

---

**GCOS STEERING COMMITTEE**

**TWENTY-NINTH SESSION**

GCOS SC-29, 7–9 December 2021

Virtual Session

**AOPC report for GCOS Steering Committee**

During the last year AOPC has been involved in the following activities:

- Review of the GCOS Status Report
- Preparation of actions for next GCOS Implementation Plan (GCOS IP): the panel has met online several times to discuss and prioritize actions for the next GCOS IP and has delivered to the GCOS Secretariat a list of several actions to be now considered together with actions identified by TOPC and OOPC.
- Finalize the ECV requirements: taking into account the comments received from the public review, AOPC has finalized the ECV requirements for all ECV products. Definitions and requirements for the Atmospheric Composition ECVs have been agreed with the GAW community to ensure consistency. These requirements will be part of the Observing Systems Capability Analysis and Review Tool (OSCAR) database in support of WMO Programmes and Co-sponsored Programmes.
- Members of the AOPC are part of the newly established GCOS adaptation Task Team and are contributing their expertise to the advancement of this topic. Details on the GATT can be found in Doc X.X.
- AOPC has provided support and guidance to the Task Team for Lightning Observations for climate Application (TT-LOCA). The team is working on developing and propose a data format including metadata for lightning data for climate applications based on existing formats; reviewing temporal and spatial ECV requirements; promoting reprocessing of existing data in order to complement lightning data archives; establishing an integrated lightning database with NOAA or NASA. Members of the TT-LOCA are now collaborating with the AOPC WG-GRUAN to launch a pilot study on measuring ionospheric potential to observe global thunderstorm activity using the radiosondes launches from specific GRUAN stations.
- The GSRN Task Team: A GCOS Surface Reference Network Task Team was established to support the initial implementation of the GSRN by undertaking the necessary activities to instigate the network. Among several offers to host the Lead Center from different countries, the GSRN TT has identified the China Meteorological Administration (CMA) as the most suitable to host the GSRN Lead Center. As CMA has accepted this

role, GSRN TT and CMA will now collaborate towards the establishment of the GSRN Lead Center. More details on the work of the GSRN TT can be found in Doc XX.

- GRUAN: The implementation of a GCOS Reference Upper Air network is moving forward, with GRUAN consisting now of 31 stations, 13 of which are fully certified. GRUAN is now presented with the challenge of the ban of the R23, which will translate into the impossibility to measure water vapor in the stratosphere. No new technologies are available for now, although several candidates are in advanced. Trial and show promise. All have a lower GWP or no GWP than the R23 but this may present challenges to measurement in certain conditions.
- The GCOS Network Manager continues to monitor the GSN and GUAN networks. A detailed report on the GUAN and GSN performance can be found under item 3.7

### **Future work:**

- AOPC will continue supporting the implementation of GRUAN, the establishment of GSRN, the TT-LOCA on lightning observations and the GATT on adaptation.
- AOPC will continue its activity of monitoring GUAN and GSN by assessing the report provided by the GCOS Network Manager.
- WMO Congress in October 2021 passed resolution 4.1/1 on the WMO unified data policy, 5.2/1 on the establishment of GBON and 4.2/1 on the SOFF. The Unified Data Policy will enhance the free and unrestricted quantity and quality of Earth System data. It defines a set of core data that Members shall exchange on a free and unrestricted basis which includes current and historic observational data, to the extent that the Members holds the data in a digital archive. The inclusion of historical data from archives represents a significant step for the climate community and AOPC needs to identify how to best support the new data policy and to implement the data policy for climate archives. Resolution 5.2/1 approves the GBON Implementation and urges all WMO members to support the implementation of GBON by exchanging specific surface-based observations for NWP (weather and climate). GBON will contribute to meeting the requirements of Global NWP, including reanalysis in support of climate monitoring. implementation of GBON constitutes an important step for addressing existing large geographical gaps in observations and AOPC will contribute to the GBON implementation and will ensure that that climate needs are addressed in GBON.
- AOPC members will continue working on the GCOS Implementation Plan. This includes completing the identified actions, contribute to the general text of the GCOS IP, address comments from the public review and contribute to the final draft of the IP.
- AOPC members will contribute to the GCOS Climate Conference (November 2022).

### **Issues**

- The lack of ability to hold a physical panel meeting has had significant implications on the panel's work
- There are significant demands for AOPC members to participate in a range of WMO activities and thought should be given to expansion of the panel membership to enable this collaboration