

National Report of Finland

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with

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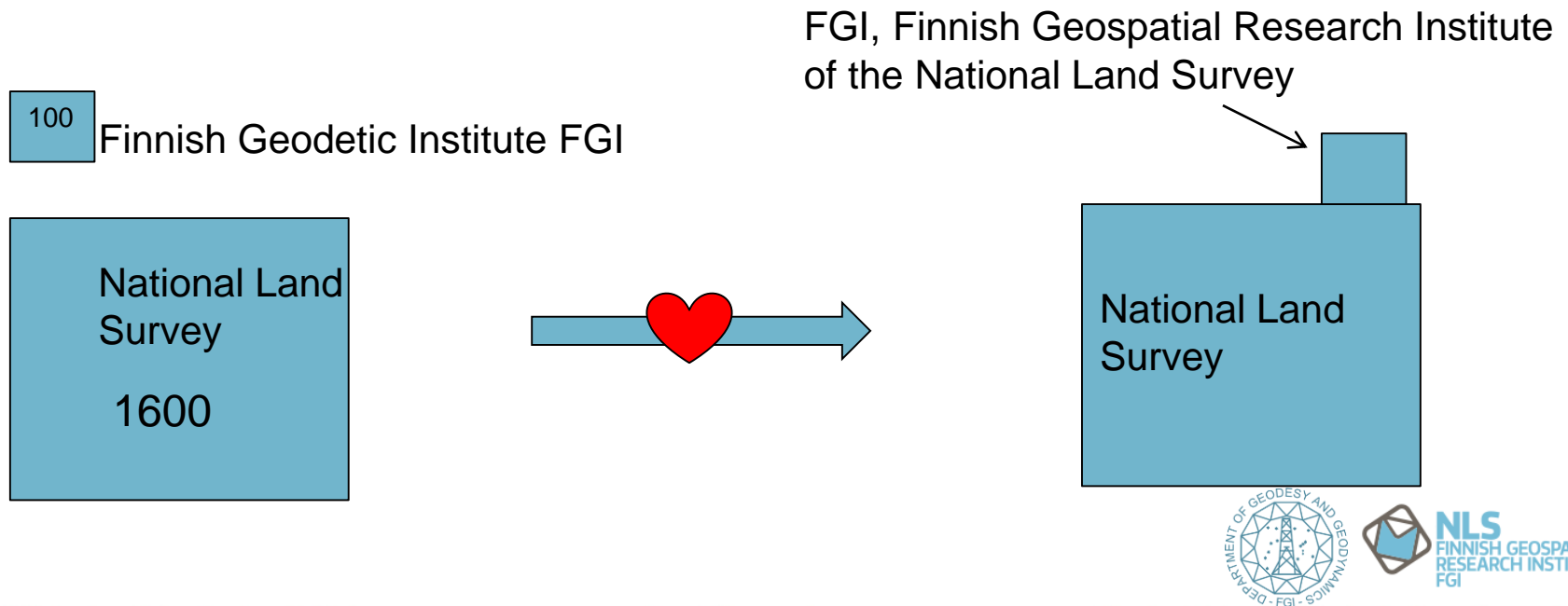
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FINNISH GEOSPATIAL
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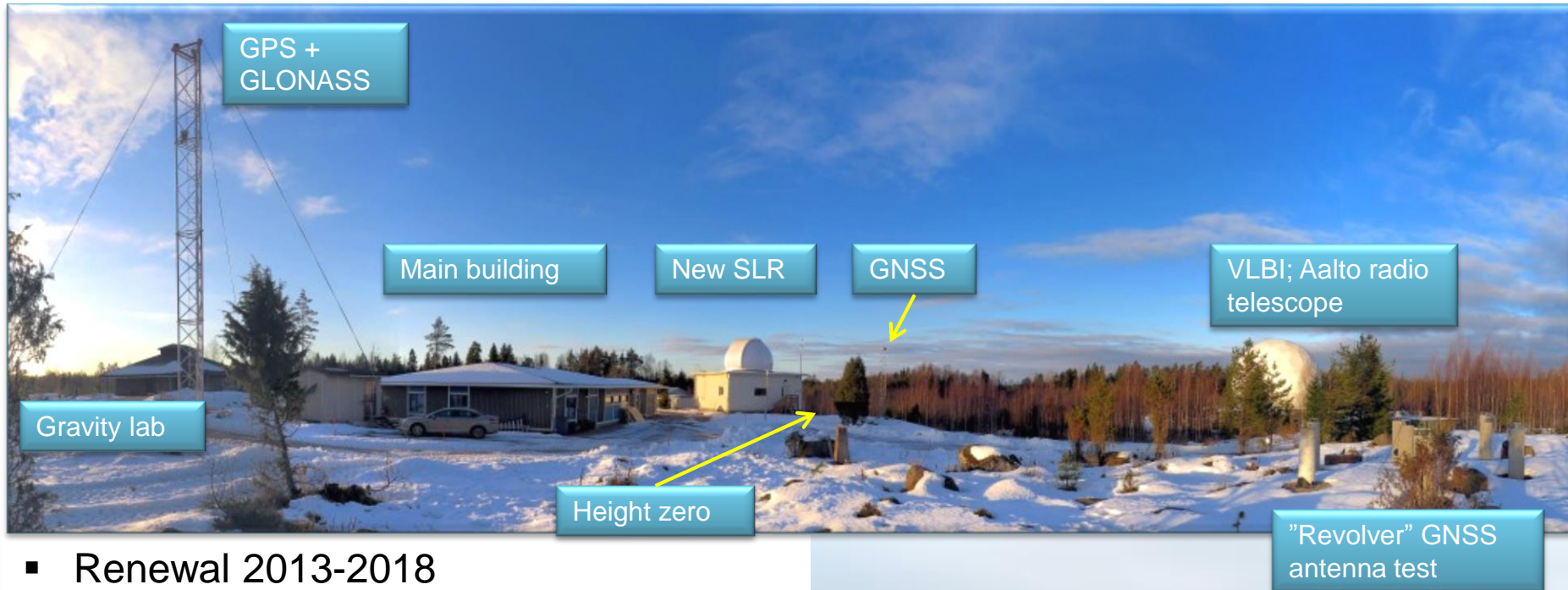
DEPARTMENT OF GEODESY AND GEODYNAMICS
FGI - FINNISH GEOSPATIAL RESEARCH INSTITUTE

Organizational changes

- Finnish Geodetic Institute (FGI) was merged to the National Land Survey of Finland.
- The new name is Finnish Geospatial Research Institute (FGI)
- E-mail @fgi.fi -> @nls.fi
- Tasks and responsibilities remains



Metsähovi Fundamental Station

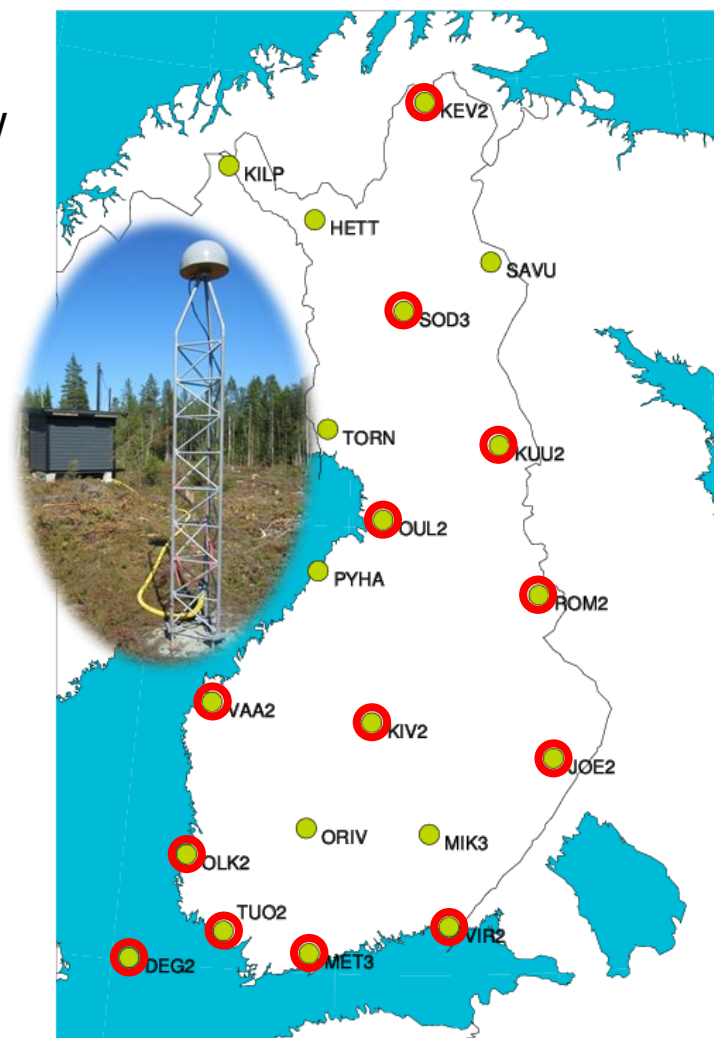


- Renewal 2013-2018
- New SLR observatory building finished December 2014; telescope (0.5m) installation Sept 2015
- New Vaisala AWS310 weather station
- Infrastructure upgrading in general
- Local ties radio telescope - GNSS
- New radio telescope for geodetic VLBI on "wish list" (funding pended)



FinnREF Renewal

- Determination of EUREF-FIN coordinates for new FinnRef stations (2-year data history); plans to propose stations in EPN later this year
- Network RTK with a sparse reference station network (inter-station distance ~200 km, 0.5 m accuracy); free service 2014-15
- Ongoing: Usability and accuracy of network RTK at forestry environment
- Transformations from ITRF to National ETRS
- A method to determine ETRS89 coordinates for private GNSS stations; E2 processing service (official coordinates for private stations)
- NKG processing center
- Accurate mobile phone positioning using support from GNSS network (P3-project)



Gravimetry and crustal deformation

- SG: New Superconducting Gravimeter installed; now 1 year data
- AG: Bilateral comparison with FG5-233 (Lantmäteriet) in Metsähovi (2014) and Mårtsbo (2015)
- AG: measurements at 5 stations in Finland (3 new)
- Geoid: Preparation of data for NKG2015 geoid model
- Evaluating Nordic Uplift model
- FGI Watertube tilt-meter installed by GGI(Hungary) in Conrad observatory (Austria)



Geodetic Metrology

Works within the European Metrology Research Programme (EMRP) joint research project SIB60

"Metrology for long distance surveying":

- **GNSS metrology and local ties at fundamental geodetic stations:**
 - - GNSS test field configuration simulations
 - - GNSS test field field tests of different configurations
 - - Design for the upgraded Metsähovi GNSS test field
 - - Calibration measurement procedure for the upgraded Metsähovi GNSS test field
 - - Upgrade of the Metsähovi GNSS test field finished
 - - Scale transfer from Nummela Standard Baseline to Metsähovi GNSS test field
 - - Investigation of the uncertainty of near real-time methods for GNSS based local ties
- **Geodetic baselines:**
 - - FGI measured the 8-pillar 600-m geodetic baseline of PTB, Braunschweig, Germany
 - - FGI measured the 8-pillar 1100-m geodetic baseline of UniBW, Neubiberg, Germany



GNSS antenna test field "Revolver"

Other works of the National Standards Laboratory of Length:

- FGI measured the 7-pillar 1320-m geodetic baseline and test field of VGTU at Kyviskes, Lithuania and 16-point 15-m indoor geodetic baseline of VGTU in Vilnius, Lithuania
- absolute calibrations of quartz gauges were completed (at VTT-MIKES, Espoo), expanded uncertainties for the 1-m-long gauge lengths are 72 nm
- new results from the interference measurements at the 864-m Nummela Standard Baseline in autumn 2013 differ less than 0.10 mm from the previous results in autumn 2007

One PhD dissertation was published

