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## Report from the IGOS-P 13 Meeting

**Dr. Donald Hinsman**, WMO (Switzerland), Outgoing IGOS-P Co-Chair

**Dr. Conrado Varotto**, CONAE (Argentina)/CEOS, IGOS-P Co-Chair

The 13th Meeting of the Integrated Earth Observing Strategy (IGOS) Partnership was hosted by WMO in its Headquarters in Geneva, on May 23 2006.

The meeting was opened by Jeremiah Lengoa, Assistant Secretary General of the World Meteorological Organization (WMO), who welcomed the participants to Geneva and to the WMO headquarters, and stressed the importance of partners to the business of global observing.

At the beginning of the meeting, Co-Chair Donald Hinsman (WMO) reported that the Interagency Coordination and Planning Committee (ICPC) had replaced the old Sponsors Group of the Global Observing Systems (G3OS) for coordination among the main observing systems with the UN system. Membership includes United Nations Food and Agriculture Organization (FAO), United Nations Educational, Scientific and Cultural Organization (UNESCO)-Intergovernmental Oceanographic Commission (IOC), WMO and United Nations Environment Programme (UNEP), with International Council for Science (ICSU) as observer. ICPC has 3 levels in its mandate—the Executive Heads of the Agencies, a Director level group (the actual ICPC) and task groups as required. The committee meets twice a year in time to provide input to the meetings of the Executive

Heads. The Chair of the ICPC will rotate annually. WMO has chaired the first year and as such is the Co-chair of IGOS-P. Both those chairs will move to IOC for the 2006-2007 period starting after IGOS-P13. A copy of the report of the first meeting of ICPC will be posted on the IGOS-P web site.

Then, the meeting focused in the continuation of the discussions about the development of the Group on Earth Observations (GEO) Work Plan (WP) and the participation and modality of contribution of IGOS-P and the Themes to the GEO Societal Benefit Areas (SBAs).

The GEO Secretariat was represented by Antti Herlevi and Osamu Ochiai who provided an update of the status of WP 2006, the replies received from Member Countries and Participating Organizations and follow-up procedures, as well as the process of consultation that will be followed for the preparation of the WP 2007-2009 for approval at GEO III, which will take place in Geneva, on November 28 and 29, 2006.

It was highlighted that currently IGOS-P members are leading 11 Tasks and contributing to 31 Tasks of the 97 of the 2006 Work Plan, in particular those connected with existing Themes, but also including a participation in the Health and Energy SBAs, which will be the basis for the development of two new Themes.

In this sense, previous IGOS-P Meetings had addressed

the idea of an expanded partnership, in particular to include participants who can be related to SBAs that are not being currently addressed by existing Themes. As a result, the World Health Organization (WHO) was invited to send a representative to the 13th IGOS-P Plenary, in order to become better acquainted with the Partnership's activities and explore possible fields for participation. With respect to Energy, a counterpart is being sought.

Also, the Partners welcomed the Global Geodetic Observing System (GGOS), which joined the Partnership as an observing system.

There were presentations by each of the approved and proposed Theme Leaders to report on the implementation of and evolution of approved and proposed themes. Carbon Theme will publish its Implementation Plan which was approved in this meeting, and informed that it will establish a Carbon Office in UNESCO, Paris, supported by FAO. Land, Cryosphere and Geodetic Theme reports are under development. In particular, it was noted the importance of having the Cryosphere report available in early 2007 for the International Polar Year. Theme Leaders also referred to the need of working towards greater integration of some of the Theme areas.

Finally, it was decided an IGOS-P 13bis will be required to analyze and prepare the Partnership's response to WP 2007-2009 and the position for GEO III. The meeting will take place in Buenos Aires, Argentina, on November 13, the previous day to the 20th CEOS Plenary.

At the end of the meeting, WMO handed over the Co-Chair of IGOS to IOC/UNESCO for the period 2006-2007. ■





## Letter from SIT Chair to CEOS Principals

**Dr. Volker Liebig**

ESA/ESRIN (Italy), SIT Chair

CEOS Principals, I address this article to you in particular since I have been given the priority by CEOS Plenary – as incoming Strategic Implementation Team (SIT) Chair – of laying the foundations for a new era of multilateral co-operation between our agencies against the background of the developing Group on Earth Observations (GEO) initiative. We agreed at Plenary in London last November that we must work to evolve our chosen coordination body – CEOS – into an organisation which is an efficient and effective mechanism for this task. We recognised that the emergence of GEO represents a rare and significant opportunity for space agencies to demonstrate that we are providing value for money in our programmes and are responsive to global needs – across a spectrum of applications. The existence of the 10-year implementation plan for the Global Earth Observation System of Systems (GEOSS) provides CEOS with a welcome focus for these efforts – a politically backed focus which we have been lacking to date, and which we hope can catalyse new enthusiasm, new ideas, and new resources to ensure real progress is made.

The CEOS response will be recorded in the form of the new *CEOS Implementation Plan for the Space-based Observations for the GEOSS* – which Plenary has agreed should become the sole focus for CEOS efforts – including those of Plenary, SIT and the Working Groups. My top priority in 2006 has been to initiate the preparations required to put in place the first elements of this CEOS Implementation Plan, and the first SIT meeting under ESA Chairmanship (in Frascati in March) focused almost exclusively on the 3 strands of effort which I proposed to you all in London:

- the short-term effort: ensuring a coordinated CEOS response to the 2006 (and now 2007–9) GEO Work Plans – this is well in hand;
- the medium-term effort: focused on development of the Climate Chapter of the Implementation Plan – provided by the CEOS Response (on behalf of “parties that support space agencies”) to the GCOS Implementation Plan, being developed for delivery to COP-12; this is another rare opportunity for our community to demonstrate our value in an extremely important domain which is “core business” to many of us;
- the long-term implementation framework: providing a viable and attractive process for us all, as agencies with individual ambitions, budgets, and programmes, to co-operate so that, in combination, our programmes might be more effective, and provide better continuity and inter-comparability for the benefit of users.

The COP-12 report is well underway – thanks to the leadership of Barbara Ryan of USGS, who is leading a small task force of experts to ensure that an

informed and balanced assessment of the prospects for the utility and availability of space-based data for climate applications is provided to the UN Framework Convention for Climate Change in Kenya in November.



Dr. Volker Liebig,  
SIT Chair

The long-term CEOS IP framework is also developing nicely – with an extremely enthusiastic reception at SIT-19 for the new process proposed in the paper developed by an ESA-CNES team suggesting the development of a series of “CEOS Constellations”. This paper suggests that we recognise that national/regional observing requirements will continue to dominate space agency spending, and therefore, realistically, the CEOS Implementation Plan can at best seek synergies where agency programmes can also contribute to satisfying the GEOSS requirements; and that – to this end – CEOS should provide guidelines and standards to allow agencies to determine from the outset whether and to what extent this can be achieved. If the initial enthusiasm from CEOS agencies can be supplemented with some resources to further develop the concept and some priority prototypes, I am confident that this initial groundwork can blossom into a viable framework to motivate our co-operative implementation efforts.

SIT-19 will be held in La Jolla, California on 19th and 20th September. If our multi-lateral efforts at co-operation are to succeed, we must engage the support of as many heads of space agency Earth observation programmes as possible. One of my goals as SIT Chair is to welcome India, China, Brazil and other less frequent participants back into the SIT process – as well as encouraging the highest possible level representation by the “regulars” at each SIT meeting. I promise that the SIT-19 agenda will present some important issues worthy of your attendance, and I encourage all Principals to be present. I look forward to seeing you there.

Although I have taken the liberty of addressing this short article to CEOS Principals, I am sure that the content will explain to others where CEOS stands at present in this most interesting development in international Earth Observation cooperation. ■

# Update on the CEOS Response to the GCOS Implementation Plan

**Ms. Barbara J. Ryan**

*U.S. Geological Survey (USA), Chair, CEOS–GCOS Task Force*

**Dr. Thomas Armstrong & Ms. Rebecca Johnson**

*U.S. Geological Survey (USA)*

At the 21 March 2006 meeting of the Committee on Earth Observation Satellites (CEOS) Strategic Implementation Team (SIT) in Frascati, Italy, there was extensive discussion of the CEOS response to the draft report, “Systematic Observation Requirements for Satellite-based Products for Climate” prepared by the Global Climate Observing System (GCOS). The report expands upon the earlier document, “Implementation Plan for the Global Observing System for Climate in Support of the United Nations Framework Convention on Climate Change” (GCOS–IP), produced in October 2004. Parties to the United Nations Framework Convention on Climate Change (UNFCCC) that support space agencies initially were asked to provide a response to the GCOS–IP at the 11th Conference of the Parties (COP–11). Although not formally tasked to do so, CEOS—as the primary international forum for coordination of space-based Earth observations—was the logical respondent to this call.

Following the Frascati meeting—and recognizing that time for drafting the CEOS response was of the essence—a group of experts representing CEOS agencies convened at a workshop held 22–24 May 2006 at the World Meteorological Organization (WMO) in Geneva, Switzerland. Present at the meeting were representatives from the British National Space Centre (BNSC), the European Space Agency (ESA), the Japan Aerospace Exploration Agency (JAXA), the National Aeronautics and Space Administration (NASA), the National Oceanic and Atmospheric Administration (NOAA), the Norwegian Computing Center, and the U.S. Geological Survey (USGS). A number of GCOS representatives were also in attendance to ensure complete understanding of their draft report and to better represent the needs expressed in it.

Over the course of the workshop, attendees created a working outline for the report. Much advantage was taken of efforts that were already underway by members of several CEOS Working Groups who had evaluated portions of the GCOS draft report related to their specific areas of expertise. It was agreed that the CEOS response would:

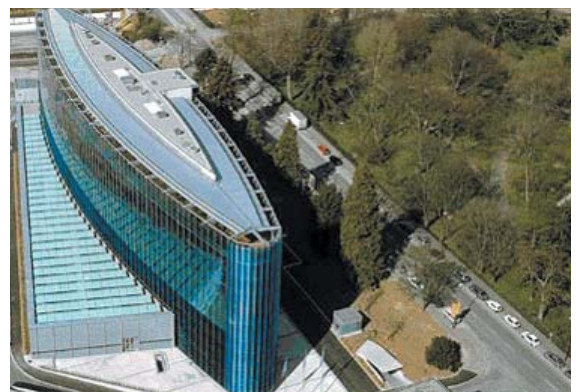
- Encompass both the general considerations requested by GCOS and the specific observational requirements for climate data on the atmosphere, oceans, cryosphere, and land surface;
- Be understandable to both the space agency and climate science communities, as well as the

decision-makers and politicians who set national and regional priorities for science and observation programme funding;

- Facilitate development of an implementation plan against which space agency progress can be measured; and
- Define an implementation framework that will foster and support a variety of contributions from the space programmes of many nations—large and small, developed and developing.

Working in small groups, attendees then began drafting detailed responses to specific recommendations set forth in the GCOS–IP for each of three physical domains: atmosphere, oceans/ice, and land. A deadline of 21 June was set for submission of all initial inputs to the report to be incorporated into a first draft. Work continued on that draft at a follow-up meeting held on 11–13 July in Montreal, Canada, and hosted by the Canadian Space Agency (CSA). After review and input from members of the CEOS SIT in late summer, the final report will be generated immediately following SIT–19, which will be held in La Jolla, California, on 19–20 September.

The CEOS response to the GCOS–IP will be formally presented at the UNFCCC COP–12 meeting in November 2006 in Nairobi, Kenya. The report represents a unique opportunity for space agencies to present a coherent implementation plan that demonstrates to policy makers and their funding governments how space observations can contribute to this effort, and what actions are required to achieve systematic observation of the Earth. ■



WMO Headquarters in Geneva



## The GEO–CEOS Cooperation : Rising to the Challenge

*Prof. José Achache, GEO Secretariat Director (Switzerland)*

CEOS member space agencies have reaffirmed the role of CEOS as the best forum for space programming coordination, and CEOS has stepped forward as a natural partner for the Group on Earth Observations (GEO) to increase cooperation and coordination of Earth observations from space. CEOS working groups and member agencies have agreed to take the lead for key activities within the GEO Work Plan, and CEOS Strategic Implementation Team (SIT) is considering some reorganization to better support the GEO process. The coming months will provide CEOS with an opportunity to demonstrate its effectiveness in bringing the coordinated resources of its member agencies to bear on Global Earth Observation System of Systems (GEOSS) implementation.

In 2006, CEOS has become one of the key contributors to the GEO Work Plan, agreeing to contribute to 14 tasks out of a total of 91, and to take the lead or co-lead on four of them. JAXA will continue its leadership of the Global Precipitation Mission (GPM) and the Working Group on Calibration and Validation (WGCV), chaired by the NASA/GSFC, will be leading the task on data quality assurance. The US Geological Survey (USGS), in its role as upcoming chair of CEOS, will lead two tasks on behalf of CEOS, one to ensure the provision of space-based data for climate studies and forecasting, and the other to ensure continuity for near-real-time, 30-meter, multi-spectral remote sensing coverage of the Earth's surface. This latter task of ensuring a Landsat-equivalent follow-on mission is ripe for international collaboration, and GEO will surely benefit from the coordinated efforts of CEOS member agencies to ensure continuity of this all-important data set.

CEOS has also begun taking organizational steps to ensure close coordination with the GEO process. CEOS has designated representatives for the four GEO Committees, and serves as a co-chair of the Architecture and Data Committee. In addition, CEOS Working Groups on Calibration and Validation (WGCV) and Information Systems and Services (WGISS), are developing proposals for realignment of their mandates, and new terms of reference will be elaborated for the next SIT session.

GEO has initiated the development of the 2007–2009 Work Plan, during which time the Secretariat has engaged in a dialogue through bilateral meetings with technical partners to examine how the 2006 tasks might evolve in future years. In this process, the Secretariat has received proposals for new tasks from several Members and Participating Organizations, and a first draft of the GEO 2007–2009 Work Plan has been issued for technical review.

CEOS members have welcomed the three-year planning approach, and have engaged actively with the GEO Secretariat to develop the plan. An innovative proposal emerging from this process is the Virtual Constellation concept for satellite mission planning. If realized, this concept would represent significant progress toward the implementation of GEOSS. Early plans will consider specific cases such as constellations of SAR systems or micro satellites for a range of applications, including agriculture, ozone, and climate.

The encouraging cooperation that has begun between GEO and CEOS is pointing the way toward concrete results for the first phase of building GEOSS. The challenge, and the promise of this cooperation, will be transforming the extensive planning and dialogue into concerted action on the part of CEOS member agencies, which when working together to advance cooperative space-based Earth observation, can make tremendous strides for society. ■



The GEO Secretariat staff in Geneva

## Working Group on Calibration and Validation (WGCV)

*Dr. Stephen G. Ungar, NASA/GSFC (USA), WGCV Chair*

*Dr. Petya K. E. Campbell, JCET/UMBC (USA), WGCV Technical Secretariat*

**W**GCV held its 25th Plenary meeting May 9–12, 2006, contemporaneously with the 21st WGISS Plenary, in Budapest, Hungary. Prof. Ivan Almar, President of the Scientific Council on Space Research, Hungary welcomed the WGCV group. WGCV commends the hosts Viktor Pusztai (EOGEO Hungary), Gábor Remete-Fülöp (HUNAGI, GSDI) and Lorant Czarán (UN) for their efforts, which greatly facilitated this productive and enjoyable venue. The three major thrusts of WGCV25 were: identifying those GEOSS tasks to which the WGCV could logically make significant contributions and defining the nature of these contributions; exploring areas of joint interest with WGISS; formulating recommendations for the CEOS 20th Plenary to be finalized at the next WGCV Plenary (WGCV-26), which will be held in Chiang Mai, Thailand from October 31 to November 2, 2006.

The WGCV Atmospheric Chemistry Subgroup (ACSG) has been very active with NASA's Aura, ESA's Envisat and CSA's SciSat/ACE satellites providing atmospheric chemistry data routinely. These data are providing new insights into climate and air quality, therefore validation continues to be a high priority. Several NASA aircraft missions and a multinational ground campaign were conducted in April/May 2006 to provide crucial validation data for these satellite missions. The Aura Validation Data Center successfully supported these missions thus providing quick and easy access to both satellite and validation data.

The WGCV Land Product Validation (LPV) Subgroup chair, Jeff Morisette, NASA GSFC completed his three-year term. The subgroup will now be chaired by Frederic Baret, INRA while Sebastien Garrigues, University of Maryland, will serve as vice-chair. LPV is currently conducting an intercomparison of global Leaf Area Index (LAI) products, including: CYCLOPES (SPOT/VEGETATION sensor), GLOBCARBON (ATSR and SPOT/VEGETATION sensors), MODIS, CCRS (SPOT/VEGETATION sensor). The intercomparison is carried out in a systematic and statistically robust way, using the BELMANIP/CEOS benchmark network of sites and it will provide a representative sampling of global surface types. Recent significant publications of LPV include a special issue of the IEEE Transaction on Geoscience and Remote Sensing (TGARS) on global land product validation and a joint CEOS, GOCF/GOLD, and EU JRC document entitled "Global Land Cover Validation: Recommendations for Evaluation and Accuracy Assessment of Global Land Cover Maps" (<http://landval.gsfc.nasa.gov/pdf/GlobalLandCoverValidation.pdf>). LPV is helping to coordinate the CEOS-endorsed workshop on long term global monitoring of

vegetation variables using moderate resolution satellites to be held from August 8–10 in Missoula, Montana, USA (<http://www.nts.gov.umt.edu/VEGMTG>).

The WGCV Infrared Visible Optical Sensors (IVOS) Subgroup has a new chair—Nigel Fox of the National Physics Laboratory (U.K.), who has succeeded Michael Rast following Michael's move from ESA/ESTEC to the GEO Secretariat. IVOS continues its vigorous activities in defining and documenting the standards for traceability of current and planned satellite missions, which provides a platform to coordinate calibration of sensors and validation of their products worldwide. The formulation of the Cal/Val requirements for space-borne Earth Observation systems globally was developed by IVOS in support of the WGCV whitepaper entitled "Data Quality Guidelines for Satellite Sensor Observations Relevant to GEOSS Calibration and Validation Issues". IVOS has initiated a project to develop a web based "Cal/Val portal" as an interface (and depository) for all necessary information to support Cal/Val and intercomparison of EO sensors. The information: such as instrument descriptions in common format, best practice guidance and protocols, reference site data etc. will be critical to meet the interoperability needs envisaged by GEOSS. Cal/Val portal development activities are largely being undertaken by ESA and a prototype is currently under implementation.

The CEOS SAR Subgroup held its subgroup meeting and a SAR Cal/Val workshop in September 2005 at the University of Adelaide, Australia. Twenty-nine presentations were made at the workshop and it included a half-day tutorial on POLinSAR for Space Applications given by Prof. Shane Cloude. Based on presentations and group discussions, the subgroup made nine recommendations which were reported by the subgroup chair Satish Srivastava to WGCV at its meeting held at ESA/ESRIN in November 2005. These recommendations included the incorporation of QUADPOL and POLinSAR modes in future SAR missions and a radiometric characterization of Boreal forest in Canada, at least as a secondary calibration site. The next SAR subgroup meeting and Cal/Val workshop will be held at the University of Edinburgh, Scotland from 3rd to 6th October 2006 (<http://www.geos.ed.ac.uk/research/eo/events/ceos2006/>). The Edinburgh Earth Observatory within the School of Geosciences will host the workshop. It will include a half-day tutorial planned for 3rd October on Calibration and Validation for Ice and Snow Studies, to be given by Prof. Andy Shepherd. ■



## Working Group on Information Systems and Services (WGISS)

**Mr. Ivan Petiteville**

*ESA/ESRIN (Italy), WGISS Chair*

The Working Group on Information Systems and Services (WGISS) held its 21st meeting in conjunction with its two Sub-Groups, Technology & Services and Projects & Applications in Budapest, Hungary, 8–12 May 2006. WGISS and WGCV met during a one day joint working session. Up to 64 representatives attended the combined Working Group and Sub-Group sessions. Our hosts, Viktor Pusztai (EOGEO Hungary), Gábor Remete-Fülöpp (HUNAGI, GSDI) and their highly dedicated colleagues, provided an excellent venue. In addition a boat trip on the Danube gave us the opportunity to admire Budapest by night while enjoying some Hungarian goulash.

WGISS-21 was the first WG meeting since the initiation of the 'CEOS Implementation Plan for Space-based Observations for the GEOSS'. A considerable portion of the meeting was dedicated to consideration of how WGISS can support the SIT efforts in this domain. GEO SEC representatives were present and each WGISS activity, existing or proposed, was systematically considered for its contribution to the GEO 2006 Work Plan (WP).

Liaison reports were presented

involving International Council of Scientific Unions (ICSU), ICSU Committee on Data (CODATA), Consultative Committee for Space Data Systems (CCSDS), World Data Center (WDC), Electronic Geophysical Year (eGY), and CEOS Working Group on Education, Training and Capacity Building (WGEdu). These liaisons allow WGISS to interact with and to better understand activities affecting Earth Observation areas of interest.

A very interesting workshop on Remote Sensing activities in Hungary was organized by the host. The various presentations focused on the operational use of information derived from EO data. In addition, the Secretary of the Global Spatial Data Infrastructure Association (GSDI), Gábor Remete-Fülöpp presented the activities of its association. As both WGISS and GSDI work on similar issues, it had been agreed to identify either in the GEO WP an activity to be undertaken jointly.

During the WGISS Plenary, new positions and activities were discussed. Points of Contact were identified for each of the GEO WP tasks where WGISS has been cited as contributing. An overall coordinator for GEO

activities was assigned – the WGISS Vice Chair (Ken McDonald of NASA) – who will coordinate all the WGISS activities requested by CEOS. Pakorn Apaphant (GISTDA) assumed the position of Chair for the Project and Applications Subgroup. Kathy Fontaine (NASA) was selected to be Vice-Chair for the Project and Applications Subgroup. Satoko Miura (JAXA) replaced Osamu Ochiai as new lead for the WTF CEOP team. It was also decided that a new WGISS Test Facility (WTF) will be established – a natural disaster management project involving JAXA and GISTDA – with Pakorn Apaphant as POC. It shall be linked to GEO tasks relative to Disaster. ■



Participants of the WGISS-21 and WGCV-25 meetings, held contemporaneously in Budapest, Hungary. Common tasks and directions were addressed in two WGISS&WGCV joint sessions.

## Report from WSSD Follow-up Team

**Mr. Gordon Bridge**, EUMETSAT (Germany), WSSD Follow-up Team Leader

At the 19th CEOS Plenary, Gordon Bridge reported that CEOS WSSD effort was focused upon 5 'modules', with particular emphasis placed upon capacity building in Africa, namely, 1) Education, Training and Capacity Building; 2) Water Resource Management; 3) Disaster Management and Conflicts; 4) Climate Change; 5) Global Mapping, Land-use Monitoring and Geographic Information Systems.

For Module 1, a key result was the

establishment of the African Advisory Group (AAG) which has already provided valuable user feedback (in particular, concerns, advice and recommendations) on the beneficial use of EO data in Africa to the CEOS WGEdu, to the Africa User forum (organized by EUMETSAT), and to the ESA's TIGER Project. WGEdu's EO Resources Portal is another key result from this Module.

The Module 2 key activity is ESA's

TIGER project; comprising several water related EO projects with free use of ENVISAT and ERS data-sets by African researchers. In addition, the Canadian Space Agency, as a TIGER partner, has made substantial investment in seven research and development contracts, in particular use of Radarsat data, as part of Canada's contribution to water management in Africa.

Module 3 key activities include several UN Workshops, a UNESCO initiative for

## Working Group on Education, Training and Capacity Building (WGEdu)

*Ms. Yolanda Berenguer, UNESCO (France), WGEdu Chair*

The Working Group on Education, Training and Capacity Building (WGEdu) held its 7th annual meeting in Vienna, Austria from 19 to 21 April 2006, under the auspices of UN-OOSA. The WGEdu welcomed its new members Lucia Kocar (CONAE), Tare Brisibe (Nigerian National Space Research and Development Agency), Birgit Strømsholm (Norwegian Space Centre) and a reactivated member, Tania Maria Sausen (INPE). The Group now has eleven active members.

Discussions on the first two days of the meeting focused on the report provided by each member on his/her respective institution's education and capacity building activities and the linkages and synergies that could be explored between and among WGEdu members. This is particularly important for new members who are willing to initiate activities and are seeking partners. The issue of providing and updating contents to the WGEdu Education Portal in an easy and systematic manner was also discussed. The Group agreed that the collection of satellite data information and educational resources should be done on a regional basis to facilitate the monitoring and coordination of inputs by the agency/institution(s) in that region.

NOAA/USGS would be responsible for North America & Canada; INPE for Latin America and the Caribbean; ESA/EUMETSAT/NSC for Europe and NASRDA for Africa. GISTDA, although not present at the meeting but had expressed interest in becoming a WGEdu member, has agreed to be the regional coordinator for Asia.



WGEdu members and GEO CB Committee Co-Chairs

A significant outcome of the meeting was the commitment of the WGEdu members to a five-year Strategic Plan (2006–2010) aimed at giving visibility to the valuable contribution of WGEdu to the education charter of CEOS. Taking a pro-active stance, the WGEdu has engaged itself in organizing an activity on a yearly basis, which will be held along the margins of the CEOS plenary. As a first step in this direction, plans are being made to conduct a workshop for secondary teachers in Buenos Aires in conjunction with the 20th CEOS Plenary.

The last day of the meeting was devoted to discussions with two Co-Chairs of the GEO Capacity Building (CB) Committee, Errol Levy of the

European Commission and Jose Maria Marcos of the Spanish Meteorological Institute. The CB Co-Chairs were invited by WGEdu to its annual meeting with a view to familiarizing them with the space-based component of capacity building. It should be noted that the WGEdu representative to the GEO CB Committee, Renee Leduc Clarke, participated in the first CB meeting held in Paris 6–8 March 2006, whereby the preparations for the first CB workshop (Brazil, May 2006) were discussed. The presence of the CB Co-Chairs at the WGEdu annual meeting was an opportunity to exchange information, explain and clarify certain capacity building aspects and expectations in the framework of the GEOSS 10-year Implementation Plan. ■

a Japan-sponsored “centre of excellence” addressing water-related disasters, NASA projects to promote the use of data from its research satellites for flood monitoring and control, new tsunami warning services in the Indian and Pacific Oceans being supported by several CGMS satellite operators with other Universities and Agencies, the EU and EUMETSAT sponsored PUMA project, to improve severe weather warning, water management and food security in Africa, with the AMESD project expected to follow PUMA starting in 2007.

Whilst there was no specific report of new activities for Module 4, it was agreed

that more effort should be placed on highlighting the capabilities of satellite observations for climate monitoring at relevant international conferences.

For Module 5, currently the main activity is the provision by USGS of GIS software packages and tools, and capacity building activities at regional remote sensing centres in Africa, using data sets from (e.g.) Landsat, MODIS, ASTER SRTM. Future emphasis will entail the creation of greater awareness of the availability of Landsat and similar data, building capacity building skills, and software and hardware to make better use of these datasets.

Modules identified a common need for training and capacity building and all noted a particular need to raise the awareness of the benefits of Earth Observation at the highest levels in order to achieve a sufficient level of credibility. Consequently, CEOS Plenary was informed that in future the activities of WSSD would largely be addressed within the framework of WGEdu and its subsequent interactions with GEO. ■

## Note from the CEOS Chair

We are already in the middle of 2006, and more than half of my term as CEOS Chair has passed. I would like to take this opportunity to share with you our excitement for the future of the Committee's activities. During the 19th Plenary in London, Principals agreed to in the need for a strengthening of CEOS structure that would ensure its capacity as a suitable cooperation mechanism for Earth Observations from space. Among the recommendations of the Plenary, was a consensus on the vital role that the Strategic Implementation Team should play in being an engine of the long term activities of the Committee, and I would like to specially highlight the outstanding work of the SIT leadership by ESA and NOAA in steering the work during this year to seek and develop proposals for

new tools to enhance the cooperation in satellite Earth Observation.

The participation of CEOS as the coordination forum for the space segment of GEOSS, including the preparation of a long term program to help maximize our efforts in a cooperative environment for such space segment, has been the focus of activities within SIT. Both as Chair of CEOS as well as the Head of the Argentine national space agency, I see the concept of CEOS constellations as positive and appealing, with sufficient potential to become a useful reference tool for space agencies when seeking to maximize the results of their projects by cooperating with their international partners. I am sure that at SIT-19 we will find a good opportunity to

**Dr. Conrado F. Varotto**  
CONAE (Argentina)  
CEOS Chairman



discuss this idea, and that at CEOS 20th Plenary in Buenos Aires we will be able to endorse it and find the necessary support from CEOS members to bring it into reality.

This has been a year for focusing efforts in certain specific areas, as set forth by the Plenary, and in this I would like to point out the work of our colleagues from USGS, who have taken over the preparation of CEOS response to the GCOS Implementation Plan.

These activities initiate a new era for CEOS, and the joint effort of all its members is vital to continue along this path. Therefore, we look forward to welcoming all CEOS Principals in November's Plenary in Buenos Aires, in order to work together to secure the success of CEOS in this new role. ■

Contributions for future issues of the CEOS Newsletter from the CEOS Members and Associates, and subscriptions to the CEOS Newsletter, please contact CEOS Japan Secretariat : ceos-jpn@jaxa.jp, or misawa@restec.or.jp <http://www.ceos.org/pages/pub.html#newsletter>

## Meeting Calendar

As of August 2006

Activities	2006												2007	
	March	April	May	June	July	August	September	October	November	December	January	February	March	
<b>CEOS Plenary</b>										▲ 14-15 20th CEOS Plenary CONAE/BuenosAires				
<b>WSSD Follow-up Team</b>														
<b>CEOS SIT</b> (Strategic Implementation Team)		▲ 20-21 SIT-18 ESA/ESRIN						▲ 19-20 SIT-19 Scripps/La Jolla, USA Hosted by NOAA						
<b>CEOS WGISS</b> (Working Group on Information Systems & Services)			▲ 8-12 WGISS-21 EOGEO&HUNAGI Budapest, Hungary				▲ 11-15 WGISS-22 NASA/Annapolis, USA							
<b>CEOS WGCV</b> (Working Group on Calibration and Validation)			▲ 9-12 WGCV-25 EOGEO&HUNAGI Budapest, Hungary						▲ 31-2 WGCV-26 GISTDA/Chiang Mai, Thailand					
<b>CEOS WGEdu</b> (Working Group on Education, Training, and Capacity Building)		▲ 19-21 WGEdu-7 Vienna							▲ 16-17 1st WGEdu workshop CONAE/Buenos Aires					
<b>IGOS Partners</b> (Integrated Global Observing Systems)			▲ 23 IGOS-P13 WMO/Geneva			▲ 21-25 Cryo Symposium Cambridge, UK		▲ 26-28 IGWCO/Capacity Build. Workshop JAXA/AIT/Bangkok, Thailand	▲ 13 IGOS-Pbis CONAE/Buenos Aires		▲ Asia Water Cycle Workshop Tokyo, Japan		▲ CEOP/IGWCO USA	
<b>Others</b>		▲ 20-22 Clic Asia JAMSTEC/Yokohama, Japan	▲ 1-12 CSD-14 New York		▲ 16-23 COSPAR06 Beijing		▲ 2-6 IAF Valencia, Spain		▲ 28-29 GEO III Geneva	▲ 6-17 UNFCCC/COP-12 Nairobi, Kenya		▲ GEO Symposium Tokyo		

▲: determined    △: to be determined (Date, Host organization/Location)    CEOS-related meetings are open only to designated participants.

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