



# CEOS-WGCV and WGCV / ACSG Activities

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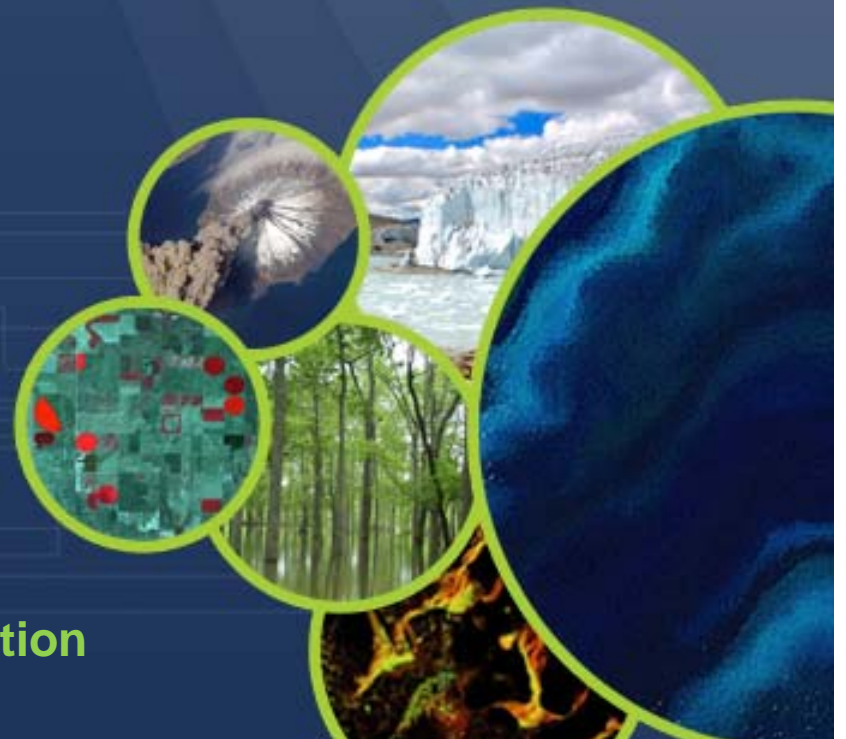
CEOS – WGCV

ACC-VC # 11

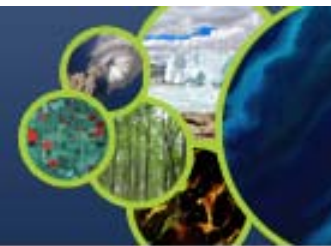
ESA-ESRIN, Frascati, Italy

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Working Group on Calibration and Validation



- **The CEOS Working Group on Calibration and Validation (CEOS/WGCV) Mission is to ensure long-term confidence in the accuracy and quality of Earth Observation data and products and to provide a forum for the exchange of information about calibration and validation, coordination, and cooperative activities.**
- **The CEOS/WGCV Atmospheric Composition SubGroup (CEOS/WGCV/ACSG) Mission is to ensure the accurate and traceable calibration of remotely-sensed atmospheric composition radiance data and validation of higher level products for application to atmospheric composition and *in conjunction to* climate research.**



The CEOS/WGCV, and its subgroups, has been undergoing a restructuring process since late 2012 to address:

- The changing CEOS member agency needs, especially for new members, changing mission portfolios and Earth Observation applications
- The requirements of the different new CEOS activities, including:
  - Supporting the other CEOS Working Groups
  - The CEOS responses to task forces such as for Carbon (2013/14) or the water cycle (WSIST, 2015)
  - The CEOS constellations
  - New activities such as the sensor cross-cutting items, e.g., DEMs, cloud masking, etc. **Working Group on Calibration and Validation**

The WGCV/ACSG work has therefore focused on three targeted small scale activities (that do not overlap with existing structures such as for example IWGGMS):

1. Support / develop Fiducial Reference Measurements (FRMs) for atmospheric composition:
  - Support the calibration, traceability and characterization of Brewers using the Izaña standard instrument (4 campaigns to date) –  
*in cooperation with WMO/GAW*
  - Support the inter-comparison of ground-based instruments (Brewer-Dobson, of ground-based NO<sub>2</sub> measurements, etc.)
  - The development ground-based O<sub>3</sub> and NO<sub>2</sub> profiles from spectrometers –  
*in cooperation with NDACC*
  - The standardization of the mini-spectrometer retrievals (see Pandonia presentation by A. Cede)
  - Cooperate on merging ground-based measurements such as LIDAR, sun-photometers and spectrometers, to enhance aerosol classification databases

## 2. Cross-cutting activities

- Organization of the February 2015 Radebeul workshop on the selection of the CEOS/WGCV cross-cutting activities
- Limited 2-year targeted studies – based on a clear defined procedure with defined deliverables
- Selected studies (to follow QA4EO principles) to support EO applications:
  - Atmospheric Correction for land and ocean parameter retrievals
  - Harmonised cloud screening approach (and nomenclature)
  - Digital Elevation Model (DEM) characterization

More information can be found on the CEOS Cal/Val Portal



### 3. Atmospheric Composition / Chemistry instrument calibration (recent developments from the WGCV)

- Joint WGCV/ACSG and GSICS/UV-VIS working meeting at NOAA in Fall 2015
- Organization CEOS pre-launch calibration & characterization workshop together with all WGCV sub-groups (targeted date: second half 2016)
- Definition of QA4EO “best practices” for the consolidation of datasets and the calibration documentation



- **There are clear areas of mutual interest, namely the calibration work and the Fiducial Reference Measurement (FRM) activities**
- **CEOS/WGCV is open to cooperation with the ACC**
- **CEOS/WGCV welcomes constellation participation in the plenary, sub-groups and other activities**
- **CEOS/WGCV is currently systematically inviting VCs into the plenaries with dedicated sessions**

***Point of Contacts:***

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## *Some definitions...*



- **calibration:** *The process of quantitatively defining the system response to known, controlled signal inputs.*
- **validation:** *The process of assessing by independent means the quality of the data provided.*
- **fiducial:** *(adj) Regarded or employed as a standard of reference, as in surveying.*
  - [Late Latin *fdcilis*, from Latin *fdcia*, *trust*, from *fdere*, *to trust*; *seebheidh-* in Indo-European roots.]