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

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**7th GRUAN Implementation-Coordination Meeting (ICM-7)**
Matera, Italy
23 February – 27 February 2015

Session 1

# GRUAN Work Plan 2015-2016

*(ICM-7)*

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**Summary and Purpose of Document**

The final session agreed on a specific GRUAN work plan for the forthcoming year based on the preceding discussions. Similar as during the previous meeting, the work plan discussed during ICM-7 is intended to be specific and clear. These action items will be tracked and discussed in the next meeting.

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| | Action | Owner | Due |
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| | **High priority actions** | | |
| 1 | Technical note outlining the process that will be undertaken to certify a new program at a site with an existing certified measurement program | WG Chairs, TT Chairs, Lead Centre | June 2015 |
| 2 | Produce a Technical Note highlighting the steps that must be achieved for a GRUAN product to be accepted ('certified') and released. WG to review criteria for acceptance | WG chairs, TT chairs, Lead Centre, Holger Vömel | Aug 2015 |
| 3 | All sites with capability to report BUFR over GTS in NRT. Advice and tech. support to be provided by LC / WMO / GCOS on a site by site basis to all certified and candidate sites not currently reporting BUFR to attempt to enable. In first instance LC to ascertain status for each site as to why not reporting BUFR to GTS and advise Tim Oakley and Roger Atkinson. | Lead Centre, GCOS, WMO, TT sites | Sept 2015 for initial reports for each site to Tim and Roger<br><br>ICM-8 for all sites with capability to be reporting BUFR |
| 4 | Define strategy and necessary steps to undertake transition from RS-92 to another sonde model. Produce GRUAN report on strategy and rationale including inter-alia:<br>Sharing the burden<br>Role of ancillary measurements<br>Plans for parallel measurements<br>Ensuring competition in marketplace | Lead Centre, TT radiosondes, TT sites, WMO, GCOS | Oct 2015 |
| 5 | An assessment of the advantages and disadvantages of manual vs. autosonde launches written up and submitted to the peer reviewed literature | TT radiosondes | March 2016 |
| 6 | Lead Centre to work with sites not attaining regularly 10hPa to understand why and help improve situation. Short report from each affected site at ICM-8 | Lead Centre, TT sites | April 2016 |
| | **Ongoing actions** | | |
| 7 | Please send relevant funding calls to the science coordinators so that they can disseminate to relevant parties and cajole to get GRUAN partners cooperating in proposals | Science coordinators | |
| 8 | Produce a quarterly 2-page newsletter for dissemination to the community email list | Greg Bodeker, Emma Scarlet, | Quarterly |

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| | to be sent by Lead Centre | Science Coordinators | |
| | **Timebound actions** | | |
| 9 | Finalize and publish the GRUAN brochure | Greg Bodeker | April 2015 |
| 10 | Letter of support for closer collaboration between CNR and Italian Met Service in support of Potenza site and broader Italian UA program | WG Chairs, Potenza, Secretariat | May 2015 |
| 11 | A short GRUAN report detailing the process implemented to provide feedback of observation minus background fields to the GRUAN Lead Centre | David Tan, Lead Centre | June 2015 |
| 12 | GRUAN information event at WMO congress to include presentations from PRs and handing of certificates. | Lead Centre, GCOS secretariat, with input from WG Chairs | June 2015 |
| 13 | Prepare and disseminate promotional video for GRUAN. Site reps to send segments to Greg. | Greg Bodeker, Lead Centre, TT sites | Aug 2015 |
| 14 | A document detailing the operational challenges related to multi-payload soundings submitted either to peer reviewed literature (first choice) or to WG-GRUAN for review as a GRUAN report | TT radiosondes, NOAA NWS, TT sites | Sept 2015 |
| 15 | Manuscript describing the derivation of uncertainty estimates for GNSS-PW measurements submitted to a peer reviewed journal | TT GNSS-PW | Sept 2015 |
| 16 | Extend trend sensitivity studies to stratospheric water vapour | TT Scheduling | Sept 2015 |
| 17 | Each site to produce first version of photos to document seasonal and long term site changes (regular e.g. semi-annually from stated locations / daily webcam shots etc. as appropriate to their specific case, and 'on change'). Uploaded to GRUAN website. LC to instigate mechanism to remind sites. | TT Sites, Lead Centre | Nov 2015 |
| 18 | Develop first draft of GRUAN radiosonde generic technical document omnibus | Lead Centre, Task Team Radiosondes, Greg Bodeker, but also include some non-instrument experts, WMO ET can review | Nov 2015 |
| 19 | Develop GRUAN data product and processing stream for Modem radiosondes. | CNRS, Lead Centre, TT | Nov 2015 |

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| | First draft of technical document describing processing streams for all Modem radiosondes | radiosondes | |
| 20 | Lead Centre and US National Weather Service Sterling facility to meet in person to discuss collaboration and advise Working Group | Lead Centre, NWS, broader NOAA contingent | Nov 2015 |
| 21 | Technical Note on the appropriate techniques for manufacturer independent ground checks using the SHC. Paper submitted to peer review documenting scientific rationale | Lead Centre | Dec 2015 |
| 22 | Technical documentation for GRUAN lidar stream (lidar Guide) submitted for review by WG-GRUAN | TT Ancillary Measurements | Dec 2015 |
| 23 | Develop frostpoint hygrometer GRUAN data products. Guidance needs to account for operation of CFH, NOAA FPH. Paper submitted to a peer reviewed journal. | TT radiosondes | Dec 2015 |
| 24 | Develop a GRUAN GNSS-PW product. Technical documentation completed for GNSSPW measurements (GNSS-PW Guide) | TT GNSS-PW | Dec 2015 |
| 25 | Develop a GRUAN ozonesonde data product in consultation with NDACC and GAW. Completed technical documents | Greg Bodeker, Lead Centre | Dec 2015 |
| 26 | Revise the RS-92 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. Validate new radiation correction using ancillary measures to build confidence (paper). Document v3 appropriately. | Lead Centre, TT radiosondes, TT ancillary measurements | March 2016 |
| 27 | Technical documentation completed for frostpoint hygrometer measurements. In first instance send existing documentation to Greg Bodeker. | TT radiosondes | March 2016 |
| 28 | Determine how best to work with NDACC and GAW to bring in measurements of aerosol properties into GRUAN. Produce short document outlining a proposed strategy. | WG Chairs, WG members, TT ancillary measures, Potenza, EARLINET | March 2016 |
| 29 | Define the GNSSPW data collection client requirement, initiate data flow | TT GNSS-PW, Lead Centre | March 2016 |
| 30 | Presentation(s) at ICM-8 summarizing strategy for dealing with transition from RS92 and initial analyses and implications | Lead Centre, TT Radiosondes, TT sites | April 2016 |

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| 31 | Redraft IP to be more a strategic plan document, perhaps with a somewhat longer timeframe but only milestones, not deliverables, to avoid dating issues. Draft document ready by ICM-8 for review and discussion. | WG Chairs, Lead Centre, TT Chairs | April 2016 |
| 32 | Define the ozonesonde data collection client requirement, identify the central data processing facility, and initiate data flow | Greg Bodeker, Lead Cenre | April 2016 |
| 33 | Investigate how GRUAN uncertainties could be transmitted over BUFR and how BUFR tables would require modification to enable this. Report at ICM-8. | GCOS Network manager, CBS, WG Chairs | April 2016 |
| 34 | Perform demonstration study of SASBE at time of satellite overpass based on a realistic set of assumptions about the availability and colocation of sondes and ancillary measurements. Focus is on temperature and water vapour. Initial report available. | TT ancillary measurements | April 2016 |
| 35 | Periodic science review of network expansion priorities and progress. Report to ICM-8 | Greg Bodeker | April 2016 |
| 36 | GRUAN official launch event / celebration including some short relevant presentations and possibly posters. To be held at ICM-8 which will take us back to our roots where it all started. | Working Group, Lead Centre, TT Sites | April 2016 |
| 37 | Manuscript(s) detailing operational considerations for controlled descents for frostpoint hygrometers submitted to a journal or detailed in a GRUAN Report | TT radiosondes | May 2016 |

**Kommentar [PT1]:** Possibly to be replaced still