



The Committee on Earth Observation Satellites (CEOS) is providing information and data for Calibration (Cal) and Validation (Val) of Earth Observation (EO) data through this portal.

## Cal/Val Portal Status

The overall objective of the portal is the provision of satellite and correlative data over selected and agreed international sites, used for calibration and validation. This is accompanied by relevant methodological and instrument documentation. The portal comprises infrared and visible optical sensors (IVOS) as well as SAR, microwave and other GEO relevant instruments. The latter group of sensors will be expanded significantly in the near future, e.g. through the ESA SMOS mission.

The major features of the Portal are

- Provision of Earth Observation and correlative data over internationally agreed Cal/Val sites
  - Earth Observation data selection: The following instruments are supported: MERIS RR L1b and L2, ALOS PRISM, ALOS AVNIR, AATSR L1 and L2. MERIS and AATSR data are systematically downloaded from the space agencies and extracted over the Cal/Val sites. SAR and other microwave instrument data are planned for the future.
  - *In situ*/Reference data selection: The *in situ* part contains the local database and link to Aeronet, METOZ and Globcolour databases
- Provision of technical instruments characteristics
  - The instruments part includes technical details on ALOS, ENVISAT, ERS-1 and 2, Kompsat, Landsat, NOAA and SPOT instruments. ASAR and Radarsat will be integrated next.
  - Sensor ML handbook and a full suite of XML files are offered for download (ALOS AVNIR2 and PRISM, ERS and Envisat (A)ATSR, MERIS, Terra and AQUA MODIS, Landsat TM and ETM+, Proba Chris, SeaWiFS, SPOT HRV/HRVIR/HRG).
- A database with information about the Cal/Val sites supported in the portal is available.

- Resources
  - Tools: Software Tools for download and local processing of calibration as well as online software services are provided here.
  - Workshops: This sections links to various upcoming events relevant for Calibration and Validation and collects information (presentations, minutes) of past events.
  - Links: Internet sites with information and data related to Cal/Val are provided here.
  - Literature: This section includes a collection of relevant general documents.
- Methods
  - Calibration Methods: This section provides templates, reference documents and recipes for calibration and validation methods.
- Projects
  - Space for groups of people, sharing a common Cal/Val Project is provided here. The information can be password protected.
- Feedback
  - An online form for providing feedback to ESRIN and the portal developers is provided.



## Cal/Val Portal Version 2 released on 1<sup>st</sup> February 2008: Improvements in user friendliness

- An introductory section explaining what the Cal/Val Portal is about has been added to the main page.
- A section providing documents of relevant Cal/Val workshops has been added to the portal.
- Documents on Cal/Val methodologies are now also available in html format.



### *Upcoming changes and improvements*

- A brief guide 'How to use the Portal' has recently been written. This guide will be available in the 'Information' section in the next update of the portal.
- The newsletter will be available in the 'Information' section in the next update of the portal.
- The descriptions of sites in the Cal/Val Portal are currently being significantly extended. For this purpose, all WTF Core Sites data are currently being downloaded from the WGISS site (<http://edcimswww.cr.usgs.gov/wgiss/>). This site will go offline next year, and its content will be provided through the Cal/Val Portal in future. A close collaboration has been established between the Cal/Val Portal group and people at USGS, i.e. Gyanesh Chander and his colleagues. The improvements will become available with the next updates of the portal.

### *Further Evolution*

- Reference documents, instrument description and selected products for active and passive microwave instruments (ASAR, Radarsat, Palsar)
- Information on ESA's Soil Moisture and Ocean Salinity (SMOS) mission will also be available through the Cal/Val Portal in the near future. The SMOS instrument will operate in the microwave range. In this sense, the Cal/Val Portal is also starting to provide information for instruments working at wavelength ranges other than IVOS sensors.
- MODIS tools will be implemented in an own section in the Cal/Val Portal very soon. This section will be developed in close collaboration with experienced people at NASA.

## *Events*

### *CEOS IVOS 19th Meeting*

The CEOS Working Group on Calibration and Validation (WGCV) subgroup on Infrared and Visible Optical Systems (IVOS) meeting was held in Phoenix, AZ at the Courtyard Tempe Downtown Marriot Hotel from Feb 6-7, 2008. The IVOS 19th meeting was hosted by Dr. Kurtis Thome from University of Arizona with co-sponsorship from USGS.

The main objectives of the meeting were information exchange on agency and country activities and on progress on IVOS activities, to agree on the subgroup mission and terms of reference in light of GEO and the

development and prioritisation of activities. The latter includes

- Operation and use of Cal/Val test sites
- CEOS Cal/Val Portal
- Best practises
- Comparison Exercise

After 3 days of fruitful discussion a list of 8 recommendations and 12 action items were drawn up based on these objectives. The minutes of the meeting are available in the Cal/Val Portal. If you would like to join the IVOS subgroup please contact the chair Nigel Fox ([Nigel.Fox@npl.co.uk](mailto:Nigel.Fox@npl.co.uk)).

### *GEO/CEOS Workshop on Calibration and Validation Processes, Geneva, Switzerland, October 2007*

This workshop was hosted by the Group on Earth Observations (GEO) and the European Space Agency (ESA) at the GEO Secretariat headquarters in Geneva. It arose from the need to harmonise and standardise satellite data handling and information exchange across the international community. The workshop was attended by 45 participants comprising experts from organisations and agencies throughout the world.

Active discussions were undertaken on calibration and validation (Cal/Val) processes, and on data quality assurance. The participants addressed issues related to harmonisation and the ultimate goal to establish globally-recognised guidelines. These dialogues and their resulting recommendations lead towards the Global Earth Observation System of Systems (GEOSS)'s ultimate goal for data interoperability, providing a seamless and transparent flow of knowledge and information products to the global community.

In conclusion, the workshop participants enthusiastically endorsed the outcomes as a milestone towards achieving the GEOSS goal of harmonising the quality assurance processes.



GEO/CEOS Workshop participants



**WGVC-28 and WGISS-25**

On 26. - 29.02.2008 the WGCV-28 and WGISS-25 Joint Meeting was held in Sanya, China. Contact: Petya Campbell ([pcampbel@pop900.gsfc.nasa.gov](mailto:pcampbel@pop900.gsfc.nasa.gov))

**Upcoming events**

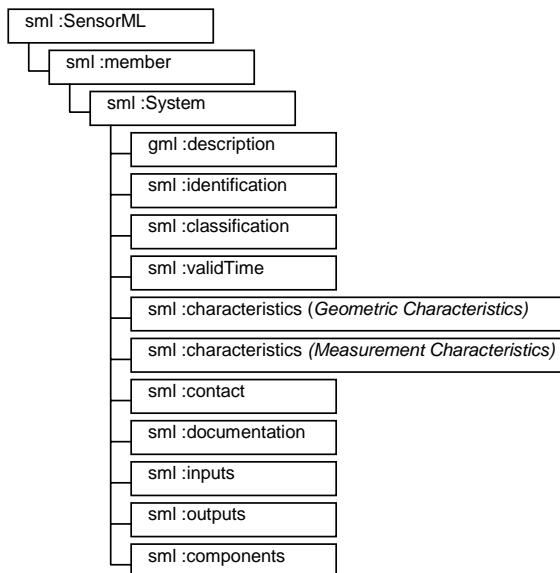
06. - 08.05.2008: GEO - CEOS Workshop on Quality Assurance of Calibration and Validation Processes, hosted by NIST, Washington, USA; contact: Marie-Claire Greening ([marie-claire@greeningconsulting.co.uk](mailto:marie-claire@greeningconsulting.co.uk))

**SensorML****SensorML Description of Instruments Available**

SensorML (Sensor Model Language) is a specification for a standardised description of *in situ* and remote sensors. It is based on eXtended Markup Language (XML). This standard has been developed by the VAST team managed by Mike BOTTIS (UAH) and is now endorsed by the Open Geospatial Consortium (OGC). The Cal/Val Portal has contributed to the extension of SensorML to include suitable fields required for radiometric aspects of EO sensors. A variety of sensors have been characterised in SensorML (see list on page 1). The files are available in the instruments section of the Portal. In cooperation with the SensorML development group in US, an extension of the SensorML specification to include geometric information other than just the pixel size will be addressed during 2008.

<http://vast.nsstc.uah.edu/SensorML/>

<http://www.opengeospatial.org/standards/sensorml>



SensorML (sml) structure

**Supported Projects News**

The Cal/Val Portal offers a forum for the exchange of information and the sharing of data. The following projects are currently supported by the portal:

**MERIS Data Quality Working Group:** The MDQWG is working under ESA leadership on MERIS data quality control, instrument calibration, product validation and algorithm improvement.

**AATSR Data Quality Working Group:** This group is monitoring the AATSR instrument performance.

**ALOS calibration team:** The European node of the ALOS calibration group is using the portal for data dissemination, link to *in situ* data and publishing of results. An intercalibration between ALOS PRISM and MERIS was undertaken with support of the portal.

**The NorSen Group** (Norway, Sweden, Finland) has indicated its interest to use the Cal/Val Portal as a long-term platform for its work. Interest for cooperation or registration as a project has also been expressed by SMOS calibration, the Globcolour project, the Aurora initiative and the MarCoast GSE project.

**Feedback**

The Cal/Val Portal team would like to emphasize that any kind of feedback (questions, comments, own contributions for possible integration in the portal, ... etc.) is highly appreciated. This feedback is essential for the continued development and improvement of the portal as it seeks to find its place as an integral part of the work of the Cal/Val community.

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