CCI DSWG & SEWG Session
CCI 6th Colocation, 28th September 2015
Summary Report
Carsten Brockmann
<table>
<thead>
<tr>
<th>CCI Type</th>
<th>Participants</th>
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<tbody>
<tr>
<td>Aerosol</td>
<td>Julian Meyer-Arnek (DLR)</td>
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<tr>
<td>Cloud</td>
<td>Cornelia Schlundt (DWD)</td>
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<td>Caroline Poulsen (STFC)</td>
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<td>Fire</td>
<td>Thomas Storm (BC)</td>
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<td>Lucrecia Pettinari (UAlcaca)</td>
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<td>GHG</td>
<td>Guenter Lichtenberg (DLR)</td>
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<td>Glaciers</td>
<td>Tazio Strozzi (Gamma-RS)</td>
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<td>Ice Sheets Greenland</td>
<td>Dag Evensberget (S&amp;T)</td>
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<td>Ice Sheets Antarctica</td>
<td>Mike Grant (PML)</td>
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<td>John Swinton (TVUK)</td>
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<td>SST</td>
<td>Martin Boettcher (BC)</td>
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<td>Land Cover</td>
<td>Carsten Brockmann (BC)</td>
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<td>Soil Moisture</td>
<td>Martin Ertl (AWST)</td>
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<td>CCI Open Data Portal</td>
<td>Alison Waterfall (STFC)</td>
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<td>Victoria Bennett (STFC)</td>
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<td>CCI Toolbox</td>
<td>Carsten Brockmann (BC)</td>
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Themes

1. Obs4MIPs
2. DOIs
3. Operationalisation
4. Sentinels & Big Data
5. Uncertainties
6. Outreach
7. Engineering Challenges
8. Development Tools
9. Catalogues
10. Data Conventions
11. Masks
12. Best Practice
13. CCI DSWG & SEWG

Input to all themes were collected before the meeting and are available for further work
**Obs4MIPs**

**Status:**
- Early stage of cooperation
- OC CCI test-run

**Challenge / Need / Issue:**
- Benefit: meeting CMIP6 timeline and requirements
- Interaction with Obs4MIPS team unclear
- Dataset compliancy required

**Potential Solution(s) / Action(s):**
- Support through the CCI Open Data Portal
- DSWG recommendations/instructions on datasets compliancy
  - note: DSWG more advanced than Obs4MIPS
DOIs

Status:
• CCI Open Data Portal project begins service for DOI provision to archive
• J. Beneviste reported on best practice in ESA Exploitation Department
• Some CCIs use DOIs following organisational rule (e.g. DLR, CEDA)

Challenge / Need / Issue:
• No agreement on CCI wide guiding principles for constructing DOIs (naming rules, syntax)
• Diverse knowledge & interest about DOIs within CCI teams
• CCI wide harmonisation and support required

Potential Solution(s) / Action(s) :
• The discussion yesterday helped teams to better understand DOIs
• CCI Portal offers support to all CCI teams: they will issue DOIs
• This is an offer by the CCI Portal; CCI teams are free to go their own way
**Status:**

- Land and Ocean CCIs are really concerned by very large data volumes already now
- All CCIs are ready to / progressing towards repeatedly processing large data volumes in short time

**Challenge / Need / Issue:**

- Data volumes will increase by an order of magnitude through Sentinels. Most CCIs are going to use Sentinel data within Phase 2 (atmospheric CCIs need S5).
- Fast access to large data volume is an issue. CCI is not part of the inner Copernicus network, although it shall contribute the Copernicus Climate Change Service
Potential Solution(s) / Action(s):

- Improve provision of information
  - **Best** way to getting Sentinel data
  - Central repository for CCI System Engineering docs
  - Synthesis information
- Support from ESA for CCI wide data access
  - Broadcasting like ENVISAT DDS or EUMETCAST
  - Centralised common repository of required Sentinel data
  - ....
- Support from national data Hubs or Collaborative ground segments
  - still in preparation phase: this is a drawback and opportunity at the same time
  - ensure proper funding
- Intensify exchange of knowledge / lessons learned with SEWG
  - adapt best practices
  - develop mitigation strategies
Uncertainties

**Status:**
- All CCIs generating uncertainty products; different methodologies,
- No well-agreed way to represent them and their variety
- Cloud – Aerosol – SST common activity to harmonize

**Challenge / Need / Issue:**
- Harmonisation of methodology and representation required
- Improvement of communication to data users

**Potential Solution(s) / Action(s) :**
- paper from cross CCI WG under preparation
  - SEWG to review and comment from technical point of view
- mini-working group, action C. Poulsen
  - compile overview on uncertainty representation of all CCIs
- work closely with science leaders and EO teams
**Outreach**

**Status:**
- CCI overarching communication through ESA and CMUG
- Communication mainly individually undertaken per CCI
- Common CCI Portal points to individual CCI pages which contain specific information and data
- CCI Portal project: interface to public users, not (yet) for CCI internal communication

**Challenge / Need / Issue:**
- Common appearance of CCI needs improvement to improve outreach to scientific communities and international bodies needs improvement
- Improvement / ease access to CCI data to users (experienced and new users): catalogue, data access

**Potential Solution(s) / Action(s):**
- Increase visibility in social media
- Use YouTube to advertise and train data usage
- Work on meta data, cataloguing etc → CCI data access portal
**Data Conventions**

**Status:**
- DSWG standard available and implemented by CCIs
- All CCIs comply with CF convention where they exist

**Challenge / Need / Issue:**
- DSWG standard good for CCI “corporate identity” and to ease work for groups working across CCIs. Not ideal for each individual purpose
- CF convention does not address L2 data well; several variables are missing (CF addresses L3 and higher)
- Minimum set of meta data required, becoming more important for catalogue of the portal

**Potential Solution(s) / Action(s):**
- SEWG (E. Pechorro) will collect requirements to extend CF convention and provide to V. Bennett (CF convention)
- Work of CCI Data Portal and CCI Toolbox will intensify dialogue with CCI teams on data formats and meta data.
Masks I

Status:
• Masks = maps with static background information used during processing; most CCIs make use of such masks: land-water, snow, BRDF ...
  • MODIS derived datasets are widely used
• Science leaders agreed that the LC CCI derived land-water mask shall be used by all CCIs
  • Sentinel 3 ground segment masks for land-water, marine/inland water, coastline and intertidal derived from LC WB mask

Challenge / Need / Issue:
• Further harmonisation of masks desirable towards improved intercomparability of ECVs
• Ease access to masks
• Align with Sentinel processing if possible
Potential Solution(s) / Action(s) :

- use Sentinel 3 masks for land-water, marine/inland water, coastline & intertidal
  - will be updated to higher resolution after availability of updated LC CCI WB mask
- collect other masks used by CCIs and make them available to all CCI projects through the CCI Data Access Portal
- support usage of masks in CCI Toolbox
- decision on mandatory use of masks to be taken by science leaders
**Summary**

**System Engineering Working Group SEWG**
- including Data Standard Working Group DWSG
- addressing large variety of themes; technical issues often connected with scientific, managerial and “political” questions
- active participation from all CCI projects

**Challenges and Actions**
- Be the police for standards
  - but be a supportive police
  - data standards, conventions, meta data, DOIs
- Support across ECV data usage and processing
  - access to Sentinel data, data formats, meta data, masks ...
- Support the improvement of outreach activities
  - Obs4MIPS, Portal, ...
- Integrate new technical projects
  - CCI Open Data Access Portal and Toolbox

European Space Agency