



Committee on Earth Observation Satellites
<http://www.ceos.org>

NEWSLETTER

August 2007

No. 29

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CEOS and GEO, a Long-Term Partnership

by

Ms. Barbara J. Ryan,
CEOS Chair



and



Prof. José Achache,
Director, GEO Secretariat

Following the creation of GEO, the Group on Earth Observation, CEOS at its 19th Plenary meeting in London decided to realign its strategy and plans to deliver the space-based component of the Global Earth Observation System of Systems (GEOSS). CEOS, as collectively representing the space agencies, now considers itself as the “space arm” of GEO.

CEOS contributions to GEO Work Plan

As one of the original “Contributing Organizations” of GEO, CEOS fostered space agencies’ participation in the initial GEO 2006 Work Plan. Following the GEO Work Plan’s November 2005 release, CEOS assessed its potential role in each of the 96 tasks under consideration, and in early 2006 developed proposed contributions, each being led by one space agency (or in some cases, a CEOS Working Group) on behalf of CEOS. In total, CEOS was listed as Lead and Point of Contact for four GEO Tasks, related to Climate (“Key data from satellite systems”), Architecture (“High resolution multi-spectral imager continuity” and “the Global Precipitation Measurement (GPM) mission implementation”) and Data Management (“GEOSS quality assurance strategy”). CEOS also co-led, or contributed to, thirty-seven other GEO tasks, addressing all GEOSS Societal Benefit Areas (SBAs) and cross-cutting activities.

This initial effort has been pursued and amplified with the GEO 2007–2009 Work Plan, where CEOS, through its members and working groups, is active in 39 out of 75 continuing or new tasks.

In 2006, CEOS has been tasked to provide the “coordinated response of the space agencies” to the Global Climate

Observing System (GCOS) requirements for the space-based component of the global climate observing system. The CEOS plan is a comprehensive collection of 59 actions aimed at fulfilling climate observing needs in the atmosphere, ocean and terrestrial domains, as well as a number of cross-cutting requirements.

It is important to note that accomplishing this goal will represent a major step forward for GEO’s Climate SBA.

The CEOS Implementation Plan

In accordance with decisions of the 19th and 20th CEOS Plenaries, CEOS has initiated the development of a long-term Implementation Plan (IP). The IP will be presented to the 21st CEOS Plenary in November 2007. The IP is intended to expand to all GEOSS SBAs the same approach as that CEOS uses for climate. The IP will include a detailed analysis of the GEO targets and associated space-based observational requirements, and a corresponding plan to respond to these requirements in a timely manner.

The CEOS Constellations for GEO

To harmonize and maximize efforts among space agencies to deploy Earth observation missions as part of GEOSS and to address emerging data gaps, avoiding overlap between observing system and making maximum use of existing assets, CEOS has established the concept of Virtual Constellations for GEO. A Virtual Constellation is a set of ground or space-based assets from different partners that are mobilized in a coordinated manner for greater efficiency. The Virtual Constellation concept also provides a process by which international cooperation among space agencies is stimulated to define a coordinated response to the space-based

observation needs, focusing on a particular thematic area. These coordination efforts can ultimately leading to the implementation of a “real” constellation, which may involve formation flying or coordinated operation scheduling and data distribution.

Observations from a Virtual Constellation should provide better coverage and temporal, spatial, and spectral information and yield improved data management and dissemination. A series of four prototype Virtual Constellations (namely, land-surface imaging, global precipitation, ocean surface topography, and atmospheric composition) are currently under definition by CEOS members and participating organisations, in consultation with their respective user communities. Each Virtual Constellation is designed to address a significant implementation challenge, and each addressing key GEOSS observations, their sustained continuity, and prospective observational/data gaps.

Looking forward

Given the ambitions of the CEOS long-term Implementation Plan and the fact that additional “candidates” for Virtual Constellations are already appearing on the scene, it is clear that a new period of integrative and collaborative effort has started.

Together with the planned transition of IGOS Themes into GEO and the continued support of all three CEOS Working Groups in building GEOSS, the global Earth observation community is effectively refocusing its efforts. Needless to say, CEOS is working very closely with the GEO Secretariat in these efforts, and this collaboration is expected to grow in the years ahead. ■



Report from SIT Chair

Dr. Volker Liebig, ESA/ESRIN (Italy), SIT Chair

Dear Colleagues,

I am pleased to provide a report on the 20th meeting of the CEOS Strategic Implementation Team (SIT), held at ESA/ESRIN in Frascati-Italy, on 19th and 20th June 2007. I set five objectives to be achieved by this meeting:

- 1) To review the draft CEOS Implementation Plan for GEOSS Space Segment – and to have Principals review their agency contribution to the various actions.
- 2) To consider progress to date on the 59 Climate actions proposed by CEOS to UNFCCC COP-12 and identify measures required by space agencies to address obstacles.
- 3) To review progress on the CEOS Constellations prototypes and confirm space agency participation and support for the objectives. To confirm space agency inputs, through CEOS, for GEO IV in November.
- 4) To report to Principals on developments in the IGOS Partnership and Themes – with a report on the Partnership meeting of 30th May.
- 5) To develop the initiative of CEOS Chair exploring improved co-operation between CEOS and CGMS in support of GEO objectives.

On the **CEOS Implementation Plan**, it was agreed that the CEOS IP Task Force should conclude the first full draft for

distribution ahead of CEOS Plenary, and that CEOS agencies should review the draft CEOS IP with a view to identifying tasks to which they might contribute.

The CEOS Executive Officer reported on the **Climate action status**, noting that significant progress has been accomplished in the past six months following the presentation of the CEOS Response to the GCOS Implementation Plan. Initial results can be reported, which show a constant effort within space agencies to improve adherence to GCOS Climate Monitoring Principles and carry forward Climate actions. As an example, ESA summarized our efforts to ensure that the forthcoming GMES Sentinels are compliant with the former. CEOS agencies were asked to nominate PoCs and allocate required resources for Climate Action Teams

A **CEOS Virtual Constellations for GEOSS** workshop was held just before SIT-20 and provided an excellent opportunity for study leads to report on progress and to receive feedback from the community. It was agreed that the SIT Chair will work with study leads to refine the way forward for conclusion of the studies Pilot Phase, and with CEOS Chair to propose a draft strategy for the way forward on the Constellations framework,



The SIT-20 Meeting at ESA/ ESRIN

including conclusion of the pilot phase, assessment of lessons learned, way forward on existing studies and on new studies.

Following my invitation as SIT Chair, ISRO delivered a presentation on the Indian Earth Observation program.

Delegates were informed on my behalf on the main outcomes from the recent **IGOS Partnership** meeting: the Cryosphere Theme report was approved; the Land Theme was given provisional approval; the process of transitioning IGOS Themes to the GEO framework was formally opened with the GEO Secretariat.

Both USGS (as CEOS Chair) and WMO gave presentations **on how to improve coordination among CEOS, CGMS and WMO**. It was agreed that CEOS Chair and SIT Chair, in coordination with CGMS and WMO, would further develop the issue of improved coordination support for GEOSS space segment needs.

I am happy to conclude that the SIT meeting was well attended and –all in all – went a long way towards meeting the objectives we had set for it.

Mary Kicza of NOAA will take on the SIT Chair role after CEOS Plenary in Hawaii in November and I would like to take the opportunity to wish her the best of luck for this important role at a crucial time in the development of our international co-ordination efforts, refocused by the common purpose of the GEOSS space segment. ■



Participants of the SIT-20

Report on IGOS Transition Activities

Dr. Keith Alverson, IOC/UNESCO (France) and
Ms. Barbara J. Ryan, CEOS/USGS (USA), IGOS-P Co-Chairs

The fourteenth meeting of the Integrated Global Observing Strategy Partnership (IGOS-P-14) was held at the Intergovernmental Oceanographic Commission (IOC) on 30 May 2007. The meeting was chaired by Keith Alverson (IOC/UNESCO) and by Barbara J. Ryan (CEOS Chair/USGS) and was well attended, including representation from each of the IGOS Theme Teams. Also participating were Jose Achache and Michael Rast of the Group on Earth Observations (GEO) Secretariat. At the end of the meeting, Keith Alverson passed the co-chairmanship over to Walter Erdelen of UNESCO.

IGOS Partners reviewed and unanimously approved the Cryosphere Theme report. The Land Theme report also was reviewed by the Partners and, pending incorporation of comments received, is expected to be approved at IGOS-P-14bis to be held in November in Cape Town, South Africa. The Geodetic Theme originally had planned to submit a theme proposal for consideration at IGOS-P-14, but instead will focus on direct cooperation with GEO, some of which already is underway.

The primary focus of IGOS-P-14 was on the question of the IGOS Themes' transition to the GEO structure, as proposed in the Theme Transition Plan prepared by the Co-Chairs. Discussion on the topic revealed a wide range of opinions, but converged with the following points: 1) As in the past, there is a need to be able to draw together communities of scientists to develop new themes, which need to be addressed within GEO; 2) Current themes are well-aligned with, and can advance, the goals and objectives of GEO; 3) High-level support for Earth observation is a positive outcome of GEO; 4) The high-level (ministerial) support that GEO has experienced needs to be nurtured in order to sustain Earth observations;

5) IGOS Partners have exerted considerable leadership for the current themes, and this leadership must be continued during and after the transition of the Themes to GEO; and, 6) The needs of developing countries should be foremost not only during the transition of the Themes to GEO, but in the long run.

The Themes Transition Plan presented by the Co-Chairs was slightly revised by the Partners and then approved as revised. In accordance with the recommendations of the plan, it was agreed that the process of transitioning should be formally opened with the GEO Secretariat. Each Theme team leader has been requested to negotiate details of their separate transition plan with the GEO Secretariat and report to the Co-Chairs on mutually agreeable transition arrangements by mid-summer.

The Co-Chairs, assisted by the Chairman of the Theme team leaders group (Dr. Stuart Marsh) were to discuss with the GEO Secretariat the overall aspects of the transition process, with a view to ensuring that there are no significant omissions. A complete transition schedule will be ready for presentation at IGOS-P-14bis in November.

Trusting that satisfactory transition arrangements can be made for the IGOS Themes, the participants acknowledged the outstanding work that has been conducted under an IGOS banner. Transition status and progress will be reported at IGOS-P-15, in early 2008, following further coordination among the Partners. ■



CEOS Chair, Ms. Barbara J. Ryan, presenting awards to Dr. Jean-Louis Fellous and Prof. John Townshend for their leadership of the oceanic and terrestrial domain chapters, respectively, of the CEOS Report "The Way Forward."



Working Group on Calibration and Validation (WGCV)

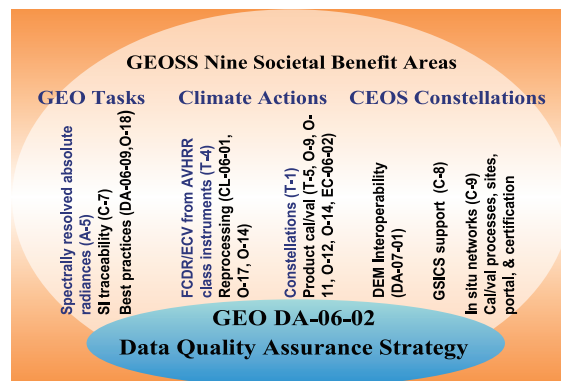
Dr. Changyong Cao, NOAA/NESDIS (USA), WGCV Chair

WGCV held its 27th Plenary meeting at the National Physical Laboratory (NPL) in London from 12 to 15 June 2007. Dr. Arwyn Davies, Director of BNSC (British National Space Centre) Earth Observation, and Prof. Alan O'Neil, Director of the NCEO (National Centre for Earth Observation) welcomed the participants and presented an overview of the UK Earth observation programs. The UK has been a proactive member of CEOS and a strong advocate for science and industry as well as international collaborations, as exemplified in the success of the Disaster Monitoring Constellation (DMC). WGCV thanks BNSC and NPL for sponsoring the meeting and highly commends our hosts Dr. Nigel Fox, Dr. Martyn Sene, and Ms. Heather Pegrum of NPL, and Prof. Jan-Peter Muller of the Mullard Space Science Lab. for the efficient organization and methodical planning of the meeting, site visits, and the social event.

A major objective of the meeting was to further align WGCV activities with the CEOS implementation plan to support the GEO tasks, CEOS climate actions, and constellations. In addition to the agency/country reports for information exchange, new sessions with invited lead experts addressed the WGCV contributions to a number of GEO tasks and CEOS action items.

Significant progress reported by the subgroups, ESA, NASA, NOAA, and USGS addressed the GEO data quality assurance task (DA-06-02). A joint workshop with GEO on quality assurance of cal/val processes will be held in early October. Three Priority-1 climate action items are identified and preliminary work in these areas has shown promising results, including spectrally-resolved absolute radiances (A-5), fundamental climate data records (FCDR) (T-4), and constellation support (T-1) (see figure). The advanced calibration capabilities of research instruments will help improve the calibration consistency and traceability of operational instruments. Close collaboration through joint studies among NOAA, NASA, ESA, and USGS has already started and will greatly facilitate the generation of the FCDRs.

At WGCV 27, the more than 40 participants from nearly 30 agencies/countries represented a vibrant and dedicated



Current CEOS/WGCV Tasks and Action Items

group of scientists with diverse expertise that range from SI traceable measurements to product validation, passive radiometers to active sensors, and low to high spatial and spectral resolution. Working together we tackle many fundamental issues for the implementation of GEOSS. New international collaboration initiatives were proposed, which include the ESA support of THEOS cal/val in an agreement with GISTDA (Thailand), and the shared use of the unique cal/val site from our newest member TÜBİTAK UZAY (Turkey).

Looking forward, we recognize that the stringent requirements for satellite instrument calibration present major challenges to the current state-of-the-art in cal/val - e.g. in climate change detection, the signals to be detected are small (on the order of 0.1 K per decade in the infrared/microwave and a few percent per decade in the visible/near-infrared). Meanwhile, getting institutional support for sustained cal/val has been challenging. We expect that with the increased priority and visibility of cal/val in the CEOS climate actions and GEO tasks, space agencies will better recognize the importance of cal/val and increase their support. WGCV strongly endorses our task leads and team members in soliciting support so that we can continue to make progress on the assigned tasks and materialize the CEOS actions. ■



CEOS Agencies Support Transition Planning

Ms. Pontsho Maruping, CSIR (South Africa), 2008 CEOS Chair

Current and Future CEOS Chairs, Ms. Barbara Ryan and Ms. Pontsho Maruping, share custody of the CEOS gavel and plaque at a meeting at USGS Headquarters

On March 20, 2007, in Reston, Virginia, representatives of South Africa's Council on Scientific and Industrial Research (CSIR) met with the U.S. Geological Survey (USGS), National Aeronautics and Space Administration (NASA), and National Oceanic and Atmospheric Administration staff to prepare for CSIR's

(to be continued on page 5)

Working Group on Information Systems and Services (WGISS)

Mr. Ivan Petiteville, ESA/ESRIN (Italy), WGISS Chair

WGISS held its 23rd meeting in conjunction with its two Sub-Groups, Technology & Services and Projects & Applications in the fascinating city of Hanoi, Vietnam, May 21-25, 2007. The meeting was hosted by the Vietnam Remote Sensing Center (VNRSC) and sponsored by JAXA. About 40 representatives attended the combined Working Group and Sub-Group sessions. Our host, Dr Le Minh (VNRSC Director) and his highly dedicated colleagues provided an excellent venue.

Mr. Mitsuhiro Tsuchiya (Director Earth Observation Center, JAXA) was present during the whole week. In addition a host dinner on a boat-restaurant on the West Lake gave us the opportunity to appreciate the high creativity of the Vietnamese cuisine.

WGISS-23 was the third WG meeting since the initiation of the 'CEOS Implementation Plan for Space-based Observations for the GEOSS'. The WGISS contribution to GEO was discussed at length. The WGISS members contributing to fourteen 2006 GEO tasks reported on the tasks status. The detailed activities to be undertaken by WGISS for the execution of specific tasks in the 2007-2009 GEO Work Plan were identified as potential areas of WGISS contribution, and WGISS Points of Contact (POCs) were assigned to reach out to the GEO Tasks POCs for these tasks. The presence of a GEO Secretariat representative was very fruitful to the detailed definition of the working group's contribution. The potential WGISS contributions to GEO were identified as: IDN, ICS, WTF concepts (i.e. WTF-CEOP and WTF-Disasters) and emerging technologies like GRID and Service Oriented Architectures. Specific GEO-related actions and decisions were taken:

- Four "GCOS" actions requiring a specific WGISS involvement had been identified.
- The support to the Virtual Constellation Concept was analyzed and in particular a WGISS POC for the Land Surface Imaging was nominated.
- WGISS nominated one person to contribute to the GEO Standard Interoperability Forum group

- As requested by the GEO Director, a group specialized in Sensor Web has been created to support the "Sensor Web" GEO Task (DA-07-04)

In addition to the above, new positions within WGISS and new activities were discussed.

Liaison reports were presented involving ICSU, CODATA, CCSDS, World Data Center (WDC), Electronic Geophysical Year (eGY). These liaisons allow WGISS to interact with and to better understand activities affecting Earth Observation areas of interest.

The responses from the CEOS representatives to the proposal for the CEOS-level conference had been reviewed.

The WGISS-23 Workshop organized by VNRSC focused on the current Remote Sensing activities in Vietnam. Remote Sensing has been used in Vietnam since the early 1980's, and presently many ministries and provinces are using RS and GIS technology, implying the need for increased data access.

WGISS-24 will be hosted by the DLR (Oberpfaffenhofen, Germany, 15-19 October 2007). ■



Participants of the WGISS-23

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chairmanship of CEOS beginning in November 2007.

Meeting participants reviewed the scope of CEOS chairmanship responsibilities, the role of CEOS with respect to the Group on Earth Observations (GEO), the Global Climate Observing System (GCOS), and the United Nations Framework Convention on Climate Change (UN FCCC). Participants also discussed the CEOS Constellations concept, and a variety of strategic, budgetary, and administrative issues.

U.S. agencies look forward to CSIR's chairmanship

of CEOS along with South Africa's hosting of the 2007 GEO Plenary and Ministerial Meetings, which should provide valuable synergy in CEOS member agencies' work with GEO. South Africa will also be well-positioned to work with new CEOS stakeholders in the developing world, and to promote wider access to and use of space-based remote sensing data. CSIR and its U.S. counterparts will work closely with one another on transition issues and will support one another's CEOS work in the future. ■



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 8th annual meeting in Frascati, Italy from 30 April to 2 May 2007, under the auspices of the European Space Agency/ESRIN. The WGEdU welcomed its new members Gerard Begni (CNES), Alex Fortescue (CSIR) and Supapis Polngam (GISTDA).

Other participants of the meeting were Lucia Kocar (CONAE), Robert Meisner (DLR), Maurizio Fea (ESA), Francesco Sarti (ESA), Gordon Bridge (EUMETSAT), Gbenga Jegede (NASRDA), Renee Leduc Clarke (NOAA), Birgit Stromsholm (NSC), Alex Xuehu Zhang (Peking University), Yolanda Berenguer (UNESCO), Sergio Camacho (UN-OOSA) and Bryan Bailey (USGS).

Discussions on the first day centered around possible ways of linking current educational and capacity building activities between and among WGEdU member institutions based on the presentations provided by the participants and of enhancing cooperation and collaboration for broader implementation of activities at the regional and international scale. The need for increased WGEdU membership was underlined given the growing tasks to be performed by the Working Group in light of the CEOS IP that focuses on the space segment of the GEOSS 10-year Implementation Plan.

A three-year Strategic Plan (2007–2009) was defined by the participants that highlights and demonstrates the education charter of WGEdU. The Plan will work on three main axis: 1) WGEdU Education Portal which will be aligned to the GEO Capacity Building Portal; 2) Remote sensing workshops which will be organized annually and will target diverse audiences;

3) Test access to category 4 data (archived or near real-time) based on the Data Access Principles through implementation of pilot projects. With regard to the latter, INPE and ESA have confirmed their full support by providing agency contact points for data requests.

The WGEdU members reviewed the task sheets of the 2007–2009 GEO Work Plan related to capacity building. WGEdU is co-lead organization of task sheet CB-07-02 (through UN-OOSA) and contributing organization of task sheets CB-06-04 (through EUMETSAT, NOAA); CB-07-01b (through ESA, EUMETSAT, NOAA, UNESCO, USGS) and CB-07-01d (through UNESCO, UN-OOSA). Further contributions will be confirmed by WGEdU members in due course for the next update of the task sheets.

Preparatory discussions were held on the 2nd annual remote sensing workshop which WGEdU has committed to organize in memory of Jay Feuquay (USGS). The 3-day event will be hosted by CSIR and will be held on 26–28 November 2007 in Cape Town, South Africa. The workshop will be designed to meet the needs of tertiary level remote sensing educators and practitioners from government agencies and NGOs in African countries.

With a view to building synergies with other CEOS Working Groups, the Chairs of WGISS and CalVal were invited to the 8th WGEdU meeting. It was concluded, after the presentations made by Ivan Petiteville (WGISS Chair) and Pascal Lecomte (CalVal Vice-Chair), that users should be made aware of the importance and value of calibration and validation of data and the need for a global and methodological information system for effective access and use of data. The participants agreed that joint Working Group meetings would be organized in the future for better flow of communication and efficient coordination of activities.

Farewell events were held for Maurizio Fea (ESA) and Sergio Camacho (UN-OOSA). Both Maurizio and Sergio were among the founders of the WGEdU.

The next WGEdU Executive Committee will be composed of Co-Chairs Renee Leduc Clarke (NOAA) and Gordon Bridge (EUMETSAT) and Vice-Chair Tania Maria Sausen (INPE). The 9th annual WGEdU meeting will be held in April/May 2008 in Brazil and will be hosted by INPE. ■



Participants of the WGEdU-8 meeting

Message from the CEOS Chair

This article is derived from a White Paper provided by CEOS Chair, Barbara Ryan, in connection with the 20th meeting of the CEOS Strategic Implementation Team (SIT-20).

Ms. Barbara J. Ryan,
2007 CEOS Chair, USGS (USA)



The fundamental question facing CEOS today is as follows:

How can CEOS members cooperate more effectively to address the global observational requirements of our respective stakeholders?

This paper is provided to SIT-20 participants to prompt discussion of this question among CEOS Members, and to enhance our ability to help answer the global socioeconomic and environmental questions being asked by our national authorities.

Operating Environment

This is a critically important time for CEOS and global Earth observations. Rapid, large-scale ecosystem changes have placed environmental and climate issues high in the public consciousness of many countries. There is a heightened awareness of the ability of Earth Observation (EO) systems to address fundamental challenges to 21st century societies and to the global commons. Satellite EO is recognized as an indispensable tool for disaster mitigation, resource management, societal response to climate change, and health and welfare issues.

Credible, complete, and continued information about the Earth System is necessary to governmental decision-makers and to those who elect them. Yet, national and regional space program budgets are in flux: growing in some countries, shrinking in many others. Despite varying trends, there is a growing awareness that no one government or small grouping of governments can adequately address global observational requirements on their own. We must collectively invest in a "system of systems" approach to global observations, to facilitate well-informed decisions (and the necessary socioeconomic tradeoffs therein) by our national authorities.

Meeting the Need

The intergovernmental Group on Earth Observations (GEO) and its Global Earth

Observation System of Systems (GEOSS) were organized to help knit together observing systems, both satellite and in situ, in a more coherent, complete, and effective manner. GEOSS, however, can only be as effective as the sum of its parts. The advent of GEOSS has greatly increased the importance of CEOS's role. Given its membership, only CEOS is in a unique position to provide a complete, coordinated response to GEO's space-based EO requirements.

The remit of GEO is both ambitious and audacious. Its member governments have articulated a major challenge for themselves; one that, if successful, will greatly enhance the day-to-day value of EO, and radically alter the scope and nature of public and private socioeconomic decision-making. If, on the other hand, it fails, GEO will be viewed as another effort in a long list of well-intentioned but ultimately ineffective coordination efforts.

The Challenge to CEOS

The related challenge to CEOS is no less daunting. CEOS members must demonstrate that they are well-organized and resourced to support development of an effective GEOSS. Until recently, CEOS has been viewed as the perennial best-efforts "club" for information sharing and nominal coordination of space-based missions – a useful role, but one that is insufficient to fulfill today's requirements.

Much like GEO, if CEOS is to thrive, it must become an output-focused organization, empowered by its members and stakeholders to fully coordinate all civil space-based EO operations for national and international decision-makers.

Transitioning to Sustained Action

How is CEOS to become an output-focused organization? Thanks to the work of our colleagues, we already have a focused, yet ambitious, set of objectives:

- 1) Deliver the systems, data and products called for under the Global Climate Observing System Implementation Plan (GCOS IP) and the various GEO Work Plan tasks;
- 2) Fully develop the Constellations concept to support a series of missions which serve the needs of the global community; and,
- 3) Align the CEOS Working Groups and CEOS Work Plan in support of these objectives.

Under our current and future CEOS and Strategic Implementation Team (SIT) Chairs, we must sharpen this focus, while at the same time elicit the support and long-term engagement of more CEOS Members and Associates. We have been greatly aided through the creation of a CEOS Executive Officer, courtesy of ESA, who has skillfully worked with our external stakeholders, in particular GEO, GCOS, and the World Meteorological Organization, to help us meet our commitments.

There are some external perceptions of our initial organizational successes. And while our plans and liaison work are being well-received, the "service delivery" work must now begin. Amidst this heightened sense of attention and expectations, CEOS must deliver upon its commitments. There is no turning back to our old orientation – to do so would rapidly result in our own irrelevance.

Full Engagement

Furthermore, we cannot rely solely on our Executive Officer to make CEOS a more action- and output-oriented organization. We all must liaise more effectively with our new Members and

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Associates, to discern immediate and specific responsibilities for them in supporting CEOS objectives. And longstanding members must carefully and deliberately pass the torch to our new leadership in future years – the scope and schedule of the CEOS workload requires this.

The phrase “passing the torch” does, in fact, involve a handoff – we cannot just throw the torch and hope that our partner catches it. We must do everything within our ability to ensure a smooth transition. But perhaps most importantly, “passing the torch” underscores the marathon nature of our efforts – this is not just a one- or two-year activity, but a long-term commitment to coordinated Earth observations. Meanwhile, USGS is

taking its own leadership transition effort seriously. Having benefited from BNSC's and CONAE's earlier work, we are trying to adequately set the stage for our CSIR colleagues. CSIR is well-positioned to lead the work of CEOS into new domains and partnerships.

Taking Stock

USGS came to the chairmanship of CEOS with a brief list of priorities: Strengthen relations with GEO; support and enhance the Constellation efforts; respond to the needs of the GCOS Implementation Plan; promote the coordination of mid-resolution imagery; manage the work of CEOS; and, broaden our members' commitment and energy. Thanks to the hard work of our staff and our CEOS colleagues, we are pleased

with our progress in these areas.

Nevertheless, we realize there is much more to do by the end of our chairmanship. The real report card will come at year's end, at the CEOS Plenary, the GEO Ministerial meeting, and the UN FCCC meeting. If we are to succeed, we will have done so by remaining focused on our priorities, and by working closely with the SIT Chair, our Working Group Chairs, and all our CEOS colleagues and partners to deliver the outputs we have promised to GEO, GCOS, and our national and international stakeholders.

We look forward to seeing you at the CEOS Plenary on November 13–14 in Hawaii. ■

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 : misawa@restec.or.jp <http://www.ceos.org/pages/pub.html#newsletter>

Meeting Calendar

As of July 2007

Activities	2007							2008				
	May	June	July	August	September	October	November	December	January	February	March	April
CEOS Plenary							▲13-14 21st CEOS Plenary USGS Hawaii, USA					
CEOS SIT (Strategic Implementation Team)		▲19-20 SIT-20 ESA/ESRIN Frascati, Italy										
CEOS WGISS (Working Group on Information Systems & Services)	▲21-25 WGISS-23 VNRSC & JAXA Hanoi, Vietnam					▲15-19 WGISS-24 DLR Oberpfaffenhofen, Germany				▲25-29 WGISS-25 Joint Meeting China		
CEOS WGCv (Working Group on Calibration and Validation)		▲11-15 WGCv-27 NPL Teddington, UK				▲2-4 GEO-CEOS Workshop on Quality Assurance GEO/ Geneva				▲25-29 WGCv-28 Joint Meeting China		
CEOS WGEdu (Working Group on Education, Training, and Capacity Building)							▲26-28 2nd WGEdu Workshop CSIR/Cape Town, SA					△ WGEdu-9 INPE/Brazil
IGOS Partners (Integrated Global Observing Systems)	30▲ IGOS-P14 IOC Paris, France				▲6-9 CEOP/ AWCI Bali, Indonesia		▲27 IGOS-P14 bis CSIR/Cape Town, SA				△ IGWCO Workshop Tokyo, Japan	
GEO (Group on Earth Observations)						28-29▲ GEO-IV/ Cape Town, SA 30 GEO Summit ▲	▲1-4 GEOSS/AWCI Symposium Beppu, Japan					
Others		▲6-15 UN-COPUS-50 Vienna, Austria			▲24-28 IAC-58 Hyderabad, India	▲5-9 CGMS-35/ USA	▲3-14 COP-13 Bali, Indonesia					

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

Published by
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