

# ICM-13 Actions status

28 November 2022

# Summary

We had 26 agreed actions from ICM-13. Of these ...

5 are completed

20 are in progress

1 remains unaddressed

We had 5 high priority items (3, 2)

We had 2 actions related specifically to the RS92-RS41 transition (2)

We had 4 actions related to progressing new GRUAN data products (1, 3)

We had 10 other actions (1, 9)

We had 5 actions where progress is required, but not time-bound (4, 1)

High priority items

# HP1 Manage and progress High Priority Actions

Quarterly meetings to discuss progress, report issues and update as agreed

Mar 2022

Jun 2022

Sep 2022

GCOS Sec

Lead for each HP action

# HP2 Development of RS41-GDP

Milestones in the development of the Vaisala RS41 GDP:

(a) Finalise TD

(b) Final Certification (subject to review of TD completion)

Presentation on Monday, session 2 – 4 (Michael Sommer)

# HP3 Development of Meisei GDP

Milestones in the development of the Meisei IMS-100 GDP:

Paper submitted to AMT

(IMS-100 provisionally certified on same basis as RS41)

Presentation on Monday, session 3 – 2 (Lead Centre / JMA / Meisei)

# HP4 Development of Modem M10 GDP and M20 data product

Milestones in the development of the Modem M10 GDP:

a) Technical document

b) Paper: Dupont et al JAOT2020, Characterization and Corrections of Relative Humidity Measurement from Meteomodem M10 Radiosondes at Midlatitude Stations, doi:10.1175/JTECH-D-18-0205.1

c) Data Processing

Presentation on Monday, session 3 – 3 (Antoine Farah):

a) Modem M10 GDP (10 min)

b) Development of M20 data product (D4) (5min)

c) Discussion (5min)

# HP5 Use of R23 and its replacement

Provide operational guidance to GRUAN sites on how to manage the finite supply of R23 and monitor the status at each site in collaboration with TT sites

- a) Ongoing testing, including where possible comparison to CFH, of possible R23 replacements; SKYDEW; Liquid Nitrogen (Julich); Ethanol dry-ice
- b) Provide experimental flight data to LC to ensure optimal progress

Presentation on Monday, session 3 – 1 (LC / Christian Rolf [online])



RS92-RS41 transition items

# A1 Parallel soundings database augmentation with ancillary data

Augment parallel soundings of RS92-RS41 with 'ancillary' measurements (CFH, FPH, lidar, MWR, cloud observations (incl. BSRN) within +/-2 hours)

- a) TN ready for review
- b) Site representatives to provide final input

Presentation on Monday, session 4 – 1 (Dave Smyth)

## **A2      Satellite data collocations with RS92/41 pairs**

Provision of collocations with the historical RS92-RS41 payload ascents for a range of relevant polar orbiter and radio occultation measurements (geophysical and sensor)

Meetings held to discuss next steps

Presentation on Wednesday, session 7 – 6 (Lori Borg / Axel Von Engel)

# New GRUAN data products

# B1 Microwave Radiometer GDP progression

Milestones in the development of the Microwave Radiometer GDP:

Updates on data format and calibration uncertainty characterization. L1 and L2 format nearly at final version

Presentation on Friday, session 9 – 2 (Nico Cimini)

# B2 LIDAR GDP progression

Milestones in the development of the LIDAR GDP:

Implement data stream for at least one site

Presentation on Monday, session 1 – 2 (Thierry Leblanc [online])

# B3 Frostpoint Hygrometer GDP progression

Milestones in the development of the Frostpoint Hygrometer GDP:

(a) Paper (Voemel) - review

(b) Identify additional personnel (with good knowledge of statistics) to complete task

Presentation on Friday, session 9 – 3 (Ruud Dirksen & Takuji Sugidachi)

# B4 QC/QA flagging and presentation in data files

Complete summary of different approaches currently in use across sites

Discussion on the QTF topics is concluded. The QTF TN draft was promised to be ready before ICM-14

Presentation on Friday, session 10 – 2 (Tzvetan Simeonov)



Other actions

# C1 Sites photos

Utility to regularly update site photos is complete

Complete audit that all GRUAN sites who are actively sharing data have uploaded site photos

Presentation on Friday, session 11 – 4 (Michael Sommer)

## C2 Usage of GRUAN data

Further develop ideas around the appropriate usage and citation metrics of GRUAN data

Presentation on Friday, session 11 – 3 (Dave Smyth)

# C3 Data Policy

Progress to finalization of an explicit strategy regarding which data can be released to whom

Finalise Technical Note

Presentation on Friday, session 11 – 2 (Ruud Dirksen)

# C4 Uncertainty terminology and presentation in GRUAN products

Milestone: paper on traceability and uncertainty reporting based on RS92 GDP assessment

Paper in progress; linked paper on USCRN uncertainty assessment also in progress

Presentation on Wednesday, session 7 – 3 (Fabio Madonna & Tom Gardiner)

# C5 Standard Humidity Chamber

Milestones: paper to justify the use of the SHC in terms of the data quality and the benefits and including need for standardisation of operating procedures

TN to describe procedural requirements (e.g. operational procedure; quality of the applied references in the SHC)

Presentation on Monday, session 4 – 2 (Michael Sommer)

# C6 Standardizing cloud observations / reporting

Develop a proposal on the reporting of cloud observations

GRUAN RP: 'Towards the standardisation of cloud observations and their reporting associated with radiosonde ascents' (<https://www.gruan.org/documentation/gruan/rp/gruan-rp-5>)

1. Manual visual cloud observation (to be included in the GDP metadata)
2. Automated ground-based remote sensing instruments
3. Balloon-borne cloud/radiation instruments

Presentation on Friday, session 10 – 1 (Masatomo Fujiwara)

# C7 Justification for high ascent attainment

TT radiosondes to progress an analysis of the additional benefits of high-altitude attainment (10hPa compared to 30hPa). Milestone:

Draft paper commenced

Presentation on Wednesday, session 7 – 1 (Masatomo Fujiwara)



# C8      **Silent stations**

WG, LC and secretariat to propose a review mechanism for retention of sites which remain silent and never progress to certification

Draft TN to TT-Sites for review

Presentation on Friday, session 11 – 2 (Ruud Dirksen)

# C9 GNSS GDP format

GFZ to progress provision of a netCDF format version of the GNSS GDP

Further update at ICM-14

Presentation on Friday, session 10 – 3 (Galina Dick)

# C10 Metrological closure of GNSS-IWV and radiosondes

For GRUAN sites that perform both GNSS-IWV measurements and radiosoundings, analyse the comparison of the GRUAN data products (and their respective uncertainties) for these data streams to establish whether metrological closure is attained

Update at ICM-14

Presentation on Friday, session 10 – 4 (Galina Dick)

Actions where progress is required, but  
not time-bound

# D1 Ozonesondes GDP progression

A short document with GRUAN-specific content will be written using the ASOPOS 2.0 report as background reference material. Milestones in the development of the Ozonesode GDP:

- (a) Datastream
- (b) Paper
- (c) GRUAN documents

Presentation on Friday, session 9 – 4 (Richard Querel)

# D2 Radiosonde fundamental documentation

Milestone: draft available for review by WG

Update at ICM-14

Presentation on Friday, session 11 – 4 (Christoph von Rohden)

# D3 RS92-RS41 comparison paper

Paper on statistical analysis of all GRUAN RS92-RS41 dual flights (manufacturer products and GDPs) is in progress

Presentation on Friday, session 10 – 5 (Tzvetan Simeonov)

# D4 Development of M20 Data product

Already discussed under item HP4 – presentation on Monday, session 3 - 3 (Antoine Farah)



# D5 Refresh of presentation materials

PowerPoint presentation initiated. More progress needed

Presentation on Friday, session 11 – 4 (Dave Smyth)