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Committee on Earth Observation Satellites
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SIT-26 Meeting Results

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

Participants to the SIT-26 in Frascati

At 14:46, on Friday, March 11th, 2011, a big earthquake hit east Japan. It was just a week before the SIT-26 to be held in Tokyo. Means of communications in the affected areas was broken down and it required a few days for the government to grasp the tremendous impact caused by this disaster. Many CEOS colleagues sent me e-mails caring for our safety and some of them also kindly suggested the postponement of the SIT meeting. After deliberating on the matter with concerned colleagues in JAXA, I announced the postponement of the meeting. Although, as a SIT Chair, canceling the meeting was not an option, aftershocks and the Fukushima Crisis did not allow me to convene the meeting again in Japan anytime soon after the disaster.

However, thanks to the kind support of the related people and agencies, as a result, we could hold SIT-26 at ESRIN in Frascati, Italy, with 68 participants. On behalf of JAXA, the current SIT chair agency, I would like to express my sincere appreciation to ESA for hosting the meeting, and to ASI, the current CEOS chair agency, for kindly handling the rescheduling of the event.

GEO Ministerial Conference was held in Beijing last November. At the Conference, CEOS introduced the report titled "Satellite, Science and Society", and showed our progress of the priority tasks which we have been working on for a few years. CEOS has achieved a goal.

What is the next then?

It was crucial to have a SIT meeting at this point since the year 2011 is the start of the latter half of the GEOSS 10-Year Implementation Plan. Thus, this year is very important for the success of the plan.

What GEO has achieved so far?

At the last GEO Ministerial Conference, the adoption of the GEOSS Data Sharing Principles was evaluated as an achievement of GEO. Now, 86 governments as well as the European Commission, and 61 international organizations subscribe to these Principles. It will be important for GEO to support wide application of these Principles.

On the other hand, the idea cannot be realized without data. GEO aims to collect the data through the GEOSS Common Infrastructure (GCI). How to contribute to the GCI is a crucial challenge for CEOS. The issue was identified by the then-CEOS chair, Dr. Camara, in a timely manner at the last Plenary in Rio de Janeiro, .

WGISS has been developing the International Directory Network (IDN) with rich contents, which is based on the NASA/GSFC data system. If CEOS can provide the contents of IDN to GCI systematically, general users among nine SBAs can recognize the GEO-obtained data. Then the users may understand its value through GCI. Though there was no marked discussion on this subject at the SIT-26, such consensus has been created through discussions among the experts at the SIT Workshop held in Washington, D.C., this February. Much like the MIM database, the IDN can serve as an important reference tool and resource for the global user community. I do hope that CEOS Principals will recognize its importance more than ever.

There were other major agenda items in the SIT meeting. The progress of the current CEOS priority issues was confirmed. It is important to promote these key components of the CEOS commitment to GEO. Discussion on the CEOS's support to the new GEO initiatives was also an important agenda item. I believe that such initiatives will lead the way to the development of new satellite data applications and eventually to enhanced societal benefits. We have also discussed and confirmed on the climate-related activities in order to respond to GCOS requirements. As ASI has pointed out in the meeting, it was especially meaningful because the participants understood the importance of the collaboration between the newly established Working Group on Climate and Virtual Constellations.

Dr. Freilich's perspective on the CEOS cooperation, which was introduced in the course of discussion on CEOS resources raised by Dr. Briggs, indicated the further productive cooperation for the future. I think that a part of it comes from the Self Study, which NASA, the upcoming SIT chair agency, is now conducting in order to articulate new subjects of SIT leadership.

Dr. Lars Prahm's resignation from EUMETSAT Director-General as well as Dr. Stan Wilson's retirement from NOAA were announced in the meeting. Dr. Prahm was one of the opinion leaders of CEOS. Dr. Wilson achieved an outstanding career in ocean remote sensing, and I learned a lot from him. On behalf of SIT, I would like to express our heartfelt appreciation to them for their dedicated contribution to CEOS.

Although this meeting was the last SIT meeting in my tenure, my responsibility as SIT chair will remain until the forthcoming Plenary. Until that day, I would like to make my best efforts while enjoying your support and cooperation.

Once again, I appreciate your participation in the meeting and your kind cooperation. At the same time, I would like to express my gratitude on warm concordances and sympathies I have received from CEOS colleagues on the tragedies in Japan.

Accelerating the implementation of GEOSS

Robert Koopman,
GEO Secretariat (Switzerland)
(until July, 2011)

Humbulani Mudau,
GEO Secretariat (Switzerland)
(after July, 2011)

In response to the Beijing Ministerial Summit, GEO members and participating organisations, including CEOS, have made concrete steps to accelerate the implementation of GEOSS.

Defining the 2012–2015 GEO Work Plan

A new GEO Work Plan is being developed to address the final period of the 10-Year Implementation Plan. The main aims of this 2012–2015 Work Plan are to achieve the GEOSS Strategic Targets adopted at the 2009 Plenary and to address the priorities set by the Beijing Plenary. These priorities are executing the Data Sharing Action Plan, sustaining and enhancing observation systems and capacity building, providing data for the Global Forest Observation Initiative, advancing initiatives such as the GEO Biodiversity Observation Network and the Global Land Cover Initiative, and implementing GEO coordination mechanisms at the national and organizational levels.

The process for defining the new three-year Work Plan for 2012–2015 started with the generation of an early draft by the GEO Secretariat based on feedback obtained from the Plenary, the Monitoring and Evaluation process, and the broader GEO Community. This is being followed by a sequence of review rounds by experts and delegations.

Over 100 GEO Task contributors and Committee members gathered together in Geneva in May for a broad technical review of the draft work plan. CEOS was well represented in the plenary sessions and break-out groups, and an earlier CEOS-wide consultation resulted in significant feedback on the draft plan. Based on all the technical review comments received, the Secretariat released an updated draft plan on 27 June that will be reviewed by GEO Principals. Their comments will be incorporated into yet another draft that will be forwarded to the November GEO Plenary in Istanbul to be finalized.

The three-part structure of the new work plan sets out actions to build the infrastructure of GEOSS, strengthen institutional capabilities, and generate information for decision makers in the nine Societal Benefit Areas.

Implementing the 2009–2011 Work Plan

Whilst the 2012–2015 Work Plan is being developed, its 2009–2011 predecessor is being implemented with significant success.

The Data Sharing Action Plan is being executed and the list of open resources contributed to the GEOSS Data-CORE (Collection of Open Resources for Everyone) is growing whilst further contributions will be solicited in anticipation of the 2011 GEO-VIII Plenary.

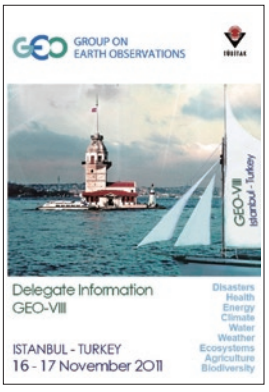
In the architecture and data management domain, a concerted action dubbed "Sprint to Plenary" is underway to improve access to earth observation data, starting with several datasets supporting the earth observation priorities identified in a study by the GEO User Interface Committee. The improvements will be achieved through enhancements of the GEOSS Common Infrastructure, partial integration of facilities with search brokering and access and visualisation functions, and collaboration with data providers in the context of the fourth Architecture Implementation Pilot.

The successes of the GEO Forest Carbon Tracking initiative, co-led by CEOS, continued into 2011 and have resulted in the Global Forest Observation Initiative, which is gradually taking shape. The coordination of data acquisition is an important cornerstone of these initiatives and serves as an example for similar initiatives like the Joint Experiment on Coordinated Agricultural Monitoring, the G20 Global Agricultural Geo-Monitoring Initiative, the Water Cycle Integrator, etc.

High on the list of successes for 2011 is the Supersites initiative, which again involved data acquisition from CEOS agencies, among others. The Tohoku-oki Supersite dedicated to the March 2011 earthquake and tsunami that struck Japan was operational hours after the quake and provided an important service to the community. The Supersite received 4,500 visits per day and 34,000 unique visitors in the first month; 11 Terabytes of data were downloaded in the first month.

The examples above are only the tip of the iceberg, and steady progress has been observed on many other fronts. Take for example the improvements in information on volcano hazards (involving also CEOS) in the short period between the Eyjafjallajökull and Grimsvotn eruptions. The GEO Biodiversity Observation Network is also progressing steadily and responding to a formal request from the member governments of the Convention on Biological Diversity.

The implementation of the GEO Work Plan benefits greatly from the exemplary coordination between CEOS and GEO points of contact at and across all levels: task participants and leads, committee and task force members and co-chairs, staff of both secretariats, the CEOS executive officer and deputy, and the support teams of the CEOS chair and the CEOS-SIT chair. This collaboration has supported both ongoing actions and the definition of the 2012–2015 Work Plan, both of which CEOS has further supported through its member agencies by continued secondments to the GEO Secretariat.



Working Group on Calibration and Validation (WGCV)

Gregory L. Stensaas, *US Geological Survey, WGCV Chair*

Participants to the WGCV-33 meeting in Moscow

The 33rd Working Group on Calibration and Validation (WGCV) plenary meeting was hosted by the Russian Federal Space Agency (Roscosmos) in Moscow, Russia from 17-20 May 2011. The meeting provided a valuable forum for the group to discuss its activities and future planning, and greatly benefitted from the active participation of Roscosmos and the operational and scientific calibration / validation (Cal/Val) communities in Russia.

The WGCV is the lead on GEO task DA-09-01a, which includes the Quality Assurance Framework for Earth Observation (QA4EO). A set of showcases to exemplify QA4EO implementation are currently under development. These showcases, and the wider implementation of QA4EO, will be discussed at a QA4EO workshop on *Providing Harmonised Quality Information in Earth Observation Data by 2015* that will be held in Harwell, UK from 18-20 October 2011. More details on the workshop can be found via the QA4EO website at http://www.qa4eo.org/.

Guided by its subgroups, the WGCV has defined a set of CEOS Cal/Val sites that represents the minimum set of mandatory sites (applicable across all relevant sensor / thematic domains) that should be maintained for the long-term future. Details on these sites and their requirements can be found on the Cal/Val portal at http://calvalportal.ceos.org/.

The WGCV continues to work towards organising, promoting and participating in instrument / field campaigns that are of benefit to the Cal/Val community. The Infrared and Visible Optical Sensors (IVOS) subgroup held a workshop at JRC, Ispra, Italy in October 2010, and IVOS-23 was held at CNES, Toulouse, France in April 2011, where the results from the Tuz Gölü intercomparison campaign in 2010 were discussed by a dedicated focus group. A further intercomparison campaign is planned over the Dome C Antarctic station from December 2011 – January 2012.

The WGCV, particularly its Atmospheric Composition and Land Product Validation subgroups, are supporting work on Essential Climate Variables (ECVs) and are working closely with the Working Group on Climate (WGClimate) and the Global Space-based Intercalibration System (GSICS). The Microwave Sensors (MWS) subgroup is also now focusing on the requirements from climate and global change, on cross-calibration and cross-comparison, on long-time stability, and on traceability. A MWS subgroup meeting and Microwave Sensor Cal/Val workshop is planned from 26-28 October 2011 in Beijing, China.

The 18th CEOS SAR Cal/Val Workshop was held at the University of Zurich, Switzerland from 25-27 August 2010. At this workshop the subgroup chair, Satish Srivastava (CSA), stepped down after taking on the role of WGCV vice-chair. The SAR subgroup has welcomed Manfred Zink (DLR) as its new chair. The next workshop will be hosted by the Alaska Satellite Facility, at the University of Fairbanks, Alaska from 7-9 November 2011.

The 34th WGCV plenary meeting will hosted by TERN-AusCover in Brisbane, Australia from 6-10 February 2012. More details on the WGCV and its activities can be found on the WGCV website at http://www.ceos.org/wgcv/.

CEOS Missions, Instruments and Measurements Database
- 2011 Updates and Refinements

The 2011 update of the ESA-maintained CEOS Missions, Instruments and Measurements (MIM) database is currently underway, with inputs being gathered from more than 35 CEOS agencies. This update will refresh the MIM's extensive information on satellite and instrument capabilities, and includes the addition of several new pieces of information. The new information as well as an updated MIM online application will be released before CEOS Plenary in November, and includes:

- The inclusion of information on ECVs, SBAs, and Virtual Constellations from the SEO;
- Improved information on instrument and measurement spatial resolution;
- Inclusion of links to the SEO's COVE tool; and
- The addition of more detailed waveband information (i.e. SAR bands).

The MIM has become an important community resource, and it's the information provided by CEOS agencies that provides the substance. At the close of the 2010 survey, the MIM featured details of 261 Earth observing satellite missions and 416 distinct instruments, which are currently operating or planned for launch in the next 15 years. Applications for the MIM within CEOS include SEO-lead gap analyses in support of Virtual Constellations and other potential emerging CEOS priorities, as well as support to the WGClimate looking at sustained ECV generation. The information is also broadly available to the community via the website, now recognized as the only official consolidated statement of space agency EO programs world-wide. Thank you in advance for your effort in support of the 2011 update.

The MIM online can be accessed at database.eohandbook.com.

Working Group on Information Systems and Services (WGISS)

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

The 31st WGISS plenary and subgroup meetings were held in Sioux Falls, USA, during June 13-17, 2011. The meeting was rescheduled from the original plan due to the unexpected tragedy in Japan in April. To ensure the continuity of WGISS activity, the US Geological Service, Earth Resources Observation and Science Center kindly offered to host this meeting. There were about 45 WGISS members and liaisons including SEO, and Deputy CEO, participating in this event.

The CEOS WGISS Integrated Catalogue (CWIC) workshop was considered a highlight for this WGISS meeting. CWIC is an infrastructure element being contributed by CEOS through support of GEO Task DA-09-01b, and is a contribution toward the goals of the GEOSS target architecture and an element of GCI. CWIC can be considered as a CEOS community catalogue for satellite data products and is an interface between portals and catalogue systems. We wish to extend CWIC to support the harmonised discovery, search, access and use of satellite data from CEOS members both following and contributing to the GEOSS architecture, guidelines and standards. CWIC offers an inventory search access point for portals by translating and routing searches to CEOS agency inventory systems. The high volumes of satellite data result in hundreds of millions of inventory records, making it impractical to harvest the metadata into one database. CWIC offers a collaborative way for diverse agencies to study the common challenges, come up with common solutions, and test the solutions before making investments in their agency systems. The CWIC team is using the GEO/OGC standards for search and access. The CWIC partners will identify what modifications are needed to the standards for operational use of the standards with satellite data systems and bring that back to the OGC for future revisions to the standards. At the workshop, the version 1.0 was demonstrated, and version 2.0 capabilities were discussed.

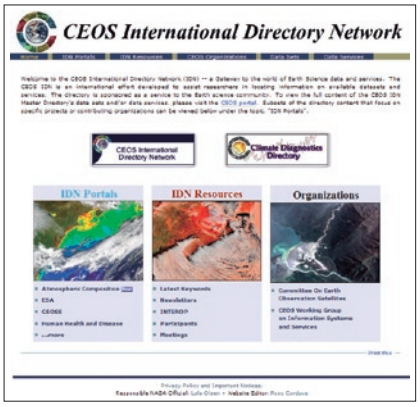
WGISS is always aware of actions and assignments from CEOS and SIT. The IDN Interest Group reported that the integration of Catalog Services for the Web (CSW) into the IDN to serve NASA's metadata to GEOSS was developed and tested with the GEOSS Clearinghouse. The service has been registered in the GEOSS registry system. The DIF dataset descriptions are now searchable in the GEO Portal. The progress of a joint project on WGCV-WGISS QA4EO showcases on Terrain Elevation, Atmospheric Composition, and Forest Carbon Tracking were also reported. It was expected that the showcases would be ready for demonstration in 2012. The meeting also provided opportunity for WGISS to closely coordinate with the SEO to discuss the CEOS portal study. All issues were considered and clarified, while the LSI and Atmospheric Composition Interest Groups are continuing to support the constellation portals, and the Water Portal Project is well underway. Regarding disaster management support, we established a new project called GEOSS Architecture for Use of Satellites for Disasters & Risk Assessment. We considered how sensor web technologies could be applied to a variety of applications and projects. Another exciting report was that the CEOS WGISS Data Stewardship Interest Group planned to play a very important role in contributing to GEOSS on Lifecycle Data Management. Documents related to data lifecycle, long-term archive strategies, and data preservation techniques were expected to be our valuable contributions for GEO in the near future.

WGISS members will be busy the next two months making progress on these activities, and will meet again in Budapest during the week of September 26. WGISS will continue to work hard to support CEOS objectives and goals. Our WGISS 5-Year Plan is being updated to ensure that we best serve for the EO community as a whole.

Participants to the WGISS-31 meeting in Sioux Falls

International Input Positively Influences Directory Decisions Through the International Directory Network's (IDN) "Interoperability Forum"

***Lola M. Olsen**, CEOS IDN Interest Group Chair AND **Pakorn Apaphant**, WGISS Chair*



Pivotal suggestions made decades ago through the directory's "Interoperability Forum" have offered rewarding guidance for the CEOS International Directory Network (IDN). The CEOS IDN (http://idn.ceos.org) is an international effort developed to assist users in locating data sets, data services, and climate visualizations. The IDN Interest Group within CEOS is responsible for coordinating activities among the participating agencies to maintain, improve, and expand the functions and use of the IDN.

One of the first topics for discussion in the forum was related to a decision related to whether to offer a "free-text" or a "controlled keyword" search to discover data sets of interest. A statement by one of the participants at the time made the decision easy: "Sometimes we can not think of the science keyword in English (to use for a free-text search), but we can recognize it within a list." For me, it was clear at that

(to be continued on page 5)

Working Group on Climate (WGClimate)

Mark Dowell, *EC/JRC(Italy), WGClimate Chair*

Participants to the 1st WGClimate meeting in Frascati

The Working Group on Climate (WGClimate) was endorsed as new CEOS working group at the last CEOS plenary in Rio (October 2010). The first full meeting of WGClimate was held at the ESA ESRIN on the 26th and 27th of May 2011. The meeting was well attended by WGClimate members and also benefited from co-location with CEOS SIT to include additional attendance from CEOS agencies.

Initial introductions confirmed the broad range of competences and interests of WGClimate members, including a cross-section of backgrounds across the ocean , land and atmosphere domains.

Introductory presentations on the current state of the GCOS Satellite Supplement update and the planned CEOS response to the the 2010 GCOS Implementation Plan were provided, and set the context for the subsequent discussion of the long-term strategy for ECV production by CEOS agencies.

The main priorities for WGClimate in this initial phase formed the basis for the agenda addressing a range of specific aspects. These included the compilation of an inventory documenting CEOS agencies efforts across ECVs, here discussions included the required content for such an inventory, climate information stewardship and the definition of indices to assess the maturity of ECV products. A second priority addressed the definition of an architecture for space-based climate monitoring which would serve both as a conceptual framework within WGClimate for planning future activities, and also as a means of identifying CEOS agency contributions to the global monitoring capability. A significant WGClimate activity in this first year will be to represent CEOS in the CEOS-CGMS-WMO writing group on space-based architecture for climate monitoring. This group is preparing a strategy document, providing a roadmap for climate monitoring architecture – both its definition and implementation, that will be delivered to CEOS and CGMS by mid-September. A third and final topic started to address the best practices to undertake an ECV-by-ECV investigation of requirements for long-term sustained production, including assessment of existing products and identification of pilot ECVs through which the analyses could be undertaken.

There was also considerable discussion throughout the meeting on identifying linkage with on-going efforts: both internal to CEOS i.e. within other working groups and virtual constellations, and external to CEOS with other international programmes and activities working in the same field.

The working group members also discussed a draft document for working group governance policies and agreed to produce a WGClimate work plan for the first 24 month in advance of the CEOS Plenary in Lucca (November 2011).

(continued from page 4)

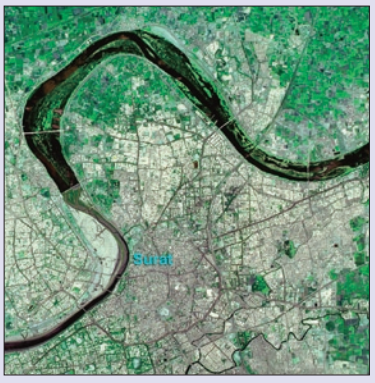
moment that controlled science keywords would be critical to the directory's success. A discussion followed through the directory's "Interoperability Forum". The "controlled science keyword" concept was supported, which supports normalized searches. This decision did not affect the ability to also offer a "free-text" search. The CEOS IDN (http://idn.ceos.org) is an international effort developed to assist users in locating data sets, data services, and climate visualizations. Free online access to metadata on scientific data in the Earth sciences is provided to the public. The IDN Interest Group of WGISS/CEOS is responsible for coordinating activities among the participating agencies to maintain, improve, and expand the functions and use of the IDN.

The IDN holds 17,195 "unique" data set descriptions from CEOS members and other interested organizations. Thirty-six (36) fields are available to describe the individual data sets, known as Directory Interchange Formatted records (DIFs). These fields describe the content, usage constraints, quality, data set availability, location, common usage, etc. Six fields are required; 17 are highly recommended, and 11 are recommended.

Early this year, the IDN developed Catalog Services for the Web (CSW) using the GeoNetwork's CSW to integrate the protocol and establish a dedicated server architecture to serve NASA's metadata to GEOSS. The service was registered and is now advertised in GEOSS. The Clearinghouse started harvesting the IDN data set descriptions using CSW protocol in March of 2011. The descriptions are now searchable in the GEO Portal. Harvesting will occur on a weekly basis.

Resourcesat-2

ISRO launched Resourcesat-2 using its PSLV C-16 launcher on April 20, 2011. This satellite is follow-on of Resourcesat-1 launched in 2003. It carries three cameras, high resolution Linear Imaging Self Scanner (LISS-IV) operating in three spectral bands in the Visible and Near Infrared Region (VNIR) with 5.8 m spatial resolution and steerable up to ± 26 deg across track to achieve a five day revisit capability; a medium resolution LISS-III operating in three spectral bands in VNIR and one in Short Wave Infrared (SWIR) band with 23.5 m spatial resolution; and a coarse resolution Advanced Wide Field Sensor (AWIFS) operating in three spectral bands in VNIR and one band in SWIR with 56 m spatial resolution. For additional information, visit http://www.isro.gov.in/satellites/resourcesat-2.aspx



The image of IRS LISS IV

An Enterprise to Meet 21st Century Needs

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What are the hallmarks of a successful 21st century enterprise? A clear mission, well-defined goals and objectives, visionary leadership, close connections with key stakeholders, and the ability to change with the times. Knitting these ingredients together are flexible and productive work practices by knowledgeable and committed staff members.

We believe that CEOS displays many of the characteristics of a successful 21st century enterprise. Its mission is clear: to coordinate civil space-borne observations for societal benefit. CEOS goals and objectives are closely woven into its work: to optimize the benefits of these observations through increased cooperation among its members, serve as a focal point for international coordination, and exchange information to encourage complementarity and compatibility of Members' observation and data exchange systems. It exhibits visionary leadership from its past and current CEOS Chairs and Strategic Implementation Team Chairs, working with the CEOS Secretariat and Members to chart a course which keeps CEOS engaged with high-priority Earth observation (EO) issues.

CEOS works very closely with its key stakeholders, including the Group on Earth Observations (GEO) and the UN Framework Convention on Climate Change, to better understand and serve their needs. Through internal and external coordination, CEOS Member Agencies' capabilities are playing increasingly important roles in many EO applications. The 2011 CEOS Work Plan includes significant initiatives to improve EO data access, support the monitoring of Earth's climate, observe deforestation, mitigate disasters, and enhance agricultural productivity.

The many CEOS-related meetings and teleconferences that occur on a routine basis underscore the fact that CEOS is truly a global, 24 hours-a-day, seven-days-a-week effort. On any given day of the week, CEOS Member Agency staff members are diligently going about their work, in close consultation with partner agencies and external stakeholders. CEOS Working Group representatives, Virtual Constellations Teams, and Societal Benefit Area Coordinators are making important progress to assemble the many components that will constitute a well-integrated, space-based, observing system for the Earth's atmosphere, land, and oceans.

Since its inception in 1984, the scope and societal impact of CEOS have grown at an impressive rate. CEOS has adapted to and helped to shape global developments in Earth observation capacity and applicability to society's most pressing issues. With recent progress in information and communications technology, and through new organizational paradigms such as GEO, CEOS is now helping its stakeholders to more fully realize the promise of Earth observations.

We expect that CEOS will continue to evolve to meet the 21st century's most pressing challenges. This will require more deliberate assessment and planning with even greater engagement from the full CEOS membership, present and future.

Yet, if the past is prologue, CEOS has a bright future ahead. Its many talented and motivated experts with whom we work, often on a "24-7" basis, never fail to impress and motivate us. We look forward to working with them to advance CEOS objectives and better serve the needs of our users worldwide!

Aquarius/SAC-D

The Aquarius/SAC-D observatory rocketed into space from Vandenberg Air Force Base in California atop a United Launch Alliance Delta II rocket at 7:20:13 a.m. PDT (10:20:13 a.m. EDT) on June 10th, 2011. Less than 57 minutes later, the observatory separated from the rocket's second stage and began activation procedures, establishing communications with ground controllers and unfurling its solar arrays. Initial telemetry reports show the observatory is in excellent health. The Aquarius instrument will map the salinity at the ocean surface, information critical to improving our understanding of two major components of Earth's climate system: the water cycle and ocean circulation. The SAC-D (Satélite de Aplicaciones Científicas) observatory is a collaboration between NASA and Argentina's space agency, Comisión Nacional de Actividades Espaciales (CONAE). In addition to Aquarius, the observatory carries seven instruments that will collect a broad range of environmental data. Other mission partners include Brazil, Canada, France and Italy.

Liftoff of the Delta II Rocket

Update as of 8/30/11-NASA is pleased to report that the Aquarius instrument is fully operational in normal science mode. All the data channels appear to be working fine. The first global salinity map (first complete week of data) is planned for release in early September. For additional information, visit http://aquarius.nasa.gov/.

A Message from the 2011 CEOS Chair

***Enrico Saggese**, ASI (Agenzia Spaziale Italiano) President, 2011 CEOS Chair*

The Italian chairmanship of CEOS is well into its third quarter.

Time has gone fast, very fast, and it is nearly the time to assess the achievements and the results: a frightening exercise sometimes.

I think we have made progress on a number of issues. This progress has been the result of multiple efforts by organizations and individuals. CEOS has shown all its strength this year, due to the cohesion of its members and the resources, in quality and quantity, they have dedicated to meet the commitments taken collectively. Therefore we look forward with expectation to the forthcoming plenary that we are right now organizing for early November in Lucca. Also in view of this event, let me review the events and milestones we have been going through together in the course of this year; finally, I shall attempt a quick look at what is expecting us in the months and years ahead.

The Italian chairmanship started in Rio de Janeiro last October, and that plenary was already eventful; I should like to briefly re-call the establishment of the Working Group on Climate, the decision to continue our effort in support of the Global Forest Observation Initiative, through our Forest Carbon Task Force, the decision to re-shape the Working Group on education and to support the initiative on data democracy, the consideration given to new initiatives like the Geo-hazards supersites. All this and more was condensed in the Rio declaration and presented to the GEO plenary in Beijing. Immediately after we presented a full report to the UNFCCC COP 16 in Cancun, detailing the efforts deployed by space agencies in providing satellite observations in support of climate change assessment, also in response to the set of precise requirements published by the secretariat of the Global Climate Observing System.

2011 started with an important initiative of WMO, which initiated a discussion about the way to arrive at the definition and implementation of an operational global climate monitoring architecture from space; this has resulted in the constitution of a writing group, charged with the task of establishing a plan in order to arrive at the definition of the architecture. The writing group is equally populated by CGMS and CEOS, and chaired by a CEOS representative; a draft report should be available in the course of September; the resulting actions should be included in a re-defined GEO task. We are following the developments of this initiative very closely, we think it is crucial for the future involvement of CEOS agencies, collectively, in the development of a climate monitoring system.

Like every year, between February and May, we have been going through the exercise to respond, with concrete actions, to the relevant tasks of the GEO work-plan; this year, in addition, we have been heavily involved in the definition of the new GEO work-plan, 2012-2015, which will be presented in its final form at the GEO plenary in Istanbul.

To this we should add more involvement of our agencies in other GEO tasks and initiatives: the Joint Experiment for Crop Assessment and Monitoring (JECAM) and the Biodiversity task. Progress has also been achieved by our Carbon Task Force, always in response to a GEO task.

CEOS is successfully meeting its commitment to provide the Core capabilities of the space component of GEOSS, and is providing key contributions to the GEO Common Infrastructure. This constitutes a huge effort, which is far from being finished. We indeed should like to end our chairmanship with recommendations for a deeper involvement of CEOS agencies, and of their collaborative tools like virtual constellations, in the implementation of the space component of GEOSS. This may well be one of the main themes at the forthcoming plenary.

The contributions to the GEO Common Infrastructure, aimed at populating the portals with a growing number of references to data sets, are being encouraged with the "sprint to plenary" initiative. CEOS agencies are fully engaged in this effort and we hope to see the results by the GEO plenary in Istanbul.

NASA is continuing to lead the CEOS self study. We all expect important replies from it, and I must recall the important effort devoted to this initiative by several agencies representatives. For those of you who have not been closely associated with it, I invite you to look at the terms of reference of the study and, around the plenary, at the full report. There are there important questions for our future, and some answers. It will be up to us, together, to decide how much of its recommendations we want to take up and implement, how much we need to change CEOS and its structures, whether we need to evolve our strategies, and so on.

But in parallel we have to look at the external world, which is also evolving rapidly; GEO is changing, the role of WMO in climate monitoring and climate services and its relationship to GEO is being discussed; CEOS is a key contributor in data and observing capabilities to the GEO Systems of Systems and will have to face these changes and adapt itself; and the same time will have to try to exercise its influence in order to direct the evolutions underway in directions compatible with the roles and strategies decided by its member agencies.

It would be, for example, unconceivable in the climate domain that operational architectures are defined without taking into account the contributions, past, present and future, of space agencies. Fortunately, this is not happening today and we shall have to work to keep it so.

This brings me to enumerate the challenges ahead for CEOS, as I perceive them, and not necessarily in order of

(to be continued on page 8)

(continued from page 7)

importance. I have already mentioned the first one: extend and protect the role of space agencies in the setting up of an operational space infrastructure for climate monitoring; this is even more important in perspective because, as obvious, such an observation capability will also serve other areas of social economic and strategic interest: environment, food resources, other resources, health and civil protection and more. CEOS has the opportunity and the duty of being at the forefront of this quest.

I also mentioned the self-study led by NASA and the decisions to be taken about its recommendations, probably in the course of next year. The CEOS structure is likely to evolve, in order to adapt to a changing environment.

In the near future we shall have to make sure that all the initiatives we take part into produce tangible results; and we shall have to devise a way to assess these results and to close those initiatives for which CEOS participation has achieved its objectives. These mechanisms are not clear today.

Another point on which more work will be required on our side is certainly the definitive consolidation of the GEOSS Common Infrastructure; CEOS will have to decide the depth of its involvement, which is already considerable, and exercise its technical and political weight in this process, which is progressing slowly. We have no interest in this becoming an endless and inconclusive process.

Similarly, the data made available by Space agencies for GEO tasks and initiatives are today not very visible/usable; under the leadership of WGISS CEOS will need to take more part in the design of an effective data access system, in the respect of GEO principles; the system used by meteorological agencies could be an example to consider.

There certainly are more challenges that expect us in the future, but those I mentioned are already a very representative subset of what is looming ahead.

CEOS, while maintaining its characteristics of consensual decisions and voluntary contributions, has the opportunity to become a more and more powerful tool on the international scene, at the service of the space agencies that support it.

Contributions for future issues of the CEOS Newsletter from the CEOS Members and Associates, and subscriptions to the CEOS Newsletter, please contact : ceos-jpn@restec.or.jp **http://www.ceos.org/ (→Publications & Services)**

Meeting Calendar

As of August 2011

Activities	2011 July	August	September	October	November	December	2012 January	February	March
CEOS Plenary					▲8–9 **25th Plenary** ASI/Toscana, Italy				
CEOS SIT (Strategic Implementation Team)			▲13–14 **Technical Workshop** Washington DC, USA						27–28▲ **SIT-27** San Diego, USA
CEOS VCs Interface (Virtual Constellations)									
CEOS WGISS (Working Group on Information Systems & Services)				▲26–30 **WGISS-32** Budapest, Hungary					
CEOS WGCV (Working Group on Calibration and Validation)								▲6–9 **WGCV-34** Brisbane, Australia	
CEOS WGEdu (Working Group on Education, Training, and Capacity Building)			▲12 **WGEdu meeting** Maryland, USA						
CEOS WGClimate (Working Group on Climate)									
GEO related Activities (Group on Earth Observations)				▲18–20 **QA4EO Workshop** RAL, UK	▲16–17 **GEO-VIII Plenary** Istanbul, Turkey				
Others		▲25–29 **IGARSS 2011** Vancouver, Canada		▲24–28 **WCRP OSC** Denver, CO, USA ▲3–7 **CGMS-39** St.Petersburg, Russia ▲3–7 **IAC 2011** Cape Town, South Africa	▲3–4 **2011 G20 Cannes Summit** Cannes, France	▲11/28–12/9 **UNFCCC COP-17** Durban, South Africa			26–29▲ **Planet Under Pressure: new knowledge towards solutions** London, UK 14–22 July 2012→ **COSPAR 2012** Mysore, India

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

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