



CEOS
Working Group
on Calibration and Validation

CEOS WGCV

The Working Group on Calibration and Validation (WGCV) was established in 1984. This resulted from the recognition that calibration and validation activities should play a key role in all satellite Earth Observation missions to ensure the clear and quantitative understanding of the data they generate.

Definitions

Calibration

The process of quantitatively defining the system responses to known, controlled signal inputs


Validation

The process of assessing, by independent means, the quality of the data products derived from the system outputs

Membership

Membership in the WGCV is open to all members of CEOS as defined in the CEOS Terms of Reference, including observers and affiliates. Members may include in their delegations to WGCV meetings any participants who have relevant expertise to contribute to the objectives of the WGCV. Each CEOS member and affiliate designates a point of contact for WGCV correspondence.

Objectives



The objectives of the WGCV are to enhance coordination and complementarity, to promote international cooperation, and to focus activities in the calibration and validation of Earth observations for the benefit of the CEOS members and the international user community.

Meeting the objectives includes the promotion of:

- Exchange of technical information and documentation
- Investigation of possibilities for technical coordination and cooperation for space and ground segments
- Coordination of calibration and validation campaigns and programmes optimizing and sharing of available facilities, expertise, and resource as appropriate

Specific Objectives

Sensor-specific calibration and validation

To document and establish forums for the assessment and recommendation of current techniques and standards for pre- and post-launch characterizations and calibration.

Geophysical validation

To document and establish forums for the assessment and recommendation of techniques for validation of geophysical parameters derived from Earth observation satellite systems.

Selected procedures

The WGCV meets when appropriate, but at least once per year, rotating venue amongst its members. The chairman and secretariat for the WGCV, designated by the plenary, prepare and distribute minutes for each meeting. At each meeting of the WGCV, the time, place, and host for the next meeting is established. For each meeting of the WGCV, each member prepares a report on the member's current and planned calibration and validation activities.

New focus area

The WGCV will concentrate on defining standards and procedures aimed at allowing for the inter-comparison and ultimate utilization of data from all Earth observing platforms, both current and future. Particular emphasis is to be placed on land remote sensing systems. It is imperative to establish common approaches to validation, calibration and data exchange formats to insure effective cooperative use of all CEOS member space assets in addressing important global scale problems as defined by the CEOS membership.

New strategy

Associated Field Campaigns

Conduct calibration and validation field measurement campaigns in association with WGCV Plenary Workshops at significant sites within the sponsoring countries.

Joint Sessions with WGISS

Periodically schedule WGCV and WGISS Workshops for same location with either concurrent or overlapping venues to facilitate joint sessions addressing issues of common interest.

WGCV Subgroups

Subgroups within the WGCV have been established to perform detailed technical work in specific areas. Subgroups are established by the consensus of the WGCV. The WGCV develops the Terms of Reference for each Subgroup and the chairman of each Subgroup reports at each WGCV meeting on the group's progress and plans.

Atmospheric Chemistry Subgroup

Mission

To ensure accurate and traceable calibration of remotely-sensed atmospheric chemistry radiance data and validation of higher level products, for application to atmospheric chemistry and climate research

Infrared and Visible Optical Sensors (IVOS) Subgroup

Mission

To ensure high quality calibration and validation of infrared and visible optical data from Earth observation satellites and validation of higher level products

Land Product Validation (LPV)

Subgroup

Mission

To foster quantitative validation of high level land products derived from remote sensing data in the solar reflective and thermal infrared wavelengths

Microwave Sensors Subgroup

Mission

To foster high quality calibration and validation of microwave sensors for remote sensing purposes. These include both active and passive types, airborne and spaceborne sensors.

Synthetic Aperture Radar (SAR)

Subgroup

Mission

To foster high quality calibration and validation of airborne and spaceborne Synthetic Aperture Radar for remote sensing purposes

Terrain Mapping Subgroup

Mission

To ensure that characteristics of digital terrain models produced from EO sensors are well understood and that products are validated and used for appropriate applications

To meet their objectives, the WGCV and its Subgroups develop and document standards and procedures that can be used by members and others for calibration and validation.

The task of validating all sensors currently flying and scheduled to fly in the near future on a sensor-by-sensor basis is large. However, an even greater and overriding issue to be addressed by the WGCV is the cross-comparison of different sensor types that are providing the same geophysical products

For further information visit the WGCV website at www.wgcvceos.org for details of current activities and contact details. You can also order your own copy of the WGCV's brochure on-line.

