

ITWG Climate Working Group

Status of Recommendations and actions

ITSC-17

Compiled by Jörg Schulz

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Topics from ITSC-17

- New satellite programs / missions still in planning stage
- Ensuring the data record - metadata, reprocessing, data archival
- Cal/val activities - GSICS, GRUAN, CLARREO - are they looking like meeting our needs?
- Consideration of work programmes for climate already in operation / advanced planning
- Gap analysis - are there data that as a global community that we should be looking at but are not? What should the priorities be and why?

Summary of Outcomes I

- Current missions and mission planning
 - All recommendations were forwarded to CGMS and some resulted in real improvements.
 - The DMSP continuation remains unclear as we heard from Mitch; EPS-SG will MW imager but MW sounder has AMSU/MHS heritage
 - Phasing of orbits important for the sampling of diurnal cycles has not been changed. Thus, there is still room for improved coordination within CGMS
 - Studies on the specification of needed instrument overlap have not been performed over the past two years but still remain an issue
 - Recommendation on parallel dissemination of Metop-A/B data is realised by EUMETSAT, both will be available via EUMETCAST and from the archive.
 - A recommendation on global SNOs from Metop A/B cannot be followed as there is no real opportunity (same orbital plane, 50 minutes apart). SNO with drifting satellites are an option but not many will occur. Other things such as asymmetric scan biases can be studied.

Summary of Outcomes II

- Meta data, processing, archive issues
 - Recommendation to reanalyses centres to use FCDRs as input such as the inter-calibrated MSU presented at the last meeting. Furthermore it was asked for anchoring reanalyses to such more globally complete and consistent date records.
 - This was briefly discussed in the WCRP Working Group on Observations for reanalyses that was a subgroup WOAP (WCRP Observations and Assimilation Panel) without leading to conclusions – the group was not very active...
 - Improved access to data for CMIP5 activities using NetCDF CF conventions and standard grids was realised for some data sets coming from various sources including conversion to standard grids which is often obtained by providing tools. NetCDF employing CF conventions is agreed to be the standard in SCOPE-CM and will most likely become the standard for all EUMETSAT CDRs including those from the SAFs.

Summary of Outcomes III

- Cal/Val Activities
 - Metrology: The importance of metrology has been recognised in the recent document on an architecture for space-based climate monitoring that describes an end-to-end strategy for CDR creation from sensing to decision making.
 - GPS RO as own CDR and for Cal/Val: Noted progress with COSMIC and EPS-SG. CGMS has formed a specific WG for RO – climate issues shall be considered across the CGMS WGs – may need a mechanism for this.
 - CLARREO type missions were recommended: Just the opposite happened, the CLARREO mission was put onto the long bench by NASA for financial reasons. For passive microwave observations the SI traceability of sufficient accuracy will not be achievable within the next 10 years as the radiometric uncertainties achievable in-lab are at the same level as required from satellite sensors on-orbit. The recommendation on the realisation of a CLARREO like mission, however, shall be repeated from this

Summary of Outcomes IV

- Cal/Val Activities
 - GRUAN: The agency funding of high quality in situ networks is still an issue but not only space agencies need to be considered but also national weather services. There is a network extension workshop 13-15 June 2012 at the DWD Lindenberg facility.
 - Interaction of GSICS and SCOPE-CM: Since the ITSC-17 each EUMETSAT conference saw a GSICS user meeting where new requirements including climate were discussed see (<https://gsics.nesdis.noaa.gov/wiki/bin/view/Development/UsersWorkshop2011>).
 - SCOPE-CM and also the NOAA CDR program were asking GSICS to do more for climate. Recently, activities within the GSICS Research Working Group have been started, e.g., using IASI/HIRS for geo calibration (see my own talk).

Summary of Outcomes V

- Planned and ongoing analysis of data records
 - Recommendation to ESA CCI for data openness and transparency: The availability of produced data records is ensured, the availability of the input data (level-1) probably not always. Some ITWG people are part of ESA CCI consortia or attend the CCI collocation meetings. Thus, we have the opportunity for feedback, maybe also on proposals for the second phase of the CCI.
 - Multiple analyses and uncertainty characteristic of FCDR and TCDR: This is recognised in SCOPE-CM, in EUMETSAT and NOAA CDR activities and will be further followed up in the architecture for space-based climate monitoring and CEOS WG Climate.
 - Assessments of diurnal drift and the need for hourly reanalyses output: This was communicated to the WOAP subgroup but it did not happen so far.

Topics for ITSC-18

- **Global observing System design:** gap analysis, support to CDRs, redundancy – does it meet climate requirements?
- **Data archiving – ensuring the data record:** long term archiving of raw data, including documentation and instrument information, accessibility of data;
- **Data continuity:** MSU-AMSU CDR, upper stratosphere/lower mesosphere post SSMIS, other issues?
- **Data reanalysis:** pre-1979 datasets – VTPR, IRIS, IMG, etc.
- **Cal/val activities:** GSICS, GRUAN, CLARREO - are they looking like meeting our needs? How can we most effectively influence / support them?

Topics for ITSC-18

- **Temporal instrument overlap requirements:** There is a need to robustly quantify recommendations in GCOS climate monitoring principles on temporal overlaps required when the satellite technology changes.
- **Consideration of work programmes for climate already in operation / advanced planning** - are there things they should be doing that they are not? Best practices being learnt?
- **Strategy for lossy data compression:** PC RT models, PC data dissemination and assimilation, PCs and CDRs, Level 2 products
- **Infrared FOV size:** trade off versus other characteristics
- **Future of the group:** How do we see the climate theme evolve in ITWG?

Meeting Climate WG

- Saturday 24/3 from 9-12 - we may extend or meet again if needed ...
- If you have more topics send them to:
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- Join the climate meeting or send input on topics if you attend another group