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## The 23<sup>rd</sup> CEOS Plenary in Thailand

**Dr. Darasri Dowreang**, GISTDA, 2009 CEOS Chair



I would like to thank all those who participated in the 23<sup>rd</sup> CEOS Plenary, held on the 4<sup>th</sup> and 5<sup>th</sup> of November 2009 at the Sheraton Grande Laguna in Phuket, Thailand. We had 70 delegates representing 24 CEOS members in attendance. This annual meeting is an important date on the CEOS calendar, and allows us to review progress made over the year, and set new directions and objectives for the coming year.

### Reporting on 2009

We spent the first day of Plenary reporting on 2009 activities. Two tasks in particular were highlighted for their progress in 2009: Greenhouse Gas Observations from Space (GHG) and Forest Carbon Tracking (FCT). Notably Prof. José Achache, GEO Director, thanked CEOS for its strong support of these tasks, and for its continued commitment in 2010.

We also heard of great progress from all six CEOS Constellations, who are all actively reaching out to user communities to ensure continuity of measurements, access to data sets, and capacity building. Our GISTDA team reported on the efforts we undertook as CEOS Chair on the CEOS Data Democracy Initiative, in particular in the Asian community. The CEOS Deliverables document was also presented as significant outcome, and GISTDA plans to lead an effort to publish these Deliverables in a CEOS High Profile publication in 2010. The CEOS Working Groups reported on their achievement which indeed indicated a very productive year, including great progress on the implementation of the QA4EO program, and continued support to GEO through their activities.

Several productive side meetings were held in the margins of the Plenary including a meeting of the CEOS

Troika, which affirmed the important role that the group plays in CEOS coordination. CEOS agreed on the importance of the CEOS response to the updated GCOS Implementation Plan and sought a plan for 2010 and beyond during Climate coordination side meeting. It also shed some light on the scope, breadth and depth of resources required to secure observations of the Essential Climate Variables (ECVs).

### Directions and Objectives for 2010

The second day was spent discussing and planning for 2010, focusing on the key milestone of the GEO Ministerial Summit. We flagged the GHG and FCT initiatives, as well as Data Democracy and the continued opening of data policies and access as key issues that CEOS can highlight to the Ministerial.

The CEOS Carbon Task Force (CCTF) outlined its expanding role in 2010, working to coordinate the CEOS contribution to CEOS carbon-related initiatives. The delivery of 2009 FCT products, derived in part from CEOS agency acquisitions, is anticipated in April 2010, and 2010 observational requirements are being coordinated. With the finalisation of the GEO Carbon Report in late 2009, the CCTF will work to formulate a CEOS response, working with the CEOS Virtual Constellations to discuss the role they will play.

The group agreed that a SIT-lead planning meeting would be held in late-January 2010 to develop and begin to execute CEOS plans for 2010. This meeting will include a detailed discussion on Climate actions and the CEOS response to the GCOS IP.

### Looking Ahead: CEOS Leadership Transitions

In closing I would like to thank the outgoing leadership of WGISS (Martha Maiden) and WGEdU (Gordon Bridge), and wish INPE all the best for their term as CEOS Chair in 2010. I would also like to thank Mary Kicza and NOAA for their sound council and strong leadership and hard work as SIT Chair, and wish JAXA every success during their term. I also look forward to the future leadership of Centre for the Development of Industrial Technology (CDTI) of Spain in 2011 and Indian Space Research Organisation (ISRO) in 2012, ... and end my term as CEOS Chair with confidence of the incoming leaderships. ■



Participants of the 23rd Plenary in Phuket, Thailand



## CEOS Strategic Implementation Team(SIT) Way Forward

**Makoto Kajii**, JAXA (Japan), SIT New Chair



I had a chance to attend COP-15 held in Copenhagen. I visited the CEOS exhibition booth and participated in the CEOS side event chaired by Dr. Camara, the new CEOS Chair. It was my first experience of COP, and I was surprised by the many grassroots NGOs and demonstration occurring in the city. The global climate change issue is truly receiving global attention, and we may be at an important historical milestone, so, I thought in Copenhagen. Then, it raised an obvious question in my mind. What is the role of CEOS and the space agencies of the world in the global climate change issue? If the climate change were a disease affecting the Earth, then satellite data is an indispensable diagnostic tool to monitor the disease state of the Earth.

CEOS promoting proper international coordination of Earth observation programs and the maximum utilization of their data should be an ideal international framework to provide such a tool for the global society.

The priority of the climate change related GEO tasks reflected in the CEOS Work Plan has been confirmed at our recent meetings, SIT-24 in Darmstadt and CEOS Plenary in Phuket, and GEO-VI meeting in Washington, DC. It is also reflected in the CEOS Deliverables planned for 2010 and focused on the GEO Ministerial in Beijing. I would appreciate once again former CEOS and SIT Chairs, CEO and other related CEOS colleagues, who have worked for CEOS in recent years, since they have led CEOS to a right direction.

As the new SIT Chair, I also take the direction as a priority of CEOS. And I would like to work with members of SIT to keep momentum that aims to demonstrate the capability of satellite Earth observation for the global climate change issue.

I think, the Working Groups and the Virtual Constellations are real functions to conduct *doable* activities and to create *deliverable* outcomes of CEOS. Furthermore, the real information exchange and discussion on possible cooperation among agencies must be realized through human networks at the Working Groups and the Virtual Constellations. It is important that SIT ensures they have the guidance and resources necessary for their activities, and I would like to work for it.

The CEOS Missions, Instruments and Measurements (MIM) database, an ESA contribution, is an excellent information which CEOS member agencies can share. It is very useful for our program coordination. CEOS must

recognize its full potential and seek to further development and enhancement of the database and its applications. I anticipate that SIT will identify new areas for cooperation through gap-analysis using the MIM database and related user requirements in support of NASA's System Engineering Office.

The SIT-25 meeting will be held in Tokyo coming April. Preparations are already underway. CEOS are much more than the annual meetings of SIT and Plenary. They are continuous and integrated efforts taken by numerous groups of specialists orchestrated by the outstanding efforts of the CEOS Secretariat.

We should mind the need to maintain good visibility for our efforts to the broader community so that our efforts and outcomes are understood and appreciated. I hope that the CEOS Newsletter, a JAXA contribution, is one means helping such a visibility.

The JAXA SIT Chairmanship is open to hear your voice. Japanese leadership style prioritizes harmonization and understanding among team in realizing the common goal. In this spirit, I am very much dependent on the cooperation and support of all CEOS agencies and of individuals. Your comments and requests are always welcome. ■

The "CEOS Ocean Surface Topography Constellation User Requirement Document" was published by NOAA and EUMETSAT in October, 2009. This is one main outcome of the CEOS Constellation on ocean Surface Topography Mapping. More information and the report are available at the CEOS Website (<http://www.ceos.org>). ■





# The Group on Earth Observations (GEO) and CEOS Cooperation

Michael D. Tanner, GEO Secretariat (Switzerland)

The year 2009 marked the beginning of a new phase in GEOSS implementation and another successful year of contributions from CEOS agencies. The new three-year Work Plan introduced the GEO strategic objectives, along with new proposals and contributions from over 30 GEO Members and Participating Organizations. The focus of the Work Plan shifts towards building GEOSS – developing the GEO Portal, connecting various observing, prediction and information systems, and making environmental data, products and services available to society. Africa has benefited from a surge of initiatives designed to better inform decision-making. User engagement and Communities of Practice also were re-enforced.



GEO Secretariat Members

A 15-month assessment of the three GEO Portals was completed. The assessment focused on developing the core capabilities required to use GEOSS resources efficiently, including components and services registries, a search tool known as the “Clearinghouse”, and the GEO web portals for searching and accessing the data, imagery, information and services available through GEOSS. Models for sustained Portal operations were examined, and registrations of Earth observations resources in the GEOSS Common Infrastructure encouraged. In particular, the GEOSS Architecture Implementation Pilot Phase 2 (AIP-2) coordinated the incorporation of newly contributed components to GEOSS.

A wide range of new products and information was developed and contributed to GEOSS in 2009. These are all available to the GEO community either through the GEO Portal or through dedicated portals that will soon be connected to the GEO Portal. This information serves a wide range of purposes, such as predicting and managing natural disasters, assessing climate variability and change, monitoring ecosystems and biodiversity, planning new infrastructure, and mitigating the impacts of global environmental change. Importantly, many Developing Countries have for the first time access to information they need. Some key examples of how GEO Members and Participating Organizations have advanced GEOSS implementation are highlighted below:

- Users were given access to the *world's largest collection of land surface imagery* – including Global Landsat data – via the Land Surface Imaging portal; see [AR-09-02](#)
- A *new digital topographical map of the Earth* was developed and made publicly available – to respond to the critical need for a comprehensive, highly accurate, fully consistent global Digital Elevation Model (ASTER GDEM); see [DA-09-03](#)
- The principle of “universal access” to the *International Charter on Space and Major Disasters* was endorsed by

space agencies. In 2008, 45 GEO Member countries still did not have Authorized User status to the Charter; see [DI-06-09](#)

- *World seismic information* strongly progressed towards free availability at minimum time delay. Access to the complete Synthetic Aperture Radar (SAR) data holdings was granted through the Supersite website; see [DI-09-01](#). Over 170 *geological datasets* were made available by 40 nations through the OneGeology Portal; see [DA-09-03](#)
  - Major *global reanalysis* datasets were released by national and international prediction centres in Europe, Japan and the USA; see [CL-06-01](#)
  - Satellite data records were expanded through the launch of the *Japanese Greenhouse Gases Observing Satellite “IBUKI” (GOSAT)* satellite and the development of a new CEOS virtual constellation to provide *ocean biology and biogeochemistry products*; see [CL-09-03](#)
  - Numerous *global runoff* products were released through the newly-reworked Global Runoff Data Centre (GRDC) portal – including time series of daily and/or monthly river discharge data of more than 7,300 stations from 156 countries over a period of around 38 years; see [WA-08-01](#)
  - Long-record (quasi-)global *precipitation climatology* datasets were made available by the Global Precipitation Climatology Centre (GPCC), the Global Precipitation Climatology Project (GPCP), and the TRMM Multi-satellite Precipitation Analysis (TMPA); see [WA-08-01](#)
  - TIGGE – a global database of *ensemble weather forecasts* originating from 10 major forecasting centers (Australia, Brazil, Canada, China, France, Japan, Korea, UK, USA and ECMWF) – was made a free resource for high-impact weather research in early warning and societal applications; see [WE-06-03](#)
- Near-real time and archived measurements of remotely-sensed *ocean-colour products and sea-surface temperature* were made available for South America, Africa and the Indian Ocean through the ChloroGIN portal; see [EC-09-01](#)



# The GEO Integrated Global Observation Strategy (IGOS) Symposium

**Gregory W. Withee**, *United States Geological Survey (USGS), GEO IGOS Symposium Program Chair*

The GEO IGOS Symposium was Held in Washington DC on November 19<sup>th</sup>, in conjunction with the Sixth Plenary of the Group on Earth Observations. The GEO IGOS Symposium celebrated past IGOS accomplishments, acknowledged the recent transition of IGOS activities into GEO, and discussed possible future Earth observation strategies. Discussions were interesting and lively. It was agreed by all that the Symposium was a very worthwhile event, and that GEO should consider symposia like this one as a means for GEO to engage the scientific community.

The IGOS Partnership was established in 1998 to bring together a wide range of organizations committed to strengthening and harmonizing space-based and in-situ Earth observations in support of a number of "themes. The IGOS work has involved scientists from many disciplines, and considered the themes of oceans, carbon cycle, geohazards, water cycle, atmospheric chemistry, coastal zone and the cryosphere. These scientists were supported by a partnership, so named IGOS - P, of United Nations and scientific organizations, including the International Council for Science, ICSU, for over a decade. With the emergence of GEO with its high-level political mandate, the IGOS Partners decided in 2008 to transition the IGOS Themes into GEO, thus broadening international collaboration on the Global Earth Observation System of Systems (GEOSS) that is being developed by GEO.

The GEO-IGOS Symposium was conceived as an opportunity to join members of the international scientific community with the GEO community with the goal to foster continued global collaboration and understanding of the Earth's environment as well as to promote substantive engagement on the sustained observations needed to understand and monitor Earth processes and to assess human impacts. The Symposium celebrated the accomplishments of the former Integrated Global Observing Strategy Partnership (IGOS-P) and its successful transition into the Group on Earth Observations (GEO). It considered how the GEO Communities of Practice that have inherited the IGOS mandates can build on these accomplishments over the next few years.

The meeting began with some special speeches by the Secretary of the Smithsonian, Dr. G. Wayne Clough, the Associate Director of the United States Office of Science and Technology Policy, Ms. Sherburne



Keynote by Mr. Roy Gibson at GEO IGOS Symposium

Abbot, and the Director of GEO Secretariat, Prof. Jose Achache. After a rousing but cautionary keynote on the future of GEO by Roy Gibson, first Director General of the European Space Agency (ESA), the Symposium settled down to hear the first science presentation by Deliang Chen, Executive Director of the International Council for Science, ICSU. Dr. Chen's speech stressed the importance of maintaining science in GEO, and he stated that GEO should capitalize on the migration of the IGOS science into GEO to maintain and even build better bridges to the scientific community. He offered the services of ICSU in that regard.

Dr. Stuart Marsh of the British Geological Survey, BGS, chaired a session on the IGOS themes and emerging themes. Issues on Water, Carbon, Health, and Disasters were addressed. All these issues were thought to have good homes in GEO, and have found communities of practice to help advance the themes. Dr. Robert Scholes of the South African Council for Scientific and Industrial Research, CSIR, chaired the next session on the way forward. Here there were presentations on Communities of Practice for agriculture, geohazards, cryosphere, and the coastal zone. An update of the very first IGOS theme on Oceans was presented and as with many of the early IGOS theme reports, the Ocean Theme was found to be still very relevant today.

The days last session on integration and decision making, was lead by Gilberto Camara of the Brazilian Instituto Nacional de Pesquisas Espaciais, INPE. Dr. Scholes gave a stimulating session on the GEO Biodiversity Observation Network, GEOBON, and cited this emerging community of practice as very important to GEO. Finally Dr. Gilberto Camara himself gave one of the most powerful sessions of the day on: "Informing policy and Decision making." This presentation took the audience from observations



CEOS Exhibition at the GEO VI Plenary

# The CEOS Forest and Carbon Activity

Dr. Alex Held, CSIRO, Canberra, Australia



In support of forest monitoring and verification requirements proposed by the IPCC and the United Nations Framework Convention on Climate Change (UNFCCC), the Forest Carbon Activity in CEOS was initially proposed by NSC, CSIRO and JAXA during SIT-22 Meeting in Tokyo in 2008, and approved by the CEOS Plenary in George, South Africa. In parallel, an overarching new GEO task called “Forest and Carbon Tracking” Task (GEO FCT) was also approved in Budapest in 2008, for the 2009–2011 GEO Work Plan.

The CEOS Forest Carbon Activity, has already begun coordinating and providing dedicated satellite data acquisitions of mid-resolution satellite data (optical/SAR) in 2009, for a growing number of “FCT National Demonstrator” countries. This has been achieved through a coordinated effort and the generous support by CEOS-member space agencies from Brazil, Canada, Germany, India, Italy, Japan and the USA, as well as ESA, the CEOS Land Surface Imaging Constellation team led by the USGS, as well as by JAXA’s Kyoto Carbon Initiative and the wider SAR and optical remote sensing community.

Furthermore, this joint CEOS-GEO initiative is providing additional operational support to countries wishing to establish or improve their own national systems for forest monitoring and carbon reporting, in the form of access to associated analysis and prediction tools, capacity building, and creation the appropriate frameworks and technical standards. Execution of this activity is occurring via eight main actions, closely guided by a GEO FCT Strategic Implementation Plan (see [www.geo-fct.org](http://www.geo-fct.org)). These actions are:

- Obtain a commitment from CEOS member space agencies to provide continuous optical and radar satellite data, and the tools and training suitable for wall-to-wall forest carbon tracking.
- Guide countries on methods for satellite data processing and tools and standards for producing verifiable forest information products, such as annual mid-resolution (<50m) wall-to wall time series for forest change assessments and information on areas undergoing forest degradation.

- Develop guidance documents for ground measurements that link forest inventories, remote-sensing data and carbon models.
- Evaluate and agree on validation procedures and accuracy assessment for the remote sensing of forested areas and for carbon stock estimates.
- Building growing network of ‘National Demonstrator’ countries, initially from the three major tropical forest regions: Southeast Asia, Africa and South America.
- Raise awareness of progress and demonstrations as inputs to UNFCCC and other major international events, making clear the policy implications of the new technical capabilities.
- Create a coordinated network of processing facilities that will ensure established standards are used and that countries are supported with the processing of key data products.
- Based on the successful implementation, demonstration and political acceptance of the system, assign operational responsibility for its coordination and operation to an appropriate international body or agency.

In addition to CEOS member agencies and the governments with a strong interest in forest carbon monitoring such as Norway, Australia, Japan, Canada, and the Netherlands, other team members of the GEO FCT task include, FAO, GOF-C-GOLD, USGS, the EC Joint Research Centre and several university research teams, all of which play important roles. CEOS has also committed additional resources via ESA in support of coordination of the overall CEOS inputs to the task.

The CEOS Forest Carbon Activity and the GEO FCT task aim to quickly move from a ‘technical capability demonstration’, to development of a long-term support mechanism for the establishment of national forest Monitoring Reporting and Verification (MRV) systems, through the complementary assistance of donor countries, UN bodies, NGOs and technical expert panels currently involved in related capacity building activities. ■

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through decision making, using the Brazilian forests as the backdrop. This presentation highlighted the strong connection between Earth observations and socio economic decision making, in this case regarding issues important to Brazil, but also to mankind.

In his concluding remarks, Prof. Achache stated that he was

pleased that the Symposium speakers clearly identified that most of the IGOS themes have already been transitioned into communities of practice. He emphasized the Symposium talks that linked Earth observations to decision making, and stated the importance of GEO in this regard. He reflected on the success of the symposium, and concluded that there should be future symposia associated with major GEO events, to help ensure science connections in GEO. ■





## Working Group on Calibration and Validation (WGCV)

**Pascal Lecomte**, ESA/ESRIN (Italy), WGCV Chair

The Working Group on Calibration and Validation (WGCV) strives to ensure long-term confidence in the accuracy and quality of Earth Observation (EO) data and products. The WGCV provides quality assurance support and encouragement to the EO community as it works to achieve the Group on Earth Observations (GEO)'s vision for a Global Earth Observation System of Systems (GEOSS). The working group continues to contribute on many GEO tasks and leads a dedicated task to establish and implement Quality Assurance for GEOSS (GEO task DA-09-01a).



Participants to the 2009 QA4EO Workshop on Facilitating Implementation in Antalya, Turkey

The WGCV has led the development of a Quality Assurance Framework for Earth Observation (QA4EO), which has undergone rigorous review and is evolving into a process relevant to the wider GEOSS community. The implementation of QA4EO within the various EO communities is of critical importance to ensure information relevance and to provide effective and appropriate adoption methodologies. To help establish these principles, a Workshop on Facilitating Implementation of QA4EO was held from the 29<sup>th</sup> of September to the 1<sup>st</sup> of October 2009 in Antalya, Turkey. The workshop was chaired by GEO and hosted by TÜBİTAK UZAY (TÜBİTAK Space Technologies Research Institute). Presentations and discussions throughout the three-day workshop spanned a cross-section of EO disciplines as the participants

considered how best to take QA4EO forward and encourage its rapid uptake by the full GEOSS community. The workshop was very productive in shedding light on the current state of QA4EO and the necessary steps that need to be taken to make QA4EO principles accessible to the GEOSS community. To review the status of QA4EO implementation, measure its impact on the EO community and coordinate future activities, a further workshop was tentatively proposed for Summer 2010. More details on QA4EO can be found on the QA4EO website at <http://qa4eo.org/>.

In defining Essential Climate Variables (ECVs), the Global Climate Observing System (GCOS) and the Global Terrestrial Observing System (GTOS) have made an enduring contribution to collective efforts to monitor the status of the planet. The WGCV is actively working to meet the request in GCOS-IP10 to benchmark and compare leaf area index (LAI) products and to exploit in situ observations. The GEO Forest Carbon Tracking (FCT) task team has also requested the help of the WGCV to support in situ data calibration and validation over forest sites. The WGCV's Land Product Validation (LPV) subgroup will be writing to the GTOS and GCOS community to suggest an approach for the consistency of definitions of LAI, which is currently defined differently in the key GTOS/GCOS documents that make reference to LAI. Similar work will be undertaken for the Fraction of Photosynthetically Active Radiation (fAPAR).

The 31<sup>st</sup> plenary meeting of the WGCV will be held in the Bolger Center, Maryland, USA from the 2<sup>nd</sup> to 4<sup>th</sup> of March 2010. The 32<sup>nd</sup> plenary meeting will be a joint meeting with WGISS at the Canadian Space Agency headquarters, Québec, Canada from the 13<sup>th</sup> to the 17<sup>th</sup> of September 2010. More details on the WGCV and its activities can be found on the WGCV website at <http://ceos.org/wgcv/>. ■

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

**Birgit Stromsholm**, NSC, **George Jungbluth**, NOAA, and **Tania Maria Sausen**, INPE, a new group of Co-Chairs

CEOS WGEdu is planning a busy year of activities for 2010.

Following the dedicated leadership of outgoing WGEdu Chair Gordon Bridge, for 2010 the Working Group will be lead by a new group of Co-Chairs, consisting of Birgit Stromsholm (NSC), George Jungbluth (NOAA), and Tania Maria Sausen (INPE). This will allow the Group to be even more active in integrating training and capacity building activities into CEOS operations as well as

integrate satellite contributions into GEO efforts in the capacity building realm, for example, by integrating CEOS activities into the use of the GEONETCast Training Channel, maintained on the GEONETCast system worldwide.

Already, 2010 is shaping up to be a busy year for WGEdu. The group will continue to support remote sensing workshops, with the first to be held in Brazil March 29–31, devoted to Geotechnologies for Natural Disasters Monitoring.

# Working Group on Information Systems and Services (WGISS)

A message from WGISS Chair, **Dr. Pakorn Apaphant**, GISTDA (Thailand)



First of all, on behalf of WGISS members I would like to express my sincere appreciation to our previous chair, Martha Maiden of NASA, who greatly contributed her time and resources to this Working Group during her tenure. Deliverables from WGISS to CEOS can clearly show her leadership and high capability to transfer policy to operation perfectly.

During the past year, WGISS subgroups and members enjoyed working together to reach the common goal which was to make sure that our committed themes to CEOS could be delivered. As a satellite arm of GEOSS, WGISS/CEOS has supported or partially supported several GEO tasks such as AR-09-01b, AR-09-02a and c, CL-06-02, DA-09-01a and b, DA-09-02a, DA-09-03d, and DI-06-09. Among these, I wish to highlight that WGISS implemented a CEOS WGISS Integrated Catalog (CWIC) prototype for search and discovery of CEOS satellite holdings to support a CEOS-led task on DA-09-01b. Within CEOS, WGISS also cooperated and supported several CEOS Virtual Constellations (VCs) namely, Land Surface Imaging, Atmospheric Composition, and Precipitation Constellations. We had developed portals for those VCs as their initial capabilities were demonstrated at the CEOS booth in the latest GEO plenary. We worked closely with WGCV to develop plan for including data quality information for LSI-related data and information products (QA4EO) and to support the Global DEM

dataset project. WGISS also facilitated open software packages and resource persons to the Data Democracy project. These accomplishments could not be reached without strong support from all CEOS members.

For the year 2010, WGISS will continue our important role supporting CEOS in responding to GEO and other international key forums under the same theme as last year. To ensure that our outcomes will fit well with the CEOS goals, we will work very closely with CEOS and SIT. We recognize that active cooperation is very important and therefore strengthening internal coordination will be a focus. Recommendations from our user vice chair will be utilized to shape our effort for serving EO users worldwide. New promising projects and interest groups will be promoted, i.e., the Security Project, the Water Community of Practice Portal Project, the CEOS WGISS Integrated Catalog (CWIC), the Global DEM Quality Project, and the Data Management Interest Group. The active cooperation will not be limited only within our group, but will be also extended to other working groups and virtual constellations. We will work with CEOS Virtual Constellations to develop and/or improve the capability of portals and to demonstrate portal use of the CWIC model. To achieve these abovementioned goals, WGISS will need to receive strong support from CEOS members. More expertise to WGISS from agency delegations is desired in atmospheric composition data systems and services to support ACC IG and new Atmospheric Composition Portal activity. European partnership is also needed in developing and implementing the CWIC. In addition, Satoko Miura of JAXA steps up from the application subgroup leader to WGISS vice chair. Karen Moe of NASA kindly helps us to continue her subgroup chair role at least for one more meeting. I would like to invite CEOS members to support us by proposing a representative for this position by the 29<sup>th</sup> WGISS meeting and to attend the meeting which will be held during May 17-21, 2010 in Bonn, Germany. ■



The 28th WGISS plenary, Pretoria, South Africa

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The NASA CEOS Systems Engineering Office (SEO) is an active and valued contributor to the WGEdu's activities. In 2009, SEO worked on revitalizing the CEOS WGEdu Education Resources Portal, and this activity will continue as the portal rolls out in 2010.

CEOS SEO will also be playing a key role in an exciting new project, the CEOS EduFlow. EduFlow will work with a sponsoring CEOS member each year to develop a suite of training materials dedicated to increasing the capability to use satellite observations

in a particular application relevant to that country. These materials will then be packaged for use by the wider CEOS community and distributed at the CEOS Plenary as a contribution to the entire organization. The inaugural EduFlow theme will be provided by CONAE of Argentina, and will focus on the use of satellite remote sensing to address coastal management and climate change issues.

The WGEdu will next meet in Iguazu Falls, Argentina, at the invitation of CONAE May 12-14 2010. ■

# HOW CAN CEOS GO FORWARD? A Word from the Chair

**Dr. Gilberto Camara**, Director General, INPE (Brazil), 2010 CEOS Chair



**B**razil, represented by the National Institute for Space Research (INPE), is honored to serve as the Chair for the Committee on Earth Observation Satellites (CEOS) in 2010.

INPE recognizes CEOS noble task of coordinating global spatial and civil programs and interchanging Earth observation satellite data in benefit of the society.

Brazil was the first country to adopt a policy of free data access with CBERS in 2004. In



INPE CEOS Chair Team

2008, USGS followed this path by adopting the same policy for Landsat-5 and Landsat-7 image data distribution. Free data access will also be used for the next satellite of the Landsat Series (USGS/NASA) and the Sentinel Series (ESA). Open access data policies will enable the Global Earth Observation System of Systems (GEOSS) to succeed. We truly believe that data democracy needs to reach the masses.

INPE is engaged to stress CEOS contributions in support of government actions taken by the Group on Earth Observations (GEO). We take this opportunity to remind CEOS agencies of the importance of your contributions to the GEO Forest Carbon Tracking (FCT) task. 2010 will be a critical year to put into practice the actions agreed in the FCT 2009 Data Processing and Product Development Plan.

We also see the emergence of a new generation of countries, which are establishing their programs to put them in benefit of the society. With the transition of the world's economy, space programs should be designed for the new societies. We know Earth observation data is essential for the planet and CEOS has the power to change how our space agencies are viewed by the community.

We could see during the 23<sup>rd</sup> CEOS Plenary a magnificent example of organization, hospitality and friendliness, which reflected the outstanding job of GISTDA as a Chair throughout the year of 2009.

If there is any suggestion or issue regarding CEOS, we would like to welcome you to contact us. With the support and the commitment of all CEOS agencies we are sure this should be a fruitful chairmanship year. ■

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](mailto:misawa@restec.or.jp) <http://www.ceos.org/> (→Publications & Services)

## Meeting Calendar

As of February 2010

Activities	January	February	March	April	May	June	July	August	September	October	November	December
<b>CEOS Plenary</b>										▲13-15 24th Plenary INPE/Rio de Janeiro, Brazil		
<b>CEOS SIT</b> (Strategic Implementation Team)		▲25-27 CEOS-GEO Action Workshop NASA/SEO Arlington, Virginia, USA		▲13-14 SIT-25 JAXA/Tokyo, Japan								
<b>CEOS VCs Interface</b> (Virtual Constellations)	▲18-20 IOCCG-15 Brazil	▲23-24 LSI INPE/Sao Jose dos Campos, Brazil	▲30-31 AC CSA/Montreal, Canada		▲18-20 OSVW Barcelona, Spain					▲18-20 OST Lisbon, Portugal		△ OSVW-2 Training Course Buenos Aires, Argentina
<b>CEOS WGISS</b> (Working Group on Information Systems & Services)					▲17-21 WGISS-29 UNOOSA/Bonn, Germany				▲13-17 Joint WGISS-30 & WGCV-32 Plenary meetings CSA/Québec, Canada			
<b>CEOS WGCV</b> (Working Group on Calibration and Validation)			▲2-4 WGCV-31 Bolger Center, MD, USA									
<b>CEOS WGEdu</b> (Working Group on Education, Training, and Capacity Building)				▲29-31 Geotechnologies for Natural Disasters Monitoring INPE/Brazil	▲12-14 WGEdu-11 Puerto Iguazu, Argentina							
<b>GEO related Activities</b> (Group on Earth Observations)			▲1-5 ADC Full Com. JRC/Buenos Aires, Argentina	10-12 ▲ GEOSS AP Symposium Bail, Indonesia	21-22 ▲ FCT Data Sharing Woodshole, USA	▲17-18 GEO Task Symposium Pretoria, South Africa	▲19-21 CO-location meeting Pretoria, South Africa				▲3-4 GEO-VII	▲5 Ministerial Summit Beijing, China
<b>Others</b>	▲1 CEOS Climate Small Team Meeting WMO, Geneva, Switzerland	15 ▲ Climate Change Symposium JAXA/Tokyo, Japan		▲11-12 Science Data Summit Vienna, Austria	▲9-18 53rd COPOUS Bremen, Germany	▲18-25 COSPAR 2010 Honolulu, Hawaii, USA	▲25-30 IGARSS Honolulu, Hawaii, USA	▲27-30 IAF Congress Prague, Czech Republic	▲8-12 CGMS EUMETSAT New Delhi, India	▲8-12 SELPER Symposium Guanajuato, Mexico	▲8-19 COP-16 UNFCCC/Mexico City, Mexico	

▲: determined

△: to be determined (Date, Host organization/Location)

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