NLS
FINNISH GEOSPATIAL
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National Report of Finland

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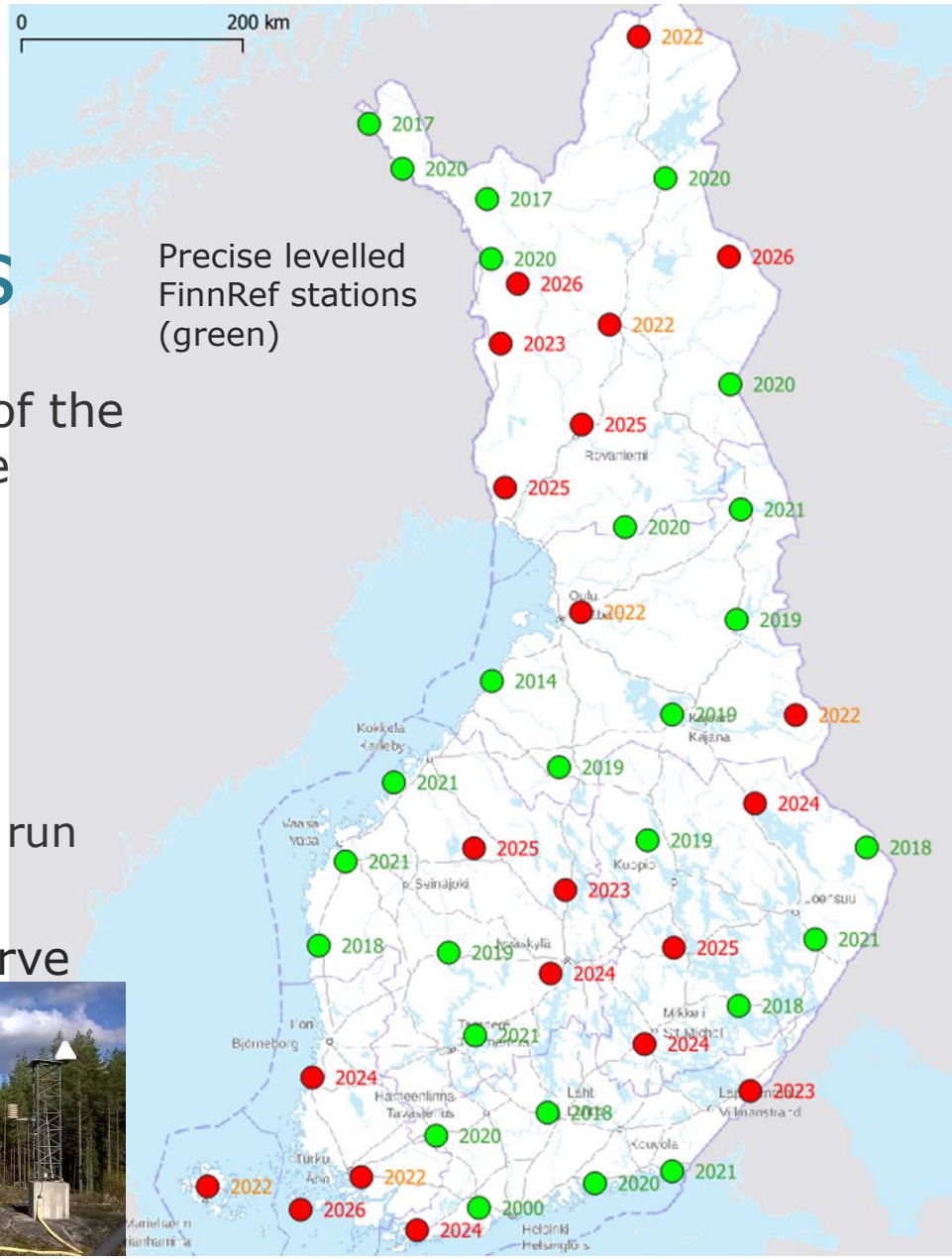
FinnRef: Backbone of Finnish reference systems

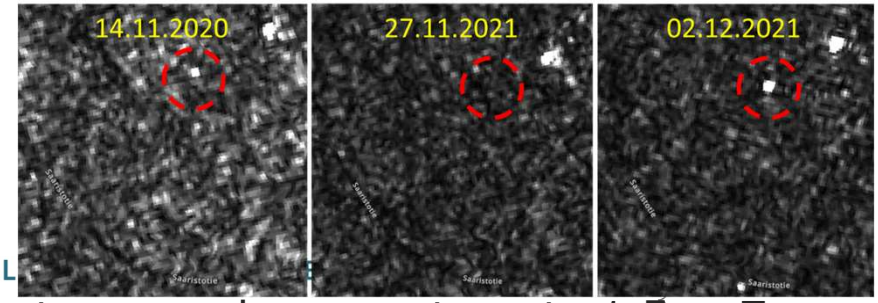
- Finnish Geodesy strategy 2017-2026: FinnRef permanent GNSS network will be the backbone of the national coordinate, height and gravity reference systems
- Precise levelled N2000 (EVRS) heights for all (or most of the) stations by ~2025
  - Currently 26/47 connected to (precise) levelling network (green dots in the figure)
  - 2022 (plan): 6 new connections (~100km double run precise levelling)
- Centering measurements (heights from the reserve markers to the GNSS antenna)
  - Currently 24/47 done
  - 2022 (plan): 8 stations



FinnRef: Backbone of Finnish reference systems

- Repeated absolute gravity measurements
  - 20/47 stations with AG pillar
  - 2021: 11 stations
  - 2022 (plan): 7 stations
- FLEX-EPOS: SAR reflectors to be installed at FinnRef stations
  - 6 Zarges type + 5 MK3D type
  - 2 reflectors now installed: Metsähovi & Loviisa
  - 2022: snow covers & 7 installations

Loviisa :

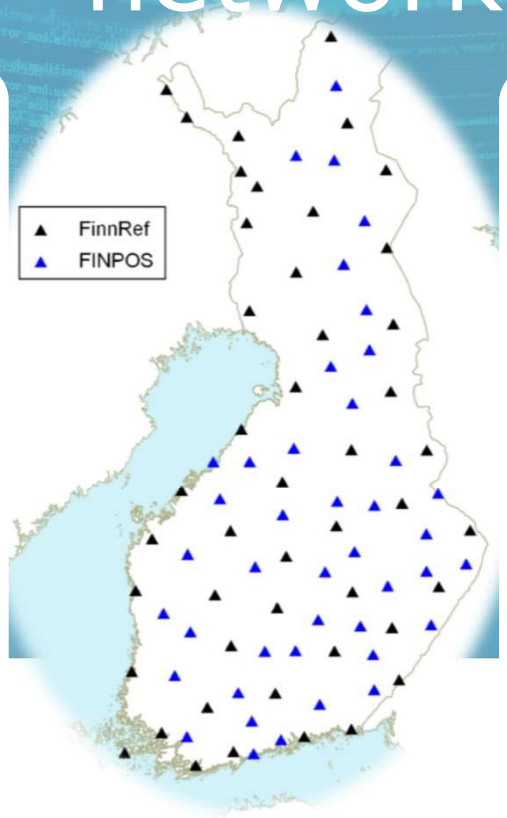


transponder no target 1.5 m Zarges

National Land Survey's GNSS-network

RINEX (files)

- FINPOS-service (link)
  - 1 s observation interval
  - Browser-based download service
- Via EPN-network (link)
  - Open: data from 20 of the stations
  - 30 s observation interval
  - FTP service



RTCM (real time)

- NLS DGNSS-service (link)
  - Free service
- NLS raw data service (link)
  - Paid service

NEW !

- Via EPN network (link)
  - Open: data from 20 of the stations
  - Free service
  - Data available for demo- and development purposes

NKG GNSS AC: cumulative solution

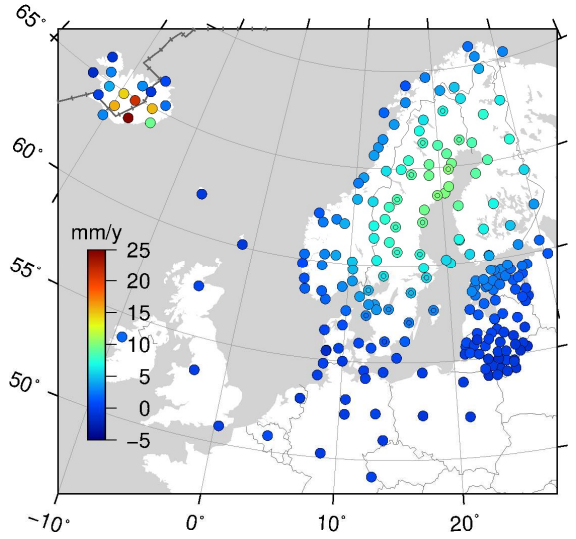
- Cumulative GNSS solution
  - Update with 3.5 year of data: 1997-2020.5
  - IGb14
- Results published in Nov
  - Focus on automatization of the time series analysis
  - https://link.springer.com/article/10.1007/s10291-021-01194-z

Original Article | Open Access | Published: 01 November 2021

Updated GNSS velocity solution in the Nordic and Baltic countries with a semi-automatic offset detection method

Sonja Lahtinen, Lotti Jivall, Pasi Häkli & Maaria Nordman

GPS Solutions **26**, Article number: 9 (2022) | Cite this article



Metsähovi

Development of VLBI and SLR continues

VLBI (first signal received in the end of 2020)

2022: Improvement of the thermal insulation of the pedestal

Laser scanning the dish, shape and its variations (by RISE, Geometre-project)

SLR

Still challenges with delay of the telescope subsystem supplier

2022: Closed-loop distance measurements, brings us again a step closer to observations

Telescope manufacturer will continue to work on the telescope this spring


New Metsähovi Main building
Ready May 2022

Advancing together