

Update from WG-ARO and progress check on agreed activities

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Outline

- WG specific activities update
- Progress against agreed ICM-2 2010/11 activities
- AOPC meeting feedback
- Implementation Plan reminder
- Headline take home points

WG specific activities update

- Continuing reporting to WIGOS
- 5 of the 6 envisaged task teams instigated (lag: AOPC)
- GRUAN brochure prepared (w/ LC and GCOS Sec)
- Verbal and written report to AOPC (parent body)
- Several teleconferences
- Work towards possible WCRP conference involvement.

Progress against agreed ICM2 outcomes

- Consult with the satellite community (GSICS EP, SCOPE-CM EP, CM-SAF, CGMS Working Groups) on better linkage to GRUAN.
- Foster GAW, BSRN, NDACC representation in WG-ARO and Task Teams and seek for international representation of members.
- Formulate Task Teams, which report to WG-ARO on semi-annual basis; agree on ToRs.
- Initial results from Task Teams

- Results from science team GATNDOR on: Collocation; Mgmt of Change; Value of Complementary data
- Agree a protocol for dealing with any site offers arising in the interim.
- Develop definition for optimal GRUAN site to decide on future sites (optimal location/climate zone, institution etc.).
- Explore the possibility to publish GRUAN metadata congruent with WIS metadata standards.

- Explore the possibility to disseminate near real time data via the WMO Information System (WIS) including the Global Telecommunication System (GTS) using existing infrastructure connections.
- **Agree and implement data usage acknowledgement protocol.**
- Investigate the potential for tracking of data usage.
- Define data reprocessing and version control procedures.

- Develop a case study for the measurement uncertainty guide focussing on *in situ observations*
- Develop generic outreach material, a ppt-presentation and a brochure
- Publish and maintain an inventory of GRUAN site instrumentation (maps, table)
- Implement final version of data dissemination structure
- Develop a draft GRUAN guide of operations in liaison with Task Teams; draft to be approved by WG-ARO

AOPC feedback

- First full week in Feb. Attended virtually by me and in person by Holger
- About an hour or so of presentations and discussions.
- Issues raised
 - Resource squeeze (WG chair, WG members, GCOS Sec)
 - End of initial Lead Centre term
 - Clarity of long-term reporting lines
 - Lack of site assessment task team in operation
 - Coordination with other programs
 - Actions assigned to AOPC in the Implementation Plan



Draft feedback

- The Panel appreciated the briefing by the Head of the GRUAN Lead Centre on the motivation and development status of the GRUAN, including the treatment of measurement uncertainties, the data dissemination model and next steps to decide on remaining issues, such as the scheduling of launches.
- The Panel also appreciated the presentation by the Chair of WG ARO, expressing his concerns on organizational and governance issues related to GRUAN. The Panel considered the rules for selection of new sites, or removal of existing sites from the GRUAN, were a matter for either WG ARO or the Lead Centre to develop. The Panel recommended that WG ARO considers the development of a self-certification procedure, which may be applied by sites, for a limited period at least. Sites would also be monitored by the GRUAN Lead Centre.

- The Panel encouraged as many GRUAN stations as possible to transmit their non-QCed data in near-real-time onto the GTS, so that basic monitoring by NWP centres and collocations with hyperspectral infrared sounding and GPS radio occultations could be made routinely.
- The Panel noted the request of WG ARO that an independent scientific advisory panel be set up. The Panel considered that the GRUAN programme should be reviewed under the auspices of AOPC three years after data started flowing regularly. This review should consider whether an independent layer of network management (including independent site certification) and/or assessment was advisable and feasible.

- AOPC noted that the GCOS SC had welcomed in Sept 2010 the steps being taken by CBS towards integration of the GRUAN towards CBS structures. It furthermore noted the outcome of CBS-EXT in Nov 2010 which “agreed on a mechanism for the development of observing practices for the GCOS Upper-Air Reference Network (GRUAN) stations. For GRUAN to become fully operational, its operational practices will have to be accommodated in the WMO Regulatory Material, in particular in the Manual and Guide on the GOS. The Commission agreed that an expert meeting should be organized to finalize these practices with a view of submitting them to CBS-XV for consideration. It requested the chairpersons of the Expert Team on Evolution of the Global Observing System (ET-EGOS), the Expert Team on Surface-based Remotely-Sensed Observations (ET-SBRSO) and the Expert Team on Satellite Systems (ET-SAT) to nominate members participating in this effort together with the OPAG-IO Rapporteur on Regulatory Material. It was agreed that the GCOS Secretariat will be in charge of coordinating these activities.”
- The Panel would welcome feedback from the upcoming ICM-3 on these issues. A small number of succinct points could be presented by them to the AOPC Chair, with a view to him forwarding them as appropriate to the GCOS SC for their consideration.

- The Panel decided to recommend to the GCOS SC that the review of the GRUAN Lead Centre in 2012 should be undertaken under the auspices of AOPC, based on reports from the Lead Centre and the Chair of WG ARO. Such reports should be provided to the Chair of AOPC by 31 March 2012, to enable AOPC to make a recommendation to the SC.
- The Panel requested WMO to ask the Lead Centre to indicate its willingness to continue in this role prior to the GCOS SC session to be held in September 2011, to allow for proper planning.

Implementation Plan

- For GRUAN credibility it is key that we consider this meeting in the context of the Implementation Plan (GCOS-134 – <http://www.wmo.int/pages/prog/gcos/>)
- Does not mean we HAVE to do what is in there but we need to document why we don't if we don't.
- There are quite a number of tasks for 2011/12 many of which will be heavily reliant upon task teams.

Current slated 2011 activities

- Roll out measurement guidance to meet GRUAN requirements to all GRUAN site instrumentation based upon prevalence of instrument types.
- Prepare a position paper on expansion to full column characterisation to meet all stated GRUAN measurement requirements.
- Define a set of accepted objective criteria to assess both instrument specific measures and site performance against vis-à-vis stated requirements.

- Assessment of the value and utility of satellite coincident in-situ and remote sensing measurements vis-à-vis standard times for satellite cal/val. Submitted for publication.
- Final set of temporal sampling guidance for in-situ and remote sensing instrumentation based upon a quantitative assessment prior to network expansion, including superseding of GCOS-121 documentation for in-situ measurements.
- Formulate generic guidance on the collocation issue based upon quantitative evidence wherever available and for all variables.

- Develop an instrument replacement protocol with a solid quantitative basis.
- Design and instigate a framework to investigate, report and resolve data quality and instrument issues in real- time.
- Finalize the GRUAN Manual of Operations.
- Implement a final version of the data dissemination structure.
- Workshop with manufacturers under the joint auspices of GCOS and HMEI.
- Assessment of utility against cost and logistical overhead of regular site specific intercomparisons / travelling standards to intercompare sites.

- Brief scientific community on GRUAN.



Headline take homes

- Need to resolve site assessment issue
- Feedback a few headlines to AOPC regarding long-term governance and Lead Centre assessment
- Create a plan for coming year. Include all actions from Implementation Plan or explain and justify exceptions. [Note no GCOS Sec support for write up]
- Use side meetings and facilities to the full to advance our planning and implementation
- Participants can inform WG-ARO evolution

