



Sea Level CCI project

Phase II 1st 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

- System Specification Document (SSD)
 - Defines **how** the system will do it
 - **D3.1 SSD** – A revised document has been updated and sent to ESA on 29th Sept, containing minor evolutions to be in line with Phase II activities – **under ESA Review**
- System Verification Report (SVR)
 - Describes the tests undertaken to **ensure** the system will do it
 - **D3.2 SVR** – A revised document has been updated and sent to ESA on 21st January - **under ESA Review**



System Engineering Working Group (SEWG)

•What is the point of the SEWG?

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

•Cost effectiveness through ECV collaboration can take a number of forms:

•During system development – Examples -

- Sharing of system engineering knowledge across ECV projects,
- Mitigation of development risk - avoiding Faults – e.g engineering of the same (shared) architectural resource can help significantly anticipate upcoming concerns towards fault avoidance.
- Risk mitigation via shared adoption of development tools – risk of choosing unapt development tools is lessened, and risk of managing change of tools lessened (in the event of, for instance, having chosen an unapt tool), if shared across ECV parties

•Following delivery of the system – Examples -

- Sharing of physical resources ultimately required for housing the operational systems, such as a shared hosted service, burden sharing on the operational need for fault tolerance, etc
- Efficiencies gained by the sharing of operational human resources across a number of ECVs, e.g. client-facing support.

•Who participates?

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



SLCC involvement in SEWG

• We assist ESA in their leadership of the SEWG

- Coordinating and chairing meetings across ECVs
- Managing SEWG Mailing list
- File repository – includes non-deliverables as well as deliverables,
- Liaising with CCI Data Standards Working Group (DSWG)

• Participate in SEWG meetings

- Attend and contribute to the bi-monthly or quarterly telecoms
- 5 such meetings took place in 2014



SLCC involvement in DSWG / SEWG in 2014

• Key issues raised / discussed in 2014

- Uncertainty information within the CF-netCDF – examples added to the DSWG Wiki
- Use of standard Land-Sea mask across all CCIs; the Land Cover CCI mask – ongoing activity
- Summary of data volumes and processing times to generate a year's data within all CCIs
- How can CCIs access Sentinel data – ESA confirm CCI ECV teams can access Sentinel data via data hub
- Summary of Sentinel data requirements for all CCIs – Technical Note sent to ESA
- Use of DOIs – guidance on how to use DOIs distributed by team
- CEOS ECV inventory – guidance on how to enter CEOS ECV inventories – ongoing
- Use of Agile development within ESA, example use of SCRUM – information distributed to team

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



SLCC involvement in SEWG in 2014

• **ESA DSWG / SEWG survey**

- ESA CCI office issued survey on DSWG-SEWG support to CCI projects in 2015
- Key questions included usefulness of these WGs, frequency and nature of the meetings, coordination between DSWG and SEWG, the overall aims for WGs and key issues to be explored within for Phase II.
- Response from SLCCI was positive; we can see and have enjoyed benefits of involvement in these WGs. Points for further discussion include:
 - Potential of videoconferencing for meetings
 - Request for more information on adding ECV products to CEOS ECV inventory
 - A DSWG topic for 2015 involves climate data taxonomies



SLCC involvement in SEWG in 2014

•QA4ECV Questionnaire

- Quality Assurance for Essential Climate Variables
- 4-year FP7 project focusing on developing a Quality Assurance (QA) system for observational data products. QA4ECV will perform a detailed practical demonstration of the QA concept concentrating on six Essential Climate Variables (terrestrial and atmosphere) – **focus on all ECVs**
- Questionnaire was focused on development of a tool for modeling uncertainty as it propagates through the processing chain, with aim to provide a uncertainty estimate at a per-pixel level.
- Questions focused of current approach to uncertainty and error estimations from a software engineering perspective and how the ECVs teams could potentially use the tool / QA system that will be prototyped in QA4ECV.
- Other ECVs who participated include Aerosols, Ocean Colour, SST, Soil Moisture, GHG, Clouds and the EUMETSAT CM-SAF
- Results consolidated into a TN that is available on the ESA DSWG website
- This is an ongoing activity and the QA4ECV consortium will be keen to engage with the SLCCI and other CCI teams as the project continues

further details on: www.qa4ecv.eu





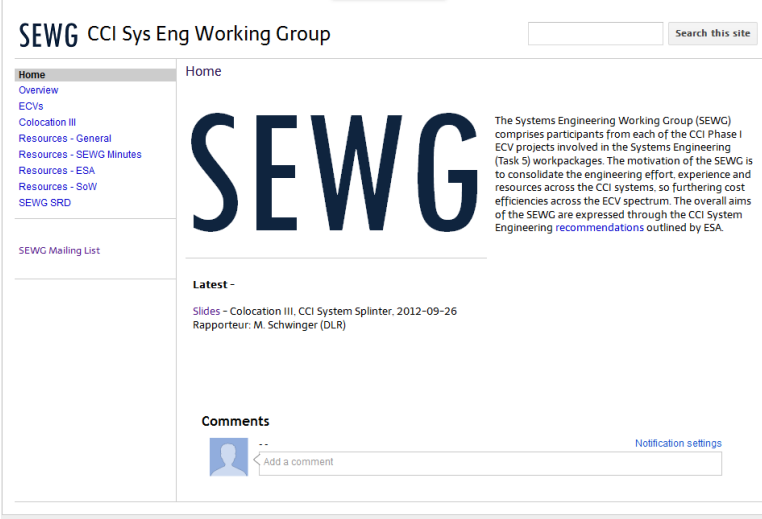
Way forward

• 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

• Deliverables

- Acting on feedback on submitted documents
- Preparation of and submission of Year 2 and Year 3 deliverables, namely SSD, SVR and PUG



The screenshot shows the homepage of the SEWG CCI Sys Eng Working Group. The page features a navigation menu on the left with links for Home, Overview, ECVs, Colocation III, Resources - General, Resources - SEWG Minutes, Resources - ESA, Resources - SoW, and SEWG SRD. The main content area includes a search bar, a large 'SEWG' logo, and a paragraph explaining the group's purpose: '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.' Below this is a 'Latest' section with a link to 'Slides - Colocation III, CCI System Splinter, 2012-09-26' by M. Schwinger (DLR). A 'Comments' section is also visible with a form to add a comment and a notification settings link. The footer contains links for Sign in, Recent Site Activity, Report Abuse, Print Page, Remove Access, and Powered By Google Sites.



Thank you

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