins six mois avant la date fixée pour l'Assemblée générale au cours de laquelle elle doit être examinée. Le Secrétaire général doit aviser tous les Correspondants de l'AISC et les Délégués accrédités, au moins deux mois avant la date fixée pour l'Assemblée générale, de toutes les propositions de modifications reçues.
- 6.3 Les modifications ne peuvent être adoptées qu'avec l'assentiment d'au moins la majorité des deux tiers des voix exprimées par les Délégués accrédités à une session administrative plénière réunie lors d'une Assemblée générale, et doivent également être approuvées par le Conseil de l'UGGI. La majorité des deux tiers est déterminée par la proportion des votes positifs par rapport à la somme des votes positifs et négatifs, y compris les votes par correspondance et sans prendre en compte les abstentions.
- 6.4 Les modifications apportées aux présents statuts entrent en vigueur à la clôture de l'Assemblée générale au cours de laquelle elles ont été adoptées.

Règlements de l'Association Internationale des Sciences Cryosphériques

1. Divisions

- 1.1 Les composantes scientifiques de l'Association sont formées en Divisions, comme suit :
 - Division I : Neige et avalanches
 - Division II : Glaciers continentaux et calottes glaciaires
 - Division III : Glace des eaux douces et marines
 - Division IV : Cryosphère, atmosphère et climat
 - Division V : Glaces planétaires et autres glaces du système solaire
- 1.2 Le rôle des Divisions est de faciliter la réalisation des objectifs scientifiques de l'Association en assurant la coordination de recherches scientifiques pertinentes, l'organisation de réunions scientifiques et la promotion d'échanges d'informations et de données.
- 1.3 Chaque Division doit définir son rôle, sa composition et son mode de fonctionnement.
- 1.4 Chaque Division est représentée au Bureau de l'AISC par une personne élue au poste de Responsable de Division.
- 1.5 Les Divisions peuvent créer des groupes de travail dotés d'attributions déterminées.
- 1.6 Le rôle et la portée des activités de chaque Division sont examinés de façon périodique par le Bureau.

2. Administration de l'AISC

- 2.1 Le Bureau se réunit au moins deux fois lors de chaque Assemblée et tient au moins une réunion supplémentaire entre deux Assemblées générales ordinaires.
- 2.2 Le Bureau se réunit sur convocation du Président, qui établit l'ordre du jour en collaboration avec le Secrétaire général.
- 2.3 Le quorum à une réunion du Bureau de l'AISC est constitué de la majorité des membres, dont le Président ou le Président désigné, le Secrétaire général et au moins un des Vice-Présidents.
- 2.4 Le Président peut convier des représentants d'organisations scientifiques ou des personnes individuelles à assister à une réunion du Bureau à titre consultatif.

3. Dirigeants

- 3.1 Président
 - 3.1 a) Le Président est élu pour une Période et ne peut être réélu à la même fonction. Conformément à l'article 2.8a des présents statuts, le mandat du Président commence à l'Assemblée de l'AISC tenue approximativement à mi-chemin entre deux Assemblées générales de l'UGGI.
 - 3.1 b) Le Président assume les fonctions suivantes :
 - i) il représente l'AISC au Comité exécutif de l'UGGI et à d'autres réunions, conférences ou événements où une représentation officielle est requise ou indiquée;
 - ii) il convoque les sessions administratives plénières et les réunions du Bureau, et préside ces réunions;

- iii) il établit l'ordre du jour des réunions du Bureau et le diffuse aux membres du Bureau;
 - iv) il présente un rapport sur les travaux de l'Association à une session administrative plénière lors de chaque Assemblée générale;
 - v) il choisit le président de chaque groupe permanent établi conformément aux statuts;
 - vi) il choisit, au nom du Bureau, les personnes « ès qualités » qui maintiendront le contact entre le Bureau et d'autres organisations et programmes scientifiques suivant des attributions déterminées.
- 3.1 c) En l'absence du Président, le Président désigné agit à titre de Président, conformément aux statuts et règlements. S'il n'y a pas de Président désigné, le Bureau doit nommer l'un des Vice-Présidents pour que celui-ci agisse à titre de Président, conformément aux statuts et règlements.
- 3.2 Vice-Présidents
- 3.2 a) Les Vice-Présidents sont élus pour une Période et peuvent être réélus une fois.
- 3.2 b) Les Vice-Présidents assument les fonctions suivantes :
- i) ils représentent les intérêts de l'ensemble des chercheurs en sciences cryosphériques;
 - ii) ils conseillent le Bureau relativement aux activités de l'AISC;
 - iii) ils secondent le Président dans la poursuite des objectifs de l'Association au sein de l'UGGI et de la communauté scientifique internationale.
- 3.3 Secrétaire général
- 3.3 a) Le Secrétaire général est élu pour une Période et peut être réélu pour deux Périodes consécutives.
- 3.3 b) Le Secrétaire général assume les fonctions suivantes :
- i) il seconde le Bureau dans la gestion des affaires administratives et scientifiques de l'Association, s'occupe de la correspondance, tient les archives de l'Association et voit à leur conservation;
 - ii) il organise les réunions du Bureau, seconde le Président dans l'établissement de l'ordre du jour des réunions du Bureau, et rédige et diffuse le procès-verbal de ces réunions;
 - iii) il organise les Assemblées conformément aux instructions du Bureau, établit le programme de chaque Assemblée et voit à sa publication;
 - iv) il sollicite et prend en note le nom des Délégués accrédités qui seront présents à chaque session administrative plénière, établit et diffuse l'ordre du jour, prépare les bulletins de vote et prend les dispositions nécessaires pour le dépouillement des voix, et rédige et diffuse le procès-verbal de chaque session;
 - v) il a la responsabilité des fonds alloués à l'Association par l'UGGI ou provenant de toute autre source; il les reçoit et les répartit conformément aux décisions des sessions administratives plénières ou selon les instructions du Bureau; il tient les comptes de tous les reçus et des sorties de fonds, et après leur vérification par un comptable qualifié, soumet ces comptes à l'approbation du Bureau et les présente à une session administrative plénière lors de chaque Assemblée générale;

- vi) à des fins de communication, il tient à jour la liste des membres de l'AISC, dont les Correspondants des Comités nationaux UGGI et les Représentants de l'AISC;
 - vii) il publie un bulletin interne de l'Association (*IACS News*, par exemple) contenant des renseignements d'intérêt général pour l'Association;
 - viii) il assume toute autre fonction que lui confie le Président ou le Bureau.
- 3.3 c) Le Bureau peut, à sa discrétion, nommer un Secrétaire général adjoint.
- 3.4 Responsables de Division
- 3.4 a) Les Responsables de Division sont nommés pour une Période, mais peuvent être réélus pour deux Périodes supplémentaires.
- 3.4 b) Les Responsables de Division assument les fonctions suivantes :
- i) ils font la promotion des intérêts de leurs Divisions respectives en participant aux symposiums, conférences, ateliers et autres activités approuvés par le Bureau;
 - ii) ils choisissent le président de chaque groupe de travail établi par la Division, conformément aux règlements;
 - iii) ils prêtent leur assistance au Bureau dans la poursuite des objectifs de l'Association, conformément aux statuts et règlements.
- 3.5 Nul ne peut être réélu à quelque poste que ce soit au Bureau de l'AISC s'il a été membre du Bureau pendant quatre Périodes.

4. *Nominations et élections au Bureau*

- 4.1 Au moins dix mois avant une Assemblée générale de l'UGGI, le Bureau établit un comité des candidatures composé d'un président et d'au moins deux autres membres. Ce comité est chargé de recevoir et d'étudier les propositions de candidatures et de préparer une liste de candidats pour chaque poste à pourvoir en recherchant une représentation géographique et professionnelle équilibrée. Les membres du Bureau ne peuvent être nommés au comité des candidatures.
- 4.2 Au moins neuf mois avant une Assemblée générale de l'UGGI, le Secrétaire général sollicite les candidatures pour les postes à pourvoir, qui doivent parvenir au président du comité des candidatures au plus tard six mois avant la tenue de l'Assemblée générale. Les candidats doivent venir de pays représentés par un Organisme adhérent de l'UGGI qui est membre en règle (dont la cotisation a été acquittée).
- 4.3 Chaque candidature à un poste doit être accompagnée d'un curriculum vitae faisant état de la compétence du candidat pour le poste auquel il est présenté. Une déclaration signée témoignant de la volonté de la personne de se porter candidat doit également être fournie. Une candidature n'est recevable que si elle est accompagnée du curriculum vitae et de la déclaration.
- 4.4 Un candidat peut postuler à plus d'un poste, sauf s'il sollicite le poste de Président désigné, ce dernier ne pouvant prétendre à aucun autre poste au sein de l'Association.
- 4.5 La liste des candidats doit normalement comprendre plus d'un nom pour chaque poste à pourvoir. Le président du comité des candidatures doit diffuser la liste des candidatures auprès des Délégués accrédités de la session administrative plénière au moins trois mois avant une Assemblée générale de l'UGGI. La liste soumise aux voix doit comprendre le nom des candidats retenus par le comité des candidatures et celui de tous les autres candidats proposés.

- 4.6 L'élection des dirigeants du Bureau se fait au scrutin secret. Le Président choisit deux scrutateurs parmi les participants à la session administrative plénière, qui seront chargés de la surveillance du scrutin et de la compilation des votes. Les scrutateurs ne doivent pas être membres du Bureau ou du comité des candidatures et ne peuvent pas être candidats aux élections.
- 4.7 Les candidats ayant obtenu la majorité simple des voix sont élus. Si aucun candidat n'obtient la majorité des voix pour un poste en particulier, les deux candidats ayant obtenu le plus grand nombre de votes sont nommés et un second tour de scrutin est tenu. En cas d'égalité des voix au second tour de scrutin, le Président a voix prépondérante.

5. Sessions administratives plénières

5.1 Participation

- 5.1 a) Les sessions administratives plénières sont ouvertes à tous les participants scientifiques présents aux Assemblées générales de l'AISC. Elles sont également ouvertes au grand public.
- 5.1 b) Les participants accrédités par un Organisme adhérent de l'UGGI (Délégués accrédités) peuvent voter sur des questions administratives et financières, conformément aux statuts et règlements. Tous les autres participants peuvent se faire entendre, mais ne peuvent voter que sur les questions de nature scientifique.
- 5.1 c) Un Délégué accrédité peut désigner un autre participant du même pays pour le représenter à une session administrative plénière, ou à une partie de celle-ci, pourvu que le Secrétaire général en ait été avisé par écrit avant la session administrative plénière à laquelle doit se présenter le représentant désigné.
- 5.1 d) Une personne qui assiste à une session mais qui n'est pas inscrite comme participant à l'Assemblée ne peut se faire entendre qu'avec la permission du Président.
- 5.1 e) Le Président peut, de sa propre initiative ou à la demande d'un Délégué accrédité, convier certaines personnes, notamment des représentants d'organisations scientifiques compétentes, à participer à une session administrative plénière à titre consultatif.

5.2 Ordre du jour

- 5.2 a) Le Secrétaire général établit l'ordre du jour provisoire de la session administrative plénière et le diffuse auprès des Délégués accrédités, Correspondants et Représentants de l'AISC au moins deux mois avant l'ouverture d'une Assemblée.
- 5.2 b) L'ordre du jour provisoire doit comprendre tous les articles présentés par les Délégués accrédités de l'AISC pour faire l'objet de débats à la session administrative plénière, ainsi que les questions soumises par le Bureau. Les articles supplémentaires inscrits à l'ordre du jour pour lesquels aucun avis n'a été donné ne peuvent faire l'objet de débats qu'avec l'assentiment des membres votants de la session administrative plénière.

6. Modification des règlements

Les règlements peuvent être modifiés à la majorité simple des voix exprimées à une session administrative plénière tenue lors d'une Assemblée générale, conformément à l'article 6 des présents statuts.

Glossaire des statuts et règlements de l'AISC

AISC : Association Internationale des Sciences Cryosphériques.

Assemblée : Assemblée générale ordinaire, Assemblée générale extraordinaire ou Assemblée scientifique de l'AISC.

Assemblée générale (de l'AISC) : Assemblée générale ordinaire ou Assemblée générale extraordinaire de l'AISC.

Assemblée générale de l'UGGI : Assemblée des Délégués accrédités de l'Union Géodésique et Géophysique Internationale, telle que définie dans les statuts de l'UGGI.

Assemblée générale extraordinaire : Assemblée générale de l'AISC convoquée par le Président conformément à l'article 3.4 des statuts.

Assemblée générale ordinaire (de l'AISC) : Assemblée de l'AISC normalement réunie à l'occasion d'une Assemblée générale ordinaire de l'UGGI (soit tous les quatre ans).

Assemblée scientifique (de l'AISC) : Assemblée de l'AISC normalement réunie entre deux Assemblées générales ordinaires.

Association (l') : l' Association Internationale des Sciences Cryosphériques (AISC).

Bureau : les dirigeants élus par une session administrative plénière d'une Assemblée générale de l'AISC.

CIUS : Conseil international pour la science (autrefois le Conseil international des unions scientifiques).

Comité des candidatures : comité nommé par le Bureau pour solliciter les candidatures en vue de l'élection des dirigeants du Bureau et présenter la liste des candidats à la session administrative plénière.

Comité exécutif de l'UGGI : le Comité exécutif de l'Union Géodésique et Géophysique Internationale, tel que défini dans les statuts de l'UGGI.

Comité national UGGI : voir Organisme adhérent.

Conseil de l'UGGI : Conseil de l'Union Géodésique et Géophysique Internationale, tel que défini dans les statuts de l'UGGI.

Correspondant : personne nommée par le Comité national d'un Organisme adhérent de l'UGGI pour maintenir le contact entre le Comité national et l'AISC.

Délégué accrédité : délégué nommé par le Comité national d'un Organisme adhérent de l'UGGI pour assister à la session administrative plénière d'une Assemblée de l'AISC. Les Délégués accrédités sont habilités à voter sur toute question de nature scientifique touchant l'AISC ainsi que sur les questions administratives et financières, pourvu que la cotisation due à l'UGGI par l'Organisme adhérent ait été acquittée conformément aux statuts et règlements de l'UGGI.

Divisions : composantes scientifiques constitutives de l'AISC, visées à l'article 1 des règlements.

Organisme adhérent : ainsi qu'il est stipulé dans les statuts de l'UGGI, le seul organisme d'un pays qui représente l'ensemble des activités géodésiques et géophysiques de ce pays. En cas de circonstances exceptionnelles, un pays peut compter plus d'un Organisme adhérent. Chaque Organisme adhérent constitue un Comité national de Géodésie et de Géophysique, désigné par Comité national UGGI dans les règlements de l'UGGI.

Période : temps écoulé entre la clôture de deux Assemblées générales ordinaires de l'AISC consécutives.

Règlements : les règlements de l'AISC.

Représentants : scientifiques désignés par le Bureau pour maintenir le contact avec la communauté des chercheurs en sciences cryosphériques de leur pays.

Session administrative plénière : réunion officielle du Bureau de l'AISC, des Délégués accrédités et des participants scientifiques *bona fide* aux Assemblées de l'AISC. Les sessions administratives plénières sont ouvertes au grand public.

Statuts : les statuts de l'AISC.

UGGI : Union Géodésique et Géophysique Internationale.

Appointment of IACS Officers, 2007-2011

Should the Council approve the establishment of the proposed International Association of Cryospheric Sciences (IACS), the officers for the term 2007-2011 must be appointed by the Council. Thereafter, officers will be elected as specified in the IACS Statutes and By-Laws.

The following slate of officers is therefore presented for adoption by the IUGG Council.

President: Georg Kaser (Austria)
President Elect: Ian Allison (Australia)
Vice President: Kumiko Goto-Azuma (Japan)
Vice President: Peter Jansson (Sweden)
Vice President:) to be confirmed
Secretary General: Manfred Lange (Germany)

Head of Division I: "Snow and Avalanches": Charles Fierz (Switzerland)
Head of Division II: "Glaciers and Ice-sheets": Julian Dowdeswell (UK)
Head of Division III: "Marine and Freshwater Ice": Claude Duguay (Canada)
Head of Division IV: "Cryosphere, Atmosphere and Climate": Valérie Masson Delmotte (France)
Head of Division V: "Planetary and other Ices of the Solar System": to be confirmed

Agenda Item #11: Proposals for the 2011 General Assembly



Australian Academy of Science



Dr Jo Ann Joselyn
IUGG Secretary General
CIRES Campus Box 216
University Of Colorado
US-Boulder, Colorado 80309-0216
USA

15th December, 2006

**Re: General Assembly of the International Union of Geodesy and Geophysics
International Congress (IUGG) 2011, Melbourne, Australia**

Dear Dr Joselyn,

On behalf of the Australian and New Zealand scientific communities, the Australian Academy of Science and the Royal Society of New Zealand invite the International Union of Geodesy and Geophysics to hold the 2011 IUGG General Assembly in Melbourne, Australia.

The scientific communities and the governments of both countries fully support this invitation. The holding of such an important and major scientific forum on major issues facing the planet Earth would be of huge benefit not only to the scientists of our two countries, but to all countries of the Asia-Pacific region, and indeed the southern hemisphere.

Australia is an outstanding destination for the IUGG General Assembly. The Australian and New Zealand scientific communities have formed an experienced steering committee to manage the bid. Despite the relatively small size, the Australian and New Zealand earth science community is very active, undertakes international level research across all of the disciplines of the member associations of the IUGG, and plays a prominent role in the earth sciences internationally. The Australian and New Zealand communities rely on strong international links to maintain the high standards of research undertaken in our countries. The opportunity to host a major event such as the IUGG General Assembly is highly esteemed, and is important to the ongoing vitality of the earth sciences in our countries, and in the Asia-Pacific region.

Australia has excellent scientific and conference related infrastructure to hold an IUGG General Assembly, including by 2011 a completely new convention centre in Melbourne, with a plenary hall capable of seating 5,000 delegates. Building of this new centre has already commenced. Australia and New Zealand are safe countries and its people have a reputation for their friendliness and welcoming attitude to visitors. We also have many unique tourist attractions that appeal to international convention delegates. International flights from all continents fly to Australia daily, providing easy access for the whole international scientific community.

We are very excited at the prospect of hosting the IUGG General Assembly in Melbourne, welcoming delegates and providing them with an intellectually stimulating and socially memorable IUGG General Assembly in 2011.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Kurt Lambeck', with a long horizontal flourish extending to the right.

Professor Kurt Lambeck,
President, Australian Academy of Science

A handwritten signature in blue ink, appearing to read 'Neville Jordan', with a large loop at the bottom.

Mr Neville Jordan,
President, Royal Society of New Zealand

Professor Ray Cas,
Director, Australian Crustal Research Centre, and
Monash Volcanology Research Group (MONVOLC),
School of Geosciences,
P.O. Box 28E,
Monash University,
Victoria, Australia, 3800
Tel: 61 (0)3 9905 4897
Fax: 61 (0)3 9905 4903
Email: ray.cas@sci.monash.edu.au



MONASH University



Dr Jo Ann Joselyn
IUGG Secretary General
CIRES Campus Box 216
University Of Colorado
US-Boulder, Colorado 80309-0216
USA

11th December, 2006

**Re: General Assembly of the International Union of Geodesy and Geophysics
International Congress (IUGG) 2011, Melbourne Australia**

Dear Dr Joselyn,

On behalf of the Joint Australian and New Zealand 2011 IUGG General Assembly Bid Committee, I invite the International Union for Geodesy and Geophysics to hold the 2011 IUGG General Assembly in Melbourne, Australia.

The scientific communities of both countries strongly endorse this invitation (see enclosed letters of support). It would be a major benefit to the scientists of our two countries, and to all countries of the Asia Pacific region to participate in an international forum that involves the world's leading earth science researchers in discussion of the major

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issues facing the planet Earth. Conversely, for other researchers from elsewhere, understanding the distinctive characteristics of the southern hemisphere is fundamental in understanding the dynamics of the Earth and many of the problems it faces.

Australia is an ideal location for the IUGG General Assembly for many reasons. First, the Australian and New Zealand earth science community is very active in the IUGG science disciplines, and plays a prominent role in the earth sciences internationally. We have many active learned societies, government research and scientific organizations, and universities with major teaching and research programs in the IUGG disciplines. We have formed an experienced committee from both Australia and New Zealand to develop this bid.

Secondly, Melbourne has excellent scientific, conference and social infrastructure, and is one of the truly cosmopolitan cities of the world, well known for its amazingly diverse cultures and cuisine. It is a modern city, with a population of 3.75 million people. This year, building of a completely new convention centre has commenced in Melbourne, and it will be in use in 2008. This new convention centre will have a plenary hall with seating capacity for 5,000 delegates, and all the meeting room needs of an IUGG General Assembly will be available within the one convention centre. The convention centre is located within the central business district of the city of Melbourne, within easy walking distance of many hotels and hostels.

Thirdly, international flights from all continents fly to Melbourne daily, providing easy access for the whole international scientific community to Melbourne. The airport is only 20 minutes by taxi or bus from the convention centre.

Australia and New Zealand are safe countries and its people have a reputation for their friendliness and welcoming attitude to visitors. We also have many unique tourist attractions that appeal to international convention delegates. The uniqueness and contrast in landscapes, climate, flora and fauna between the two countries is striking. Destinations like Ayres Rock and the arid red centre of Australia, the coral reefs of the Great Barrier Reef of Queensland, the Great Ocean Road of Victoria, the volcanic region of the central North Island of New Zealand and the Alps of the South Island of New Zealand are stunning from both tourism and scientific perspectives. The Aboriginal and Maori cultures of our two countries are rich, unique and amazingly different.

G3 2011 IUGG Letter of invit. bid comm.doc

The Australian and New Zealand scientific communities are truly excited at the prospect of welcoming delegates and providing them with an intellectually stimulating and socially memorable experience at the IUGG General Assembly in Melbourne in 2011.

Yours sincerely,

A handwritten signature in blue ink that reads "Ray Cas". The signature is written in a cursive style and is underlined with a horizontal line.

Professor Ray Cas,

Chair, on behalf of the Joint Australian and New Zealand Bid Committee for IUGG 2011.

IUGG XXIII GENERAL ASSEMBLY
Sapporo, Japan, 30 June – 11 July 2003

**Agenda Item # 12 : Reports by Association Presidents /
Rapports des présidents des associations**

The reports contained in this section of the Agenda book are summaries of the four annual reports prepared by each Association during the last quadrennium. Each year, their complete reports are included in IUGG annual report that is submitted to ICSU and posted on the IUGG internet site. Printed copies of the IUGG annual report are also mailed to all Adhering Bodies and National Committees.

The Associations each maintain an internet site; links to these sites are shown on the IUGG index page. The Association web sites are a valuable source of information not only about the Association itself, but also about their scientific disciplines.

During the quadrennium, the activities of the Associations were reported and discussed at the 2004 meeting of the Association Presidents and Secretaries General with the Bureau, and the 2005 Executive Committee meeting. These opportunities for the Association officers to compare challenges and solutions have proved to be most valuable.

Each Association holds a Scientific Assembly approximately 2 years following the IUGG General Assembly. These Assemblies are of a size that permits them to be hosted in developing countries; this has always proved to be beneficial to the scientific endeavours in those countries. The Scientific Assemblies convened during the past quadrennium, are listed below.

| Association | Meeting dates | Location | Participants |
|-----------------------------------|---------------|------------------------|--------------|
| • IAG and IAPSO (joint) | 2005 | Cairns, Australia | 724 |
| • IAGA | 2005 | Toulouse, France | 886 |
| • IAHS | 2005 | Foz de Iguassu, Brazil | 459 |
| • IAMAS | 2005 | Beijing, China | 840 |
| • IASPEI | 2005 | Santiago, Chile | 360 |
| • IAVCEI | 2004 | Pucon, Chile | 936 |

In addition, the Associations organized the scientific programme for the 24th General Assembly and managed the distribution of travel assistance grants. The Scientific Programme Committee met in Perugia, Italy in 2005 and in March 2007, but carried out much of the work via the Internet.

Agenda Item 12a:

International Association of Geodesy (IAG) - Quadrennium Report Association Internationale de Géodésie (AIG) – Rapport du Quadrennium

(1) Central Bureau activities.

Since the adoption of the new statutes and by-laws at the Sapporo General Assembly, IAG has both, National Members and individual (personal) members. A main function of the Central Bureau is now related to the contact with these personal members. The Central Bureau maintains and updates a database of addresses of individual members and it keeps track of their membership fees.. It maintains the accounts related to the IUGG allocation.

The function of the Central Bureau has changed due to the establishment of a Communication and Outreach Branch (see section (5)), which since November 2003 publishes a monthly Newsletter, maintains the IAG home-page (<http://www.iag-aig.org>) and promotes IAG and geodesy as such.

The Geodesists Handbook, 2004, edited by Dr. O.B. Andersen was published. (Journal of Geodesy, Vol. 77, no. 10-11, April 2004).

The Central Bureau has prepared the EC meetings and it participated in the IUGG EC meeting.

(2) The Executive Committee (EC).

At a meeting of the IAG Council in September 2001 new statutes and by-laws were adopted by the IAG Council. Since 2003 it was a major task of the EC to implement the new structure. This structure is based on the research-oriented Commissions, on the monitoring-oriented IAG Services, and on a new structural element, the Communication and Outreach branch (COB). Furthermore so-called inter-commission committees (ICC's) and one IAG project (see section (7)) have been established.

The EC held several meetings, where the main topic was the implementation of the new IAG structure. The first of these meetings took place on April 11, 2003 in Nice, France, where in addition the IUGG/IAG General Assembly in Sapporo was prepared. The EC prepared the establishment of three ICC's, namely on Standards, on Planetary geodesy and on Theory, and it initiated the IAG Project called "Integrated Global Geodetic Observing System" (IGGOS), later on renamed as GGOS (for more information see section (7)).

The EC met 2004 in Nice, in 2005 in Cairns, Australia, in connection with the IAG Scientific Assembly, and 2006 in Vienna, Austria, in connection with the EGU General Assembly.

(3) IUGG/IAG General Assembly, July 2003, Sapporo, Japan.

The IAG General Assembly 2003 in Sapporo was considered to be too long, which is why IAG reduced its own program to only 4+4 weekdays. This program covered presentations of reports and scientific papers for the five IAG Sections in the seven first days; the last day was devoted to a symposium on IGGOS. The section symposia were reviewed and have been published in the IAG Symposium Series by the Springer Verlag. All the national reports had been published before the General Assembly in the “Travaux de l’Association Internationale de Géodésie”, on a CD-ROM.

The national reports were distributed at the IAG general assembly. Many of them were available in electronic form. They are now available through links on the IAG homepage.

During the IAG General Assembly the Council had 2 meetings. The auditors reported on the IAG accounts, and the new budget was approved. The council also adopted a number of resolutions, which subsequently were adopted as general IUGG resolutions. The council also approved the establishment of the above mentioned ICCT’s and strongly endorsed the IGGOS project. The council did not conduct any elections, because the elections had been performed prior to the general assembly by e-mail ballot.

The outcome of the elections and of the essential decisions of the administrative meetings have been published in the Geodesists Handbook 2004,

(4) Individual membership.

With the new statutes and by-laws individual membership has been introduced. The individual members receive a newsletter and they have various other benefits. The membership fee is USD 50, with a discount of 1 year, if the membership fee is paid for 3 (4) years. Institutions may pay the institutional membership fee for a number of coworkers. Students and retired colleagues do not have to pay the membership fee, provided that they were able to receive the IAG newsletter by e-mail. By the end of the year 2006 260 scientists had signed up as IAG members, of which about 150 paid the regular membership fee.

(5) Communication and Outreach.

Based on two responses to a call for participation the EC decided to establish the new COB under the leadership of Prof. Joseph Adam at the Budapest University of Technology and Economics. The COB has established a modern web-page: <http://www.iag-aig.org> and prepares material for the promotion of IAG activities. Part of the information is password-protected and only available to the individual members.

The following outreach workshops and schools were organized:

IAG-IASPEI Joint Capacity Building Workshop, 17-23 January 2005, Miramare-Trieste, Italy.

The “School on the determination and use of the geoid”, was conducted first in Budapest, Hungary in February 2005 and then in June 2006 in Copenhagen, Denmark.

A Geoid School for our colleagues of French tongue took place 27 June –July 1 in France.

A “Summer School on Microgravimetric methods: static and dynamic aspects” took place 23-28 October 2005 in Lanzarote, Canary Islands, Spain.

(6) Coordination with organizations in the field of surveying, cartography and remote sensing.

The JB-GIS (Joint Board of the Geospatial Information Societies) meets annually on the occasion of the general assembly of one of the participating organizations (IAG, FIG, ISPRS, ICA, IHO, IMTA). The IAG president participated in these annual meetings in the time period 2003-2006 (2003 in Durban, South Africa; 2004 in Istanbul, Turkey; 2005 in Cairo, Egypt, and 2006 in Vienna, Austria).

(7) GGOS Activities

GGOS stands for Global Geodetic Observing System. According to the IAG Statutes and ByLaws, this IAG Project is viewed as IAG’s flagship, focusing the work of all IAG entities (Commissions, ICCs, Services) to generate IAG’s contribution to the field of Earth Sciences. The GGOS activities were a (if not the) central element of all IAG activities in the 2003-2007 period. The GGOS activities are based on the IUGG Resolution No. 3 taken at the IUGG General Assembly 2003 in Sapporo.

Prof. Christoph Reigber (GFZ, Germany), as Chair, and Prof. Hermann Drewes (DGFI, Germany), as secretary, led the so-called definition phase of the GGOS project from 2003 to 2005 (between the IUGG General Assembly in Sapporo and the IAG Scientific Assembly in Cairns). The result of their work was presented at the IAG Scientific Assembly in Cairns, Australia, in the form of the report “GGOS Implementation Plan”. The document and the associated plan were endorsed by the IAG Executive Committee at its meeting in Cairns. Moreover the IAG EC, appointed Prof. Markus Rothacher (GFZ, Potsdam) as Chair, Prof. Hans-Peter Plag (University of Reno) and Ms. Ruth Neilan (Director, IGS (=International GNSS Service) Central Bureau) as Co-Chairs of GGOS project for the next four years, a time period which is now called the GGOS implementation phase. The IAG Services, the IAG Commissions, and the ICC on Theory are now developing the strategy document “the Global Geodetic Observing System: Meeting the requirements of a global society on a changing planet in 2020”. This document contains the GGOS specifications, in particular the underlying concepts, the conventions, the required infrastructure, and the key products; it lists the participating IAG services and the required new entities (services or bureaus). The document shall be presented to the IAG EC at its first meeting at the IAG/IUGG General Assembly in Perugia and provide the basis for the future development of GGOS.

(8) Participation of IAG in the Group on Earth Observation, GEO.

GEO was established by a declaration of 33 nations plus the European Commission during the Earth Observation Summit held in Washington, DC, on July 31, 2003. Since May 2004 IAG is a so-called participating organization in GEO. The IAG EC decided that GGOS should act on behalf of IAG in the GEO. Since 2004 IAG has been very active in GEO, in particular with respect to the development of the GEOSS (System of

Systems) and the 10-Year Implementation plan. The GGOS Chair is coordinating IAG's work in GEO.

(9). IAG organized or sponsored Meetings:

10 Years IGS Workshop and Symposium, March 1-5, 2004, Berne, Switzerland.

Second International GOCE User Workshop, "GOCE, The Geoid and Oceanography", ESA-ESRIN, Frascati (Rome), Italy, 8-9-10 March 2004. (IAG Sponsored).

14th (2004) EUREF Symposium of the IAG Sub-commission for Europe, 2-5 June 2004, Bratislava, Slovakia and the 15th EUREF Symposium, 1-4 June 2005 in Vienna, Austria. The EUREF 16 Symposium, June 14-17, 2006. Riga, Latvia.

1st FIG International Symposium on Engineering Surveys for Construction Works and Structural Engineering, Nottingham 28 June – 1 July, 2004. (IAG Sponsored).

15th International Symposium on Earth Tides, 2-6 August 2004, Ottawa, Canada.

Gravity, Geoid and Space Missions – GGSM2004, 30 August – 3 September 2004, Porto, Portugal

XII General Assembly of the WEGENER project, 21-23 September 2004, Tangier, Morocco and

XIII Assembly, 4-7 September, 2006, Nice, France.

Int. Workshop on "Deformation and Gravity Change: Indicators of isostasy, tectonics, volcanism and climate change", Lanzarote, Canary Islands, Spain. 2004.

International Symposium on Geodetic Deformation Monitoring, From geophysical to engineering roles, 17-19 March 2005 in Jaen, Spain.

IAG/IAPSO Scientific Assembly "Dynamic Planet 2005", 22-26 August 2005 in Cairns, Australia.

7th Conference on optical 3-D measurements took place 3-5 October 2005 in Vienna, Austria.

3rd IAG Symposium for geodetical and Structural Engineering and 12th FIG Symposium on Deformation Measurements, May 22-14, 2006, Baden, Austria.

VI Hotine-Marussi Symposium of Theoretical and Computational geodesy: Challenge and role of modern geodesy. 29 May – 2 June 2006, Wuhan, PR China.

Int. Workshop "Height systems, geoid and gravity of the Asia-Pacific", June 6-8, 2006, Ulaanbaatar, Mongolia.

Understanding Sea-level rise and variability WCRP Workshop, 6-9 June 2006, Paris, France (IAG Sponsored).

AFREF Technical Workshop, 9-13 July 2006, Cape Town, South Africa.

International Workshop on quality improvement and coastal-land applications of satellite altimetry,
July 21-22, 2006, Beijing, PR China.

“Gravity Field of the Earth” – 1st Int. Symposium of the IGFS, 28 Aug.-1 Sep. 2006, Istanbul, Turkey.

Symposium “Geodetic reference Frames”, GRF2006, 9-13 October 2006, Munich, Germany.

(10). Services.

The International Gravity Field Service (IGFS) has included a new center, the International Center of Global Earth Models (ICGEM). The establishment of a Satellite Radar Altimetry service is in progress in cooperation with IAPSO.

Christian Tcherning
Secretary General, IAG

Restructuring the IAG Statutes and Bylaws – Overview

A. Statutes

- #1 Basic definitions added
- # 5 Responsibilities of the President, the Vice-president, and Secretary-General added
- # 5 Procedure to call Extraordinary Council Meetings added
Minor change to mail-ballot procedure
- # 5 Responsibilities for Operation and Management added

B. Bylaws

- # 1.2 Minor changes to Commissions,
- # 1.2 Minor changes to Sub-components and Joint Sub-components
- # 1.5 Procedure for election of Editorial Board and Editor-in-Chief
- # 1.6 Minor changes to Inter-commission Committees
- # 2.1 Individual members and Candidate members

C. Scope of the work

Besides the specific changes listed in A and B, a major effort was made to restructure both documents. This was done to simplify access to the documents and to clarify certain passages that had caused problems in the past. When comparing the current version of the documents to the restructured one, a large part of the material has been re-arranged without making substantial changes to the content. However, overall readability should have improved considerably.

D. Status of the work

The final documents will be completed by the end of this month. It will contain three columns, one with the restructured text, one with the current text, and a third one with the reasons for the changes made.

2007-02-17 KPS

Agenda Item 12b:
**Quadrennium Report of the International Association of Geomagnetism
and Aeronomy (IAGA)**
**Rapport du Quadrennium de l'Association Internationale de
Géomagnétisme et d'Aéronomie (AIGA)**

Outstanding frontiers of research in geomagnetism and aeronomy in the period 2003-2006 have included understanding of solar processes, solar-terrestrial interactions (including those that influence climate); space weather and its implications for space-based infrastructure and exploration; coupling processes that link aeronomic and geomagnetic phenomena from the fringe of geospace through many steps to the Earth's core; the success of the "Decade of Geopotential Research" in securing continuous satellite mapping of the Earth's magnetic field, culminating in the SWARM mission; geomagnetic precursors and signals associated with earthquakes and volcanoes; progress in understanding the origin and behaviour of the main field through numerical dynamo simulations; greatly improved observation, modelling, and mapping of the field at and near the Earth's surface – used for geophysical exploration and direction-finding; palaeomagnetic contributions to solving geological and tectonic problems; use of mineral magnetic properties to monitor environmental effects; and major advances in instrumentation, data acquisition, and sharing of information and services, often in real-time or near-real time. These research fields cover much, though not all, of the science of the Association. Important applications will hopefully result in the future in terms of improved risk assessments and predictions of catastrophic events.

Assemblies: In 2003 the XXIIIrd IUGG General Assembly in Sapporo took place with a major IAGA involvement (53 IAGA-led symposia, 1601 papers) and in 2005 the Xth IAGA Scientific Assembly was held in Toulouse (61 symposia, 1390 papers). Most of the preparations for the XXIVth IUGG General Assembly to be held in Perugia in July 2007 (57 IAGA-led symposia) have also been made in this period.

Strategic directions for IAGA: a process of determining future priorities for IAGA, involving both young and more experienced scientists, was undertaken during the 2003-2006 period. The changes listed below are examples of the results of this exercise. To make IAGA more attractive to younger scientists, the EC is recommending that the Past-President and second Vice-President positions on the EC be replaced by new, younger members. This change will require acceptance by the IAGA Conference of Delegates at the Perugia General Assembly.

Important decisions by the Conference of Delegates in Toulouse: (1) The duration of future IAGA Assemblies, General as well as Scientific, will be 6 full working days for the scientific programme (generally Monday to Saturday) and one preceding day (Sunday) for administrative meetings. (2) The next IAGA Scientific Assembly will take place in Sopron, Hungary, in late August 2009.

Topical meetings: In the four-year period 2003-2006, IAGA sponsored 22 topical meetings covering large parts of the IAGA science. The IAGA financial contributions amounted to a total of USD 27 000, directed mainly at helping needy scientists attend.

IGY+50 and eGY: The 50-year anniversary of IGY will be celebrated by IUGG and IAGA in Perugia. IAGA is one of the main sponsors of eGY (the Electronic Geophysical Year) and a strong supporter of IHY (International Heliophysical Year). Much effort has gone into preparations for these projects. eGY will be officially launched in Perugia on 7th July 2007. IAGA played a lead role in establishing cooperation and articulating mutual support among the four internal science year initiatives: the International Polar Year (IPY), IUGS's International Year of Planet Earth, IHY, and eGY.

Global Science Information Commons: The UN (three World Summits for the Information Society), GEO/GEOSS, ICSU, CODATA, IUGS, AGU, and many other bodies have a shared vision of a global (geo)science commons that will serve our information and service needs for the future. IAGA, largely through eGY, has lent strong support to these efforts and a link between IUGG, CODATA, and GEOSS.

IAGA medals and awards: IAGA Medals for Outstanding Long Service have been awarded by the IAGA Executive Committee to Raghab Chandra Deka (India) and to Toyohisa Kamei (Japan).

At the IAGA Assembly in Toulouse in 2005, an IAGA Young Scientist Presentation Award was established. The three first awards of this kind were agreed during the fall of 2006: to Anna Khanukhina (Russia), Annika Seppälä (Finland), and Tracy Moffat-Griffin (United Kingdom). The award consists of support to participate in the next IAGA/IUGG Assembly.

To add balance to the small list of IAGA awards, the Executive Committee decided in 2006 to prepare the case for establishing a new medal for outstanding scientific services to IAGA by a scientist who is prominent, and who would not, therefore, qualify for the Long Service Medal.

For the Executive Committee of IAGA
Bengt Hultqvist
Secretary General

Proposed change to the composition of the IAGA Executive Committee

The IAGA Executive Committee (EC) presently comprises 10 persons: President, two Vice-Presidents, Secretary-General, five additional Members, and the retiring President - see IAGA Statute 8 (appended). All except the Secretary General serve for a 4-year period.

The procedure for changing the composition of the EC requires a change to the IAGA Statutes – see Statute 15 appended.

The proposed changes are requested by the IAGA Executive Committee in response to their decision to take action to improve opportunities for IAGA scientists, particularly younger scientists to serve on the EC – the relevant portion of the Beijing EC minutes are appended.

Proposed changes

1. Replace the Past-President position on the EC with an additional new member. The Past President shall be entitled to attend EC meeting, but not entitled to IAGA financial support for this; the Past President may participate in the conduct of EC business, but may not vote.
2. Replace one of the two Vice-President positions on the EC with an additional new member. The single Vice-President appointed shall normally become Present for the following 4-year period, but shall not to be named President-elect so as to allow for an alternative appointment in exceptional circumstances.
3. Limit the time that anyone may serve on the EC to 12 years (three Periods), with the exception of a twice-serving Vice-President.

These changes leave the number of people serving on the EC unchanged.

Reasons for the changes

The purpose of the changes is to allow more officers to serve on the EC without increasing total numbers or costs.

The IAGA EC recognises that

- (a) many capable and distinguished IAGA scientists do not have an opportunity to serve on the EC,
- (b) IAGA would benefit from accessing the services of such scientists, both while they serve on the EC and afterwards,
- (c) serving on the EC enhances the career of a scientist and is a benefit that should be shared widely, and
- (d) measures to reduce the average age of the EC are welcome.
- (e) Increasing the size of the EC increases costs and makes decision making more difficult, so is not an attractive solution. The readily achievable alternative is to cycle officers through the EC more rapidly.

At present, a President is likely to serve for 16 years or longer (four-year terms as a member, Vice-Pres, Pres., and Past-Pres.). Removing the Past-President position on the EC will reduce this period to 12 years and free-up a position on the EC for a new member. Participation by the Past President at EC meetings and in EC business can help continuity and maintain access to the experience of the PP. The EC considers that it is best that the PP does not vote on EC business matters as this tends to perpetuate history.

The reason for having two Vice Presidents appears to be to provide backup in case one of them is indisposed. With modern communications this seems unnecessary. If both the President and Vice-President are indisposed then the EC is able to make a temporary appointment. The benefits of one instead of two V-Ps are

- A new member can be appointed to the EC without increasing costs
- The V-P is the most likely person to become President, so has ample time to prepare for office
- The problem of choosing between two V-Ps for President does not occur.

APPENDIX

IAGA Statute 8: Membership of the Executive Committee

8.1 The Executive Committee shall consist of the President, two Vice-Presidents, the Secretary-General, five additional Members, and the retiring President (ex-officio). Except for the retiring President, all members of the Executive Committee shall be elected by a Conference of Delegates as an administrative matter with voting as stipulated in Statutes 13 and 14.

8.2 The President shall be elected for one Period, and may not be re-elected to the same office. The Vice-Presidents shall be elected for one Period and may be re-elected once. A retiring Vice-President may be elected President. Each of the five additional Members shall be elected for one Period and may be re-elected for successive single Periods, but may not hold office as an additional Member for more than three consecutive Periods. The retiring President is a member ex-officio for one Period. With the exception of the election of the Secretary-General, no person who has served on the Committee for four Periods shall be eligible for further election to any position on the IAGA Executive Committee.

8.3 The Secretary-General shall be elected for eight years and may be re-elected for successive four-year terms.

8.4 The election of the Executive Committee shall normally take place at a Conference of Delegates held at an ordinary General Assembly, with the exception of the Secretary-General who shall normally be elected at a Conference of Delegates held at a Scientific Assembly.

8.5 In the event of any vacancy occurring in the membership of the Executive Committee during a Period, the Executive Committee shall appoint a person to fill the vacancy until the next election. The eligibility for election of a person so appointed shall not be affected by such an appointment. If the vacancy is that of the Presidency, the Executive Committee shall appoint one of the two Vice-Presidents to act as President.

IAGA Statute 15: Modification of the Statutes

15.1 Modifications to these Statutes shall come into force at the close of the General Assembly at which the modifications are adopted, or as otherwise decided by a Conference of Delegates.

15.2 These Statutes may only be modified with the approval of at least a two-thirds majority of Chief Delegates of paying Member Countries present at a Conference of Delegates held during a General Assembly, in accordance with Statutes 6, 13, and 14.

15.3 Only the IAGA National Body of a Member Country may propose a change to these Statutes. Any such proposal must reach the Secretary-General at least four months prior to the announced date of the General Assembly at which it is to be considered. The Secretary-General shall notify all IAGA National Bodies of any proposed change at least two months prior to the announced date of the General Assembly.

Extract from the minutes of the IAGA EC meeting in Beijing, July 2006

“At the initiative of the President the EC discussed in Beijing the need of modifying the composition of the EC in order to bring younger persons into the EC without increasing the total number. After discussion the EC decided to express as its opinion that the position as Past President could be eliminated and the number of Vice-Presidents could be one. In the view of the EC this would introduce no major drawbacks and would have the advantage that two new persons, hopefully younger and representing at present unrepresented sectors of IAGA activities, could be added. The Vice-President should normally take over the Presidency after the sitting President for the next four years.”

Agenda Item #12c:
**Quadrennium Report of the International Association of Hydrological
Sciences (IAHS)**
**Rapport du Quadrennium de l'Association Internationale des Sciences
Hydrologiques (AISH)**

The main activities involving IAHS as a whole have been the IAHS General Assembly (**Sapporo, Japan, 2003**), the IAHS Scientific Assembly (**Foz do Iguacu, Brazil, 2005**) and the preparation of the *Perugia* IAHS General Assembly.

In *Sapporo*, in the framework of the *IUGG General Assembly*, IAHS has been the lead Organization for 9 Symposia and 8 Workshops and co-convened 15 events together with other IUGG Associations. IAHS also contributed to the Union Symposia “*State of the Planet*”. The IAHS Bureau met two times and the nine IAHS Commissions held their Assembly. More than twenty countries participated to the election of the new IAHS Officers. **Arthur Askew** from Australia is the New President-elect and **Pierre Hubert** (France) has been elected as Secretary General. **Louise Heathwaite** (UK), **Xia Jun** (China) and **Chris Leibundgut** (Germany) are the new Vice-Presidents. 45 Officers of the Commissions, including 7 women have also been elected.

The **VIIth Scientific Assembly** has been held in *Foz do Iguacu (Brazil)* from 3 to 9 April 2005, first IAHS Assembly in South America. This Assembly attracted 459 participants from 56 countries. The venue offered by our Brazilian colleagues was perfect from all points of view. On the scientific side 7 Symposia and 7 workshops have been held under the overall theme of “**Freshwater : Sustainability within Uncertainty**”. At the beginning of the Assembly occurred the transfer of Presidency from **Kuni Takeuchi** to **Arthur Askew**, elected two years before in Sapporo.

During the past four years, the IAHS Bureau met in *Sapporo*, Japan (2003), *Paris*, France (2004), *Foz do Iguacu*, Brazil (2005) and again *Paris*, France (2006). It has been decided to hold the IAHS VIIth Scientific Assembly in *Hyderabad* (Andhra Pradesh, India) in September 2007. It will be an event jointly organized with the IAH (International Association of Hydrogeologists). First Inputs for the Scientific Program of this Assembly have been requested from Indian Scientific Bodies and from IAHS Commissions.

An important decision for IAHS has been the approval of the movement to transform the IAHS International Commission for Snow and Ice (ICSI), first into a Union Commission for Cryospheric Sciences (decided in *Boulder*, September 2004), then into a full International Association for Cryospheric Sciences within IUGG, planned to be launched in *Perugia* in July 2007. This transformation gives a happy end to a long standing problem within IAHS. A new IAHS International Commission, the International Commission for Snow and Ice Hydrology (ICSIH), created in *Foz do Iguacu* in 2005, deals with purely Hydrological Snow and Ice matters, in full cooperation with the new Cryospheric IUGG Body.

The *Hydrology 2020* Working Group, launched in *Maastricht* (2001), and led by **Taikan Oki**, has presented the present advancement of his Work in *Sapporo* (2003) and in *Foz do Iguacu* (2005). The Synthesis of the Hydrology 2020 Working Group has been gathered in a Red Book (IAHS Publ. 300) published early 2006 which has been officially

presented during a devoted Symposium held in **Delft**, The Netherlands (June 2006) and during a special session organized during the UNESCO-IHP Council in **Paris** (July 2006).

The **PUB** (Prediction in Ungauged Basins) Working Group has been officially launched during a Meeting held in **Brasilia**, Brazil in November 2002 after a preparatory Meeting held in **Kofu** (Japan) in March of the same year. The development of the initiative has been approved during the **Sapporo** Assembly and his “**Science and Implementation Plan**” has been finalized and published in the 2003 December issue of **Hydrological Sciences Journal**. A first regional meeting has been held in **Paris** (November 2003) and an Australian-Japanese meeting is supposed has been held in **Perth** (Australia) in February 2004, followed by many others like **Predicting Ungauged Streamflow in the Mackenzie River Basin, Today's Techniques & Tomorrow's Solutions** (*Yellow Knife*, Canada, March 2004), **Modelling Hydrological Responses in Ungauged Catchments** (*Osnabrück*, Germany, June 2004), **International IAHS-PUB Workshop on Uncertainty Analysis in Environmental Modeling** (*Menaggio*, Italy, July 2004), **PUB Session on Methodology of Trans-regional Application of Hydrological Models** (*Colombo*, Sri Lanka, November 2004). First led by **Murugesu Sivapalan**, the PUB Working Group is led by **Jeff Mc Donnell** since the **Foz do Iguacu** Assembly and until the **Perugia** Assembly. A Permanent Secretariat has been created, managed by **Saman Weerakoon** and **Vladimir Smatkhin**, hosted by the International Water Management Institute in Colombo (Sri Lanka). This secretariat manages a devoted Web Site and publishes a regular Newsletter.

The International Prize of Hydrology, awarded annually on an individual basis in recognition of an outstanding contribution to the science (A joint IAHS, UNESCO and WMO initiative) has been awarded to **Dr Alan Gustard** (UK) in 2003, **Dr John Rodda** (UK) in 2004, **Pr Gert A. Schultz** (Germany) in 2005 and **Pr W.J. Shuttleworth** (USA) in 2006

The IAHS Tison Award was established in 1982 and aims to promote excellence in research by young hydrologists. The Award is granted for an outstanding paper published by IAHS. In 2003 it has been awarded to **Drs Y. Agata, S. Kanae, T. Oki, T. Saruhashi and D. Yang** (Japan), in 2004 to **Dr F. Chiew** (Australia), in 2005 to **Dr F. Sheng Yue** (China) and in 2006 to **Dr Özgür Ki_i** (Turkey / *Turquie*)

Publication is an important sector of activity for IAHS. This activity is undertaken in the framework of IAHS Press, located in Wallingford (UK) with the generous support of the Centre for Ecology and Hydrology and managed by **Cate Gardner**. IAHS Press publishes **Hydrological Sciences Journal** with 4 issues a Year and now about 12 papers per issue. The Journal is directed by **Z.W. Kundzewicz** (IAHS Editor) assisted since 2006 by **D. Koutsoyannis**. We can notice with satisfaction the continuous increasing of the Impact Factor of our Journal, reaching 1.6 at the level of the best Water related Journals. In the 2003-2006 period IAHS Press also published 32 Red Books which give a general and synthetic view of the IAHS Scientific Activity:

Calibration and Reliability in Groundwater Modelling: A Few Steps Closer to Reality, Edited by *K. Kovar & Z. Hrkal*, IAHS Publication 277.

Hydrology in Mediterranean and Semiarid Regions, Edited by *Eric Servat, Wajdi Najem, Christian Leduc & Ahmed Shakeel*, IAHS Publication 278.

Erosion Prediction in Ungauged Basins (PUBs): Integrating Methods and Techniques, Edited by *Dirk H. de Boer, Wojciech Froehlich, Takahisa Mizuyama & Alain Pietroniro*, IAHS Publication 279.

Water Resources Systems Global Change, Risk Assessment and Water Management, Edited by *Stewart Franks, Günter Blöschl, Michio Kumagai, Katumi Musiaka & Dan Rosbjerg*, IAHS Publications 280 & 281.

Weather Radar Information and Distributed Hydrological Modelling, Edited by *Yasuto Tachikawa, Baxter E. Vieux, Konstantine P. Georgakakos & Eiichi Nakakita*, IAHS Publ. 282.

Erosion and Sediment Transport Measurement in Rivers: Technological and Methodological Advances, Edited by *J. Bogen, T. Fergus & D. E. Walling*, IAHS Publication 283.

World Catalogue of Maximum Observed Floods / Répertoire mondial des crues maximales observées, Compiled by *Reg Herschy*, IAHS Publication 284.

Wastewater Re-use and Groundwater Quality, Edited by *Joop Steenvoorden & Theodore Endreny*, IAHS Publication 285

The Basis of Civilization – Water Science ? Edited by *John C. Rodda & Lucio Ubertini*, IAHS Publ. 286

Scales in Hydrology and Water Management / Echelles en hydrologie et gestion de l'eau, Edited by *Ioulia Tchiguirinskaia, Mike Bonell & Pierre Hubert*, IAHS Publ. 287

Sediment Transfer Through The Fluvial System, Edited by *Valentin Golosov, Vladimir Belyaev & Des E. Walling*, IAHS Publ. 288.

GIS and Remote Sensing in Hydrology, Water Resources and Environment, Edited by *Yangbo Chen, Kaoru Takara, Ian D. Cluckie, & F. Hilaire De Smedt*, IAHS Publ. 289

Northern Research Basins Water Balance, Edited by *Douglas L. Kane & Daqing Yang*, IAHS Publ. 290

Sediment Budgets 1, Edited by *Des E. Walling & Arthur J. Horowitz*, IAHS Publ. 291.

Sediment Budgets 2, Edited by Arthur J. Horowitz & Des E. Walling, IAHS Publ. 292.

Sustainable Water Management Solutions for Large Cities, Edited by Dragan A. Savic, Miguel A. Mariño, Hubert H. G. Savenije & Juan Carlos Bertoni, IAHS Publ. 293.

Dynamics and Biogeochemistry of River Corridors and Wetlands, Edited by Louise Heathwaite, Bruce Webb, Don Rosenberry, David Weaver & Masaki Hayashi, IAHS Publ. 294.

Regional Hydrological Impacts of Climatic Change : Impact Assessment and Decision Making, Edited by Thorsten Wagener, Stewart Franks, Hoshin V. Gupta, Eva Bøgh, Luis Bastidas, Carlos Nobre & Carlos de Oliveira Galvão, IAHS Publ. 295.

Regional Hydrological Impacts of Climatic Change : Hydroclimatic Variability, Edited by Stewart Franks, Thorsten Wagener, Eva Bøgh, Hoshin V. Gupta, Luis Bastidas, Carlos Nobre & Carlos de Oliveira Galvão, IAHS Publ. 296.

Bringing Groundwater Quality Research to the Watershed Scale, Edited by Neil R. Thomson, IAHS Publ. 297.

Permeable Reactive Barriers, Edited by Genevieve A. Boshoff & Brian D. Bone, IAHS Publ. 298.

Geomorphological Processes and Human Impacts in River Basins, Edited by Ramon J. Batalla & Celso Garcia, IAHS Publ. 299.

Hydrology 2020 : An Integrating Science to Meet World Water Challenges, Edited by Taikan Oki, Caterina Valeo & Kate Heal, IAHS Publ. 300.

Predictions in Ungauged Basins: International Perspectives on the State of the Art and Pathways Forward, Edited by Stewart Franks, Murugesu Sivapalan, Kuniyoshi Takeuchi & Yasuto Tachikawa, IAHS Publ. 301.

Sustainability of Groundwater Resources and its Indicators, Edited by Bruce W. Webb, Ricardo Hirata, Eduardo Kruse & Jaroslav Vrba, IAHS Publ. 302.

Predictions in Ungauged Basins: Promises and Progress, Edited by Murugesu Sivapalan, Thorsten Wagener, Stefan Uhlenbrook, Erwin Zehe, Venkat Lakshmi, Xu Liang, Yasuto Tachikawa & Praveen Kumar, IAHS Publication 303

Calibration and Reliability in Groundwater Modelling : From Uncertainty to Decision Making, Edited by M. F.P. Bierkens, J.C. Gehrels & K. Kovar, IAHS Publication 304.

Frontiers in Flood Research / Le point de la recherche sur les crues, A joint IAHS / IHP-UNESCO publication, *Edited by Ioulia Tchiguirinskaia, Khin Ni Ni Thein & Pierre Hubert*, IAHS Publ. 305.

Sediment Dynamics and the Hydromorphology of Fluvial Systems, *Edited by John S. Rowan, Robert W. Duck & Alan Werritty*, IAHS Publ. 306.

Large Sample Basin Experiments for Hydrological Model Parameterization: Results of the Model Parameter Experiment – MOPEX, *Edited by Vazken Andréassian, Alan Hall, Nanée Chahinian & John Schaake*, IAHS Publ. 307.

Climate Variability and Change : Hydrological Impacts, *Edited by Siegfried Demuth, Alan Gustard, Eduardo Planos, Fred Scatena & Eric Servat*, IAHS Publ. 308

In addition, IAHS Press regularly publishes the *IAHS Newsletter* (4 issues per year) and also published **Hydrology: A Question of Balance**, by *J.V. Sutcliffe*, (IAHS Special Publication no. 7) in the “*Blue Books*” Series. A New Series “*Benchmark Papers in Hydrology*”, directed by *Jeff Mc Donnell* has been launched by IAHS Press, the first title of this series published in 2006 being “**Streamflow Generation Processes**” *edited by K.J. Beven*. An important effort has been undertaken to make freely available on line all “Old” (More than 5 years old) IAHS Publications. This effort has been first concentrated on the Red Books and 94 Red Books are presently available on line, representing more than 35000 pages of hydrologic literature. The effort has been extended in 2006 to the *Hydrological Sciences Journal*. At the present time 20 volumes (1956-1975) are available on line.

The *IAHS TFDC* (Task Force for Developing Countries) continued its action and distributed free of charge all IAHS publications (*Hydrological Science Journal* and the Red Books) to more than 60 selected Universities and Research Institutions of Africa, Asia, South-America and Eastern Europe.

Our close and traditional cooperation with different Agencies of the UN System has been continued during the last 4 years. We participate to the Work of the *UNESCO-WMO* Standing Group on the International Glossary of Hydrology and to the steering Committee of the *UNESCO-WMO World Climate Program - Water*. We have been involved in the definition and implementation of the new *International Flood Initiative* led by *UNESCO and WMO* and have been invited to contribute to the 2005-2015 UN International Decade “*Water for Life*”. *UNESCO, WMO and IAEA* generously supported the attendance of participants from developing countries to the IAHS General Assembly of *Sapporo* and to the IAHS Scientific Assembly of *Foz do Iguaçu*.

An IAHS representative or delegation has been invited and attended the different meetings of the *UNESCO International Hydrological Program* : IHP Bureau (*Paris*, 2003), IHP Council (*Paris*, September 2004), IHP Bureau (*Paris*, 2005), IHP Bureau (*Delft*, 2006), IHP Council (*Paris*, July 2006). *IAHS* and *UNESCO* also jointly organized two sessions of the traditional Kovacs Colloquium :

7th Kovacs Colloquium (*Paris*, September 2004) “**Scales in Hydrology and Water Management, Echelles en hydrologie et gestion de l’eau**” (Red Book 287)

6th Kovacs Colloquium (*Paris*, 30 June – 1st July 2006) « **Frontiers in Flood Research / Le point de la recherche sur les crues** » (Red Book 305)

An IAHS representative or delegation has also been invited and attended major **WMO** events like the WMO XIVth Congress (**Geneva**, 2003), the Commission of Hydrology meeting (**Geneva**, November 2004), the CHy Advisory Working Group meeting and the WMO Executive Council (**Geneva** 2005), the CHy Advisory Working Group meeting (**Melbourne**, 2006) meeting and WMO Executive Council (**Geneva**, 2006). IAHS also contributed to the new edition of the WMO “Guide to Hydrological Practices”. A joint IAHS-WMO conference on “Advances in Hydrometry” is planed to be held in **Manaus** (Brazil) early 2008.

We would like also to notice our membership to the World Water Council Board of Governors and our contributions to the 2003 **Kyoto** World Water Forum and to the 2006 **Mexico** World Water Forum.

P. Hubert, IAHS Secretary General

All information about IAHS activities is available on the WEB at <http://iahs.info>

Agenda Item #12d:

Quadrennium Report of the International Association of Meteorology and Atmospheric Sciences (IAMAS)

Rapport du Quadrennium de l'Association Internationale de Météorologie et des Sciences de l'Atmosphère

The International Association of Meteorology and Atmospheric Sciences exists to promote the study of the science of the atmosphere and to support international cooperation, presentation of results, and education and public awareness. With significant governmental and public interest in meteorology and atmospheric sciences arising because of issues such as climate change, air pollution, extreme weather events, recovery of the stratospheric ozone layer, intensification of tropical cyclones, and more, this has been a particularly exciting time for research in meteorology and atmospheric sciences.

During the period 2003-2006, among a number of other activities, IAMAS participated in the quadrennial IUGG/IAMAS Assemblies in Sapporo, Japan in July 2003 and organized an IAMAS Scientific Assembly in Beijing, China in August 2005. Both of these events were very successful. Detailed information and minutes of IAMAS activities are available on the IAMAS website, <http://www.iamas.org>.

The IUGG/IAMAS Scientific Assemblies in Sapporo were held 30 June - 11 July 2003. Approximately 1700 abstracts were received for 43 IAMAS-led symposia, and IAMAS scientists led two of six Union Symposia. Of the IAMAS-led symposia, eighteen were Joint Symposia with other Associations, one was a Joint Workshop, nine were Inter-Commission Symposia within IAMAS, and fifteen were led by one of the 10 IAMAS Commissions; IAMAS also co-sponsored 19 Joint Symposia led by other Associations. Regarding registrations, 823 of 4151 IUGG participants were from IAMAS. The threat of SARS did complicate provision of financial support for scientists from some needy countries. In the end the Local Organizing Committee and IUGG awarded \$82,685.53, of which IAMAS provided \$42,000

In addition to the scientific symposia, two special events organized by the IAMAS SG deserve mention: (1) a series of daily "Sushi-Lunch" lectures given by leading scientists in the field; and (2) a special Saturday morning "Celebration of Profs. Nakaya and Magono," which recognized significant contributions of these former professors at Hokkaido University. Also notable was that several IAMAS scientists participated in the outreach program organized by IUGG to student groups in the Sapporo region, and were greatly impressed with the interest and knowledge the students showed.

IAMAS also held its General Assembly during the Sapporo meeting, convening two Bureau and three Executive Committee meetings along with two meetings of the IAMAS Assembly. The IAMAS President and SG also attended three meetings of the IUGG Executive Committee and two sessions of the IUGG General Assembly. A resolution

proposed to WMO Congress by IUGG Representative, IAMAS SG R. List, initiated a similar resolution in IUGG on an assessment of the effects of aerosol pollution and biomass burning on precipitation, with recommendations for joint WMO/IUGG action on this issue of importance for the world and the developing nations in particular,

IAMAS elections held in Sapporo, led to the election of: Dr. M. MacCracken, USA, as President, Dr. R. Vincent, Australia, as Vice President (second term), Prof. Wu Guoxiong, China, as Vice President, Prof. R. List, Canada, for a last term as SG, and Dr. J. Turner, UK, as Deputy Secretary General. Prof. H. Davies, Switzerland, became Past President. Dr. Len Barrie, UN-WMO, Prof. I. I. Mokhov, Russia, and Prof. A. Sumi, Japan, were re-elected as Members-at-large, and Dr. P. Bougeault, France and Dr. V. Ivanovici, Romania were elected as new Members-at-large. Appreciation was expressed to the retiring EC members: Past President R. Duce, Vice President R. Carbone, and Member-at-large Dr. J.-L. Fellous.

The major association-wide activity following the Sapporo Assembly involved making preparations for the IAMAS Scientific Assembly that was held in Beijing from 2-11 August 2005. The theme for the Assembly was “The Fascinating Atmosphere; Changeable and Changing”. It was organized by the Chinese Academy of Sciences and the China Meteorological Organization, with strong support from the political authorities and the leading scientific organizations. The Local Organizing Committee, led by IAMAS vice-president Dr. Guoxiong Wu, did a perfect job in ensuring a very nice venue and productive scientific setting. The Assembly was attended by 841 scientists from 54 countries who submitted 1377 abstracts and presented papers in 45 symposia (3 with the Union Commission of Cryosphere Sciences, UCCS). In addition, there was a special series of noontime lectures by leading scientists, Two special events were held: (1) honoring the 90th birthday of Senior Academician Prof Ye Duzheng, and (2) a special evening symposium covering scientific preparations for the IPCC’s Fourth Assessment Report. Drawing from the IUGG allocations to IAMAS and from a head tax imposed on registrants for the Scientific Assembly (plus a \$5000 contribution from WMO), IAMAS was able to distribute grants totaling \$63,400 to participants from needy countries and young scientists.

In joint planning with the leadership of IGBP’s PAGES project, the IAMAS Assembly was held in coordination with PAGES’ 2nd Open Science Meeting, which met from 10-12 August and attracted over 200 participants. Coordination of these two international meetings broadened the participation in both meetings and helped to improve IAMAS coordination with scientists involved in paleoclimatic research.

The IAMAS Executive Committee held two business meetings during the Beijing Assembly. Of greatest import, the EC accepted the invitation of Canada to hold a joint IAMAS/IAPSO Assembly in Montreal from 19-29 July 2009 (we also will be joined by the UCCS in organizing symposia). IAMAS EC appointed a committee to consider possible revisions and updates to the IAMAS statutes. In addition, a number of IAMAS scientists participated in outreach efforts to young scientists in Beijing, finding them very enthusiastic and interested in atmospheric and climate sciences. Since the Beijing

Assembly, the death of IAMAS Member-at-large Dr. V. Ivanovici, Romania has taken place, and the EC has accepted the nomination of Prof. Dr. Sabina Stefan as an "ad interim" Member-at-large.

During the Beijing Assembly, the IAMAS SG also convened a program-planning meeting in preparation for the IUGG/IAMAS 2007 Assemblies in Perugia. Following this initial planning session, additional proposals for symposia were invited and this collection of proposed sessions was brought to the meeting of the IUGG Program Committee in Perugia, Italy in September 2005. The following components comprise the events for which IAMAS will be responsible for in Perugia: (i) two Union Symposia, (ii) two special IUGG events (one on the newest IPCC Report and on the Joint IUGG/WMO Assessment Report on the Effects of Pollution on Precipitation), (iii) 30 Joint Symposia [5 of which are organized by the UCCS] and (iv) 21 IAMAS Symposia.

Additional Activities

During the period 2003-2006, five of the IAMAS commissions held major meetings. These included: (a) Quadrennial Ozone Symposium (1-8 June 2004 in Kos, Greece); (b) the 14th International Conference on Clouds and Precipitation (18-23 July 2004 in Bologna, Italy); (c) the Quadrennial Radiation Commission Meeting (23-28 August 2004 in Busan, Korea); (d) the International Commission on the Middle Atmosphere's series of workshops and co-sponsorship of several symposia at the tenth IAGA Scientific Assembly (18-29 July 2005 in Toulouse, France); and (e) the Quadrennial Symposium of ICACGP (International Commission on Atmospheric Chemistry and Global Pollution), jointly sponsored by IGAC (International Global Atmospheric Chemistry) and the WMO (18-23 September 2006 in Cape Town, South Africa). All of the meetings were well attended and very successful.

The assessment of the effects of aerosol emissions on precipitation was started and coordinated by IAMAS SG and the WMO representative L. Barrie (a Member-at-large of IAMAS EC) by forming an IUGG/WMO International Aerosol-Precipitation Science Assessment Group, IAPSAG. Prof. Peter Hobbs, University of Washington, USA, agreed to serve as the chair, and the members were drawn from leaders of a number of relevant subject areas. Although an application to ICSU for funding was highly rated, funding was not secured; as a result, IAMAS and WMO together accepted responsibility for funding. The panel made good progress during 2004 and 2005, including holding a symposium and roundtable on the subject at the Beijing Assembly. IAPSAG's progress was then slowed somewhat by the death of its Chair, who had sacrificed so much of his remaining precious time for this scientific cause. Without significant delay, the VP of IAPSAG, Prof. Zev Levin, Israel, took over as chair, and Prof. William R. Cotton, USA, as the new VP. Last year, drafts of all of the report's chapters were close to finalized and discussed at a meeting near Toulouse, France, followed by an independent review by a group under the leadership of Dr. George Isaac of Canada. This Report, now finalized, is an impressive epic "Review" of 482 pages, mostly on the background science and related technology. The leaders, and all contributors and reviewers deserve our gratitude and admiration for this Herculean task. A special evening event will be convened at the Perugia Assembly to report on the results of the assessment.

During the quadrennium, IAMAS also continued its active liaisons with related international programs and organizations. These included:

- The IAMAS President served as one of the two IUGG liaisons to the Scientific Committee for Oceanic Research (SCOR). The status of this activity is reported separately.
- The IAMAS President served as a member of the planning committee for the ICSU workshop on the Significance to Society of Potential Impacts by Comets and Asteroids. Its report is to be published in 2007.
- In addition, the IAMAS President served as the liaison to the Joint Scientific Committee (JSC) of the World Climate Research Programme (WCRP), also participating on behalf of both SCOR and IAMAS. Also see the separate report on this activity.
- The IAMAS SG served as the IUGG liaison to the World Meteorological Organization and the World Climate Research Program, WCRP (see separate Report), including participating in Congress and EC meetings, and serving as the IAMAS member of the WMO meeting of the WG on the Physics and Chemistry of Clouds and Weather Modification.
- Prof. List also attended the first organizational meeting of the Canadian Committee responsible for the organization of the IAMAS Assembly 2009.
- IAMAS SG also helped the Union Commission on Cryosphere Science in its preparations to become an IUGG Association.
- Dr. Deon Terreblanche represented IAMAS at the quadrennial meeting of the WMO Commission of Atmospheric Research.
- IAMAS nominated a number of technical reviewers to participate in the review of Working Group I draft of the Fourth Assessment Report of the Intergovernmental Panel on Climate Change.

Over the last two years, Deputy SG John Turner upgraded the IAMAS Web site (<http://www.iamas.org>) and, with Dr. Gareth Marshall of the British Antarctic Survey, initiated a semiannual newsletter that has been reporting on both IAMAS and commission activities.

With respect to IAMAS finances, IAMAS income comes mainly from the IUGG allocations totaled \$120 000 [all financial figures for quadrennium] and from a head tax on registrants at IAMAS assemblies [\$56 000]. Grants to participants amounted to \$105 000 (2/3 to scientists from needy countries. 1/3 to young scientists independent of origin) [WMO provided a grant of \$5 000]. IAMAS Commissions received \$37 000 from “head office.” Office expenses were \$1300. Travel support needed for the participation of the IAMAS officers was mostly provided by their home countries. Other IAMAS expenditures were: in 2006 \$7700 in support of the joint IUGG/WMO IAPSAG (compensated by a \$7000 grant from IUGG), and a \$3000 contribution to the Union Commission of Cryosphere Science, UCCS, for start-up expenses. In this quadrennial period the Assets of IAMAS increased by \$77 000 to \$272 800.

The IAMAS leadership expresses particular thanks to Dr. JoAnn Joslyn, IUGG SG, who was always available to provide guidance.

Submitted 18 February 2006 by: Michael MacCracken, president; Roland List, Secretary General; and John Turner, Deputy Secretary General.

IAMAS Statute changes:

1st Change: NEW PARA:

11A. The Executive Committee may, at its discretion, appoint a Deputy Secretary General who will take over specific functions of the Secretariat and also share duties with the Secretary General. Normally he will be from an area of science complementary to that of the Secretary General.

11A. Le Comité exécutif peut, à sa discrétion, désigner un Secrétaire général adjoint qui peut prendre des responsabilités pour des affaires spécifiées ou prendre part dans d'autres affaires du Secrétaire général. Normalement, le Secrétaire est d'une branche des sciences différente de celles du Secrétaire général.

2nd change in French only "Old" Article 12: remplacer Secrétaire général adjoint by Sous-Secrétaire general.

3rd Change: Adjustment of Article numbers.

I do not think that we should add "he/she" unless we do for the whole Statutes.

The second change is from a questionable translation by a French member country which used "adjoint" for "assistant". However, it is standard that "deputy" is translated by "adjoint". Thus this is streamlining only.

There is still a possibility that Member Countries may propose Statute changes.

The above formulation is the one going to the National IUGG Members.

Submitted by Roland List
Secretary General, IAMAS

Agenda Item #12e:
**Quadrennium Report of the International Association for the Physical
Sciences of the Oceans (IAPSO)**
**Rapport du Quadrennium de l'Association Internationale pour les
Sciences Physiques des Océans (AISPO)**

The International Association for the Physical Sciences of the Oceans (IAPSO) promotes the study of the physical sciences of the oceans and the interactions taking place at the sea floor, coastal, and atmospheric boundaries. IAPSO provides basic services such as the Permanent Service for Mean Sea Level, in cooperation with IAG, and the IAPSO Standard Seawater Service (operated by Ocean Science International, Limited). IAPSO sponsors Inter-Association Commissions of IUGG, including Tsunami Commission (with IASPEI and IAVCEI) and GeoRisk Commission (with IAMAS, IAHS, IASPEI and IAVCEI). IAPSO collaborates closely with the Intergovernmental Oceanographic Commission (IOC) of UNESCO and the Scientific Committee on Oceanic Research (SCOR) of International Council for Science (ICSU). See the IAPSO website, <http://www.iugg.org/iapso>, for detailed information about all the meetings, workshops and other activities.

IAPSO's principal activity during the past four years was participation in the 2003 IUGG General Assembly, and participation in the Joint IAG/IAPSO/IABO Assembly in Cairns, Australia in 2005; IABO stands for the International Association for Biological Oceanography of ICSU.

At the IUGG General Assembly in Sapporo, Japan on 30 June–11 July 2003, IAPSO convened 6 Association symposia and 11 joint symposia. The Prince Albert I Medal was presented to Dr. Klaus Wyrtki (USA). Dr. Walter Munk (USA), the first recipient of the Medal in 2001, delivered the memorial lecture. The Prince Albert I Medal is awarded biannually to a scientist who has made outstanding contributions to the enhancement and advancement of the physical and chemical sciences of the oceans. The Medal is named for the late Prince Albert I of Monaco who, in 1919, organized the Oceanography Section of IUGG; the Medal was established in partnership with Prince Rainier of Monaco. The Eugene LaFond Medal for the best paper from a developing country was presented to Margarita V. Chikina (Russia).

IAPSO participated in the Joint IAG/IAPSO/IABO Assembly in Cairns, Australia on 22–26 August 2005. IAPSO participated in 17 symposia including 7 Association symposia, 7 Joint IAPSO/IABO symposia, and 3 Joint IAG/IAPSO symposia. The Joint Assembly drew a total of 724 delegates from 62 countries. The Prince Albert I Medal was presented to Dr. Friedrich Schott (Germany), who delivered the memorial lecture. The Eugene LaFond Medal was presented to Maria del Carmen Grados (Peru).

IAPSO sponsored a workshop entitled "International Workshop on Forecasting and Data Assimilation in the Benguela and Comparable Systems" held in Cape Town, South Africa on 8–11 November 2004. There were over 100 invited participants in the workshop

including 35 from overseas and 25 from neighboring African countries. An important objective of the workshop was the development of a strong base for an effective and affordable forecasting capability for the Southeast Atlantic within the global network. A product of the workshop was a peer-reviewed book entitled "The Benguela: Predicting a Large Marine Ecosystem" published in 2005 by Elsevier.

IAPSO's Commission on Mean Sea Level and Tides, and the Permanent Service for Mean Sea Level, co-sponsored a workshop entitled "Understanding Sea-Level Rise and Variability" held in Paris, France in June 2006. The workshop was organized by the World Climate Research Program (WCRP) and hosted by IOC. 163 scientists from 29 countries attended the workshop bringing together all relevant scientific expertise with a view towards identifying the uncertainties associated with past and future sea level rise and variability. The WCRP issued a summary report of the workshop.

IAPSO continued its joint activities with SCOR. The Joint Working Group on Ocean Mixing held a meeting entitled "Conference on Ocean Mixing" in Victoria, Canada on 11–14 October 2004. There were more than 120 attendees representing 14 countries. A Proceedings volume was published as a special issue entitled "Ocean Mixing" of Deep-Sea Research Part 2. The Joint Working Group on Thermodynamics and Equation of State of Seawater was organized in 2005, and the Joint Working Group on Deep Ocean Exchange with the Shelf was organized in 2006. Activities of these three working groups continue into 2007.

In other activities, IAPSO co-sponsored the AGU Ocean Sciences meeting in January 2004, and the symposium at the Committee on Space Research (COSPAR) meeting held in 2004. In other ICSU related actions, IAPSO participated with the Scientific Committee on Problems of the Environment (SCOPE) on a proposal to ICSU for PACKMEDS which was funded successfully.

Several of IAPSO's activities underpin the climate projections of the Intergovernmental Panel on Climate Change (IPCC), the fourth report of which was issued in 2007. IAPSO's support of work on sea level is an obvious contribution. Without the activities of the Standard Seawater Service, IPCC would be unable to infer changes in precipitation over the oceans. The outcomes of Working Groups on Ocean Mixing and on the Equation of State of Seawater are likely to influence the climate models used in IPCC's 5th assessment due in 2014.

General business meetings of representatives of the Adhering Bodies were held during the 2003 IUGG General Assembly and the Joint Assembly in Cairns in 2005. Revisions of the Statutes and By-Laws were intensively discussed. One of the main items is the separation of the duties of the Secretary General by the creation of an IAPSO Treasurer. The position of Deputy Secretary General is eliminated, with the Executive Committee remaining the same size. The primary reason for this was to resolve a problem with the selection of Secretaries General; i.e., many potential candidates are in locations where it might be difficult to handle receipt and disbursement of funds. This change in the Executive Committee would take effect with the 2007 elections. The representatives of

the Adhering Bodies requested more interaction with a formal meeting at all IAPSO Assemblies. Various other changes define the intent of Statutes and By-Laws more properly. The revisions were transmitted to the IAPSO representatives of the Adhering Bodies for final approval by e-mails, and formal adoption will be an agenda item at IAPSO's 2007 business meeting.

The next IAPSO Assembly will be held as the Joint Assembly with IAMAS in Montreal, Canada on 19–29 July 2009.

IAPSO officers during the past quadrennium are Dr. Shiro Imawaki (Japan), President; Dr. Fred E. Camfield (U.S.A.), Secretary General; Dr. Paola Rizzoli (U.S.A.), Past President; Drs. S. Krishnaswami (India) and Lawrence A. Mysak (Canada), Vice Presidents; and Dr. Maria Cintia Piccolo (Argentina), Deputy Secretary General. Members of the Executive Committee are Drs. Kentang Le (China), Eugene G. Morozov (Russia), Denise Smythe-Wright (U.K.), W. John Gould (U.K.), Claude Roy (France) and John F. Middleton (Australia).

STATUTES OF THE ASSOCIATION

To be adopted by the IAPSO Council on 4 July 2007

Adopted by the General Assembly at Berne, October 1967, modified at Canberra, December 1979, modified by mail ballot, 1998, *modified by mail ballot 2004*, and **modified by mail ballot 2006**.

I. Objects, Composition and Membership of the Association

1) The International Association for the Physical Sciences of the Oceans (IAPSO) **hereafter referred to as the Association** is a constituent of the International Union of Geodesy and Geophysics **hereafter referred to as the Union**. The Association is subject to those articles of the Statutes and By Laws of the Union which apply to Associations, and also to these Statutes.

2) The objects of the Association are:

(a) To promote the study of scientific problems relating to the ocean and interactions taking place at its boundaries, chiefly insofar as such study may be carried out by the aid of mathematics, physics and chemistry.

(b) To initiate, facilitate and coordinate research into and investigations of those problems of the ocean which require international cooperation.

(c) To provide for discussion, comparison and publications.

(d) **To organize Assemblies, which include symposia on the most interesting and up-to-date problems of physical and chemical oceanography.**

3) Those **Adhering Bodies that** adhere to the Union are Members of the Association, *and are hereafter referred to as "Members"*.

By resolution of **an Association** Assembly, other international organizations **that** are concerned with the study of physical sciences of the oceans may be admitted to Membership, with the status of guests.

II. Administration

4) The Authority of the Association shall be vested in the **Members**, and exercised collectively by their **accredited** delegates. **The Association will hold a meeting of delegates at General Assemblies of the Union and at Association Assemblies occurring during interim periods between General Assemblies.**

5) The Association shall **convene scientific symposia and/or workshops and** hold business meetings **of the Members' delegates** at the General Assemblies of the Union, to be held normally once every four years. The Association may recommend to the Executive Committee of the Union, at a General Assembly of the Union, arrangement of joint sessions of two or more Associations or of joint meetings of two or more

Committees or Commissions for the discussion of topics of an interdisciplinary character. With the concurrence of the Executive Committee of the Union, the Association may arrange General Assemblies and other meetings of its own in the interval between the General Assemblies of the Union, either singly to deal with topics of specific interest, or jointly with another Association or other Associations.

(a) Meetings of Members' delegates are restricted to the delegates, members of the Association Executive Committee, and persons invited by the Association President when their attendance is deemed necessary to make reports or presentations to the delegates.

(b) Meetings of the Association Executive Committee are restricted to members of the Executive Committee and persons invited by the Association President when their attendance is deemed necessary to make reports or presentations to the Executive Committee.

6) The President, the two vice-Presidents, the Secretary General, and the Treasurer of the Association shall be elected by delegates to the Association in accordance with Section III.

7) The Bureau of the Association shall consist of the President, *Past President*, the Secretary General *and the Treasurer*. Its duties shall be to conduct the affairs of the Association in accordance with the decisions of the foregoing **meetings of the delegates**. It shall prepare the Agenda for **meetings of delegates**. **With the advice of the Association Executive Committee, it shall prepare the scientific program for Assemblies.**

8) In accordance with Section III, the delegates from countries having Members shall elect six persons who, together with the President, immediate Past President, Vice Presidents, Secretary General, *and Treasurer*, shall constitute the Executive Committee of the Association.

9) The Executive Committee may establish Association Commissions, Working Groups or Services to address particular scientific areas of oceanography, and may abolish such Commissions, Working Groups and Services by a majority vote of the Executive Committee members. The Executive Committee may also approve Association participation in joint Commissions, Working Groups and Services with other Associations or scientific bodies, and may withdraw Association participation by a majority vote of the Association Executive Committee members.

10) A Nominations Committee of four persons from **countries having Members** will be appointed by the Executive Committee. The Nominations Committee will normally include the immediate Past President as its Chairperson. Its function will be to scrutinize nominations received for positions on the Executive Committee which become vacant, to seek additional nominations where appropriate, to ensure disciplinary and geographical distribution, and to prepare a final slate of candidates for election at the General Assembly.

11) The Executive Committee of the Association may establish medals and awards to recognize individuals for their accomplishments in advancing the knowledge of the physical and chemical sciences of the oceans.

III. Voting

12) On scientific matters, each delegate present shall have one vote.

13) In questions of administration or of mixed, administrative and scientific character not involving questions of finance, voting shall be by **Members**, each **Member** having one vote with the provision that its subscription shall have been paid up to the end of the year preceding the voting.

14) In questions involving finance, voting shall be by **Member delegates**, with the same provision as for administrative questions. The number of votes for each **Member delegate** shall be **equal to** the number of its category of membership to the Union.

15) In case of doubt as to which class a question belongs, and in all cases of equality of votes, the chairman shall decide.

16) A delegate shall represent only one **Member**. An adhering Member not represented by a delegate may forward by post its vote on any specific question of an agenda.

17) Guests will not vote.

IV. General

18) These Statutes shall be changed only by a majority of two thirds of the votes cast **by delegates at an Association Assembly** or by post **in accordance with Statute III. In cases where voting is by post, the changes must be endorsed by the delegates at the next Association Assembly.**

19) The Association may make By-Laws which may be changed by a simple majority of the votes cast **by delegates at an Association Assembly** or by post **in accordance with Section III. In cases where voting is by post, the changes must be endorsed by the delegates at the next Association Assembly.**

20) This English text shall be the authoritative text of the Statutes of the Association.

BY-LAWS OF THE ASSOCIATION

To be adopted by the IAPSO Council on 4 July 2007

Adopted by the General Assembly at Berne, October 1967, modified at Canberra, December 1979, modified at Honolulu, August 1995, modified by mail ballot, 1998, *modified by mail ballot 2004, modified by mail ballot 2006.*

I. Membership of the Association

1) It is recommended that each adhering **Member** shall form a National Sub-Committee for the Physical Sciences of the Oceans, to which correspondence may be addressed.

2) Each adhering **Member** and each international member may contribute to the Agenda of **Association** Assemblies.

II. Administration

3) (a) The President and the Vice Presidents shall be elected for one four-year term. Their terms shall be the interval between the ends of two successive General Assemblies of the **Union**. *A Vice President may be elected for one additional four-year term.*

(b) The term of the immediate Past President shall run from the end of the General Assembly at which the new President is elected until the end of the next General Assembly.

(c) The Secretary General *and the Treasurer* shall be elected for two *periods*, and may be re-elected for **the** subsequent single *period*.

4) The President shall:

- (a) provide general leadership for the Association in all matters;
- (b) represent the Association on the Union Executive Committee;
- (c) serve as chairperson of those meetings of Members' delegates and the Association Executive Committee held at Association Assemblies;
- (d) represent the Association in communications with the International Association for Biological Oceanography (IABO) either directly or through scientific committees of the International Council for Science (ICSU);
- (e) appoint qualified ocean scientists to serve as liaisons between the Association and other scientific organizations as appropriate;
- (f) prepare Association responses on inquiries of a scientific nature received from other organizations.

5) The Vice Presidents shall:

- (a) perform such tasks as may be assigned by the President or the Association Executive Committee;

(b) act as the President whenever the President is not present or is unable to perform any of the President's duties. The acting President shall perform such tasks as required by the President.

6) *The Secretary General shall:*

(a) *serve as Secretary of the Association Assemblies, the Member meetings, the Executive Committee and the Bureau; arrange for meetings of these Bodies; prepare and distribute promptly the agenda and the minutes of all their meetings;*

(b) *manage the affairs of the Association, attend to correspondence, preserve the records;*

(c) *maintain an Association web page on the World Wide Web, either as part of or linked to the Union web page. The web page shall include all general details of the Association; its activities; abstract books of Association Assemblies when available; and other information of use to Members and associated scientists;*

(d) *at least three months before the General Assembly of the Union, forward to all the Members a report on the administration of the Association since the last General Assembly, and present a summary of this to the delegates meeting at General Assembly itself;*

(e) *perform such other duties as may be assigned by the Association Bureau.*

7) *The Treasurer of the Association shall be responsible for the financial administration of the Association in accordance with directions issued by the Association Bureau. The Treasurer shall:*

(a) *prepare the yearly budget of the Association and distribute to the Association Bureau for approval;*

(b) *collect the funds of the Association and disburse them in accordance with the approved budget;*

(c) *maintain records of all the financial transactions of the Association and submit annual financial reports thereon to the Association Bureau and to the Treasurer of the Union;*

(d) *assemble, at the end of the calendar year preceding a General Assembly, the complete accounts of the Association for the past period for presentation to the Association Bureau and the Treasurer of the Union at least three months prior to the General Assembly and at the Member meeting at the Assembly;*

(e) *pay traveling expenses and per diem subsistence to members of the Executive Committee attending Association Assemblies and meetings with Association support where those concerned cannot draw proper allocations from their national sources (see By-Law 18).*

8) Of the six persons referred to in Article 8 of the Statutes, not more than three may be elected to an additional term.

9) The Executive Committee shall:

(a) Prepare for the Executive Committee of the Union recommendations concerning the arrangement, at a General Assembly of the Union, of scientific meetings to be confined to joint sessions of two or more Associations or of Joint meetings of two or more Committees or Commissions, for the discussion of topics of an interdisciplinary character;

(b) At its meetings during an Assembly, select the themes of Association symposia for the next Assembly, and recommend conveners for the symposia;

(c) Seek for the concurrence of the Executive Committee of the Union for the arrangement of General Assemblies and other meetings of the Association in the intervals between the General Assemblies of the Union, either singly to deal with topics of specific interest, or jointly with another Association or other Associations.

(d) Fill any vacancy which may occur among the officers of the Association between General Assemblies. Such appointments shall be subject to the subsequent approval of the next General Assembly. Tenure of office for part of a period shall not be counted as a period for the purpose of these By-Laws.

(e) Consider matters of general administration and finance, and report thereon to the General Assembly.

(f) Make recommendations on matters of policy.

(g) Frame the budget for the ensuing period and report to the General Assembly of the Association and to the Secretary General of the Union. The budget period of the Association coincides with the budget period of the Union.

(h) Advise upon the distribution of funds.

(i) Consider proposals for changes in the Statutes and By-Laws, and report thereon to the General Assembly.

10) Officers designated by these By-Laws for special duties or for special committees may appoint substitutes in their stead. Notice of the intention to do so must be sent in writing to the President or Secretary General. No substitute shall represent more than one officer.

11) Decisions and actions of the Officers and Committees of the Association, taken during and between **Association** Assemblies, shall be **reported to the delegates' business meeting at the Assembly.**

12) Proposals for the Agenda of **the meeting of delegates at General Assemblies of the Union and Association Assemblies** shall reach the Secretary General six months before the **meetings**. The Secretary General shall send the Agenda to **the Members and their accredited delegates**, through the National Sub Committees where such exist, at least four months before the **meeting**. No question **not previously** placed on the Agenda shall be discussed unless approved by two thirds of the votes of the **Members** represented at the Assembly.

13) Medals and Awards

(a) the Executive Committee will establish protocols for awarding medals or other awards established by the Association;

(b) the Prince Albert I Medal shall be awarded at each Association Assembly to a distinguished ocean scientist for career achievements in advancing the knowledge of the physical and chemical sciences of the oceans;

(c) the Eugene LaFond Medal will be awarded at Association Assemblies to a student or scientist from a developing country in recognition of the student's or scientist's presentation of an outstanding paper. Not more than one Medal will be awarded at any Assembly. The Executive Committee may decline to present the Medal at a particular Assembly.

14) Nominations Committee

(a) The terms of members of the Nominations Committee referred to in Article 10 of the Statutes will expire at the end of the General Assembly following their appointment.

(b) A call for nominations for candidates for positions on the Executive Committee will be issued by the Secretary General of the Association at least six months prior to a General Assembly where an election is to take place.

(c) Nominations must be accompanied by a brief Curriculum Vitae, and will not be accepted later than three months prior to the General Assembly, except for additional candidates identified by the Nominations Committee in accordance with Article 10 of **The** Statutes.

(d) The Nominations Committee will prepare a slate of candidates one month prior to the General Assembly, and will confirm that the members of this slate are prepared to serve if elected.

(e) In the event of a vacancy occurring on the Executive Committee during its term of office as a result of the resignation or demise of a member, the Nominations Committee will assist the Executive Committee in finding a suitable replacement.

III. Finance

15) The President and **Treasurer** shall individually have power to sign documents on behalf of the Association.

16) All disbursements of Association funds shall be made by the Treasurer in consultation with the Association Bureau.

17) The **Treasurer** shall receive the allocation of funds from the Union, *maintain financial accounts, obtain receipts for disbursement of funds and maintain financial records.*

18) Traveling expenses may be paid by the **Treasurer**, but only

(a) in connection with meetings on specific Association *or Union* business; when *the travelers* represent the Association and not **the Members** or other organizations; and where those concerned cannot draw proper allocations from their national sources.

(b) to cover the traveling costs of a person receiving an award from the Association.

(c) Such payments may cover traveling costs *at economy rates* and a reasonable contribution to other expenses *when* attending such meetings.

Agenda Item #12f:

Quadrennium Report of the International Association of Seismology and Physics of the Earth's Interior (IASPEI)

Rapport du Quadrennium de l'Association Internationale de Séismologie et de Physique de l'Intérieur de la Terre (AISPIT)

IASPEI promotes the study of problems relating to earthquakes, the propagation of seismic waves, and the internal structure, properties, and processes of the Earth. Comprehensive minutes of the past Quadrennium and other information are on the IASPEI website, <http://www.iaspei.org/>.

IASPEI organized its 33rd General Assembly in Santiago, Chile, from October 2 to 8, 2005. It was held in a most suitable venue, the centrally located Diego Portales Conference Centre in Santiago de Chile. The Local Organizing Committee under the leadership of Diana Comte, consisted of members of the University of Chile and Instituto Geografico Militar (IGM). There were 15 scientific symposia covering all parts of the scientific fields of IASPEI, with 220 talks given and about 200 posters shown. In addition, a large number of planning and 'business' meetings were held. 360 persons from 42 countries attended. An IASPEI Training School has been organized during the week following the General Assembly by the Commission on Education and Outreach. The School was held at the Departamento de Geofisica of the University of Chile, which proved to be an excellent venue. About 20 participants from all over Latin America attended the School. The next IASPEI General Assembly, after the IUGG one in Perugia, Italy, will be held in Cape Town, South Africa, in January 2009.

The Asian Seismological Commission (ASC) had two meetings in the past Quadrennium. At the Fifth General Assembly in Yerevan, Armenia, in 2004, representatives from most Asian countries and from Africa, Europe, America, and Australia offered the results of their scientific achievements in the field of seismology, earthquake hazard assessment, and topics related to the Earth's interior. A well-prepared and well-attended International Training Course on Seismology and Mitigation of Seismic Disasters preceded the assembly. ASC's Sixth General Assembly and the Symposium on Earthquake and Tsunami Disaster Preparedness and Mitigation was held in Bangkok, Thailand, during 7-10 November 2006. The conference was hosted by the Thai Meteorological Department in the Siam City Hotel. About 200 participants from 35 countries and regions attended the conference, highlighted by a welcome evening with local music and dances and by a dinner cruise along the river. Two field trips have been arranged: one to the Srinagarind Dam (NW Thailand) and a post-field trip to the tsunami-hit areas around Phuket. The conference underscored the need to strengthen connections of scientists, earthquake engineers, disaster risk reduction specialists, policy-makers, and administrators to reduce the impact of earthquakes. Much attention was devoted to the great Sumatra 2004 event and the following tsunami both in science and social aspects. ASC's Seventh General Assembly will be in Tsukuba, Japan, in 2008.

A pilot project, “Seismic Hazard and Risk Assessment in Asia,” adopted at the ASC Fourth General Assembly, focuses on improving hazard evaluation, assessing and reducing seismic risk, and early warning and notification. Due to the unfortunate and premature demise of Prof. Serguey Balassanian, the Project leader, the related activities have undergone a considerable slowing down.

With IASPEI’s financial support, the European Seismological Commission (ESC) has Organized, in the past Quadrennium, two Training Courses for Young Seismologists to expose them to state-of-the-art moment tensor inversion and seismic hazard and risk assessment procedures.

The training course in Potsdam, 2004, took place in the four days before the ESC General Assembly. Thirty students from twenty countries attended the course.

The primary aim of the Young Seismologist Training Course in Potsdam was to provide some basic requirements on moment tensor inversion, the techniques and programs used to perform manipulation and analysis of the data. Facilities for the course were well organized by the University of Potsdam, Germany.

The 2006 Training Course on “Seismic Hazard and Risk Assessment” was organized at ETH-Zurich, Switzerland, from September 11 to 14, 2006, following the ESC Geneva General Assembly. This time the course was addressed not only to young seismologists but also to young engineers. The course lasted four days and was attended by 40 participants.

The ESC Bureau endorsed a proposal to hold a seventh training course in Hersonissos, in September 2008. The ESC 29th General Assembly was held in Potsdam, Germany during 12-17 September 2004, jointly organized by the University of Potsdam and the GeoForschungsZentrum Potsdam. About 400 participants attended the conference. A comprehensive report is to be found on the ESC website.

The European Association of Earthquake Engineering (EAEE) and the European Seismological Commission (ESC) have held in common the First European Conference on Earthquake Engineering and Seismology (1st ECEES) – 13th ECEE and the 30th ESC General Assemblies – during 4-6 September 2006 in Geneva, Switzerland. The conference was well attended by about 1,200 participants. A comprehensive state-of-the-art volume on topical themes of the conference was published. During the ESC General Assembly the ESC Statutes have been extensively revised. Please see the ESC homepage for details: <www.esc.bgs.ac.uk>. The next general assembly will be held in Hersonissos, Crete (Greece), 7-12 September 2008.

The Third International Symposium on the effects of Surface Geology on Seismic Motion, has been held in Grenoble from August 30, to September 1, 2006, under the international umbrella of the ESG working group created jointly by IASPEI (International Association of Seismology and Physics of the Earth’s Interior) and IAEE (International Association of Earthquake Engineering) two decades ago.

Third in the series, following the two previous in Odawara (Japan, 1992), and Yokohama (Japan, 1998), this ESG2006 symposium has been an opportunity to picture both the state-of-the-art and state-of-practice, in the very diverse aspects of ground motion estimation. A number of invited key-note papers, and a large number of “regular” papers as well, depicted the advances and issues in various domains: strong motion data and processing techniques, non-linearity in soils, microtremor techniques, site surveys, numerical simulation, empirical estimates of ground motion and case studies. One ESG peculiarity is also to be built around benchmarking exercises on ground motion prediction. Two such benchmarks have been proposed for ESG2006. The first one has addressed the simulation of ground motion in the peculiar 3D Grenoble basin for local weak and moderate size earthquakes, while the second one investigated the capability of array noise measurements to provide reliable and robust estimates of the shear wave velocity profile.

In order to favor the exchanges and discussions, it was decided to have only plenary sessions with keynotes, benchmarks, and a few representative oral presentations spanning as much as possible the range of present-day issues in ground motion estimation. All posters have been exposed for the whole 3-day duration.

The numerous written contributions (about 150) are gathered in a two-volume Proceedings book.

The Publications Transfer Program of IASPEI’s Commission for Developing Countries (CDC) has made material on seismology available to institutions in need, in particular those located in Africa, South and Latin America and Asia.

The following publications are available from the IASPEI Secretariat. IASPEI on approval distributes free copies of its publications to institutional libraries in less Id countries.

- *IASPEI: Cooperation for Better Understanding of the Earth* (26-page brochure).
- *International Handbook of Earthquake and Engineering Seismology (Part A and B)*, a two-volume comprehensive review, a state-of-the-art reference for seismologists, earthquake engineers, geologists, and geophysicists. For more information, consult the website, <http://www.academicpress.com/quake>.
- *New Manual of Seismological Observatory Practice* provides the essential scientific and technical fundamentals, reveals their inter-relationships, and motivates observatory personnel to do their jobs as carefully as possible.

Finally, IASPEI uses a bulk E-Mail System to broadcast timely announcements about forthcoming meetings and other information of interest to IASPEI members.

Peter Suhadolc
Secretary General, IASPEI

Agenda Item #12g:

Quadrennium Report of the International Association of Volcanology and Chemistry of the Earth's Interior (IAVCEI)

Rapport du Quadrennium de l'Association Internationale de Volcanologie et de Chimie de l'Intérieur de la Terre (AIVCIT)

Memberships:

IAVCEI individual memberships for the period 2003-2007 varied from 700 to 840 with the high coming just after the 2004 General Assembly. Thirty-nine members have chosen to become Life Members, including three members who were awarded Life Membership as Honorary Members in 2003-4. The IAVCEI web page is frequently revised and updated. The web site url is www.iavcei.org. The volcano listserver administered by Arizona State University remains the official IAVCEI listserver. It has >2700 people listed, which exceeds the IAVCEI membership. Two or three issues of the newsletter "IAVCEI News" were mailed to members each year.

Meetings:

A number of highly successful meetings were held in 2003-2007, most with partial support from IAVCEI:

| | | |
|-----------------------------|-----------------------|----------------|
| 2003 Cities on volcanoes 3 | Hilo Hawaii | 350 people |
| 2003 IUGG General Assembly | Sapporo, Japan | 378 " (IAVCEI) |
| 2003 State-of-the-Arc | Cascades, USA | 50 |
| 2003 Basement volcanoes | Petropavlovsk, Russia | 30 |
| 2003 Plume IV | Hveragerdi, Iceland | 50 |
| 2003 South Aegean Arc | Milos Island, Greece | 50 |
| 2004 Neogene Volcanic Belt | Mexico City, Mexico | 100 |
| 2004 Volcanic Ash Aviation | Washington, DC | 200 |
| 2004 2nd Intl. Maar Conf. | Hungary-Slov.-Germany | 108 |
| 2004 IAVCEI General Assbly. | Pucon, Chile | 936 |
| 2005 Ocean Island Volc. | Cape Verde Islands | 60 |
| 2005 Caldera Volcanism | Tenerife, Spain | 40 |
| 2006 Cities on Volcanoes 4 | Quito, Ecuador | 550 |
| 2006 Continental Volcanism | Guangzhou, China | 200 |
| 2006 Walker Symposium | Reykjavik, Iceland | 98 |
| 2007 State-of-the-arc | Chile | 50 est |
| 2007 Volc. and Tectonics | Havana, Cuba | 100 " |
| 2007 El Chichon, 25 y later | Chiapas, Mexico | 100 " |
| 2007 Magmas and Volc Gases | Taipei | 60 " |
| 2007 IUGG General Assembly | Perugia, Italy | 400 " |

The next IAVCEI General Assembly has been scheduled for August 2008 and will be held in Reykjavik, Iceland. The first circular was printed and distributed in December 2006.

Meetings of the IAVCEI Executive Committee were held in July 2003, November

2004, and December 2006. Preparations are well under way for what is sure to be a successful IUGG meeting in July 2007 in Perugia.

Officers of IAVCEI for 2003-2007 were:

| | |
|--------------------------------|-------------------------------------|
| President | Oded Navon (Israel) |
| Vice-President | Jocelyn McPhie (Australia) |
| Vice-President | Toshitsugu Fujii (Japan) |
| Secretary-General | Steve McNutt (USA) |
| Members of Executive Committee | Anita Grunder (USA) |
| | Renato Solidum (Philippines) |
| | Hugo Moreno (Chile) |
| | Jean-Christophe Komorowski (France) |
| Past President | Steve Sparks (UK) |
| Editor Bull Volc | John Stix (Canada) |

A nominations committee was formed in 2006 to determine qualified candidates for IAVCEI officers for the term July 2007 to July 2011. The committee was chaired by former IAVCEI president Grant Heiken and completed its work in early January 2007. The election will be a true contested election, with 3 candidates for the SG position and 3 for two vice-president positions, as well as 1 for president and 4 for the four EC positions. The election will be held in spring 2007 by mail vote of IAVCEI individual members and national correspondents

Commission activities:

The Commission of Mitigation of Volcanic Disasters has begun a new Atlas series, the first volume of which covers the Caribbean region and was prepared under the leadership of Jan Lindsay. The IAVCEI Executive Committee authorized \$4000 to support the first volume of the series.

The Commission on Subduction Zone Magmatism held a highly successful workshop on the State-of-the-Arc (SOTA) in the Cascades in September, 2003. Another State-of-the-Arc workshop just took place in Chile in January-February 2007.

The Commission on Explosive Volcanism is continuing to work on compilation of a comprehensive database of all eruptions with volume >10 km³ for the last 2 million years. Two commissions held workshops in September 2004: The Second International Maar Conference in Hungary, and the MEEMSV IV International workshop in France.

A monograph based on all of the Symposia under the Sapporo 2003 Union theme "State of the Planet: Frontiers and Challenges," was published by in 2004 (Dr. R.S.J. Sparks (IAVCEI), co-editor). IAVCEI received a grant of \$5000 from IUGG to distribute 137 copies of the book to scientists in developing countries.

A new book series was begun in 2005 with Grant Heiken as series editor. The series is called "IAVCEI Special Publications in Volcanology" and includes academic works as well as titles of a more practical nature, such as hazards assessments. The first title was published in 2006, "Statistics in Volcanology" edited by H.M. Mader, S.G. Coles, C.B. Connor, and L.J. Connor and is available from The Geological Society, London. IAVCEI members receive a 50 percent discount when ordering the books.

Awards: Three outstanding volcanologists were awarded with IAVCEI Honorary Memberships. One was awarded at Sapporo 2003: Prof Shigeo Aramaki (Japan); the other two in Pucon: Prof Hans-U. Schmincke (Germany), and Dr Robert Tilling (USA). The Thorarinsson medal was awarded to Wes Hildreth (USA), and two Wager medals to Andy Harris (USA) and Oleg Melnik (Russia). Two new awards were given for the first time in 2004: the Krafft medal to Tom Simkin (USA) and the Young Scientist award to Costanza Bonadonna (Italy). No medals or awards were given in 2005 or 2006.

Video and calendar sales: IAVCEI sold several educational products in 2003-2007. Two videos on 1) understanding volcanic hazards and 2) reducing volcanic risk were produced professionally under contract with IAVCEI. Over 70 videos were sold in 2003, 60 in 2004, 60 in 2005, and 40 in 2006. We note that video sales are down somewhat as DVD becomes the preferred format. We plan to produce the IAVCEI videos in DVD format some time in early 2007.

Also, volcano calendars for each year from 2003 to 2007 were produced by IAVCEI members and were printed and marketed by a professional calendar company. Over 5,000 calendars were sold in 2003, 5000 in 2004, 8000 in 2005 with a second printing needed, and 8000 in 2006. An additional 800 were distributed each year by IAVCEI to various scientific, educational, and governmental organizations. IAVCEI received a small royalty payment (1 percent) for the calendars.

Fundraising: IAVCEI recognized that its activities could be significantly expanded by improved fundraising. Towards this end, former President Steve Sparks wrote a series of articles on fundraising for IAVCEI News in 2002, discussed in detail at the July 2003 meeting of the Executive Committee. Secretary-General Steve McNutt worked with a lawyer and submitted forms for incorporation as a non-profit corporation in fall 2003; the non-profit status was granted in December 2003. After meeting with a consultant, McNutt also submitted a full application for tax exempt status under section 501(c)3 with the Internal Revenue Service of the US. The application was approved by the IRS in June 2004 and IAVCEI now has tax exempt status. This status is important so that contributions may be received with a tax benefit to contributors. Over \$10,000 in contributions have been received as of February 16, 2007. The largest portion has been proceeds from the sale of books previously owned by IAVCEI member George P.L. Walker.

The 2003-2007 quadrennium included significant growth, improved fundraising, a variety of successful meetings covering many areas of the science of volcanology, continuation of video and calendar sales, and the introduction of several new awards. Some commissions have been active while others need to be restructured or refocused. We entrust this reform to the new Executive Committee who will be elected in spring 2007.

Steve McNutt
Secretary-General for IAVCEI

Agenda Item #13a:
**Quadrennium Report of the IUGG Commission on Geophysical Risk
and Sustainability (GeoRisk)**
**Rapport du Quadrennium de la Commission sur les Risques
Géophysiques et le développement durable**



IUGG Commission on Geophysical Risk and Sustainability

URL: <http://www.iugg-georisk.org/>

This report serves to inform the IUGG Council of the activities of the Commission over the quadrennium since the last IUGG General Assembly. It reports on the membership, the public statement that the Commission issued, the meetings and symposia organised and endorsed, the publications produced, and the project-based activities undertaken.

The IUGG Commission on Geophysical Risk and Sustainability (IUGG GeoRisk Commission) established by the IUGG Bureau in August 2000 is dedicated (i) to promoting scientific studies applied to the reduction of risk from natural hazards in an increasingly urbanized world and sustainability and (ii) to reducing death and destruction from natural and technological hazards by providing hazards data and information to emergency managers, policy-makers, scientists and the general public in the most timely and effective manner as possible. This includes the integration of knowledge concerning environmental, social and economic processes. The fundamental scope of this Commission is to facilitate communications – between scientists via meetings, workshops and publications, as well as between scientists and decision makers, between scientists and the public, and between scientists and schools.

IUGG GEORISK COMMISSION MEMBERSHIP

| Name | Duty | Association | Country |
|--------------------------|--|--------------------|-----------------|
| Tom Beer | President (2000-2004), Past-President (2004-) | IUGG | Australia |
| Alik Ismail-Zadeh | President (2004-), Vice-President (2000-2004) | IASPEI/CMG | Germany/Russia |
| Kuniyoshi Takeuchi | Vice-President (2000-) | IAHS | Japan |
| Ramesh Singh | Vice-President (2004-) | IASPEI/IAPSO | India |
| Grant Heiken | Secretary General (2000-2004) | IAVCEI | USA |
| Gerd Tetzlaff | Secretary General (2004-) | IAMAS | Germany |
| Paula Dunbar | Treasurer (2000-) | IASPEI | USA |
| Hermann Drewes | Commissioner (2000-) | IAG | Germany |
| Harsh Gupta | Commissioner (2000-) | IUGG | India |
| Slava Gusiakov | Commissioner (2000-) | IASPEI | Russia |
| Kosuke Heki | Commissioner (2003-) | IAG | Japan |
| Amithirigala Jayawardena | Commissioner (2003-) | IAHS | Hong Kong/China |
| Evgeny Kontar | Commissioner (2000-) | IAPSO | Russia/USA |
| Volodya Kossobokov | Commissioner (2000-) | IASPEI | Russia/France |
| Susan McLean | Commissioner (2000-) | IAGA | USA |

| | | | |
|---------------|----------------------|--------|--------|
| Uri Shamir | Commissioner (2000-) | IUGG | Israel |
| Zhongliang Wu | Commissioner (2003-) | IASPEI | China |

STATEMENT OF THE COMMISSION

On 7th January 2005 the GeoRisk Commission adopted the Statement on the *Greatest Earthquake and Tsunami of the Early XXI Century and the Need for Urgent Action to Reduce Natural Disasters in the Indian Ocean Region and Elsewhere*. Among major recommendations of the Commission were the following:

1. The countries around the Indian Ocean to set up a Disaster Management Center in order to monitor land, ocean and atmosphere in relation to all kinds of natural hazards, especially those related to coastal regions. Such Centers should be established in any disaster-prone coastal regions where they do not already exist (e.g., Mediterranean Sea and Atlantic Ocean).
2. A Tsunami Warning System to be set up in the region. Before such systems are in operation in the region, the Pacific Tsunami Warning Center in Hawaii should extend its warnings to cover all vulnerable areas in the Indian Ocean.
3. Multidisciplinary and multinational research programs and research networks on geophysical hazards and risks to be developed in the Indian Ocean countries in order to integrate diverse data streams, to improve understanding of the natural phenomena associated with the disasters, to develop predictive modeling capability, and to generate and to disseminate timely and accurate information needed by decision makers and the public (URL: http://www.iugg-georisk.org/reports/IUGG_GeoRisk_st_full.pdf)

Based on the Statement of the GeoRisk Commission, on 10th January 2005 IUGG issued a Resolution on the Sumatra earthquake and tsunami (<http://www.iugg.org/tsunamiresolution05.pdf>). On 17th January 2005 International Council for Science (ICSU) produced a Position Statement based on the materials of the IUGG GeoRisk Commission's Statement (http://www.icsu.org/3_mediacentre/INSIGHT_SI_01_2005.html)

SCIENTIFIC MEETINGS ORGANIZED BY THE COMMISSION

1. 2nd IUGG GeoRisk Commission Advanced Research Workshop on Risk Science, Society and Sustainability, 26-27 August 2004, Stockholm, Sweden

The major scientific goals of this workshop were (i) to provide insight into the relationship between risk science, society and sustainable development; (ii) to search for new possibilities in risk science that focus on the major responsibility of the scientific community; and (iii) to address the problem of implementation of scientific initiatives as elements of public policy. The workshop focused on the question: can sustainable development be successful without taking into account the risk of hazards and their impacts? To this end, the workshop brought together experts from the fields of geophysics and mathematics with experts in social science and law specifically to deal with problems of risk and sustainability. Prof. G. Papadopoulos delivered the Rammal Award lecture. Other presentations were made by E. Kontar (Russia/USA), A. Makarenko (Ukraine), U. Shamir (Israel), T. Beer (Australia), P. Wiedemann (Germany), and J. Paterson (UK). The workshop was sponsored by EuroScience, IUGG, and NATO.

A report of the meeting was published in EOS, Transactions of the American Geophysical Union, 85 (44) 453 (2 November 2004).

2. 3rd IUGG GeoRisk Commission Symposium on Geophysical Risk and Hazards, 2-4 December 2004, Hyderabad, India

Hazards 2004 was the name given to the combined meeting that constitutes the Third Workshop of the IUGG Commission on Geophysical Risk and Sustainability & the Tenth International Symposium on Natural and Human-Induced Hazards of the Natural Hazards Society. The meeting was held in Hyderabad, India 2-4 December 2004. There were 120 attendees comprising 40 foreign scientists and 80 Indian scientists. The conference itself was excellently organized. Dr R.K. Chadha and Dr. D. Srinagesh – the Chair and Secretary-General of the Local Organizing Committee – had the full support of Dr. V.P. Dimri, their employer and the Director of the National Geophysical Research Institute (NGRI) – one of the Indian CSIR research institutes and the location where the conference was held.

3. 4th IUGG GeoRisk Commission Workshop on Recent Geodynamics, Georisk and Sustainable Development of the Black Sea to Caspian Sea Region, 3-6 July 2005, Baku, Azerbaijan

The Workshop organized by the IUGG Commission on Geophysical Risk and Sustainability in association with the International Hydrological Program of UNESCO, American Geophysical Union, Azerbaijan National Academy of Sciences, Heidelberg Academy of Sciences and Humanities, and Earthquakes and Megacities Initiative, was held in Baku, Azerbaijan from 3 to 6 July 2005. About fifty scientists from 12 countries attended, and 19 invited speakers delivered talks at the workshop. The workshop was supported by IUGG, UNESCO, and ExxonMobil. The Workshop brought people of natural, social and political sciences together with the representatives of industry, governments, and mass media to prepare the social and political background for sustainable development in the Black Sea to Caspian Sea region. The invited and contributed presentations dealt with the recent geodynamics of the region, natural hazards (earthquakes, mud volcanoes, landslides, rapid sea level changes), associated risks, and mitigation of the impacts of geohazards on society.

4. Symposium “Marine Risk and Sustainability”, IAG/IAPSO/IABO Joint Scientific Assembly, 22-25 August 2005, Cairns, Australia

This symposium was organized by the IUGG GeoRisk Commission (conveners: T. Beer and E. Kontar) at the 2005 IAG/IAPSO/IABO Scientific Assembly. K. Satake (AIST, Japan) opened the session with his talk on “Lessons learned from the 2004 Sumatra earthquake and the Asian tsunami”. The tsunami theme was followed by a number of speakers: D. King (James Cook University); Y. Tyupkin and V Morozov (both Russian Academy of Sciences, Moscow); C. Pattiaratchi (University of Western Australia); R. Othman (Universiti Teknologi Malaysia). The second theme of the session was that related to coastal contamination from submarine groundwater. Detailed investigations in diverse geographic locations were presented by J. Zhang (Toyama University); C. Schrum (Schrum & Wehde Ecosystem Modeling); G. Kim (Seoul National University); M. Schlueter (Alfred Wegener Institut). The third theme of the session was sustainability issues. Speakers: D. McDonald, T. Beer, and E. Grist (all CSIRO Marine and

Atmospheric Research), F. Rack (JOI Deep Sea Drilling Programme), E. Kontar (Russian Academy of Sciences, Moscow), E. Stanev (University of Sofia, Bulgaria), J. De (Indian National Institute of Oceanography), and F. Wang (Institute of Oceanology, Chinese Academy of Sciences).

5. Special Session on Mathematical Aspects of Geohazard Research, IUGG Conference on Mathematical Geophysics, 5th June 2006, Sea of Galilee, Israel

The scientific session was focused on several topics: (i) non-linear dynamics of the lithosphere, predictions of extreme natural events and limitations of the predictability (V. Keilis-Borok, UCLA); (ii) mathematical descriptions of physical phenomena associated with geohazards (B. Malamud, King's College London, UK, and M. Ghil, ENS Paris, France); (iii) mathematical and numerical modeling of extreme natural events (E. Aharonov, Weizmann Institute of Science, Rehovot, Israel; A. Ismail-Zadeh, Karlsruhe University, Germany; and J. Zvelebil, Geological Survey, Prague, Czech Republic), and (iv) quantitative analysis and compilations of geophysical data related to geohazards (V. Gusiakov Russian Academy of Sciences, Novosibirsk, Russia; and S. Sobolev, GFZ-Potsdam, Germany).

6. 5th IUGG GeoRisk Commission Symposium "Riding the storm: Can science keep us in the saddle?", 16th July 2006, Munich, Germany

The third joint symposium of the IUGG GeoRisk Commission and the European Association for Promotion of Science and Technology entitled "Riding the storm: Can science keep us in the saddle?" was held July 15-19 in Munich, Germany, during the EuroScience Open Forum. The meeting's topics were extreme natural events and humanitarian disasters (F. Wenzel, Karlsruhe University, Germany), the role of geoscience in preventive disaster management of catastrophic natural events (A. Ismail-Zadeh, IUGG GeoRisk Commission), integrated global observation strategy for disaster reduction (H. Moderassi, IGOS Geohazards and French Geological Survey, Orleans, France), prediction of extreme natural events (V. Kossobokov, Russian Academy of Sciences, Moscow), disaster risk management from an insurance perspective (A. Smolka, Munich Reinsurance), and relationship between disaster risk management and governance (J. Paterson, University of Aberdeen, UK). The symposium was followed by a press briefing.

SCIENTIFIC MEETINGS ENDORSED BY THE COMMISSION OR ATTENDED BY GEORISK COMMISSIONERS AS SESSION CONVENERS OR INVITED SPEAKERS

- Second Annual Meeting of the Asia-Oceania Geoscience Society, Singapore, 20-24 June 2005.
- 2nd International Geohazards Workshop, Orléans, France, 27-29 June 2005.
- 2nd International Conference of The Nigerian Union of Planetary and Radio Sciences, Port Arthur, Nigeria, 24-26 August 2005.
- 8th Workshop on Nonlinear Dynamics and Earthquake Prediction, Trieste, Italy, 3-15 October 2005.

- IOC/UNESCO International Workshop on Post-Disaster Assessment and Monitoring of Changes in Coastal, Ocean, and Human Systems in the Indian Ocean and Asian Waters, Phuket, Thailand, February 20-24, 2006.
- 3rd International Conference on Early Warning: From Concept to Action, Bonn, Germany, 27-29 March 2006.
- OECD Global Science Forum Workshop on Earthquake Science and its Contribution to Society, Potsdam, Germany, 1-2 June 2006.
- 11th International Symposium on Natural and Human Induced Hazards and 2nd Workshop on Earthquake Prediction, Patras, Greece, 22-25 June, 2006.
- 36th COSPAR Scientific Assembly, Beijing, China, 16-23 July 2006.
- General Assembly of the Asian Seismological Commission and Symposium "Earthquake and Tsunami Disaster Preparedness and Mitigation", Bangkok, Thailand, 7-10 November 2006.
- International Conference on Climate Change and Earthquakes, Islamabad, Pakistan, 13-17 November 2006.

BUSINESS MEETINGS

- On 2 December 2004 the business meeting of the GeoRisk Commission was held in Hyderabad, India. New Executives of the Commission took the office after the meeting.
- On 29 March 2005 A. Ismail-Zadeh met in Paris A. Szollosi-Nagy, Secretary General, International Hydrological Program, UNESCO and discussed topics related to Webcyclopedia and Baku international workshop.
- On 19 June T. Beer and A. Ismail-Zadeh met in Paris H. Modaressi, S. Hosford, and G. Le Cozannet of the IGOS GeoHazards Bureau to discuss cooperation between IUGG (GeoRisk Commission), IGOS Geohazards team and GeoUnion Hazards Initiative.
- On 21 June 2006 T. Beer and A. Ismail-Zadeh met in Paris P. Dube (Botswana), a member of the ICSU Planning Group on Natural and Human Induced Environmental Hazards and Disasters, to discuss possibilities of cooperation on the topic of natural hazards in Africa.
- On 10 July 2006, A. Ismail-Zadeh met in Paris A. Gvishiani, Vice President of ICSU CODATA, to discuss cooperation between IUGG GeoRisk Commission and ICSU CODATA on the development of Webcyclopedia.
- On 15 January 2007 A. Ismail-Zadeh met in Kyoto K. Sassa, President of the International Consortium on Landslides (ICL), Kyoto to discuss ways of cooperation between the GeoRisk Commission and ICL.
- At the invitation of International Consortium on Landslides, A. Ismail-Zadeh attended the First Session of the International Program on Landslides (IPL) held in United Nations University, Tokyo, Japan, January 22-25, 2007. The IUGG and GeoRisk Commission are invited to co-sponsor the First World Landslide Forum to be held 18-21 November 2008, Tokyo, Japan.
- On 30 January 2007 A. Ismail-Zadeh and T. Beer met in Tokyo Dr. Haruyama of the International Geographical Union (IGU) and discussed the topics related to cooperation between the IGU Commission on Hazards and Risks and IUGG GeoRisk Commission. Also they met Dr. M. Kono, IUGG Past-President, and discussed

several aspects of the relationship between IUGG with Union Associations and Commissions.

COMMISSION PROJECTS

- “Near Earth Orbit Objects”, co-partner, funded by ICSU (2004)
- “Dark Nature”, co-partner, funded by ICSU (2004)
- Workshop in Stockholm (Sweden), funded by NATO and IUGG (2004)
- “Comprehensive historical earthquake and tsunami database for the South-West Pacific”, funded by IUGG (2004).
- Workshop in Baku (Azerbaijan), funded by IHP/UNESCO, IUGG, and ExxonMobil (2005).
- Symposium in Munich (Germany), funded by IUGG (2006).
- Workshop in Kampala (Uganda), funded by IUGG (2007).

The GeoRisk Commission submitted two ICSU project proposals, but the projects were not funded because of ICSU financial problems:

1. Geohazards: Extreme Natural Events and Societal Implications (led by IUGG / GeoRisk Commission). Sponsoring partners: ICSU GeoUnions.
2. The Role of Science and Data in Disaster Risk Management (led by ICSU CODATA). Supporting partner: IUGG / GeoRisk Commission

WEBCYCLOPEDIA OF NATURAL HAZARDS, RISKS AND SUSTAINABILITY

The web-page of the Commission is maintained at the new site: <http://www.iugg-georisk.org>

The Webcyclopedia at: <http://www.iugg-georisk.org/webcyclopedia/index.html> continues to collate information. The Webcyclopedia is a matrix, ordered in terms of cities, hazards and risks, and authors. The hazards is determined by the scientific skill base, as determined by the IUGG Associations - hydrological, meteorological, marine, tsunamis, volcanoes, seismic, geodetic (landslides), geomagnetic. The risks are determined by the sustainability issues such as infrastructure issues (building vulnerability, robustness of infrastructure), and health issues (air quality, water quality, contaminated land). The Webcyclopedia entities are varied, ranging from the traditional scientific paper through to interactive hazard maps, real time data, models of the phenomena, or merely hyperlinks to other sites providing information on the topic. The presentations, given at the meetings organized by the Commission or endorsed by the Commission, have been incorporated into the Webcyclopedia. The Commission continues to search for an editor for the project.

PUBLICATIONS

- Beer, T. and Ismail-Zadeh, A.T. (Eds.) Risk Science and Sustainability, Kluwer Academic Publishers, Dordrecht, 2003. 256 p. (peer-reviewed articles based on the Budapest workshop of the IUGG GeoRisk Commission).

- Ell, R., Riding the storm: can science keep us in the saddle? *ESOF Newsletter*, No. 10, Feature article, http://www.esof2006.org/blog_article.php?ID=24&what=Feature, 24 May 2006.
- Gupta, H., Mega –Tsunami of 26th December 2004: Indian Initiative for Early Warning system and Mitigation of Oceanogenic Hazards, *Episodes*, Vol. 28, No.1, 2-5, 2005.
- Ismail-Zadeh, A.T., Science for mitigation of natural disasters, *EuroScience News*, 30, 1, 2005.
- Ismail-Zadeh, A. T. (Ed.) *Recent Geodynamics, Georisk and Sustainable Development in the Black Sea to Caspian Sea Region*, American Institute of Physics Conference Proceedings, vol. 825, Melville, New York, 2006. 162 p. (peer-reviewed articles based on the Baku workshop of the IUGG GeoRisk Commission)
- Ismail-Zadeh, A., and Beer, T., A focus on risk science and sustainable development, *EOS, Transactions of the American Geophysical Union*, vol. 85, No. 44, 453, 2004.
- Ismail-Zadeh, A. T., and T. Beer (Eds.) *Georisk: Interactions between Science and Society*, special issue of *Natural Hazards*, Springer, 2007 (peer-reviewed articles based on the Stockholm and Hyderabad workshops of the IUGG GeoRisk Commission).
- Singh, R. (Ed.), *Sumatra Tsunami and Earthquake*, special issue of the *International Journal of Remote Sensing* (Taylor and Francis), 2007.
- Singh, S.K., Ortiz, M., Gupta, H. K., and Ramadass, D.G.A. Slow slip below Port Blair, Andaman, during the great Sumatra-Andaman earthquake of 26 December 2004, *Geophys. Res. Lett.*, 33, L03313, doi:10.1029/2005GL025025, 2006

PLANNED ACTIVITY

IUGG GeoRisk Commission is involved in the organization of the following scientific meetings in 2007:

1. EGU Symposium “Earthquake Prediction: What can be done with the best science available?” The Union symposium will be held at the European Geophysical Union General Assembly, Vienna, Austria, 15-20 April 2007. The symposium is co-sponsored by UNESCO. Principal organizer: V. Kossobokov.
2. Union Symposia at the IUGG General Assembly, July 2-13, 2007, Perugia, Italy: US007 High-Performance Computations in Geosciences and US012 Early Warning of Natural Hazards. The symposia are co-sponsored by IASPEI. Principal organizers: A. Ismail-Zadeh, R. Singh, and Z. Wu.
3. Mini-Symposium “Strategy of Reducing Predictive Uncertainty of Geophysical Hazards”, 30 July – 4 August 2007, Bangkok, Thailand. The symposium is co-sponsored by the Asia Pacific Geophysical Society. Principal organizers: K. Takeuchi and H. Gupta.
4. Workshop “Natural and Human-induced Hazards and Disasters in Africa”, Kampala, Uganda, August 2007. The workshop is organized by ICSU Regional Office for Africa and co-sponsored by the GeoRisk Commission (principal contact A. Ismail-Zadeh).

5. Third International Geohazards Workshop, 6-9 November 2007, Frascati, Rome, Italy. The workshop is organized by the IGOS Geohazards team and co-sponsored by the GeoRisk Commission (principal contact A. Ismail-Zadeh).

IUGG GeoRisk Commission intends to strengthen its cooperation with the

- IGOS-Geohazards Team and ICSU CODATA on the development of the Commission's project "Webcyclopedia of Natural Hazards, Risks and Sustainability";
- International Consortium for Landslides and International Program for Landslides and consider possibilities to take part in the organization of the First World Forum on Landslides, UNU Tokyo, January 2008;
- UNESCO International Hydrological Program and UNESCO section on Disaster Reduction;
- International Year of Planet Earth in organization of a conference on Geohazards, Georisks and Disasters, 2008-2009; and
- ICSU GeoUnions Hazard Initiative.

The next business meeting is to be held in Perugia, on *Friday 6 July, 12:00 a.m. to 2:00 p.m.* The President, Secretary General and Treasurer will report on the activity between December 2004 (the last business meeting) and June 2007.

The report is prepared by Alik Ismail-Zadeh.

February 15, 2007

Agenda Item #13b:
Committee on Mathematical Geophysics (CMG)
Comité de géophysique mathématique

1 The 2006 CMG meeting

In the past year the CMG sponsored the the 26th International Conference on Mathematical Geophysics, which had the theme “Coupling in Earth Systems: Solids, Fluids, Life.” The conference was held June 4–8, 2006 near Tiberias, Israel on the Sea of Galilee. The conference was widely held to be a great success. A formal conference report was submitted to IUGG this past fall. The program, the book of abstracts, and a photo gallery is available at the conference website, <http://www.weizmann.ac.il/conferences/CMG2006/>.

2 The 2008 CMG meeting

The 27th International Conference on Mathematical Geophysics will be held from June 16–20, 2008 in Longyearbyen on Spitsbergen. The tentative theme for the meeting is “Dynamics in Earth Systems: Flow, Fracture and Waves.” The local organizers include Eirik Flekkoy of the University of Oslo and Alex Hansen of The Norwegian University of Science and Technology (NTNU) in Trondheim. Flekkoy and Hansen are currently consulting the officers of the CMG for suggestions concerning the program. Their specific interests are in featuring problems concerning the coupling of field observations and experiments to theoretical models, including computer simulations, the formulation of simple concepts, and analytic theory. Of particular interest are problems of coupled, evolving Earth systems. We expect to reach an agreement shortly (within weeks) concerning the overall construction of the scientific program. We shall then poll the CMG representatives in the IUGG associations for specific suggestions. Shortly thereafter we shall start advertizing the meeting.

3 CMG symposium at the Perugia meeting

Augusto Neri, in collaboration with G.Bergantz, E. Aharonov O. Melnik, is organizing a CMG-sponsored Union symposium at the IUGG XXIV General Assembly in Perugia, entitled “Modelling and Simulation of Geophysical Flows: Present and Future.” Currently, four members of the CMG, including the President and Secretary, expect to participate in the Symposium.

4 Committee membership

This past fall our Secretary, Marc Spiegelman, resigned from our committee. Prof. Claudia Pasquero of the University of California–Irvine is now the new Secretary. The current lineup of CMG officers is listed below.

| | |
|------------|--|
| President | Daniel H. Rothman, MIT |
| Secretary | Claudia Pasquero University of California–Irvine |
| Vice-pres. | Einat Aharonov, Weizmann Inst. of Science |
| Vice-pres. | Ray Pierrehumbert, University of Chicago |
| Vice-pres. | Antonello Provenzale, CNR-ISAC, Torino, Italy |
| Vice-pres. | Eli Tziperman, Harvard University |

Daniel H. Rothman, CMG Chair
Claudia Pasquero, CMG Secretary

Agenda Item #13c:
**Quadrennium Report for the Committee on Studies of Earth's Deep
Interior (SEDI)**
**Rapport du Quadrennium pour le Comité d'étude des profondeurs
terrestres**

The principal function of SEDI is to foster cross-disciplinary research on the dynamics and structure of the Earth's deep interior. SEDI works to achieve this goal by organizing biennial scientific meetings, distributing an electronic newsletter, *Deep Earth Digest* through www.sedigroup.org, and maintaining an email list for scientific exchange. Currently, the mailing list includes about 550 members.

During the past quadrennium, SEDI has organized two meetings, and a third is now in the planning stage. Professor Uli Christensen hosted the 9th SEDI meeting in Garmisch-Partenkirchen, Germany, 4-9 July 2004. Over 150 papers in 8 diverse sessions were presented over 5 days. The proceedings of this meeting were published in a special issue of *Physics of Earth and Planetary Interiors* (Volume 153, November 30, 2005). The 10th SEDI meeting was hosted by Professor Pavel Hejda in Prague, The Czech Republic, July 9-14, 2006. Nearly 200 participants were registered at this meeting and more than 160 papers were presented. Proceedings from the meeting are currently being edited and are scheduled to appear in either *Geophysical and Astrophysical Fluid Dynamics* or *Studia Geophysica et Geodetica*. Planning for the 11th SEDI meeting is under way.

SEDI is committed to promoting the interests and activities of young researchers. In addition to supporting student travel, SEDI also supports two awards for young researchers. The Doornbos Memorial Prize was set up in 1994 following the tragic death of seismologist Durk Doornbos. The fund is managed by IASPEI and the prize is awarded for outstanding scientific contributions at the biennial SEDI meeting.

The Prize was awarded to Arwen Deuss of the University of Cambridge and Cinzia Farnetani of the Institut de Physique du Globe, Paris at the 2004 meeting. Julien Aubert of the Institut de Physique du Globe, Paris, Keith Koper of Saint Louis University and Jon Mound of Harvard University received the Prize in 2006. SEDI has also initiated the Zatman Lecture to honour the memory of Dr. Stephen Zatman, a dynamic and innovative young researcher who died under tragic circumstances in 2002. The inaugural Zatman Lecture was given by Dr. Richard Holme of the University of Liverpool at the 2004 meeting. Dr. John Aurnou of the University of California, Los Angeles gave the Zatman lecture in 2006.

SEDI has played a role in supporting the 24th General Assembly in Perugia, Italy. Professor Dave Loper and Professor Phillippe Cardin are co-convenors of special session JAS001, *Planetary Dynamos: theory, models, observations and experiments*. SEDI co-sponsored 3 additional special sessions at the 24th General Assembly.

Agenda Item #13d:
**Quadrennium Report of the Commission on Cryospheric Sciences
(CCS)**
**Rapport du Quadrennium de la Commission des Sciences
Cryosphériques**

ICSI/UCCS activities in 2003–2006

In July 2003, during the IUGG General Assembly in Sapporo, the President of the International Commission on Snow and Ice (ICSI), Gerry Jones, the ICSI Secretary Georg Kaser, and Roger Barry presented an ICSI proposal to attain the status of an Association within IUGG, to the IUGG Executive Committee.

In September 2004, the IUGG Executive Committee established the IUGG Commission for the Cryospheric Sciences (UCCS). UCCS is an interim stage in the change of status of ICSI from that of a commission of the International Association of Hydrological Sciences (IAHS) to that of an Association (International Association of Cryospheric Sciences, IACS) of IUGG. The IUGG Council will bring down the final decision on the formation of IACS at the IUGG General Assembly in Perugia, 2007.

In the meanwhile UCCS has continued the work initiated by ICSI and further developed its activities as a Union Commission. UCCS maintains its activity under the statutes and by-laws of the former ICSI/IAHS with the addition of obligations to its new mother organisation, the IUGG. The current UCCS bureau, which is identical to the ICSI bureau elected during the IUGG Assembly in Sapporo, 2003, consists of Georg Kaser (President); Gerald Jones (Past President); Peter Jansson (Secretary/Treasurer); Jon Ove Hagen, Kumiko Goto-Azuma, Konrad Steffen (Vice Presidents); Julian Dowdeswell, Charles Fierz, Manfred Lange (Heads of Divisions).

Bureau meetings were held in

Cambridge (UK), November 2003

Paris (UNESCO, F), June 2004

Quebec City (CAN), December 2004

Paris (UNESCO, F), November 2005

Karthus (I), UCCS retreat meeting, June 2006

Geneva (WMO, CH), October 2006

The respective minutes are available at

<http://www.cryosphericsscience.org/docs/documents.html>

UCCS web site

UCCS has organized a permanent web site with a new URL:

www.cryosphericsscience.org

The web site is hosted at CIRES, Boulder Colorado (where the IUGG site is also hosted) with the kind assistance and support of CIRES Director Dr. Konrad Steffen and associates at CIRES.

Meetings

IAHS 7th Scientific Assembly, Foz de Iguassu, Brazil, 4–9 April 2005

UCCS participated in the IAHS Scientific Assembly 2005 by hosting the Symposium ‘*Contribution from Glaciers and Snow Cover to Runoff from Mountains in Different*

Climates'(S5). The two-day Symposium, organized by Regine Hock assisted by Mark Williams, Edson Ramirez and Gwyn Rees as co-conveners, consisted of 27 oral and 10 poster presentations by participants from 17 countries. In addition, the workshop '*Andean Glaciology*'(W4) was convened by Jefferson Simoes with assistance from Georg Kaser, Gino Casassa, Pierre Ribstein, and Alberto Aristarain. Seventeen papers covering a wide spectrum of Andean glaciology from mass balance studies of small tropical glaciers to the morphology of Patagonian Fjords were discussed.

IAMAS 9th Scientific Assembly, Beijing, China, 2–11 August 2005

UCCS participated in the IAMAS Scientific Assembly 2005 by co-hosting the Joint Symposium '*Snow and ice covers feedback to interactions with forest, atmosphere and environment*' (J1–J3). The first session '*Modelling forest snow processes*' was chaired by Richard Essery and Shufen Sun, the second session '*Glacier mass balance and its coupling to atmospheric circulation*' was chaired by Peter Jansson and Charles Fierz, and the third session '*Mountain snow and ice cover*' was chaired by Manfred Staehli.

Conference on Glacial Sedimentary Processes and Products, University of Wales, Aberystwyth, 23–27 August 2005

The UCCS Division of Glaciers and Ice Sheets Working Group on Debris Transport in Glaciers organised an international symposium on Glacial Sedimentary Processes and Products in Wales 2005. The meeting was well attended; an abstract volume of 139 abstracts is accessible at <http://www.lboro.ac.uk/research/phys-geog/dtg/past.html>

International Symposium on Cryospheric Indicators of Global Climate Change: a joint WCRP–CliC/IGS/UCCS Symposium, Cambridge, England, 21–25 August 2006

The first event organized by the newly formed UCCS was the '*International Symposium on Cryospheric Indicators of Global Climate Change*' held in Cambridge, UK, 21–25 August 2006. The Symposium, which was held jointly by UCCS, the International Glaciological Society (IGS), and the WCRP core project Climate and Cryosphere (CliC), attracted a large number of attendees and abstracts. A total of 224 delegates attended the meeting, 292 abstracts were submitted before the symposium, and by the time of the symposium some 111 talks and 105 posters were scheduled; approximately 80 papers were finally submitted for the proceedings volume to be published in the *Annals of Glaciology* 46.

Other activities

Field course on Methods of Glacier Observations, New Delhi, Chhota Shigri Glacier, India, 1–11 August 2003.

The field course '*Methods of Glacier Observations*' was organised and held by ICSI and the HKH-Friend Snow and Glacier Group. It was sponsored by UNESCO/IHP, ICSI being the contractor. The French Institut de recherche pour le développement (IRD) supported the course. Preparatory work started with a workshop organised by HKH-FRIEND and ICSI in Kathmandu in March 2001. It was at this workshop that the decision to produce a glacier fieldwork manual was taken; the manual was subsequently prepared and published by ICSI (see publication list below). The field course was held on Chhota Shigri Glacier, Himachal Pradesh, India and attended by 20 trainees from India, Nepal and Bhutan and 7 trainers from ICSI and IRD (2). Local organisation was provided by the Glaciology Group of Jawaharlal Nehru University, New Delhi, India. Since the field course, the Chhota Shigri Glacier has remained the first and only benchmark glacier of a Regional HKH Glacier Mass Balance Network (HKH-GMN).

Field course on Methods of Glacier Observations, La Paz, Bolivia, 1–11 August 2005.

The field course ‘*Methods of Glacier Observations*’ was initiated and co-sponsored by UCCS together with the French Institut de recherche pour le développement (IRD/GREATICE), the Instituto de Hidráulica e Hidrología (IHH) of Universidad Mayor de San Andrés, Bolivia, Alliance Francaise (AF), and IHP/UNESCO. It was held in La Paz and on Glaciar Zongo, Bolivia. Financial support was provided by UNESCO IHP and IRD. The course organized by Dr. Bernard Francou (IRD) and Dr. Edson Ramirez (IHH) attracted 20 participants from Argentina, Bolivia, Brazil, Chile, Ecuador, Mexico, and Peru. Trainers came from Bolivia, France and Norway. The training course was organized to support the development of the Andean Glacier Mass Balance Network. It consisted of lectures on both general methodology of mass balance measurements and on those methodologies suitable for local conditions in the Andes. Results from existing (16 glaciers) and past investigations in the regions were also discussed as well as the important and particular climate glacier relationships. The course also contained field experience on the Zongo Glacier (5060 m a.s.l.). The workshop was concluded by setting goals for collection, analysis, exchange and scientific communication of results from the region through web-media, publications and scientific symposia.

World Glacier Monitoring Service

UCCS, as was the former ICSI, is responsible for the UNESCO/UNEP/FAGS activity of maintaining a glacier monitoring service. The service is currently housed at the University of Zürich. The service collects glacier monitoring data produces both bi-annual and five year reports of glacier data as well as maintains a data bas of glacier-related data.

Division activities

Glacier and Permafrost Hazards in Mountains

The joint UCCS/IPA working group on glacier and permafrost hazards in mountains (GAPHAZ) organized its third scientific session on glacier and permafrost hazards ‘*Climate change impacts on glaciers, permafrost and related hazards*’ at the European Geosciences Union (EGU) General Assembly 2006 held in Vienna. Further information and abstracts can be found at <http://www.copernicus.org> (go to EGU, assembly 2006, programme, Cryospheric Sciences, session CR12). A similar session has been proposed also for the EGU'07. A special issue of "Global and Planetary Change" resulting from the EGU'05 session is in press.

Division of Glaciers and Ice Sheets

Glacial debris transport and deposition

The main activity over the past year has been the acquisition of papers arising from the August 2005 conference in Aberystwyth and editing them. The full work was sent to the IAS Special publications editor in August 2006, and publication is expected in mid-2007. A Working Group website has been developed, thanks to the design skills of the new Work Group Secretary, Dr David Graham of Loughborough University, UK. Please see: <http://www.lboro.ac.uk/research/phys-geog/dtg/index.html>.

Division of Snow and Avalanches

Snow Classification

The activity has progressed and is currently in a phase of revising the classification; the (shape)

classification is augmented by a proper characterisation of a snow layer as a whole and not just through the grain types found in that layer. The revised classification will thus include guidelines on how to use other properties such as density, hardness, liquid water content etc. to characterise snow. The final goal of the WG is a revised classification to be presented at the General assembly in Perugia, 2007.

Intercomparison of Forest Snow Process Models (SnowMIP2)

Following on from the Snow Model Intercomparison Project (SnowMIP) for simulations of snowcovers without exposed vegetation, SnowMIP2 was commissioned by ICSI as an intercomparison of models simulating snow processes in forested environments. Following its inception, SnowMIP2 was also adopted as an activity of the GEWEX Land Atmosphere System Study (GLASS) and the WCRP Climate and Cryosphere project (CliC). Extending the original plan for an intercomparison of simulations at three sites, driving and evaluation datasets have been obtained for five sites (in Switzerland, Canada, Japan, the USA and Finland), each with a pair of nearby coniferous forest and open plots. The modelling phase of SnowMIP2 began in June 2006 with the release of finalized instructions and driving, initialization and calibration data. A remarkable response was received, with more than 30 centres in 12 countries registering to participate; the deadline for completion of simulations is December 2006, so it remains to be seen how many models will return results. More information on SnowMIP2 can be obtained from the project website <http://users.aber.ac.uk/rie/SnowMIP2.html>.

Publications

The following are publications produced as an outcome of ICSI/UCCS sponsored activities and workshops/Symposia 2003–2006:

2007

Annals of Glaciology, 46. Proceedings from the International Symposium on Cryospheric Indicators of Global Climate Change.

2006

Casassa, G., W. Haeberli, G. Jones, G. Kaser, P. Ribstein, A. Rivera, C. Schneider (eds). Proceedings of the Symposium on Andean Mass Balance, Valdivia, March 2003, Global and Planetary Change. doi:10.1016/j.gloplacha.2006.

Hock, R., Rees, G., Williams, M., and Ramirez, E. (eds.), 2006. Contribution from Glaciers and Snow to Runoff from the Mountains in Different Climates. *Hydr. Proc.* 20 (10).

2005

IUGG (CCS)-UNEP-UNESCO, 2005. Fluctuation of glaciers 1995-2000 (Vol. VIII).

IUGG (CCS)-UNEP-UNESCO-WMO, 2005. Glacier mass balance bulletin. Bulletin No. 8 (2002-2003).

2004

Pomeroy, J.W. (eds.), 2004. Snow processes and modeling: Recent advances. *J. Hydrometeorol.* 5 (5).

2003

Kaser, G., Fountain, A., and Jansson, P., 2003. *A Manual For Monitoring the Mass Balance of Mountain Glaciers*. IHP-VI Technical Documents in Hydrology No. 59. UNESCO, Paris.

Lang, H., and Kaser, G., (eds.), 2003. High mountain regions: hydrological processes and cryospheric processes, models and the variability of available water resources; in anticipation of the 'Year of the Mountains 2002'. *J. Hydrol.* 282 (1-4).

IAHS (ICSI)-UNEP-UNESCO-WMO, 2003. Glacier mass balance bulletin. Bulletin No. 7 (2000-2001).

The future

As stated above, UCCS is an interim organisation. The immediate future and the possibilities for the Cryospheric Sciences are highly dependent on the outcome of the IUGG General Assembly and decisions to be taken there by the IUGG council. UCCS activities, however, will continue to develop. Planning for the IUGG General Assembly is in progress. A total of 13 symposia and workshop activities are planned in conjunction with and will be hosted by IAG, IAHS, IAMAS, IAPSO and IAVCEI. UCCS is also collaborating on the plans for a joint IAMAS/IAPSO/UCCS Assembly in Montreal 2009. Workshops are also planned for the 33rd International Geological Congress in Oslo 2008. Both activities will be published in international journals. UCCS will continue to sponsor glacier monitoring efforts in less well investigated areas such as the Himalayas, the South American Andes and the tropical regions. The responsibility of the Cryospheric community to produce and improve data products for climate change assessments will also remain a strong focus for the Commission, The World glacier Monitoring Service (WGMS) is one example how such monitoring data is collected and distributed for assessments such as the IPCC.

Peter Jansson, Feb 13, 2007
Secretary/Treasurer

Agenda Item #14a:
Quadrennium Report for the International Lithosphere Program (ILP)
Rapport du Quadrennium du Programme International de la
Lithosphère

Introduction

There has been a significant change in the situation regarding the International Lithosphere Program since the 2003 (Sapporo) General Assembly. Since 1980, ILP had been an Interdisciplinary Body of the International Council for Science (ICSU). In 2003, A. Taira (Japan) was the President and K. Shedlock (USA) was Secretary General. IUGG named two members to their Bureau, coordinated with the International Union of Geological Sciences (IUGS) to name a joint member of the ILP Bureau, and sent a non-voting liaison to each Bureau meeting. In 2004, Sierd Cloetingh became the President of ILP and J. Negendank became Secretary General. The IUGG members of the Bureau were Hermann Drewes (Germany) and Qingchen WANG (China), the joint IUGG/IUGS Bureau member was Soeren Gregersen (Denmark), and the IUGG representative was E. Robert Engdahl (USA). At their General Assembly in October 2005, ICSU withdrew sponsorship of ILP and recommended that responsibility should shift to IUGG and IUGS. Since that time, IUGG and IUGS have reaffirmed the ILP mission have collaborated to re-define ILP as an inter-Union body. New Terms of Reference have now been approved by both Unions (attached as an Appendix). Both IUGS and IUGG have appointed members to the ILP Bureau for the Term 2006-2010 as follows:

| | |
|-------------------------------------|---|
| <i>President:</i> | Sierd Cloetingh (Netherlands) |
| <i>Secretary General:</i> | Jørg F.W. Ngendank (Germany) until mid 2007 |
| <i>Bureau Members:</i> | IUGG: E. Robert Engdahl (USA) |
| | IUGG: K.C. Sain (India) |
| | IUGS: Yoshiyuki Tatsumi (Japan) |
| | IUGS: Jean Paul Cadet (France) |
| | IUGS and IUGG: Alan Green (to be confirmed) |
| <i>Past President (ex officio):</i> | Asahiko Taira (Japan) |
| <i>Chair of Nat'l Members:</i> | Søren Gregersen (Denmark) |

In a document prepared for the 2006 IUGG Bureau meeting, J. Negendank reported that ILP cooperates with IUGS and IUGG on the International Year of Planet Earth (IYPE). In this context ILP is leading the IYPE theme Deep Earth. He also reported that ILP held Bureau meetings on 6 December 2005 in San Francisco, and on 4 April 2006 in Vienna, Austria. The next Bureau meeting will be arranged in Perugia, Italy, during the course of the IUGG General Assembly 2-13 July.

List of Active Projects

I. Projects, Task Forces

Theme I: Geoscience of global change

I-4/Task Force II: New tectonic causes of volcano failure and possible premonitory signals

Theme II: Contemporary dynamics and deep processes

II-1/Task Force VII: Temporal and Spatial Change of Stress and Strain

II-5/Task Force V: Global and regional parameters of paleoseismology; implications for fault scaling and future earthquake hazard

II-6/Task Force VIII: Baby plumes in Central Europe

II-7 Ongoing project: Earthquakes and Megacities Initiative (EMI)

II-10/Task Force IV: Ultra-Deep Continental Crust Subduction (UDCCS)

Theme III: Continental lithosphere

III-2/Task Force VI: Sedimentary Basins

III-9/Task Force I: Earth Accretionary Systems (in space and time) (ERAS)

III-10/Task Force III: Lithosphere-Asthenosphere Interactions

II. Coordinating Committees

CC-1/1: Himalaya-Karakorum-Tibet-Workshop 2005

CC-1/2: Andes

CC-1/3: TOPO-EUROPE

CC-4: Continental Drilling

CC-7: International Commission for the Earth Sciences in Africa (ICESA)

CC-8: Committee on Interdisciplinary Lithospheric Surveys (COILS)

CC-8A: Lithospheric Evolution of Gondwana East from iNterdisciplinary Deep Surveys (LEGENDS)

Future plans

- Initiate new Regional Committees like the Andes or Topo-Europe in other continents (e.g. Asia, Africa ...)
- Restructure National Committees
- Seek to participate in opportunities presented by the European Science Foundation EUROCORES programme "TOPO-EUROPE" to carry out research on coupled Deep Earth - Surface Processes on Europe's continental lithosphere and its margins. The research groups will start in 2007.

Appendix to ILP Report
Inter-Union Commission on the Lithosphere:
The International Lithosphere Program (ILP)

TERMS OF REFERENCE

approved with modification by IUGG Bureau 18 October 2006
approved by the IUGS Bureau 12 January 2007

I. ESTABLISHMENT AND PURPOSE OF THE PROGRAM

1. The International Lithosphere Program (ILP), guided by the Scientific Committee on the Lithosphere (SCL), was established in 1980 as the Inter-union Commission on the Lithosphere (ICL) by the International Council for Science (ICSU), at the request of the International Union of Geological Sciences (IUGS) and the International Union of Geodesy and Geophysics (IUGG). The name was formally changed to the Scientific Committee on the Lithosphere in 1999. According to Decision 8.4 from the 2005 ICSU General Assembly, ICSU decided “to withdraw ICSU sponsorship from SCL/ILP and to recommend that responsibility would then shift to IUGG and IUGS.”

2. The International Lithosphere Program (ILP) seeks to elucidate the nature, dynamics, origin, and evolution of the lithosphere, with special attention to the continents and their margins. Believing these goals are best attained through international, interdisciplinary collaboration, the ILP establishes international, multidisciplinary projects and working groups to pursue specific research objectives. Projects and working groups address scientific topics in any of the four ILP themes: global change, contemporary dynamics and deep processes, continental lithosphere, and ocean lithosphere.

3. The target areas for ILP focus are aspects of the crust and deeper parts of the lithosphere and the interaction of crust/mantle (lithosphere) processes with surface processes and neotectonic activities, especially on the continents and their margins (e.g. lithospheric folding) in which both geophysics and geology are involved. The ILP seeks to avoid overlap with current research fields in IUGS Commissions, Task Groups, and Initiatives; IGCP and GARS projects; IUGS Affiliated bodies; IUGG Associations; and other appropriate research groups. If plans for addressing such overlapping fields would develop, ILP should discuss these with both Unions beforehand. The Unions, in turn, are committed to involve ILP in their own programs and projects given an expression of interest to do so from ILP.

4. The ILP supports the active participation of scientists from developing countries. Although active participation of such scientists is not deemed a training activity, it is expected that their involvement will provide training opportunities for students and young scientists.

5. The ILP supports workshops and/or special symposia at regional, national, or international meetings through projects and coordinating committees or in conjunction with IUGS, IUGG, and other scientific bodies.

6. The ILP administers an award (a citation and travel grant), the Edward A. Flinn Award, given to an outstanding young scientist for contributions in the solid earth sciences addressed by the ILP.

7. The ILP maintains a website and issues an Annual Report. Currently, the Annual Report is available as a web-based publication; the last printed Annual Report was published for 2000. The ILP also delivers administrative reports to both IUGS and IUGG annually or as requested.

8. The ILP receives visibility from IUGG and IUGS in newsletters, websites, annual reports, and outreach materials and events. The ILP has access to the IUGS publishing house in the Geological Society of London, and is expected to join and participate in outreach and other events initiated by IUGS and/or IUGG, such as the International Year of Planet Earth. Logos of both Unions must be visible in all ILP publications, their website, and other outreach activities.

II. COMPOSITION OF THE PROGRAM

9. The ILP initiates projects and working groups selected through a competitive proposal process. Small grants may be awarded especially to support meeting and field travel for scientists from developing countries who are involved in the projects. ILP projects are expected to have an average life span of 5 years unless extraordinary success warrants continuation.

10. Working Groups may be created to accomplish specific objectives. The topic or problem around which a Working Group is organized must clearly require an interdisciplinary approach and significant participation by representatives of all branches of Earth science is highly desirable.

- A Working Group shall consist of a limited number of scientists appointed by the Bureau (defined in Part III). Consideration is to be given to the appropriate geographical distribution of the members. The Bureau will provide for an orderly rotation of the membership of the Working Groups.
- The Chair of a Working Group shall be appointed by the Bureau for a term of 5 years and will report the progress on the topic to the Bureau annually or as requested.

III. ADMINISTRATION

11. The ILP is positioned as a Joint Scientific Program of IUGG and IUGS. ILP may have its own National Members, on the condition that this would not negatively affect national membership to IUGS and IUGG.

12. The ILP is administered by a Bureau of seven members. These include the President and the Secretary General, who are named by agreement between IUGG and IUGS; two members appointed by IUGG; two appointed by IUGS; and one member appointed jointly by IUGG and IUGS. At least one Bureau member will normally represent a developing country. The Past President may attend meetings with voice but without vote. In addition, the National Members may elect a representative invited to attend ILP Bureau meetings with voice but without vote, although they may choose to elect a regular member of the Bureau to represent their interests.

13. The normal term of office for all Bureau members shall be 4 years, denoted as one period. The first period shall commence in calendar year 2006; officers appointed in 2006 must be reappointed or replaced in 2010. Vacancies during any term shall be filled by IUGG, IUGS, or jointly (as appropriate) in consultation with the ILP Bureau.

14. The President shall be appointed for one period and is eligible for re-appointment. The President shall chair the meetings of the Bureau and shall be their representative in external and internal affairs. The ILP President is welcome to attend regular Executive Committee meetings of IUGS and IUGG as an observer.

15. The Secretary General shall be appointed for one period, and may be re-appointed for consecutive periods up to a maximum of 3 periods in office. The Secretary General shall be responsible for all matters concerning the finances and administration of the Bureau; in particular, he/she shall conduct the correspondence, arrange for meetings of the Bureau, prepare agendas and meeting minutes, and issue reports.

16. Regular Bureau members may be reappointed once, but with the provision that no more than 4 of the 7 members may be in their second period of service. The representative of the national members should be elected at the beginning of each period.

17. The Bureau shall normally meet once each year in coordination with IUGG and IUGS. The meeting shall be announced no less than 4 months in advance. At such meetings, the Bureau shall approve the financial accounts submitted by the Secretary General, deliberate and adopt the budget for the forthcoming period of one year, initiate Working Groups and review their progress.

18. The decisions of the Bureau shall be taken during its meetings by a simple majority vote of the members then present. A quorum of 5 members must be present; the Chair has a casting vote.

19. Additional meetings of the Bureau may be convened as deemed necessary by the President or at the request of a majority of the Bureau members.

IV. FINANCES

20. The operational costs of the ILP Bureau shall be provided by the ILP budget. IUGG and IUGS will provide financial support to ILP, based on accepted work programs and their own budget capacity; ILP is committed to raising most of its budget by external fundraising.

V. AMENDMENTS TO THE TERMS OF REFERENCE

21. Amendments to the Terms of Reference may be proposed by the ILP Bureau and will be adopted when ratified by IUGS and IUGG.

Agenda Item #14b:
The Geo-Unions Consortium
Le Consortium des GeoUnions

Beginning in early 2004, several of the ICSU Unions that focus on the geosciences (the GeoUnions) met to coordinate and cooperate. This was received with considerable enthusiasm by ICSU, and viewed as model for other Unions to follow. The GeoUnions now constitute a "cluster" of Unions within the ICSU family, of the following seven Unions: IAU (International Union of Astronomy, not fully engaged in the GeoUnions activities), IGU (Geography), INQUA (Quaternary Research), ISPRS (Photogrammetry and Remote Sensing), IUGS (Geological Sciences), IUGG (Geodesy and Geophysics), IUSS (Soil Sciences).

In order to take advantage of overlapping scientific expertise, a joint Science Program was agreed, with six topics, each led by one of the Unions:

- Cities and Megacities (IGU)
- Desertification (IUSS)
- Groundwater (IUGG)
- Hazards (IUGG)
- Health (IUGS)
- Polar science (ISPRS)

Teams were set up, with members from each of the Unions, to prepare a scientific program of action and then develop research proposals that could be submitted to funding sources. Some of the teams progressed more than others, but none has so far reached the point where it is able to submit proposals. The idea has much merit, but implementation is not easy, and depends very much on the individuals involved, in particular the lead persons. It is hoped that the GeoUnions joint programs will lead to significant science projects, to greater recognition by society, and will help to create an attraction for young scholars to adopt a career in the geosciences.

The GeoUnions also support the IUGG initiatives on Geosciences in Africa and the electronic Geophysical Year. There is considerable overlap between the 10 science topics of the International Year of Planet Earth (IYPE) and the GeoUnions science programs. In addition, ICSU has strategic priorities in Natural and Human-Induced Environmental Hazards, and Science for Health and Well-being. It is hoped that each programme will be enhanced by cross-collaboration and communication.

Since the first meeting in Paris, the GeoUnions have met in Boulder, Colorado (2004), Shanghai, China (2005), and Maputo, Mozambique (2006). The next meeting is planned for Rome, Italy (2007) on April.

Uri Shamir

Agenda Item #15a:
Relations with ICSU: Summary of Matters Arising
Relations avec le CIUS: Résumé des affaires qui s'élèvent

IUGG has been a member of the International Council of Science (ICSU) since it was founded in 1925. ICSU now has 111 National Members and 29 Unions, seven of them in the GeoUnion cluster, and several Interdisciplinary Bodies. The Executive Board of ICSU has, in addition to the ICSU Officers, four members elected by the National Members and four elected by the Unions, one from each of the four clusters of Unions. At the ICSU General Assembly in Suzhou in October 2005, the GeoUnions cluster named Uri Shamir as its sole candidate, and he was elected to the ICSU-EB for the period 2005-2008. Dr. Harsh Gupta was selected as a member of the ICSU Committee on Scientific Planning and Review (CSPR) following the ICSU General Assembly.

IUGG has been an active participant in ICSU activities, including the nomination of persons for numerous panels and working groups. Those panels for which IUGG was successful included the Panel of Area Assessment on Environment and its Relation to Sustainable Development (Dr. Uri Shamir), an ad hoc Expert Panel on Priority Area Assessment on Capacity Building in Science (Dr. Harsh Gupta), an ad hoc Committee on Membership Issues (Dr. Uri Shamir), and both the scoping and planning group on Natural and Human-Induced Environmental Hazards (Dr. Tom Beer). Two IUGG nominations were successful for the International Science Panel on Renewable Energies (ISPRES) (Dr. Andrew Blakers and Dr. Arni Snorrason).

IUGG wrote a letter endorsing the ICSU "Agenda for Action" with regard to Science in the Information Society, and wrote a statement and sent an observer (Dr. Arthur Askew) to the December 8-9, 2003 conference in Geneva, Switzerland, on the Role of Science in the Information Society. During the quadrennium, IUGG officers attended an ICSU Unions meeting in Paris (2004) and an upcoming Unions meeting in Rome (April 2007), and the ICSU General Assembly in Suzhou, China (2005).

ICSU has decided to create a number of Regional Offices. Prof. Charles Merry, Chairman of the South African National Committee for IUGG, represented IUGG at the First ICSU Regional Meeting for Africa in Harare, Zimbabwe in 2004. Dr. Uri Shamir attended the Second Consultative Forum of the Regional Office for Africa (ROA) in Johannesburg and Pretoria in September 2006. Drs. Tom Beer and Harsh Gupta represented IUGG at the meeting establishing the ICSU Regional Office for Asia and the Pacific held in Kuala Lumpur in 2005, and Dr. Luiz Paulo Fortes, Chairman of the Brazilian National Committee for IUGG, represented IUGG at the meeting establishing the ICSU Regional Office for South America, held in Panama City in 2006. Attempts to find a location for an ICSU office in the Arab world have not yet borne results. The Regional Offices have the task of dealing with issues that have regional relevance and of engaging local scientists, in collaboration with the international scientific community.

As part of the celebrations of their 5th Anniversary, ICSU will hold a conference titled "Global Scientific Challenges: Perspectives from Young Scientists", in Lindau, Germany, in April 2007. IUGG is sending three young scientists to attend.

IUGG has had some concerns about the manner in which the interaction between ICSU and its Unions is conducted. In consultation with the other GeoUnions, who felt the same, a letter of concern was addressed to ICSU (IGU did not join) in September 2006,

titled "ICSU and its Unions: A Call for Closer Cooperation". The letter was also circulated to all other ICSU Unions, and several consenting answers were received. The ICSU-EB discussed the letter, and ICSU Executive Director, Prof. Thomas Rosswall, responded in a letter in November 2006. Copies of these two documents can be made available to members of this Council upon request. It is to be expected that these discussions have helped to improve the coordination between ICSU and its Unions.

ICSU is currently reviewing its Grants programme, and its dues structure. The outcome of both reviews will be of considerable interest to IUGG.

Several of the ICSU Strategic Priorities, decided at their 2005 General Assembly, are of direct interest to IUGG and its Associations. Those include the following planned actions, from the ICSU Strategic Plan 2006-2011 (available on the ICSU website: www.ICSU.org).

- ICSU will plan and coordinate IPY 2007-2008 in cooperation with the World Meteorological Organization.
- An ad hoc Planning Group will be established to develop a new international research programme on natural and human-induced environmental hazards and disasters;
 - ICSU will work with the UN International Strategy on Disaster Reduction and other international organizations to ensure that existing and new scientific knowledge is used to develop improved hazard-mitigation strategies and policies.
 - An ad hoc Planning Group will develop a plan for an International Science Panel on Renewable Energy;
- ICSU will establish an ad hoc Scoping Group to more clearly define how it might contribute to science for human health, taking into account the ongoing development of two new research initiatives:
 - Science for Health and Well-Being is an ambitious initiative, bringing together the perspectives of many ICSU Unions in an integrated approach to human health;
 - Global Environmental Change and Human Health is a new project that is being planned as part of the Earth Systems Science Partnership;
- ICSU will play an active role in developing an international framework for the production, management and dissemination/access of scientific data and information. An ad hoc Strategic Data and Information Committee will be established, for three years in the first instance, to oversee the development of this framework

Finally, there have been active discussions over the past several years regarding the future of the Federation of Astronomical and Geophysical Data Analysis Services (FAGS), an ICSU Interdisciplinary Body. These discussions are summarized in the next section.

Agenda Item #15b:
**Quadrennium Report for the Federation of Astronomical and
Geophysical Data Analysis Services (FAGS)**
**Rapport du Quadrennium de la Fédération des services d'analyse des
données astronomiques et géophysiques**

This period has been interesting as the FAGS Council addressed a number of changes, external and internal, and continues thoughtful restructuring of the organization.

The Committee on Scientific Planning and Review (CSPR) is the ICSU Committee responsible for all Priority Area Assessment (PAA) and it appoints an *ad hoc* PAA Panel for each major priority scientific area identified for assessment. At the 27th General Assembly of ICSU (2002) the CSPR recommended carrying out two PAA, both of which passed comment on FAGS. The first, *PAA Report on the Environment and its Relation to Sustainable Development*, (ISBN 0-930357-59-0) released in December 2003 was critical of FAGS although their comments were supposedly narrow in scope and "...limited to their [FAGS] contribution to environmental science." (Sec 5.5.5, pg. 36 of the report) The panel recommended that FAGS should no longer be an Interdisciplinary Body under ICSU (ICSU IB).

The second PAA, *Panel on Scientific Data and Information*, (ISBN 0-930357-60-4) released in December 2004 similarly reviewed FAGS activities in relation to science data and information and also recommended that FAGS should no longer be an ICSU IB. (Sec. 5.3.2, pg. 32) The report cites that FAGS was not active in regard to key data policy and management issues and that it did not interact with other ICSU bodies such as CODATA and WDCs. One of the reports key recommendations is to establish a Scientific Data and Information Forum (ScDIF) and noted that some of the FAGS services may be important contributors to ScDIF.

The reaction of the FAGS Council, the service directors, and the sponsoring Unions, IUGG, URSI and IAU were opposed to devolving FAGS back to the Unions, and generally discontent with the PAA process and results. However, the council recognizes that FAGS must also evolve as a federation in a rapidly changing world. The scientific service directors all agreed that not being associated with the ICSU umbrella could have a detrimental impact on their ability to obtain funding from their national sponsors.

Therefore, a FAGS Council meeting in Paris (2-3 May 2005) at UNESCO included Service Directors and the Union' Secretary Generals. They studied several alternatives for the future. One alternative that the FAGS Council has been investigating was its rebirth as a virtual Centre (CAGS) under the auspices of UNESCO. UNESCO would consider a joint grouping with the three Unions in principal. Advantages could have been more government recognition and funding for FAGS Services. Another alternative was to create an ad hoc committee across the three Unions, which would have had the weakness of being without a prestigious umbrella, such as ICSU, or UNESCO.

At the ICSU 28th General Assembly, China, 18-22 October, 2005 the recommendations to eliminate FAGS as an ICSU IB were put to the Assembly, but it was not accepted and it was decided *“To extend ICSU’s sponsorship of FAGS for a period of 3 years, during which the FAGS panel will continue to fulfill its role of coordination among the Services, while ICSU examines integration of this function within its activities in data and information.”* This decision resulted from strong actions of the IAU, IUGG and URSI who submitted this alternative to the ICSU General Assembly and thus received a strong majority of votes among both the National Member and Union delegates of ICSU. Consequently, FAGS retained its Interdisciplinary Body status for a further three years.

A FAGS meeting was organized on 29-30 March 2006 at Paris Observatory again with the Service Directors, the Unions and the ICSU Representative in order to re-consider the future of FAGS with the new situation. During this meeting, it was acknowledged that, contrarily to what was discussed during the 2005 FAGS meeting, there was a future for FAGS within ICSU. A proposal should be prepared for building a new federation of services in order to adapt to the modern astronomical and geophysical services, the ICSU WDC system evolution and the current ICSU strategic plan. There has been interesting and positive discussion during that meeting from which have emerged preliminary views on the current FAGS strengths and weakness and on a recommended organisation for a future Federation of Services that could (i) be a benefit for the Services and the Unions and (ii) fit the current ICSU strategic plan and especially the Priority Area Assessment (PAA) on Scientific Data and Information.

In last 2006 the "Ad hoc Strategic Committee on Information and Data" (SCID) was established by ICSU, according to the ICSU Strategic Plan 2006-2011, in order to achieve the recommendations of the Priority Area Assessments PAA on Scientific Data and Information. The SDIC terms of reference have been adopted and are especially relevant to considerations on the future of FAGS -- SCID membership includes two FAGS representatives. Two FAGS representatives have been nominated and the first SCID meeting will probably be held in a few months time.

In parallel, the FAGS Council is preparing a strategic paper on FAGS future, which will be discussed at the FAGS meeting in April 2007 in Paris. The concepts in the paper will be discussed with the Services, the Unions, ICSU, etc. Further developments will be considered during the FAGS General Committee meeting at the 24th IUGG General Assembly in July 2007, Perugia, Italy.

IUGG funding for FAGS has been steady at \$12,000 US per year. This funding is gratefully received, and by nature is fully utilized with no overhead being extracted from the receiving services. It is most commonly used for outreach to scientists in developing countries. In general, funding from the Unions has decreased dramatically, with IUGG being the main sponsor of FAGS services activities. Part of the future strategies for FAGS will be how to secure the necessary resources to support the coordination roles and those inter-service activities that are outside the scope of the individual services budgets.

FAGS Website, with links to all of the FAGS services:
<http://www2.kms.dk/fags/index.html>

Meetings of FAGS Council 2003-2007:

April 28, 2003, ICSU, Montmorency, Paris, France

April 19, 2004, Southampton Oceanography Centre, Southampton, UK

May 3, 2005 UNESCO, Paris, France

March 30, 2006, Observatoire de Paris, Paris, France

April 3, 2007, ICSU (tbd), Paris, France

Council:

President: Nicole Capitaine, France, succeeded David Pugh, UK, as President of the FAGS Council in March 2006. David Pugh completed his last four-year term.

Secretariat: Niels Andersen, Denmark

Members:

IUGG: David Pugh, UK; Ruth Neilan, USA

URIS: Roy Booth, Sweden; Phil Wilkinson, Australia

IAU: Einar A. Tandberg-Hanssen

Respectfully submitted on behalf of FAGS Council,

Ruth E. Neilan and David Pugh
IUGG Representatives to FAGS

Agenda Item #16a:
**Report on the Activities of the Scientific Committee on Antarctic
Research (SCAR) 2003-2006**
**Rapport des Activités du Comité Scientifique de la Recherche
antarctique**

SCAR, the Scientific Committee on Antarctic Research, is an interdisciplinary committee of ICSU and it is charged with the initiation, promotion and co-ordination of scientific research in Antarctica. SCAR evolved from the Special Committee on Antarctic Research established by ICSU to co-ordinate the scientific research of the twelve nations active in Antarctica during the International Geophysical Year 1957-58.

The membership of SCAR comprises the National Committees of national scientific academies or research councils of those nations which are active in Antarctic research, relevant ICSU Scientific Unions, and Associate Members which are those national scientific organisations planning to become active in Antarctic research.

SCAR Delegates meet biennially to determine SCAR policy and strategy. The Delegates elect a President and four Vice-Presidents from amongst themselves who, together with the Immediate Past President, constitute the Executive Committee which is responsible for conducting the day-to-day administration of SCAR through its Secretariat and Executive Office at the Scott Polar Research Institute in Cambridge, United Kingdom.

The membership of SCAR numbered in 2002, 27 Full Members (National Committees), 7 ICSU Union Members, and 4 Associate Members. In 2006 the membership was 30 Full Members (Switzerland became Full Member in 2004, Bulgaria and Ukraine became Full Members in 2006), 8 ICSU Union Members (the International Union for Quaternary Research became ICSU Union Member in 2006) and 4 Associate Members (Malaysia has been admitted to Associated Membership in 2004, Denmark and Portugal have been admitted to Associated Membership in 2006).

The publication of *SCAR Bulletins* (nos 148-161) within *Polar Record*, and as a separate for internal SCAR distribution and *SCAR Reports* (nos 23-28) continued throughout the 2003-2006 period. In 2005 SCAR stopped production of the hard copies of these publications. The *SCAR Bulletin* and *SCAR Report* are reproduced on the SCAR website (usually as pdf files), they are now publicly available and can be reached from the SCAR homepage at www.scar.org. To improve communication with members and with the Antarctic and Southern Ocean scientific communities SCAR launched in January 2005 a Quarterly Newsletter also publicly available at www.scar.org.

Following the review of the *ad hoc* Group on SCAR Organisation and Strategy, SCAR operates now with three Standing Scientific Groups (Geosciences, Life Sciences, Physical Sciences). The new structure will enable SCAR to address inter-disciplinary science more efficiently and integrate more effectively with other international and global programmes. Each group elects three officers, comprises a maximum of four national

representatives and is structured in several sub-groups (Action Groups, Expert Groups, Scientific Programme Planning Groups and Scientific Research Programmes) to accommodate their various activities. The scientific and business meetings of the three Standing Scientific Groups will be held, if possible, two-three months before the Delegates Meeting and are open to all interested scientists. Two Delegate Committees were created to discuss respectively scientific and organisational matters and two Standing Committees were established one on the Antarctic Treaty System, and the second on SCAR Finance. In addition to these Standing Committees a SCAR-COMNAP Joint Committee on Antarctic Data Management has been created to advise SCAR and COMNAP on all aspects of Antarctic data matters.

2003

In January 2003 a meeting of the International Organising Committee for the First SCAR Open Science Conference was held in Bremerhaven and Bremen, Germany, to view the local facilities and to review progress with the overall organisation. For the first time, the biennial 2004 SCAR Meeting will be organised in two distinct parts to fulfil a recommendation of the *ad hoc* Group that reviewed SCAR: the Science Meeting will be in Bremen and the Delegates Meeting in Bremerhaven two months later.

SCAR was represented at the XXVI Antarctic Treaty Consultative Meeting (ATCM) in Madrid, Spain, during June 2003. Prior to the meeting, SCAR had contributed to several Inter-sessional Contact Groups to comment on scientific aspects of comprehensive environmental evaluations and draft management plans for Antarctic Specially Protected Areas and tabled seven Information Papers at the meeting.

A meeting of the SCAR Executive Committee was held in Brest, France, 11-15 July 2003. The meeting was held in conjunction with the annual meeting of the Council of Managers of National Antarctic Programmes (COMNAP) and its Standing Committee on Antarctic Logistics and Operations (SCALOP). For the first time, the Executive Committee was joined by the chief officers of the three Standing Scientific Groups whose contributions added much to the meeting's productivity. Agenda items included progress report about the development and population of the Antarctic Master Directory with metadata entries; progress report on the activities of the Standing Scientific Groups; proposal of new Scientific Research Programmes; review of the Prince of Asturias Fellowship Programme with the selection of five young scientists receiving an award of US\$ 10,000 each to undertake a research project in a SCAR country other than their own; selection of candidates for the new position of Executive Director of SCAR to be interviewed in August 2003.

2004

The SCAR Executive Committee met in Bremerhaven, Germany, on 20-21 January 2004 in conjunction with the International Organizing Committee for the SCAR First Open Science Conference. The president welcomed Dr Colin Summerhayes as the newly appointed Executive Director of SCAR. Agenda items included the reorganisation of the SCAR Office in Cambridge, the preparation of the XXVII Antarctic Treaty Consultative Meeting (ATCM) scheduled in Cape Town, South Africa, 24 May - 4 June 2004, the

discussion of the new Constitution to be finalised by the end of March, and of course, the final arrangements for the forthcoming SCAR Open Science Conference in Bremen.

SCAR held its first Open Science Conference on 26-28 July 2004, in Bremen, with the title “*Antarctica and the Southern Ocean in the Global System*”. A total of 633 abstracts had been submitted for oral and poster presentations by scientists from 34 countries. Around 1000 people registered for the meeting, which provided important opportunities to develop cross-disciplinary links. The SCAR Executive Committee also met in Bremen on 25 and 30 July 2004 and established the final agenda and timetable for the XXVIII SCAR Delegates Meeting. A Joint meeting of SCAR and COMNAP Executive Committees was held on 29 July 2004. The objective of this joint meeting was mainly to discuss possible co-operations between the two committees (IPY, Antarctic Master Directory, ATCM issues, SCAR Scientific Research Programmes). Jörn Thiede and the Alfred Wegener Institut staff were congratulated on the excellent organisation of the Science Meeting.

The XXVIII biennial meeting of SCAR was held in Bremerhaven, Germany, 4-8 October 2004 and corresponds to the completion of the SCAR restructuring that began with an independent review commissioned in April 1999. The principal changes can be summarised as follow:

- SCAR has converted its Secretariat to an Executive Office run by an Executive Director appointed in April 2004.
- SCAR has adopted a new Constitution and Rules of Procedure, which embrace a new vision, mission and objectives.
- SCAR has created a modern science framework of Standing Scientific Groups on Geosciences, Life Sciences, and Physical Sciences, with interdisciplinary cross linkages between them.
- SCAR has focussed its major scientific research on a limited number of major scientific questions of global scientific interest, many of which also have considerable socio-economic significance.
- SCAR has reorganised its meetings to give National Delegates greater contact with the science, and has introduced a major biennial Open Science Conference.
- SCAR has expanded its geographical remit to include the Southern Ocean from the Antarctic coast north to the Subantarctic Front, to recognise the important role of the Antarctic Circumpolar Current.
- SCAR will make a significant contribution to the proposed International Polar Year.
- SCAR has published a Strategic Plan (2004-2010) to specify how it proposes to achieve its new vision, mission and objectives (<http://www.scar.org>)

Switzerland has been admitted as a Full Member of SCAR and Malaysia has been admitted to Associate Membership.

On the Executive Committee, Chris Rapley (United Kingdom) and Roland Schlich (France) completed their terms of Office as Vice-presidents. Mahlon C. Kennicutt II (United States) and H. Shimamura (Japan) were elected Vice-Presidents. Jörn Thiede (Germany), President elected in 2002 and the immediate Past President Robert Rutherford (United States)), together with the Vice-Presidents Jeronimo Lopez-Martinez (Spain) and Clive Howards-Williams (New Zealand) completed the Executive Committee.

G. Kleinschmidt and S-H Lee had resigned from the Standing Committee on Finance and Delegates approved the appointments of R. Dietrich (Germany) and T.J. Wilson (United States). The committee, chaired by R. Schlich (France), was completed by the appointment of J. Valencia (Chile) and F.J. Davey (New Zealand) for the duration of the 2004 session.

The Chief Officers, A. Capra (Italy) for the Geosciences, A.H. Huiske's (The Netherlands) for the Life Sciences, and J. Turner (United Kingdom) for the Physical Sciences presented their respective progress report. The Delegates accepted the reports and approved the revised provisional budgets.

The SCAR Delegates also approved plans for a new set of five major Scientific Research Programmes that will be the SCAR scientific flagships for the next 5-10 years. They are:

- Antarctica and the Global Climate System (AGCS) a study of the modern ocean-atmosphere-ice system;
- Antarctic Climate Evolution (ACE) a study of climate change over the past 34 million years since glaciation began;
- Evolution and Biodiversity in the Antarctic (EBA) a study of the response of life to change;
- Subglacial Antarctic Lake Exploration (SALE) a study of the chemistry and biology of long buried lakes beneath the ice sheet;
- Interhemispheric Conjugacy Effects in Solar-Terrestrial and Aeronomy Research (ICESTAR) a study of how the Earth's outer atmosphere responds to the changing impact of the solar wind at both poles.

2005

SCAR played a prominent role in the XXVIII Antarctic Treaty Consultative Meeting (ATCM), held in Stockholm, Sweden, 6-17 June 2005. SCAR presented a number of Information Papers and Working Papers, and provided the annual SCAR lecture, which was on climate change and given by Steven Chown of South Africa.

A meeting of the SCAR Executive Committee was held in Sofia, Bulgaria, 11-13 July 2005. The meeting was held in conjunction with the annual meeting of the Council of Managers of National Antarctic Programmes (COMNAP) and its Standing Committee on

Antarctic Logistics and Operations (SCALOP). Chief Officers of the SCAR Standing Scientific Groups and SCAR Standing Committees attended the meeting. Agenda items included a review of the SCAR membership, a report on population of the Antarctic Master Directory with metadata entries, and a review of the activities of the Joint SCAR-COMNAP Committee on Antarctic Data Management (JCADM). The Chief Officers presented their respective progress report and reviewed the five ongoing SCAR Scientific Research Programmes. The Australian National Committee provided a progress report on arrangements for the XXIX SCAR meetings (Open Science Conference and Delegates Meeting) to be held in Hobart in 2006. The Executive Director reported on the current status for the 2005/2006 SCAR Fellowship Programme and M. Chuck Kennicutt, the newly appointed chairman of the SCAR Standing Committee on Finance, replacing R. Schlich (France), reported on the SCAR finances.

2006

The Twenty-nine biennial meetings of SCAR (Open Science Conference and Delegates meetings) were held in Hobart, Tasmania, 9-19 July 2006. The business meetings of SCAR subsidiary bodies, the SCAR Open Science Conference and the annual meeting of the Council of Managers of National Antarctic Programmes (COMNAP) and its Standing Committee on Antarctic Logistics and Operations (SCALOP) were held during the first week (9-14 July 2006). The Delegates Meeting was scheduled for the second week, 17-19 July 2006.

Some 750 abstracts were received for oral and poster sessions for the SCAR Second Open Science Conference. Most of them were accepted. A few abstracts were withdrawn due to the inability of people to travel to the meeting. 53 % of the papers were oral and 47 % posters. There were 13 parallel sessions and 39 separate scientific themes. The organisers of the combined SCAR and COMNAP meetings in Hobart were pleasantly surprised to attract some 850 registrants from 32 countries, including some 120 students. Ian Allison and the Australian Antarctic Division were congratulated on the excellent organisation of the meeting.

During the opening ceremony of the SCAR Open Science Conference, the President had awarded: the president's Medal to Peter Barrett (New Zealand); the SCAR Medal for Excellence in Antarctic Scientific Research to Paul Mayewski (USA); and the SCAR Medal for International Scientific Coordination to David Walton (UK).

Bulgaria and Ukraine have been admitted as a Full Member of SCAR and Denmark and Portugal have been admitted to Associate Membership. The international Union for Quaternary Research (INQUA) was admitted for Union Membership.

On the Executive Committee Jörn Thiede (Germany) completed his term of Office as President, Jeronimo López-Martínez (Spain) and Clive Howard-Williams (New Zealand)

also completed their terms of Office as Vice-presidents. Chris Rapley (United Kingdom) was elected President. Sergio Marensi (Argentina), Antonio Meloni (Italy), and Zhanhai Zhang (China) were elected Vice-Presidents. The immediate Past-President Jörn Thiede (Germany), together with the Vice-President Mahlon Kennicutt II (USA) completed the Executive Committee.

S. Marensi (Argentina) was appointed to replace T. Wilson (USA) on the Standing Committee on Finance alongside current members M. Chuck Kennicutt (chairman) and R. Dietrich (Germany). Two volunteers, F. Davey (New Zealand) and S. Malinga (South Africa) were appointed on the committee for the duration of the meeting.

The Chief Officers, A. Capra (Italy) for Geosciences, A. Huiskes (The Netherlands) for Life Sciences, and J. Turner (United Kingdom) for Physical Sciences, presented a summary report of their respective Standing Scientific Groups activities. A number of generic points emerged from these reports, which led to some actions for the future. It was suggested that in the interest of efficiency and effectiveness Standing Scientific Group Officers should work with the SCAR Secretariat to prepare an annotated agenda, in advance, as a basis for the SSG report to Delegates.

A. Capra highlighted the Marine Acoustic Action Group report presented at the 29th ATCM meeting in Edinburgh (June 2006), the activities of the Expert Group on Geographic Information (composite gazetteer, map catalogue, digital databases), of the Expert Group on the Geodetic Infrastructure of Antarctica improving the database for the Antarctic geoid, of the Expert Group on the Digital Magnetic Anomaly Map developing a DVD of data up to 1999 for submission to the World data Centres. A. Capra also draw attention to the currently planned 10th International Symposium on Antarctic Earth Sciences, which will take place in Santa Barbara, California, 26 August - 1st September 2007.

A. Huiskes highlighted the increasing active interdisciplinary collaboration between SCAR and SCOR in relation to the Southern Ocean ecosystem, the completion of the former EVOLUNTA and RISC programmes, and the incorporation of their follow-on activities into the EBA programme, the formation of a new Action Group on the Continuous Plankton Recorder. A. Huiskes also suggested that the Expert Group on Birds and the Expert Group on Seals should be merged.

J. Turner highlighted the cross-SSG workshop in Amsterdam (November 2005) which had established links with the Life Sciences SSG for the provision of future climate scenarios for the assessment of possible environmental change during the next century, the cross-SSG workshop on climatic, biological and cryospheric variability, which had been organised during the Second Open Science Conference, the completion and termination of the MOSAK and PASTA Action Groups. J. Turner also proposed a new Action Group for a Pan-Antarctic Observations Network, the addition of an Action Group on Contaminants to map pollutants and the launching of a new Scientific Programme Planning Group on Antarctic Astronomy and Astrophysics.

The Executive Director summarised the review of the performance of the Joint SCAR-COMNAP Committee on Antarctic Data Management (JCADM). The review is very favourable, JCADM is meeting the key recommendations of the external review that was undertaken in March 2005.

Reports on and reviews of the five SCAR Scientific Research Programmes were also presented by the leaders of these programmes. A short synopsis will be published in the Antarctic Science Journal, in order to generate further interest.

Chuck Kennicutt, the Chairman of the Standing Finance Committee, presented the financial statements for 2004 and 2005 which were approved by the Delegates. The 2006 provisional budget was revised taking into account the new levels of national contributions that took effect on 1st January 2006 and the additional expenditures induced by the development of the research programmes. The 2007 and 2008 provisional budgets were tabled and approved.

The Delegate of the USA invited the SCAR Executive Committee to meet in parallel with the XVIII COMNAP meeting to be held in Washington DC (USA), during 8-13 July 2007.

The XXX SCAR meeting will be in Russia in 2008. The Open Science Conference will be in St Petersburg and hosted by the Arctic and Antarctic Research Institute. The Delegates Meeting will be held immediately afterwards in Moscow and hosted by the Russian Academy of Sciences.

Dr Roland Schlich
Liaison Officer of IUGG to SCAR
Strasbourg, February 2007

Acronyms

| | |
|----------|---|
| ACE | Antarctic Climate Evolution |
| AGCS | Antarctica and the Global Climate System |
| ATCM | Antarctic Treaty Consultative Meeting |
| COMNAP | Council of Managers of National Antarctic Programmes |
| EBA | Evolution and Biodiversity in the Antarctic |
| EVOLUNTA | Evolutionary biology of Antarctic Organisms |
| ICESTAR | Interhemispheric Conjugacy Effects in Solar-Terrestrial and Aeronomy Research |
| ICSU | International Council for Science |
| INQUA | International Union for Quaternary Research |
| IPY | international Polar Year |
| JCADM | Joint SCAR-COMNAP Committee on Antarctic Data Management |
| MOSAK | Modelling and Observational Studies of Antarctic Katabatic Winds |

PASTA Plateau Astronomy Site Testing in Antarctica
RISC Regional Sensitivity to Climate Change in Antarctica Terrestrial
Ecosystems.
SALA Subglacial Antarctic Lake Exploration
SCALOP Standing Committee on Antarctic Logistics and Operations
SCOR Scientific Committee on Oceanic Research
SSG Standing Scientific Group

Agenda Item #16b:
**Report on the Activities of the Scientific Committee on the International
Geosphere-Biosphere Programme (IGBP)**
**Rapport des Activités du Comité Scientifique du Programme
International sur la Géosphère et la Biosphère**

IGBP is the International Geosphere-Biosphere Programme. Though originally started as an interdisciplinary body within ICSU, it has been outstandingly successful and appears to have developed an independent existence.

Upon appointment as IUGG Liaison to IGBP in 2003, I tried to determine what the liaison actually did and how the liaison officers related to the IGBP governance structure. It was only by examining archival documents that I discovered that at one stage such liaison representatives were considered an essential part of IGBP but as the programme developed, the role of the liaisons were diminished.

I sought enlightenment from the then Director of IGBP who wrote that:
...the idea of liaison officers to IGBP was developed well before my time. To the best of my knowledge, the original intent was to ensure good connectivity between the ICSU unions and IGBP as a new, interdisciplinary programme. In those days (late 1980s) there was apparently some concern about how IGBP would interact with the unions, and there was obviously a need to avoid overlap and unnecessary duplication.

As IGBP has developed, I think the roles of IGBP as an interdisciplinary, focussed research programme and the unions as being representative of broad disciplines are clearly differentiated and complementary. Also, with modern communication techniques...I wonder there is still a need for official union liaison persons to IGBP. I guess this is ultimately ICSU's call.

In July 2004 I wrote to all members of the IGBP Scientific Committee, and to all IGBP National Representatives enclosing a copy of the IUGG brochure and seeking their suggestions for liaison. Though I received a couple of polite replies thanking me for the contact, it is apparent that IGBP has continued to develop and now sees its role as embedded within the Earth Systems Science Partnership (ESSP) of Diversitas, IHDP, IGBP and WCRP.

The present IGBP web site sees IGBP partners as follows:

In addition to connections with our ESSP partners and links to the global observations community (e.g. the Group on Earth Observations – GEO; the Integrated Global Observing Strategy – IGOS; the Committee on Earth Observation Satellites - CEOS), IGBP maintains collaboration with a number of other international organizations.

The Scientific Committee for Oceanic Research (SCOR) is co-sponsor of the GLOBEC, IMBER and SOLAS projects, while the Commission on Atmospheric Chemistry and

Global Pollution (CACGP) co-sponsors SOLAS and IGAC. These collaborations are very important for IGBP, because these organizations provide significant scientific input and guidance to the projects as well as co-sponsoring the Fast-Track Initiatives. Plans are underway for a new Symposium on Oceans in a High CO2 World, to be co-sponsored by SCOR, the Intergovernmental Oceanographic Commission (IOC), and IGBP.

IGBP also works closely with the Asia-Pacific Network for Global Change Research (APN), and the Inter American Institute for Global Change Research (IAI). Both APN and IAI support IGBP-related research and training activities, and are important partners in developing scientific agendas appropriate for their respective regions.

IGBP contributes to global assessments such as the Intergovernmental Panel on Climate Change (IPCC) and the Millennium Ecosystem Assessment (MEA).

IGBP is sponsored by the International Council for Science (ICSU) and financial support is facilitated by the International Group of Funding Agencies (IGFA).

In conclusion then, the only role for the IUGG representative appears to be one of receiving the IGBP newsletter. For the IUGG liaison to be useful the liaison person would need to be tied in to the workings of IGBP. This would mean being a project chair, a national committee chair, or a member of the Scientific Committee. As I could identify no such person who is also tied in to IUGG, for example as an officer of IUGG or one of the International Associations I recommend that the role of IUGG Liaison to IGBP be discontinued.

Tom Beer
IGBP Liaison to IGBP

Agenda Item #16c:
**Report on the Activities of the Scientific Committee on Oceanic
Research (SCOR)**
**Rapport des Activités du Comité Scientifique des Recherches
Océanographiques**

The Scientific Committee on Oceanic Research (SCOR) was created by ICSU 1957 as the first of its interdisciplinary bodies, with responsibility for promoting international cooperation in oceanography. SCOR currently has 87 national Nominated Members to international SCOR, representing 35 nations. The Nominated Members elect an Executive Committee that fulfills SCOR's responsibilities. SCOR operates primarily through three types of scientific activities: large-scale research projects, working groups, and planning groups and advisory bodies, supplemented by capacity-building activities.

The SCOR Executive Committee meets annually, with every other year being a formal General Meeting with its national members. Over the past quadrennium, SCOR's meetings have been in Moscow (2003), Venice (2004), Cairns (2005) and Concepción (2006). SCOR will be meeting in Bergen, Norway in 2007 and celebrating its 50th anniversary with a meeting in Woods Hole, USA in 2008, where it first met in 1957. SCOR's role within ICSU was most recently evaluated in 2003 as part of ICSU's examination of all activities in the area of the environment. The review highly commended SCOR for its scientific integrity, the success of its working groups, promotion of international, multidisciplinary cooperation in ocean sciences, outreach to scientists in the developing world, and flexibility of its focus.

For the period 2003-2007, Dr. Shiro Imawaki, the President of IAPSO, and Dr. Michael MacCracken, the President of IAMAS, served as the IUGG's liaisons to SCOR. By the SCOR procedures, the liaisons of IAPSO, IAMAS, and IABO (the International Association for Biological Oceanography) are *ex officio* members of the SCOR Executive Committee. In addition to their responsibility for representing the interests of their associations and unions, the *ex officio* members, based on their areas of expertise, are also asked to assist in helping to oversee and serve as reporters for or liaisons to various of the many groups with which SCOR interacts. At present, Dr. Imawaki serves as liaison to two SCOR WGs, and Dr. MacCracken serves as liaison to one SCOR WG, to the Joint Scientific Committee of the World Climate Research Programme and to the SOLAS/INI Review of Anthropogenic Nitrogen Impacts on the Open Ocean; he also previously served as SCOR's member on the planning committee for the Special Workshop on Comet/Asteroid Impacts and Human Society that was sponsored by ICSU.

As an indication of the breadth of SCOR activities, the major activities going on now are described below. Additional information is available on the SCOR Web site (<http://www.scor-int.org/>) and through the *SCOR Newsletter* that was initiated in 2004.

Large-Scale Research Projects

Global-scale issues related to the role of the ocean in environmental change are tackled through SCOR's participation in planning and guiding long-term, large-scale

international ocean research projects. For example, SCOR initiated the Joint Global Ocean Flux Study (JGOFS) and the Global Ocean Ecosystem Dynamics (GLOBEC) projects; the latter was also co-initiated by the Intergovernmental Oceanographic Commission (IOC). SCOR and the International Geosphere-Biosphere Programme (IGBP) presently cosponsor two other major ocean science activities: the Surface Ocean-Lower Atmosphere Study (SOLAS) and the Integrated Marine Biogeochemistry and Ecosystem Research (IMBER) project. In addition to these projects with IGBP, SCOR also co-sponsors the Global Ecology and Oceanography of Harmful Algal Blooms (GEOHAB) program with IOC, and SCOR is the sole sponsor of the new GEOTRACES project. GEOTRACES will measure the concentrations and distributions of trace elements in the ocean.

Working Groups

More specific ocean science topics are addressed by Working Groups, the traditional mechanism by which SCOR has operated since its inception. These Working Groups are usually formed based on a proposal that is focused on addressing a particular topic over a few-year period, with the results to be presented in a manual, book, or publication. For each of the approved WGs, some of which are co-sponsored with other organizations or associations (e.g., IAPSO), SCOR approves the charter and membership (typically ten members from countries around the world), provides funds for meetings and publications, and monitors the WG's progress. Typically, two to three new WGs are formed each year.

In approving the WGs, SCOR also seeks to ensure a balance across the range of disciplinary interest in the oceans (e.g., physical as compared to biological, deep versus coastal ocean, etc.). Some of the existing working groups are as follows:

Coupling Waves, Currents, and Winds in Coastal Models

This group is preparing a book, to be published by Cambridge University Press, which reviews the present status of our knowledge regarding each component of coastal dynamics: coastal wave models, coastal circulation models, and the coastal atmospheric boundary layer models. The group has examined the existing coastal circulation and wave data from both conventional and remotely sensed sources to detect possible weaknesses of uncoupled models, and to address the issues faced in creating a coupled model. It is stimulating collaborative research among wave, circulation, and coastal meteorology modelers with the goal of designing a coupled coastal dynamics model. The group will estimate the contribution of coastal waters to heat exchange between the atmosphere and the ocean, which has importance for global modeling and climate studies.

Ocean Mixing (with IAPSO)

This group has produced a special issue of *Deep-Sea Research* on ocean mixing, summarizing past results, including analyses of historical field data, concerning the sources for, and geographical distribution of, mixing in the deep-ocean basins. The special issue assesses, within the established observational and theoretical context, difficulties involved with parameterization of mixing in numerical ocean general circulation models. The group has also assessed what more should be done by further

observational programs or improved observational techniques to fill gaps in understanding essential for modeling the effects of ocean mixing, including the potential to detect ocean mixing through remote sensing and tracer techniques.

Mechanisms of Sediment Retention in Estuaries (with IAPSO and the Land-Ocean Interactions in the Coastal Zone [LOICZ] project of IGBP)

This group is working to collect and analyze global data on sediment retention in estuaries versus export to the coastal ocean, based on climate, hydrologic, physical, geological, chemical, biological, and human processes, and including estuarine systems of different types, from tropical to subpolar. It will evaluate available models of estuarine sediment retention. It will also identify research, observation (including standard measurement procedures), and modeling activities needed to improve predictions of sediment retention in estuaries.

Reconstruction of Past Ocean Circulation (with the International Marine Global Change Study: IMAGES)

This group will assess the existing paleoceanographic methods for reconstructing the history of ocean circulation over the past 120,000 years. It will develop recommendations for future approaches to quantitatively assess the hypothesized changes in ocean circulation over the same time scale. The group will identify a minimum array of global locations and data types that would help to constrain uncertainties concerning changes in ocean circulation linked to major climate changes, bearing in mind the potential for collecting appropriate geological material as well as the size of the expected circulation signal relative to uncertainties in the methods.

Analyzing the Links between Present Oceanic Processes and Paleo-records (with IMAGES)

This group will use the new insights gained from contemporary ocean biogeochemical studies to identify or refine our understanding of key oceanic processes, and develop or improve proxies for these processes for subsequent use in paleoceanographic studies. It will refine established proxies, provide mechanistic understanding and foster the development of new proxies within integrated multidisciplinary process studies in the modern ocean. The group will use proxy evidence from the sedimentary records to test hypotheses of the oceanic response to climate change.

Thermodynamics and Equation of State of Seawater (with IAPSO)

This group will examine the results of recent research in ocean thermodynamics with a view to recommending a change to the internationally recommended algorithms for evaluating density and related quantities (including enthalpy, entropy and potential temperature). Such recommendations would take into account the reformulation of the International Temperature Scale (ITS-90). The group will examine the most accurate recent knowledge of the freezing temperature of seawater, the calculation of dissolved oxygen, and the behavior of seawater at high salinity. It will also examine the feasibility of using simple functions of three-dimensional space to take account of the spatially varying concentrations of alkalinity, total carbon dioxide, calcium and silica place on the determination of density in the ocean. Finally, the group will extend these concepts to a

wider range of physical/chemical issues of relevance to the internal working of the ocean and of its interaction with the atmosphere and to present and potential future observational techniques.

Natural and Human-Induced Hypoxia and Consequences for Coastal Areas

This group will synthesize the state of the science for the following aspects of coastal hypoxia: (a) prevalence and spatio-temporal variability; (b) natural and human causes; (c) effects on the biogeochemistry and ecology; and (d) resistance, resilience and recovery of ecosystems. The group will identify gaps in our understanding of hypoxia and make recommendations for future research. It will determine the requirements for observing and modeling hypoxia and its impacts in coastal systems.

Deep Ocean Exchanges with the Shelf (with IAPSO)

This group will establish the current state of knowledge and make recommendations for future research related to the following topics:

- Processes due to shelf waves, internal tides, shelf-break upwelling, storms and extreme events that produce effects over time scales of weeks to one or two years;
- Transport over the shelf and shelf break of riverine and estuarine input of sediment and fresh water;
- Dissipation of tidal motion along the continental margins on time scales of hours to days;
- Physical controls of chemical and biological fluxes between the shelf and the open ocean that can affect the ecology of such regions; and
- Coupled physical-chemical-biological models, generally at local to regional scales, which have a more realistic description of the exchanges at the shelf edge.

The group will determine where further observational programmes (using improved technology) are needed to improve understanding of shelf-break processes and to provide help with the formulation of more realistic models of the fluxes between the shelf and the deep ocean. The group will also serve as an international forum for oceanographers to discuss current research on the interaction between the coastal zone and the deep ocean. It will foster collaboration between developed and developing countries that have interest in the shelf zone; limited-area models are required to help scientists in countries that do not have access to large computers.

Planning Groups and Advisory Bodies

The third type of SCOR activity includes planning groups and advisory bodies. Among the activities that SCOR has initiated and helped to organize are the following:

Symposia on the Ocean in a High-CO₂ World

SCOR and IOC convened a symposium in May 2004 that focused the attention of the scientific community on ocean acidification and its effects on marine organisms. The first symposium stimulated other national and international evaluations, new research,

and public awareness of the issue. SCOR, IOC, and IGBP are planning the second symposium in this series, to be held late in 2008.

IOC/SCOR International Ocean Carbon Coordination Project (IOCCP)

IOCCP is a joint group of SCOR and IOC that promotes the development of a global network of ocean carbon observations for research through technical coordination and communication services, international agreements on standards and methods, advocacy, and links to the global observing systems.

SCAR/SCOR Expert Group on Oceanography

The Scientific Committee on Antarctic Research (SCAR) and SCOR formed a joint Expert Group on Oceanography in 2004 to encourage an inter-disciplinary approach to Southern Ocean observations, modelling, and research, recognizing the inter-dependence of physical, chemical and biological processes in the ocean at present and in the past. This group is also intended to facilitate coordination between the physical oceanographic research groups currently active and those planning research in the Southern Ocean; to identify historical and reference data sets of value to researchers, focusing initially on physical oceanography data; and to encourage the exchange of information with operational agencies. The primary activity of the group in 2007 will be work on developing a Southern Ocean Observing System.

Capacity-Building Activities

Just as IUGG and its associations work to build international capacity for scientific observation and research, SCOR conducts an active program of capacity building for developing nations and nations with economies in transition (DN&NET). Such nations often conduct significant ocean research programs on national and regional scales, but are under-represented in major international ocean research projects. To promote the participation of scientists from DN&NET in major projects, SCOR carefully reviews the membership on WGs and project steering committees to ensure there is suitable participation by scientists from these nations. By convening a number of its Executive Committee meetings in such nations, SCOR also has sought to recognize and bring attention to research programs in these nations and to provide an opportunity for scientists from those nations to interact with ocean scientists from all over the world. SCOR supports efforts to increase the involvement of scientists from such countries by awarding travel grants for their scientists to participate in ocean science meetings. SCOR also participates in a fellowship program designed to promote ocean observations (led by the Partnership for Observations of the Global Ocean).

Joint Efforts with IAPSO and IAMAS

In addition to the very valuable exchange of information and development of contacts, there is considerable benefit to both SCOR and to IUGG and its associations as a result of the liaison activity. SCOR benefits directly through the participation of these individuals in SCOR meetings and their fulfilling of a number of the roles that would otherwise fall on already heavily burdened SCOR members. Representing the associations, the liaisons also bring a disciplinary-wide perspective to SCOR, which complements the deep

expertise in particular fields that is brought to the Executive Committee by SCOR's elected officers. The participation of the IAMAS liaison often provides an important link to the atmosphere, which so intimately interacts with the oceans. The participation has also enabled all three organizations to be kept aware of activities of the others and to look for areas of common interest and where joint efforts would be valuable to the ocean and atmosphere communities.

To help build an even broader connection, SCOR held its 2005 Executive Committee meeting in conjunction with the IAG/IAPSO/IABO General Assembly in Cairns, Australia. This provided an excellent opportunity for members of SCOR to interact with IAPSO and its leadership and to discuss areas of common interest.

With respect to their sponsored activities, IAPSO and SCOR are now co-sponsoring Working Group 121 on Ocean Mixing, Working Group 122 on Mechanisms of Sediment Retention in Estuaries, Working Group 127 on Thermodynamics and Equation of State of Seawater, and Working Group 129 on Deep Ocean Exchanges with the Shelf (see descriptions of these groups above). The last two of these working groups focus on issues that were identified by IAPSO as being of strategic interest to the broad ocean sciences community and the working group proposals were submitted to SCOR by scientists that IAPSO had brought together.

RECOMMENDATION: Based on the roles that the liaisons play and the benefits to SCOR and the associations, we strongly recommend that this liaison activity be continued.² Given the growing international importance of the issue of sea level rise, which is more and more strongly going to be affected by deterioration of glaciers and ice sheets, it might well be worth considering also having a representative from cryospheric sciences also be appointed as a liaison, especially if the proposal for an International Association of Cryospheric Sciences (IACS) is approved at the IUGG General Assembly in 2007.

Shiro Imawaki (IAPSO), Michael MacCracken (IAMAS) and Bjorn Sundby (SCOR)

² Note that funding for this activity is handled as follows: The host nations of the IAPSO and IAMAS liaisons have graciously supported travel to and from most of the SCOR meetings, and SCOR has supported the living expenses at the Executive Committee meetings. For only one of the meetings over this quadrennium was it necessary to rely on travel funds from the IUGG budget.

Agenda Item #16d:
**Report on the Activities of the Scientific Committee on the Problems of
the Environment (SCOPE)**
**Rapport des Activités du Comité Scientifique sur les Problèmes de
l'Environnement**

SCOPE is an interdisciplinary body of natural and social science expertise focused on global environmental issues, operating at the interface between science and decision-making (policy and management). Furthermore, SCOPE is an International Council of Science (ICSU) committee, which develops syntheses and reviews of scientific knowledge on current or potential environmental issues, primarily through working groups, workshops, and symposia resulting in journal articles and SCOPE publications. The scientific program consists of projects focused on the concepts and practices of sustainability: *maintaining the life-support system of humankind by safeguarding the natural resources over time*. Its aim is to contribute to designing processes and practices, which reduce the depletion rate of non-renewable resources, identify alternate resources, and assure a sustainable supply of renewable resources. SCOPE holds that these resources must be managed in accordance with the strongest possible scientific basis, cultural sensitivity, and social justice.

The SCOPE scientific program is organized into three clusters as listed below. The potential linkages between SCOPE and IUGG are strongest in the areas where the earth system science is about a *transport vector*, e.g. water (IAHS, IAMAS, IAPSO) and atmospheric circulation (IAHS, IAMAS, IAVCEI, IAPSO), or a *hazard* (IAHS, IAMAS, IASPEI, IAVCEI, IAPSO), such as earthquakes, volcanic eruptions, floods, droughts, and changes in atmospheric circulation and transport, e.g. ENSO. Atmospheric circulation and transport is affected by oceanic circulation and the changes in the composition of the atmosphere caused by human activities, droughts, and volcanic eruptions.

During SCOPE's 52nd Executive Committee Meeting last October in Rome, Italy, I perceived that SCOPE is in crisis, and in fact, they have had a financial deficit for the past two years (\$15K/year), which has been attributed to the lack of proposals for new SCOPE projects during two consecutive years 2002-2003 and the absence of sufficient funding for some existing projects. Thomas Rosswall, President of ICSU provided a gloom and doom overview of a similar story for ICSU and several other International Scientific Organizations and how ICSU developed a scientific vision to help guide it with respect to relevance and global impact. The questions regarding relevance of mission and organization mission overlap in a rapidly changing world seems to me to be a central theme of many international organizations today. Thomas' message was that there are too many different organizations competing for diminishing funds and the success stories seem to be tied to major thrusts, such as the International Polar Year (2007-2008, with a major five year thrust on the science of the polar regions). Subsequent to Thomas' presentation, other SCOPE members presented various aspects of how SCOPE conducts its projects and mechanisms for delivering a new suite of products for what was perceived to be a more societal relevance. Imbedded in these presentations and discussions was the perception that by providing more policy relevant output from the projects, this will lead to more success. I questioned if this new direction is misguided in

that the problem with SCOPE is a current short fall in finances and that the added burden of generating a new suite of products has yet to show a concurrent financial return to solve the immediate problem. In addition, new products will require more work from an already overworked secretariat that may not have the expertise to expand in some of the discussed areas, such as web site products. SCOPE has an outstanding history of providing excellent synthesis on globally relevant topics, which are multi/inter disciplinary, a requirement for being a SCOPE project.

The SCOPE Executive Committee will likely be seeking some detailed input from its membership – the Unions and National Committees, i.e., to review the status of SCOPE with respect to its relevance and what activities SCOPE should pursue to better serve its membership and society in general. What has SCOPE done for IUGG recently and vice versa? I would like to see IUGG and its Associations provide a response to these vary important issues and related questions.

For additional information about the SCOPE program and related contacts, see <http://www.icsu-scope.org/>, or for questions/comments, send an email to the secretariat (secretariat@icsu-scope.org). Many of the synthesis products (SCOPE Volumes) are accessible on line under publication on the SCOPE web site.

Cluster 1 - Managing Societal and Natural Resources (MSNR)

Cluster coordinators: P.G. Risser (USA), N.O. Adedipe (Nigeria)

Projects founded on scientific research, but emphasising its applications in developing options for practices and policies for a more sustainable biosphere.

- The Southern African Savannas Network
- Peri-Urban Environmental Change (PU-ECH)
- Urban Solid Waste Management
- Adaptive Ecopolis Development to Meet the Challenge of Environmental Change
- Bridging the gap between ecology researchers and managers of protected areas
- Assessment of Sustainability Indicators (ASI)
- Consequences of Industrialized Animal Production (CIAP)
- AG 21 - Agriculture in the 21st century – costs and benefits for societies and environments

Cluster 2 - Ecosystem Processes and Biodiversity (EP&B)

Cluster Coordinators: C. Heip (Netherlands), C.B. Field (USA)

Projects focused on ecosystem processes, their interactions with human activities, and the relation between biological diversity and ecosystem functioning.

- Altitude referenced biological databases - a tool for understanding mountain biodiversity.
- Earth Surface Processes, Material Use and Urban Development (ESPROMUD)
- Land-Ocean Nutrient Fluxes: Silica Cycle
- Biodiversity & Ecosystem Functioning (BD-EF)
- Emerging Ecosystems
- Monsoon Asia Integrated Regional Studies (MAIRS)

- The International Nitrogen Initiative (INI)
- Microbial genomes in the environment
- Dynamics of semi-enclosed marine ecosystems (PACKMEDS)

Cluster 3 - Health and Environment (H&E)

Cluster Coordinator: V.P. Sharma (India)

Projects that develop methods to assess chemical risks to human and non-human species and

use case studies of environmental contamination to assess the health and environmental risks of specific chemicals.

- Cadmium in the Environment
- Biodiversity, Health and the Environment

Completed Projects Archive

- Element Interactions and the Cycles of Life
- Endocrine Active Substances
- Soils and Sediment Biodiversity and Ecosystem Functioning (SSBEF)
- Toward CO₂ Stabilization: Issues, Strategies, and Consequence
- Fertilizer Nitrogen
- International Program on Ecosystem Change (IPEC)
- Global Invasive Species Programme (GISP)
- Scientific Group on Methodologies for the Safety Evaluation of Chemicals (SGOMSEC)
- Radioactivity at Nuclear Sites (RADSITE)

by Jake Peters (U.S. Geological Survey, Atlanta, GA, USA; nepeters@usgs.gov)

Agenda Item #16e:
**Report on the Activities of the Scientific Committee on Science and
Technology in Developing Countries (COSTED)**
**Rapport des Activités du Comité Scientifique de la Science et de la
Technologie dans les Pays en Développement**

Committee on Science and Technology in Developing Countries (COSTED / IBN), which had been in operation for the past 35 years, was reviewed, by an ICSU's CSPR Panel. The main recommendation of the Panel was to wind up the existing COSTED structure and replace it by ICSU Regional Offices, one each for the Africa, Asia, Latin America and Arab Region. This recommendation was accepted in the ICSU General Assembly held in Brazil in the year 2002, and ICSU was asked to go ahead with the establishing of the regional offices.

As of February 2007, ICSU Regional Offices have been established in Pretoria, South Africa for the African region, and at Kuala Lumpur, Malaysia for Asian and the Pacific region.

ICSU Regional Office for Africa (ROA), Pretoria

After detailed consultations with scientists in Africa and others interested in Africa, four priority areas were identified. These are:

- 1) Health and human well-being,
- 2) Sustainable energy,
- 3) Natural and human –induced hazards and disasters, and
- 4) Global change.

Four scoping groups are preparing work plan in these four priority areas. Before implementation, there will be a wide consultation involving the ICSU family and partners. The Pretoria Office has been quite busy and has organized a number of workshops and seminars on issues of interest to Africa. For example a conference on “**Water Management and Soil Conservation in Semi-Arid Environments**” was held at Morocco from 14-19 May 2006.

ICSU Regional Office for Asia & Pacific (ROAP)

The ICSU Regional Office for Asia & Pacific was inaugurated by the Deputy Prime Minister of Malaysia on 19th September 2006 at Kuala Lumpur. Coinciding with this inauguration, an international conference on “**Natural and Human Induced Hazards**” was convened. It was noted that the number of the natural disasters has increased significantly in the recent past, from about 100 per decade in 1940 to 2800 per decade in 1990's. The Pacific and the Asian region have a major share of these disasters. The 26th December 2004 earthquake in Sumatra region and the unprecedented tsunami it generated killing some 250,000 human beings, and the Muzzafarabad earthquake of

October 8,2005 killing some 88,000 human beings are classical examples. The focus of the conference was to use the scientific knowledge to prevent natural and man- made hazards from becoming catastrophic events.

Many activities are planned by ROAP. For example a conference on “**Space Applications for Sustainable Development in Asia and Pacific**” during February 5 to 10,2007; an “**International Advance Course on Renewable Energies**” during May 21 to 30, 2007 etc.

Other Regional Offices

Efforts are on to set up the remaining two ICSU Regional Offices for Latin America and the Arab Regions. It is expected that both these offices shall be functional with in the current year (2007).

Suggestions for IUGG

It is important for IUGG to take note of these developments. Specifically, it may be noted that natural and man-made hazards are the central themes for both the ICSU Regional Offices at Pretoria and Kuala Lumpur. Additionally, there is stress on water resources, climate change etc. The Associations of IUGG have a lot to contribute. IUGG should continuously interact with the regional offices and participate in their activities. IUGG should also make efforts to involve the Regional Offices in it's out reach programs.

Agenda Item #16f:
**Report on the Activities of the Scientific Committee on Solar-Terrestrial
Research for 2002-2006**
**Rapport des Activités du Comité Scientifique de la Physique Terre-
Soleil**

Overview of SCOSTEP

SCOSTEP is a scientific committee of the International Council for Science (ICSU, formerly International Council of Scientific Unions). It is charged with the long-term responsibility to promote international interdisciplinary programs in solar-terrestrial physics. The governing body of SCOSTEP is the SCOSTEP Bureau. The Bureau comprises of SCOSTEP's President, the Vice President, the Scientific Secretary (ex. Officio), and the representatives of ICSU participating bodies such as Committee on Space Research (Dr. Ryoichi Fujii), International Association of Geomagnetism and Aeronomy (Dr. Wolfgang Baumjohann), International Association of Meteorology and Atmospheric Sciences (Dr. Toshitaka Tsuda), International Astronomical Union (Dr. Natchimuthukonar Gopalswamy), International Union of Pure and Applied Physics (Dr. Sandra Chapman), Scientific Committee on Antarctic Research (Dr. Maurizio Candidi), and International Union of Radio Science (Dr. Christian Hanuise). The Bureau directs scientific, administrative, and financial activities. The Scientific Secretary administers the Secretariat, organizes meetings, and conducts the financial business of SCOSTEP under the direction of the Executive Officers and Bureau. The Bureau usually meets annually.

The SCOSTEP General Council provides oversight for SCOSTEP operations. The General Council presently consists of representatives from 30 subscribing Adherents, and is chaired by SCOSTEP's President. The Council meets every two years to review the scientific, financial and administrative activities of SCOSTEP and, if necessary, refer matters to the Bureau for further consideration. Thirty-seven scientists from 20 countries currently serve as Scientific Discipline Representatives to provide advice to SCOSTEP about scientific programs and act as critical links between national and regional activities in their fields and SCOSTEP international scientific programs. They lead within SCOSTEP and through other ICSU bodies to propose new programs and participate in the Steering Committees and projects of ongoing programs. There are also representatives of three World Data Centers for STP and two Affiliates from International Ursigram and World Days Service (IUWDS) and World Meteorological Organization (WMO). Eleven correspondent countries are recognized by SCOSTEP, and they participate in Council discussions but are not voting members. Further, SCOSTEP reports its accomplishments annually to the ICSU Executive and participates by request in activities at ICSU Headquarters and at meetings of other ICSU bodies. The next SCOSTEP Bureau and General Council meetings will take place in July 2007 in conjunction with the XXIV IUGG General Assembly in Perugia, Italy.

SCOSTEP organizes and conducts international solar-terrestrial physics (STP) programs of finite duration in cooperation with other ICSU bodies. The committee shares results of these programs by joining in conducting scientific meetings, conferences, and workshops

and by publishing newsletters, handbooks and special journal issues about solar-terrestrial physics programs. SCOSTEP currently sponsors the Climate And Weather of the Sun-Earth System ([CAWSES](#)) program. CAWSES is an international program established with an aim of significantly enhancing our understanding of the space environment and its impacts on life and society. The main functions of CAWSES are to help coordinate international activities in observations, modeling, and applications crucial to achieving this understanding, to involve scientists in both developed and developing countries, and to provide educational opportunities for students of all levels. There are four scientific working groups in CAWSES:

1. **Solar Influence on Climate**, Co-chairs: M. Lockwood (UK) and L. Gray (UK);
2. **Space Weather: Science and Applications**, Co-chairs J. Kozyra (USA) and K. Shibata (Japan);
3. **Atmospheric Coupling Processes**, Co-Chairs F.-J. Luebken (Germany) and J. Alexander (USA); and
4. **Space Climatology**, Co-chairs C. Froehlich (Switzerland) and J. Sojka (USA).

Scientific activities of CAWSES were under the oversight of a Scientific Steering Group (SSG) led by Dr. Sunanda Basu; Prof. Susan Avery assumed the Chair of CAWSES 1 August 2006. More information on changes in CAWSES leadership can be found in the September 2006 issue of CAWSES News at <http://www.bu.edu/cawses> . The Education and Capacity Building aspect of CAWSES is presently a responsibility of M.A. Geller, S.-T. Wu, and G. Lu (SCOSTEP Executive Officers), on behalf of the SCOSTEP Bureau. The CAWSES Program Office currently resides at Boston University.

The CAWSES program is now in the final year of its original 4-year plan (2004-2008). During past 3 years, CAWSES has established regional offices in Brazil, France, Germany, India, Japan, and Taiwan, and involved scientists from 19 countries. At the last Bureau meeting in March 2006, the Bureau strongly endorsed the extension of the CAWSES program for the period of 2008-2012. A CAWSES Phase-II Planning Committee has been formed to make a new roadmap for CAWSES during its extended mission on international scientific cooperation.

Scientific Meetings 2003:

- The SCOSTEP co-sponsored the Yuri Galperin Memorial Symposium, which was held in February in Moscow. Prof. Galperin had been a member of the SCOSTEP Bureau (representing COSPAR) until his untimely death about a year earlier.
- **ISCS** (International Solar Cycle Study) was one of the four SCOSTEP focused program during 1998-2002; it ended in 2002 along with S-RAMP, EPIC, and PSMOS. The final ISCS scientific meeting was held in Tatranska Lomnica, Slovak Republic in June 2003.

Scientific Meetings 2004

- Several SCOSTEP leaders were invited to participate in the International Heliophysical Year US Planning Workshop held in March at National Solar Observatory, Sunspot, New Mexico. They described elements of SCOSTEP's CAWSES program that will coincide during its last two years with IHY.

- The kickoff meeting of CAWSES-JAPAN was held at Irigo, Japan, in June. The 3-day meeting spanned all CAWSES scientific theme areas, and resulted in a major university science initiative grant for “outstanding” science which was anticipated to be funded for at least three years with eligibility for an extension beyond that time.
- The first CAWSES workshop was held at the Royal Astronomical Observatory, Paris, France during the weekend before COSPAR in July. This 2-day meeting combined scientific papers and planning efforts to direct the remaining years of CAWSES.

Scientific Meetings 2005

CAWSES science planning meetings held:

- The annual Science Planning Meeting, Theme 2, and Theme 3 Splinter meetings were held July 20 - 26, 2005 during the IAGA scientific assembly in Toulouse, France. Sunanda Basu, Chair of CAWSES, was invited to deliver an Association Lecture on CAWSES science.

CAWSES science workshops:

- CAWSES Space Weather Workshop, May 14, 2005, during ISEA-11 meeting in Taipei, Taiwan, (Theme 2 activity).
- CAWSES CPEA Workshop, May 14, 2005, during ISEA-11 meeting in Taipei, Taiwan, (Theme 3 activity).
- CAWSES Workshop on Solar Variability and Planetary Climates, June 6 – 10, 2005 at ISSI, Bern, Switzerland, (Theme 1 activity).
- CAWSES Workshop on Solar Irradiance Variability, July 1, 2005, during Solar Variability & Earth and Climate meeting in Catone, Italy, (Theme 4 activity).
- Joint Workshop on ICESTAR-CAWSES campaigns, July 1, 2005, during CEDAR Workshop in Santa Fe, NM, USA (Theme 2 activity).
- CAWSES Session on Solar activity and its influences on the Earth’s Weather and Climate, August 2 – 11, 2005, during the IAMAS scientific assembly in Beijing, China, (Theme 1 activity).
- CAWSES Space Weather Workshop, December 10-12, 2005, Stanford University, CA, USA (Theme 2 activity).
- 1st CAWSES Capacity Building workshop, November 7 – 15, 2005, at NCU, Taiwan. (Coordinated by the CAWSES AOPR office).

Scientific Meetings 2006:

- SCOSTEP held its 11th Quadrennial Solar Terrestrial Physics Symposium (STP-11) in Rio de Janeiro on March 6-10, 2006. The conference was attended by 135 participants from 26 countries in South and North America, East and West Europe, Asia, Australia, and Africa. The sessions of STP-11 were organized in accordance to the CAWSES science Themes. Additional information on the STP-11 conference is available online at <http://www.bu.edu/cawses>.
- The Space Weather School was held on May 2-19, 2006, Trieste, Italy. Tutorials on basics physics concerning the Sun-Earth system were presented to 54 international students from Africa, Asia, South America, and eastern Europe.
- The Ice Layer Workshop was held from May 14-17, 2006 in Kuhlungsborn, Germany. Recent development in ice layer related observations from both ground and

space were presented, and results from modern models and interpretations regarding ice particle properties and their long-term variations associated with solar cycle were also discussed.

- The first Tidal Campaign Workshop was held in Beijing on July 21, 2006. The workshop provided an overview of the complexity of atmospheric tides and waves based on various ground and space based observations.
- The Workshop on Long Term Changes and Trends in the Atmosphere was held in Sodankyla, Finland on September 4-7, 2006. There were three topical discussions concerning the key unresolved problems related to long-term changes and trends in atmosphere: (1) trends in dynamics, (2) trends in water-related phenomena, and (3) trends in the ionospheric F_2 region.
- The CAWSES International Workshop on Space Weather Modeling was held on November 14-17, 2006, in Japan. The workshop brought together modelers and observers to discuss recent progress and scientific challenges in space weather modeling on the four focused research topics: (1) the Sun and solar corona, (2) the heliosphere and solar wind, (3) the magnetosphere and ionosphere, and (4) novel numerical modeling techniques.
- The 11th International Workshop on Technical and Scientific Aspect of MS Radar (MST-11) was held in Gadanki, India, on December 11-15, 2006. The workshop provided a forum to discuss research and development of radar techniques to study the mesosphere, stratosphere, troposphere, and the coupling to the ionosphere.
- The first Sun-Earth Connection Virtual Conference took place on November 13-17, 2006. It was cosponsored by SCOSTEP/CAWSES at a central website located at <http://workshops.jhuapl.edu/s1/index.html>. This was the first ever virtual conference concerning the STP sciences, and was hugely successful. The conference had 268 registered participants worldwide, 87 abstracts and 35 information resources were loaded in the data commons area, and the website received a total of 118,000 hits. A summary report of the virtual conference is available at the above website. The main organizer of the virtual conference was Dr. Janet Kozyra.

Future Plan

SCOSTEP is charged with the long-term responsibility to promote international interdisciplinary programs in solar-terrestrial physics. SCOSTEP will continue to work within the ICSU framework to encourage cross-disciplinary conferences and to facilitate cross-project cooperation and multi-national research collaboration. SCOSTEP will continue conducting programs with the scientific goal of advancing quantitative understanding of coupling mechanisms responsible for the transfer of mass and energy throughout the solar-terrestrial system. The practical goal is to improve predictability of the effects of the variable components of solar energy and disturbance on the terrestrial environment. These disturbances range from interference with satellite and aircraft communications systems, to blackouts of electric power grids.

Compiled by Gang Lu; edited by JA Joselyn

Agenda Item #16g:
Report on the Activities of the Scientific Committee on Space Research
(COSPAR)

Rapport des Activités du Comité Scientifique de la Recherche spatiale

COSPAR's objectives are to promote on an international level scientific research in space, with emphasis on the exchange of results, information and opinions, and to provide a forum, open to all scientists, for the discussion of problems that may affect scientific space research.

During the last 4-year period COSPAR has worked on re-defining its proper role given the current period of fluidity in the space field and a certain change of emphasis within the Committee. For this reason a new COSPAR Scientific Advisory Committee (CSAC) was established and met for the first time in 2006. The mandate of the CSAC is to review the likely evolution of space research over the next 20 years, to compile a vision of the major organizations working in space, to review how COSPAR could better fulfill its mission and respond to the needs of the science community, to analyze and suggest new approaches to international cooperation, and to analyze the way COSPAR executes its vision and to suggest improvements to its structure or method of functioning.

The recommendations of CSAC are likely to influence a significant part of the IUGG scientific community, in particular that part, which is dependent on competence in analyses of space data. Some relevant items, which were discussed, are:

- Added value that COSPAR can bring to international coordinating entities (GEO, CEOS, IACG, ISO, etc.) and to enabling more effective international cooperation.
 - o Here it was made clear that it will be necessary to identify clearly any role COSPAR might play and whether it is a useful one likely to be appreciated by other entities involved!
- Suggestions to guide the discussion at the Space Agency Round Table at the 36th Scientific Assembly in Beijing.
 - o Establishing an Approach and a Framework for International Science Cooperation in the New Age of Exploration.
- Proposal for the creation of a COSPAR Panel on Education
 - o The CSAC decided to recommend to the Bureau the creation of a new COSPAR Panel on Education (PE).

In line with ICSU recommendations, capacity building was identified by the COSPAR Council at its meeting at the 35th Scientific Assembly in Paris in 2004 as a priority activity for COSPAR. The 3rd COSPAR Capacity Building School on Data Analysis in Space Sciences, December 2003 in Beijing was highly relevant for IUGG and IAGA was co-sponsoring this event. Another IUGG relevant event was the Regional Workshop for African Oceanographers: Ocean Remote Sensing: a Tool for Ocean Science and Operational Oceanography, September 2005, Rabat, Morocco.

In general, and most obviously recognized in the exploration programs of NASA and ESA, the development and realization of planetary exploration necessarily builds on the

expertise that is available in the Earth Science Community, which is most prominently represented in the IUGG associations. A continued strong link to COSPAR is therefore of mutual interest.

16 February 2007
Eigil Friis-Christensen
IUGG Liaison to COSPAR

Agenda Item #16h:
**Report on the Activities of the World Climate Research Programme
(WCRP)**
**Rapport des Activités sur le Programme de recherché du climat
mondial**

Because the set of WMO activities is so encompassing, IAMAS President Mike MacCracken has served as the liaison to the Joint Scientific Committee (JSC) of the World Climate Research Programme. In filling this role, he also serves as the liaison to this body for SCOR. Over the last four years, he has participated in the JSC meetings in Guayaquil, Ecuador in 2005 and the Pune, India in 2006. In addition, he participated in the Open Science meeting for the WCRP's CLIVAR project in June of 2004 in Baltimore. In these meetings, in addition to assisting in the scientific review, he has focused on encouraging cooperation between the organized international projects and the IUGG associations, including leading off the discussion at the 2006 meeting on better connecting the WCRP with its stakeholder and other organizations. He has also sought to encourage joint meetings, or at least coordination in the timing of meetings, between the associations and the WCRP projects. The National Science Foundation has supported his participation in these JSC meetings.

Agenda Item #17a:
Report from the Cartographic Office of the United Nations
Rapport du Bureau Cartographique des Nations Unies

The United Nations' Regional Cartographic Conferences (UNRCC) were initiated already in 1949 by the first UN Secretary General. The objective was to stimulate the surveying and mapping of the national territories to the UN member states. Actually, there are regularly held UNRCCs for Asia-Pacific and for the Americas. During the legislative period 2003-2007 there were the Conferences

- 8th UNRCC for the Americas, New York, USA, 27.-30. June 2005
- 17th UNRCC for Asia and the Pacific, Bangkok, Thailand, 18-22 September 2006

The main activity in Asia is done by the Permanent Committee on Geographical Information System Infrastructure for Asia and the Pacific (PCGIAP) with four Working Groups:

- WG 1: Regional Geodesy
- WG2: Regional Fundamental Data
- WG3: Cadastre
- WG4: Institutional Strengthening

Working Group 1 is of major interest for IUGG, in particular for IAG. There is a close link of this WG to the IAG Commission 1, Subcommission 1.3e Asia-Pacific. The main activities reported during the 17th UNRCC-AP were the installation of regional geodetic networks through annual GPS campaigns, geodetic datum change parameters, and regional geoid computations. A set of 433 stations was included in an integrated process and analysis of 6 GPS campaigns, 311 of them in the Asia-Pacific region.

The activities in the Americas with interest for the International Union of Geodesy and Geophysics (IUGG), in particular for the International Association of Geodesy (IAG), are the geodetic reference frames. They are closely related to the work of IAG Commission 1 "Reference frames", in particular its Subcommission 1.3b South and Central America. There was a resolution of the 8th UNRCC-A recommending to all American countries to adopt the Geocentric Reference Frame for the Americas (Sistema de Referencia para las Américas, SIRGAS), which is a densification of IAG's International Terrestrial Reference frame (ITRF). A presentation on the status of SIRGAS was given during the meeting including the activities on the unification of the national vertical reference systems (height systems) all over the continents. This requires to replace the individual reference tide gauges by a common reference surface (geoid or quasigeoid, respectively).

In a coordinated activity of the UNRCC representative and some IAG entities (Commission 1, International GNSS Service) as well as the Fédération Internationale des Géomètres, there is a project to install a continental reference frame in Africa (AFREF). The SIRGAS project is seen as an excellent example for this purpose. The cooperation of IAG is very important.

Participation of the IAG Representative in Meetings related to UNRCC

- African Reference Frame (AFREF) Meeting, Cairo, Egypt, 18.04.2005
- 8th UNRCC for the Americas, New York, USA, 27.-30. June 2005

Hermann Drewes
Representative of IUGG to UNRCC

Agenda Item #17b:
Report from the International Civil Aviation Organization (ICAO)
Rapport de l'Organisation Internationale de l'Aviation (OIAC)

As presented on the ICAO web site (<http://www.icao.int>), the aims and objectives of ICAO are to develop the principles and techniques of international air navigation and to foster the planning and development of international air transport. Specific to IUGG, ICAO is responsible for co-ordinating the efforts of international organizations and States which comprise the International Airways Volcano Watch (IAVW). The IAVW is co-ordinated and developed by the ICAO Secretariat with the assistance of the Volcanic Ash Warnings Study Group (VAWSG).

Volcanic ash is a direct safety threat to jet transport aircraft, primarily because the melting point of the ash (mostly silicates) is around 1100°C while the operating temperatures of high by-pass jet engines are around 1400°C. The ash, therefore, does not simply blow through the engines as dust/sand tends to do, but MELTS in the hot section and then FUSES randomly on fuel nozzle guide vanes and turbine blades. With sufficient exposure to volcanic ash, jet engines have flamed out. There have been four cases since 1982 in which jet engines have flamed out in flight due to an encounter with volcanic ash. There have also been a significant number of cases where aircraft engines, cockpit windows and pitot-static systems have had to be replaced due to aircraft encounters with volcanic ash.

Need for IUGG participation comes from the unusual combination of scientific expertise needed to address the issue of aircraft hazards from volcanic clouds. While aviation weather issues are effectively addressed by a robust international infrastructure, training and experience about volcanic cloud hazards in significant ways is outside of the sphere of aviation met offices. There is need for communication with volcano observatories that have the responsibility for ground based monitoring. There is a need to use remote sensing technology for both volcano monitoring and volcanic cloud sensing; scientific understanding of this is sparse and diffusely held. There is need for advanced trajectory models to accurately forecast cloud movements to allow for adjustments of aircraft flight plans. And there is a need for very efficient systems to integrate and disseminate operational volcanic cloud hazard data. This has led to the initiation of Volcanic Ash Aviation Centers (VAACs). The IUGG delegate has a responsibility to try to ensure that scientific expertise about volcanic cloud hazard mitigation experience and techniques gets to VAACs.

In the past decade there have been a series of workshops and meetings. These have been both regional and worldwide in scope, and also have focused on different levels of personnel. Because volcanic cloud hazards are not a daily occurrence in most parts of the world, it is vital that experience with volcanic crises be shared so that people in all areas benefit from the experience gained in some. The Internet has been a very valuable tool in this effort and one result of workshops has been increased communications between VAACs, volcano observatories and scientists aware of volcanic cloud issues.

William I. Rose, Michigan Technological University, USA

Agenda Item #17c:
Report from the Panamerican Institute of Geography and History
(PAIGH)
Rapport de l'Institut Panaméricain de Géographie et d'Histoire (IPGH)

The cooperation of the International Union of Geodesy and Geophysics (IUGG) with the Panamerican Institute of Geography and History (PAIGH) were continued intensively during the years 2003 to 2007. The main objectives of PAIGH are to encourage, coordinate and publish cartographic, geographic, geophysical and historical studies, to promote and carry out studies, projects, and training in these disciplines, and to promote cooperation among the institutes of these disciplines in the Americas. They are fulfilled by General Assemblies, the latest one held in Caracas, Venezuela, 20-23 November 2005, and in four Commissions:

- Cartography Commission - established in April 1941, currently based in Colombia;
- Geography Commission - established in August 1946, currently based in Peru;
- History Commission - established in August 1946, currently based in Costa Rica;
- Geophysics Commission - established in June 1969, currently based in the USA.

The Cartography Commission and the Geophysics Commission are of major interest for IUGG, the present report concentrates therefore on the cooperation with these entities.

The *Cartography Commission* includes the *Committee on Fundamental Geospace Data* with two Working Groups, namely the *WG on Reference Systems for the Americas (SIRGAS)* and the *WG on Hydrography*. The *SIRGAS WG* is identical with the Subcommission 1.3b of the International Association of Geodesy (IAG), and the *WG on Hydrography* is related to the International Association of Hydrology (IAHS) as well as to the Pilot Project on *Tide Gauge Benchmark Monitoring (TIGA)* of the IAG GNSS Service (IGS). Principal meetings within the Commission were the Workshops held in

- Aguascalientes, Mexico, 9-10 December 2004,
- Caracas, Venezuela, 17-18 November 2005,
- Rio de Janeiro, Brazil, 16.-18. August 2006.

There are three principal activities to be highlighted:

1. Installation of national geocentric reference frames compatible with the International Terrestrial Reference Frame (ITRF) of IAG in all American countries. A considerably increasing number of continuously observing GPS stations in continental and national scale was installed. The data are processed weekly to station position coordinates and annually to long-term station velocities. A structure of processing centres was installed in Mexico, Colombia, Brazil and Argentina with the assistance of IAG institutions.
2. To monitor the stability, in particular vertical motions, of tide gauges in order to separate recorded sea level changes from vertical crustal movements. A number of tide gauges in South America was equipped with GPS receivers with assistance of

IAG institutions. The data are processed weekly to station coordinates and annually to vertical velocities.

3. Compute regularly models of the total electron content (TEC) of the ionosphere over the South American continent from continuously observing GPS station data. This is a very new service providing these important data free to all South American users.

The *Geophysics Commission* is divided into six Committees (Aeronomy, Seismology and Vulcanology, Physical Oceanography, Meteorology and Atmospheric Physics, Gravimetry, Environmental Physics). Close cooperation with IUGG exists with the *Gravimetry Commission*. It is close to the IAG Commission Projects 2.2, 2.5 *North and South American Geoid* and 2.7 *Gravity in South America*. Most activities are directed to the precise geoid determination in South America which requires additional measurements and collection of gravimetric data in uncovered regions (e.g., Andes and Amazon areas). A cooperation exists via IAG with several institutions on the use of the new satellite gravity missions (CHAMP, GRACE, GOCE) and airborne gravimetry. There were several meetings held in cooperation of IAG and PAIGH:

- X Reunión Técnica de Consulta, Caracas, Venezuela, 16-18 November 2005,
- Simposio Gravedad y Geoide, Buenos Aires, Argentina, 25-29 September 2006.

The principal activities of the commission in cooperation with IAG are

1. The installation of national gravity networks in the in Latin American countries with absolute and relative gravimeter observations. Most of the countries have got absolute gravity reference stations with the assistance of IAG institutions.
2. Regional geoid computations as vertical reference surfaces (height systems). There is a very close cooperation of IAG Commissions 1 and 2 with South American countries to establish a unified vertical reference system related to a unique global reference surface.

The cooperation with and the assistance of IAG in the activities of these commissions is extremely important and highly appreciated by the PAIGH member countries.

Participation of the IAG Representative in Meetings related to PAIGH

XXI Congreso Brasileiro de Cartografia, Belo Horizonte, Brazil, 30.09.-03.10.2003
AGU Fall Meeting, San Francisco, USA, 08.-12.12.2003
Primer Congreso Latinamericano de Sismología, Armenia, Colombia, 16.-20.08.2004
VIII Congreso Ciencias de la Tierra, Santiago, Chile, 18.-21.10.2004
SIRGAS Workshop, Aguascalientes, Mexico, 09.-10.12.2004
IV Colóquio Brasileiro de Ciências Geodésicas, Curitiba, Brazil, 18.-20.05.2005
Reunión Técnica del Proyecto SIRGAS, Caracas, Venezuela, 16.-17.11.2005
XX Reunión Consulta Cartografía IPGH, Caracas, Venezuela, 17.-18.11.2005
Curso Sistema de Referencia y Geoide, Barcelona, Spain, 19.06.2006
SIRGAS Workshop, Rio de Janeiro, Brazil, 16.-18.08.2006

IV National Conference Geography and Cartography, Rio de Janeiro, Brazil, 21.-
25.08.2006

Hermann Drewes
Representative of IUGG to PAIGH

Agenda Item #17d:
Report from the International Hydrological Programme
Rapport du Programme International Hydrologique

IAHS-UNESCO Relationship 2003-2006

IAHS and *UNESCO*, especially its *Water Sciences Division*, have close and old relationship, originating from the *International Hydrological Decade*. This relationship has been continued during the last 4 years in many manners. We participate to the Work of the *UNESCO-WMO* Standing Group on the International Glossary of Hydrology and to the steering Committee of the *UNESCO-WMO World Climate Program - Water*. We have been involved in the definition and implementation of the new *International Flood Initiative* led by *UNESCO and WMO*. *UNESCO*, generously supported the attendance of participants from developing countries to the IAHS General Assembly of *Sapporo* and to the IAHS Scientific Assembly of *Foz do Iguaçu*.

An IAHS representative or delegation has been invited and attended the different meetings of the *UNESCO International Hydrological Program* : IHP Bureau (*Paris*, 2003), IHP Council (*Paris*, September 2004), IHP Bureau (*Paris*, 2005), IHP Bureau (*Delft*, 2006), IHP Council (*Paris*, July 2006). *IAHS* and *UNESCO* also jointly organized two successful sessions of the traditional Kovacs Colloquium :

7th Kovacs Colloquium (*Paris*, September 2004) “**Scales in Hydrology and Water Management, Echelles en hydrologie et gestion de l’eau**” (Red Book 287)

6th Kovacs Colloquium (*Paris*, 30 June – 1st July 2006) « **Frontiers in Flood Research / Le point de la recherche sur les crues** » (Red Book 305).

Pierre Hubert
Secretary General, IAHS

Agenda Item #17e:

Report on the International Oceanographic Commission (IOC) Rapport sur la Commission Océanographique Internationale (COI)

At the IUGG General Assembly in Sapporo, 2003, as IAPSO President I established contacts with SCOPE, who's President was then Dr. Jerry Melillo of the Marine Biological Laboratory, Woods Hole, to establish a collaborative project which might also interest the International Oceanographic Commission (IOC). During the successive year, Dr. Melillo and I worked together to formulate a proposal on "Physics and Chemistry as the Key to Marine Ecosystem Dynamics and Structure" (PACKMEDS). The objective of the project was to synthesize and review the scientific understanding on the dynamics of semi-enclosed marine ecosystems and the integrated effects of changes in sediment and nutrient inputs from land to sea. The semi-enclosed basins to be considered include the following.

| | |
|---------------------|------------------|
| Black Sea | North Adriatic |
| Baltic Sea | Bay of Bengal |
| East China Sea | Gulf of Thailand |
| Sea of Okhotsk | Gulf of Mexico |
| Gulf of St Lawrence | Laptev Sea |
| Kara Sea | Yellow Sea |
| Cariaco Trench | Patagonian Shelf |
| Hudson Bay | North Sea |

The proposal was developed as a SCOPE (Scientific Committee on Problems of the Environment) Rapid Assessment Project and was submitted to ICSU and the IOC. Dr. Patricio Bernal, Secretary General of IOC, and Dr. Umit Unluata, director of the Ocean Section, expressed their interest and willingness to sponsor and support PACKMEDS. ICSU did not fund PACKMEDS in 2005 but did so in 2006. Successively, the project obtained endorsement and support from the Scientific Committee on Ocean Research (SCOR). The organizational meeting of PACKMEDS occurred on March 24 - 26, 2006, in Bremen, Germany, hosted by Dr. Ittekkott of the University of Bremen and chaired by Drs. Jerry Melillo (SCOPE), Paola Rizzoli (IUGG), and Bjorn Sundby (SCOR). Dr. Umit Unluata represented IOC at the meeting. A major workshop with about 60 participants, presently being finalized by Dr. Veronique Plock Fichelet, Secretary of SCOPE, will be held at the Hanse -Wissenschaftskolleg (HWK) in Delmenhorst, Germany, April 1- 5, 2007. Dr. Patricio Bernal will name a representative from IOC. The results of the analysis, and priorities for future research will be published as a synthesis volume in the SCOPE series.

Paola Rizzoli
IUGG Representative to IOC

Agenda Item #17f:
Report from the World Meteorological Organization (WMO)
Rapport de l'Organisation Météorologique Mondiale (OMM)

IAHS – WMO Relationship 2003-2006

Our close and traditional cooperation with *WMO* and especially its *Hydrology and Water Resources Department* has been continued during the last 4 years. We participate to the Work of the *UNESCO-WMO* Standing Group on the *International Glossary of Hydrology* and to the steering Committee of the *UNESCO-WMO World Climate Program - Water*. We have been involved in the definition and implementation of the new *International Flood Initiative* led by *UNESCO and WMO*. *WMO* generously supported the attendance of participants from developing countries to the IAHS General Assembly of *Sapporo* and to the IAHS Scientific Assembly of *Foz do Iguaçu*.

An IAHS representative or delegation has also been invited and attended major *WMO* events like the WMO XIVth Congress (*Geneva*, 2003), the Commission of Hydrology meeting (*Geneva*, November 2004), the CHy Advisory Working Group meeting and the WMO Executive Council (*Geneva* 2005), the CHy Advisory Working Group meeting (*Melbourne*, 2006) meeting and WMO Executive Council (*Geneva*, 2006). IAHS also contributed to the new edition of the WMO “*Guide to Hydrological Practices*”. A joint IAHS-WMO conference on “*Advances in Hydrometry*” is planned to be held in *Manaus* (Brazil) early 2008.

Pierre Hubert
Secretary General, IAHS

Agenda Item #18:
Report of the IUGG Finance Committee for the 2003-2007
Quadrennium
Rapport du Comité des Finances de l'UGGI pour le Quadrennium
2003-2007

Two significant changes to the membership of the Finance Committee (FC) took place in Sapporo. Whereas previously the election of the FC was on the basis of a single list from which five members were elected, a different format was proposed by the nominations committee. In the past, at least from 1983, not less than three members were re-elected. On this occasion only one former member of the FC was elected. This led to some difficulties that were resolved. The election procedure in Perugia reduces the membership from five to four with two members having served on the FC in the previous term.

The second change was that the chairman of the FC or his/her representative would be invited to attend the annual meeting of the Bureau. I hope the Bureau will agree that this has been a success.

The mid- term meeting of the FC took place in Vienna in April 2000. The Treasurer presented the final accounts for the period 2000-2003 and the accounts for 2004. Members of the FC expressed concern at the reduction in the number of members and as a result, the decrease of the Union's income. The future financial health of the Union depends crucially on encouraging those countries in Observer status to begin paying their annual dues once more, and urging Associate Members to transfer to category one.

The accounts of IAGA, IAHS, IAMAS, IAPSO and IASPEI were presented to the FC. The Treasurer confirmed that the 2005 allocation would be paid to IAG and IAVCEI when their accounts had been received and scrutinized.

The committee conducted a review of membership and recommended that the USA, Japan, Mexico, New Zealand and Israel should be asked to raise their category by one. It also agreed that the procedure for allocating categories should be reviewed.

The FC agreed that it should recommend to the Council that two additional categories, 13 and 14, ought to be introduced. Also that the period of membership as an Associate Member should be defined along the lines of those members in Observer status.

A considerable amount of time was spent on fund raising and how the FC might contribute to this activity. Much of this time was concentrated on the Geophysics In Africa (GIA) initiative championed by the President. It was agreed that subject to the approval of the Executive committee, \$50,000 in the budget for new initiatives should be set aside as a clear indication of IUGG's support and as a means of raising further funds from other sources.

In addition to the mid-term meeting of the FC the following meetings attended by an FC member took place.

- Meeting of the Bureau in Boulder in September 2004 attended by David Jackson.
- Meeting in Perugia in September 2005 attended by the Chairman who took part in the Bureau meetings and attended the Executive Committee at which discussion of the Vienna meeting's minutes took place.
- Meeting between the Treasurer and the Chairman in Manchester in May 2006 to review the 2005 accounts. Whilst the accounts were satisfactory it was agreed that there was a need to write to all members in Observer status and to Associate Members asking them respectively to begin paying their annual dues again or to transfer to category one. Following the meeting and with the assistance of the Secretary General and the Treasurer, letters signed by the Chairman have been sent to all the relevant National Committees. Up to date results will be presented in Perugia. It was also agreed to draw up an interim budget to present to the Bureau in Melbourne in which the figures for 2004 and 2005 would be replaced by the audited income and expenditure for those years.

At the Bureau meeting in Melbourne the Chairman attended all the sessions. The draft budget was presented by the Treasurer at length and included a reappraisal of the underlying methodology for producing the budget. The draft budget together with a series of explanatory notes is included in the Treasurer's report to Council.

A review of membership categories will be undertaken by the FC in Perugia using the most recent published data. The recommendations will be circulated to Council members prior to the second meeting of Council.

I have been privileged to work with two Treasurers, Søren Gregeson and Aksel Hansen. I am particularly grateful for the time, help and advice Aksel has given me during my year as Chairman and for his unfailing friendship.

Michael Hamlin, Chair

**Agenda Item #19:
Presentation and Adoption of the 2007-2011 Budget
Présentation et Adoption du Budget 2007-2011**

IUGG Budget 2008 - 11 DRAFT; MELBOURNE Totals

All figures, except the value and number of units, are in thousands of US dollars

| Year | 2007 | 2008 | 2009 | 2010 | 2011 | 2008-11 |
|---|---------|--------------|--------------|--------------|--------------|--------------|
| Estimated unit value | \$1,650 | \$1,680 | \$1,715 | \$1,750 | \$1,785 | \$1,732 |
| Estimated number of units | | 246 | 245 | 244 | 243 | 978 |
| INCOME | | | | | | |
| 1. MEMBERSHIP SUBSCRIPTIONS | 384.3 | 413.3 | 420.1 | 427.0 | 433.7 | 1694.1 |
| 2. ICSU GRANTS | | | | | | |
| 3. ASSEMBLY SURCHARGE | | | | | 20.0 | 20.0 |
| 5. SALES OF PUBLICATIONS, ETC | | 0.2 | 0.2 | 0.2 | 0.2 | 0.8 |
| 6. MISCELLANEOUS | | 12.5 | 12.5 | 12.5 | 12.5 | 50.0 |
| 7. TOTAL INCOME | | 426.0 | 432.8 | 439.7 | 466.4 | 1764.9 |
| 8. BALANCE 1/1 | | 466.5 | 495.6 | 521.0 | 565.9 | |
| EXPENDITURES | | | | | | |
| 11. ADMINISTRATION | | 84.0 | 84.0 | 64.0 | 108.0 | 340.0 |
| 11.1 Personnel | | 20.0 | 10.0 | 10.0 | 10.0 | 50.0 |
| 11.2 Quarters | | 2.5 | 2.5 | 2.5 | 2.5 | 10.0 |
| 11.3 Supplies | | 2.5 | 2.5 | 2.5 | 2.5 | 10.0 |
| 11.4 Communication | | 8.0 | 8.0 | 8.0 | 8.0 | 32.0 |
| 11.5 Travel, organizational | | 45.0 | 55.0 | 35.0 | 70.0 | 205.0 |
| 11.6 Miscellaneous | | 1.0 | 1.0 | 1.0 | 5.0 | 8.0 |
| 11.7 Travel, representative | | 5.0 | 5.0 | 5.0 | 10.0 | 25.0 |
| 13. ASSEMBLIES | | 0.0 | 0.0 | 0.0 | 40.0 | 40.0 |
| 13.1 Organization | | 0.0 | 0.0 | 0.0 | 10.0 | 10.0 |
| 13.2 Travel Grants | | 0.0 | 0.0 | 0.0 | 30.0 | 30.0 |
| 14. SYMPOSIA | | 20.0 | 20.0 | 20.0 | 5.0 | 65.0 |
| 14.1 Symposia | | 20.0 | 20.0 | 20.0 | 5.0 | 65.0 |
| 15. ASSOCIATIONS | | 209.7 | 224.1 | 227.5 | 231.0 | 892.3 |
| 15.1 Allocations | | 192.2 | 206.6 | 210.0 | 213.5 | 822.3 |
| 15.1a Associations | | 187.5 | 201.9 | 205.3 | 208.8 | 803.5 |
| 15.1b WCRP, EMSEV | | 4.7 | 4.7 | 4.7 | 4.7 | 18.8 |
| 15.2 Intr. of IACS | | 17.5 | 17.5 | 17.5 | 17.5 | 70.0 |
| 15.3 Grants, ICSU | | | | | | |
| 16. DUES | | 15.0 | 15.0 | 15.0 | 15.0 | 60.0 |
| 16.1 ICSU | | 15.0 | 15.0 | 15.0 | 15.0 | 60.0 |
| 17. UNION ACTIVITIES | | 57.0 | 53.0 | 57.0 | 53.0 | 220.0 |
| 17.1 GeoRisk, Liaison Officers, SEDI, CMG | | 28.0 | 24.0 | 28.0 | 24.0 | 104.0 |
| 17.2 Inter-Union Science (FAGS, ILP) | | 29.0 | 29.0 | 29.0 | 29.0 | 116.0 |
| 18. COUNTRIES IN NEED | | 0.0 | 0.0 | 0.0 | 60.0 | 60.0 |
| 18.1 Travel Grants | | 0.0 | 0.0 | 0.0 | 60.0 | 60.0 |
| 19. MISCELLANEOUS | | 5.0 | 5.0 | 5.0 | 5.0 | 20.0 |
| 19.1 Miscellaneous | | | | | | |
| 19.2 Professional Services | | 3.0 | 3.0 | 3.0 | 3.0 | 12.0 |
| 19.3 Fees | | 2.0 | 2.0 | 2.0 | 2.0 | 8.0 |
| 19.4 Loss on exchange | | | | | | |
| 20. CONTINGENCIES | | 6.25 | 6.25 | 6.25 | 6.25 | 25.0 |
| 21. TOTAL EXPENDITURES | | 396.9 | 407.4 | 394.8 | 523.2 | 1722.3 |
| 22. BALANCE 12/31 | | 495.6 | 521.0 | 565.9 | 509.0 | |

Melbourne, Wednesday, 18/10, 2006

final version of draft budget must be ready by the end of January

Comments

the red lines represent subtotals for each line of expenditures

the small surplus is just a result of the uncertainty in estimating the future income and in addition to this we can also mention the time delay in the payment to the associations

| | | | | | |
|------|--------------|----|----|----|----|
| 17.1 | GeoRisk | 6 | 6 | 6 | 6 |
| | Liaison Off. | 14 | 14 | 14 | 14 |
| | SEDI | 4 | 4 | 4 | 4 |
| | CMG | 2 | 2 | 2 | 2 |
| 17.2 | FAGS | 12 | 12 | 12 | 12 |
| | ILP | 17 | 17 | 17 | 17 |

