

**RECORD OF AN EXTRAORDINARY IUGG-CCS BUREAU MEETING,  
DECEMBER 10 AND 11, 2004; FAIRMONT HÔTEL LE CHÂTEAU FRONTENAC  
QUEBEC CITY, CANADA**

## MINUTES

This has been a special meeting of the IUGG-CCS Bureau (formerly the ICSI Bureau) in order to discuss urgent matters related to the transition from ICSI to the Commission for the Cryospheric Sciences of the IUGG (IUGG-CCS). The meeting followed the successful application by ICSI to the IUGG Executive Council in Boulder in September 2004 on a possible transition of an IAHS Commission to an Association of IUGG (i.e., the International Association of Cryospheric Sciences; IACS).

### *Present*

**Gerry Jones**, *Past President*

**Georg Kaser**, *President*

**Jon Ove Hagen**, *Vice President*

**Konrad Steffen**, *Vice President*

**Julian Dowdeswell**, *Head, Division on Glaciers and Ice Sheets* (December 11)

**Paul Föhn**, *Head, Division on Seasonal Snow Cover and Avalanches*

**Manfred Lange**, *Division on River, Lake and Sea Ice*

### *Absent (with regrets)*

Kumiko Goto-Azuma, *Vice President*

Peter Jansson, *Secretary/Treasurer*

Wilfried Haeberli, *Director of WGMS*

### *Invited participant*

**Roland List**, *IAMAS*

Pierre Hubert, *IAHS* (absent with regrets)

Lawrence Mysak, *IAPSO* (absent with regrets)

Christopher F. Waythomas, *IAVCEI* (absent with regrets)

## **A. General**

1. The Past President, **Gerry Jones**, welcomed the Bureau members to his home town and turned immediately over to the new President, **Georg Kaser**.
2. The **President** thanked **Gerry Jones** for the organization of the meeting and for his many efforts as President of ICSI. He also briefly reflected on the fact that the change between Presidents, which used to be more formal, had become less of an event and now is being conducted somewhat prosaically.

He also welcomed the Secretary General of IAMAS, **Roland List** as a guest to the meeting. Roland List acts as the IAMAS representative at this CCS Bureau meeting but states, that somebody else will be nominated as such on a longer term.

3. Three changes to the agenda (APPENDIX A) were proposed by the **President**:

- a) point C. 3. (iv) should become point C. 4. (i) with the former points C. 4. (i) and (ii) becoming points C. 4. (ii) and (iii)
- b) IAPSEI in C. 6. should be replaced by IAVCEI (International Association of Volcanology and Chemistry of the Earth's Interior)
- c) ICSU in point C. 7. (iv) should be changed into IUGG

It was further proposed to deal with points C. 3. (i) to (iii) extensively during the second day of the meeting and to try to finish all other items during the first day. With these modifications, the agenda was unanimously adopted.

## **B. ICSI matters**

### *1. Minutes of the 2004 Bureau Meeting, Paris*

- (i) The minutes of the previous ICSI Meeting in Paris, in 2004 were discussed next and were accepted by the Bureau members present (proposed by **Jon Ove Hagen**, seconded by **Konrad Steffen**).

### *2. Activities following the Paris Minutes of 2004*

- (i) The first issue was the action items agreed upon. Except for point 5.1, all points were taken care of, as follows.  
**Action ad 5.1:** **Georg Kaser** to provide Konrad Steffen with report on HKH and Andean GMNs.

On item 7, **Jon Ove Hagen** presented a first draft of an action plan for the evaluation of WGMS that he and **Julian Dowdeswell** had prepared. In essence, it is proposed that WGMS undertakes an "internal review" first addressing in particular the provision of data on glacier fluctuations and mass balances in electronic format. It was agreed that a slightly expanded form of the action plan be prepared and subsequently be forwarded to Wilfried Haerberli. The question was asked, did ICSI have any rules or regulations regarding the WGMS. There are no specific rules as such, but Jones believed that such rules had been proposed by Mark Meier in his report of 1996-97?

**Action:** Jones will try and dig up report on ICSI-WGMS rules from his archives.

With regard to the question of Peter Jansson on the date of the Fairbanks meeting:

**Action:** **Konrad Steffen** will contact Peter Jansson to inform him as soon as possible that the meeting has been held in December 2004.

On item 13.2, the **President** reported that he had thought about the flyer but had postponed its drafting because of the ongoing changes with ICSI and its transition to the IACS.

With regard to item 14.2 it was agreed that **Konrad Steffen** (**action**) approaches Richard Armstrong to strongly urge him to finalize the manuscript for the book on *Snow and Climate*.

With regard to item 15.5.3, **Manfred Lange** cited an Email from Terry Prowse which states that the River Ice working group has not been very active after the initial meeting. It was agreed that Terry be told that the Bureau has approved an extension of the WG until 2007.

**Action:** **Manfred Lange** to inform Terry Prowse of WG on River Ice to be extended until 2007.

On item 16.1, **Manfred Lange** reported that he had made contact to a number of people and had received a positive reply by Dr. Christophe Sotin (Laboratoire de

Planétologie et géodynamique, in Nantes, France) who expressed interest to be part of a new CCS Division on Extraterrestrial Ice. This issue should be pursued with emphasis as it is seen as an important activity under the prospective IACS.

- (ii) Other: Sayd Iqbal Hasnain, the chairman of the former WG on Himalayan Glaciers asks CCS sponsorship for the International Workshop on Climate Variations and Changes – Status of South Asian Glaciers to be held in Manali, Himachal Pradesh, India, on September 30 and October 1<sup>st</sup>, 2005. The Bureau approves sponsorship. **Georg Kaser** will represent CCS at the Manali Workshop on “Climate Variability and Change: Status of South Asian Glaciers”.

**Action:** **Georg Kaser** to inform Syed Hasnain about CCS sponsorship of the Manali Workshop and his probable attendance.

3. *Secretary/Treasurer: Report on ICSI (CCS) finances*

A brief report of the treasurer was presented by **Gerry Jones**, because **Peter Jansson** was unable to come to the meeting in Quebec. There were some difficulties in interpreting the budget report mainly because of the use of Swedish and US-currencies in the report. It was agreed to ask Peter to prepare a new version of the budget for the next, ordinary, Bureau meeting by using one currency only (US \$). He should also look again into the possibility to have a bank account in US \$ at a Swedish bank.

### C. CCS-IACS

1. *Report of the IUGG Meeting, Boulder, September 2004: the creation of CCS*

The **President** reported on the IUGG Executive meeting in Boulder in September 2004 that he, Gerry Jones and Roger Barry attended in order to present ICSI's case for a transition to become an Association. Details of the proceedings have been provided in an earlier Email of the President. He expressed again his gratitude to IAHS and IAMAS and also to IAPSO and IAVCEI for their support at the meeting, which led to a very positive and somewhat unexpected outcome. The immediate consequence of the acceptance of ICSI's proposal by the IUGG Executive Committee (IUGG EC) was the formation of the IUGG Commission of Cryospheric Sciences (IUGG-CCS), which is regarded as an interim before the final approval of CCS as the International Association of Cryospheric Sciences (IACS). In the meantime, IUGG has provided financial support for CCS (US \$ 5000) over the next three years.

At this point **Roland List** gave additional details with regard to the decision by the IUGG EC. He also provided insight into various issues related to the setting-up and running of an IUGG Association. He particularly referred to issues of funding and the relationship between the different IUGG Associations.

2. *Transition of ICSI to CCS: Activities taken subsequent to the IUGG EC Meeting*

**Georg Kaser** then went on to explain about the necessary steps to be taken between today and the prospective acceptance of the IACS by the IUGG EC at the Perugia IUGG-General Assembly in 2007. The draft for the Statutes and By-laws of IACS should be reviewed by the Bureau members and a first 'official' draft be sent to the IUGG EC in May 2005. Comments by the IUGG Executive Committee will lead to a second draft, which will eventually be adopted by the IUGG EC at their next meeting in Perugia in September 2005. Their recommendations will then be voted on by the IUGG Executive Council which convenes during the IUGG Scientific General Assembly in Perugia in 2007. If voted favourably, the IASC could be established officially right after the IUGG-General Assembly in 2007.

The point was also made that at the IUGG EC it would have to be clarified what the status of

the CCS President and of the Bureau would be and whether or not their mandate could be extended to 2008. This would allow an Extraordinary Assembly to be held that could vote for a new Bureau.

**Action:** **Georg Kaser** will contact JoAnn Joselyn in order to clarify the status of the CCS President and that of the other Bureau members at and soon after the IUGG Executive Council Meeting in Perugia 2007.

An item requiring attention is the fact that the IAHS voiced their strong desire to maintain a Division on Snow and Ice Hydrology. The **President** discussed possible implications and expressed concern as to possible overlap between this Division and the CCS/IACS. Currently there is a proposal by IAHS to create an Inter-Association Commission on Snow and Ice Hydrology that both IAHS and CCS-IACS would support. At the IAHS Bureau meeting held in Paris in September 2004 a Working Group was asked to provide a proposal at the IAHS Assembly in Foz do Iguacu in April 2005. The WG is composed by Pierre Hubert, John Pomeroy, Pierre Ribstein, and Georg Kaser. The CCS Bureau concluded that CCS should remain supportive to IAHS, but that the details of a separate Commission on Snow and Ice Hydrology should largely be left to the IAHS.

**Action:** **Georg Kaser** to inform the *Ice and Snow Hydrology* WG members about the CCS position.

As agreed upon earlier, discussions on the following point C. 3. was deferred to December 11. The meeting instead continued with the former point C. 3. (iv), now point C. 4. (i).

4. *Transition of CCS to IACS (2005-2007): Discussions on steps to be taken prior to Perugia and beyond*

(i) New fields of interest

The discussion under this agenda item took more time than expected, mainly because a number of issues outside the scope of this item were discussed. In particular, the discussion related to the question as to what extent the upcoming conferences in Cambridge (2006, CliC-CCS-IGS) and Perugia (2007, IUGG) would provide a platform to expand the CCS activities and to gain the attention of the cryospheric community. A concrete means of attaining this would be to invite top researchers in certain fields of interest to CCS to participate in CCS-sponsored conferences. The latter is seen as a possible way to integrate new fields into the existing structure of CCS-IACS. However, this does not exclude the creation of new Divisions within CCS-IACS.

It was concluded that the planning for the Cambridge meeting was already well underway and that CCS should not interfere. Instead, CCS should support the planning process actively and visibly and take on the organization of at least one session at the conference. Liaisons for CCS in this process will be **Julian Dowdeswell** supporting the local organisation, and **Jon Ove Hagen** and **Konrad Steffen** supporting the scientific editorial board. It was proposed by **Julian Dowdeswell** and approved by the Bureau that a CCS Young Scientists Award should be announced for the CliC-CCS-IGS Cambridge meeting.

With regard to the Perugia IUGG General Scientific Assembly, discussions focussed on a Union Symposium and a Union Lecture as major input by CCS-IACS to the IUGG General Assembly. **Paul Föhn**, **Peter Jansson**, **Georg Kaser** and **Manfred Lange** will take on responsibility for further planning. As of now, the following topics were proposed for the Union Lecture and Symposium:

- a) The Changing Cryosphere (Union Lecture; Robert Correll)
- b) Union Symposium on Changes in the Cryosphere; possible invited lecturers include:  
Robert Bindshadler (WAIS-Programme)

Gary Clark (modelling of ice dynamics)  
Dorthe Dahl-Jensen (North-GRIP ice core)  
Christian Haas (remote sensing of snow and ice; CRYOSAT)  
Robert Thomas (West Antarctica)  
Eric Wolfe (EPICA)  
Martyn Tranter (Life on/in ice).

- c) In addition, a number of possible topics for scientific sessions were discussed. Of particular interest was the question of hazards and **Jon Ove Hagen** (action) will contact different groups working in the field to make them aware of the proposed topic.

**Action:** **Georg Kaser** and all others to prepare a CCS proposal for the IUGG Scientific Program meeting at Perugia on September 12, 2005.

3. *Transition of CCS to IACS (2005-2007): Structure, Status, By-laws of IACS*

- (i) The remaining time during the first day of the meeting was used to introduce the internal draft of the proposed Statutes and By-laws for the prospective IACS. They were extensively laid down and explained by the **Past President**, who also gave a brief introduction into the structure and background of the document that he had prepared (see Appendix B).

In a first round of discussions, **Roland List** posed a number of questions as to the general philosophy of the proposed Statutes. However, it was decided to defer further discussions to the second day at which all members of the Bureau present would have had a chance to examine the draft. The meeting thus adjourned to provide time for reading and reviewing the draft prepared and presented by **Gerry Jones**.

## 11. 12. 2004 – restructured agenda

Before returning to point C. 3. (i), discussions on December 11 started on issues that had not been covered during the previous day. To that end, the **President** had prepared a modified agenda (Appendix C), which was followed during the day.

### Business other than structure and future fields

1. *Relations with IAHS*

- (i) It was first stated that CCS will maintain close links to IAHS and will participate in possible joint activities where appropriate. This is to be communicated to the respective contact persons in IAHS.

**Action:** **Georg Kaser** to write letters to the appropriate contact persons.

With regard to GEWEX, it was concluded that CCS would only get involved if an individual(s) could be identified within the CCS who might contribute significantly. On the World Water Assessment Programme (WWAP), a similar position was taken. Concerning the International Year of Planet Earth (IYPE), which is promoted by the International Union of Geological Sciences and UNESCO, IAHS had been asked to provide a position paper/supporting letter. This request had been passed on to CCS. It was noted that the organization of the IYPE left much to desire and that we would not be in a position to provide the desired letter at this time.

- (ii) CCS had been approached to consider IAHS Press as the principal publisher of scientific papers/proceedings of CCS (sponsored) conferences. It was decided that IAHS press may be considered same as other publishers to be decided on a case-by-case basis as to the most appropriate publisher.

2. *Appearance of CCS at conferences*

In order to raise our visibility in the scientific community, international conferences and symposia offer valuable opportunities. In order to pursue this, it was decided that we would produce swiftly (if possible prior to the CLIC Beijing meeting in April 2005) a flyer that briefly describes the CCS and its objectives. To this end, an ad hoc committee consisting of

- **Julian Dowdeswell**
- **Gerry Jones**
- **Georg Kaser** (chair)
- **Manfred Lange** and
- **Konrad Steffen**

will pursue this issue with high priority.

**Action:** ad hoc committee to produce a first draft by the end of January 2005 for circulation and comments to/by the other Bureau members.

3. *Relations with IUGG*

- (i) With regard to the International Polar Year (IPY), Michael Kuhn (Innsbruck, Austria) will represent CCS in the joined ICSU/WMO working group mainly with regard to ICSU's involvement. The WMO interests are being represented by Ian Allison (Australia) who had also agreed to represent CCS in the working group.

**Action:** **Konrad Steffen** to write an e-mail to Ian Allison expressing appreciation.

- (ii) The CCS has been asked to comment on an application of the *International Arctic Science Committee* (IASC) to become an ICSU Associate. IASC would attain such a status as the 24<sup>th</sup> institution within ICSU. There was unanimous agreement that CCS should support the IASC application.

**Action:** **Georg Kaser** to write an appropriate recommendation letter to ICSU.

- (iii) The **President** pointed out that there was a call for applications for IUGG grants. These grants are mainly meant to support the organization of conferences and of Inter Association Initiatives. However, while the deadlines for 2005 have already passed, there might be a similar call next year that we may want to pay attention to.

- (iv) The **President** also informed the Bureau about a new E-Journal that is published by IUGG; he will see to it that the Bureau members will be put on the mailing list for that journal.

**Action:** **Georg Kaser** to ask JoAnn Joselyn to add CCS Bureau members address to IUGG e-journal distribution list.

4. *Relations with the International Permafrost Association (IPA)*

The **Past President** pointed out that the IPA used to be part of ICSI before splitting off some time ago. **Gerry Jones** had discussions with the former President of IPA Hugh French and later with the present President Jerry Brown. These discussions took place in an open and constructive manner and left ample room for possible collaboration.

**Action:** **Georg Kaser** will meet with Jerry Brown next week in San Francisco. It was concluded that we will maintain an open attitude towards IPA and may invite Jerry Brown to one of the next CCS Bureau meetings.

5. *Relations with UNESCO, WMO, others*

With regard to UNESCO, it was concluded that we should keep up the good and constructive relationships. Concerning WMO, it was pointed out by **Roland List** that we need to establish

official contacts through appropriate bodies (IUGG) rather than on an individual basis. However, **Konrad Steffen** explained that contacts on the working level may very well be established on an individual basis.

6. *Relations with CLiC*

With regard to the CLiC conference in Beijing, it was discussed that one of the roles the CCS might play in more general terms may lie in reducing the number of scientific conferences through facilitating the merging/integration of various but similar meetings into a single event. This needs further considerations.

Next, the proposed Integrated Global Observing Strategy (IGOS) was introduced by **Georg Kaser**. He had been asked to contribute with one chapter to a strategy document but had declined the request. After further explanations as to the overall stature and importance of IGOS by **Konrad Steffen**, it was agreed that CCS should signal the willingness to contribute to IGOS through reviews and other activities as appropriate.

**Action:** **Georg Kaser** to inform Barry Goodinson about CCS readiness to contribute to IGOS e.g. through reviews.

7. *Relations with the International Glaciological Society (IGS)*

The relationship between the IGS and CCS (ICSI) have traditionally been very fruitful. This is to be seen specifically in the upcoming Cambridge meeting in 2005, at which CCS will play a visible role. To clarify this role, it was decided to write to the IGS Secretary General, Magnus Magnusson and to request that **Jon Ove Hagen** and **Konrad Steffen** become members in the Scientific Steering Committee for this meeting and to confirm **Julian Dowdeswell**'s role as local co-organiser.

**Action:** **Georg Kaser** to write to Magnus Magnusson.

After these discussions, the Bureau returned to agenda item C. 3. of the original agenda (**now C.1**) that was introduced at the end of the previous day.

*C.1. Transition of CCS to IACS (2005-2007): Structure, Status, By-laws of IACS (number C. 1. of the modified agenda)*

The discussions were opened by a brief presentation of **Gerry Jones** on the thoughts and discussions that had been voiced during last night. This has led him to conclude that the Statutes and By-laws should be simplified as much as possible. To that end, he will modify the text presented in Appendix B of his document presented at this meeting.

One item that received particular attention, also due to remarks by **Roland List**, was the exact nature of Statutes and By-laws. Specifically the question was asked whether or not we need 'rules' addressing the principal and the operational aspects of the prospective IACS? Connected to this, the nomenclature of Statutes and By-laws was put into question. The Bureau, after extensive discussions, concluded that

- we do need rules that address the aforementioned categories separately;
- the principal rules be called **Statutes** and the operational rules be called **Regulations**;
- changes in the former would require a two-third majority whereas changes to the latter could be decided upon through majority vote at a IACS General Assembly.

**Roland List** then explained his suggestions for changes/amendments/corrections of/to the present draft of the Statutes. He also stressed that in moving from a Commission to an Association will require substantial reorientation and reformulation of our previous operations and rules.

In a subsequent general discussion, the following conclusions were reached:

- (i) We agree that the move from ICSI to IACS requires changes but does not imply that we neither give up the successfully practiced cooperation between all members of the

Bureau nor that we abandon the body of experience that is founded in ICSI's long-term history.

- (ii) **Gerry Jones'** draft provides an excellent basis for a redraft of the Statutes, which should be pursued by **Julian Dowdeswell** and **Manfred Lange**.
- (iii) The following **action** items were agreed upon:
  - **Gerry Jones** to modify his present draft by including the discussions of this meetings and the paper by **Roland List** until the end of this year;
  - **Manfred Lange** and **Julian Dowdeswell** to produce a new draft of the Statutes by the end of January 2005;
  - this draft is to be circulated, commented on and approved by the Bureau members by the end of February;
  - a semi-final draft is to be sent to JoAnn Joseyln by mid-March;
  - a final draft will be produced through correspondence with JoAnn by **Manfred Lange** and **Julian Dowdeswell** and will be submitted to the IUGG EC in May 2005.

This concluded the discussions on C. 1. and the meeting then addressed point C. 2. of the modified agenda.

C.2 *Transition of CCS to IACS (2005-2007): Discussion on steps to be taken prior to Perugia and beyond*

- (i) The discussions on possible contributions of CCS to the 2007 IUGG General Scientific Assembly was taken up again. The idea of proposing a Union Lecture and a Union Symposium was maintained, however, changes to the topics of the Union Symposium were suggested by **Julian Dodeswell**.

With regard to possible sessions to be proposed by CCS, there are also suggestions by Roger Barry that should be taken into account in addition to other suggestions mentioned during the meeting. It was decided that **Georg Kaser** will generate a template that lists the presently discussed CCS sessions and provides an opportunity to each Bureau member to comment and to add possible new topics. However, it was stressed by **Georg Kaser** that he would need these information well in advance of the IUGG EC meeting in Perugia in September 2005 and that this includes the names of possible convenors and their consent.

**Action:** **Georg Kaser** to circulate a template of presently available topics for CCS sessions at the IUGG General Assembly in Perugia in 2007.

All: Comment on and add alternative topics and possible convenors, after requesting their consent to act in this capacity.

- (ii) With regard to the **name** of the prospective Association of Cryospheric Sciences, there is a suggestion by Uwe Radok to refer to the Greek origin of that name and change it into Cryological Sciences. While we appreciate this thought, it was decided to stick to the presently chosen name, which reflects the current nomenclature. Concerning the **logo** of IACS, we agreed that we should stick to the present logo of ICSI, however, modify the name and add as a background to the ice crystal the image of the globe.

**Action:** **Peter Jansson** to modify the logo.

We also discussed the issue of offering **prices** to young researchers for exceptional presentations of CCS (co-) sponsored Conferences. There is general agreement that this is an effective way to raise our profile. However, the details will have to be discussed further. This notwithstanding, we will move ahead and offer a cash price to an exceptional young participant at the upcoming Cambridge meeting in 2006.

We then returned to the remaining items on the modified agenda as follows.

5. *Any other business*

Three issues were briefly discussed. There is a new Journal of Mountain Sciences that is being published by the Chinese Academy of Sciences, which may provide a platform for CCS publications.

**Konrad Steffen** pointed out that there is a new part to the Journal of Geophysical Research of the *American Geophysical Union*, the JGR – Land, which is meant to publish papers related to glaciers and ice sheets, which had so far been published in various other JGR sections.

**Georg Kaser** reports on an informal meeting which was spontaneously convened during the UNESCO IHP National Committees Assembly held in Paris in September 2004. A group of hydrologists from Nordic countries expressed the wish to get Arctic Hydrology a better visibility within IHP. Provisional minutes are provided by Árni Snorrason from Iceland (Appendix D).

6. *The next Bureau meeting*

It was agreed that the next CCS Bureau meeting be held at the **UNESCO Headquarters in Paris on November 3 and 4, 2005.**

**Action:** **Georg Kaser** to contact Mike Bonell and Lalji Mandalia, UNESCO, Paris.

7. *Closure*

The **President** thanked again the **Past President Gerry Jones** for all his efforts and the Bureau members for a fruitful and constructive meeting.

The meeting was thus adjourned at 16:15.

Manfred Lange

Georg Kaser

## Appendix A.

### IUGG-CCS Bureau Meeting, December 10<sup>th</sup> and 11<sup>th</sup>, 2004. Fairmont Hôtel le Château Frontenac Quebec City, Canada.

## Agenda

### A. General

1. Welcoming address by the Outgoing President and introduction of the Incoming President
2. Acceptation of the Presidency by the Incoming President
3. Agenda: additions/modification

### B. ICSI matters

1. Minutes of the 2004 Bureau Meeting, Paris
  - i) *Corrections/modifications/additions*
  - ii) *Acceptance*
2. Activities following on the Paris Minutes of 2004
  - i) *Action items*
  - ii) *Other*
3. Secretary Treasurer: Report on ICSI (CCS) finances

### C. CCS – IACS

1. Report IUGG EC meeting, Boulder, September 2004: the creation of CCS (Reports, G. Jones, G. Kaser)
2. Transition of ICSI to CCS: Activities taken subsequent to the IUGG EC meeting (Report, G.Kaser)
3. Transition of CCS to IACS (2005-2007): Structure, Statutes and By-laws of IACS (Report, G. Jones)
  - i) *A structure appropriate for the future IACS in order to promote the Cryospheric Sciences within IUGG best (Statutes and By-laws for the Bureau, Officer's duties, Assemblies and Voting rights)*
  - ii) *Other statutes and by-laws.*
  - iii) *National IACS Bodies and National Representatives*
  - iv) *New fields of interest to be defined or to be covered in addition to those traditional to ICSI*
4. Transition of CCS to IACS (2005-2007): Discussion on steps to be taken prior to Perugia and beyond

## Appendix A.

- i) *appearance at conferences (IAHS - Foz do Iguacu, IAMAS – Beijing, CliC - Cambridge, others)*
  - ii) *name<sup>1</sup>, publicity, logo, IACS prize, others*
5. Relations with IAHS
- i) *snow and ice hydrology; GEWEX, PUB, Hydrology 2002, WWAP, IAHS-IYPE (IUGS-UNESCO) others*
  - ii) *IAHS 7<sup>th</sup> Scientific Assembly, Foz de Iguassu, Brazil, April 2005, ICSI participation*
  - iii) *IAHS press*
6. Relations with other supporting Associations (IAMAS, IAPSO, IAPSEI)
- i) *ICSI participation, 9<sup>th</sup> Scientific Assembly, Beijing, China 2005*
7. Communication with IUGG
- i) *CCS contribution to the IUGG General Assembly, Perugia 2007 (co-sponsors)*
  - ii) *IPY*
  - iii) *IASC application to IUGG*
  - iv) *ICSU Grants program 2006*
  - v) *IUGG E-Journal*
8. Relations with IPA
- i) *Joint Working Group on Glacier and Permafrost Related Hazards*
  - ii) *Possible future cooperation (fusion?)*
9. Relations with UNESCO, WMO, others
10. Relations with CliC
- i) *First Scientific Conference Beijing April, 2005*
  - ii) *Conference, IGS/ICSI/CliC, Cambridge 2006, progress report*
  - iii) *Contribution to Integrated Global Observing Strategy (IGOS) - Cryosphere*
11. *Relations with IGS*
12. Any Other Business
13. The Next Bureau Meeting
14. Closure

G. Kaser/ G. Jones/ P. Jansson

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<sup>1</sup> Uwe Radok proposes that close to the greek origin „Kryological Sciences“, maybe „Cryological Sciences“, or „Ice Sciences“ instead of „Cryospheric Sciences“

## **Proposed Statutes and Regulations:**

### **Statute 1; Objectives of the International Association of Cryospheric Sciences (henceforth IACS)**

The objectives of IACS are:

- a) to promote studies of cryospheric systems of the Earth and other bodies of the solar system and of the interplanetary medium;
- b) to encourage research in the above subjects by persons, national and international institutions and programmes, and individual countries through collaboration and international co-ordination;
- c) to provide an opportunity on an international basis for discussion and publication of the results of the above research;
- d) to promote education and public awareness on the cryosphere
- e) to facilitate the standardisation of measurement or collection of data on cryospheric systems and of 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 control.

### **Statute 2; Establishment of Component Bodies**

To achieve its objectives, the Association may establish Component Bodies both within IACS and jointly with other Associations of the International Union of Geodesy and Geophysics (IUGG) and/or components of other Bodies of the International Council for Science (ICSU)

### **Statute 3; A Member Country of IACS**

A country that adheres to IUGG, as defined in the IUGG Statutes, is a Member Country of IACS and may participate in IACS activities. Paying Member Countries of IUGG, as defined in the IUGG Statutes, are paying Member Countries of IACS. Countries in Observer status or having Associate Membership of IUGG, as defined in the IUGG Statutes, are non-paying Member Countries of IACS.

### **Statute 4; An IACS National Representative**

Each Member Country of IUGG shall appoint a National IACS Representative who is responsible for maintaining official contact with the Association.

**Statute 5; An IACS National Committee**

Each Member Country of IUGG may appoint an IACS National Committee, which shall maintain contacts with the Association through the National Representative.

**Statute 6; Assemblies of IACS**

6.1 An ordinary General Assembly of IACS shall normally be held in conjunction with each ordinary General Assembly of IUGG.

6.2 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.

6.3 A Scientific Assembly of IACS may be held between ordinary General Assemblies of IACS, in accordance with IUGG Regulations.

6.4 An extraordinary General Assembly of IACS may be convened by the President in accordance with the Regulations.

**Statute 7; Plenary Administrative Session and National Delegates**

7.1 The work of the Association shall be directed by the Plenary Administrative Session held at Assemblies of IACS.

7.2 The Plenary Administrative Session shall consist of the Bureau and National Delegates. A National Delegate is a person who has been designated by a member country for the purpose of casting that country's vote at the Plenary Administrative Session as stipulated in Statute 10. The National Delegate may be represented in voting matters by another person appointed in accordance with Regulation 8.

7.3 A National Delegate may represent only one Member Country. A member of the Bureau may not be a National Delegate, except when that member would be the only possible delegate in attendance from the country in question.

7.4 A Plenary Administrative Session shall be convened at least once during each Assembly of IACS.

**Statute 8; the IACS Bureau**

8.1 Responsibility for the direction of IACS affairs between Assemblies shall rest with the Bureau.

8.2 The President of the Bureau, or his representative, shall present a report on Bureau activities between Assemblies to each Plenary Administrative Session.

8.3 The duties of the Bureau shall be to administer the affairs of the Association in accordance with these Statutes and Regulations and the decisions of the prior Plenary Administrative Session.

8.4 The Bureau may create Joint Bodies with other IUGG Associations, components of other ICSU Bodies, UNESCO and other International Scientific Organisations to deal with topics of mutual interest, and may appoint appropriate leaders and IACS representatives.

8.5 In its dealings with non-IUGG Bodies, the Bureau shall not commit the name of IUGG, or act on behalf of IUGG, unless prior approval has been secured from the IUGG Executive Committee.

8.6 The Bureau shall meet at least twice at each Assembly, and must meet at least once more between ordinary General Assemblies.

### **Statute 9; Membership of the Bureau.**

9.1 The Bureau shall consist of the President, the President-Elect or immediate Past-President, Three Vice-Presidents, the Secretary-General, and the Heads of Divisions. The immediate Past-President shall remain a Bureau Member during the period between the end of his/her office and the election of a new President-Elect. Except for the retiring President, all members of the Bureau shall be elected by the Plenary Administrative Session during the General Assembly of IUGG in accordance with the Statutes and Regulations.

9.2 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 for one period. The Secretary-General shall be elected for one period and may be re-elected for two successive periods. The Heads of Divisions shall be elected for one period and may be re-elected for two successive periods. No person who has served on the Committee for four Periods shall be eligible for further election to any position on the IACS Bureau.

9.3 In the event of any vacancy occurring in the membership of the Bureau during a Period, the Bureau 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 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.

### **Statute 10; Voting Rules at Plenary Administrative Sessions**

10.1 Each National Delegate present at a Plenary Administrative Session shall have one vote.

10.2: A Member Country not represented at a Plenary Administrative Session may vote by correspondence on any voting matter provided that: **(i)** the matter has been clearly defined in the final agenda distributed in advance to the Member Countries according to the Regulations, **(ii)** the substance of the matter has not been changed, and **(iii)** the said vote has been received by the Secretary-General prior to the meeting.

10.3: Decisions on any voting matter, except for the modification of the Statutes, shall be taken by a simple majority of the votes cast. Decisions on the Statutes shall be taken according to Statute 11. 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.

### **Statute 11; Modification of the Statutes and Regulations**

11.1 Modifications to these Statutes and Regulations shall come into force at the close of the General Assembly at which the modifications are adopted, or as otherwise decided by a Plenary Administrative Session.

11.2 The Statutes may only be modified with the approval of at least a two-thirds' majority of National Delegate's votes cast at a Plenary Administrative Session held during a General Assembly, in accordance with Statute 10. A majority of two-thirds shall be calculated in accordance with the classes of votes defined in Statute 10.3.

11.3 The Regulations may be modified by a simple majority of National Delegate's votes cast at a Plenary Administrative Session held during a General Assembly, in accordance with Statute 10.

11.4 Only the IACS National Representative of a Member Country or members of the IACS Bureau may propose a change to these Statutes and/or Regulations. 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 IACS National Representatives of any proposed change at least two months prior to the announced date of the General Assembly.

### **Statute 12: Dissolution of the Association**

If the Association should be dissolved, its financial assets will revert too the Union to be used for the continuation of scientific and educational activities, such as the organisation of scientific meetings and symposia, the dissemination of scientific information, and the co-ordination of international research activities.

### **Statute 13; Languages**

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

## **Proposed IACS Regulations:**

### **I. Composition**

#### **Regulation 1; Component Bodies of IACS**

The Components of IACS shall be called Divisions as follows:

Division I: AA

Division II: BB

Division III: CC

Division IV: DD

#### **Regulation 2; Role and Structure of Divisions**

2.1 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.

2.2 Each Division shall be responsible for its role, structure, and mode of operation. The Division Head shall inform the Bureau on the activities of his/her Division at every Bureau Meeting.

2.3 The role and the effectiveness of each Division shall be reviewed periodically by the Bureau.

### **II. Administration**

#### **Regulation 3; Bureau Meetings**

3.1: The President will convene the Bureau and set the agenda in consultation with the Secretary-General.

3.2: The quorum needed for an IACS Bureau Meeting to be valid consists of 6 Officers, including either the President or President-Elect, one of the Vice-Presidents and the Secretary-General together.

3.3: The President may invite representatives of scientific bodies or individuals to attend a Bureau Meeting in an advisory capacity.

#### **Regulation 4; Extraordinary General Assemblies**

4.1 The President may at any time, with the approval of the Bureau, call an extraordinary General Assembly.

4.2 The President must call an extraordinary General Assembly at the request of not less than twenty-five Member Countries.

4.3 Such an extraordinary General Assembly must be held no later than nine months after the request.

4.4 An extraordinary General Assembly shall have the same powers and be subject to the same rules as an ordinary General Assembly.

#### **Regulation 5; Notice of an Assembly**

Notice of the date and place of an ordinary General Assembly or a Scientific Assembly shall be sent by the Secretary-General to the Member Countries at least nine months prior to that Assembly. The notice period for an extraordinary General Assembly shall be four months.

#### **Regulation 6; The Agenda for a Plenary Administrative Session**

6.1 A provisional agenda for a Plenary Administrative Session shall be prepared by the Secretary-General and circulated to IACS National Representatives at least two months prior to the opening of an Assembly.

6.2 The provisional agenda shall include all items submitted by IACS National Representatives for discussion at the Plenary Administrative Session, together with questions placed on the provisional agenda by the Bureau. Additional agenda items, for which notice has not thus been given, may only be discussed with the consent of the Plenary Administrative Session.

#### **Regulation 7; Attendance at a Plenary Administrative Session**

7.1 Plenary Administrative Sessions shall be open to all bone-fide participants at IACS Assemblies. Participants, who are National Delegates may vote according to the statutes and regulations, all other participants may have voice but no vote.

7.2 The President may, on his or her initiative or at the request of a National Representative, invite representatives of scientific bodies or individuals to attend a Plenary Administrative Session in an advisory capacity.

7.3 The Plenary Administrative Session at a IACS Assembly shall be open to the public. A session attendee who is not a participant at the Assembly shall have voice only with permission of the President.

#### **Regulation 8; Representation on behalf of a National Delegate**

A National Delegate of a Member Country may designate another participant from that country at a IACS Assembly to be his or her representative at all or part of a Plenary Administrative Session. If the National Delegate is unable to do this, the accredited participants from that Member Country may designate one of their number to represent the National Delegate. In either case, the Secretary-General shall be informed of the designation in writing prior to the Plenary Administrative Session at which the representative of the National Delegate is to act.

### **Regulation 9; Nominations and Election of the Association Bureau**

9.1 The Bureau shall establish a Nomination panel of not less than three members at least ten months prior before an IUGG General Assembly to receive and consider suggestions and prepare nominations for the President-Elect, the three Vice-Presidents, the Secretary Treasurer, and the Heads of Divisions. Members of the Bureau may not be appointed to the Nominating Committee.

9.2 At least nine months before an IUGG General Assembly the Secretary-General shall inform all National Representatives of the membership of the Nomination panel, asking them or their respective National Committees to send their nominations to its Chairman not later than six months before the General Assembly. On the basis of available nominations by National Committees, National Representatives and the Bureau, the Nomination Panel prepares a list of candidates, seeking to achieve a reasonable balance in their geographical and professional distribution.

9.3 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

9.4 A person may be candidate for more than one office except the candidate for President-Elect who may not be a candidate for any other office of the Association.

9.5 The list of candidates shall normally contain more than one name for each office. The Chairman of the Nomination panel shall distribute the list to the National Representatives at least three months before an IUGG General Assembly. The list submitted for voting shall contain both the candidates proposed by the Nomination Panel and the names of all other nominees submitted.

9.6: 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 Nominating Committee nor candidates for the election.

9.7: To be elected to office, each candidate must obtain a simple majority of votes. For those offices not filled in the first round of voting, a second round shall be held

on the two highest ranking candidates of the first round. In the case of a draw in the second round the President shall decide.

9.8 Scientists from countries that are not Member Countries of IACS or are represented by Adhering Bodies that have been in Observer status for more than two years or have Associate Membership (as defined in the IUGG Statutes) are not eligible to hold elected positions in IACS.

### **Regulation 10; Duties of the President**

The duties of the President of IACS are:

- (a) to represent IACS in the IUGG Executive Committee;
- (b) to represent IACS in its dealings with IACS National Committees and/or National Representatives, other IUGG Associations, and other ICSU Bodies;
- (c) to represent or to appoint a person to represent IACS at meetings, conferences, or functions where formal representation is requested or desirable;
- (d) to convene Plenary Administrative Sessions and meetings of the Bureau and to preside over these meetings;
- (e) to prepare and distribute the agenda of Bureau Meetings to Bureau members
- (f) to submit a report on the work of the Association to a Plenary Administrative Session at each Assembly.

### **Regulation 11; Representation on behalf of the President**

If the President is not available, the President-Elect shall act on behalf of the President according to the Statutes and Regulations. If there is no President-Elect, then the Bureau shall appoint one of the Vice-Presidents to act on behalf of the President according to the Statutes and Regulations.

### **Regulation 12; Duties of the Secretary-General**

The duties of the Secretary-General are:

- (a) 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;
- (b) 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 Bureau meetings;
- (c) to organise Assemblies according to the instructions of the Bureau, to prepare and arrange publication of the Programme of each Assembly, to prepare the list of

National Delegates for each Assembly, and to prepare and distribute the agenda and minutes of Plenary Administrative Sessions;

(d) 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 the Plenary Administrative Session;

(e) to appoint, on behalf of the Bureau persons or institutions belonging to countries that are not members of the Association to be local correspondents to the Association;

(f) to publish an internal Association bulletin (such as IACS News) containing information of general interest to the Association;

(g) to perform such other duties as may be assigned by the President or by the Bureau.

### **Regulation 13: Assistant Secretary-General**

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

## **III) General:**

### **Regulation 14: National Correspondents**

The Bureau may appoint National Correspondents in those countries where a National Representative has not been designated (Statute 4). The National Correspondent shall inform the Bureau on the cryospheric research in the scientific community of his/her country and disseminate information on IACS activities to same.

### **Regulation 15: Honorary Membership of IACS**

A person who has given outstanding service to IACS may be elected by a Plenary Administrative Session as an "Honorary Member of IACS". The Bureau shall select persons for this category and shall present their names to a Plenary Administrative Session for approval.

## **Glossary: IAGA Statutes and Regulations**

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

(The) Association: IACS.

(The) Bureau: the Bureau elected by a Plenary Administrative Session of an IACS Assembly to be responsible for IACS affairs between Assemblies.

Component Bodies: the Divisions of IACS.

Extraordinary General Assembly: a General Assembly of IACS called by the President in accordance with Regulation 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.

Member Country (of IACS): a country that adheres to IUGG and may, therefore, participate in IACS activities. Paying Member Countries of IUGG, as defined in the IUGG Statutes, are paying Member Countries of IACS. Countries in Observer status or having Associate Membership of IUGG, as defined in the IUGG Statutes, are non-paying Member Countries of IACS.

National Committee: the body in a Member Country that may be established by the body that adheres to IUGG to represent that country in IACS activities. The Committee maintains contact with the Association through the National Representative.

National Correspondent: a person appointed by the Bureau in countries where no National Representative has been designated. The National Correspondent shall inform the Bureau on the cryospheric research in the scientific community of his/her country and disseminate information on IACS activities to same.

National Delegate: the Delegate appointed by a member country for the purpose of casting the vote of that country at the Plenary Administrative Session of the IACS Assembly.

National Representative: a person appointed by each Member Country of IUGG to be responsible for maintaining official contact with the Association.

**Nominating Committee:** the committee appointed by the Bureau to provide nominations for the election of Bureau Officers to the Plenary Administrative Assembly.

**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 Members, National Delegates of Member Countries, and bone-fide participants at IACS Assemblies. It is open to the public.

**(The) Regulations:** the Regulations of IACS

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

**(The) Statutes:** the Statutes of IACS.

## Appendix C

### IUGG-CCS Bureau Meeting, December 10<sup>th</sup> and 11<sup>th</sup>, 2004. Fairmont Hôtel le Château Frontenac Quebec City, Canada.

## Agenda

For day 2: 11.12.2004

### C. CCS – IACS

1. Transition of CCS to IACS (2005-2007): Structure, Statutes and By-laws of IACS (Report, G. Jones)
  - i) *A structure appropriate for the future IACS in order to promote the Cryospheric Sciences within IUGG best (Statutes and By-laws for the Bureau, Officer's duties, Assemblies and Voting rights)*
  - ii) *Other statutes and by-laws.*
  - iii) *National IACS Bodies and National Representatives*
2. Transition of CCS to IACS (2005-2007): Discussion on steps to be taken prior to Perugia and beyond
  - i) *New fields of interest to be defined or to be covered in addition to those traditional to ICSI (to be combined with discussion on C3 and C4)*
  - ii) *name<sup>1</sup>, publicity, logo, IACS prize, others*
3. CCS contribution to the IUGG General Assembly, Perugia 2007 (resume, synopsis and summary)
4. Conference, IGS/ICSI/CliC, Cambridge 2006, progress report (summary)

### Business other than structure and future fields

1. Relations with IAHS
  - i) *GEWEX, PUB, Hydrology 2002, WWAP, IAHS-IYPE (IUGS-UNESCO) others*
  - ii) *IAHS press*
2. *appearance at conferences (IAHS - Foz do Iguacu, IAMAS – Beijing, CliC - Cambridge, others)*

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<sup>1</sup> Uwe Radok proposes that close to the greek origin „Kryological Sciences“, maybe „Cryological Sciences“, or „Ice Sciences“ instead of „Cryospheric Sciences“

## Appendix C

3. *Relations with IUGG*
  - i) *IPY*
  - ii) *IASC application to IUGG*
  - iii) *IUGG Grants program 2006*
  - iv) *IUGG E-Journal*
  
4. *Relations with IPA*
  - i) *Joint Working Group on Glacier and Permafrost Related Hazards*
  - ii) *Possible future cooperation (fusion?)*
  
5. *Relations with UNESCO, WMO, others*
  
6. *Relations with CliC*
  - i) *First Scientific Conference Beijing April, 2005*
  - ii) *Contribution to Integrated Global Observing Strategy (IGOS) - Cryosphere*
  
7. *Relations with IGS*
  
5. *Any Other Business*
  
6. *The Next Bureau Meeting*
  
7. *Closure*

G. Kaser

From asn@os.is Fri Oct 15 14:15:43 2004  
Date: Fri, 15 Oct 2004 12:06:57 +0000  
From: Árni Snorrason <asn@os.is>  
To: Arctic UNESCO <Arctic\_UNESCO/IHP@OS.svunta.os.is>, ishiklom@zb3627.spb.edu,  
georg.kaser@uibk.ac.at  
Cc: Kristinn Einarsson <ke@os.is>  
Subject: Arctic IHP meeting in Paris

Dear friends,

At the IHP-Council meeting in Paris last month, an informal gathering of IHP representatives from the Arctic countries was arranged. I have prepared short minutes from the meeting with a list of the participants.

### **Minutes**

Participants:

Verne R. Schneider, USA  
Ingrid M. Verstraeten, USA  
Dan Rasbjerg, Denmark  
Kjell Repp, Norway  
Ari Jolma Finland  
Georg Kaser, IUGG Comm. for the Cryospheric Sciences  
I. A. Shiklomanov, Russia  
Árni Snorrason, Iceland.

Árni Snorrason had called to this informal meeting of the IHP-representatives from the Arctic countries. He gave a short introduction to the reason for such a meeting, reciting the draft resolution from the IHP meeting in Helsinki in March for region I and II of IHP. He also mentioned the international mobilization regarding the Polar year 2007-2009, as well as the upcoming meeting of the Arctic Council and its program: Arctic Climate Impact Assessment, ACIA, 9-12 November 2004 in Reykjavík Iceland. He also mentioned an informal discussion with Vladimir Ryabinin, WMO on the Arctic Hycos project as well as the Northern Research Basin network which is operating under the national IHP committees. He concluded by calling for an increased cooperation on hydrology of the Arctic region and the need to joint the forces of the IHP, WMO and the Arctic initiatives that are active as well as those planned. The participants were all positive and felt that it would be beneficial to establish stronger cooperation. It was also agreed that the group should develop and put forward a draft resolution for the council. Dan Rosbjerg succeeded that the group should propose an Arctic center, but after some discussion it was felt that such a proposal would be premature. Verne Schneider also questioned if the leadership for such a network should be with IHP rather than WMO. Árni said that he had asked Vladimir Ryabinin to arrange a meeting of the representatives from the Arctic countries at the upcoming meeting of the Commission for Hydrology of WMO (this has subsequently been arranged) where this issue could be raised within the WMO community.

The group decided to develop a draft resolution on Arctic hydrology (this resolution was subsequently accepted by the Council), furthermore, to arrange a meeting of the Arctic IHP committees, the Arctic WMO representatives as well as the Principal Scientists of the Northern Research Basin network operating under the national IHP committees and representatives from IUGG Comm. on Cryospheric Sciences and the International Arctic Science Council. Kjell Repp from Norway took on the task to arrange such a meeting early next year.

Árni Snorrason

## Text of the resolution



### Enhancing Hydrological Activities in the Arctic IHP-XVI Resolution

- **Noting**  
That a 2nd regional meeting (Helsinki, 22-23 March 2004) of the IHP NC of EG I and II, recommended more emphasis within the IHP on the Arctic environment and the establishment of closer links between IHP and IPCC activities
- **Recognizing**
  - i. That the Arctic is especially sensitive and vulnerable to human and climate impacts;
  - ii. That Arctic warming and its consequences has regional and world-wide hydrological implications;
  - iii. There is need for improved coupling of climate/hydrological models, and an enhanced understanding of cold region hydrological processes



### Enhancing Hydrological Activities in the Arctic

- **Recalling**  
That under IHP-VI, Theme I emphasises the need to address global change and water;
- **Taking into account**  
That the IPCC 2nd and 3rd assessments identified the Arctic as a bellwether of climate change;
- **Noting also**  
That the Arctic Climate Impact Assessment (ACIA) will emphasize the need for enhanced international cooperation and action in hydrological and related atmospheric, ocean and ecological sciences (report to be released Reykjavik, Iceland, 9-12 November 2004);



### Enhancing Hydrological Activities in the Arctic

- **Requests**  
Member States to enhance efforts to foster cooperation and strengthen the hydrological research/monitoring networks in the Arctic; promote the synthesis and dissemination of existing hydrological and ecohydrological data in the Arctic; and, improve communication and collaborations with other relevant organizations, agencies and programs (i.e., WCRP-GEWEX, CIIC, CLICAR, Arctic-CHAMP, IAHS, WMO, IPCC)
- **Invites**  
The IHP Secretariat to encourage and support the development of a coordinated, proactive collaborative network to address research, monitoring and information needs in the Arctic region and support the organization of workshops and conferences aimed at this theme.