



# **12<sup>th</sup> bis IGOS PARTNERS MEETING**

**London, UK**

**18<sup>th</sup> November 2004**

**Meeting Record**

MINUTES OF THE IGOS-P 12BIS MEETING  
LONDON, UK NOVEMBER 17, 2005

## 1. Organization of the Session

Don Hinsman (WMO) and Conrado Varotto (CEOS/CONAE) as Co-Chairs welcomed the participants to the 12th bis IGOS Partners meeting.

The agenda was adopted with a change in the order of presentations, to allow for enough time at the beginning of the sessions for the GEO Director to address the IGOS Partners.

## 2. GEO Progress and IGOS-P Position

### 2.1 Introduction from GEO Director, Dr. José Achache

Dr. Achache informed the Partners about the responses received by the GEO Secretariat (GEOSEC) with respect to Version 1 of the 2006 GEO Work Plan, which had been distributed to GEO Members for official comments. Comments mainly pointed out a concern that in the distribution of tasks, GEOSEC was assigned the main responsibility for many tasks which could be channeled through participating organizations and members already working on them. Dr. Achache pointed out that this was a temporary situation, and that final responsible for each task will be defined once an agreement can be reached with each one of the corresponding actors. However, it should be clearly noted that although GEO is a non binding process, once a member or a Participating Organization takes responsibility over a certain task provided for in the Work Plan, it must make sure that the result is delivered.

During the next 8 weeks, GEO will negotiate with Participating Organizations and Members willing to work on each of the tasks in order to agree on what will be considered for the implementation of the tasks, the deliverables and the deadlines. Voluntaries will fill in task sheets with the GEOSEC, which will not be contractual but there must be willingness and commitment on the part of actors identified in them to deliver as provided for in the task sheet.

Comments to Version 1 will be integrated and circulated in a couple of weeks to get further comments and prepare Version 2 of the Work Plan, which will be discussed it in the GEO-II Plenary, which will take place in Geneva, on December 14 and 15, 2005.

With respect to the structure of GEO, the following Committees have been defined: Committees on Science and Technology, Architecture & Data, User interface, and Capacity Building, and Working Group on Tsunamis. They are still under definition phase.

At present, GEO has achieved very good visibility within the EO community. The need of being able to produce results at the end of 2006 was highlighted, as an important factor to strengthening credibility of GEO and confidence by governments, which can translate in resource allocation.

Dr. Achache highlighted the work IGOS-P has done in the definition of the themes reports, which have been a significant contribution to the development of the 10

Year Implementation Plan of GEOSS. It still has to be decided how tasks will be delegated, whether to IGOS or to organizations within it.

With respect to the scoping reports that are being prepared by IGOS for the establishment of Health and Energy Themes, Dr. Achache pointed out that GEO would be happy if IGOS created two new themes to cover for the Societal Benefit Areas of Health and Energy. However, this should be done in coordination with GEO Committees, once they are established, in order to make sure that there is no duplication of work between the GEO Committees and IGOS in the definition of such new themes.

Then, Dr. Achache referred to the GEOnetcast initiative: it is a very important element, and an ambitious one. Managing to conduct and achieve something in this area would demonstrate efficiency of GEO process. Key issue for GEO as an information system is the ability of all the partners to have access to this information, particularly for developing countries.

This can build on current similar activities, such as those carried out by EUMETSAT, WMO and ESA.

Broadcasting mechanism is important but coordination is needed to homogenize them and make the information compatible so any one can use the system with minimum investment (same computer, not having to acquire new equipment).

Don Hinsman thanks Dr. Achache for his contribution to the meeting.

## **2.2 Discussion on an Expanded Partnership**

Brian O'Donnell made a short presentation on the elaboration of the scoping papers for Health and Energy, and an expanded partnership, which were agreed to be carried out in IGOS-P12.

The development of the paper was begun. Collaboration went a little further. They discovered that there is an Earth System Science Partnership (ESSP) on global environment change, which involves the World Climate Research Program (WCRP), IHDP (International Human Dimensions Program), DIVERSITAS (International Programme on Biodiversity) and IGBP (International Geosphere-Biosphere Programme), and offers an opportunity to look further than the observational scene.

We are working at engaging the World Health Organization (WHO), in particular agencies that would go with this particular theme. They need encouragement but currently they are very much preoccupied by a number of issues affecting the global community. The paper recommends two options: establish a new theme in partnership with WHO, identify the leader and develop a proposal. Second proposal is to wait until we see how GEO evolves, from conversations with Achache, this can go on and have advantage of the momentum to take it to December for the reaction of GEO. Up to date, the partnership and GEO have identified leaders in key areas that IGOS-P is already working in, WHO and ESSP should take the task and become champions (with resources) to start this up.

Don Hinsman reported that in the May meeting the G3OS changed its structure and was replaced by a high level interagency mechanism composed by UN agencies (four heads plus ICSU and IOC participation): "Interagency Planning Committee", there is a second level group that has responsibility to inform executive heads, and this is the mechanism through which UN will coordinate its interaction with GEO and CEOS. The Director General of WHO was interested in joining these groups and IGOS.

The document presented is a pre-theme proposal, the real proposal will follow, should IGOS accepts this proposal first.

## General comments:

- It has to be clear whether this is a test case on how IGOS can interact in the process with GEO, and how this affects the IGOS Process.
- Duplication of efforts between GEO and IGOS Process must be avoided, it is necessary to find new mechanisms using all available resources.
- Work within IGOS is not restricted to IGOS Partners, there are other cases of non partners being invited to participate.
- Arranging two sets of requirements is a very difficult work, entailing several groups working together. IGOS can work on Health and Energy themes following the process, but it is up to GEO to decide how it wants to deal with these two SBAs.
- WP v2 will be a process of negotiation with the responsible agencies to better define what the tasks really are and how they match the real capability of the organizations to deliver. If partnership agrees, this statement of intent to initiate the process for Health and Energy themes can be taken to GEO-II by Co-Chairs, otherwise the Director would have to create new committees to do this.
- It is time to set up a health theme. WHO has a good record of working with the partners. However, for the energy theme, the corresponding partner is not so evident, it still needs more work to identify it.
- In the case of Health, there are already many initiatives going on in different regions, in which WHO and other international organizations are involved, this shows that people from the health sector are willing to be involved in this matter and need those organizations of EO to help them, the IGOS theme proposal would be the best opportunity for this.
- For energy it will be necessary to talk to companies and organizations. NASA points out that they have been working with IEA and they can provide some specific language for this.
- GEO would be happy to see IGOS initiating the Process to define the Health and Energy Themes, but the GEO quick schedule must be taken into account. The preliminary requirements will be needed for next year. This means that the timing of the IGOS Process needs to be adjusted.
- The need of GEO for a quick elaboration of the theme document would have an impact on the IGOS Process. However, it is pointed out that what GEO needs to receive in the short term is an initial set of requirements, and that the Process has been adjusted many times in the past, as needed.
- The way to have themes take off quickly is to have a strong champion.
- WCRP will be happy to see IGBP included in the partnership for climate resource.
- More background information will be needed from potential new partners before a formal invitation to join the Partnership is made.

The participants agree that the Partnership should inform GEO-II of its interest in moving into theme for health and undertake the task to start on energy. Expansion of the Partnership to cover these new themes is also accepted.

<b>12bis-1</b>	<b>Partners offer to the GEO SEC that IGOS-P will lead the GEO</b>
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	<b>Task on helping to better define the requirements and priorities of the Health community regarding Earth Observations</b>
<b>12bis-2</b>	<b>Partners will formalize by e-mail the procedure to invite WHO to join the partnership with an aim to have partnership extended by IGOS-P 13 in May 2006</b>
<b>12bis-3</b>	<b>Partners agreed that the Energy Theme was less well developed and further scoping would be required for a possible discussion at IGOS-P 13</b>

### **2.3 IGOS-P relations with GEO: discussion – Inputs to GEO-II**

Don Hinsman reports that Version 1 of the 2006 GEO Work Plan was distributed on October 21st, with a request to send comments to GEO Sec. Co-Chairs provided comments to GEO Sec Director.

GEO will release Version 2 of the WP on November 25<sup>th</sup>, and any comments must be taken to GEO-II in December. Therefore, a review of Version 2 by the Partnership is needed, so that IGOS comments can be reflected by IGOS co chairs at the GEO II meeting on December 14-15. In this review process, it is necessary to check that all the previously submitted comments have been included and that IGOS participation is properly reflected.

WMO Co-Chair will be IGOS representative at GEO-II.

Coordination with CEOS is important. CEOS and IGOS will share their respective position before taking them to GEO-II to ensure proper coordination.

<b>12bis-4</b>	<b>Partners to review Version 2 of GEO 2006 Work Plan and submit comments to be taken by Co-Chairs to GEO-II in Geneva</b>
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### **2.4 Representation of IGOS-P on GEO Committees.**

GEO Committees are still under definition. At GEO-II the Terms of Reference will be adopted and after the meeting GEO will make a call to populate them. The participation will not require extensive travel, they will function by teleconference and e-mail.

As stated above, the currently proposed committees are:

- Science and Technology
- Architecture and Data
- User Interface
- Capacity Building
- Working Group on Tsunamis (ad hoc group that has been proposed to become multihazards committee)

General Comments:

It is better for IGOS to concentrate the themes in SBAs instead of the cross cutting activities.

Not having the ToR defined makes it difficult to know how the committees will work and how effective they can be.

We can assume that they will work and that can be populated by us. IGOS has to make nominations and decide who will participate, and where.

Themes leaders' focus group or the IGOS secretariat for nominations

Theme leaders group should be the core of one of those committees. User interface was suggested, the rest of the theme would be community of practice.

We need representatives who will participate in Capacity Building area (this is for UNESCO to decide), however, since IGOS works with CEOS WGEdU of which UNESCO is Chair, that makes sense.

IGOS must be properly represented.

### **3. GGOS as an IGOS Partner**

As follow up of AI 12-11, UNESCO and Geohazards Theme presented the nomination for GGOS (Global Geodetic Observations System) to become IGOS partner. Partners will provide their secondments.

## **4. Brief Status Reports by Themes**

### **2.1 Themes Leaders Meeting**

Stuart Marsh informed on the results of the 3<sup>rd</sup> Theme Leaders meeting which was held on the previous day to IGOS-P 12 bis, as per Action 12-5.

It was agreed to establish a formal Theme Leaders Group to provide a "think-tank" on strategic level to Partners and become a forum for cross themes collaboration, seeking integrated aspects of IGOS across themes, streamlining reporting, providing a focus for resourcing, strengthening dialogue with CEOS-SIT, help crystallize relations between IGOS and GEO. The first formal meeting will be held in the March/April 2006 timeframe alongside either Water Cycle Workshop in Paris or the Ocean Workshop in Barcelona, allowing for time to have a paper ready to be presented to IGOS-P 13 in May.

### **2.2 Geohazards Theme**

Stuart Marsh informed:

Activities between May and November 2005:

- Geological Applications of Remote Sensing Program: Secretariat established in British Geological Survey
- IGOS Geohazards International Workshop: Was held on 27th – 29th June, French Geological Survey, Orleans. Had a participation of 50 international experts from 5 Continents. There were 5 Working Groups set up: each set concrete actions.
- New IGOS Geohazard Website and project portal: [www.igosgeohazards.org](http://www.igosgeohazards.org). It constitutes a Facility for file exchange, scheduling and forums. Newsletter Geohaz Update: first issue distributed, can be found in website.

Plans for November 2005-May 2006

- 3rd GARS-IGOS Geohazard Joint Committee: will be held on – 18th November 2005, DTI Conference Centre, London. New USGS member & NASA attending for first time, as well as – Observers from GEO Secretariat and other Themes

- First working period for the five working groups (Capacity Building, Observations, Integration, Infrastructure and, Science). Objectives: Expand membership beyond Workshop attendees; Pursue as eProject: exploit the new website as tool; Initially focus on ongoing database development
- Continue to make inputs to the GEO process

Issues:

- Consistent, global, high resolution topography: – Was to be taken forward with GEO Secretariat in 2005...
- ASTER & Landsat continuity for geoscience mapping: – This is being pursued by the Land Theme through GEO
- C-Band INSAR continuity for ground displacement: – Decision on ESA Sentinels by ESA Council at end- 2005
- L-Band INSAR for vegetated, non-urban environments: JAXA ALOS due to be launched...
- Data access issues: – Generic issue being addressed within GEO by others

### 2.3 Ocean Theme

Paul DiGiacomo informed that the first Ocean Theme Rolling Review Meeting was held 26-28 October 2005 in Arlington, VA, USA at the Ocean. US office. The meeting was very productive; the strategy, approach and timetable for the Rolling Review process was discussed as were ocean observing needs, gaps, priorities et al. He presented the structure of the report and the schedule of work:

Nov 05	Detailed report outline developed
Jan 06	Homework assignment #1 due: Initial draft report sections
Feb 06	Release Draft V.0 / Initial PowerPoint for AGU Ocean Sciences ad hoc Town Hall / Post PowerPoint to web site / Solicit input from constituents
Mar 06	Homework assignment #2 due: Comments on Draft V.0
Apr 06	Draft V.1 due 2 weeks prior to team meeting/ Ocean rolling review team meeting (probably Barcelona)
May 06	Complete Draft V.2
Jun 06	IGOS-P13 meeting: present Draft V.2
Jul 06	Complete Draft V.3
Jul – Aug 06	Targeted community input
Sep 06	Editors meeting/ Final working Draft V.4 completed by end of Sep 06
Oct 06	Feedback, SCOR programs meeting (Concepcion, Chile)
Nov 06	Submit to IGOS-P (present at IGOS P-13bis if held) then Publication of Draft V.5

### 2.4 Coastal Theme

Paul Digiacoimo informed the following:

Selected Recent Activities and Highlights

- 1) Coastal Theme Report sent to IOC for publishing earlier Coastal Theme Report sent to IOC for publishing earlier this month;

- 2) Coastal Zone Community of Practice(COP) Proposal submitted to the GEO Ad Hoc User Interface Working Group;
- 3) Coastal observing sessions/presentations at the TOS and LOICZ LOICZ-II Meetings; poster on the Coastal Theme at 18th Biennial Conference of the Estuarine Research Federation;
- 4) Abstract on Coastal Theme submitted to upcoming AGU/ASLO Ocean Sciences Meeting in Feb. 2006 in Hawaii.

Upcoming Activities for 2005-6:

- 1) Presentation and discussion of Coastal Zone Community of Practice Proposal at GEO Ad Hoc User Interface Working Group Meeting in Geneva on 16 December;
- 2) Coastal Theme implementation activities, including:
  - > Workshop on "Coastal Urbanization, Development, and Hazards: Impacts on Humans and Ecosystem Health and Productivity"
  - > Establishing the GOOS/GTOS Joint Panel for Integrated Coastal Observations
  - > GOOS Regional Association Meeting in South Africa; Catchments State and Coral Reef Environmental Health Workshop

Activities for Consideration/Action by GEO for 2006:

- 1) Coastal Zone COP and associated GEO targets; Workshop on "Coastal Urbanization, Development, and Hazards: Impacts on Humans and Ecosystem Health & Productivity".
- 2) Relevant Coastal Theme GEO 2006 workplan tasks include: Disasters (DI 06-03, 06 to 09); Health (HE 06-01, 03); Climate (CL 06-04); Water (WA 06-01/04); Ecosystems (EC 06-02 to 05); Agriculture (AG 06-02)
- 3) Facilitate access to highest resolution global DEM.

## 2.5 IGOL Theme

John Latham informed about the rationale and the approach for developing a Land Theme report. With respect to the status:

The Theme report is still in preparation: seeking approval in May 2006 at next IGOS-P meeting. The calendar includes:

- \_ Two Plenary Meetings plus a Final Meeting in Beijing.
- \_ Special meeting on terrestrial biodiversity (CBD, WCMC, NGOs) – November 2005. ( Separate self contained report as well as contribution to IGOL; Still need for oceanic component.)
- \_ Special Meeting on Agricultural Monitoring and Forecasting – March 2006.

1st cut at priorities

- \_ Global high resolution wall to wall map, annual, multiyear, land cover and land cover change
- \_ Ensured Data Continuity - operational Landsat-class with equivalent Long Term Acquisition Plan (Missions or coordinated international acquisition prior to 2010; Enhanced data access (cost issue))
- \_ Enhanced hyperspatial data availability (Kyoto Goal - systematic global, . 5ha, 10m, 24hr revisit)

\_ Near Real Time/ Rapid Response /Alert/ Detection e.g. (LCC/Disturbances/Crop condition (hrs); Fire. Floods, drought; Early warning of crop pests and drought (High Temporal, SAR Soil Moisture/Hyperspectral Condition and Pests)

\_ Global 30m spacing DEM

After the presentation, it was noted that in order to be ready to be presented at IGOS-P 13 in May, the report must be circulated 5 weeks in advance for its revision.

<b>12bis-5</b>	<b>Partners will review the Land Theme Report draft, which will be submitted for comments 5 weeks prior to IGOS-P13, in compliance with procedures</b>
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## 2.6 Cryosphere Teme

Barry Goodison informed on the status of development of the Theme report.

Theme goals have been identified and documents are available at the website: <http://stratus.ssec.wisc.edu/igos-cryo>

Main issues and next steps identified:

- Great diversity of the entity: need a big group
- Need to build consensus between requirements and possibilities and to add more to what is included in the GCOS IP
- Draft will be open for review to the whole cryospheric community and will seek for assessment of feasibility by CEOS and G3OS
- Second Workshop in Europe (Cambridge, Jan 2006)
- Third Workshop in Asia (Japan, Apr 2006)

Timeline

- First draft of the report completed – 15 Sept 05
- First draft peer-reviewed – 30 Oct Sept 05
- CliC SSG reviews the first draft and peer reviews – 15 Nov 05
- Comments included – doc presented to CEOS-SIT and IGOS-P –end November 05
- Document is kept on the website and announcement to be made via Cryolist, ArcticInfo, Climlist, several mailing lists, other media, directly to major research groups to review the document and provide input and comments
- Comments received – beginning 2006
- Comments and included - before May 2006

Direct linkages with all GEOSS SBA's have been identified.

Cryosphere Activity Considerations for IGOS and GEO:

Space Systems: Cryosat2 needed

For IPY (satellite and in situ)

- maintenance of existing systems to monitor the cryosphere, with establishment of the initial elements of the Arctic Ocean and Southern Ocean observing systems and start of the implementation of the Arctic HYCOS project, and
- a global snapshot of the cryosphere during the IPY based on the establishment of multidisciplinary "supersites" that would include cryospheric observations in their set of measurements and use CEOP as main means for data integration.
- GIIPSY – acquisition and archiving of satellite data for polar regions during IPY.

## 2.7 Carbon Theme

Roger Dargaville reported that the first version of the Carbon Theme Implementation Plan was submitted to IGOS P for comments, and that a response is requested by Feb 1<sup>st</sup>, 2006, in order to send the document to print.

The goal of the IP is to develop a strategy to create an observing system for the carbon cycle, integrated across land, atmosphere and ocean reservoirs, and across in situ and remote sensing platforms 'Carbon Cross Section' through the GCOS, GOOS, GTOS and GAW observational programmes.

Contributions from 40+ international experts and agency representatives

List of constructive Actions required to meet the goals set out in the Carbon Theme Report

Actions to be carried out by

- IGOS Partners (i.e. CEOS, GAW, FAO)
- the global research community
- regional programs (North American Carbon Project, Carbon Europe, Global Warming Initiative of Japan)

Future plans:

Completion of the IGCO Implementation Plan

- Finish review process
- Final printed version for distribution at IGOS-P 13
- Deadline for comments needs to be set (1 Feb 2006?)

Creation of an IGCO website

- Carbon observation portal
- Lists of available data sets and where to find them
- Links to partners (i.e. Global Carbon Project) GEO
- Continue to contribute to the GEO/GEOSS process
- Work with GEO on the 2, 6 and 10 year Work Plans

Collaboration with existing and emerging IGOS-P themes.

Continue coordination of the integrated global carbon observation theme by an IGOS partner:

- UNESCO, WMO, GCOS, others??
- Currently funded by 4 French agencies/labs (CNES, CEA, CNRS, IPSL)

Carbon Theme will contact possible Partners in the next few months and subject will be discussed during IGOS-P 13.

## 2.8 Water Cycle Theme

Wolfgang Grabs reported on the recent activities developed by the Theme in 2005:

- Inputs for GEOSS related to water were provided to the GEOSS 2006-2007 work plans
- IGWCO/CONAE capacity building workshop held in October in Buenos Aires with 110 participants from 10 countries in Latin America
- Asian water cycle meeting held in Tokyo in early November, 120 participants, Commitment to develop a prototype integrated data system for Asia building on GEO principles
- Joint workshop between GEOSS Water SBA and IGWCO held in Tokyo: Opportunities for data sharing, enhancement of in-situ networks, development of super-sites
- CEOP Phase II science and implementation plan developed and under review by IGWCO and GEWEX
- IGWCO is convener of four virtual workshops on 4th World water Forum web site.
- Workshop on High Resolution Precipitation Products held in Irvine, California in June 2005 strategy developed for the evaluation of a range of products globally and regionally

Activities for 2006:

- Support commitments to GEOSS by carrying out 2006 work plan elements in the GEOSS work plan for water sector Targets
- Prepare plans for capacity building workshops in Southeastern Asia and Africa.
- In April 2006, WMO will take over as the chair of the IGWCO Executive. The Science Advisory Group will continue to function with WCRP (Rick Lawford) as chair. The relative roles of the Advisory Group and the Executive will be developed over the next few months.
- A GARS/ UNSECO/ IGWCO working group on ground water will be launched.

In order to increase the involvement of operational programs in IGWCO, WCRP will transfer its responsibility to chair the executive committee to WMO on April 1, 2006.

Launch an IGWCO runoff project that involves water and in-situ stream flow observations.

Completion of the series of capacity building workshops. (there will be a presentation by an LPB scientist at the ba workshop).

Hold a joint meeting with CEOP at UNESCO in Paris during February 26 - march 4, 2006.

## Any other business

### 2.9 IGOS-P side event at CSD-14

Renee Le Duc Clarke (NOAA) briefed the meeting participants on the possibilities of holding an IGOS- P side event at the 14<sup>th</sup> session of the Commission on Sustainable Development, which will take place in New York, in the first week of May.

CSD-14 and 15 will be a two year cycle focused on: Climate Change, Air Pollution, Energy and Industrial Development.

IGOS is a registered partnership in CSD, and as such has several options to participate (Partnership Events and Outreach Opportunities, Non-partnership Side Events, Training Center Events, Interventions in Floor Discussion). It is decided that the best option will be the side event.

Participation will require coordination and good representation of IGOS partnership at the event, taking into account that there will be other competing simultaneous side events. National engagement is also important through national delegations. CEOS SIT will ask CEOS agencies to inform their delegations to CSD about the side event.

For the coordination, a consortium is identified, formed by: WCRP, GCOS, ICSU, GTOS, NOAA and CEOS. They have to decide who will lead this coordination effort and submit the application to CSD.

12bis-6	<p><b>IGOS-P decided to organize a side event during CSD-14, to be held in May in New York. A consortium was identified for the organization, formed by WCRP, GCOS, ICSU, GTOS, CEOS and NOAA. During the next few weeks the consortium will identify a leader and will register with CSD to reserve a date and venue for the side event.</b></p>
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### 2.10 Other outreach possibilities for IGOS

UNESCO informs that the UN General Assembly has declared 2008 as the International Year of Planet Earth. Possible participation by IGOS-P will be discussed in IGOS-P 13.

### 2.11 IGOS Brochure

JAXA informed the Partners that the IGOS Brochure has been completed, and thanked the Partners for their contributions.

## Review of IGOS-P 12 bis Actions (see attached)

### Date and Venue of next Session

The following schedule was agreed for IGOS-P 13, which will take place in Geneva, hosted by WMO:

22<sup>nd</sup> May Themes Leaders Meeting

23<sup>rd</sup> May IGOS-P 13

24<sup>th</sup> May      Geohazards Theme Meeting

## Participants:

BNSC	Mark	Churchyard
BNSC	Paula	Freedman
BNSC	Colin	Hicks
BNSC	Janet	Smith
BNSC	Stephen	Ward
British Geological Survey	Stuart	Marsh
CLIMPACT	Roger	Dargaville
CONAE	Laura	Frulla
CONAE	Ana M.	Hernández
CONAE	Ana	Medico
CONAE	Conrado	Varotto
Environment Canada	Barry	Goodison
ESA	Stephen	Briggs
ESA	Huw	Hopkins
ESA	Marc	Paganini
EUMETSAT	Werner	Balogh
FAO	John	Latham
GCOS	David	Goodrich
GCOS	Hans	Teunissen
GEO	Jose	Achache
GEO	Guy	Duchossois
GEO	Yukio	Haruyama
GTOS	John	Townshend
ICSU	Thomas	Rosswall
Institute for the Study of Earth, Oceans and Space	Berrien	Moore III
JAXA	Yasushi	Horikawa
JAXA	Tadahiko	Inada
JAXA	Chu	Ishida
JAXA	Mariko	Kato
JAXA	Kazuko	Misawa
JAXA	Kazuo	Umezawa
NASA	Ronald	Birk
NASA	Devon	Carroll
NASA/Jet Propulsion Laboratory	Paul	Digiacomio

NOAA	Renee	Leduc Clarke
NOAA	Brent	Smith
UNEP	Norberto	Fernandez
UNESCO	Robert	Missotten
USGS	Jay	Feuquay
USGS	Lawrence	Pettinger
USGS	James	Quick
USGS	Barbara J	Ryan
WCRP	Gilles	Sommeria
Wmo	Wolfgang	Grabs
WMO	Donald	Hinsman
WMO	Brian	O'Donnell