



CEOS Self-Study

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CEOS Self-Study



Objectives:

- To identify and evaluate CEOS successes and strengths in achieving real coordination in space-based Earth observations for societal benefit.
- To identify CEOS challenges and areas needing improvement
- To identify potential new CEOS initiatives for the next 5-7 years.

CSS Structure and Scope:



- **Steering Committee**
- **Three Study Teams**
 - ✓ *Executive Functions*
 - ✓ *Working Groups and SBAs*
 - ✓ *Constellations*
- **Review of existing CEOS documents, & products**
- **Engagement with past & present CEOS Leadership**
- **Broad canvassing of CEOS community**
- **Timeline ~ 8 months**
- **Products**
 - ✓ *Study Team reports*
 - ✓ *Synthesis Report*
 - ✓ *Bibliography*

Steering Committee Members:



- Pakorn Apaphant
- Stefano Bruzzi
- Simonetta Cheli
- Julio Dalge
- Yukio Haruyama
- Brian Killough
- Kerry Sawyer
- Guy Seguin
- Brent Smith
- Tim Stryker
- Patricia Jacobberger-Jellison (Chair)

Study Team Leads:



- Ivan Petiteville – *Study Team for Executive Functions*
- Martha Maiden – *Study Team for Working Groups and SBAs*
- Stephen Ward – *Study Team for Constellations*

CEOS Self Study Approach:



- Use framework of overarching evaluation questions
- Use information from CEOS's existing body of work
 - *CEOS Implementation Plan, Work Plans, Terms of Reference*
 - *CEOS Earth Observations Handbooks*
 - *CEOS Constellations for GEO Process Paper etc.*
 - *CEOS Response to the GCOS Implementation Plan*
 - *Technical and Scientific Reports, Action Lists, and Guidelines documents*
 - *Newsletters and other CEOS documents, reports, and products*
- Add broad canvassing of CEOS community (individuals and groups)
- Solicit input and perspective from past CEOS leadership
- Look inward and outward
- Extract overarching themes, gaps, and crosscutting issues
- Twice-monthly telecons help to keep work coordinated
- Report will include recommendations for CEOS consideration

The Big Questions:



- Does CEOS have clearly-defined **goals and objectives** that are aligned with its mission?
- Are **CEOS's objectives commensurate with the available resources** (human, physical, fiscal, and informational)?
- How does CEOS **measure and document progress** toward goals?
- What are CEOS's **most important successes** to date?
- What are the most important **opportunities for improvement** in CEOS over the next 3-5 years?
- What are the most important **new initiatives** for CEOS to set for the next 3-5 years?
- Are there activities that should be **ceased**?
- What **other points or issues** would it be beneficial for the CEOS Self-Study to address?

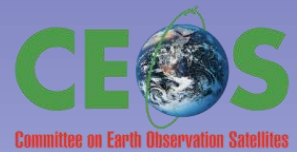
Schedule:



- February 2011: Study proposed to SIT
- February 2011: Concept presented at CEOS Actions Meeting
- March-April 2011: Organization
- May 2011: Steering Committee and Study Team Leads convened
- May – August 2011: Conduct work & draft Study Team reports
- September 2011 – Preliminary findings
- September – October 2011: Analysis and preparation of overall draft report
- November 2011: Presentation of findings at CEOS Plenary

CSS Current Status

(14 September 2011)



- Twice-monthly working telecons since May
- Study Team reports due 16 September (two already in hand)
- Interviews with past CEOS Leaders are in progress
- Extended outline has been developed
- Writing assignments are in progress
- Preliminary findings are in hand



Preliminary Findings

CEOS Self-Study:

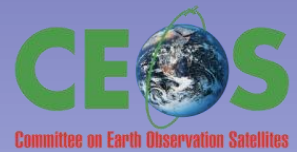
Study Team on Executive Functions

Preliminary Findings

Ivan Petiteville

V0.1, Sep. 2011

CSS Executive Functions: Background



- 18 team members:
 - involved in executive functions in CEOS, in the last 5 to 7 years or ...
 - will occupy those functions in the coming years
 - Roles: CEOS Chair, CEOS SIT Chair, CEOS SEC, CEOS Principals, Working Group Chairs or CEO.
- Procedure:
 - Questionnaire with 28 questions reviewed by CEOS;
 - Distributed mid-June;
 - 9 team members responded. Good brainstorming.
 - Draft report sent to Team Members on Sep. 2
 - Final team report forwarded to CSS Steering Committee on **September 8, 2011**

C. Blackerby	NASA
S. Briggs	ESA
S. Bruzzi	ASI
G. Camara	INPE
S. Cheli	ESA
JL. Fellous	ESA
M. Freilich	NASA
R. Gibson	ESA
P. Lecomte	ESA
O. Ochiai	JAXA
I. Petiteville	ESA
J. Rajeev	ISRO
K. Schmidt	DLR
B. Smith	NOAA
P. Ultré-Guérard	CNES
S. Ward	ASI

Executive Functions: Main Findings

(1/2)



- Different opinions on:
 - Respective roles of CEOS Chair team vs SIT Chair team
 - Distinct responsibilities, term duration, ..
 - Objectives of both Plenary and SIT meetings
 - Remove overlap; agenda should attract agencies top management
 - Procedure for selecting future activities to be supported by CEOS
 - Resources not infinite
 - Whether CEOS should focus on GEO only or not; links with other organizations ?
 - E.g. reinforce link to science
 - How to foster presence and active role of all Members & Associates
 - probation period for new candidate members; greater involvement in WGs, VCs, ..
 - Position of CEOS wrt other major global initiatives promoted by other instances like the G8, G20, etc
 - CEOS permanent resources:
 - Opportunity to reinforce the CEO /DCEO team with a ... CEOS Secretariat

Executive Functions: Main Findings

(2/2)



- Agreement (or almost):

- Voluntary contribution to be continued
- Activities to be undertaken only if resources availability is guaranteed
- Multi-year Strategic Plan is needed.
- Need to get clear detailed user requirements before engaging CEOS
- Continue to support the climate change-related initiatives
- VCs activities to be refocused to better support CEOS major activities
- Review role of CEOS SBA teams
- Role of CEO / DCEO to be defined with ToRs
- Current CEOS SEC membership is OK
- Criteria for new CEOS members are OK
- Work Plan is OK but CEOS SEC telecons to focus only on major issues.
- Improve CEOS communication

CEOS Self-Study:



Study Team on Working Groups and SBAs

Preliminary Findings

Martha Maiden

CSS WGs and SBAs: *Background*

- Established small WGs and SBAs Self Study Team:
 - Changyong Cao/NOAA – WGCV, former Chair WGCV
 - Osamu Ochai/JAXA – Water SBA
 - Muriel Lafaye/CNES – Health SBA
 - Terence Van Zyl/CSIR – WGISS Technology Subgroup Chair
 - Pascal Lacomte/ESA – WGClimat (new), former Chair WGCV
- Created draft questionnaire using SC suggestions and circulated to SC and Study Team for comment, finalized questionnaire.
- Questionnaire sent to 38 CEOS community members.
- As of Sept 9, 18 questionnaires received. WGISS sent a coordinated questionnaire, in reply of 5 WGISS community members sent questionnaires. Follow up questions were sent to the SBA Coordinators, based on initial received questionnaires and preliminary analysis. Three more interview interviews planned.
- Circulated Preliminary Findings and materials to SS Team Sept 9.

CSS WGs and SBAs: *Preliminary Findings*

- CEOS could be more customer-driven with a better strategic focus to work on priority, substantive activities.
 - GEO poses a genuine demand on CEOS to be its satellite arm, yet GEO can quickly overwhelm with lists of tasks.
 - SIT used to be a forum for CEOS to meet with multiple international scientific organizations as customers, but all, including GCOS, have moved into GEO.
 - Best efforts, voluntary basis of CEOS not conducive to concerted efforts.
 - Working Groups and SBAs want to be empowered. SIT meetings/process not configured to provide strategic prioritization and feedback to WGs and SBAs.

Note: Preliminary Finding from perusing Questionnaire replies and Interviews. Study Team has not commented.

CSS WGs and SBAs:

Preliminary Findings Working Groups

- WGISS and WGCV have changed from bottoms-up R&D arrangements to contributing to CEOS satellite arm of GEOSS; however, integrally contributing activities are still formulated largely by the WGs with much autonomy. WGs respond to Tasks and Actions assigned from SIT/CEO.
- WGCV and WGISS have history of joint meetings and coordination of many years. As organization of CEOS has grown, WGs have reached out to VCs and SBAs where perceived value can be added.
- WG Chairs have received WGs' 5 Year Work Plans, updated for currency.
 - CEOS should review and provide feedback

Note: Preliminary Finding from perusing Questionnaire replies and Interviews. Study Team has not commented

CSS WGs and SBAs:

Preliminary Findings SBAs

- Voluntary basis of participation in SBAs is not well- or evenly-staffed by CEOS agencies. Some SBA coordinators are quite new.
- SBAs' activities found to be not well understood internally to CEOS, and it is difficult to find information about them. Perceived as a group by many as inactive. An exception mentioned often was the Climate SBA.

Finding: CEOS Website documentation minimal, except for Disasters SBA listing under "Special Teams" (along with Carbon Task Force). Disasters SBA very well populated. Other Coordinators expressed wish to have CEOS SBA progress documents on line through CEOS website.

Draft Recommendation: SBA Coordinators should work with the SEO to get better real estate on the CEOS website and provide ongoing details of their SBA activities.

- SBA Coordinators and teams serve variously as link between GEO and CEOS for GEO SBA Tasks, coordinating with the GEO Secretariat's SBA Leads and working with SBAs' "Communities of Practice".

Note: Preliminary Finding from perusing Questionnaire replies and Interviews. Study Team has not commented.

CEOS Self-Study:

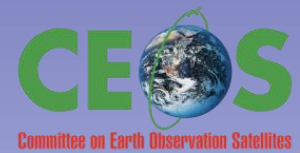
Study Team on The Virtual Constellations

Preliminary Findings

Stephen Ward, ASI CEOS Chair Team

V1, Sep. 2011

CSS Constellations: Background



- **Procedure:**

- Interviews with all VC teams (at least 1 lead each): Jun-Aug
- Draft Report v0-1: Jul-Sep
- Extensive review by VC teams, CEOS & beyond: Sep
- Selected reviewer interviews: Sep
- Final Report: early Oct

- **Review team:**

- CEOS: S Briggs, C Ishida, G Camara, C Varotto, R Gibson, VC Leads, WGClimate
- PLUS: J Achache (GEO), C Richter (GCOS), G Asrar (WCRP), B Ryan (WMO), J-L Fellous (COSPAR)

Constellations: Main Findings (1/2)



- Effective and recognised coordination mechanism
- Recognition that full potential remains to be realised
 - ‘Sharp end’ of coordination should be emphasised: data products and ECVs
 - WGClimate ECV coordination has need for such VC support
 - SST-VC willing to serve as pilot in 2012 with WGClimate
- 4 of 7 VCs cover ocean observations
 - New proposals should reflect CEOS priorities
 - Climate Architecture framework might assist with priority setting
- Constellations powered by goodwill and personal commitment
 - More than goodwill needed for implementation role
 - Membership would need to expand to reflect expertise requirements
- Not all key data providers are engaged in Constellations
 - This should be tackled directly for Constellations to be effective
 - Emerging data supplier agencies/countries should be inducted to contribute

Constellations: Main Findings (2/2)



- Constellations are varied – reflecting diversity of real world coordination challenges for the GEOSS space segment
 - VC leads strongly resistive of any unnecessary ‘one size’ template
- Constellations need to be empowered
 - SIT meetings/process not configured to identify and act upon implementation recommendations from the VCs
 - VC Report will address this as a priority
 - And suggest VCs represented on CEOS SEC more directly
- VC Leads have reported their plans & outputs for next 3 years
 - CEOS should review and feedback

CEOS Self-Study:



Past Leadership Interviews

Preliminary Findings / Common Themes

Patricia Jacobberger-Jellison

Interviews of CEOS Past Leaders

Two different leadership groups were interviewed:



Recent CEOS Leaders (post 2005)

Briggs, Stephen (ESA)
Camara, Gilberto (INPE)
Dowreang, Darasri (GISTDA)
Homma, Masanori (JAXA)
Horikawa, Yasushi (JAXA)
Kicza, Mary (NOAA)
Liebig, Volker (ESA)
Maruping, Pontsho (CSIR)
Ryan, Barbara (then USGS, now WMO)
Varotto, Conrado (CONAE)

Early CEOS Leaders (pre 2005)

Ishida, Chu (JAXA)
Shaffer, Lisa (NASA)
Duchossois, Guy (ESA)
Hicks, Colin (BNSC)
Withee, Greg (NOAA & USGS)
Furuhama, Yoji (JAXA)
Mohr, Tillmann (EUMETSAT)
Fellous, Jean-Louis (CNES/ESA)
Brachet, Gerard (CNES)
Embleton, Brian (CSIRO)
Katsurirangan, Krishnaswami (ISRO)



Interviews of CEOS Past Leaders

- Questions were tailored for each group: pre-2005 and post-2005
- Background material and questions were provided to each interviewee ahead of their interview
- Interviews were conducted in person, by telephone, and/or by email
- Each interview was led by a Steering Committee member
- Interviews with post-2005 CEOS Leaders are nearing completion
- Interviews with CEOS Leaders from early years are ongoing

Questions Posed to Early Leaders before 2005

(1/2)



- Question 1: What was the perception of CEOS objectives at the time you were involved? Were these objectives formally stated?
- Question 2: Can you make any statements about the achievement of these objectives and the way the achievement was assessed?
- Question 3: CEOS membership has changed through the years, and CEOS now includes more structural components and activities than before. Have you followed the evolution of CEOS in the last ten years? If yes, how would you express the difference with respect to earlier periods?
- Question 4: In the course of its evolution, CEOS has become a recognized contributor, on behalf of the space agencies, to international endeavors like GEO, GCOS, UNFCCC and more. Based on your experience, would you recommend this outward trend be expanded, or do you recommend that CEOS be primarily an instrument of dialogue among space agencies on Earth Observation technical matters?

Questions Posed to Early Leaders before 2005

(2/2)



- Question 5: Based upon your experience, how do you see the relation between CEOS and other coordination mechanisms, for example, CGMS or IOCCG?
- Question 6: What do you see as CEOS's most important successes and/or accomplishments over the course of its history?
- Question 7: Recently, most of the contributions of CEOS agencies to international initiatives are linked to issues related to climate and environment. Do you see other key themes on which to focus our attention?
- Question 8: Are there any other points or issues you would like the Self-Study team to address or consider?

Questions Posed to Recent Leaders

2005 to present

(1/2)



- Question 1: Does CEOS have clearly-defined objectives and do you believe these objectives have been met in the past or are being met now ?
- Question 2: Are CEOS's objectives consistent with the available resources (human, physical, fiscal, and informational) ?
- Question 3: How did CEOS measure and document its progress toward goals in the past and do you view the current process as effective ?
- Question 4: What do you see as CEOS's most important successes and/or accomplishments over the course of its history to date ?
- Question 5: What are the most important new initiatives for CEOS to set for the next 3-5 years ?

Questions Posed to Recent Leaders 2005 to present (2/2)



- Question 6: What are the most important opportunities for CEOS to improve its structure, scope, number of activities, or any other factors over the next 3-5 years ?
- Question 7: Are there any activities CEOS is currently undertaking that no longer provide value to the organization and should thus be ceased ?
- Question 8: What other points or issues would you suggest the Self-Study team address or consider ?

The next set of slides presents some common themes from post-2005 CEOS Leader interviews.

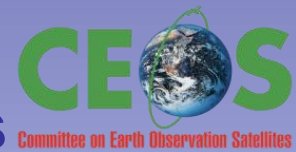
Preliminary Findings from Questions Posed to Recent Leaders (2005 to present)



Question 1: Does CEOS have clearly-defined objectives and do you believe these objectives have been met in the past or are being met now ?

- General agreement that objectives have evolved substantially
- Objectives “clearly defined but not always met”
- Originally focused on technical matters and inward-facing coordination
- Now more externally-focused
- GCOS and GEO have been excellent “forcing functions” that helped CEOS focus
- Multiple comments that CEOS must set both short- and long-term objectives and be flexible and adaptive to changes in external conditions

Preliminary Findings from Questions Posed to Recent Leaders (2005 to present)



Question 2: Are CEOS's objectives consistent with the available resources (human, physical, fiscal, and informational) ?

- Diversity of opinions
 - Many respondents emphasized importance of matching objectives to resources
 - *“The current voluntary contribution by its member Agencies is the only valid mode of operation for CEOS”*
 - *“We get as much out as we put in”*
 - *“Use existing resources in the most effective way”*
 - Some respondents felt that CEOS should work for endorsement of financing Earth Observation Satellite programs

Preliminary Findings from Questions Posed to Recent Leaders (2005 to present)



Question 3: How did CEOS measure and document its progress toward goals in the past and do you view the current process as effective?

- Consensus: there has been measurable progress on specific goals
 - Progress has been documented at annual meetings
 - Progress highly dependent upon strength of leadership at all levels
 - GCOS process was very helpful, benefit was derived from having a clear set of needs
 - WGs and VCs have work plans
 - Progress documented; but was it sufficiently visible to decisionmakers?

Preliminary Findings from Questions Posed to Recent Leaders (2005 to present)



Question 4: What do you see as CEOS's most important successes and/or accomplishments over the course of its history to date ?

- Creation of SIT
- CEOS response to GCOS
- CEOS role in creation of GEO
- CEOS responses to GEO / GEOSS
- Technical coordination: Working Groups and Constellations
- CEOS Assets: MIM, EO Handbook, IDN
- Forest Carbon Tracking, Data Democracy
- Less outwardly visible but very important: benefits of numerous side meetings and bilaterals in association with CEOS SEC, SIT, Plenary meetings.

Preliminary Findings from Questions Posed to Recent Leaders (2005 to present)



Question 5: What are the most important new initiatives for CEOS to set for the next 3-5 years ?

- Consider a focus on hazards – “CEOS could support hazards / disasters much more effectively than it currently does”
- Continue what has been started (e.g. data policy, data democracy) and meet the commitments that have already been made
- Figure out how to delegate more to WGs and VCs
- *“Most important is not to select new activities but to decide on the means by which we select them”*

Preliminary Findings from Questions Posed to Recent Leaders (2005 to present)



Question 6: What are the most important opportunities for CEOS to improve its structure, scope, number of activities, or any other factors over the next 3-5 years ?

- Increase adaptability to changing national/international situations
- Be ready for Rio +20 – do not wait
- Revamp / redefine Plenary for “less reporting, more discussion”
- Figure out how to deal with requirements in a structured way
- Be more structured, more disciplined in responding to opportunities
- Be responsive to external stakeholders but not to the detriment of coordination among space agencies
- Make better use of existing tools (WGs, VCs)

Preliminary Findings from Questions Posed to Recent Leaders (2005 to present)



Question 7: Are there any activities CEOS is currently undertaking that no longer provide value to the organization and should thus be ceased ?

- Consider whether SBAs should be evaluated
- Better redefine what needs to be addressed at both SIT and CEOS meetings to have complementary events and to avoid repetition.
- Do not continue along the path of being only “the space arm of GEO”

Preliminary Findings from Questions Posed to Recent Leaders (2005 to present)



Question 8: What other points or issues would you suggest the Self-Study team address or consider ?

- CEOS needs to agree on mid / long-term strategies and derive a list of short-term activities from those mid / long-term strategies
- CEOS support to activities related to hazards (natural and non-natural) should be further investigated
- Data democracy
 - need institutional capacity building in developing nations
 - What does CEOS do if one of the agencies doesn't agree with the direction?
- CEOS has not done much on the Arctic; this should be considered
- How to stay more connected to geopolitical groups (e.g.G8/G20)
- What other external stakeholders should CEOS engage?
- How do we balance needs with the amount of giving being asked of major agencies (especially with regard to SAR data)



What is next?

Next Steps:



- 14 September – Preliminary findings presented
- 16 September – Study Team draft reports due; interviews complete
- 30 September – Compilation of inputs from past CEOS leaders is completed
- 07 October – Steering Committee's draft synthesis report due
- 14 October – Complete draft report circulates to Steering Committee for comment and revision
- 08 November – Presentation of findings & recommendations at CEOS Plenary
- 18 November – Final written report is delivered
- 19 November – The next phase begins.





Questions?