



MAA-AMET

National Report of Estonia

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Estonian Land Board



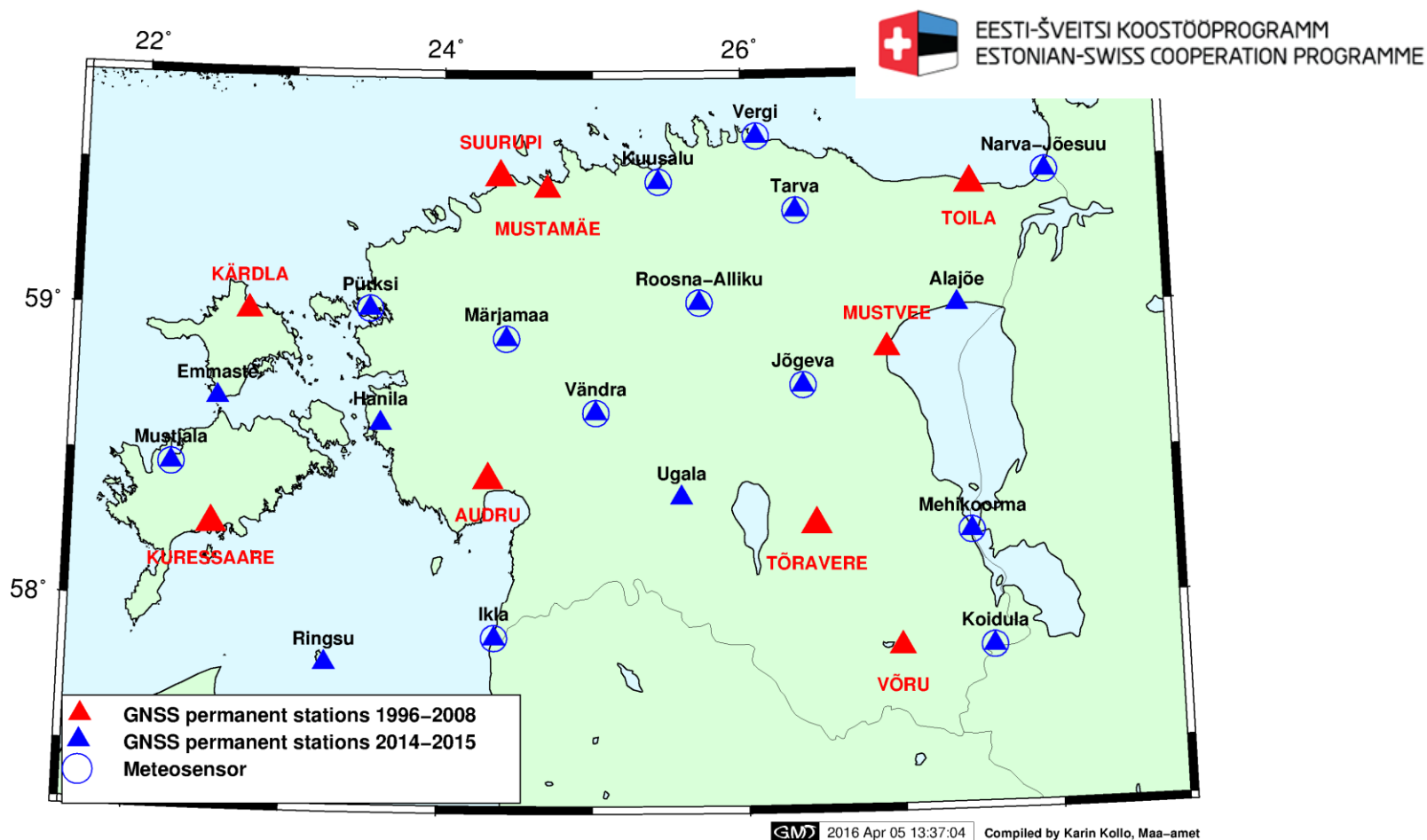
GNSS permanent station network

- ESTREF (9), EPN (4)
- RTK service (ESTPOS, 27 stations online)
 - Meteosensors (13)
- Instruments:
 - Receiver **Leica GR25**
 - Antenna **LEIAR25 + radome LEIT**
 - Meteosensor **Väisala WTX520**



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ESTREF / ESTPOS





- Cooperation
 - Latvian Geospatial Information Agency
 - Finnish Geospatial research Institute FGI
 - Estonian maritime Administration
- 10 CORS included from other networks



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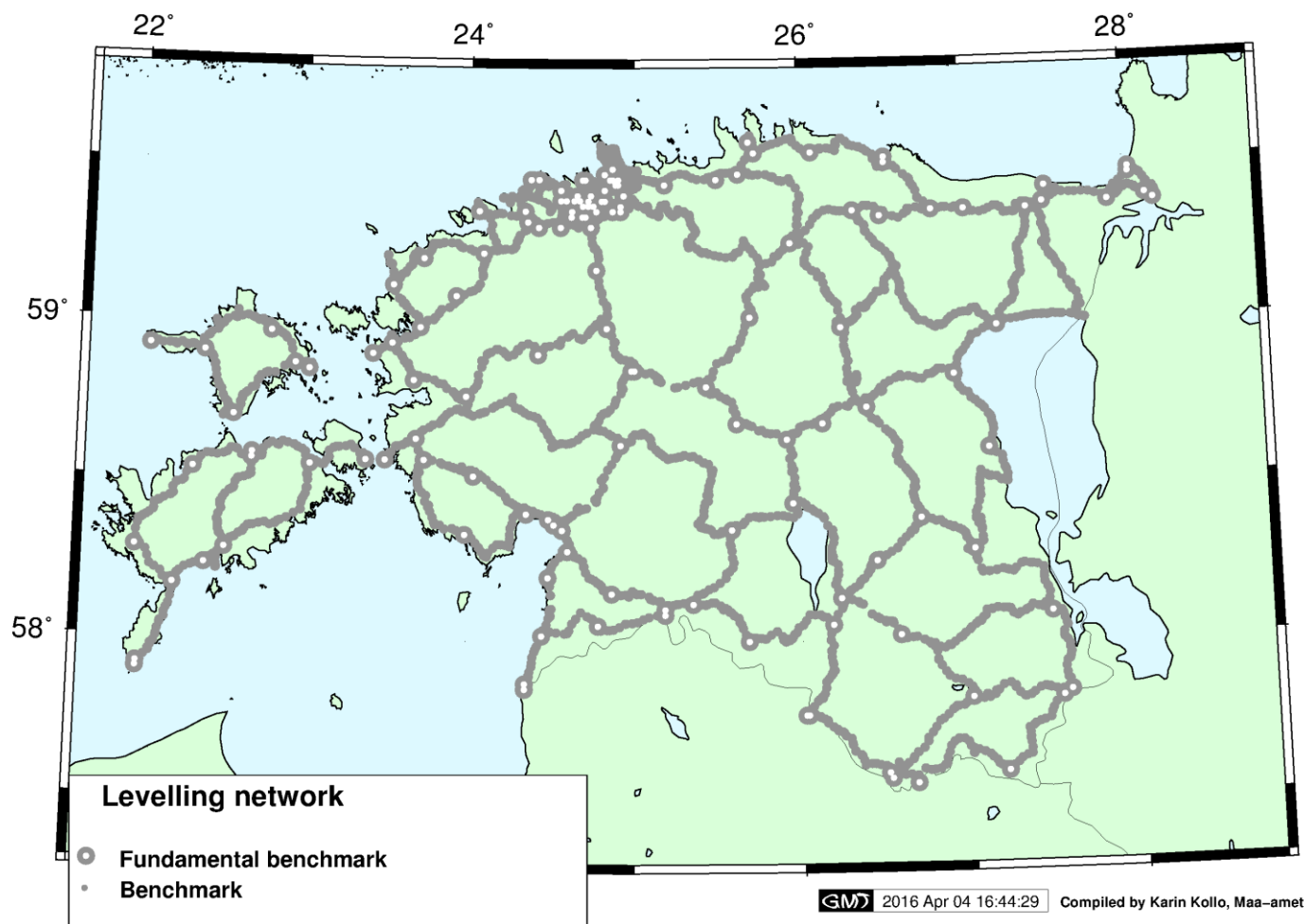


Levelling network

- Levelled about 4000 km, 2800 benchmarks with distance 1,4 km, 45% new benchmarks
- Accuracy: random and systematic errors:
 $\eta = 0.18 \text{ mm/km}$, $\sigma = 0.03 \text{ mm/km}$; misclosure for polygons: $\sigma = 0.23 \text{ mm/km}$
- Included: points from gravity network, national geodetic network and tide gauges



Levelling network





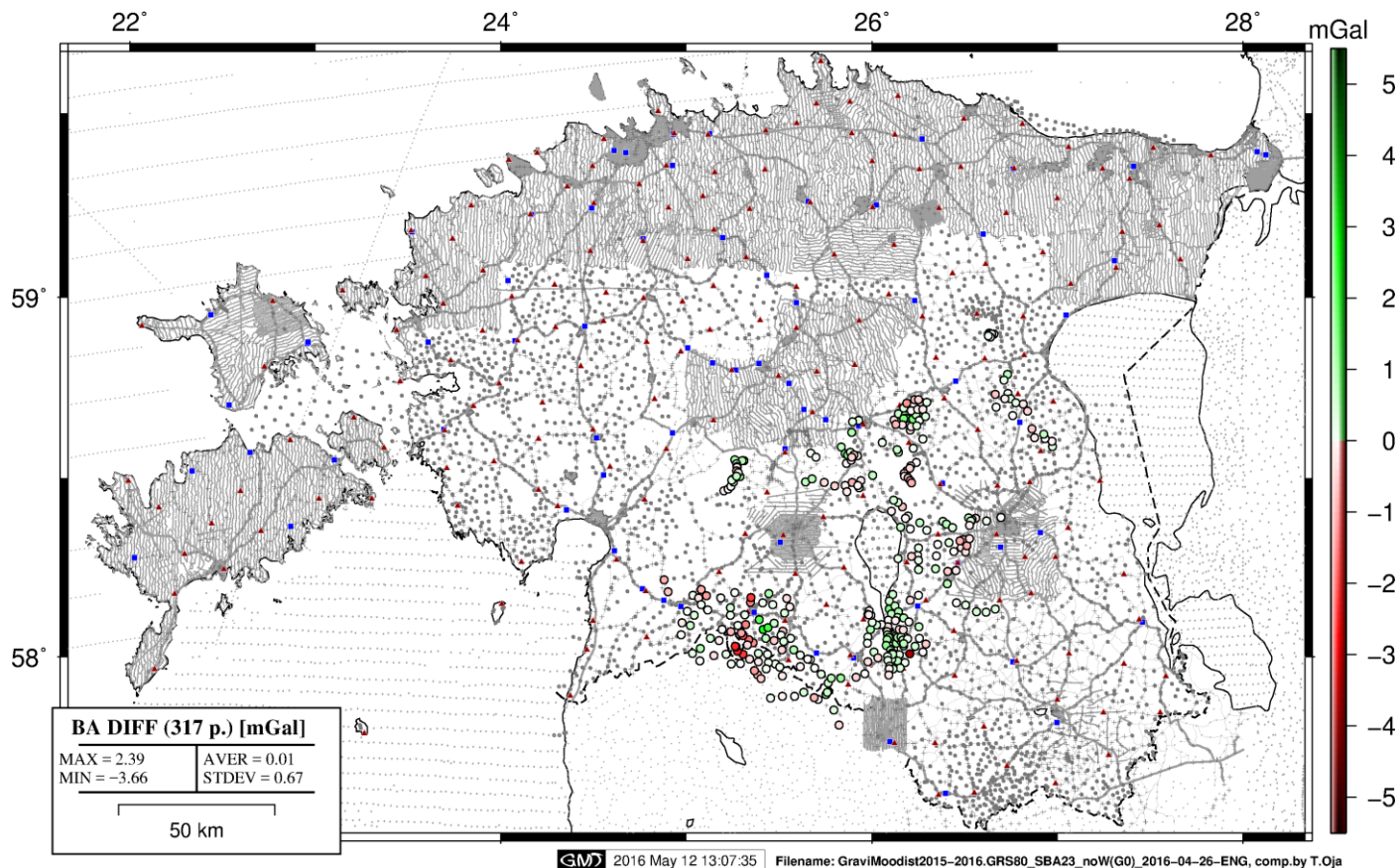
Estonian height system

- Measurements of levelling network finished
- In 2016
 - 10 additional fundamental BMs
 - Network adjustment for realization EVRF07 of EVRS in Estonia (EH2000, epoch 2000.0)
 - Introduction of EH2000, transformations, legislation
 - Adjustment and integration of local levelling networks



Gravity field and geoid studies

- In 2015-2016 gravity surveys
 - in the central-southern part of Estonia
 - along the Latvian border
- The relative gravimeter Scintrex CG-5 and GNSS network-RTK positioning were used to measure over 300 new survey points

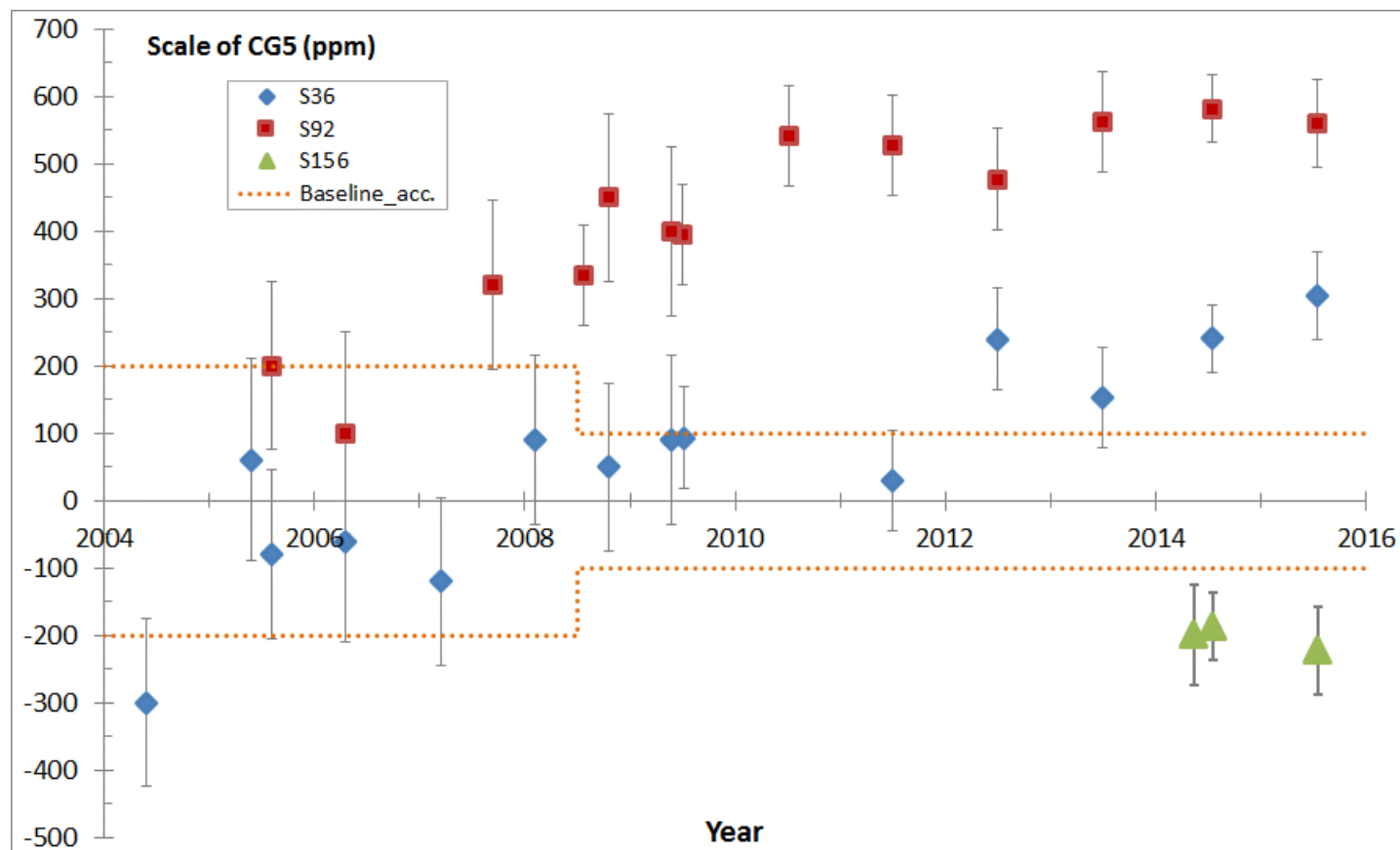


New gravity points (depicted with circles in color) in 2015-2016



Calibration of Scintrex CG-5 gravimeters

- Gravimeters tested continuously on calibration lines in Estonia and Finland
- The measurements of calibration lines performed in 2004-2015 demonstrate the scale change of CG-5 gravimeters about 200...500 ppm



Calibration factor change of CG-5 gravimeters over the period of 10 years



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Thank you!

