

**WGCV 35 Plenary
September 2012**

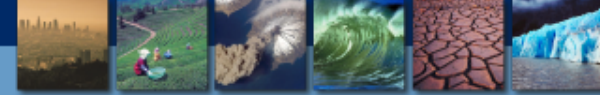
WGCV Chair Report

Greg Stensaas (USGS)





- **SIT-27 March 2012**
- **GSCIS EP-12 Meeting June 2012**
- **CSS Telecons – two telecons summer 2012**
- **SEC meeting telecons every month except Aug (Satish in July)**
- **SIT Planning Meeting Sept 2012**
- **QA4EO SIT Side Meetings – Feb and March 2012**
- **Should we be attending others??**
 - **WGCV**
 - **Subgroups?**
 - **Funding issues**
 - **New media process, election process?**



- **WGCV-33 - ROSCOSMOS, Moscow, Russia on May 16-20, 2011**
- **WGCV-34 - CSIRO/TERN/others, Brisbane, Australia, February 6-10, 2012**
- **WGCV-35 / WGISS-34 on 24-28 Sept 2012**
 - Hosted by ISRO, NRSC, Hyderabad, India
- **WGCV-36 – May 2013 - Shanghai, China**
- **WGCV-37 – Jan/Feb 2014 – TBD**
- **WGCV-38 - Sept 2014 – TDB**
- **Subgroup meetings continue 1-2 times per year**
- **CEOS Libya-4 Workshop -**
 - October 4-5, 2012, CNES Paris, (registration deadline September 14th)



- **New Chair and Vice Chair at this meeting**
 - Satish Srivastava (CSA)
 - Albrecht vonBargen (DLR)
- **OA4EO Implementation Processes are required by CEOS work plan**
- **WGCV Work Plan version completed but needs to be upgraded to cover GW/VC integration**
- **OA4EO Implementation Processes are required by CEOS work plan**
- **WGCV Work Plan version completed but needs to be upgraded on a regular basis**
- **Process required to support CEOS needs**
- **Recommendation communication processes**



- **3-year outcomes defined in course of the CSS**
 - 1. Cal/Val support to CEOS efforts needed: FCT/GFOI, JECAM, ECV validation and comparisons, ...**
 - a. Continue toward definition and enhancement of cal/val test sites and processes
 - b. Support to GFOI Methods & Protocols and validation of datasets and processes
 - c. Support cal-val and quality aspects of ECV development
 - 2. QA4EO Implementation with CEOS and GEO**
 - a. Working via IN-02-C1 task
 - b. Develop common definition and methods
 - 3. WGs, VCs, CEOS Task Leads, and CEOS communication**
 - a. Defining WG and VC points of contact to obtain WGCV support and actions
 - b. Interaction process being worked
 - c. 5-year Plan updates to reflect CEOS WG and VC interaction



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- **OA4EO Implementation Processes are required by CEOS work plan**
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- **Process required to support CEOS needs**
- **Recommendation**



From SIT-27 (Needs and Issues):

- CEOS Showcases
 - CEOS WGs and constellation involvement needed **(still needed)**
- QA4EO
 - Agency resource support for secretariat and administration being worked by UKSA/NPL **(completed)**
 - CEOS agency support of QA4EO implementation actions **(need support)**
 - CEOS team to enhance and implement of QA4EO process; implementation plan ready **(need support)**

2012 progress, issues, obstacles



- From SIT-27 (Needs and Issues):

- For a given task, each CEOS agency that is involved in the task should provide the name of its representatives that will coordinate the task within the agency and with WGCV. **(Open)**
- WGCV needs commitment from those CEOS agencies to provide resources (personnel and funds) to carry out the work which are involved in specific tasks. **(Open)**
- WGCV Vice Chair nominations needed.
 - DLR nomination **(Action complete)**
- WGCV support to WGClimates on ECV inventory, and GFOI on Methods & Protocols documents **(Process beginning)**

2012 progress, issues, obstacles



- **From SIT-27 (Opportunities and Obstacles):**
- *The role open for CEOS (starting to happen)*
 - *Defining cal/val and quality process and architecture within CEOS requires the support and effort of all members*
- *Approach, emphasis required by the VC/WG (starting to happen)*
 - *ECVs and Climate Modeling are great examples*
 - *WGCV 5-year plan available*
 - *Need requirements for efforts (liaisons)*
- *Any issues for SIT & Principals to help resolve in relation to the VC/WG having the potential to fulfill the proposed role (Help to define and track action and required effort)*
 - *CEOS specific tasks and actions to WG*
 - *Defined joint WG/VC tasks and POCs*
 - *\$ and resources (many examples of multiple agency involvement but no way to fund efforts)*



- **May 2012 telecon**

1. Greg to ask of Albrecht von Bargaen at DLR if he can start assuming his WGCV Vice Chair duties even before internal DLR approval is granted.

OBE. Complete with DLR nomination.

2. Stephen to share information on the upcoming GFOI M&G document authors meeting in Norway with Greg.

Complete.

3. Greg to work with the WGCV VC and WG liaisons to communicate the desire to link WGCV on-going activities to the other VCs and WGs.

- For a better understanding of VC and WG requirements and actions for WGCV. Need POCs and tasks/actions for each group. ***POCs and actions/interactions being worked.***
- Developing a cross WG/VC interaction email and matrix. ***In Process.***
- ***Considering short whitepaper on communication process.***



- **May 2012 telcon**

4. SIT Chair team, in consultation with the VC and WG leads, to assemble a list of participation needs for each VC and WG.
 - Work with CEOS CCS and SIT Chair teams to obtain contacts from non-active but critical CEOS members. ***In Process.***
 - WGCV to help in addressing the list of VC and WG participation needs through their contacts, in particular with China. ***The idea was to use WGCV engagement from China to try and help VCs. On hold with new matrix but have discussed with Chinese colleagues***



- **CEOS 25-16:**
 - CEOS Agencies encouraged to consider taking on responsibility for QA4EO secretariat and website maintenance
 - ***Complete. QA4EO funding secured.***
- **CEOS-24-13 / SIT 26-19:**
 - WGCV to provide a minimum instrumentation list and suggested activities for CEOS recommended instrument Cal/Val sites.
 - ***In Progress. CEOS WGCV IVOS instrumentation requirements and agency cost completed; LPVSG, MSSG, and SARSG requirements being worked.***



- **SIT-27 and Workshop**

WS-4: WGCV to provide a table to WGClimat showing appropriate points of contact for specific ECVs within WGCV (where there is a POC available)

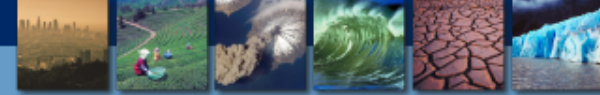
WGCV LPV has worked to develop contacts, continuing

27-23: Working Group Chairs and Virtual Constellation Leads, coordinated by the SIT Chair Team, to develop a short paper brainstorming ideas on improved communication among groups in support of more integrated CEOS objectives.

WGCV to help lead this initiative



- **Wish List:**
 - **WGCV Plenary specific participation support needed from:**
 - CDTI (Spain), CONAE (Argentina), GISTDA (Thailand), KARI (Korea), NRSCC (P.R. China), ROSHYDROMET (Russia), NSMC/CMA (China), NSO (Netherlands), SANSA (South Africa), Tubitak-Uzay (Turkey), GCOS, WMO GSICIS,
 - **WGCV subgroup support from all members and specifically from:**
 - **IVOS: CSA, CAST, CRESDA, ROSCOSMOS**
 - **SAR: awaiting input**
 - **LPV: awaiting input**
 - **TMSG: awaiting input**
 - **ACSG: awaiting input**
 - **MSSG: awaiting input**



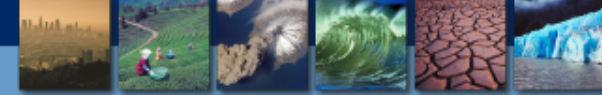
- **WGCV and WGCV SG CEOS Membership needs**
 - Active participation from all members and/or support to key technical organizations within their sphere of influence
 - Prioritization and commitment to cooperative/shared international cal/val efforts.
- **VC and WG interaction requirements or expectations**
 - Clear requirements/needs & terminology from WGs, & VCs e.g.
 - definition of “stability” – self-consistency, accuracy, repeatability...
 - Uncertainty/performance requirements
 - Utilization of SGs for Cal/Val or reporting of it through the SG
- **Ideas for CEOS SIT/SEC level planning consideration**
 - Establishment of “simple to operate” framework to facilitate multi-agency (combined) resource to develop & maintain CEOS coordinated, mission and geography independent, Cal/Val infrastructure (test-sites, comparisons, access to results/data)
 - Relative priority to agencies of sensor interoperability and long term data sets for climate and consequential commitment to a robust “CEOS (inter-agency) Cal/Val infrastructure
 - How does CEOS engage with private sector missions particularly in terms of Cal/Val



- **WGCV POC List for WGs and VCs**
 - **Would like to have a WGCV POC attend or call into VC and WG meetings as needed.**

Acronym	Leads	WG Contact to WGCV	WGCV POCs	WGCV subgroup responsibility	other WGCV VC/WG POCs	Near term Requirement
WGISS	JAXA, TBD		Chair & Vice Chair			Strong coordination need for defining cal/val and quality assurance/control implementation components and models in support of electronic implementation in the databases, metadata, and viewers. Need for cal/val data archive and viewer.
WGC	JRC, NOAA		Chair & Vice Chair and Lecomte		LPV/IVOS	ECV cal/val support, validation of model products, quality definitions and processes
WGCBD	NOAA, INPE		Chair & Vice Chair			Strong need for training and outreach relative to cal/val, QA4EO, accuracy, error, uncertainty and traceability.
WGCV	USGS, CSA		N/A			Cal/val DD statement
SST			UK, David Llewellyn-Jones	IVOS		improve cal/val data support of monitoring, assessment and predictive capabilities for SST
OCR			NIST, Carol Johnson	IVOS		improve cal/val data support of monitoring, assessment and predictive capabilities for QC
OSVW			Xialong Dong (Action)	MW		cal/val data support
OST			Xialong Dong (Action)	MW		cal/val data support
P			Xialong Dong (Action)	MW	LPV	cal/val data support
LSI			Greg Stensaas	IVOS	SAR, TM	ensure cal/val processes and data for LSI tasks, FCT, GFOI interoperability, SAR cal/val, cal of climate and EVC instruments and validation of products
AC			Bojan R. Bojkov	AC		improve cal/val data is support of monitoring, assessment and predictive capabilities for changes in the ozone layer, air quality and climate forcing
			Jean-Christopher Lambert	AC		
			Albrecht von-Bargen	AC		

Participation update



- Interaction email to each WG, VC, and CEOS Task Lead asking for detailed cal/val support needs; Define support at WGCV level or establish SIT/SEC action

WGs		WGCV Subgroup	Detailed need from VC/WG/CEOS task statement/requirement	priority number	Point of contact	
	Estimated Task/effort	Name		1, 2, 3, 4, ...	Name	email
WGC	Support ECVs; FaPAR, NDVI, LST, Albedo, Surface Reflectance, ...	IVOS, LPV				
	Support quality definition process	IVOS, AC, LPV				
	Support update of cal/val site and instrumentation requirements					
	Dataset Calibration quality to feed ECVs	IVOS, AC,				
	Understand uncertainty accuracy and uncertainty between instruments					
	Support continuity and consistency in the validation of datasets					
	Support long-term homogeneity of datasets and products					
	Support indices of quality, maturity and uncertainty					
WGCapD	Outreach and support of integration of QA into GEO	all WGCV/subgroups				
	Training and support of QA4EO Implementation in CEOS					
	Defining the DD statement for all cal/val data					
	Support a cal/val data interface in CEOS					
	Need help with presentation of showcases and pilots					
WGISS	Integration of cal/val specific information into CEOS data architecture	all WGCV/subgroups				
	Incorporation and identification of all defined cal/val site data into architecture					
	Define quality and maturity fields in database and metadata					
	Support for archive of cal/val, SDAPs, ancillary data, ...					
	Support a cal/val data archive and interface in CEOS					
	Support a set of quality indicators					
SEO	requirements, system engineering, program management, tools, and other support	all WGCV				

Participation update



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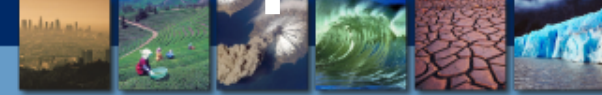
Tasks	Task/effort	WGCV Subgroup
		Name
Climate ECV	cal/validation support	all Subgroups
GFOI/FCT	cal/validation support	IVOS/LPV/SAR,
	Product uncertainty evaluation support	IVOS/LPV/SAR,
	Develop a Cal/Val/QA showcase	IVOS/LPV/SAR,
JCAM/GLAM/G		
EOBON	cal/validation support	IVOS, LPV
GEOhazards	cal/validation support	TMSG, IVOS, SAR
QA4EO		WGCV and Subgroups
	Support GEO/CEOS showcases; FCT Ozone, Elevation	IVOS/LPV/SAR, ACSG, TMSG
	Develop new QA4EO Implementation Pilots	
	Lead the CEOS and support the GEO Tasks	
	Develop QA definitions and quality indicators	
	Support indices of quality, maturity and uncertainty for datasets and information	
	Support the development quality indicators and "fit for purpose process for GEO	
	Development for quality indicators and "fit for purpose process for CEOS	
	Continue to develop and support the uncertainty analysis on higher level products, ECVs, and modeling	
	Support long-term homogeneity of datasets	
	QA4EO Sec and Web Support	
	Quality infrastructure	
	Support definitions for WGISS architecture implementation	
Cal/Val Sites and Processes	Define and prioritize for all WGCV subgroup related instruments and ECV products	WGCV & subgroups
	Define associated Cal and val processes for use over test sites	WGCV & subgroups
	Establish instrumentation list and support requirements for test sites	WGCV & subgroups
	cal/val processes	WGCV & subgroups
CTF	quality and validation support	WGCV
DD; GCI/GEOS		
DataCORE;	need support from others	

VCs	Task/effort	WGCV Subgroup
		Name
SST	Support calibration activities via IVOS	IVOS
	Support CEOS recommended test sites	IVOS
	Support SST ECV validation	IVOS
	Understand uncertainty accuracy and uncertainty between instruments	IVOS
	Support independent expert-group assessment of datasets	IVOS
OSVW		
	Support independent expert-group assessment of datasets	MW
	Support indices of maturity and uncertainty	MW
	Understand uncertainty accuracy and uncertainty between instruments	MW
OSCR	Support calibration activities via IVOS	IVOS
	Support CEOS recommended test sites	IVOS, LPV
	Support OC ECV validation	IVOS, LPV
	Understand uncertainty accuracy and uncertainty between instruments	IVOS
	Support independent expert-group assessment of datasets	IVOS, LPV
	Support calibration campaigns	IVOS
LSI		
	Support GFOI/FCT calibration and validation for IVOS and SAR instruments	IVOS, LPV, SAR
	Support JCAM validation	LPV
	Continue to support the uncertainty analysis on higher level products, ECVs, and modeling	IVOS, LPV, SAR, TMSG
	Support independent expert-group assessment of datasets	IVOS, LPV, SAR
	Understand accuracy and uncertainty between instruments and products	IVOS, LPV, SAR
AC		
	Support atmospheric adjustment for satellite retrievals	ACSG
	Support continuity and consistency in the validation of datasets	ACSG
	Support long-term homogeneity of datasets.	ACSG
	Support indices of maturity and uncertainty of ECVs	ACSG
	Support independent expert-group assessment of datasets	ACSG
	Understand uncertainty accuracy and uncertainty between instruments	ACSG
OST		
	Support CEOS recommended test sites	MW, LPV
	Support independent expert-group assessment of datasets	MW, LPV
	Support indices of maturity and uncertainty	MW, LPV
	Understand uncertainty accuracy and uncertainty between instruments	MW, LPV
Precip		
	Support the Soil Moisture ECV	MW, LPV
	Support independent expert-group assessment of datasets	MW, LPV
	Support indices of maturity and uncertainty	MW, LPV



- **WGCV-35 / WGISS-34 on 24-28 Sept 2012**
 - Discussion of QA4EO implementation efforts
- **WGCV-36 – May 2013 - Shanghai, China**
- **WGCV-37 – Jan/Feb 2014 – TBD**
- **WGCV-38 - Sept 2014 – TDB**
- **Subgroup meetings continue 1-2 times per year**
- **CEOS Libya-4 Workshop -**
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WGCV engage in common efforts w/ other CEOS components



- **WGCV engaged in these efforts and gather GEO/CEOS /support efforts to move QA4EO forward**
 - QA definitions/standards
 - Quality in metadata, “fit for purpose” information, accuracy, error, uncertainty, traceability
 - Fields in GEO and CEOS data structure
 - System specs and standards?
 - ECV cal/val and QA
 - Carbon and climate requirements validation
 - In situ and modeling quality, uncertainty, traceability
 - Other related programs and tasks
 - ISO

QA4EO actions required of SIT and CEOS members



- **CEOS members to provide examples of activities current or past which are consistent with QA4EO principles which can be used as case studies on new web-site.**
- **Agencies to present/summarize their efforts to meet QA4EO principles to QA4EO implementation team/SIT.**
- **Encourage appropriate “badging” use of QA4EO logo to build awareness and visibility**
- **Provide key representatives to support any evolution/additions of the guidelines**
 - **Climate data “maturity index”**
 - **Long Term Data Preservation (LTDP)**
 - **High level product QIs**

QA4EO actions required of SIT and CEOS members (continued)



- **CEOS (GEO SBA) contacts to promote principles and implementation in GEO.**
- **Agencies to encourage reporting of QI (uncertainties with data they supply) and providing ready access to necessary metadata providing evidence to support it.**
- **Agencies to request appropriate QA information from providers (utilizing QA4EO as shorthand specification) to stimulate and progress QA4EO principles.**
- **Agencies to provide resource to facilitate QA4EO implementation team in delivering actions.**

QA4EO Implementation Profile






- **QA4EO implementation is supported by a framework document and a set of key guidelines to assist in its interpretation and implementation**
 - **Principles and Guidelines Version 4.0 and Implementation Management**
 - CEOS, IEEE, agency support and workshop revisions
 - **QA4EO Website** <http://qa4eo.org/>
 - **Overall Key Guidelines and associated reference documentation populated on QA4EO**
 - **Enhanced documentation continually being developed**
- **Organizations that fund and oversee the development and execution of Earth Observation programs are responsible for implementing QA4EO principles**
 - **Need CEOS and GEO requirements, guidelines, and implementation mechanisms**
 - **Need to support CEOS and GEO data and information architecture**
 - **Need to continue to provide QA4EO Showcases and Implementation Pilots**

QA4EO Implementation Plan



- **Based on, previous workshop outcomes and actions**



**Group on Earth Observations (GEO)/
Committee on Earth Observation Satellites
(CEOS)**

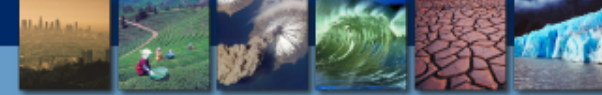
**A Quality Assurance Framework for Earth
Observation (QA4EO)**

Implementation Strategy and Work Plan

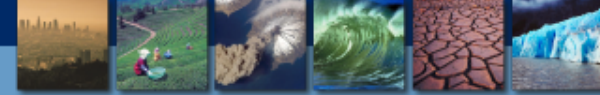
March 2012

Version 0.4

This document was prepared and compiled by CEOS Working Group on Calibration and Validation (WGCV) and is in review by CEOS WGCV and the GEO QA4EO board members, as shown later in the document.



- **UKSA with Centre of Carbon Management (CCM) at the National Physical Laboratory (NPL)**
 - **2 year effort to support QA4EO implementation support – secretariat, web, leadership**
 - **Dr. Hillary Elliott**
 - **<http://www.npl.co.uk/carbon-measurements>**



- **Authorisation - Delegated management from CEOS and GEO, responsible for recommending and proposing to GEO Secretariat**
- **Management of GEO QA4EO Implementation:**
 - Develop and define implementation prioritization of QA4EO needs in GEO
 - Create the implementation requests to obtain resource in GEO and present to GEO management
 - Support management and integration across GEO
 - Create Ad hoc Working Groups for Implementation needs
- **Efforts:**
 - Detailed promotion and management of QA4EO at technical and scientific domain level.
 - Evolution of QA4EO, scope and guidelines
 - Development of Implementation Strategy
 - Focal point for guidance on key guidelines
 - Review technical input and approve or recommend; approve procedures/comparisons as appropriate.
 - Provide scheduled actions and work as need



• **Management of CEOS QA4EO Implementation:**

- Evolve QA4EO, scope and guidelines
- Develop and refine of Implementation Strategy
- Focal point for guidance on key guidelines and implementation
- Team/Effort requirements and tasks needed in CEOS for QA4EO
- Develop and define implementation prioritization of QA4EO needs in CEOS
- Create the implementation requests to obtain resource in CEOS and present to CEOS management
- Support management and integration across CEOS
- Create Ad hoc Working Groups for Implementation of new tasks or efforts in accordance with on-going CEOS efforts

Members:

- WGCV Chair/Vice Chair
- WGCV Subgroup Chairs and delegates
- WMO
- Metrological Standards bodies (2 minimum)
- QA4EO Secretariat
- WGClimat, WGCapD, WGISS delegates
- Virtual Constellation and CEOS effort leads and/or delegates
- All members of the CEOS QA4EO Management Team will be invited and considered as support and maybe called upon as needed by the taskforce.

WGCV-35 Meeting Objectives



- **Focus on key efforts**
- **Focus on Key Discussion of WGCV-35 Meeting Objectives**
 - **Discuss WGCV issues/needs related to the CEOS CSS and CEOS Work Plan**
 - Provide comments
 - **Define WGCV Interaction across CEOS**
 - Discuss communication issues
 - Define WGISS interactions!!
 - Discuss current and future Showcases
 - **Define current status of GEO and CEOS actions**
 - Update to actions status and define new actions
 - **Status WGCV actions and define new actions**
 - **Define recommendations to plenary**
 - **New Chair and Vice Chair**
 - **GSICS and other organization support or partners**