



WMO/IOC/UNEP/ICSU  
GLOBAL CLIMATE OBSERVING  
SYSTEM (GCOS)

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**7th GRUAN Implementation-  
Coordination Meeting (ICM-7)**

Session 2

Matera, Italy

23 February – 27 February 2015

**Lead Centre progress report 01/2015**  
*(Submitted by GRUAN Lead Centre)*

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**Summary and Purpose of Document**

Progress report from the GRUAN Lead Centre covering the period 02/2014 to 01/2015.

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**GRUAN Lead Centre progress report 01/2015**

covering the period 02/2014 to 01/2015

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**Summary**

*Boulder and Lauder are official GRUAN certified sites. Cabauw, Payerne, Potenza, and Sodankyla are currently going through the process of certification.*

*The head of the Lead Centre stepped down, recruitment of new LC head in progress.*

The GRUAN Lead Centre has participated in several conferences and workshops.

The GRUAN Lead Centre participated in campaign at La Reunion.

Preparation of ICM-7.

Development of GRUAN data processing for RS92 v3.

**Health of network**

ARM has terminated their activities at Manus and Darwin. Continuation of Darwin as a GRUAN site under responsibility of BOM is being negotiated. The French sites Paris (SIRTA) and La Reunion will join GRUAN.

**Lead Centre operations**

- The Lead Centre participated in the preparation of ICM-7.
- Data flows from Beltsville and Lauder are up and running. Data flow from Payerne, Vaisala RS92 and Meteolabor SRS34, is up and running as well.
- Visits by Meisei and Modem, their radiosondes were tested in the Lindenberg facilities (radiation, RH calibration & time lag).
- Testing and characterization of Vaisala RS41.
- Ongoing development of RsLaunchClient.

<b>Progress against stated objectives</b>	
<b>Open items</b>	<b>Summary of progress</b>
3. Responses to requests from sites for letters from WG-GRUAN / GCOS to be actioned. Letters to be drafted and sent. Letters requested in site reports or at ICM-6	Only Potenza followed up. Letter was drafted and forwarded to GCOS secretariat.
5. Prepare plan for GRUAN launch activity at WMO congress and report plan to GRUAN community at ICM-7	In progress, Greg Bodeker is leading this. Talk scheduled at ICM-7.
6. Define necessary steps to undertake transition from RS92 to RS41.	In progress, talk scheduled at ICM-7.
8. To close the feedback loop for instrument and processing performance, TT sites to summarize how they wish to receive near real-time feedback.	Done, TT has sent their recommendations to LC.
10. TD omnibus of all things RS92. Lead Centre to send everything to Bodeker Scientific for collation and editing. Gaps to be identified and Lead Centre will try to address the gaps. Greg Bodeker and Peter Thorne to determine how to accommodate updates.	Superseded. Discussions with Lead Centre led to proposal to instead have a radiosonde omnibus with per instrument technical annexes. To be discussed at ICM-7.  How to accommodate updates has been addressed and published as GRUAN-TN-2.
11. Technical documentation completed for frostpoint hygrometer measurements	In progress, talk at ICM-7 will update on progress and work still required.
12. A short GRUAN report detailing the process implemented to provide feedback of observation minus background fields to the GRUAN Lead Centre	Good progress, ECMWF has developed infrastructure to make feedback data available via a user-friendly web-interface. First tests with the feedback data will be in the first half of 2015. This activity will complement Gaia-Clim.

<p>13. Sites reporting either TEMP or not reporting on the GTS / WIS to work with Lead Centre, WIGOS and HMEI to ensure GRUAN sonde launches are sent as 2 s resolution BUFR. Briefly report progress and issues to ICM-7. Data flowing through WIS as BUFR high vertical resolution for as many sites as possible.</p>	<p>Some progress. Details of how to start this process have been shared with LC.</p>
<p>22. Develop frostpoint hygrometer data products. Guidance needs to account for operation of CFH, NOAA FPH. Paper submitted to a peer reviewed journal</p>	<p>Partially met. Independent ground check developed for CFH but final analysis and write up still pending.</p>
<p>21. In collaboration with partner networks, assess the relevance and tractability of the full suite of remaining GRUAN target variables defined in GCOS112 in the context of measurement capabilities and measurement programmes underway in partner networks. GRUAN report identifying potential target data streams and partners</p>	<p>Not done. In view of limited resources, other actions were given higher priority.</p>
<p>23. Develop a GRUAN ozonesonde data product in consultation with NDACC and GAW. Completed technical documents</p>	<p>No progress. Need to find a new workable solution. Greg has been working with Anne Thompson to find someone available to assist. Funding is available.</p>
<p>24. Lead Centre to report on data usage / impact metrics (following recommendations from #2) to extent possible</p>	<p>In progress. LC has compiled a list of GRUAN-related publications/presentations.</p>
<p>25. Revise the RS92 data stream based upon feedback received - revised version 3 release including QC flags vectors and data in different vectors (good, questionable, missing), including implementation of performance feedback</p>	<p>In progress. The current state of development of v3 will be discussed at ICM-7.</p>

28. Develop GRUAN data product and processing stream for Modem radiosondes. First draft of technical document describing processing streams for all Modem radiosondes	In progress, talk at ICM-7 will update on progress and work still required.
30. Develop an advanced 'template document' for non-RS92 radiosondes for later distribution to specific users	Superseded by the suggestion for radiosonde omnibus with per instrument technical annexes.
33. Reports from WG and GRUAN community members on efforts to further contributory site set. Single page write ups for each site by selected GRUAN leads at ICM-7 (list of sites and contact points in main report) and also reports on phone calls	Partially met pending receipt of written reports and their presentation.

**Achievements**

- *Boulder and Lauder have become GRUAN certified sites.*
- *Certification procedure of Cabauw, Potenza, Payerne, Sodankyla still ongoing.*
- *The description of the Version 2 processing algorithms for the RS92 GRUAN data product has been published in AMT (DOI: 10.5194/amt-7-4463-2014).*
- Ongoing development of RsLaunchClient (current version: 0.5)
- Agreement with GFZ for a cooperation to develop a GNSS data product. This project is funded by LC.

**Training by Lead Centre**

- Training of AWI staff going to Ny Alesund
- Training and assisting staff at La Reunion in preparation and launch of CFH.

**Issues**

- The head of the Lead Centre *stepped down*, recruitment procedure in progress.

**Work plan for next six months**

- Appoint new head of Lead Centre.
- Completion of Cabauw, Sodankyla, Payerne, and Potenza site certification application.
- Work on the GRUAN radiosonde omnibus.



**GRUAN Lead Centre**  
www.gruan.org

## **Deutscher Wetterdienst**

Lindenberg Meteorological Observatory  
Richard Aßmann Observatory

- Redesign the GRUAN website and its communication tools to facilitate more flexibility regarding content management, e.g. shared editing permissions for certain parts of the website.
- Complete the development of a new GRUAN data processor, and version 3 of the RS92-GDP. This version will digest DC3DB and MWX file formats.
- Develop a GNSS data product. LC-funded cooperation with GFZ.