

2012 CEOS WORK PLAN 19 February 2012

INTRODUCTION

Since the establishment of GEO in 2005, CEOS Agencies have committed themselves to a leadership role in the development and operation of the space segment for the Global Earth Observation System of Systems (GEOSS). This commitment requires substantial results in order to demonstrate the collective potential of the satellite missions deployed by CEOS Agencies, when properly coordinated and exploited. The wide-ranging and complex nature of this effort requires the development of a yearly Work Plan.

The 2012 CEOS Work Plan has been developed by the CEOS Executive Officer and Deputy Executive Officer under the guidance of the CEOS Chair (ISRO), in consultation with the CEOS Strategic Implementation Team Chair (NASA), CEOS Secretariat, CEOS Working Groups, Virtual Constellations, the CEOS membership at large, and CEOS' external stakeholders. The intention of the document is to set the priorities and outline the activities of CEOS during the 2012 calendar year.

These activities will be carried out with several key objectives in mind:

- Support the requirements for observations related to a better understanding of climate processes, established by the Global Climate Observing System (GCOS), which is recognized as the climate observing component of the GEOSS;
- Report on a yearly basis to the United Nations Framework Convention on Climate Change (UNFCCC) about the response of the community of space agencies to the GCOS Implementation Plan and its Satellite Supplement. In particular, CEOS will continue reporting to the Subsidiary Body on Scientific and Technical Analysis (SBSTA) board, as confirmed in 2010 at the 16th Council of the Parties (COP-16);
- Liaise as appropriate with the Groups of 8 and 20 (G8 and G20) industrialized nations and develop appropriate plans to enhance the use of remotely-sensed Earth observations data and information; and,
- Support the deployment of the GEOSS space component, with a particular priority given to climate-related space-based observations and to the development of a reliable operational concept ("climate monitoring architecture"), but taking into account, as far as possible, the other Societal Benefit Areas (SBAs), and compatibility with available resources and commitments of member agencies.

CEOS leadership in developing the GEOSS space segment involves a considerable number of tasks supported by the full range of CEOS participants:

- the Chair and Strategic Implementation Team (SIT) Chair;
- the CEOS Secretariat
- the CEOS Troika
- the Working Groups (Calibration and Validation; Information Systems and Services; Climate; and Capacity Building and Data Democracy);

- the Virtual Constellations (Atmospheric Composition, Land Surface Imaging, Ocean Surface Topography, Ocean Surface Vector Wind, Ocean Color Radiometry, Precipitation, and Sea Surface Temperature);
- the CEOS-GEO Societal Benefit Area (SBA) Coordinators;
- the CEOS Systems Engineering Office;
- CEOS membership at large; and,
- the CEOS Leadership Support Team (the CEO and DCEO).

This document is intended to provide overall guidance for CEOS on expected outcomes for CEOS stakeholders in 2012. To be comprehensive, the Plan addresses all related initiatives by CEOS Agencies and subsidiary groups at a general level of understanding. Specific details of support to these outcomes will be maintained by the respective actionees (e.g., CEOS Members, Working Groups, Virtual Constellations, task teams, etc.), and reported as appropriate via updates to the on-line CEOS-GEO Actions Tracker (located at http://ceos-actions.com:8080/CEOS/ceos? dm_flow=user2& dm_event=actions).

SUMMARY OF EXPECTED OUTCOMES FOR 2012

The expected outcomes for 2012 reflect the ongoing and emerging priorities of CEOS. They are intended to enable the development of the GEOSS, with a particular focus on improved data access and availability at large. Many of these outcomes were referenced in the CEOS Lucca Statement, prepared at the 25th CEOS Plenary meeting.

1. Improved Coordination of Space Agency Activities Related to Climate

- 1.1. Completion of the CEOS Response to the *2010 GCOS Implementation Plan (IP)* and improvement, in quality and quantity, of the coordinated outputs for monitoring of Essential Climate Variables (ECVs).
- 1.2. CEOS input to the revision of the Systematic Observation Requirements for Satellite-Based Products for Climate (the “GCOS Satellite Supplement”).
- 1.3. Development of Fundamental Climate Data Records (FCDRs) and related data sets by the CEOS Working Group on Climate. Delivery of the results of the first ECV dataset survey.
- 1.4. Continued cooperation with GEO, GCOS, WMO, and CGMS in the development of a space-based system to support climate information and adaptation.
- 1.5. Further alignment of the Virtual Constellations objectives as building blocks of the space-based climate information strategy and as contributions to facilitating the observation of ECVs, as defined in the *2010 GCOS IP*.

2. Progress Towards Established CEOS-GEO Priorities

- 2.1. CEOS leadership within and support to the GEO Forest Carbon Tracking Task and the GEO Global Forest Observation Task and execution of the Global Forest Observations Initiative (GFOI) Implementation Plan, including the establishment of the Space Data Coordination Group (SDCG).

- 2.2. Continued development of the CEOS Strategy for Carbon Observations from Space by the Carbon Task Force.
 - 2.3. Advancement of CEOS Data Democracy activities within the reorganized CEOS Working Group on Capacity Building and Data Democracy (WGCBDD).
 - 2.4. Further alignment of the CEOS Virtual Constellation objectives, and their day-to-day activities to GEO 2012-2015 Work Plan Tasks.
 - 2.5. Continued support to the development and operationalization of the GEOSS Common Infrastructure (GCI) and its CEOS-related elements, including an increase in the number of remote sensing data sets within the GEO Data Collection of Open Resources for Everyone (GEO DataCORE).
 - 2.6. The development of a more integrated approach in the areas of disaster mitigation and disaster management, including continued and expanded support to the Geohazards Supersites initiative.
 - 2.7. Continued support to the Joint Experiments on Crop Assessment and Monitoring (JECAM) initiative.
 - 2.8. Continued CEOS leadership of, and support to, the Quality Assurance for Earth Observations (QA4EO) initiative.
- 3. Considering CEOS Support to Further Key GEO Priority Initiatives**
- 3.1. Exploratory dialogue on data requirements and CEOS Agency capacities to support the G20/GEO Global Agricultural Monitoring (GLAM) initiative.
 - 3.2. Continued dialogue on potential CEOS contributions to integrated water cycle products and services.
 - 3.3. Continued dialogue on potential CEOS contributions to the GEO Biodiversity Observation Network (GEO BON).
- 4. Continued and Enhanced CEOS Outreach to Key Stakeholders: GEO, COP, UNFCCC, SBSTA, G8/G20, and Others**
- 4.1. Engagement, attendance, and where appropriate, participation and presentations at key meetings.
 - 4.2. Maintenance to CEOS online services such as the CEOS website and Missions, Instruments and Measurements (MIM) database.
 - 4.3. Publication of the CEOS Newsletter.
 - 4.4. Delivery of CEOS inputs to, and a CEOS presence at the Rio+20 Summit, including the delivery of a print update of the CEOS Earth Observation Handbook.
- 5. Further review and, as appropriate, adoption of recommendations from the 2011 CEOS Self-Study**

DETAILS OF EXPECTED OUTCOMES FOR 2012

1. **Improved Coordination of Space Agency Activities Related to Climate**

1.1. **Completion of the CEOS Response to the 2010 GCOS Implementation Plan (IP) and improvement, in quality and quantity, of the coordinated outputs for monitoring of Essential Climate Variables (ECVs)**

The CEOS Response to the 2010 GCOS IP will be managed by the CEOS Climate SBA Coordinator, in consultation with the Chair and Vice Chair of the CEOS WG on Climate. The SBA Coordinator will take responsibility for ensuring a plan is put in place for development of a CEOS response which has broad consultation across the community and provides the basis for future planning and priority setting by space agencies in response to climate information needs.

1.2. **CEOS input to the revision of the Systematic Observation Requirements for Satellite-Based Products for Climate (the “GCOS Satellite Supplement”)**

In December 2011, GCOS completed an update to its supplement dedicated to satellite-derived information in support of its Implementation Plan. CEOS is an essential participant in continued updates to the Satellite Supplement. Led by the CEOS Climate SBA Coordinator, with the support of the WG Climate, CEOS will provide further updates as needed.

1.3. **Development of Fundamental Climate Data Records (FCDRs) and related data sets by the CEOS Working Group on Climate. Delivery of the results of the first ECV dataset survey.**

CEOS Agencies will continue to support the following major thrusts of WG Climate: analysis of CEOS contributions to the outputs for monitoring of Essential Climate Variables (ECVs) and identification of multi-agency teams for each ECV; completion of an agency survey of current ECV datasets; establishment of an overall comprehensive planning and review of the consequent actions; maintenance of a link to the Intergovernmental Panel on Climate Change (IPCC) modeling community to facilitate the inter-comparison of model outputs and data.

1.4. **Continued Cooperation with GEO, GCOS, WMO, and CGMS in the development of a space-based system to support climate information and adaptation**

CEOS will support the enhancement of and updates to Component 2 of GEO Task CL-01 (Climate Information for Adaption) as an umbrella framework for improved coordination of space agency activities related to climate. As part of this framework, CEOS will continue its cooperation with GEO, GCOS, WMO, and CGMS in the further definition and adoption of an “Architecture for Climate Monitoring from Space.”

1.5 **Further alignment of the Virtual Constellation objectives as building blocks of the space-based climate information Strategy and as contributions to the monitoring of ECVs, as defined in the 2010 GCOS IP**

Development of the GEOSS space component requires coordination of Earth observing systems and their data to deliver information which helps decision-makers detect,

monitor, and understand Earth system change. For this purpose, CEOS Agencies have taken a commitment to provide the building blocks of the GEOSS space component. Virtual Constellations (VCs) are, by their own definition, ideal candidates for such building blocks. The objective of developing a strategy for climate monitoring from space offers the first and important opportunity for the VCs' practical application. VC teams, working in close consultation with the WG Climate, should ensure that their individual objectives are well-aligned with the strategy for climate monitoring, and that Earth observation information in support of the GCOS ECVs is retrieved in a mutually-consistent and beneficial cross-domain manner.

2. Progress Towards Established CEOS-GEO Priorities

2.1 CEOS leadership within and support to the GEO Global Forest Observation Task and execution of the Global Forest Observations Initiative (GFOI) Implementation Plan, including the establishment of the Space Data Coordination Group (SDCG).

At the 2011 GEO Plenary, major progress in the Forest Carbon Tracking (FCT) task was noted, and participants adopted the GFOI Implementation Plan. Section 2.1 addresses the wide range of support to be provided to these activities in 2012.

2010-2011 GEO Forest Carbon Dataset and Results

The 2011 GEO Plenary confirmed that progress on Forest Carbon Tracking (FCT) research and development continues to be a top priority and is being promoted as an example of how GEO should move to end-to-end solutions for societal benefit.

CEOS is a key partner in the GEO FCT team working towards the development of 2010 and 2011 GEO Forest Carbon datasets, which will support forest change products for the National Demonstrator (ND) countries.

Several CEOS Agencies are playing key roles in the processing of the 2010 and 2011 satellite data and generation of derived forest and carbon products. Other CEOS entities, including the Land Surface Imaging Constellation (for optical data coordination and processing) and WGCV (for validation site activity definition and validation protocols), are making significant contributions.

2012 GEO Forest Carbon Data Acquisitions

CEOS will seek to demonstrate continued technical and organizational capacity to sustain the acquisition of wall-to-wall satellite data for forested regions. This activity will support the further development of a global, operational system, as called for by the 2011 GEO Plenary. The objectives include: repeat coverage of the 2010/2011 National Demonstrators (NDs); an increased focus on high resolution acquisitions over the Verification Sites; and expanded coverage for an increased number of participating NDs. Continued CEOS agency support to GEO in responding to these requirements is anticipated. This activity will be coordinated by the newly created CEOS Space Data Coordination Group (SDCG).

CEOS FCT/GFOI Data Strategy 2011-2015

As agreed at the 25th CEOS Plenary, CEOS is establishing the SDCG, formalizing ongoing coordination activities. Through this group, CEOS will determine and help implement the needed data acquisition activities to support a systematic, global and operational framework for FCT and GFOI. USGS, ESA, and NSC have agreed to serve as initial co-chairs for the group, CSA will host the first meeting in March, and a number of CEOS Agencies have agreed to participate. Terms of reference and a work plan will be developed and agreed, and the first major objective of the Group will be to develop the GFOI Global Data Acquisition Strategy for presentation to the 26th CEOS Plenary.

2.2 Continued development of the CEOS Strategy for Carbon Observations from Space by the Carbon Task Force

The CEOS Carbon Task Force (CTF) has provided CEOS Agency representation in the development of the GEO Carbon Strategy Report and the establishment of the GEO Carbon Community of Practice (CoP). One of the first actions of the CoP was to develop the GEO Carbon Strategy, which has the potential to become a significant and defining document for the GEO community. Starting in 2011, the CTF provided leadership in preparing the CEOS response to the Carbon Strategy in the form of the CEOS Implementation Plan for Carbon Observations from Space. The Implementation Plan will address the three domains -atmospheric, oceanic and terrestrial - and their interfaces. One of the key milestones for 2012 will be a workshop planned for the two days following the SIT-27 meeting, in order to share the current status of the Strategy with the CEOS community, and work on the next steps in its development. The full report is scheduled for completion in late 2012; but, due to resource constraints, delivery may be delayed until 2013.

2.3 Advancement of CEOS Data Democracy activities within a reorganized WG on Capacity Building and Data Democracy (WGCBDD)

The reorganized WGCBDD will convene its first meeting in 2012, and one of its first key objectives is expected to be further embedding Data Democracy into the structures and business of CEOS. This will include continued training and the free distribution of data and open source software. The WGCBDD will consult closely with regional specialized organizations on the best means to build capacity, and is expected to work closely with them in all matters of in-person and virtual training. Further extension of CEOS Agencies' Data Democracy activities in support of the GEOSS Common Infrastructure (GCI) will also be encouraged, in close coordination with the Working Group on Information Systems and Services (WGISS). Additionally, the CEOS Systems Engineering Office will conduct an inventory of existing CEOS Agency EO satellite missions, to assess and share information on their policies free, full, and open data access for scientific and educational purposes.

2.4 Further alignment of the CEOS Virtual Constellation objectives, and their day-to-day activities to 2012-2015 GEO Work Plan Tasks

Continued development of information products related to the established CEOS Constellations (Atmospheric Composition, Land Surface Imaging, Ocean Color Radiometry, Ocean Surface Topography, Ocean Surface Vector Wind, Precipitation, and

Sea Surface Temperature) is required, with increasing alignment between the efforts of the Constellations and the 2012-2015 GEO Work Plan. This activity requires continued development of connections among the Constellations, the GEO Secretariat, and other CEOS elements, including the CEOS Working Groups and SBA Teams. The SIT Chair will oversee the Virtual Constellations' further development and provide appropriate advice and guidance. CEOS may also consider the creation of new Virtual Constellations in 2012.

2.5 Support to the development and operationalization of the GEOSS Common Infrastructure (GCI) and the GEOSS elements

CEOS Agencies, through WGISS, will improve discovery of and access to satellite data. WGISS will foster the implementation and enhancement of the GEOSS Common Infrastructure (GCI) through continued development and coordination of tools that improve discovery, interoperability, and access to satellite data such as the CEOS WGISS Integrated Catalogue (CWIC), the International Directory Network (IDN), and the Heterogeneous Missions Accessibility (HMA) protocol-based system. WGISS will facilitate the access to satellite data by creating portals sponsored by CEOS Agencies, the SBAs, and Virtual Constellations by enabling access by the portals to the WGISS developed tools. CEOS Agencies will also support this activity with the necessary tools and interfaces to provide an easy discovery and easy access to their datasets.

2.6 Continued development of a more integrated approach in the areas of disaster mitigation and disaster management

CEOS Agencies are involved in a variety of activities related to disaster risk management. The most important one is the participation of many of them in the International Charter for Space and Major disasters. CEOS has facilitated the development of flood pilot projects in the Caribbean and Namibia to extend the application of satellite Earth Observation data from response to mitigation, warning and recovery. A volcanic ash project is also on going to create a more reliable warning tool. In order to meet the GEO strategic targets, CEOS Agencies will also work to develop a more integrated approach in the areas of disaster mitigation and disaster management, starting with the assessment of the role that CEOS Agencies can play in the complete Disaster Risk Management Cycle, in response to requirements from operational stakeholders. CEOS Agencies. This approach can be demonstrated and possibly first implemented on regional scales.

The Geohazards Supersites Initiative aims to better understand the geophysical processes causing geohazards (earthquakes and volcanoes initially). The effort is led by a global partnership of scientists, satellite and *in situ* data providers (multi-sensor InSAR, seismic, GPS, etc.) and complete data sets intended to be used in support of national authorities. In 2011, CEOS Agencies began a more coordinated effort to review and respond to data requests. Multi-source SAR data has benefitted research at various sites worldwide. Interest in additional sites and demand for related data are very high, and need to be developed in a systematic way so as to not overwhelm CEOS Agency resources, or run counter to prevailing Agency and commercial data policies. CEOS will work with GEO to better define the Supersites initiative, including developing a roadmap with deliverables and goals, as it pertains to remote sensing data requests, and formalize and prioritize data acquisitions.

2.7 Continued support to the Joint Experiments on Crop Assessment and Monitoring (JECAM) Initiative

JECAM was initiated in 2009 by the GEO Agriculture Monitoring Community of Practice (CoP) to enhance international collaboration around agricultural monitoring, and address issues associated with the use of Earth observations for food security, crop production projections, and weather forecasting worldwide. In 2011, CEOS initiated efforts to supply JECAM users with relevant remote sensing data through a coordinated EO data acquisition program of CEOS Agencies and commercial data providers. Data collection for Southern Hemisphere sites began in late 2011, and initial feedback from the JECAM community has been very favorable. CEOS will continue support of this initiative for a three-year period and across a wider range of JECAM sites beginning in 2012.

2.8 Continued CEOS leadership of, and support to, the GEO initiative on Quality Assurance for Earth Observations

The CEOS WG on Calibration and Validation (WGCV) is actively involved in GEO-sponsored efforts to implement a framework on Quality Assurance for Earth Observations (QA4EO). In October 2011, a QA4EO workshop was conducted which identified numerous areas of further consultation and coordination among CEOS and its user community. The data reviewed Quality Assurance (QA) examples across a wide variety of GEO SBAs and their relationship to the QA4EO framework. Meeting participants agreed to promote QA activities across their user communities. GEO agreed and identified GEO 2012-2015 Task IN-02, which will serve as QA4EO Implementation Pilots (QIPs). And CEOS agreed to implement a QA4EO focus within CEOS Working Groups. For 2012, WGCV will continue to consult internally with other CEOS entities and externally with GEO to better define and support the next steps in QA4EO implementation, including support to CEOS FCT/GFOI activities.

2.9 Continued CEOS support to other Tasks and Components of the 2012-2015 GEO Work Plan

For the new GEO 2012-2015 Work Plan, CEOS Agencies will support a wide range of Tasks and Components. CEOS representatives will participate in the GEO management structure and the GEO Data Sharing Working Group, to ensure progress and close alignment of CEOS and GEO priorities and objectives. CEOS representatives will also participate in GEO's Post-2015 Working Group to chart GEO's future development, and the role that CEOS may play in supporting GEO.

3. Considering CEOS Support to Further GEO Priority Initiatives

3.1 Exploratory dialogue on data requirements and CEOS Agency capacities to support the G20/GEO Global Agricultural Monitoring (GLAM) initiative

The GEO-GLAM initiative was endorsed by the G20 Heads of State in September 2011. GEO-GLAM intends to enhance national agricultural reporting systems, establish a sustained international network for research/monitoring, and create an operational global agricultural production monitoring system of systems from satellite and *in situ* observations. GEO-GLAM seeks the international coordination of space agencies in the design and implementation of a satellite observing system covering agricultural production monitoring needs, and ensuring its long-term operation. CEOS will continue

its exploratory dialogue with the GEO Agriculture Community of Practice (CoP) on GEO-GLAM data requirements, to determine whether and how CEOS Agencies could respond in a collective fashion. A decision on coordinated CEOS support to GEO-GLAM will be sought at the 2012 CEOS Plenary.

3.2 Continued dialogue on potential CEOS contributions to integrated water cycle products and services

GEO has identified the improvement of water-resource management through a better understanding of the water cycle as priority, and an area where CEOS can make significant contributions to the development of the GEOSS. The GEO Water CoP seeks to consult with CEOS Agencies to identify information products and services for remotely-sensed water cycle observations, especially drought monitoring. This process will include developing a strategic-level GEO Report to which CEOS will be asked to contribute. CEOS will also provide a representative to serve on the advisory board of the strategic-level Report. CEOS will engage with GEO to identify specific ways in which CEOS can support improved water cycle products and services, including the Water Cycle Integrator (WCI), and through data portals and satellite data provision, validation, and capacity development for regional initiatives in Africa and Latin America.

3.3 Continued dialogue on potential CEOS contributions to the GEO Biodiversity Observation Network

In 2011, CEOS representatives participated in discussions with the GEO Biodiversity Observation Network (GEO BON) to assess observations capabilities in support of the 2020 targets for the UN Convention on Biodiversity (CBD). GEO BON and CBD representatives seek more coordinated CEOS support for data provision to address CBD-related Essential Biodiversity Variables (EBVs). CEOS representatives will participate in ongoing data provider/user community consultations on this topic, to assess the potential level of CEOS support and make appropriate recommendations to CEOS leadership. CEOS Agencies also intend to organize a remote sensing and biodiversity experts workshop, to discuss shortcomings and potentials of remotely sensed information for biodiversity analysis and consider joint demonstration projects.

4. Continued and Enhanced CEOS Outreach to Key Stakeholders: GEO, COP, UNFCCC, SBSTA, G8/G20, and Others

4.1 Engagement, attendance, and where appropriate, participation and presentations at key meetings

As a part of the development of CEOS deliverables, increased and improved connections between CEOS and its stakeholders are desired. Expanded linkages will be sought through CEOS leadership and the national delegations of CEOS Agencies, to inform ministers of CEOS efforts and enlist appropriate G20/G8 support for enhanced Earth observation coordination. Key 2012 meetings identified for CEOS liaison include the UN Conference on Sustainable Development (“Rio+20”) in June, and the UN Framework Convention on Climate Change 18th Council of the Parties (COP-18) in December.

4.2 Maintenance to CEOS online services such as the CEOS website and Missions, Instruments and Measurements (MIM) database

The CEOS Missions, Instruments and Measurements (MIM) database is the only official consolidated statement of CEOS Agency programs and plans. The SEO has developed a number of analysis and visualization tools as the basis for application of this information in support of adequacy analyses. Together, these resources represent the cornerstone of CEOS capability to undertake informed coordination decisions. The continued development of these resources is planned for 2012, with a particular focus on engaging them for ECV development and observational gap analyses.

4.3 Publication of the CEOS Newsletter

CEOS will continue the publication of this valuable, long-standing communication tool. It will be issued twice per year.

4.4 Delivery of CEOS inputs to, and a CEOS presence at the Rio+20 Summit, including the delivery of a print update of the CEOS Earth Observation Handbook

CEOS will plan for inputs to, and CEOS representation at the Rio+20 Summit, including distribution of updated print edition of the CEOS Earth Observation Handbook. CEOS, in consultation with GEO, will set up an informal coordination group for CEOS- and GEO-related Rio+20 activities. CEOS will also coordinate with GCOS for a coordinated CEOS-GEO-GCOS presence.

5. Further review and, as appropriate, adoption of recommendations from the 2011 CEOS Self-Study

The CEOS Self-Study (CSS), conducted by the NASA SIT Chair Team in close consultation with the CEOS community, was intended to facilitate the work of CEOS as it tackles the challenges and opportunities ahead in providing coordination of civilian space-borne observations of Earth. The Study identified CEOS's past successes, strengths, opportunities, and areas of challenge. Its strategic goal was to inform CEOS as it goes forward, through an analysis of lessons learned, input from CEOS members, and assessment of current CEOS structure, achievements and challenges, and to provide recommendations for potential changes and potential new initiatives for the next 3-5 years. Five themes dominated the results of the CSS: CEOS objectives and achievements; decision-making, initiatives, and follow-through; CEOS structure, governance, and documentation; CEOS member/associate participation; and, meeting structure, objectives, and conduct. In 2012, CEOS will review the CSS's associated recommendations and decide upon their implementation.

RESOURCES AND RESPONSIBILITIES

	SIT Chair	VCs	Troika	SBA Coords.	CEOS SEC	CEO	Chair	WGs	SEO	Lead Responsibility
1. IMPROVED COORDINATION OF SPACE AGENCY ACTIVITIES RELATED TO CLIMATE										
Completion of CEOS Response to GCOS IP				✓		✓	✓	✓	✓	Climate SBA Coordinator
CEOS Input to GCOS Satellite Supplement				✓		✓	✓			Climate SBA Coordinator
WGClimate Activities		✓						✓		WGClimate
Architecture for Climate Monitoring from Space		✓		✓		✓		✓	✓	WGClimate
Use of VCs for Space-Based Climate Architecture and ECV development	✓	✓		✓		✓	✓	✓	✓	SIT Chair
2. PROGRESS TOWARD ESTABLISHED CEOS-GEO PRIORITIES										
CEOS Leadership/Support for FCT and GFOI	✓	✓			✓	✓	✓		✓	CEOS Space Data Coordination Group
CEOS Strategy for Carbon Observations from Space	✓				✓		✓			Carbon Task Force
Advancement of Data Democracy and WGCBD Work Plan	✓			✓	✓	✓	✓		✓	WGCBD
Furthering VC Contributions to GEO Work Plan	✓	✓				✓	✓		✓	SIT Chair
GCI Development and Operationalization	✓							✓	✓	WGISS
Integrated disaster management approach	✓			✓				✓	✓	Disaster SBA Coordinator
Continued Support to JECAM	✓	✓		✓						Agriculture SBA Coordinator
Continued Leadership of and Support to QA4EO	✓	✓		✓				✓		WGCV
Support to Other GEO WP Tasks/Components	✓					✓				All CEOS GEO Action POCs
3. CONSIDERATION OF CEOS SUPPORT TO OTHER GEO PRIORITY INITIATIVES										
Exploratory Dialogue on GEO-GLAM Initiative	✓	✓		✓		✓	✓		✓	Agriculture SBA Coordinator
Continued Dialogue on Water Cycle Products and Services	✓	✓		✓			✓		✓	Water SBA coordinator
Continued Dialogue on GEO BON	✓	✓		✓		✓	✓		✓	Biodiversity SBA Coordinator
4. OUTREACH										
Attendance at/Liaison to Key Stakeholders' Meetings	✓	✓	✓	✓	✓	✓	✓	✓	✓	CEOS Chair
Maintenance of CEOS online Services						✓	✓		✓	SEO, ESA
CEOS Newsletter					✓					JAXA
Rio+20 Summit Planning						✓	✓		✓	CEOS Chair
5. CEOS SELF-STUDY										
Review and Respond to CSS Recommendations	✓	✓	✓	✓	✓	✓	✓	✓	✓	SIT Chair
6. ADMINISTRATIVE										
2012 CEOS Work Plan Management						✓	✓			CEOS Chair
2012 CEOS Implementation Plan Update	✓					✓				SIT Chair
CEOS Actions Updates/Reporting	✓	✓	✓	✓	✓	✓	✓	✓	✓	CEO/DCEO