Prioritizing GEO/CEOS Tasks/Resources for the Working Groups

issue 0.1

Ivan Petiteville, CEOS CEO

INTRODUCTION

CEOS Support in 2007

- In 2007, CEOS has been engaged in a large number of GEO Tasks, as part of the GEO 2007-2009 Work Plan adopted after GEO-III Plenary (Nov. 2006).

- CEOS contribution to GEO Work Plan Tasks is performed through voluntary involvement of:
  - CEOS Members
  - Working Groups WGCV, WGISS and WGEdu
  - CEOS Chair and SIT Chair.

- CEOS Support described in CEOS Implementation Plan V1.
  - ***Lack of information regarding CEOS Agencies involved***
  - ***No official commitment of CEOS Members to provide resources***

CEOS Support in 2007: *CEOS Role*

- Amongst the various GEOS Tasks wherein CEOS participation has been identified, the CEOS member (or WG) role goes from "Contributing Organization", through to "co-Lead" or "Lead" and "Point of contact".

- Reporting: Information on Task progress is gathered by the Lead and Point of contact for each Task and summarized in "Task sheets" released every four months.

- Detailed information on progress in GEO Tasks is available on the GEO ftp site* which provides the most recent update (as of January 2008)

* ***ftp://ftp.wmo.int/Projects/GEO/TaskSheets/***

CEOS WGs contributions to GEO Tasks in 2007

- **WGCV leads or co-leads...**
  - **CL-06-02** and **DA-06-02**

… and is involved in

  - AG-06-03 & 04, BI-06-05, CL-06-01, 03 & 05, DA-06-04 & 09, DI-06-01 & 05, EC-06-01, 02, 03 & 07, WA-06-04, and WE-06-01

- **WGISS is involved in ..**
  - AG-06-04, AR-07-01 & 02, CL-06-02 & 05, DA-06-01, 04 & 09, DA-07-03, 04 & 06, DI-06-09, EC-07-01, WA-06-05 & 07, WA-07 & 02, and SIF
  - **has contributed about 1/3 of the 50 GEOSS core components registered**

CEOS Support in 2007: *Overall Assessment (1/3)*

- Actions where CEOS is **Lead and Point of contact** generally show good progress …
  - under CSA's leadership in advancing **DI-06-09** (***Use of Satellites for Risk Management)***
  - in **CL-06-01** ***(Sustained Reprocessing and Reanalysis Efforts)*** and **CL-06-02** ***(Key Climate Data from Satellite Systems – Response to GCOS requirements)***
  - in **DA-06-02** ***(GEOSS Quality Assurance Strategy).***
  - in **DA-07-03** ***(Virtual Constellations).***

- … and some impediments
  - No progress **reported** for **DA-07-02** ***(Global Land Cover),*** nor for **DI-06-09** ***(Use of Satellites for Risk Management)***

  - **More CEOS agencies should be involved.**

CEOS Support in 2007: *Overall Assessment (2/3)*

- The situation is diverse in other tasks wherein CEOS acts as a Contributing Organization, with some areas showing significant progress and other areas where "no progress has been reported since last update" (*but this may not represent the actual evolution*).

- In some occasions, CEOS Contributions in the form of Expertise have often been very discreet !

- More pro-active participation from CEOS was expected for some GEO tasks

CEOS Support in 2007: *Overall Assessment (3/3)*

- **Overall, the CEOS contribution to GEO Work Plan appears broadly satisfactory, but additional contributions are urgently needed**

- **CEOS contact persons in all tasks are encouraged to regularly report on progress through their GEO Task Leaders.**

CEOS Support in 2008

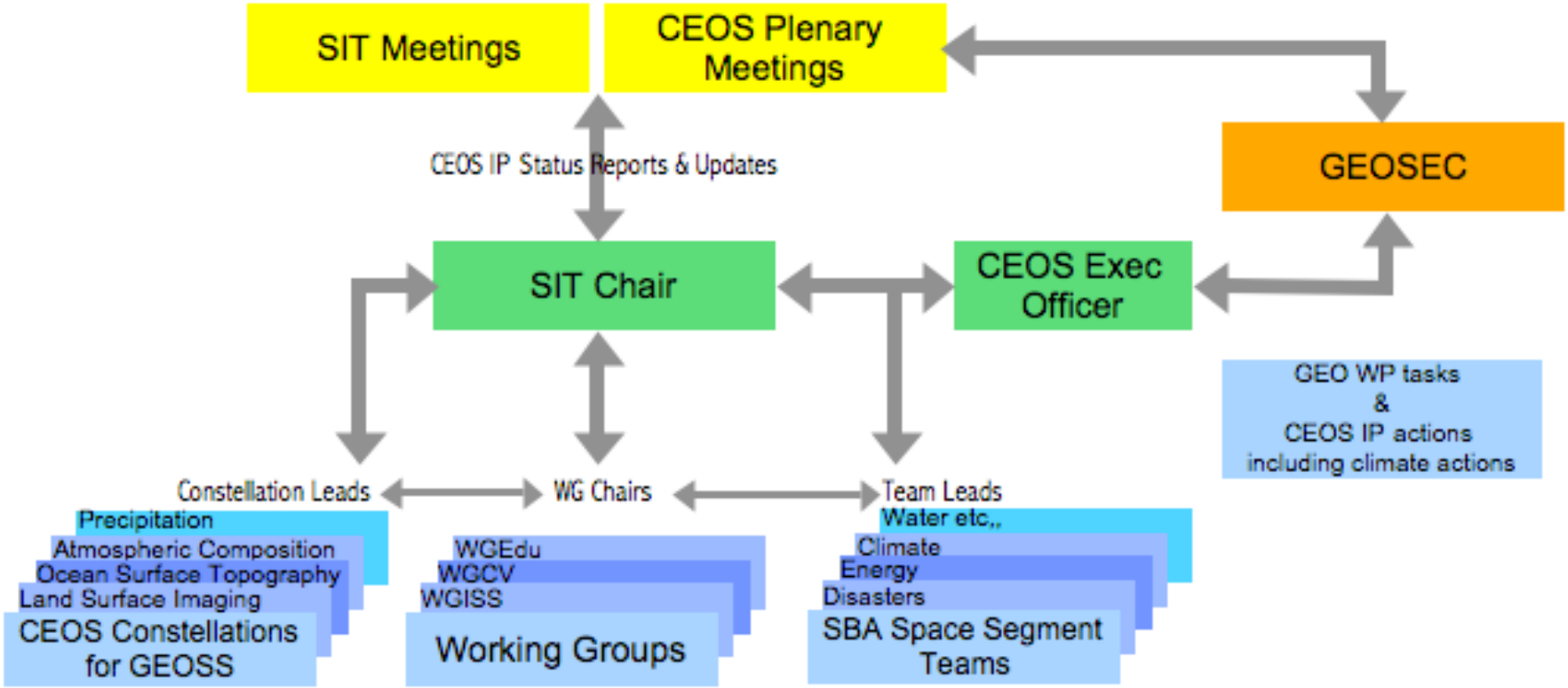
- Current GEO 2007-2009 Work Plan has been updated and endorsed at GEO-IV Plenary (Nov. 07)

- CEOS has to revise its support to GEO:
  - clear identification of all support actions
  - definition of exact contributions of CEOS Agencies, Virtual Constellations and CEOS WGs involved

Definition of CEOS 2008 support to GEO (1/2)

- After GEO-IV Plenary, SIT Chair started a large consultation within CEOS to determine a set of CEOS actions supporting the GEO 2007-2009 WP and that can be supported by CEOS members
  - Initial GEO SEC-CEOS bi-lateral meeting (mid-Dec 07) → identification of GEO tasks relevant for CEOS (Members, WGs, Virtual Constellations-VC)
  - Creation of **CEOS SBA Teams** in charge of the definition and execution of the future CEOS actions

CEOS structure to deliver the Space Segment of GEOSS

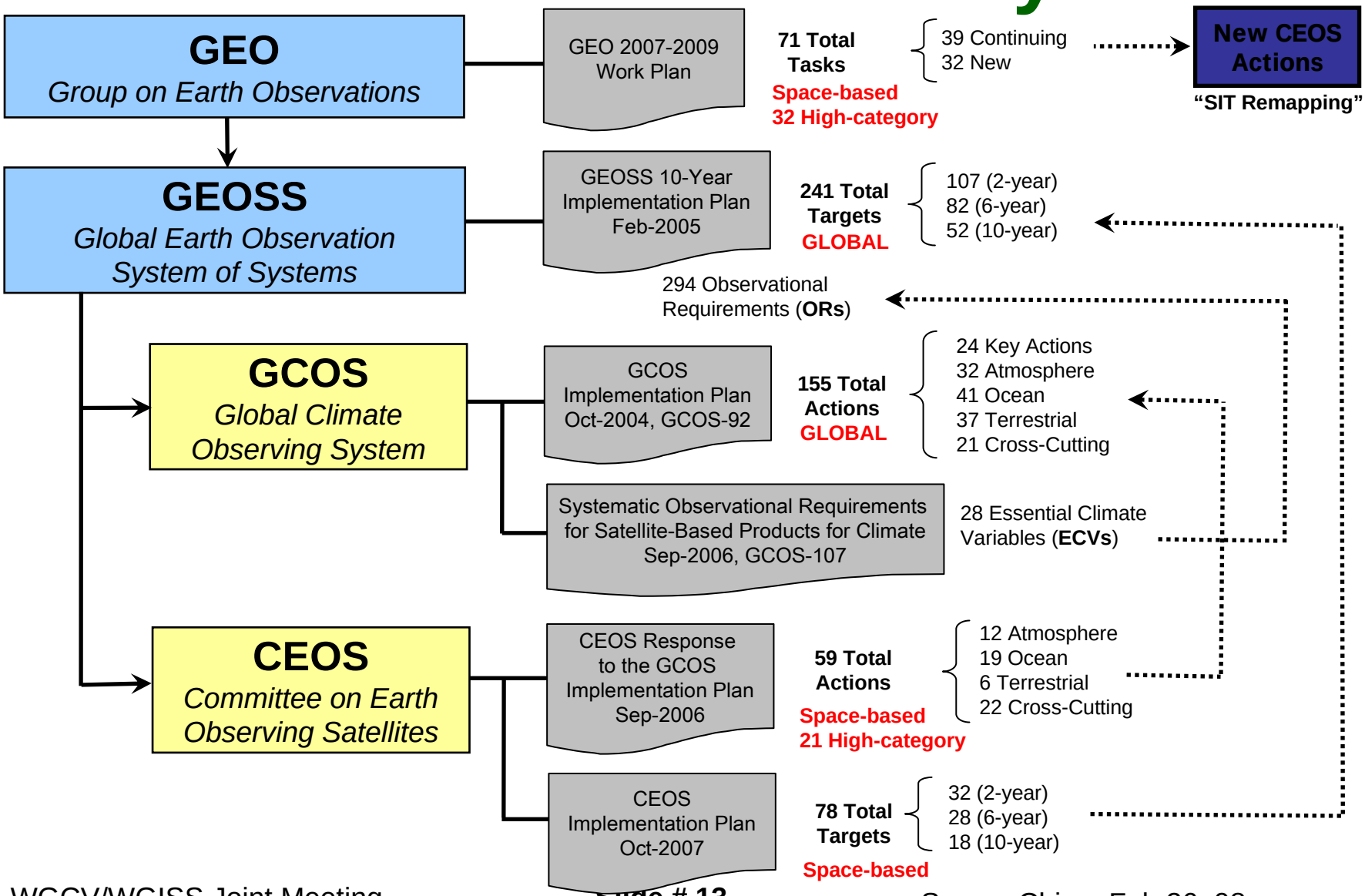


Definition of CEOS 2008 support to GEO (2/2)

- CEOS surveyed: questionnaires sent to Leads/Chairs CEOS SBA Teams, CEOS WGs and VCs (Jan 8, 2008).
  - 163 responses received (end Jan. 2008), each one proposing one or more actions addressing a specific GEO Task
  - Hard work and high motivation shown during this exercise.
  - Consolidation phase until CEOS-GEO workshop

- CEOS-GEO workshop organized by SIT with CEOS SBA Teams, CEOS WGs and VCs Reps (Feb. 20-22, 2008)

GEO Document and CEOS Action Traceability



Workshop Main Objectives

Workshop

Define the actions to be undertaken by CEOS Members to support GEO

SIT meeting (April 08)

Each CEOS Agency will be requested to commit the resources necessary for the accomplishment of those CEOS actions

"Actionable" Actions

- ***In Dec. 07, GEO Director asked CEOS:***
  - ***to support the high-category GEO Tasks***
  - ***to produce quickly concrete results***

- ***To meet the main objectives and the GEO SEC request, CEOS Teams are requested to:***
  - ***Define "actionable" actions i.e. "feasible" actions***
  - ***Identify for each action, one POC /CEOS Agency*** *(+ other Agencies involved in action)*
  - ***Propose a due date (unless continuous action)***

Examples of actions

- ***The daily maps showing the number of dry days has been largely used to assess fire risks over the forests. The number of dry days is also largely used by farmers and agriculture planning.***

NOT OK: action not clear, no actionee

- ***Secure funding for and proceed to implement Jason-3 for launch in late 2012/early 2013; to have at least a 6-month overlay with Jason-2 (EUMETSAT & NOAA to confirm support via Letters of Intent by June 2008, with program approval and signed agreements by June 2009). (EUMETSAT, CNES, ESA, EC & NOAA)***

OK: action clear, actionees & due date

WORKSHOP
INPUTS & OUTPUTS

Main Inputs

- ***CEOS-GEO Work Table***
  - ***ftp://uranus.eo.esa.int/pub/ceos/CEOS-GEO Work Table***

- ***Questionnaires***
  - ***ftp://uranus.eo.esa.int/pub/ceos/Questionnaires/Responses after Feb 20 Workshop***

Inputs for Reference

- ***GEO 2007-2009 Work Plan***
  - *High-level description of GEO tasks*
    - ***ftp://uranus.eo.esa.int/pub/ceos/Documents from GEO SEC/GEO 2007-2009 Work Plan***

- ***Detailed GEO Task Sheets***
  - *Detailed description of GEO tasks*
    - ***ftp://uranus.eo.esa.int/pub/ceos/Documents from GEO SEC/GEO Task Sheets - January 2008/2008-01***

- ***List of GEO Tasks of main interest for CEOS (from GEO SEC)***
  - *Summarized in CEOS-GEO Work Table*
    - ***ftp://uranus.eo.esa.int/pub/ceos/Documents from GEO SEC/List of High Priority GEO Tasks***

- ***category targets table from CEOS Plenary***
    - ***ftp://uranus.eo.esa.int/pub/ceos/CEOS Plenary Table of 2008 Actions***

CEOS-GEO Work Table

	A	B	C	F	G	J	L	M
1	GEO-Identified Task Leads	GEO 2007-2009 Work Plan Tasks	Recommended as a HIGH Priority CEOS Task by the GEOSEC?	How do satellite measurements contribute to this area?	Are there any current applications in operations or research that might be leveraged?	Recommended Action and Point of Contact	Supporting Working Group*	Supporting Constellation
		Last updated 30 November 2007 GEO-IV Plenary		How can satellites contribute?	How are satellites contributing?	Need very specific actions and responsible individual		
34	WMO, IGOS-P, Japan and GOOS	WA-08-P1: Integration of In-situ and Satellite Data for Water Cycle Monitoring	The CEOS contribution would be most helpful to close the gaps in hydrological cycle observations	Satellite observations provide information on snow cover, snow water equivalent, flooding, rainfall rates. Altimetry can provide river heights	Operational and research demo systems provide routine and experimental products Agency 1: Agency 2:		WGISS/WTF-CEOP	LSI OST Precipitation
35		*Weather (WMO/EUMETSAT/N*						
36	WMO	WE-06-01: Surface-based Global Observing System for Weather						Precipitation
37	WMO	WE-06-02: Space-based Global Observing System for Weather	Yes	environmental satellites operated by NOAA are designed to do exactly this. Both weather imagery and quantative measurements are routinely available.	NOAA: The operational environmental satellites operated by NOAA are designed to do exactly this. Both weather imagery and quantative measurements are routinely available.			OST

GEO Task

High-category for GEO SEC

WG support

constellation support

Received Questionnaires

- ***163 questionnaires received initially addressing 69 GEO tasks***

- ***29 high interest GEO tasks addressed. 3 not covered (high-lighted in next slide)***

- ***Responses from the 16 CEOS Teams:***
  - ***CEOS SBA teams, Virtual Constellations, CEOS WGs***

- ***Each SBA has received responses from:***
  - ***own SBA team members***
  - ***other SBA teams, Virtual Constellations, WGs***

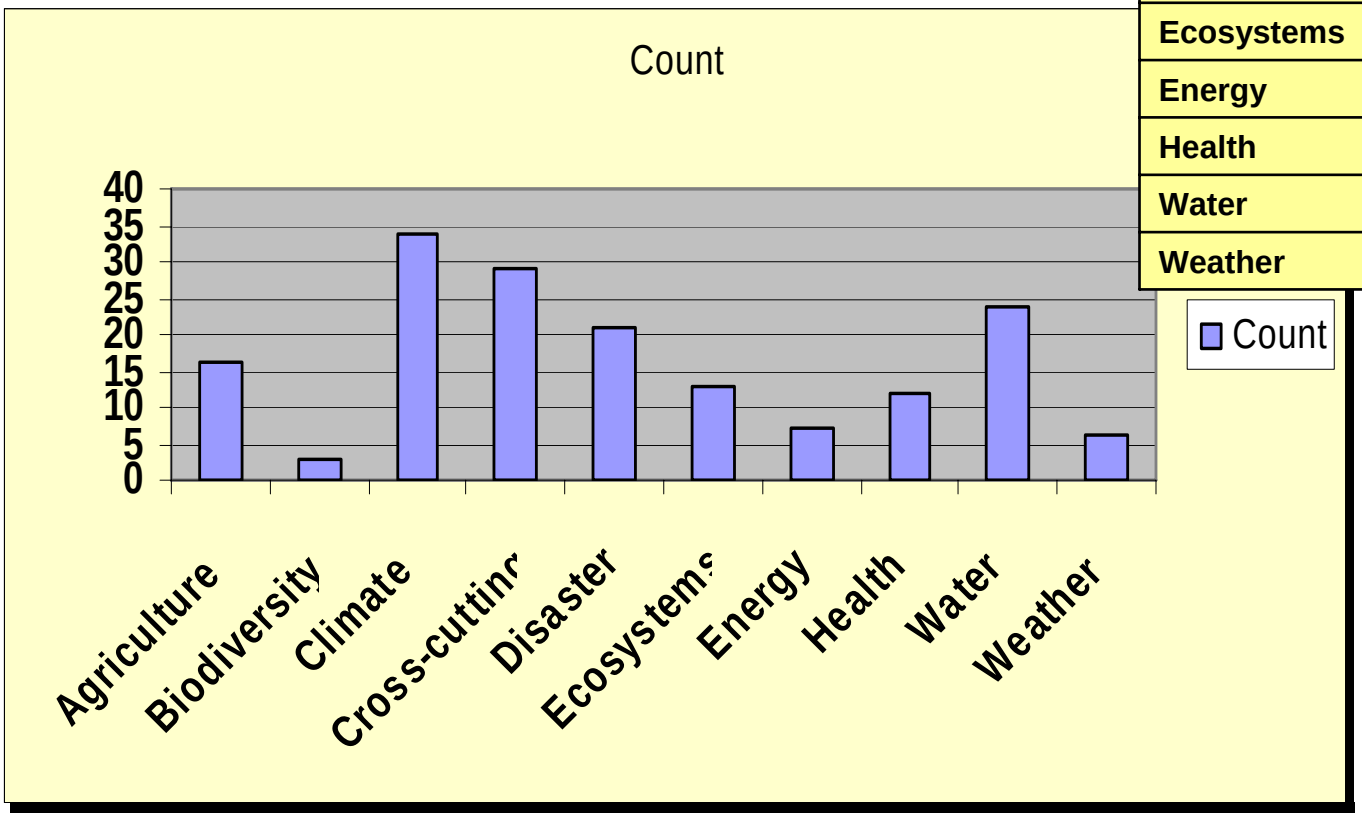
Need for consolidation during workshop

32 high interest GEO tasks for CEOS as identified by GEO SEC

- AG-07-01: Improving Measurements of Biomass
- **AR-06-11: Radio Frequency Protection**
- AR-07-01: Enabling Deployment of a GEOSS Architecture
- AR-07-02: GEOSS Architecture Implementation Pilot
- CB-07-01a: Engaging Donors
- CB-07-01b: Identifying Best Practices, Gaps and Needs
- CB-07-01e: Open Source Software
- CL-06-01: Sustained Reprocessing and Reanalysis Efforts
- CL-06-02: Key Climate Data from Satellite Systems
- CL-07-01: Seamless Weather and Climate Prediction System
- DA-06-01: GEOSS Data Sharing Principles
- DA-06-02: GEOSS Quality Assurance Strategy
- **DA-06-03: Ensemble-Technique Forecasting Demonstrations**
- DA-06-04: Data, Metadata and Products Harmonisation
- **DA-06-09: GEOSS Best Practices Registry**
- DA-07-03: Virtual Constellations
- DI-06-03: Integration of InSAR Technology
- DI-06-04: Implementation of a Tsunami Early Warning System at Global Level
- DI-06-07: Multi-hazard Zonation and Maps
- DI-06-09: Use of Satellites for Risk Management
- DI-06-13: Implementation of a Fire Warning System at Global Level
- EN-07-01: Management of Energy Sources
- HE-06-03: Forecast Health Hazards
- HE-07-01: Strengthen Observation and Information Systems for Health
- HE-07-02: Environment and Health Monitoring and Modelling
- HE-07-03: Integrated Atmospheric Pollution Monitoring, Modelling and Forecasting
- WA-06-02: Forecast Models for Drought and Water Resource Management
- WA-06-07: Integrated Earth Observation Water Resource Management
- WA-07-01: Global Water Quality Monitoring
- WA-O8-P1: Integration of In-situ and Satellite Data for Water Cycle Monitoring
- WE-06-02: Space-based Global Observing System for Weather

Statistics on Questionnaires

SBA	Count
Agriculture	16
Biodiversity	3
Climate	34
Cross-cutting	29
Disaster	21
Ecosystems	13
Energy	7
Health	12
Water	24
Weather	6



Main Outputs

- ***CEOS-GEO Actions Table***
  - *Excel file accessible at:*
    - ***ftp://uranus.eo.esa.int/pub/ceos/CEOS-GEO Actions Table***
    - ***(see slide # 43 & 44)***

- ***Table will be imported into "CEOS-GEO database" information system, after the workshop***
    - ***(see slide # 27)***

CEOS-GEO database

Mozilla Firefox

File Edit View History Bookmarks Tools Help

Back Forward Reload New Tab New Window Stop Home Sage http://james.comfreeze.net/CEOS-GEO_\ Chambers (UK)

CEOS-GEO Task Database

Version 02/08/2008

Queries | Hide/Show Columns | Export to Excel: | Current View | Full Report | Acronym Reference | Contact List

SBA	Task ID	Task Name	Long Description	Task Leads	CEOS Priority Level recommended by GEOSEC (Low, Medium, High)	CEOS Role (L-Lead; S-Supporting; NA-No Role)	
Disasters	DI-06-02	Seismographic Networks Improvement and Coordination	Facilitate improvement of capabilities for global seismographic networks such as GSN, FDSN, (including regional and global components) and GNSS networks and new ocean bottom networks such as VENUS and NEPTUNE. Facilitate sharing of data and event products among GEO members. Expand and coordinate efforts to provide access, using GEOSS interoperability methods, to real time and archived seismological data and products, and develop a portal that will link distributed seismological data centers to provide seamless access to other GEOSS components.	GSN, FDSN, USA		NA	
Disasters	DI-06-03	Integration of InSAR Technology	Support the improved integration of InSAR (Interferometric Synthetic Aperture Radar) technology for disaster warning and prediction. The Task will also address the integration of GNSS and InSAR.	IGOS-P, Greece	High	S	InSAR sho remarkabl based mo earthquak provides c pattern of Radar sat deformatic

Workshop Process

Process Overview

- **<u>Workshop Objective:</u>** per each SBA, define all the "actionable actions" for each identified GEO task:
  - actions clearly described, POC & actionees and due dates

- **<u>Fill the table:</u>**

  SBA Team Leads to fill the CEOS-GEO Actions table *(slide # 42 & 43)* using the input files *(slides # 17 & 18)* and exchanging information with other workshop participants,

Actions category

Initial Category classification Scheme

GEO Tasks	*29 high-category tasks* *(out of 32)*	*36 lower-category tasks*
to be completed ….	category 1 …in 2008	…in 2008 category 3
	category 2 …after 2008	…after 2008 category 4

Increasing Time of completion

Workshop statistics

- 150 actions at end of workshop
  - 61 category 1 addressing 15 GEO tasks
    - Some of the 16 climate actions address existing 59 GCOS actions
  - 56 category 2
  - 19 category 3
  - 10 category 4
  - 4 others (missing information on completion date)

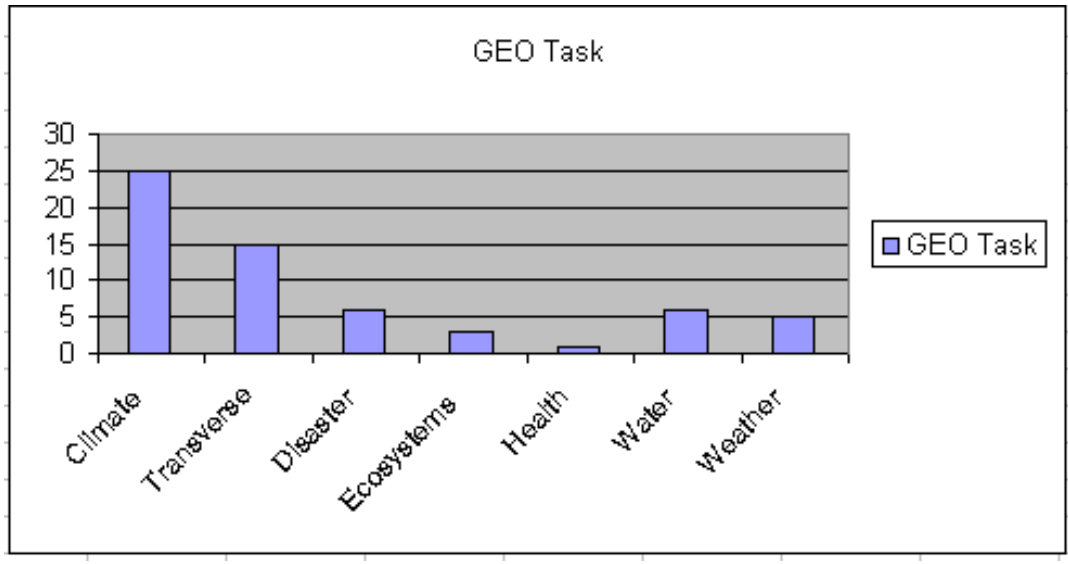
Workshop statistics Category 1 Actions

- Relate to all SBAs covered but
  - Energy
  - Biodiversity *(not covered by any CEOS action)*
- Agriculture addressed indirectly (cross-cutting aspect)

SBA directly addressed	Count
Climate	25
Transverse	15
Disaster	6
Ecosystems	3
Health	1
Water	6
Weather	5

Category 1 Actions per SBA (direct)

SBA	Number of CEOS Actions Cat. 1
Climate	25
Transverse	15
Disaster	6
Ecosystems	3
Health	1
Water	6
Weather	5



Category 1 Actions: funding

- Most of the “category 1” actions are already funded.

- 17 actions from categories 1 & 3 need additional funding not identified so far

CEOS support to GEO in 2008

- CEOS WGs contribution identified in 34 CEOS-GEO Actions
  - WGCV involved in 15 CEOS actions
  - WGEdu involved in 10 CEOS actions
  - WGISS involved in 11 CEOS actions

- As in 2007, support actions vary a lot from simple expertise to GEO Task Team Lead

- Some actions not covered yet:
  AR-06-11: Radio Frequency Protection
  DA-06-03: Ensemble-Technique Forecasting Demonstrations
  DA-06-09: GEOSS Best Practices Registry

- Flexible process: at any time, proposal for new actions can be added.

WGCV Actions

GEO Task	Nb of actions
CL-06-01	1
CL-06-02	2
DI-06-03	1
EC-06-02:	2
HE-06-03	1
DA-06-02	5
DA-07-01	1
WE-06-02	1

WGISS Actions

GEO Task	Nb of actions
CL-06-02	2
HE-06-03	2
HE-07-01	1
AR-07-02	2
DA-06-01	1
DA-07-03	1
DA-07-04	1
DA-07-06	1

WGEdu Actions

GEO Task	Nb of actions
AG-06-07	1
EN-07-03	3
HE-06-03	1
CB-06-04	1
CB-07-01a	1
CB-07-01b	1
CB-07-01e	1
CB-07-02	1

CEOS-GEO Action Table (1/2)

	A	B	D	E	F	G	I	
1	CEOS-GEO Action Number	Primary SBA Addressed	All SBAs Addressed	Primary GEO Task	Additional related GEO Task(s)	CEOS Action Category: (1 to 4)	Action Description	D
34	CL-06-02_13	Climate	Climate	CL-06-02		1	Conduct an ACC / Climate Workshop to develop requirements and long-term plans for supporting the measurement and long-term trending of atmospheric Essential Climate Variables (ECV).	30
35	CL-06-02_14	Climate	Climate	CL-06-02		1	WGISS IDN TT iterate with Climate SBA (Lead, Mitch Goldberg) to demonstrate climate data records showing long-term trends and variability information for societal benefit on CEOS IDN Portal providing access to ECVs. Candidate drill-throughs include e.g PATMOSX.	15
36	CL-06-02_15	Climate	Climate	CL-06-02		2	Extend AVHRR polar pathfinder climatology to 2007 from 2004	30
37	CL-06-02_16	Climate	Climate, Weather	CL-06-02	WE-06-02	2	Proceed with implementation of the following approved satellites: Cryosat-2 (launch in 2009), SARAL (2009), HY-2A (2009/2010 – CNES & SOA to finalize agreement to embark DORIS on HY-2A by Dec 2008), and Sentinel-3A (2012 – PDR in June 2008).	31

CEOS-GEO Action Table (2/2)

	A	J	K	M	N	O	P	Q
1	CEOS-GEO Action Number	Due Date	POC	POC Organization	All Agency and Organization Participation	CEOS Working Group and Constellation Participation	Questionnaire Reference	Comments
34	CL-06-02_13	30/09/2008	Hilsenrath	NASA	NASA, NOAA, ESA, CSA, GEO ADC	AC, WGCV, WGISS	GEO-CL ACC.doc	No additional resources are re
35	CL-06-02_14	15/09/2008	Ken McDonald	NOAA	NOAA, NASA	WGISS	CEOS-GEO_CL-06-02_Questionnaire_Heidinger.doc	Additional resources may be re
36	CL-06-02_15	30/12/2008	Key	NOAA	NOAA			
37	CL-06-02_16	31/12/2009	Stan Wilson	NOAA	NOAA, ESA, CNES, ISRO, SOA		WE-06-02 Questionnaire 22feb08.doc	

Next Steps

- **CEOS-GEO Action Table Consolidation deadline** *(March 7)*
  - Missing information to be provided (cells highlighted in pink)
  - For each action, identification of all relevant SBAs (action ALL SBAs Coordinators + CEOS WGs)
  - "green actions" (special attention from CEOS, additional resources needed, .)
  - For each "green action", need precise specifics of what is expected from all identified Agencies
  - Import the Action table into the Action Database Information System (Action SEO, SIT-21)

- **SIT Chair to contact individual Agency Principals** *(March 10 to April 7)*
  - Incorporate results in planning tour de table
  - Revise Action database accordingly

- **Feedback from CEOS Chair and CEOS Principals on Constellation Paper** *(March 12)*
  - SIT Chair to update paper as necessary (SIT-21)
  - Apply procedures for new Constellations in inviting proposals (SIT-21)

WG Priorities

- Review & consolidate actions (next 2 weeks)
- Make sure that for each action in which the WG is involved, a WG person is nominated to coordinate the WG's activities
  - Make sure that resources are available
  - Schedule and define the activities
  - Monitor and report on progress

QUESTIONS ?