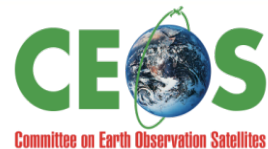


**WGCV 36 Plenary
May 2013**

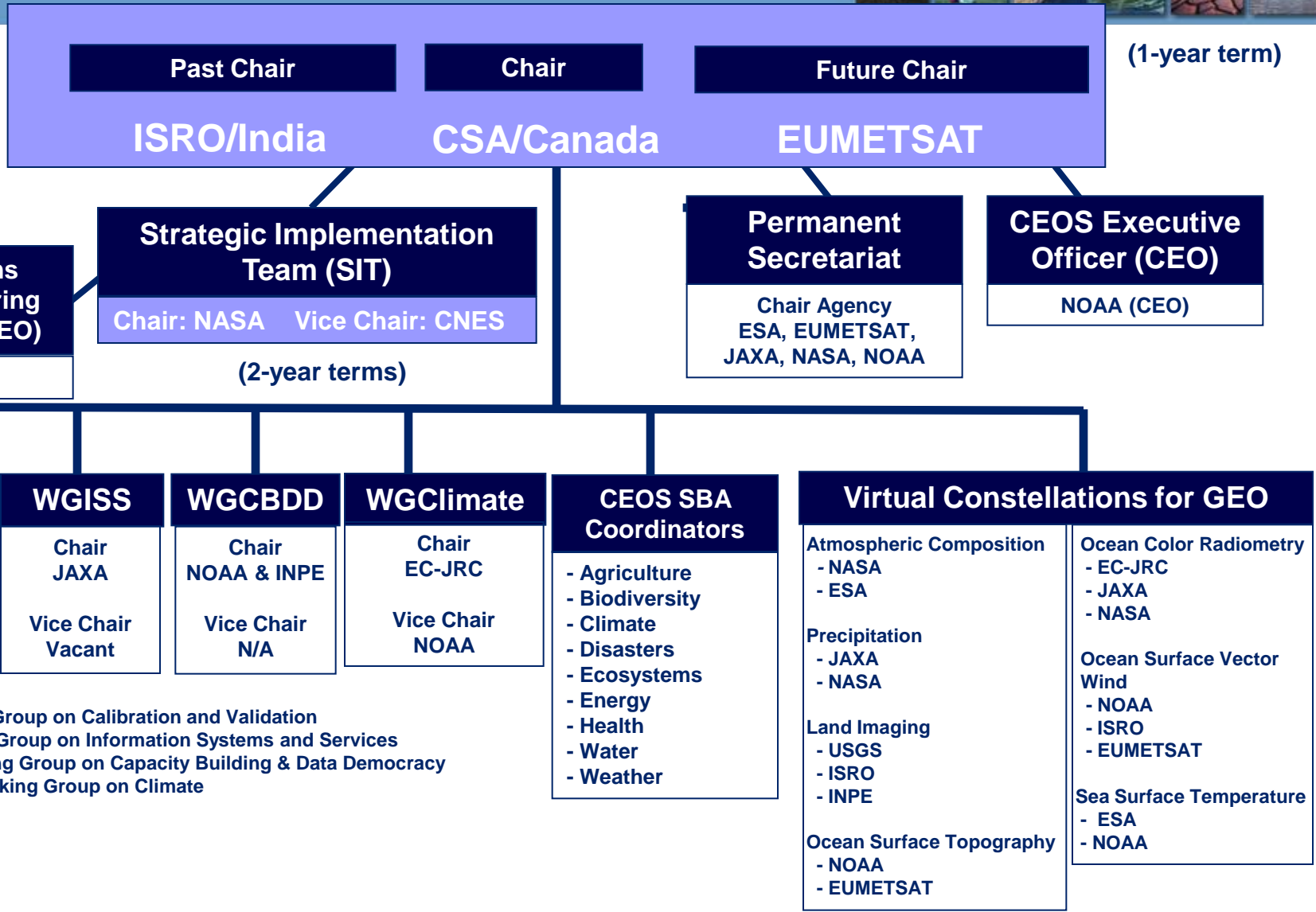
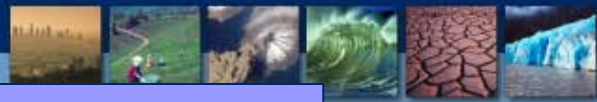
WGCV Chair Report

Satish Srivastava

Canadian Space Agency

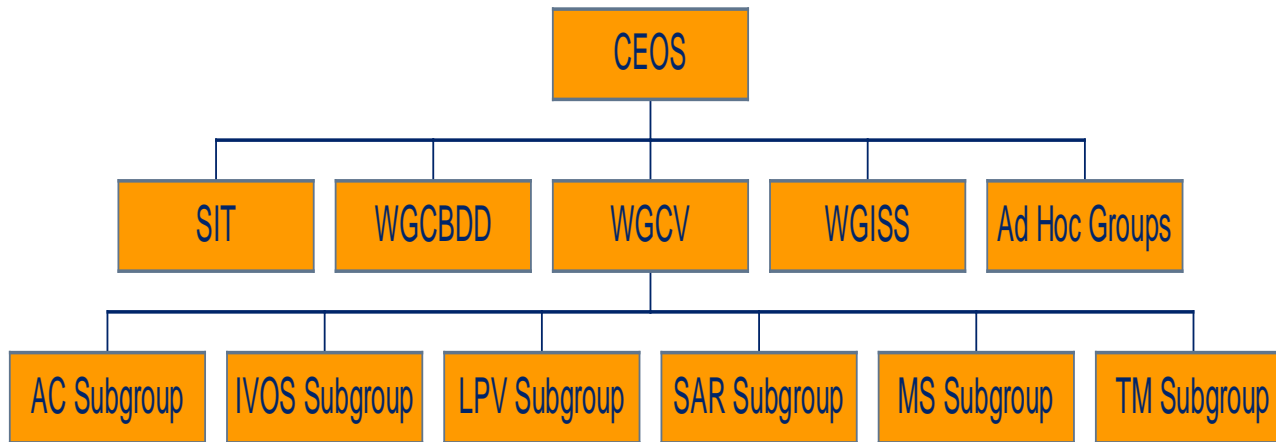


CEOS Structure 2012-2013



WGCV=Working Group on Calibration and Validation
WGISS=Working Group on Information Systems and Services
WGCBDD=Working Group on Capacity Building & Data Democracy
WGClimate = Working Group on Climate

WGCV Structure



- **CEOS (<http://www.ceos.org>)**
 - **Working Group on Calibration and Validation (WGCV) (<http://wgcv.ceos.org>)**



- CEOS Plenary 2012, Bangalore, India
 - SEC 173 Minutes (Feb. 2013)
CEOS 26-11: CEOS agencies invited to provide feedback on the GEO Water Cycle Strategy Report progress and to nominate (to Water SBA Coordinator, Osamu Ochiai) expert reviewers to engage in the review phase. – **COMPLETE** WGCV provided feedback (Dr. Eric Wood provided a section on Cal/Val for the report)
 - SEC 172 Minutes (Jan. 2013)
CEOS 26-24: CEOS Chair will work with WGCV Chair to advertise the need for WGCV Subgroup leadership roles to be staffed. – **COMPLETE**, Satish noted that the request will be circulated within WGCV and if required a draft request will be prepared to be sent to CEOS agencies by the CEOS Chair (Dr. Miguel Roman – new Vice-chair of LPV Subgroup)
- SEC Meetings led by CEOS Chair– Monthly Telecon, since November 2012
 - SEC 173 Minutes (Feb. 2013)
SEC 171-4: SEC members to provide WGCV with feedback on their 5-year plan. The plan can be found on the WGCV web page, here - <http://www.ceos.org/wgcv>. - **COMPLETE**



- QA4EO Implementation Task Force – Monthly Telecon, since February, 2013 (see details)
- SIT-WGCV Telecon, December 17, 2013
- SIT-WGs and VCs Group Telecon, January 9, 2013
- CEOS-GEO Actions Virtual Workshop led by CEO, January 23-24, 2013
 - Progress on three 2012 actions was reported.
 - One action was closed and two were remapped to 2013 actions (see details)
- SIT-28 Meeting led by SIT Chair, NASA Langley, March 2013
 - Made a presentation on WGCV collaboration with the VCs
 - QA4EO is important
 - WGCV needs a close interaction with VCs
 - SIT 28-12 - SIT Chair Team, in cooperation with the VCs and WGs, to further develop the harmonised statement of 2015 accomplishments of VCs and WGs (using the updated VC TORs) – defining scope and value-added of the groups in achieving the deliverables (due 28th CEOS Plenary)
 - SIT 28-13 - SIT Chair Team to work with VCs and WGs to identify outputs (such as key reports) that the groups feel did not receive adequate attention from SIT/Principals to be raised at the SIT Workshop



- **WGCV-33 - ROSCOSMOS, Moscow, Russia, May 16-20, 2011**
- **WGCV-34 - CSIRO/TERN/others, Brisbane, Australia, February 6-10, 2012**
- **Joint WGCV-35 / WGISS-34, NRSC, ISRO, Hyderabad, India, September 24-28, 2012**
- **WGCV-36, AOE, CAS, Shanghai, China, May 13-17, 2013**
- **WGCV-37 – Jan/Feb 2014 – TBD**
- **WGCV-38 - Sept 2014 – TBD**
- **Subgroup meetings continue 1-2 times per year**



- The 35th WGCV Plenary, held jointly with the 34th WGISS Plenary, was hosted by ISRO in Hyderabad, India from 23-28 September 2012.
- Transition of Dr. Gregory Stensaas to new WGCV Chair, Dr. Satish Srivastava for 2012-2014 period.
- WGCV Vice-chair elected from DLR, Dr. Albrecht von Bargaen
- WGCV and WGISS agreed for joint efforts on a number of actions.

Highlights of agreed joint-efforts:

1. Evaluation of data quality metadata fields for sensors/products + definition of requirements
2. CEOS WGCV Test Site information access in CWIC/IDN
3. Develop CEOS Quality Indicators
4. Define ECV quality information and implementation process for metadata and associated documentation
5. Identify key players from VCs to support WGCV/WGISS tasks
6. Update current and develop new CEOS Showcases – DEM Quality Information System (DEMqis) proposed



Main Recommendations from WGCV-35 to CEOS, Presented at SIT-28:

- 1 a) CEOS agencies to support in developing and maintaining recommended instrumentation at the recommended CEOS Cal/Val test sites for IVOS, LPV, and SAR.
- 1 b) To provide routine data via sensor acquisition plans over the CEOS recommended sites
- 1 c) To provide free access to data acquired over CEOS sites to CEOS member agencies for calibration purposes, preferably via CWIC.

- 2 a) To provide a process for supplying resources/funding/support for ground networks and field campaigns
- 2 b) To provide resources required to enable comparisons of radiometers used for validation of 1) SST and 2) OC to be organized in 2014 (preparations to commence in 2013) in support of VCs and derivation of ECVs.



Main Recommendations from WGCV-35 to CEOS, Presented at SIT-28: ... continued

- 3)** To encourage members to provide resource to lead and encourage widespread implementation of QA4EO principles within current and future activities of CEOS members facilitated by the new UKSA QA4EO Secretariat.

- 4)** WGCV and WGC to work together to establish consistent interpretation of GCOS ECV requirements and analysis methodology for accuracy and stability monitoring, and to support validation processes of ECVs.

2012 CEOS-GEO Actions Status Update



Action Number	IN-02-C1_2
Description	DOME-C Multi-Sensor Experiment (Remapped from DA-09-01a_12) Use Dome-C as prototype and developing continued and on-going methodology to tie into the Cal/Val portal enhancement as a reference for Landnet sites.
POC(s)	Nigel Fox, NPL, CEOS WGCV and Satish Srivastava, CSA, CEOS WGCV
2012 Milestones/ Deliverables	<p>a) Dec 2011-Jan 2012: Dome C intercomparison campaign planned; open to any interested parties</p> <p>b) June 2012: Establish detailed surface BRDF data of DOME-C to provide improved corrections for satellite view and illumination geometries.</p>
Main 2012 Accomplishments	<ul style="list-style-type: none"> Completed 3rd successful DOME-C campaign including using a SAR sensor (RADARSAT-2) and Bi-directional Reflectance Distribution assessment The WGCV's SAR subgroup investigated the potential use of the Dome C for the radiometric calibration of SAR. RADARSAT-2 SAR data at C-band was routinely acquired and analyzed for radiometric characterization of the site. Analysis has indicated a good potential for radiometric calibration for co-polarised C-band signals. Cross-polarised backscatter level found very low thus difficult to characterize. An experiment to determine the localised small scale surface measurement of BRF of Snow near to DOME-c has been carried out in Dec 11/Jan 12 using goniometer measurements. This was led by the Italian Antarctic Research group and Royal Holloway College of London. CEOS agencies were made aware and encouraged to collect imagery for comparison and cross-calibration in an effort to support performance checking and international bias harmonisation. The results of the surface BRF together with locally measured atmospheric conditions (ozone, aerosols) will be provided to the community via the CEOS cal/val portal.
Status	Action closed
Comments	

2012 CEOS-GEO Actions

Status Update



Action Number	IN-02-C1_3 (due date: October 1, 2013)
Description	Develop a CEOS Quality Assurance Framework for Earth Observation (QA4EO) and implement processes and structure for CEOS data and information. (Remapped from DA-09-01a_15)
POC(s)	Satish Srivastava, CSA, CEOS WGCV
2012 Milestones/ Deliverables	<ol style="list-style-type: none"> 1. Enhance QA4EO CEOS Team and Establish QA4EO Implementation Board 2. Develop CEOS QA4EO Implementation Pilots and Showcases for key priority CEOS efforts 3. Fit for purpose documentation related to system/data/and product capability and accuracy 4. Quality parameter measurement and process guidelines for each quality definition 5. Support LTDP and Data Management efforts 6. Incorporation of information in the process and definitions above into CEOS electronic database for all CEOS data and information QA flags and data/metadata fields
Main 2012 Accomplishments	<p>1. A baseline QA4EO team was established along with a secretariat which is now hosted at the Centre for Carbon Measurement of National Physical Laboratory with support from UKSA. CEOS and GEO members will be invited to attend regularly scheduled implementation meetings via the QA4EO SEC and WGCV Chair to start in Feb 2013.</p> <p>Items 2 through 6 were discussed at the Joint WGISS/WGCV plenary meeting in WGCV-35 in Hyderabad, India from 23-28 September 2012 with incremental progress reported and further actions initiated on these. Work continues with the objective of achieving goals for IN-02-C1_3 by October 1, 2013. Please refer to minutes of WGCV-35 for more details.</p>
Status	Remap to new 2013 Action
Comments	

2012 CEOS-GEO Actions Status Update



Action Number	IN-02-C1_5
Description	Enabling Data and Information Interoperability and Harmonization in CEOS and GEO. Develop an architecture and constituent elements needed for implementation of an operational system to insure the long term interoperability of EO data to meet the SBA needs, particularly climate; e.g. Methodologies, test sites, database infrastructure for quality. (Remapped from DA-09-01a_16)
POC(s)	Satish Srivastava, CSA, CEOS WGCV
2012 Milestones/ Deliverables	<ul style="list-style-type: none"> Discussions on support services and tools at the QA4EO implementation workshop, (18-20 October 2011 at RAL, UK) and the WGCV-35 plenary (Hyderabad, India from 23-28 September 2012) with minutes from these two meeting as a deliverable.
Main 2012 Accomplishments	<ul style="list-style-type: none"> Numerous discussions on several initiatives for support services, tools and requirements were held at WGCV-35 in Hyderabad, India from 23-28 September 2012 and QA4EO implementation workshop at RAL, UK in October 2011. Minutes were published to both QA4EO and WGCV websites. Progress was reported on several initiatives related to improving CEOS Cal/Val sites, processes and data sets.
Status	Remap to new 2013 action
Comments	



GEO Work Plan Task and Component	IN-02-C1_3: Advances in Life-cycle Data Management
Description	Develop a CEOS Quality Assurance Framework for Earth Observation (QA4EO) and implement processes and structure for CEOS data and information. (Remapped from 2012 IN-02-C1_3)
POC(s)	Satish Srivastava, CSA, CEOS WGCV; Niall Origo NPL/UKSA (QA4EO) secretariat
2013 Milestones/Deliverables	<ol style="list-style-type: none"> 1. Develop CEOS QA4EO Implementation Pilots and Showcases for key priority CEOS efforts 2. Fit for purpose documentation related to system/data/and product capability and accuracy 3. Quality parameter measurement and process guidelines for each quality definition 4. Support LTDP and Data Management efforts 5. Incorporation of information in the process and definitions above into CEOS electronic database for all CEOS data and information QA flags and data/metadata fields
Comments	



GEO Work Plan Task and Component	IN-02-C1_5: Advances in Life-cycle Data Management
Description	<p>Enabling Data and Information Interoperability and Harmonization in CEOS and GEO. Develop an architecture and constituent elements needed for implementation of an operational system to insure the long term interoperability of EO data to meet the SBA needs, particularly climate; e.g. Methodologies, test sites, database infrastructure for quality. This is a key enabler to facilitate the implementation of QA4EO principles (remapped from 2012 IN-02-C1_5)</p>
POC(s)	Satish Srivastava, CSA, CEOS WGCV ; Nigel Fox NPL/UKSA CEOS WGCV
2013 Milestones/Deliverables	<ol style="list-style-type: none"> 1. Complete full list of test sites needed across all space domains to underpin interoperability (May 2013) 2. Identify priority requirements – parameters and uncertainties needed by CEOS WGC and VCs and SBAs (Sep 2013) 3. Prototype pre-operational satellite to satellite (optical domain) bias correction service/database (based on an amalgam of agency developed systems) (Oct 2013) 4. Establish operational collection of cal data over CEOS test sites by agencies and their accessibility through automated services such as CWIC tools (July 2013) 5. Establish and publish methodologies to aid interoperability, Cal/Val particularly to aid developing space nations and harmonisation of others. (on going)
Comments	





Background:

- QA4EO is a consequence from a known need for interoperability in quality and consistency.
- QA4EO is included in CEOS 2013 work plan GEO 2012-2015 work plan.
- QA4EO is a direct CEOS response to GEO Task DA-06-02 & DA-09-01a: GEOSS Quality Assurance Strategy, now in: IN-02 Earth Data Sets C1.
- QA4EO implementation plan is currently in a revision process and will be discussed during the WGCV plenary.
- The interaction of WGCV and the other WGs and VCs wrt QA4EO is required.
- Meetings with VCs and WGs to detail the way forward

Quality Assurance Framework for Earth Observation



Highlights:

- With funding support from UKSA and NPL, UK for two years a new QA4EO Secretariat has been formed at NPL (**Sec. Contact: Niall Origo, sec@qa4eo.org**)
- Request for Participation into QA4EO: Letter sent on Jan. 22nd, 2013 to CEOS and GEO members. 
- QA4EO Team Structure now established: 
 - CEOS QA4EO Implementation Task Force
 - Regular teleconference/Web-Ex communication to define, discuss, action tasks as required for implementation.
 - CEOS QA4EO Management Team
 - Will meet as and when required via teleconference/Web-Ex communication to provide priority and guidance to the task force and in return be informed of new and on-going initiatives.
 - GEO Implementation Task Force
 - Will meet as and when required via teleconference/Web-Ex communication to provide the interface with the CEOS implementation teams and helps coordinate CEOS+GEO efforts.



Highlights:

- Four CEOS QA4EO Implementation Task Force meeting held since kickoff meetings of Feb 12th and 26th.
- Refocusing of QA4EO tasks and subtasks (outlined in the implementation plan) proposed
- Discussions held on potential Case Studies, a few Level-1 and -2 examples produced, comments required
Examples: TRUDAT, NOAA Maturity Matrix, ESA Sentinel-2 calibration tool, GSICS GEO-LEO, 3D Vegetation Lab and some work done under SST VC.
- In response to an invitation from GEO, two showcases on Tsunami and Air Pollution (a 3-minute video on each) proposed by Prof. Muller for GEO 2014 Ministerial Summit
- Discussions to follow in QA4EO session at this meeting.

For details and documentation, Visit <http://www.qa4eo.org/>



The NASA SIT Team has identified the following possible topics for discussion:

1. Outcomes from WGCV-36 (13-17 May at CAS in Shanghai).
2. WGCV Collaboration with the VCs was raised by WGCV at the Pre-SIT-28 Workshop. There was a discussion, and it was agreed that a change of approach is needed. Suggestion is to discuss how to deliver an outcome on WGCV engagement at the SIT Workshop in consultation with the VCs.
3. Engagement with GFOI Methods and Guidance development process.
4. Progress on the establishment of the QA4EO Secretariat.

Please feel free to suggest further topics or priorities to raise with SIT Chair.



Following slides on WGCV-WGISS Joint Efforts

Status on WGISS-WGCV Joint Actions

Satoko Horiyama MIURA
WGISS Chair
IAXA/MOSS





- **At the last WGISS-WGCV Joint meeting (Sep., 2012), the following joint actions/activities were agreed.**
 1. Quality data metadata fields
 2. Metadata requirements for quality
 3. Data access of CEOS Test Site information
 4. Quality indicators
 5. Quality assurance information on ECV products
 6. Identifying key partners and how they benefit the working group and they benefit from WG
 7. Updates and develop new showcases (QAlbedo: new proposal from WGCV)
 8. DEM Quality Information System (DEMqis)



1. **WGCV teams should also suggest ideas of **quality data metadata fields for the key sensors and products.****
- **WGISS to look at quality metadata for WGISS 35, starting from collection level (led by Tech Expo IG).**
 - ***Tech Expo IG is preparing questionnaire and will distribute it to WGISS members.***
- **Common definitions on quality is needed. WGCV will work on this.**
 - ***After a new QA4EO secretariat was formed at NPL in UK, a QA4EO Implementation Task Force has been structured in January 2013. The task force is having regular teleconference and progress is being made. Task on quality definition should start soon.***
- **Work together based on above results and prepare a example(s). Show and appeal to CEOS members !**
 - ***Not started yet***



2. Metadata requirements for quality, need to tap each WGCV working group for sensor information. Have WGISS find out what is available. Get NASA ESIP feed back on this and others.

- WGCV & WGISS chairs will send e-mail WGISS/WGCV members to document all the quality related activities.
 - *Not yet (but regarding WGISS, Action 1 will take care of this one also).*
- Nigel will provide QA4EO
 - *Action unclear to me except to say that Nigel is a member of QA4EO Implementation Task Force and the Task Force meets regularly via teleconference.*



3. Data access of CEOS Test Site information starting with:

- a. CEOS IVOS sites (also test first one prior to meeting for Libya 4 site)
 - b. LPV sites
 - c. SAR
 - d. DEM and others. Recommend starting with some key examples. SG support needed.
- WGCV will provide necessary information to WGISS/CWIC.
 - CEOS WGISS Integrated Catalog (CWIC) will support for this.

➤ ***Completed (Data access to all the test sites became available in Oct. 2012.)***



4. **Quality indicators:** get WGCV SG support and ideas and ideas from WGISS.

- Will follow No.1

- *Will follow No.1*



5. How does **quality assurance information on ECV products** get populated and stored and what are the documentation components needed

- WGCV will contact to Climate WG to obtain quality assurance requirements.
 - *It is part of QA4EO Implementation, the work will follow*
- WGISS/DSIG will contribute to this, especially regarding long term data preservation.
 - *Not yet, waiting for the above requirements*
- Input to GEO WP Component IN-02-C1
 - *Not yet, depending on the above two actions.*



6. Identifying key partners and how they benefit the working group and they benefit from WG

- **WGISS use Wish List from VCs. WGISS, working with WGCV , to contact to each VCs on their needs (detailed/specific needs).**
- ***Contacted each VC, but feed back was not so good. WGISS closed this action and will wait for the outcome of “CEOS Portal Study” led by CNES (the SIT vice chair team).***



7. Updates and **develop new showcases**

■ **QAlbedo**: new proposal from WGCV

- **WGCV will discuss existing showcases and Qalbedo tomorrow (SEP-27) and give more feed back to WGISS.**

- **No update on QAlbedo. But in recent teleconference meetings (March-April, 2013) of Task Force on QA4EO Implementation, several potential case studies to demonstrate QA4EO principles have been discussed. Examples are: TRUDAT, NOAA Maturity Matrix, ESA Sentinel-2 calibration tool, GSICS GEO-LEO, 3D Vegetation Lab and some work done under SST VC. More discussions on deciding case studies to follow in next few meetings.**



8. DEM Quality Information System (DEMqis)

- **DEMqis WPS functions (newly proposed)**
 - New web services could be developed by different space agencies irrespective of whether they produce or store/distribute DEMs...
- **On-going WGISS-WGCV joint efforts**
 - Sponsorship needed
 - WGISS will discuss if WGISS agree to participate this efforts tomorrow (SEP-27).

➤ *Waiting for sponsorship*