

E-GVAP data processing in Lantmäteriet

Tong Ning

*Lantmäteriet (The Swedish Mapping, Cadastral and Land Registration Authority) ,
SE-80182 Gävle, Sweden*

LANTMÄTERIET



In total 683 sites

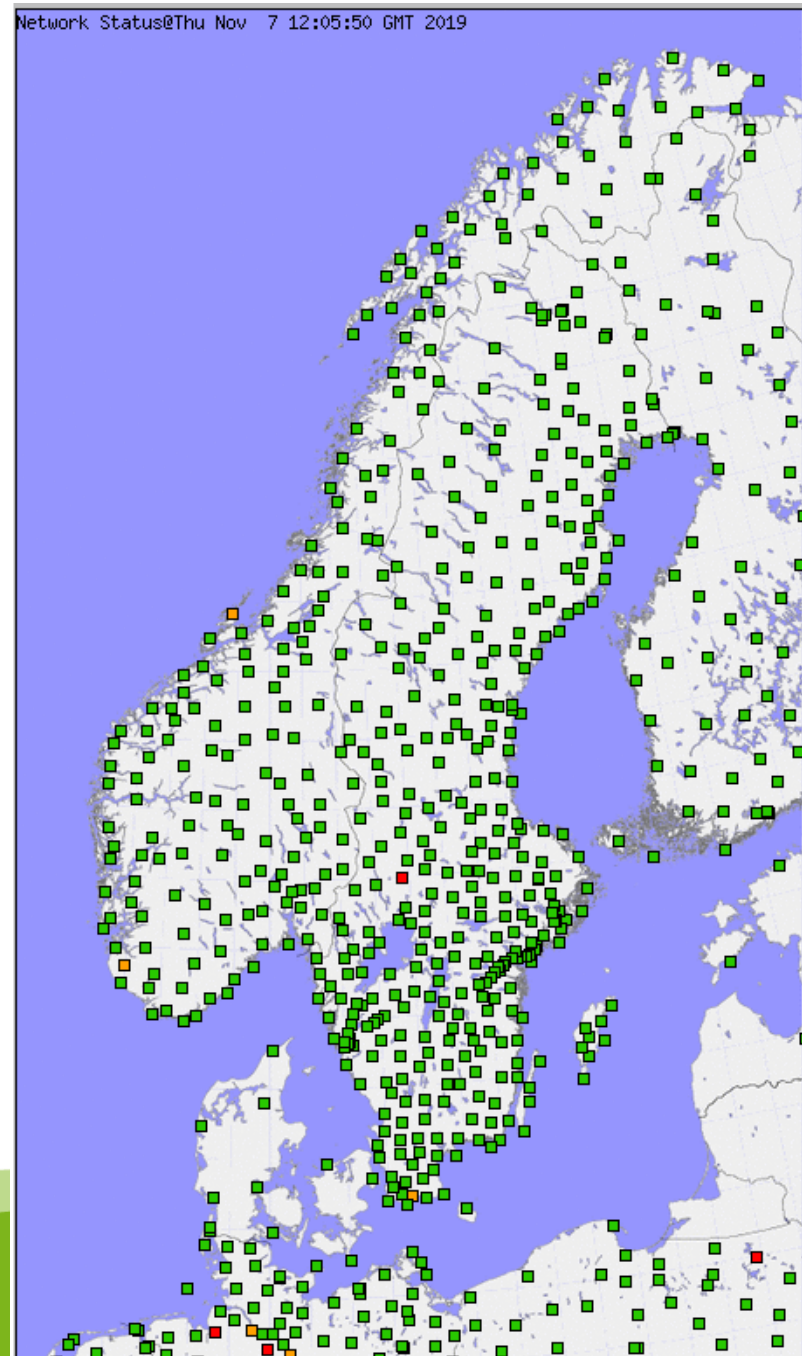
Sweden (383),

Finland (88),

Denmark (10) ,

Norway (192),

IGS sites (10).



Products provided by Lantmäteriet

- **NGA1** provides hourly-ZTD and the data processing is done by Bernese V5.2 using a network solution and a 4 hours moving window. The NRT ZTD were provided for each 15 minutes and the cost file (version 2.2a) was formed. A time delay is about 45 minutes.
- **NGA2** provides sub-hourly ZTD and the data processing is done in every 15 minutes by Bernese V5.2 using a network solution and a 2 hours moving window. The NRT ZTD were provided for each 15 minutes and the cost file (version 2.2a) was formed. A time delay is about 15 minutes.

Comparison with post-processing solutions

	Bernese hourly (NGA1) – Post-processing	Bernese sub-hourly (NGA2) – Post-processing
Mean bias* [mm]	0.21	-0.16
Mean RMS* [mm]	4.84	6.33

* averaged values over all stations using three month data

L A N T M Ä T E R I E T

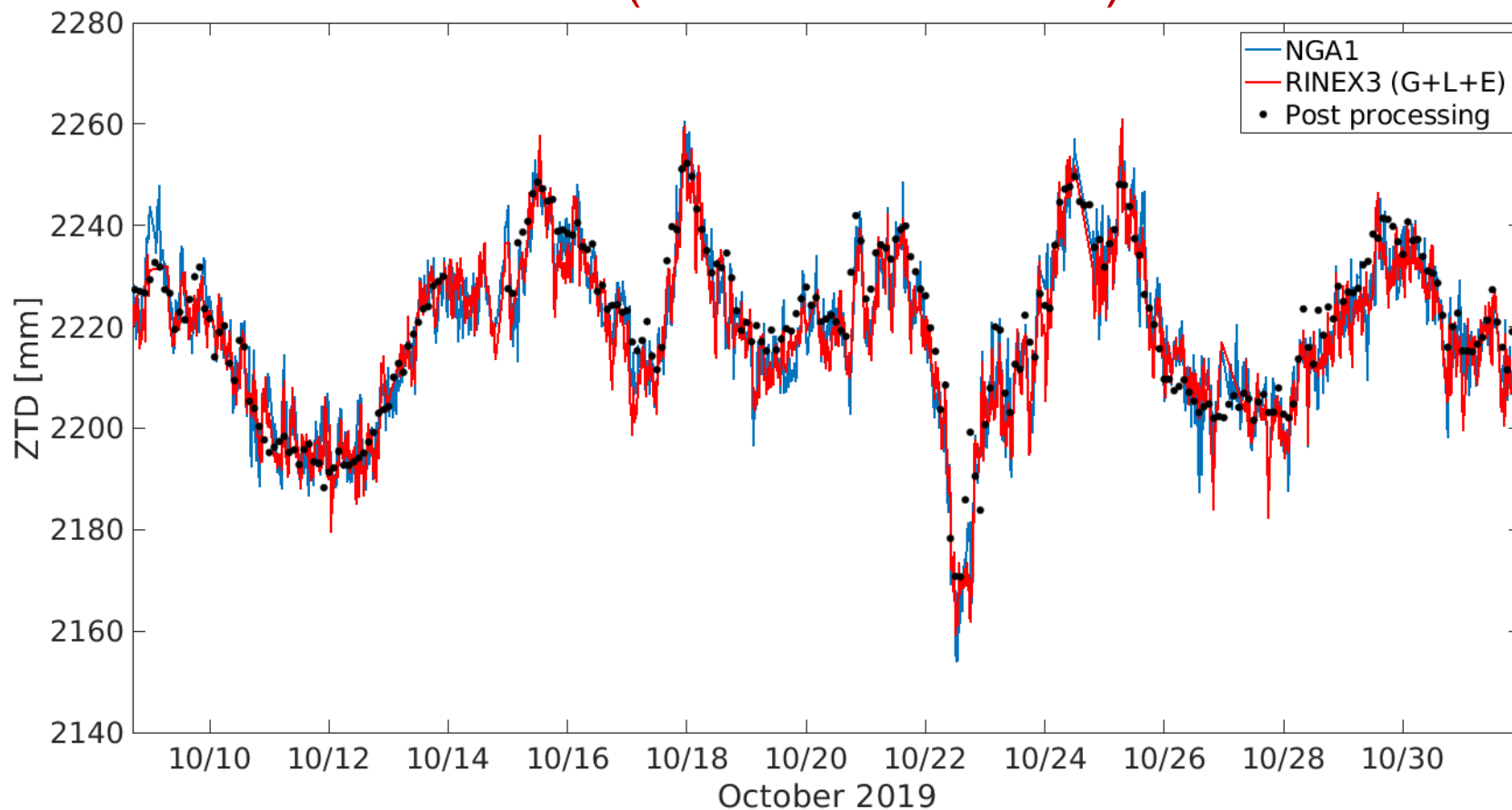


Test run, using RINEX 3 and Galileo, for E-GVAP

- Since the end of September, 2019, a test data processing using RINEX 3 files including Galileo measurements was up to running.
- Currently we are using about 80 SWEPOS sites for the test run.
- For the validation, the resulted hourly-ZTDs were compared to the NGA1 product and the ZTDs from a post data processing.

Results from the validation

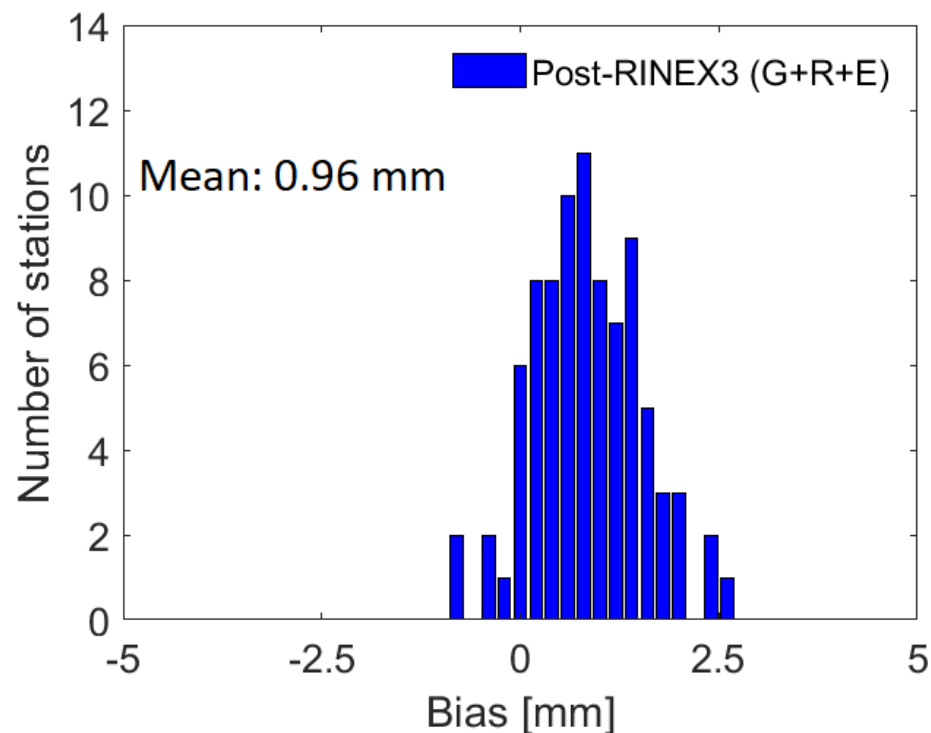
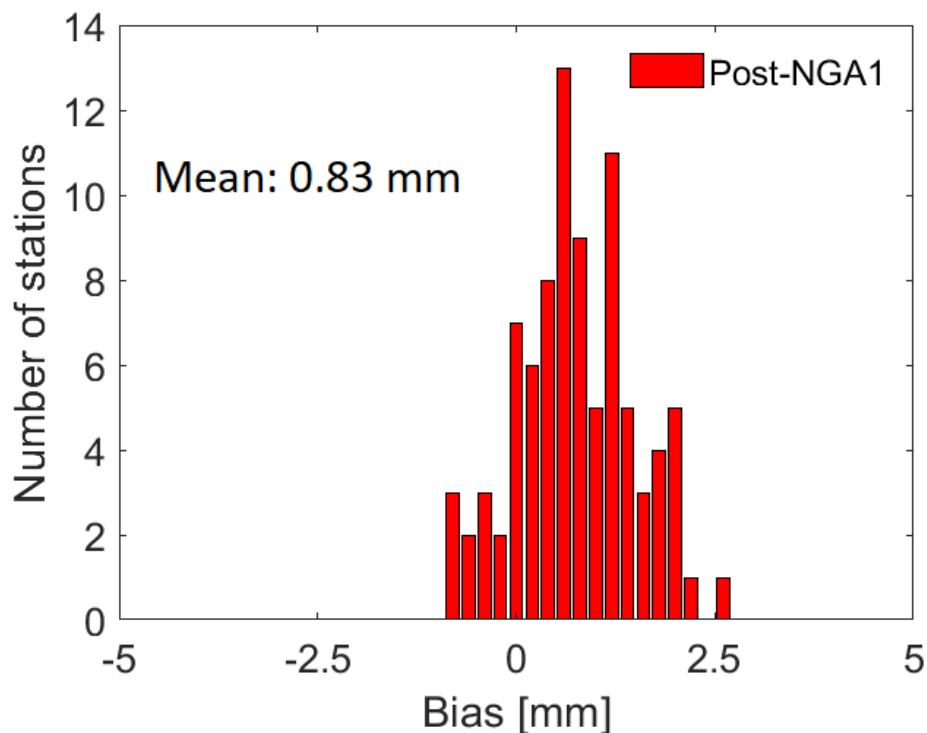
ABI0 (18.81 °E 68.35 °N)



LANTMÄTERIET

Results from the validation

Mean bias over all sites

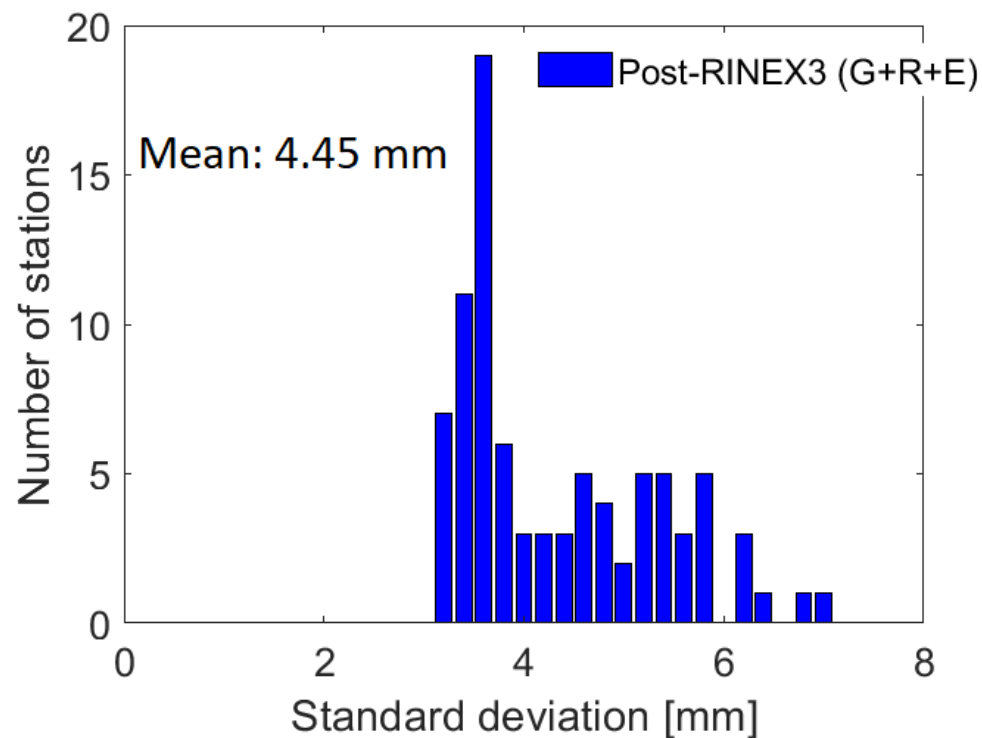
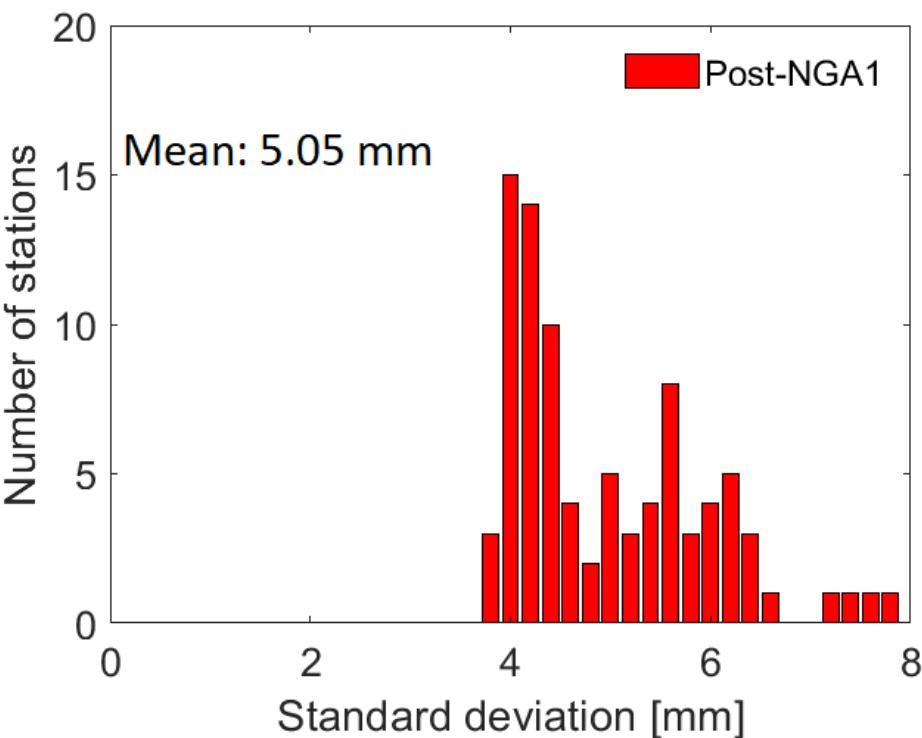


L A N T M Ä T E R I E T



Results from the validation

Standard deviation of the difference over all sites



L A N T M Ä T E R I E T



Future plans

- Implementation of RINEX 3 if it is available
- Should we include Galileo measurements when using RINEX3? What is the recommendations from E-GVAP?