



MAA- JA RUUMIAMET

# Using the GridCheck method to check the accuracy of the ESTPOS network



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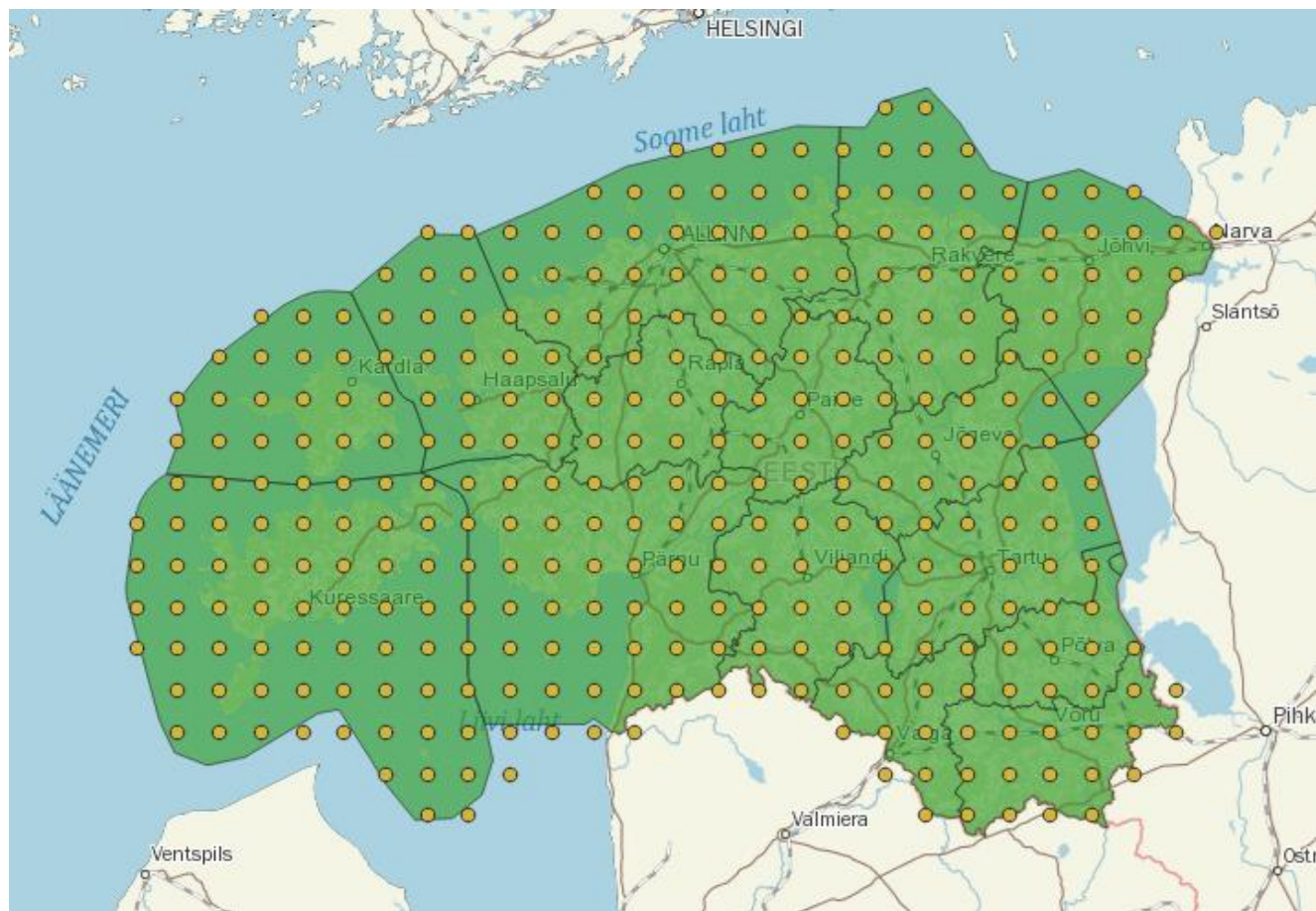
## Why?

- EUREF 2025 – Lennard Huisman, „Reference Frame Validation of a Network RTK Service in Great Britain Using the Grid Check Approach“.
- It is not possible to check the whole ESTPOS network regularly via physical RTK measurements.
- Possible paid service for commercial networks operating in Estonia (4). We have so far computed coordinates for their stations but have no way of checking if they use those coordinates (some user feedback suggest that they are not using those coordinates in every station).

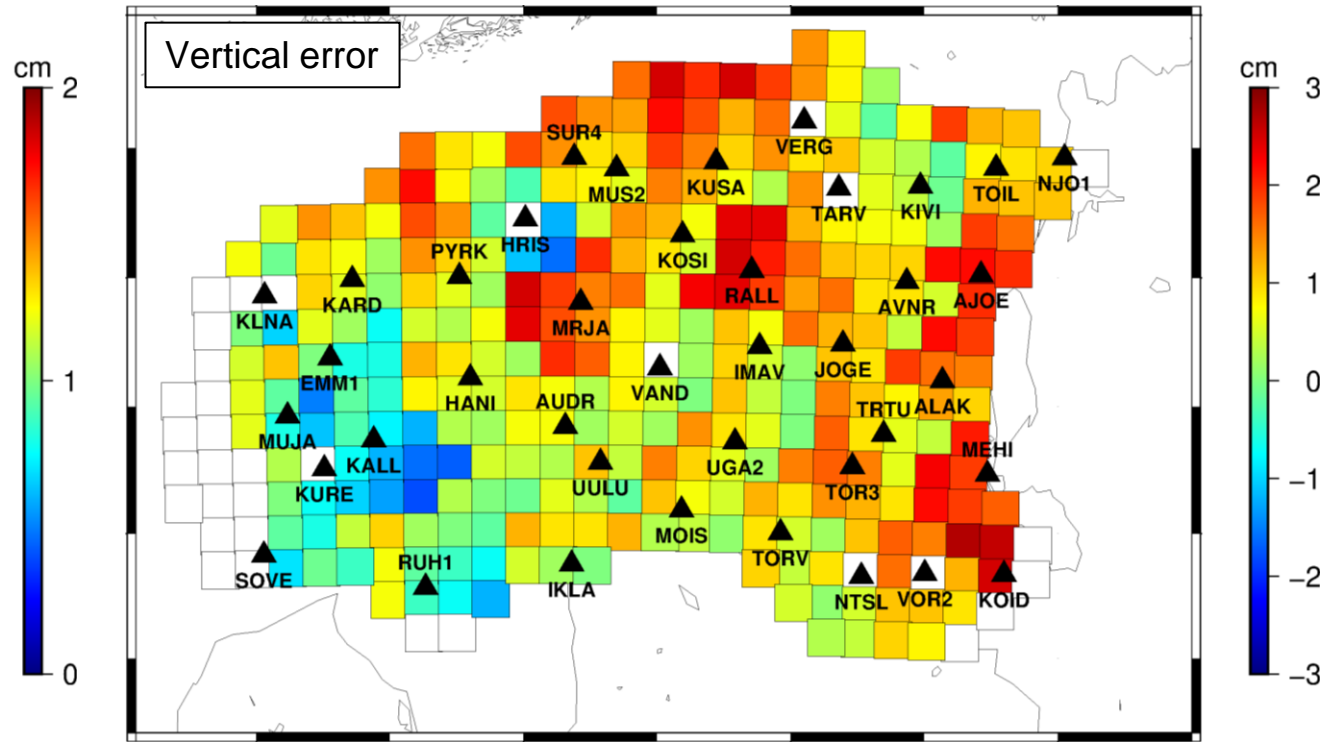
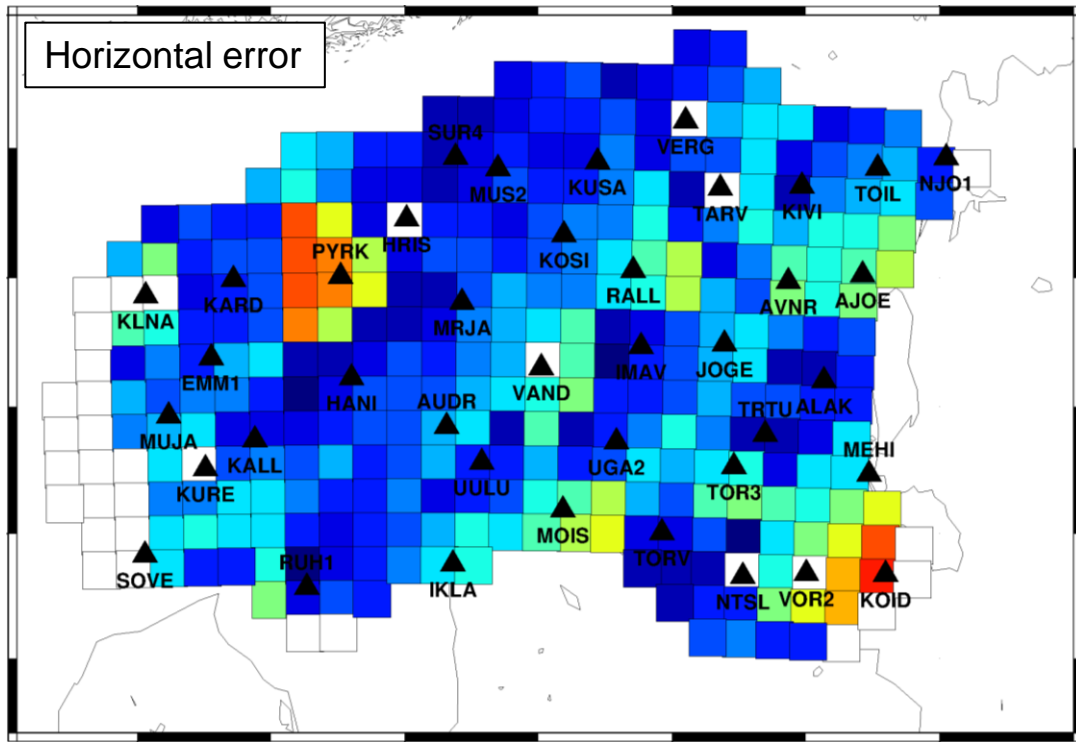


## How?

- Had a meeting with Lennard and CO to get an overall idea of how it all works.
- Created a grid with 15 km density, 339 points in total.
- Started testing with a couple of points and built a script to use RTKLIB:
  - str2str – collecting virtual measurement data via VRS solution into an rtm3 file.
  - convbin – writing a RINEX obs file from rtm3.
- Collected data for 3h, 6h, 12h and 24h. Made some preliminary computations. 6h seemed good enough.
- Split the grid into 5 parts (to not overload the ESTPOS servers). That means collecting data to about 68 points in one day, which is manageable.
- Configured Bernese and computed the data for the whole grid. Need to use NULLANTENNA.



# First run and preliminary results



\*For the white rectangles a final position was not computed by Bernese. Need to change configuration or grid?



## What now?

- Patch some things (change the grid, rcm3 -> RINEX obs, cleaning the obs file, Bernese configuration).
- Run it again.
- Update ESTPOS coordinates if and where needed.
- Run it again and see if the outcome changes.
- Automate the process as much as possible.
- Test it on a commercial service provider service (if they are willing).
- Start running it regularly for ESTPOS (2-4 times per year?).

