

Proposed ICM-10 Actions

Peter Thorne

Summary

- All unremediated actions from prior ICM by default to be carried forwards.
- New actions proposed based upon meeting discussions
- New sub-class of actions around new GRUAN data streams added to make more sense of actions

REMINDER: On a note of process for actions that involve multiple actors only the primary seems to be taking responsibility. All entities should feel ownership though. Several cases I have mapped out what each entity should do to try to remedy

High priority actions

First full version of RS41 GDP

Lead Centre to complete production of RS41 GDP before ICM-11 and be at worst under active consideration by WG for certification. Product to make use of traceability diagram and effects table approach of GAIA-CLIM and aim to have a radiosonde TD annex and a paper describing the product submitted.

Lead Centre, TT Radiosondes.

March 2019

Intermediate checkpoints:

Update on radiation measurements to WG: 9/18

Beta version of product available to TT and WG: 1/19

This constitutes the single highest priority action item on LC

Autosondes

Goal: (1) An assessment of the advantages and disadvantages of manual vs. auto launches written up and submitted to the peer reviewed literature and/or a technical document. (2) Find a way to get GRUAN certification for radiosonde data products taken with auto launcher systems.

First collect the information/experiences/concerns from various groups, and define the critical questions to answer which would appear to be at least:

- i) Can we create a GDP?;
- ii) Is there a bias between manual and auto-launched sondes?;
- iii) Does the random uncertainty change?;
- iv) impact of lifetime in launcher (quality, SHC repeatability, and height attained);
- v) how to make manufacturer-independent ground check.

Co-leads: Rigel Kivi, Fabio Madonna, Masatomo Fujiwara (MF is the Coordinator)

Members: Relevant sites, manufacturers, and Lead Centre

August 2018 to define small set of well posed questions to be addressed. December 2018 to submit manuscript. Discussion regarding GRUAN certification at ICM-11.

High level outcomes from the Radiosonde „Omnibus“ discussions

- basically continue creating an generic (overarching) document as before; structure oriented to GRUAN-TN-2
- change name from "omnibus" to "foundation" or "core" or "fundamental" RS-document (?)
- contents: background information, technical basics, general guidelines how to work with RS, general description of GRUAN data product creation, detailed description GRUAN data management (file formats, archiving etc.), QM, change management
- sonde model specific GRUAN-TD's as stand-alone documents (not as appendices reliant to the generic doc.)
- avoids conflicts or confusion from different document updating frequencies for the specific and the generic documents
- group of authors will give guidelines on the connection points to the instrument specific documents as information to minimize collecting redundant information in specific docs
- important: no sonde specific information in generic document; if applicable as example for illustration
- specific GRUAN-TDs may reference to generic document

Radiosonde fundamental documentation

Develop first draft of GRUAN radiosonde foundational technical document to cover the general instrument-independent aspects.
Available for review.

LC, TT radiosondes
January 2019.

RS92 to RS41 transition actions

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Community approach paper

Paper describing the GRUAN change management replacement strategy submitted to peer-reviewed journal (GI) to increase visibility of effort and get broad community buy-in.

Lead Centre, TT Radiosondes, WG-GRUAN
May 2018

Get your manuscript in Ruud!

Ensuring all sondes on multi-payloads included

Lead Centre to advise each site of current archive status of multi-rig launches in the database. Sites who have launched more complex set-ups with additional non-Vaisala sondes on their rigs not currently archived to advise Lead Centre and where possible provide that additional data to the Lead Centre. Lead Centre to ensure these additional data associated with such launches.

TT Sites, Lead Centre

September 2019 then ongoing

Known cases: Payerne, Modem multi-payload launches

Parallel soundings database augmentation with satellite/ancillary

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

- Sites to identify instrument streams available within +/- 2 hours of existing and planned parallel launches
- TT ancillary to provide advice on suitability and also provide satellite matchups (closest pixels?)
- WG Chair to coordinate
- Lead Centre to receive and archive

TT Ancillary measurements + TT Sites (co-led), WG Chair, Lead Centre.

Oct 2018 (RIVAL soundings)

Apr 2019 (all sites)

UKMO/BAS ascents inclusion

Arrange for the inclusion of Met Office and BAS parallel soundings data in the RS92-RS41 transition. Particular interest in St. Helena given paucity of tropical locations.

Tim Oakley, Lead Centre
May 2018

Scheduling by conditions

Lead Centre to work with sites to fill the low solar elevation angle 'hole' in the current set of dual launches with a lack of dawn / dusk ascents.

Lead Centre, TT sites

ICM-11

Updated analysis of dual launch holdings

Presentations on updated analysis, including accounting for distinctions in rigging and ancillary measurements to be presented at ICM-11.

Reports to be made available a month prior. Consideration of submission of reports as peer-reviewed literature

RIVAL team, ad hoc TT, WG Chair (if funding secured for David Smyth),
Lead Centre

ICM-11

Hard to soft casing

Lead Centre to undertake a number of RS-41 dual launches between hard and soft casing and archive as part of the dual soundings archive. Other sites that wish to ascertain the impact to also submit to the archive.

Lead Centre, TT sites

Ongoing, report at ICM-11

New GRUAN data products

Keeping track of new data stream developments and progress

WG to define and agree table entries for a quick check table on progress against data stream requirements (per summary given by Tom Gardiner). Lead Centre to host this on an appropriate area of the GRUAN website. WG to regularly review this table on calls.

WG, Lead Centre

Oct 2018

Meisei GDP product certification

WG Chair to initiate data stream certification as soon as a discussion version of a paper describing the product is available. Lead Centre to provide a package of materials and data necessary. WG members and TT radiosondes members to undertake a review and advise a decision.

WG Chair, Lead Centre, WG, TT Radiosondes

Within 4 months of discussion paper availability

GNSS-PW GDP data flow and certification

Certify the GNSS-PW data stream by ICM-11. WG Chair to work with TT-GNSS-PW to ensure review and finalisation of TD. GFZ to advance a data stream with full uncertainties (considering how to ensure as much information as possible expressed). Lead Centre to prepare a package of materials to enable certification by WG to proceed.

TT GNSS-PW, WG Chair, GFZ, Lead Centre, WG
ICM-11

Ozonesondes

WG Chair to discuss with relevant parties (Richard Querel, Jacquie Witte, Greg Bodeker, Lead Centre) remaining challenges in instigating an Ozonesonde product and revert to WG with an update. Challenges are: Peer reviewed paper, data processing.

WG Chair

Oct 2018

Modem sonde product

Further update on the Modem product development to be given at ICM-11. Special attention paid to completing documentation steps and laboratory test results.

CNRS, Lead Centre, TT Radiosondes
ICM-11

MWR

WG-Chair and Lead Centre to discuss with Nico Cimini and explore potential processing centre options for an MWR product stream and outline potential options. Presentation to be given at ICM-11.

WG Chair, Lead Centre

ICM-11

Lidar

Report on beta testing outcomes and progress of a v1 data stream at ICM-11. If beta testing shows no issues then aim to have finalised TD and be in a position to certify one or more initial lidar data streams.

TT Ancillary measurements

ICM-11

Frostpoint hygrometer roadmap

Prepare a strategy document (2-sides max) to address the remaining steps required for instigation of a general frostpoint hygrometers GDP (to cover at least FPH and CFH) for presentation and discussion at ICM-11.

Dale, Ruud

ICM-11

Remaining actions

Sites photos

Technical note on guidance on site survey photos and upload instructions. Current site photo surveys to be uploaded to appropriate area of website. GCOS Secretariat to then discuss with WIGOS inclusion into OSCAR Surface metadata database. Lead Centre to instigate mechanism to remind sites to submit new photos.

WG Chair, TT Sites, Lead Centre, GCOS Secretariat
June 2018

Failsafe back-up

Lead Centre and CNR to instigate a mirror of the raw data holdings from the GRUAN archive.

Fabio Madonna, Michael Sommer
July 2018

Generalisation of overpass information

Augment the current golden overpass emails so they show in addition appropriately polar orbiter overpasses information to enable sites to also be able to target these overpass times should they wish to do so.

TT ancillary measures, Fabio Madonna, Tony Reale, Lead Centre and TT Sites

August 2018

Certification and auditing

WG-GRUAN and Lead Centre to ensure certification and auditing of sites on the agreed upon timetables and verify against these targets at ICM-11.

Peter Thorne, Lead Centre
ICM-11

Annually based reporting

Lead Centre to provide automated reports on annual performance **no later than 20 January of each year**. Sites to append site report **no later than 15 February** to inform the ICM. WG-GRUAN members to read site reports prior to ICM.

TT Sites, Lead Centre, WG-GRUAN
February 2019

Letters on behalf of sites

WG-GRUAN chair to review site reports and initiate letters from appropriate parties accordingly. TT sites to advise any additional requests as they arise.

WG Chair, TT Sites, Lead Centre, GCOS Secretariat
June 2018

Uncertainty terminology and presentation in GRUAN products

Brief (max. 8 pages) discussion document to be produced on issues surrounding uncertainty terminology and presentation to users in GDPs including a review of heterogeneity in current approaches in certified and candidate streams to form basis for discussion at ICM-11

Tom Gardiner, WG Chair, Lead Centre, TT-AM, TT-GNSS-PW, TT radiosondes

Feb 2019

Vertical radiation profile sounding

With a view to the GCOS IP action Lindenberg (via LC) to provide an update on their radiation measurement program including inter-alia: costs, practical deployment considerations, understanding of traceability, assessment of required launch frequency

Lindenberg site

ICM-11

New sites

Lead Centre to follow up with French sites over potential site in Faa'a, Tahiti as proposed in Modem product update talk.

Lead Centre

July 2018

Clarification on NRT transmission when launching dual sondes

Lead Centre to draft letter with John Eyre to sites undertaking dual launches to clarify preference to transmit the operational sonde in NRT.

Lead Centre, John Eyre

May 2018

I know I'm going to regret this, but ...

Standard Humidity Chamber

If funding secured for WG Chair support role undertake a viability assessment of writing a paper that justifies the use of the SHC in terms of the data quality using data arising from the Lead Centre.

WG Chair

ICM-11 to report

Missing action items?

- Is there anything people feel we discussed that arises to an action item which we did not yet cover?
- This is your last chance ...
 - Surface meteorological data streams?

Policeman David

- Assuming that I get funding for David, a key deliverable is quarterly updates on action status
- So, expect frequent chasers.
- To avoid awkward moments keep to schedule 😊

Thanks

Thanks due to

- Marion and AWI colleagues for ...
 - Great facilities
 - Thursday dinner
 - Help throughout the week
- DWD for great Lindenberg and weather museum tour
- Graw, Meisei, Modem and Vaisala along with Lead Centre for organising the party

Til next time ...

- Will have been 7 years since outside Europe / N. America
- Almost certain to be at Singapore
- Timing remains uncertain
- We shall advise as soon as dates and location confirmed.