CEOS Cal/Val Portal

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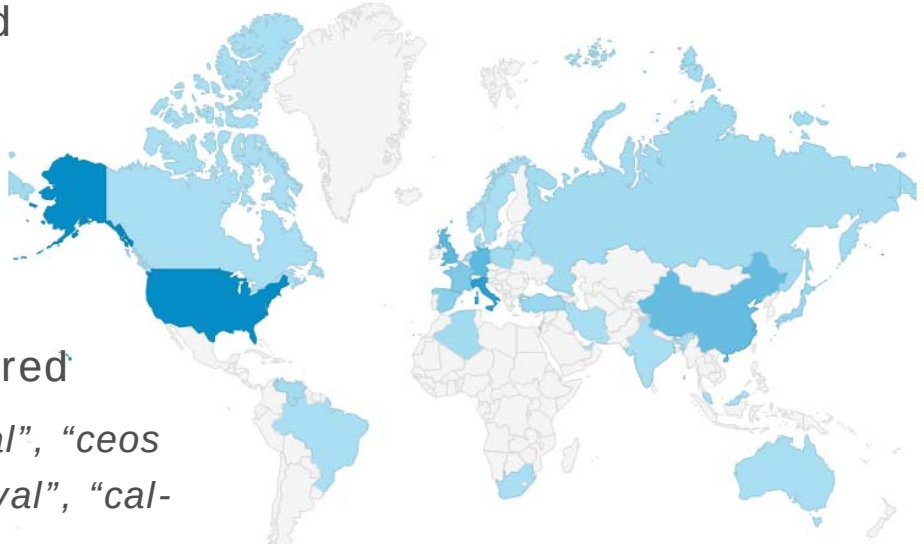
Project Overview

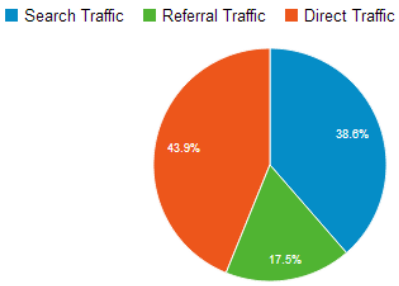
Need of portal as a reference for Cal/Val activities clearly stated during CEOS WGCV 18th meeting held in Beijing, China

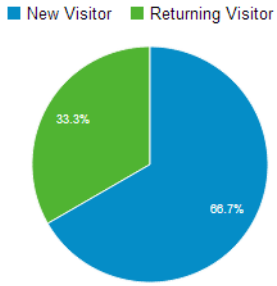
1. **2006-2009**: Creation of a web portal based on a classical html server with a simple data access interface
2. **2009-2013:** Migration of html portal to new CMS Liferay. Design of new Data Access Interface. Re-Organisation of Content Portal. Integration of new tools. New CVP Content Administrator appointed.
3. **2013 -2015+:** Plan of major clean up of content, system upgrade, etc..

STATUS

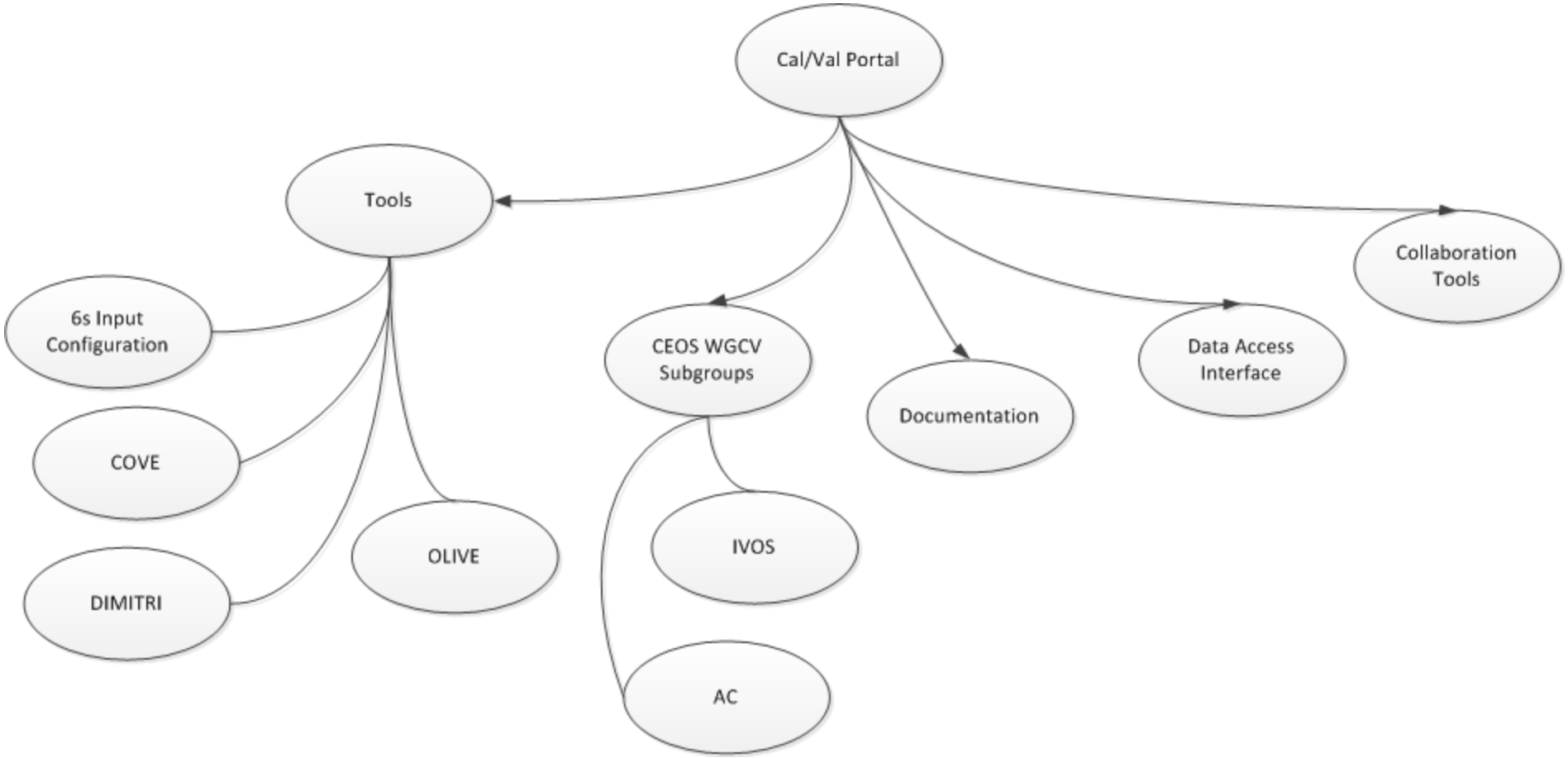
- ✓ The portal is fully operational and maintained.
- ✓ Early 98% of Service Availability
- ✓ ~ 3000 Accesses per year
- ✓ ~ 10 TB of Satellite/In-Situ Data
- ✓ ~ 200 Documents on Cal/Val Stored
- ✓ Most Used Keywords: *"calval portal", "ceos calval portal", "satellite cal/val", "cal val", "cal-val", "calibration and validation"*





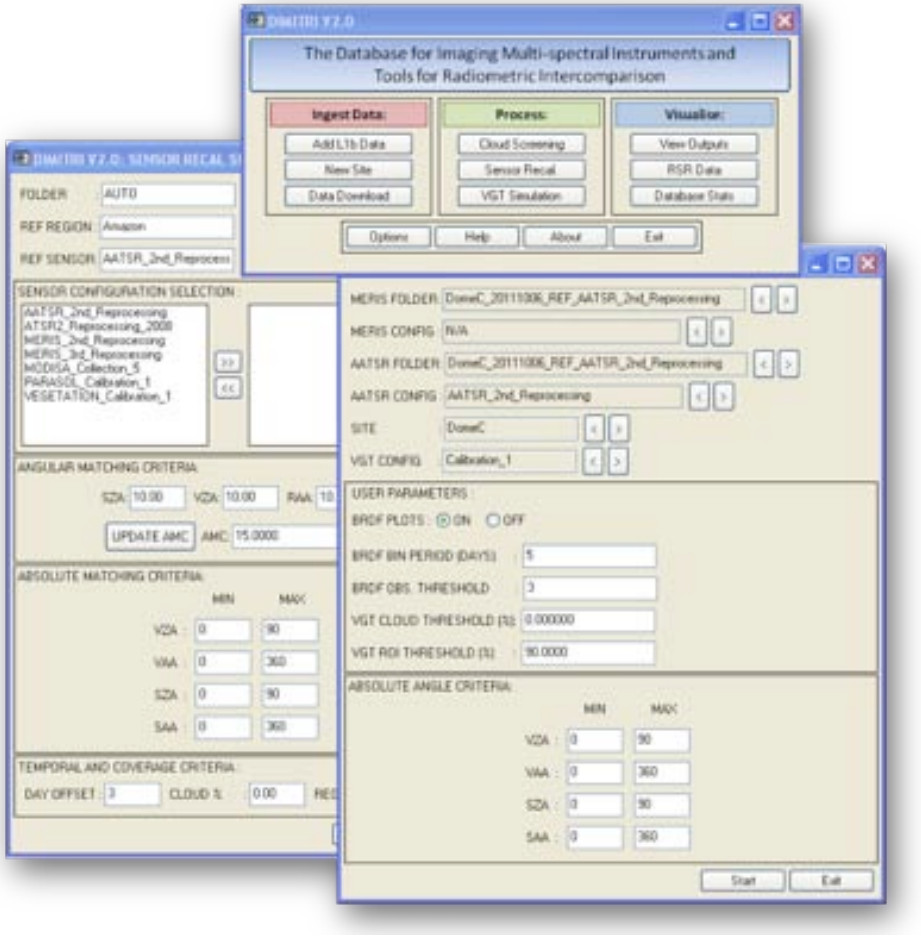


Main Components



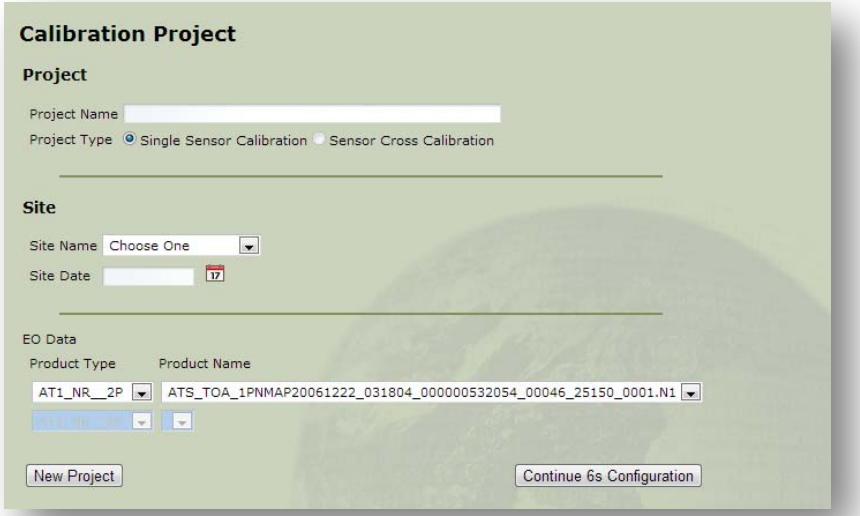
Main Components - Tools

1. DIMITRI – The Database for Imaging Multi-spectral Instrument and Tools for Radiometric Intercomparison contains L1 Data from various medium resolution imagers over terrestrial targets. DIMITRI comes with a suite of tools that allow comparison of the L1 Data originating from various sensors in the database at top of the atmosphere (TOA) level



Main Components - Tools

2. 6s Input Configuration – 6s is a basic RT code used for calculation of lookup tables in the MODIS atmospheric correction algorithm. It enables accurate simulations of satellite and plane observation, accounting for elevated targets, use of anisotropic and lambertian surfaces and calculation of gaseous absorption.



The "62 Input Configuration" tool leads the users through the different fields needed for the creation of the input files and provides the actual file to be ingested in the RT.

http://6s.ltdri.org/index.html

Is the tool still needed? 6s page not maintained. Do we need other references?

Main Components - OLIVE

3. OLIVE (On LIne Validation Exercise) is a web service designed to:

a. Quantify the performances of Earth Observation land products (LAI, FAPAR and FCOVER)

b. Use transparent and traceable methods following standards defined by CEOS – LPV subgroup

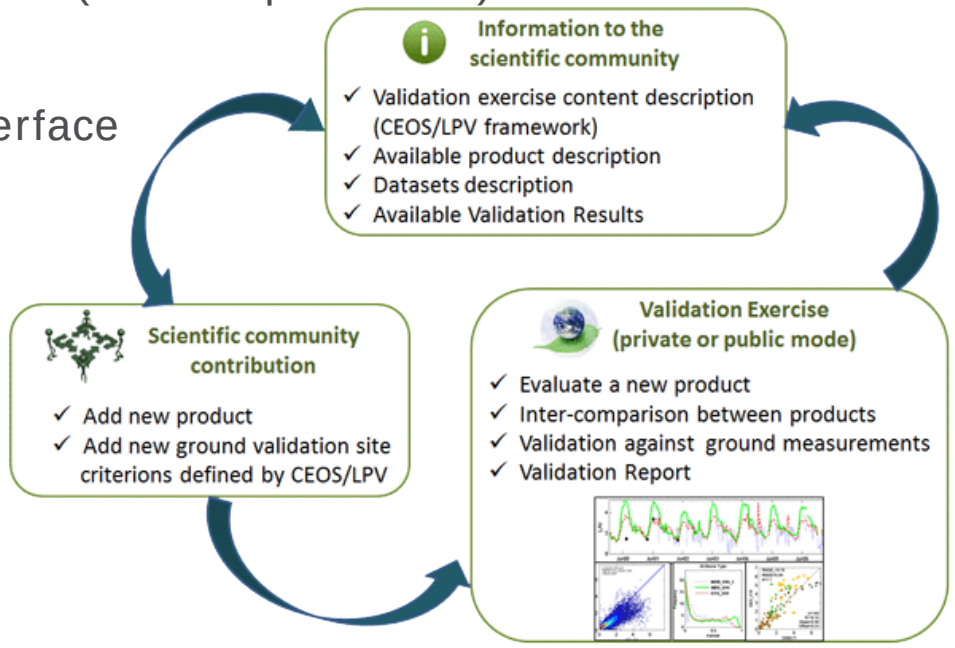
c. Provide open access of the results to the whole scientific community

d. Capitalise on the several initiatives undertaken within the community

OLIVE has been developed by INRA – BROCKMANN CONSULT with the financial support of ESA. OLIVE has been integrated into the CVP

Main Components - OLIVE

- **Components and structure:**
  a. Processing Kernel (MCVV – Matlab Validation Core Code)
  b. Test Sites and Datasets (Belmanip – Direct)
  c. Public Repository
  d. Data Submission Interface
  e. Processing Interface
- **Available Datasets:**
  a. GEOLAND V1
  b. CYCLOPES V3.1
  c. GLOBCARBON
  d. Terra Modis – Coll. 5
  e. MGVI V1



Main Components - OLIVE

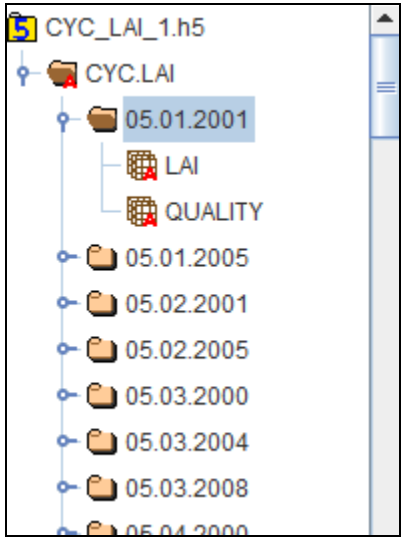
Support to users:

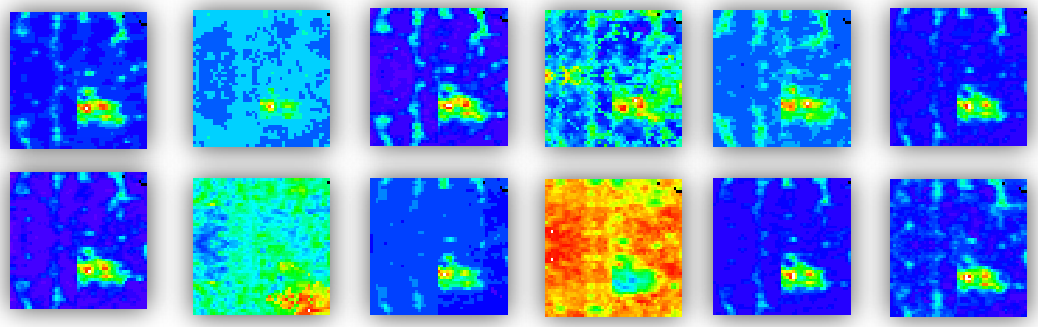
a. IDL Routine to extract particular test sites from the OLIVE datasets.

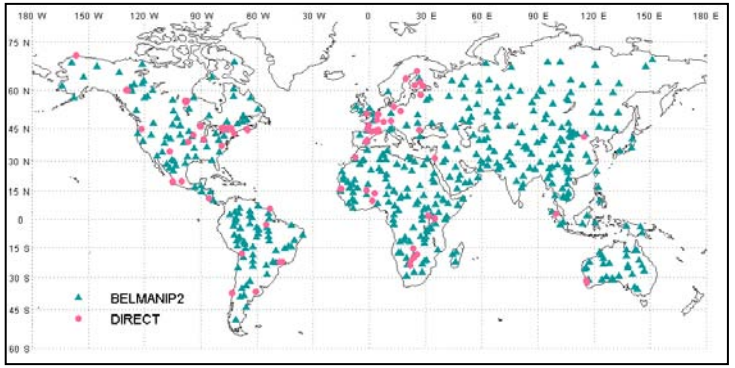
b. Test Site Selection

c. Extraction of time series

d. Export in HDF5

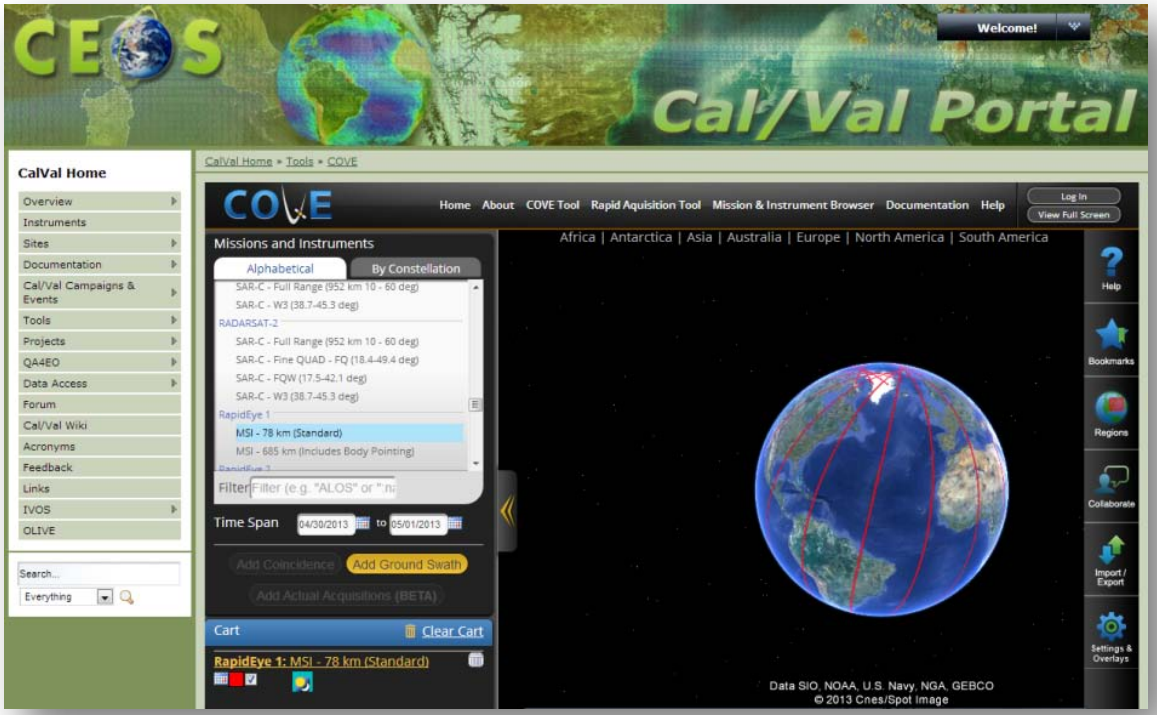






Main Components - COVE

4. COVE – The CEOS Visualization Environment (COVE) tool is a browser-based system that leverages Google-Earth to display satellite sensor coverage areas and identify coincidence scene locations. A direct access to the tool is provided by CVP



Question:

Are there any other Tools, RT, Libraries that need to be supported?

Main Components – IVOS and AC subgroups

1. Description of Services provided to IVOS
    a. Meetings
    b. Wiki
    c. Publication of Results
    d. Documentation Repository
2. Plans for AC subgroup
    a. Porting and hosting of “Dobson” Forum Web Pages
    b. Integration of IBERONESIA network
    c. International Campaign Data (Air Quality)

Question:

Is there any need to harmonise the Subgroups Web Pages?

If so, how do we proceed?

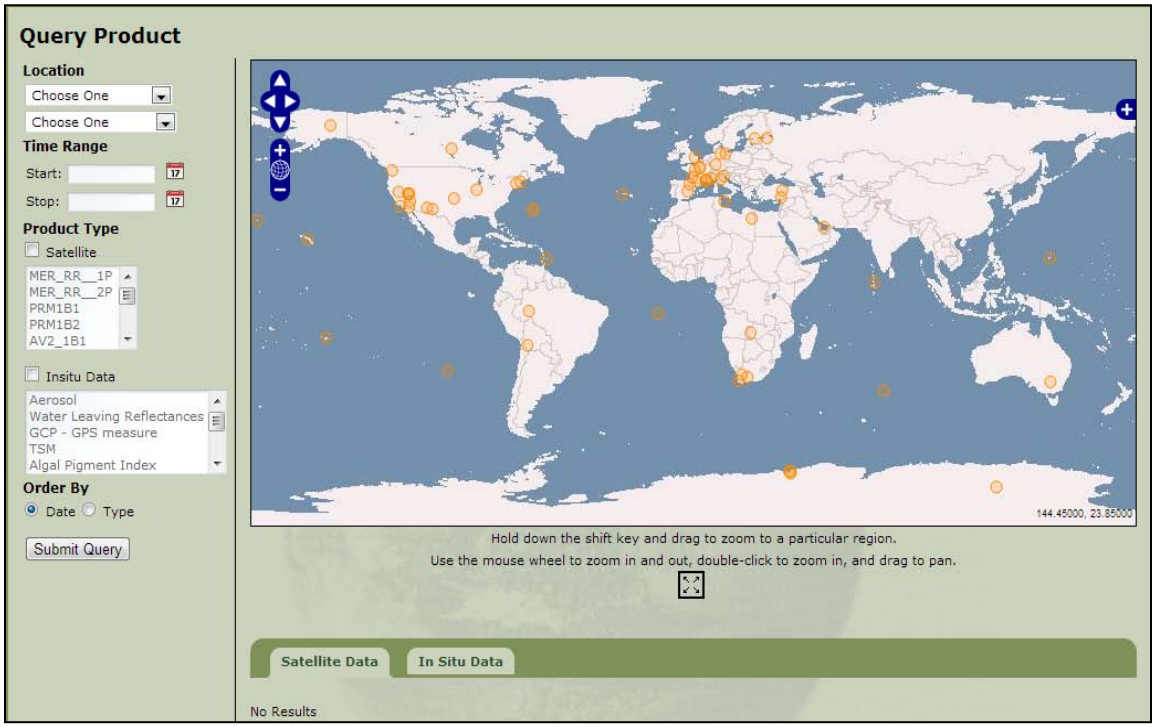
Is there any other subgroup interested in having such service?

Main Components – Data Access Interface

Description of Interface

- Renewed interface
- Simultaneous query on Satellite and In-Situ Database
- Direct Access
- Bulk download (max 50 files) enabled

- ESA SMOS Mission Cal/Val data being regularly distributed to cal/val community, currently via a special ftp



~130 TB have been delivered to Users

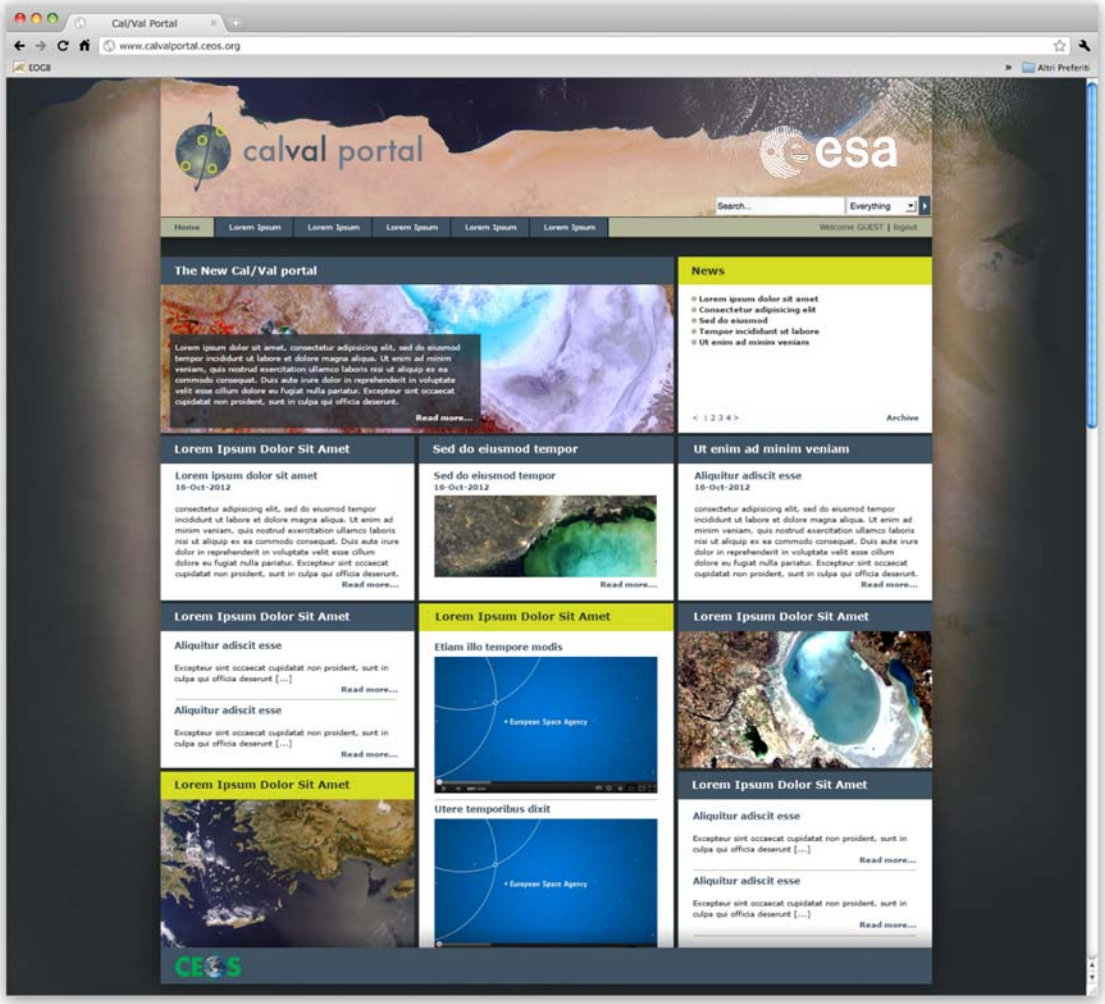
~30 TB have been stored

Future Plans – System Upgrade

- Design of new Layout, adapted to the evolution of new screen formats

- Upgrade to Liferay 6.0
  - ✓ Direct Integration of Microsoft Office
  - ✓ Integration with Social Networks
  - ✓ Improved compatibility of portlets

- Re-Organisation of content and community



Future Plans – DCIO Initiative

Objectives of the Initiative (Data Centre InterOperability):

a. Provide data discovery and search for distributed databases
b. Increase of exposure of hosted data
c. Develop joint data exchange agreement
d. Allow systematic exchange of cal/val data

Status:

a. OAI-PMH (Open Archive Initiative) – Interface installed on EVDC server
b. Harvester tool installed on CVP and EVDC server
c. Agreement on exchange protocol (XSD – XML)

Roadmap to the first working exercise :

a. Detailed design of XML messages
b. EVDC-CVP: mutual exchange of metadata
c. EVDC-CVP: set-up of data flow channel
d. Demonstration of technology
e. New Data Centre can join the initiative

Ongoing- ISMN

Overview on ISMN:

The International Soil Moisture Network is an international cooperation to establish and maintain a global in-situ moisture database.

Objectives:

-To allow easy access to ISMN data via CVP interface

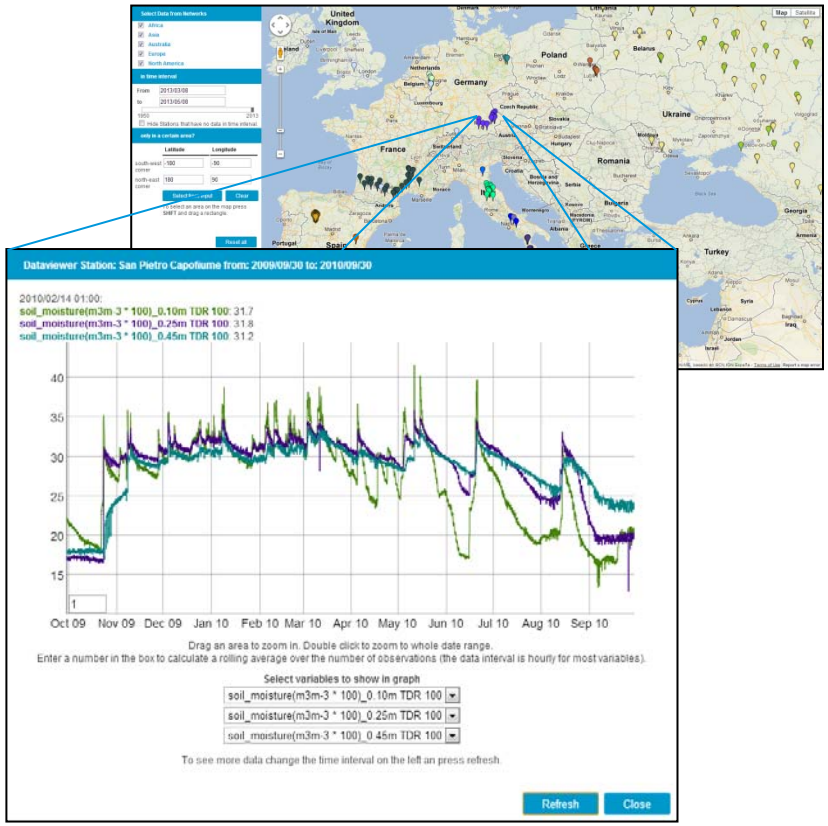
- To allow access to correlative SMOS data

- Systematic subset of SMOS data over ISMN Test sites

- To facilitate validation of SMOS data

To be implemented this year

Activity includes development of a community data intercomparison protocol [Workshop in July 2013]



Future Plans - Tools

Development of L2 SAT/SAT and Sat-to-ground Intercomparison Library for ACSG:

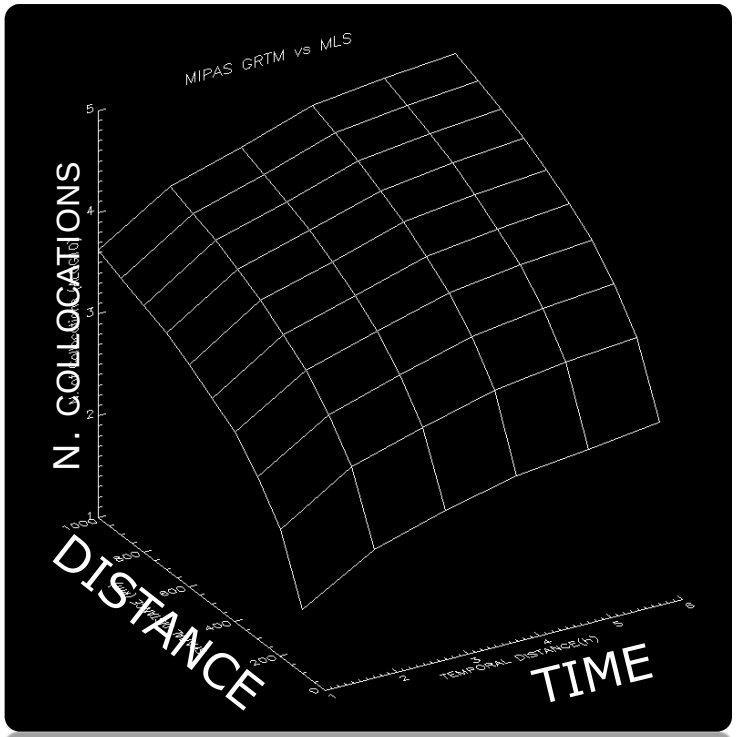
- To study the performances and stability of L2 Data over long time series
- To create a testing facility for L2 Algorithm
- To create a collocation database – Satellite to satellite – satellite to ground stations
- To create a full mission database for L2 Atmospheric Products [initially focused on Stratospheric Chemistry]

Future Plans - Tools

L2 SAT/SAT and Sat-to-ground Intercomparison

Acquisition of full mission archive for:

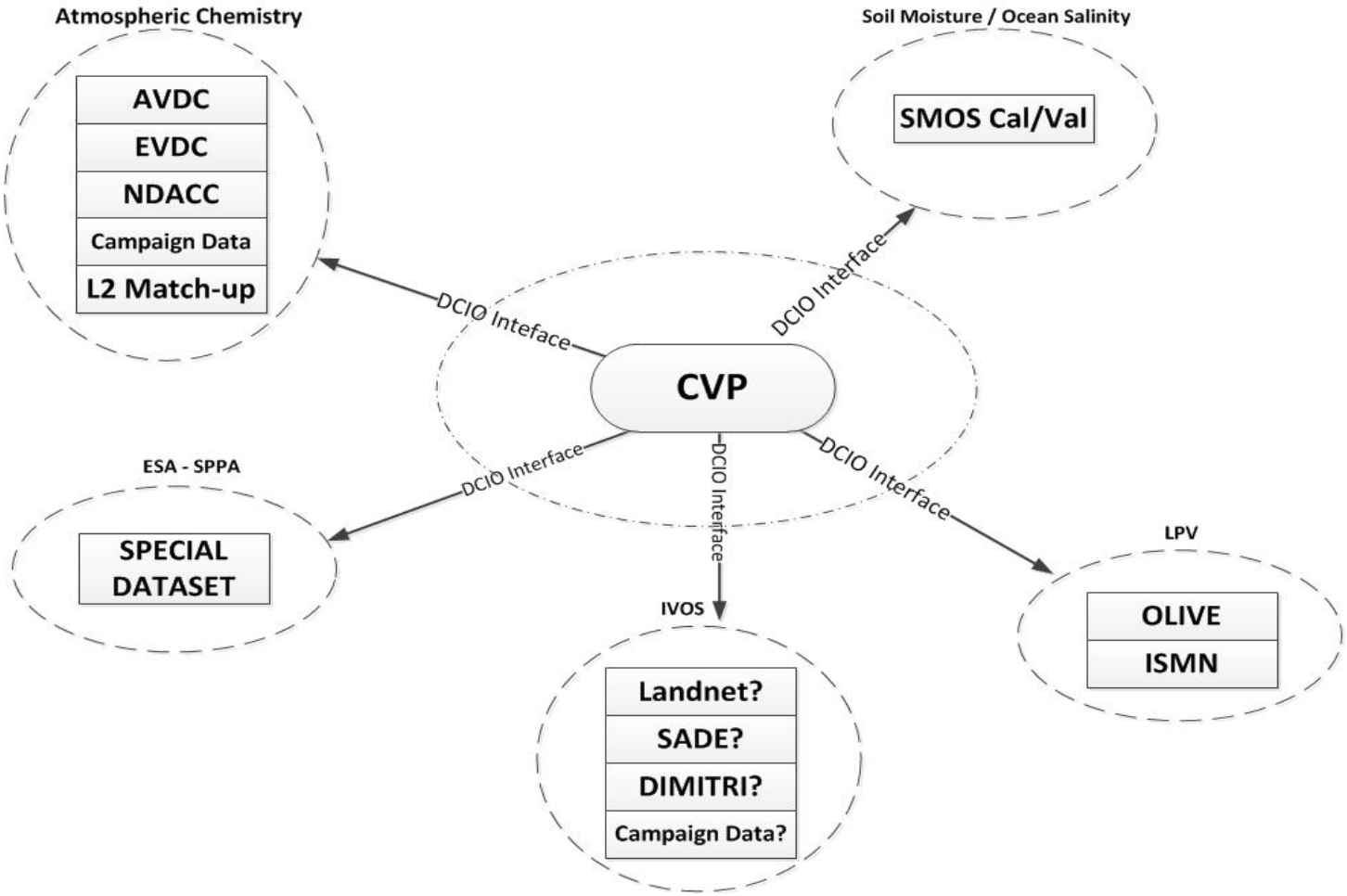
1. AURA-MLS
2. ACE-FTS
3. ENVISAT-SCIAMACHY
4. ENVISAT-MIPAS
5. ENVISAT-GOMOS
6. ENVISAT-MIPAS GRTM
7. IN-SITU DATA



- Coding of Input and Export Routines
- Collocation Engine
- Creation of first collocation database for MIPAS-GRTM vs MLS

First results will be published at the next Living Planet Symposium, Sept 2013.

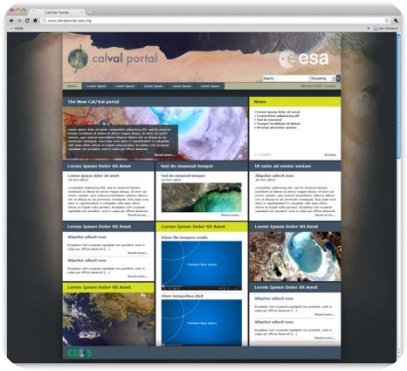
CVP as a Gateway to Datasets

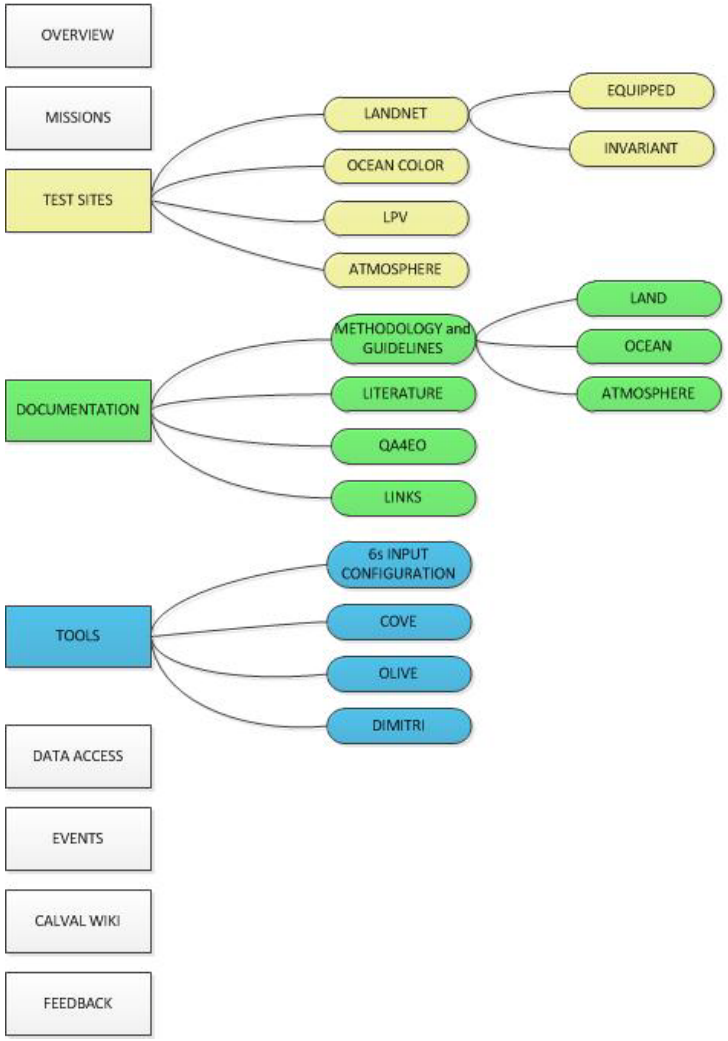


Future Plans – Structure Re-Organisation

Main Objectives:

1. Content presentation in a more rational way
2. To re-organise the document library per document type and domain
3. To create dedicated communities (mini-sites) for WGCV subgroup (IVOS and AC)





Conclusions

- ✓ CVP is fully operational and funded by ESA for the next 3 years
- ✓ The portal is regularly accessed by users
- ✓ The CVP system will be re-organised and upgraded
- ✓ Tool section has been renewed
- ✓ OLIVE project has been competed and integrated into the portal [Support to OLIVE users is being provided]
- ✓ DCIO initiative – Activity started and first test expected in 4-6 months [Interconnection with NASA-AVDC/ESA-EVDC/NDACC]
- ✓ ISMN will also be integrated
- ✓ Validation Study on L2 Atmospheric Data is on-going, first results will be presented at Living Planet Symposium