



GRUAN technical documents and special reports: status and plans / requirements

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Technical documents - current status

#	Technical document	Primary author	Review date	Latest set of reviewers	Status	Current published version (online)
1	Manual for the Data Management in GRUAN	Michael Sommer		Rolf Philipona, Dale Hurst, Leo Haimberger	Need to have a v1.0 before commencing the review (currently at v0.5). Thierry and Belay now co-authors but no time before April. Ruud can't co-author.	DRAFT v0.4.249 / 16 Feb 2011 NB: Currently unable to be accessed online [following request to only show reviewed documents online].
3	User Guide of GRUAN RsLaunchClient	Michael Sommer		Rigel Kivi, Yoshiyuki Noto, Thierry Leblanc	Need to get final version for review. Michael is working on this.	DRAFT v0.4.8 / 17 Feb 2011 NB: Currently unable to be accessed online.
4	Brief Description of the RS92 GRUAN Data Product (RS92-GDP)	Michael Sommer	Sept 2011	Greg Bodeker, Dian Seidel, Tony Reale	A new version is expected for Dec 2012 which will require a new review.	1.1.78 / 7 Dec 2011
5	Pre-launch Procedures for Vaisala RS92 Radiosonde	Ruud Dirksen				
6	GRUAN Ground-based GNSS Site Guidelines	June Wang	Sept 2011	Peter Thorne, Masatomo Fujiwara, John Dykema	Completed 31 Oct 2011, revised 9 Jan 2012 and sent back out, revised version accepted March 2012.	v1.0: 23 May 2012

Technical documents in progress

- GRUAN Ozonesonde Programme Guide (Greg Bodeker)
- GRUAN ozone, temperature and aerosol lidar data products (Thierry Leblanc)
- GRUAN FTIR data products (Jim Hannigan and Matthias Schneider)
- GRUAN ozone and water vapour microwave radiometer data products (Nico Cimini and Nik Kämpfer)
- GNSS-PW GRUAN data products (June Wang and Kalev Rannat)
- GRUAN non-RS92 data products (Holger Vömel and radiosonde TT)
- UT/LS water vapour data product (Holger Vömel, Rolf Phillipona, Masatomo Fujiwara and Dale Hurst)

GRUAN reports - current status

There are two GRUAN reports published and one in development:

1. First GRUAN Data Management Coordination Meeting at NCDC (Asheville, North Carolina, USA), 28-29 September 2009, Howard Diamond and Bill Murray.



2. GRUAN Radiosonde Task Team Review Report on the 2010 WMO Radiosonde Intercomparison, Larry Miloshevich, Masatomo Fujiwara, Rolf Philipona, and the radiosonde task team.

3. Outcomes of the GRUAN Network Expansion Workshop 13-15 June 2012, Greg Bodeker, Karin Kreher, Michael Kurylo, William Lahoz, Karen Rosenlof, Xavier Calbert and the GRUAN NEW team → pending availability of resources.



Technical documents structure

The technical documents developed to date, and those currently under development have quite different structures e.g.

- GNSS Guidelines TD6: One document of 18 pages comprising:
 - Introduction
 - Guidelines for GG sites
 - Guidelines for surface meteorological data
 - Guidelines for GG sites with GPS/GLONASS receivers
 - Guidelines for new GG sites
 - Instructions for filling out GRUAN GNSS site logs
- Radiosonde documentation: 3 separate TDs viz.
 - User Guide of GRUAN RsLaunchClient TD3 → ?? 
 - Brief Description of the RS92 GRUAN Data Product (RS92-GDP) - TD4 → 11 pages
 - Pre-launch Procedures for Vaisala RS92 Radiosonde TD5 → 9 pages 
- GRUAN lidar programme guide: 100 pages following the structure of the *GRUAN Guide to Operations*.
- NOTE: Do not need to standardize immediately!

Structure suggested in GRUAN Guide

“For each instrument providing measurements of the ECV of interest, the following technical documents are required. Whether these should be standalone technical documents or combined into a single document for each instrument has not yet been resolved.”

- Standard operating procedures
 - Details operation of the instrument
 - Recommendations. Sites would document any deviations.
 - Describes how the instrument meets the instrument requirements
 - Describes measurement scheduling
 - Describes change management
- Data and metadata capture
 - Describes capture of raw data, instrument metadata, and metadata associated with the measurement programme as a whole
 - Guides the development of the xxRunClient software
 - Details capture of change event metadata
- Guidelines for assessment and certification
 - Defines the criteria against which assessment and certification for that measurement programme will take place

Structure suggested in GRUAN Guide

- Central data processing
 - Defines how Primary Raw Data (PRD) and Converted Raw Data (CRD) streams, and associated metadata, from individual sites are processed to generate Standard GRUAN Product Data (SGPD).
 - Describes all data processing algorithms, calibration procedures and mechanisms for ensuring traceability to primary standards.
 - Describes data correction and homogenization algorithms, procedures for:
 - describing and/or analysing
 - quantifying and/or synthesizing
 - verifyingmeasurement uncertainty.
 - Describes triggers for reprocessing historical data and associated requirements and use of metadata.
 - Description of methods for QC/QA.
- Creation of the GRUAN data product
 - Details additional processing to create GRUAN data products from SGPD.
 - Details how Integrated GRUAN Product Data (IGPD) are generated from SGPD.
 - Use of SGPD to generate SASBE-type IGPD
 - Description of the contents and structure of the data files.

Many roads diverging in the yellow wood

The technical documents being developed to date are not conforming to what has been suggested in Section 4.6.2 of the GRUAN Guide.

Does this need to be resolved? A uniformity in approach would have benefits (to sites and in terms of process management).

Assuming yes, options are:

- Follow what is recommended in the Guide → this would require restructuring of some of the existing technical documents.
- One document to rule them all → as in the current lidar guide. This would require combining TD3, TD4 and TD5 into a single technical document.
- Something else.

Discuss...