

ICM-11 Actions proposed

Peter Thorne

Before we start ... an ICM-12 timing note

- ICM-12 will likely be Nov 2020 (IPCC commitments for me, GCOS going green)
- Hence many of the actions have intermediate deadlines
- Likely that LC, Co-Chairs and Secretariat will meet about half way between ICM-11 and ICM-12 to assess progress

High priority actions

4 items

HP1 First full version of RS41 GDP

Lead Centre to complete production of first full version of RS41 GDP. Product to be certified and publicly available prior to ICM-12
LC, TT Radiosondes.

Beta version data product available December 2019

TD complete February 2020

Paper submitted April 2020

Certified by working group by September 2020

Note that LC should reach out for help – e.g. Tom Gardiner can provide PTU diagram and other aspects?

HP2 Radiosonde fundamental documentation

Finalize first draft of GRUAN radiosonde foundational technical document to cover the general instrument-independent aspects.

TT Radiosondes and LC

Draft submitted to WG by ICM-12

HP3 ARL

Complete and submit the draft paper on ARL effects. Make recommendations on next steps to certify the ARL data.

WG-GRUAN, TT radiosonde, Sodankyla, Potenza, Modem, Meisei

Manuscript submitted September 2019

Further steps available in advance of and then discussed at ICM-12

HP4 QC/QA flagging and presentation in data files

Ad hoc group on QC/QA flagging to develop a strategy and rationale as a technical note. Work to include inter-alia:

- which profiles to present to users
- use of multiple fields (good, questionable, bad)
- and use of interpolated values or otherwise.

Ad hoc group members

TN draft available for WG-review Aug 2020

Presentation at ICM-12

RS92 to RS41 transition actions

5 items

A1 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.

LC, TT Radiosondes, WG-GRUAN
June 2019

[Ruud – just finish it on the plane home ...!]

A2 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).

TT Ancillary measurements, TT Sites, WG Chair, LC.

WG Chairs, LC to prepare TN guiding sites on what site data requested for such parallel measurements and how to upload Sept 2019

Sites to respond with planned submissions Dec 2019

Data submissions received and integrated May 2020

Satellite co-locations within reasonable match provided by NOAA STAR Nov 2019

A3 Addition of laboratory
characterization results of
instruments -> move to general
action

Lead Centre and CNR to begin to integrate laboratory
characterization results as part of the database to
characterize instruments starting with RS41.
Progress to be updated at ICM-12

LC, CNR

ICM-12

A4 Updated analysis of dual launch holdings

Presentations on updated analysis, **including accounting for distinctions in rigging and ancillary measurements** to be presented at ICM-12. Reports to be made available a month prior. Consideration of submission of reports as peer-reviewed literature.

RIVAL team, ad hoc TT, WG Chairs, LC
ICM-12

A5 Paper on manufacturer processed differences

Perform a synthesis assessment of the differences between the two manufacturer processed versions using a number of approaches as shown at ICM-11 in the parallel soundings session.

Alessandro, Bomin, Tony, participating sites, MO,
Dave (to coordinate)

Mar 2020

Progressing new GRUAN data products

7 items

B1 Meisei IMS GDP product

TD completed, data stream in beta mode and paper submitted by time of ICM-12

TT Radiosondes (Meisei)

ICM-12

B2 Modem sonde GDP progression

Take steps necessary to further develop the Modem product (TD completion, uncertainty characterisation, papers); update to be given at ICM-12.

TT Radiosondes (Modem)
ICM-12

B3 GNSS-IWV GDP certification

TD finalized and the product certified and flowing from all qualified sites by year end

TT GNSS-PW, GFZ, LC, WG

TD resubmitted by TT and published July 2019

Certification package prepared by LC and sent to WG-Chairs
Sept 2019

Certified product Nov 2019

B4 Ozonesondes GDP progression

Update on progress towards an Ozonesonde GDP to be given at ICM-12 including consideration of TD issues raised at ICM-11 and outcomes of further discussions with the community.

Richard Querel, WG Chairs
ICM-12

B5 Microwave Radiometer GDP progression

TT-AM to further progress the MWR product and present on
progress at ICM-12

TT-AM

ICM-12

B6 Lidar GDP progression

Report on beta testing outcomes and progress of a v1 data stream at ICM-12. 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-AM Thierry, Arnoud, Fabio
ICM-12

B7 Frostpoint hygrometer GDP progression

Provision of update on progress towards a GDP for frostpoints covering at a minimum:

1. whether a single version can be applied to all frostpoint techniques
2. questions around the Vömel et al analysis raised at ICM-11

Frostpoint hygrometers ad hoc team

ICM-12

Remaining actions

19 items

C1 Split TT-AM into two (or more) teams

TT-AM to propose splitting into two (or more) teams. The first on satellite/NWP applications of GRUAN and validation of GRUAN, the second on development of ground-based measurement techniques.

TT-AM to propose and agree with LC and WG two ToRs and original membership Oct 2019

Split following AOPC endorsement thereafter

C2 Sites photos

Sites to upload first set of photos commensurate with the new site photos TN. Lead Centre to work with sites through their PRs to share these with the OSCAR Surface database.

TT Sites, LC, GCOS Secretariat

Oct 2019 sites photos uploaded

Feb 2020 photos shared with OSCAR Surface database

C3 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-12.

WG Chairs, LC

ICM-12

Target stations to certify: Tenerife, Arrival Heights, Macquarie Island

Target stations to recertify: Payerne, Potenza

C4 Usage of GRUAN data

Further develop ideas around the appropriate usage and citation metrics of GRUAN data including appropriate acknowledgment to sites. Instigate measures as possible and further update progress at ICM-12

WG, TT sites

ICM-12

C5 Augment GNSS-IWV data flow

GNSS-IWV Data flow to be set up for additional sites prior to ICM-12. Progress to be made in installing hardware at additional sites and starting data flow.

GFZ, TT sites members, TT GNSS-IWV

Report on progress at ICM-12

C6 Survey of site approaches vis-à-vis variety of radiosonde issues

Sites to be surveyed for current approaches / issues identified as of import at ICM-11:

1. How cloud observations are made and reported in RsLaunchClient
2. Current strategies on ensuring burst height attainment
3. Helium / Hydrogen issues and strategies

TT Sites, WG, LC

Oct 2019

Define and agree survey with LC and WG July 2019

Returned surveys Oct 2019

C7 Data Policy

Progress to finalization an explicit strategy regarding which data can be released to whom and get signed off by sites and WG.

LC, TT Sites, WG

Lead Centre proposal completed by Jul 2019

TT sites review completed Nov 2019

WG review completed Mar 2020

C8 Further generalisation of overpass information

Further augment the current golden overpass emails so they show in addition non-EUMETSAT polar orbiter overpasses information to enable sites to also be able to target these overpass times should they wish to do so.

TT-AM, Tony Reale, LC, TT Sites, Axel von Engel, Lori Borg
October 2019

C9 Failsafe back-up of raw data

Lead Centre and CNR to further the preparation of a mirroring of raw data holdings and report on progress via a presentation at ICM-12

CNR, LC

ICM 12

C10 Uncertainty terminology and presentation in GRUAN products

Develop a white paper on uncertainty quantification and presentation options for possible submission for publication.

TT-Scheduling

February 2020

C11 Standard Humidity Chamber

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.

Richard Querel, David Smyth, TT-sites, LC
April 2020

C12 Metrological closure of GNSS-IWV and radiosondes

For those sites which perform both GNSS-IWV and a GRUAN qualified radiosonde perform an analysis as to whether metrological closure is attained or otherwise. Initial results to be presented at ICM-12 and discussed.

GNSS-IWV and radiosonde TTs

ICM-12

C13 Standardizing cloud treatment

Develop a proposal on how cloud observations should be taken to support the radiosonde profiles including how that information should be included in the data files. Strategy to be cognizant of existing practices (see linked action)

TT Radiosondes and TT AM (satellites)

ICM-12 presentation

C14 Multi-payload configurations

DWD and MeteoSwiss to consider running parallel multi-payload configurations to try to minimize the impacts of multi-versus single (operational) payload with a view to minimizing impacts in GRUAN but also upcoming CIMO intercomparison.

DWD and MeteoSwiss

Update talk at ICM-12

C15 Use of descent data

Revisit the potential use and value of operational radiosonde descent data within GRUAN. Are the data good enough to use? What would be involved? Is there any demonstrable value? Present update at ICM-12

TT Radiosondes

ICM-12

C16 Justification for high ascent attainment

TT radiosondes to progress an analysis of the various benefits of high altitude attainment with a view to arising one or more papers. Criteria to include NWP impact, seasonal predictability, importance of monitoring LS winds etc.

TT Radiosondes, IPET-OSDE

Update talk at ICM-12

C17 Radiosonde wind uncertainty estimate

Evaluate and improve radiosonde wind uncertainty estimates. Meisei has done detailed uncertainty estimate for Meisei wind measurements. LC to consider whether this can be done for RS41 and RS92 v3 and report at ICM12

TT radiosondes, LC

Report at ICM12

C18 Generalise parallel soundings database

Lead Centre to make all parallel soundings (all pairs or sets either model1-model2 or model1-model1) in the archive explicitly available via the parallel soundings archive facility to increase accessibility and usability. Parallel soundings archive to be made more externally accessible.

LC, TT sites

Oct 2019

TT sites to ensure all sites have uploaded all parallel measurements (not just RS92/41 pairs)

Initial survey of sites – Aug 2019

Data uploaded to LC - Oct 2019

C19 Refresh of presentation materials

Review and refresh generic powerpoint, create generic poster, encourage presentations at relevant conferences.

David Smyth, WG, LC

Oct 2019

Anything else?!?

- Speak now or forever hold your peace ...

Finally ...

- A huge thanks to the local hosts for the excellent organization of ICM-11
- Thanks also to all the day chairs speakers and all of you as participants
- Please remember to send your paragraph summaries to ctassone@wmo.int