

GRUAN GNSS TT

Overview 2018/2019, ICM11, 20 May, Singapore,

Kalev Rannat, Jonathan Jones

(co-chairs)

The GNSS-PW Task Team (as in May 2019)

Name	Affiliation
Kalev Rannat	Tallinn University of Technology, EE
Jonathan Jones	Met Office, UK
Junhong (June) Wang	State University of New York at Albany, USA
John Braun	UCAR, USA
Galina Dick	GeoForschungsZentrum Potsdam, DE
Gunnar Elgered	Chalmers University, SE
Yoshinori Shoji	Meteorological Research Institute, JP
Jens Wickert	GeoForschungsZentrum Potsdam, DE
George Liu	Hong Kong Polytechnic University, HK
Rosa Pacione	e-GEOS S.p.A., IT
Ning Tong	Lantmäteriet (Swedish Mapping, Cadastre and Land Registration Authority), SE
Fadwa Alshawaf	GFZ Potsdam, DE

About Action Items

From re-scheduled action items

GNSS PW Omnibus. The Omnibus was finalized in Feb. 2018 and sent to LC and co-chair for review on Feb. 27, 2018. The manuscript returned from review in Dec. 2018. Delivered to the LC for publishing (should get published very soon). **Finished.**

Action items left after ICM10

#B3 (New GRUAN Data products): GNSS-PW GDP data flow and certification (deadline ICM11)

"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."

Work continues to improve the GRUAN GNSS data flow and GNSS data processing (**presented on Tuesday by Galina Dick, GFZ**)

The sites currently delivering GNSS data (continuous processing chain)

Lindenberg (LBD0, LBD2)

Lauder (LDRZ)

NyAlesund (NYA2)

Lamont* (SPGO)

Payern (PAYE)

Sodankyla* (SODF)

Barrow (UTQI)

Singapore (MSS1) - since May 2019

* GNSS data processing operational, but still no meteorological data for calculating GNSS-PW

Boulder

GNSS station in Boulder (TMS3) **will be re-located** (ceased operation in Oct. 2018).

The new location for the GFZ GNSS is fixed, but some administrative issues wait for a solution. Negotiations continue (GFZ).

Tateno (tatn)

GFZ has GNSS data (2017,2018) from Tateno (TATN). Tateno however does not deliver data in real-time, but in larger batches. GFZ is negotiating how to get the data with shorter time delay. At GFZ everything is ready for the operational processing chain.

About Action Items (continued)

Upcoming GNSS sites:

- Cabauw -- CBW1 (to replace CABW), a new receiver (Leica Gr50, started on 17 May at 5PM) and a new antenna mast. The new antenna setup is a so-called Integrated Geodetic Reference Station, that combines GNSS, with InSAR corner reflectors, and markers for other techniques. The new station will be part of the AGRS.NL. The monument is completely different, and the coordinates are not the same. Automatic data uploads will be initiated to GFZ (soon).
- Potenza (GFZ in contact with site operators re: how to organise data flow, still in progress)
- Beltsville (agreement is in preparation)
- Graciosa (GFZ has permission to install the station and is in preparation to build a monument and ship equipment out - **may be done by the time of the ICM**)
- Tenerife (plan to install their own GNSS receiver, GFZ stays in contact)
- Suriname (GFZ continues negotiations)

The status of GNSS data product (**will be presented by Galina Dick**):

The data (currently not certified, but experimental) is made available at ftp.gfz-potsdam.de for GRUAN sites **ILDB0, LDB2, LDRZ, NYA2, SODF, PAYE, UTQI, SPGO, MSS1**

#C7 (Remaining Actions): Uncertainty terminology and presentation in GRUAN products (deadline Feb 2019)

"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"
Should be rescheduled (for after ICM11).

For discussion and future work: Representation of GNSS-PW GDP

GNSS PW is derived from GNSS data product. In GRUAN we need (and claim) transparency and traceability. For GNSS PW it means transparency for both the GNSS data collected and the derived PW (with its uncertainty). For PW we can refer to T. Ning et al 2016, but for GNSS data representation we need to find a consistent way with geodetic networks (e.g., IGS and national geodetic networks) to give users a chance to follow the GNSS data collection and quality at the site.

Some GRUAN sites belong to national/international networks (Payerne, Lauder, ...) – maintained by the rules of the networks. It should be decided how to proceed with others. What is the best solution to offer/represent necessary metadata for GRUAN GNSS PW? With not resolving this issue we cannot convince any data users about the high quality requirements and transparency GRUAN follows and claims.