

Interim Meeting ITWG Climate WG

25 June 2024 via video conference

Participants: Bill Bell (co-chair), Nathalie Selbach (co-chair), Reima Ereesma, Joe Taylor, Timo Hanschmann, Fiona Smith, Graeme Martin, Cheng-Zhi Zhou, Martin Burgdorf, Hank Revercomb, Bob Knuteson

Review of Recommendations and Actions from ITSC-24

- **Recommendation CWG-ITSC24-1** to meteorological satellite agencies and other providers of CDRs to provide updates to CWG / CGMS on the status of their current activities relating to user uptake and impacts of CDRs. This type of activity is seen as important for uptake of the products by users and it is recommended to consider development of similar activities to the above mentioned in case there are no such activities yet.

Topics discussed at the interim meeting included:

- EUMETSAT reprocessed data to be used in ERA6
 - Cheng-Zhi: described a new version of mean-layer temperature datasets from MW observations & invited feedback from users; he also described a recent publication on stratospheric trends in temperature & stratospheric temperature trends from AIRS.
 - *Bill Bell to contact Cheng-Zhi on possible comparison of trends with those from ERA5 (Bill)*
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- **Recommendation CWG-ITSC24-2:** to Space Agencies to note the link between (on the one hand) a tendency to small satellite technology, potentially entailing compromised calibration capabilities and (on the other) the scientific case for independent on-orbit calibration missions, such as CLARREO.
 - Absolute calibration is key for climate applications & is an important long-term goal and aspiration.
 - Fiona supported the idea of having one very good calibration source and cross-calibrating everything else relative to it.
 - Hank reiterated that the calibration for IASI and CriS are excellent for climate applications, close to 0.1 K, more problems at other frequencies; and noted the lack of formal climate missions.
 - Lack of big vision for stability/accuracy in LEO in US (comment from Hank), Cheng-Zhi on stability vs. accuracy for climate applications (stability for climate more important than accuracy, stability has improved – *although this is a long running debate* !), small sat: calibration accuracy & stability might be weaker than for larger operational LEO missions.
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- **Recommendation CWG-ITSC24-3 to GSICS:** extend calibration and harmonisation activities to historic sensors to support climate applications, including CDR / ECV production and reanalysis.

- Cheng-Zhi in MW sub-Group. MW sub group also working on it, most work concentration on current sensors, but some members also looking at historic sensors
- Martin Burgdorf: trying to extend calibration activities to earlier MW sensors (AMSU-B, ATMS at 183 GHz,...) with moon as target as part of GSICS, method can be extended to small sat as well. Martin plans to present at next ITWG Climate WG meeting
- Hank: activities in IR (AIRS, IASI) at NASA

- **Recommendation CWG-ITSC24-4** to satellite providers to catalogue available data and supporting information for all FCDRs/CDRs and establish infrastructure and procedures to sustain this over decadal timescales, make information available to users.
- **Action CWG-ITSC24-3:** establish status and plans for long-term stewardship of L0, FCDRs and CDRs and all relevant metadata and documentation at respective agencies The following group members will provide information on this task:
 - **Peng Zhang** for CMA (FY-series) - *it was noted at the interim meeting that Peng Zhang had changed roles & the group would need to establish a new contact point at CMA.*
 - **Timo Hanschmann** for EUMETSAT (Meteosat and Metop programmes) ,
 - **Joe Taylor** for CrIS in NOAA and identify relevant poc for wider NOAA data records.
 - o Timo. EUMETSAT Meteosat data archive all required information, MFG FCDR released, MSG SEVIRI FCDR processing ongoing, access to information often limited by contractual restrictions, users asked to contact EUMETSAT for get access to restricted information
 - o No major update from US side, NASA/NOAA joint effort for CrIS
 - o Peng Zhang moved jobs, not involved with satellite data any more, Fiona will contact colleague at CMA to find new point of contact for Climate WG
 - o Lihang: several CDRs in NCEI
 - o Agenda item at next meeting: identify risks what is not covered for FCDRs and CDRs

Other Items

Feedback from Fiona on HLPP, CGMS report: no major update needed, if wording in HLPP not “correct”, it can be changed, inform co-chairs for discussion in next CGMS meeting

Summary from Bill on planned usage of CrIS in ERA6: There is an agreed plan of work (involving EUMETSAT and ECMWF/C3S) to use NPP CRIS, for a short period, as an independent observation in ERA6 – to validate the uncertainties in ERA6 fields.

Notes from Teams chat:

[14:08] Fiona Smith (she/her)

This document contains our responses to CGMS on their high priority actions (across all our WG): https://docs.google.com/document/d/1ZwfM052boVLW5zR5PqGoweBm8cl0q_C5/edit?usp=sharing&oid=103770016808895872040&rtpof=true&sd=true

CGMS_Input_202403.docx

Ref 1.2.7 Target: Establish observational requirements for microwave observations (sounder and imager) for NWP and precipitation and perform gap analysis against CGMS baseline. For precipitation, ...

[14:18] Fiona Smith (she/her)

And this was the list of Working Group II Actions that you also provided feedback on <https://docs.google.com/spreadsheets/d/1TaMWw482hDC-RwecVYBTdbB1SsaC8YuT/edit?usp=sharing&oid=103770016808895872040&rtpof=true&sd=true>

[14:26] Fiona Smith (she/her)

For future reference, the microwave climate radiometer that Al Gasiewski is working on with Orbital Micro is VU-CliMMR

[14:26] Joe K Taylor

The other missing element in our current program of record for climate in the IR is the on-orbit absolute verification.

[14:35] Fiona Smith (she/her)

I agree with Cheng-Zhi, from what I can see, unless something changed in the last couple of years, stability was not a user requirement that was included in NOAA's future microwave architecture specification.