

NATIONAL REPORT OF FINLAND

Hannu Koivula



PosKEN Communication workshop in Brussels, 26-27 April 2018

COMMERCIAL NETWORK RTK PROVIDERS IN FINLAND

- Two national NRTK services
 - Trimnet
 - HxGN SmartNet

FINNREF

- NLS has initiated a project for 2017-2019 to **densify FinnRef** with 20-30 new permanent GNSS stations
- FinnRef, with 40-50 stations, will be the **basis for all reference systems in Finland**. All FinnRef stations will be connected to the precise levelling network by 2022. Part of them are/will be also absolute gravity points.
- The **NRTK service** will be improved so that it fulfills the internal surveying needs of the NLS. Starting 2019 the FinnRef reference stations will be used as base stations for aerial survey work and the NRTK service by 400 NLS surveyors for RTK.
- Also the other usage will be taken into account
 - Declaration of spatial infrastructure of Finland is under process at the Parliament of Finland



STATUS: FINNREF POSITIONING SERVICE

- Currently 32 FinnRef stations in processing + stations in neighboring countries
 - In the end of 2018 total of 65-70 stations
- Software: GNSMART / Geo++
- Testing in two regions in 2018



SNOWBOX AURORA



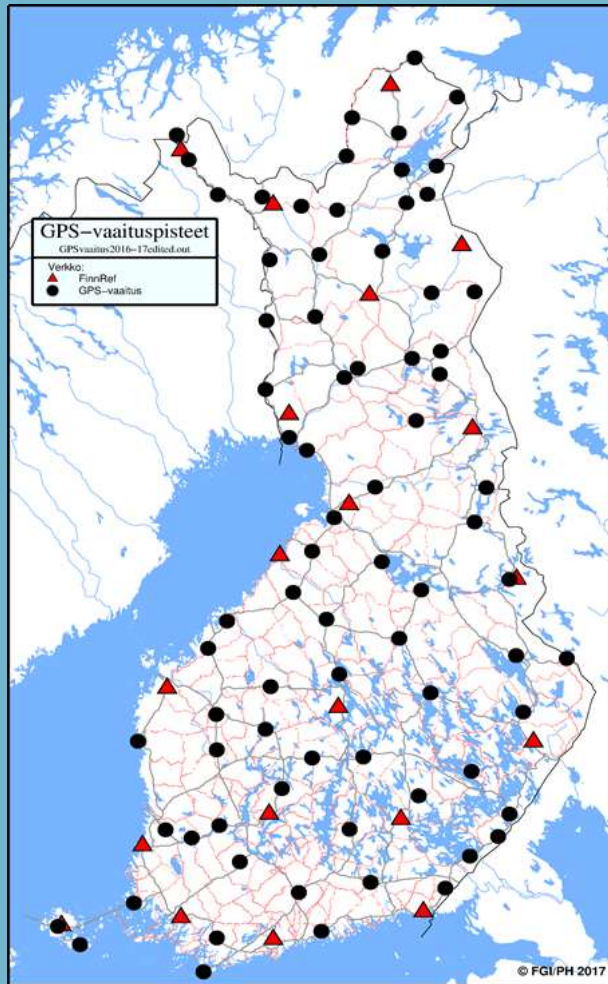
aurora
snowbox.fi

Liikennevirasto
Finnish Transport Agency



Arctic PNT: Aurora-Borealis, March 2018

NLS
FINNISH GEOSPATIAL
RESEARCH INSTITUTE
FGI



NEW GNSS-LEVELLING DATABASE

- 78 points measured in 2016 & 2017
- 1st order levelling points with heights in N2000 (~10 points 2nd order)
- Where possible EUVN and EUVN-DA points used
- GPS observations 1.5 to 2 days
- Processing of GNSS data in 2018

METSÄHOVI GEODETIC RESEARCH STATION



Observations at
Metsähovi started 1978

One of the global
geodetic core stations
(Fundamental Station)

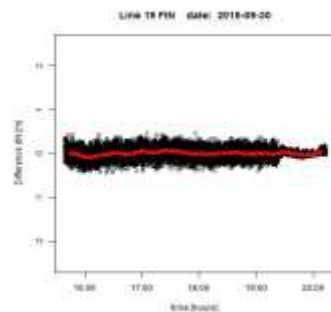
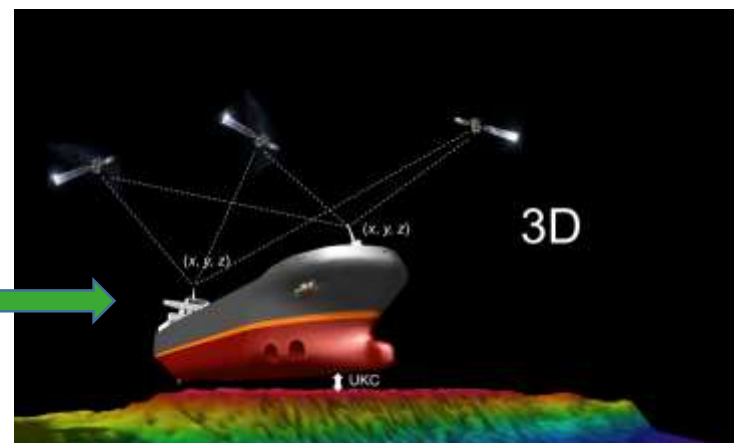
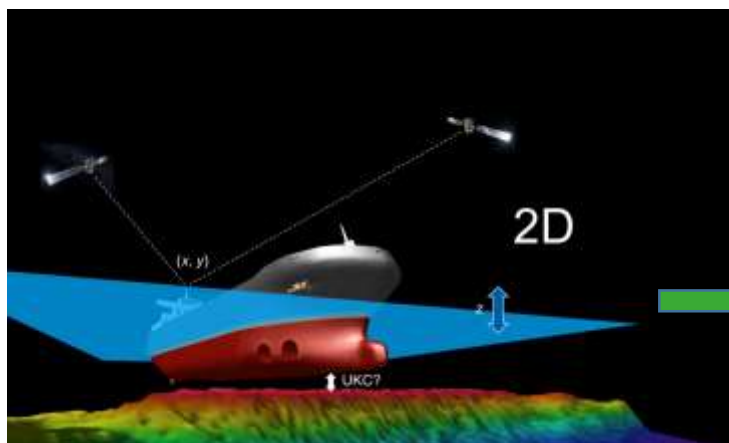
Schedule:

- SLR (2018)
- VLBI (2019)

FIN-EPOS

- A Consortium established in 2014
 - University of Helsinki
 - University of Oulu
 - Finnish Geospatial Research Institute FGI of the National Land Survey
 - Finnish Meteorological Institute
 - Geological Survey of Finland
 - VTT MIKES
 - CSC – IT Center for Science
- National network on geosciences, co-operating and coordinating data collection for EPOS
- Status of a National Research Infrastructure on the Roadmap of the Academy of Finland

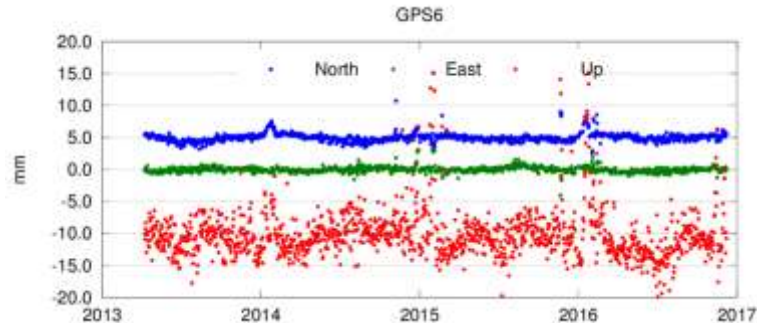
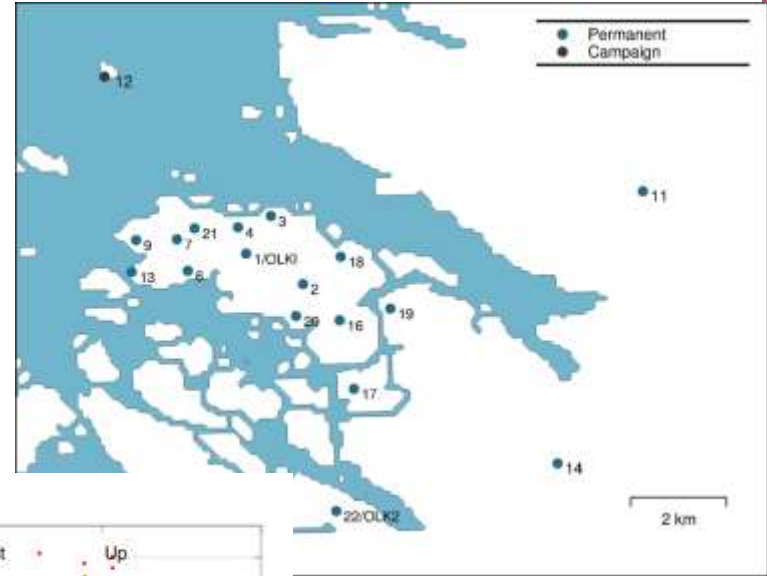




CRUSTAL MOVEMENTS AND NUCLEAR SAFETY

Since mid-1990's FGI-GEOGEO has monitored at Olkiluoto nuclear power station possible crustal movements. This is a part of geodetic applications to safety related research.

17 permanent stations, prior 2012 campaign-based
Levelling for vertical control





THANK YOU!

