

Remarks on the UAI12022 arrangements

By the manufacturers participating the ICM14 at site

The request / task

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- As you may have seen in the draft agenda, there will a special session on the radiosonde intercomparison campaign during ICM-14 (keynote forum 2, 90 minutes).
- We also want to invite the manufacturers to present their view on the intercomparison. Obviously, data or analysis results cannot be presented yet, but maybe you can say something about your view on the **idea of a laboratory campaign, the employment of the independent operators** and a **general impression of the campaign.**

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Disclaimers

- These remarks are not anyway "official" feedback from the all participated manufacturers, rather free form findings from four manufacturers participating ICM14 at site (GRAW, Meisei, Modem and Vaisala).
- Comments were compiled on short notice for the ICM, much during the meeting breaks.
- Some of the comments are combined from similar kind of remarks, some are in original form.
- Some of the comments are just informative

Informing of the campaigns

- Informing before the intercomparison
 - Information on the forthcoming Intecomparison was given well advanced. However, uncertainty and delay to the schedule was caused by the COVID.
- Delivery of equipment and sondes
 - Clear instructions were received to send the equipment and sondes due to defined date before the laboratory campaign.
 - Support from the operators and staff of DWD was received to return the package.

The campaigns

- The laboratory campaign (starting Feb 2022)
 - Later more on this
- The sounding campaign (starting Aug 2022)

The sounding campaign

Instructions for the manufactures before the campaign

- Instructions preparation for the operators
 - Manufacturer were asked to make operating and trouble shooting instructions for their systems. Instructions were submitted to the operators before the campaign. That was good arrangement.
 - It was unclear whether the systems were allowed to share a single antenna, this would have saved on cable + antenna logistics

Informing at the site

- The opening info as well as the daily infos were clear including issues like safety, code of conduct, local arrangements etc.

Premises and arrangements at the site

- Installation of the outdoor equipment
 - Lottery for the systems installation locations, ok.
 - Help from Lindenberg personnel was available
 - Grounding of antennas required special arrangements and it would have been helpful to know about the landscape requirements beforehand
- Equipment indoor
 - Enough table area for the equipment was reserved
 - Additional 100 %RH (SHC) check was performed in the sounding preparations. This required sonde specific adaptors. Very timely work when designing and making the adaptors was appreciated. However, this required also manufacturers acute involvement. Information on the SHC inlet port dimensions would have been valuable beforehand for even smoother implementation.

Premises and arrangements at the site, cont.

- There was a GNSS repeater provided on site, but it was not clear how manufacturers should proceed with their own repeaters to minimize interference from different re-radiated signals
- Other remarks
 - If training and preparation need to be done within a set time, the number of people dispatched by each manufacturer should/could have been the same.
 - Social time during meals and social event was nice addition.

Training of the operators

- This was a new phase compared to the previous intercomparisons
- Classroom training
 - When teaching the operators theory and general information on the systems, the original plan was to have just theoretical part in the classroom. In practice it was also found useful to have hands-on training with the equipment already in this phase.
 - In the beginning of the training, it was not yet clear how the special campaign operating procedures influence to the operating of the equipment. Such procedures were related to the use of SHC, filling of manual forms, etc.
- Test soundings
 - This was the first opportunity to make the soundings by the operators and to use the SHC adapters.
 - Findings during the test soundings were used to improve the balloon launching system.
- Duration of the training
 - Sufficient time for the training was provided
- Other remarks
 - There was changes to the given frequency allocations for the manufacturers during the training and testing phases. This caused some extra checking that the changes do not cause RF-interference between the sondes.

Intercomparison soundings phase, performed by the operators

- On-line support by the manufacturers
 - Server access worked well
 - Some information on the sounding status was also received by emails. This worked generally ok, but in the beginning of the campaign there was some uncertainty on the schedule.
 - Manufacturers got the data only from their own equipment. Not much information was received if there were a need for re-launches for various reasons. Possibly there was not?

Soundings phase, cont.

- Observation with 10 sondes flying at the same time may cause problems that the manufacturer did not anticipate at the time of design. Addressing such issues is usually not included in the manual. A normal operator only operates one sonde. Interference from other systems is beyond the reach of a normally trained operator.
 - >> Overlap of the manufacturer and the operator for about a week will make the sounding phase smoother and reduce the risk.
- There were manufacturers with and without a time difference to launch site. It would be better for the manufacturer to be able to respond on-site until the sounding phase stabilizes.
- By having overlap phase, the anticipated time for manufacturer presence on-site could also be more clearly defined. This would be useful for resource and travels planning.

The laboratory campaign

- The original plan was to arrange the laboratory campaign before the sounding campaign. However, the COVID changed the plans, and some of the manufacturers performed the tests after the sounding campaign.
- We noted that this was a big investment for the Lead Centre, 6 x 2 weeks. The arrangements were good, taking into account the COVID precautions etc.
- There must have been big differences how much effort was needed to get different sonde types measured. Some of the models have been tested previously with the same equipment, some not.
- Laboratory test results were delivered only to the manufacturers in question, but not to be utilized for the benefit of this intercomparison campaign.
- In the report the results will be anonymous. It is not clear how this will work out exactly. For some manufacturers there is also public data from measurements with the same setup.

General remarks by the (limited) team

- The practical arrangements for the campaigns were successful and in line with the set plans.
- Some remarks are made to possibly streamline the further campaigns.

Thank you !