



Sea Level CCI project

Phase II 2nd annual review





System Engineering & System Evolution

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WP3000 System Evolution Tasks

- WP3100: System Engineering activities (CGI-led)
 - WP3110: System Specification (CGI)
 - Documenting evolutions from Phase I and addressing key system issues within Phase II including interoperability and commonality across CCIs
 - WP3120: Engagement with SEWG (CGI)
 - Fully participate in cross-CCI System Engineering Working Group activities, which look at common system engineering aspects which affect all ECVs.
 - WP3130: Engagement with DSWG (CLS)
 - Fully participate in cross-CCI Data Standards Working Group activities, which look at common standards for metadata and data across the ECVs.
- WP3200: System Evolution (CLS-led)



Deliverables associated with WP3

- System Specification Document (SSD)
 - Defines **how** the system will do it

- System Verification Report (SVR)
 - Describes the tests undertaken to **ensure** the system will do it



Deliverables associated with WP3

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 - Defines **how** the system will do it
 - **D3.1 SSD Issue 1.1** – [May 2015] – submitted & accepted

- System Verification Report (SVR)
 - Describes the tests undertaken to **ensure** the system will do it
 - **D3.2 SVR Issue 1.1** – no update is planned and v1.1 of the document remains the up to date version



System Engineering Working Group (SEWG)

•What is the point of the SEWG?

- Cost effectiveness “*as a whole*” [SoW]

•Who participates?

- Aerosol ECV, Cloud ECV, Fire ECV, GHG ECV, Ice Sheets ECV, Land ECV, Ocean Colour ECV, Ozone ECV, Sea Level ECV, SST ECV & ESA

•Most Useful aspects of SEWG & DSWG (2015 survey):

- **Harmonisation** of CCI data & format
- Discussion of **new ideas** on data harmonisation and system engineering
- Identifying **common challenges** on operational usage
- Discussion of **common ideas** on operational usage
- **Receiving Information** from CCI programme on major accomplishments, plans and issues. .



SLCC involvement in SEWG

- **Participate in SEWG meetings**
 - Attend and contribute to the SEWG telecoms / meetings
 - 3 such meetings took place in 2015
 - Telecom in February
 - Telecom in May
 - Splinter Session at CCI co-location meeting in September



SLCC involvement in DSWG / SEWG in 2015

• Key issues raised / discussed in 2015

- DOIs – CCI Open Data Portal team will be able to generate DOIs for data for all CCI teams
- Links to C3S and Copernicus – CCI are not part of inner Copernicus network, but shall contribute to C3S
- Obs4MIPS – support for the submission provided by the CCI Open Data Portal team
- Uncertainties – work undergoing to compile an overview on uncertainty representation in all CCI projects
- Clarification regarding the proposed standard Land – Sea mask – suggested solution to use Sentinel-3 masks when appropriate and CCI Open Data Portal to collect and make available other masks.

DSWG / SEWG wiki: <http://esacci.pbworks.com>



SLCC involvement in CCI Open Data Portal

•Activities with the CCI Open Data Portal Web Presence team:

- Engage with the CCI Open Data Portal team to allow them to understand **website deployment characteristics** – namely Drupal version, modules installed
- Update the look and feel of the SL CCI portal website in accordance with the **Style Guide** generated by the CCI Open Data Portal team – the aim of this style guide was to promote consistency of views between the various CCI project webpages
- **Response to requests** from the CCI Open Data Portal team, including:
 - Update and enhance Drupal core and modules as suggested by Portal Team – for security, and user experience as well as backup
 - Update the links to direct to only cci.esa.int (remove any links to soon to be defunct esa-cci.org)
 - Fix any broken hyperlinks identified by the CCI Open Data Portal Team

•Future activities with the CCI Open Data Portal Web Presence team:

- Engage with the Open Data Portal team regarding potential upgrade to a **later version** of Drupal – identify any risks or constraints
- **Update** Drupal core and modules as advised
- Respond to a future revised Portal **Style Guide** (expected in Nov 2016)



SLCC involvement in CCI Open Data Portal

•Task 5: Obs4MIPs.

- Objectives is to provide a new dataset for Climate Modelers via the Observations for Model Inter-comparisons activity.
- This will be an updated version of the AVISO dataset provided in 2011 – ADT
- Plan is to response to a call for datasets from the Obs4MIPS / WDAC team that was issued in late 2015
- Multiple steps involved:
 1. Agree with WDAC the most suitable parameter that matches CMIP5 standard outputs -
Ongoing discussions with WDAC team, current intention is to provide a dataset of SL_CCI (v1.1) SLA monthly maps along with the MDT file provided by AVISO
 2. Submit a Data Set form, that describes key parameters such as temporal range and spatial resolution – First version of this form has been submitted to WDAC for approval
 3. Submit a Technical Note, that describes process to generate the dataset – to be done
 4. Convert the dataset to the Obs4MIP netCDF format with appropriate metadata – to be done



Obs4MIPs processing steps

1 - Preliminary phase (CLS):

STEP 1A: WRITING A NEW TIMESERIES
 → Script that will create merge monthly product into one single netCDF3 file.
 → Add ancillary file (if the size does not exceed 2GB)
 → Create a new Time variable (boundaries + mid-point of the interval, cf Obs4MIPs) in float 64

VALIDATION 1A:
 → NetCDF File Viewer (Ex BEAM, Panoply ...)

OBS4MIPs Requirement Done:
 → 1.4 Only one physical variable
 → 2.3, 2.4, 2.5 Time Variable Requirements
 → 5.1 Ancillary Data

STEP 1B: CORRECTIONS TO THE DATASET
 → Change the coordinates to float 64
 → Change the physical variable to float 64
 → Change Missing Data / Fill Value to 1.0E20
 → Check if ancillary data is float 32
 → Check if Missing and Fill Values are set to 1.0E20 for ancillary data too

VALIDATION 1A:
 → NetCDF File Viewer (Ex BEAM, Panoply ...)

OBS4MIPs Requirement Done:
 → 2.2 Coordinate Float 64
 → 3.2 Physical Variable Missing Value
 → 5.3 Ancillary Data Float 32

2 – CMOR (CGI):

STEP 2A: CMOR, PRELIMINARY PHASE
 → Script for writing Latitude BNDS
 → Script for writing Longitude BNDS

VALIDATION 3A:
 → Use of the Python NetCDF interface to write a dummy time series.
 → BEAM Viewer: The axis variable are correctly done, test with a dummy grid.

OBS4MIPs Requirement Done:
 → 2.7 Latitude BNDS
 → 2.9 Longitude BNDS

STEP 2B: CMOR - SCRIPT
 → Write a CMOR SCRIPT that is using as inputs:
 → The Output of 1B and 2A
 → The CMIP5 metadata
 → The Global Attributes
 → The Variable Attributes
 → Use the ZOS entry in the CMIP5 Tables

VALIDATION 3B:
 → BEAM Viewer: Data Check, Attribute Check

OBS4MIPs Requirement Done:
 → 1.1 NetCDF 3 File
 → 1.6 CMIP5 variable/coordinates names
 → 2.1 Axis parameters from CMIP5 Tables
 → 2.12 Axis Metadata
 → 3.1 Axis order of the CMIP5 Tables
 → 3.3 CMIP5 Name for physical Variable
 → 3.4 Physical Variable Metadata
 → 5.4 Ancillary Metadata

3 – Post Processing (CGI):

STEP 3A: GLOBAL ATTRIBUTE CORRECTION
 → Use of the Python NetCDF interface to delete the global attributes that have been generated by CMOR that are not required for Obs4MIPs
 → Change the filename according to Obs4MIPs Requirements
 → Change the Physical Variable Name from ZOS to SLA

VALIDATION 3A:
 → BEAM Viewer: Global Attribute Check

OBS4MIPs Requirement Done:
 → 4 Global Attributes = OK
 → 6 Naming File Convention Applied

4 – Validation (CGI):

STEP 4A: Compliance Check
 → Submit the file to check the CF Compliance (the test SHOULD be fine at that point, thanks to CMOR)
 → Proceed to a final Check of the different Obs4MIPs requirements (global attributes + 5 other Obs4MIPs categories)

VALIDATION 4A:
 → BEAM Viewer: Global Check
 → CF Validation Website Output

FILE READY TO SUBMISSION



Way forward

• Continued SLCCI consortium activity In SEWG

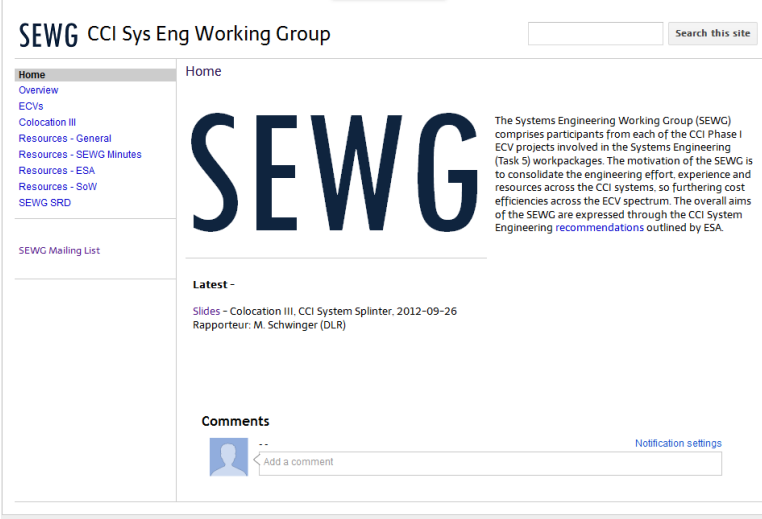
- Supporting the SEWG & DSWG activities throughout Phase II
- e.g. further liaising with CCI Data Standards & Harmonization Working Group, as they reach further conclusions
- Engagement with other projects, where relevant

• Support the CCI Open Data Portal team

- Update the SL website as directed
- Continue on the Obs4MIPs submission process

• Deliverables

- Acting on feedback on submitted documents
- Preparation of and submission of Year 3 deliverables, namely SVR and PUG



SEWG CCI Sys Eng Working Group

Home

SEWG

The Systems Engineering Working Group (SEWG) comprises participants from each of the CCI Phase I ECV projects involved in the Systems Engineering (Task 5) workpackages. The motivation of the SEWG is to consolidate the engineering effort, experience and resources across the CCI systems, so furthering cost efficiencies across the ECV spectrum. The overall aims of the SEWG are expressed through the CCI System Engineering recommendations outlined by ESA.

Latest -

Slides - Colocation III, CCI System Splinter, 2012-09-26
Rapporteur: M. Schwinger (DLR)

Comments

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Thank you

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