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Task Team Progress Report for April 2018 – GNSS-PW

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Summary and Purpose of this Document

Progress report from the task team on GNSS Precipitable Water (GNSS-PW).

The GNSS TT has worked on topics listed on the GRUAN Master Action Item list:

As reported in June 2017 (ICM-9, #24) the TT had a goal to finish the GNSS PW Omnibus by the end of summer 2017. The omnibus was finalized in February, 2018 and sent to LC and co-chair for review on Feb. 27, 2018.

#16 GNSS-PW: Take necessary steps to be in a position to qualify the GNSS-PW GDP starting after ICM-10. Remaining steps are finalisation and review of Technical Document and provision of a beta test data stream to Lead Centre.

1. GNSS data stream: The sites in the operational processing are LDB0, LDRZ, NYA2, SODF, TMS3, UTQI. Some additional GRUAN sites will be added to the operational GNSS processing soon (Payern, Potenza, Cabauw).
2. GNSS Data availability: The decision from past has been, that only certified GDPs should be published at NCEI. For this reason there is only RS92-GDP on the LC ftp server (and no GNSS data product). The data (currently not certified, but experimental) is made available at ftp.gfz-potsdam.de for GRUAN sites LDB0, LDB2, LDRZ, NYA2, SODF, TMS3.
 - user: anonymous
 - in pub:
 - cd GNSS/products/nrttrop/product_COST_GRUAN_EPOS8/y****/m**
 - cd GNSS/products/nrttrop/sinex_trop_GRUAN_EPOS8/w****
3. Comparisons with independent measurements (e.g., Radiosonde): Fadwa Alshawaf (GFZ) did some comparisons with RS for GRUAN sites Lindenberg and NyAlesund. It is not done routinely, just started as the first attempts. If and how to continue it remains for further discussions.
4. PW uncertainty estimate: GFZ continues working on the routines for calculation of the PWV uncertainties according to Tong Ning on the operational basis. After that, it is planned to reprocess all GRUAN GNSS sites once again with the calculation of PWV uncertainties and application of 2nd order ionospheric effects. After this the new PWV products will be validated with RS again.
5. GNSS data monitoring tool (item #29 in GNSS-TT Report 2017): This item was left on hold. GFZ is currently developing the new ODC (Operational Data Center, Markus Bradke et al.) for handling of the raw GNSS data. Data monitoring of GRUAN sites will be included. Next milestones can be set after ICM10. As the planned functionalities of the data monitoring tool are partly overlapping with the functionalities of the ODC, this old item #29 must be discussed

and revised at ICM-10 and after. The realisation depends on the resources and consensus (TT, GFZ, LC) on the technical requirements.