

National Report from Iceland

NKG Science week

12. – 14. March. 2024
Reykjavík, Iceland

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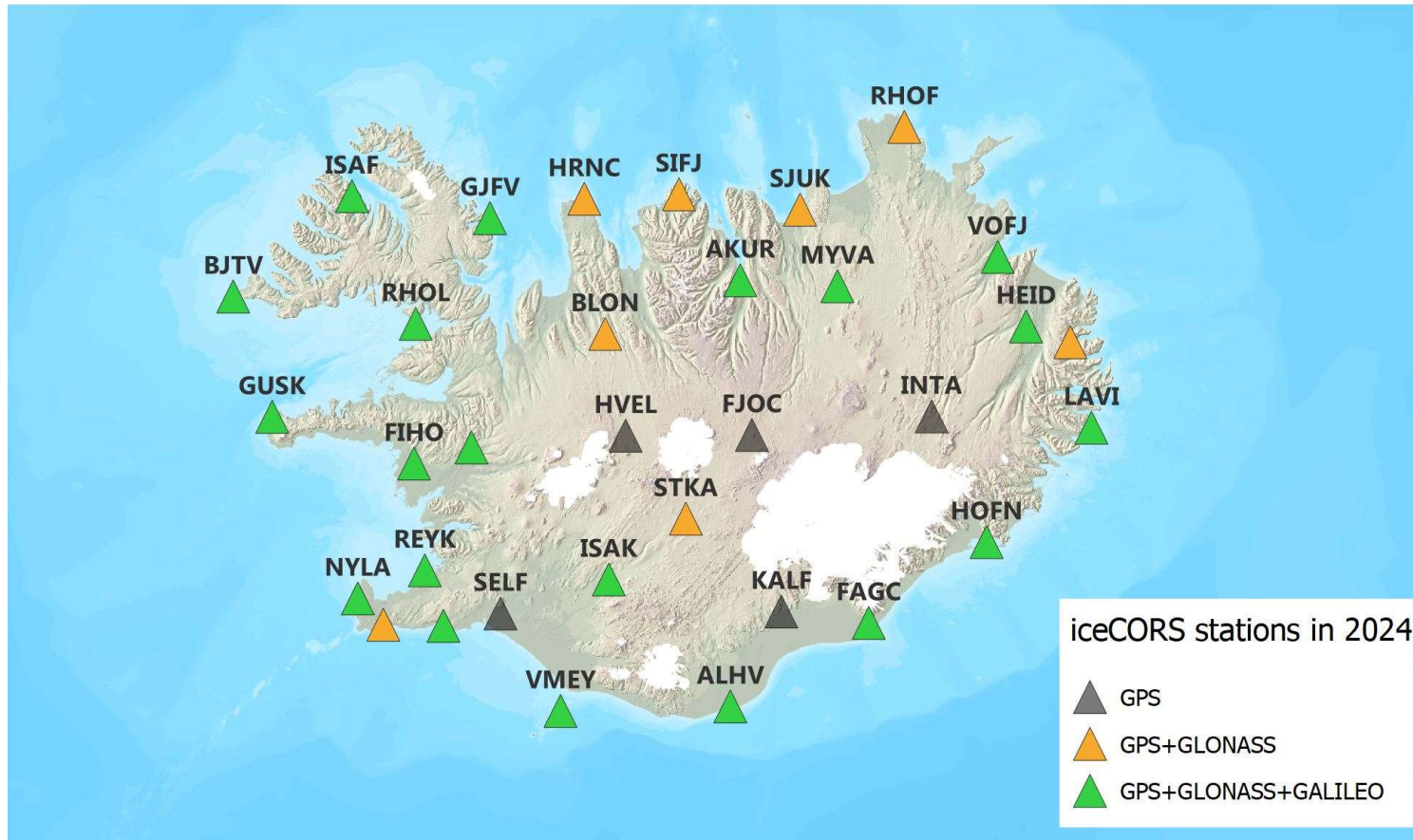
Geodetic activities in 2024

- Work on the CORS network for Iceland
- Maintenance/monitoring of the geodetic networks due to deformation in Reykjanes peninsula

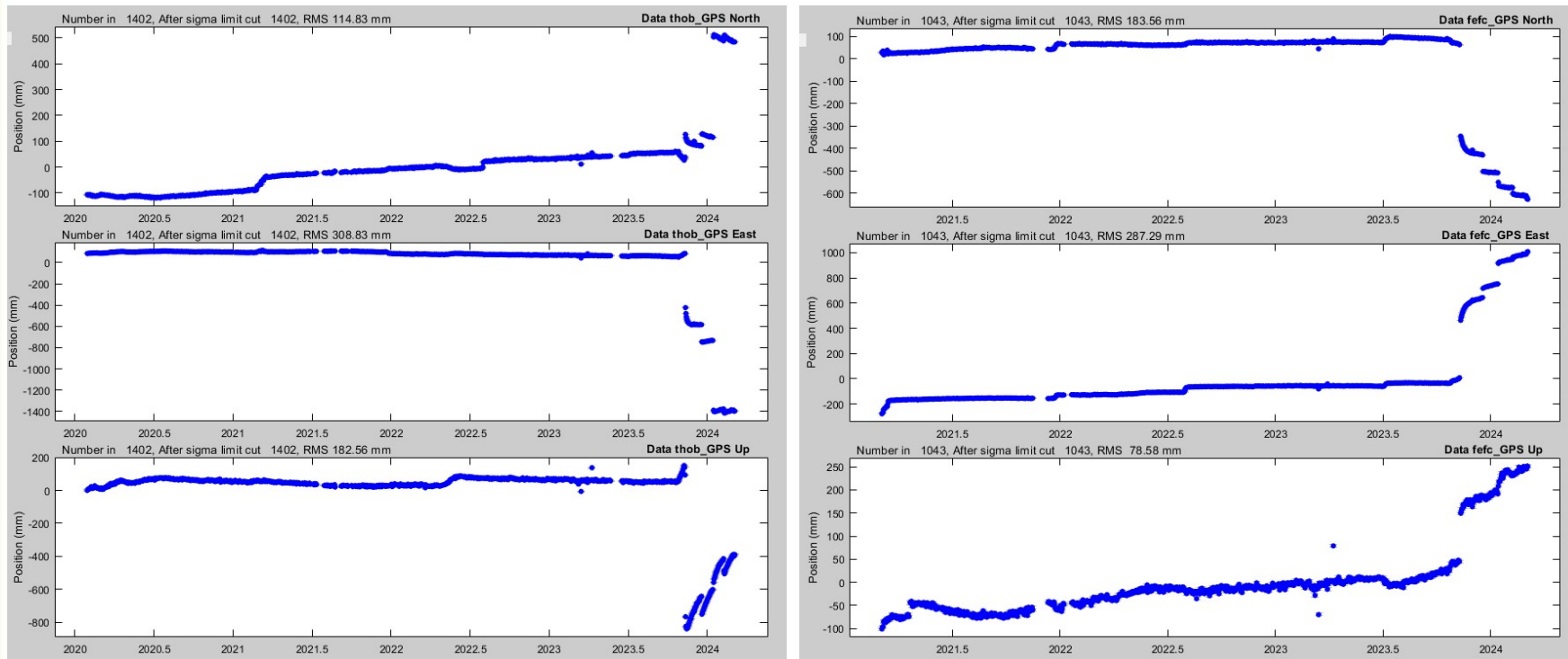
IceCORS - The Icelandic CORS network

- The first stage of building up a CORS network for Iceland is completed
 - Today we are operating 33 stations
 - We use GNSMART2 from Geo++
 - Now MSM_OUT are available
 - During 2024, the equipment will be changed to Trimble NetR9 (obtained from Kartverket). Some stations will be equipped with new antennas. At the end, the network will have 20 GPS+GLONASS+GALILEO stations
 - In the near future, the rest of equipments: 5 GPS and 8 GPS+GLONASS will be changed
- The stations are also a part of the NKG AC center project
- All data are available free of charge

IceCORS – 33 stations

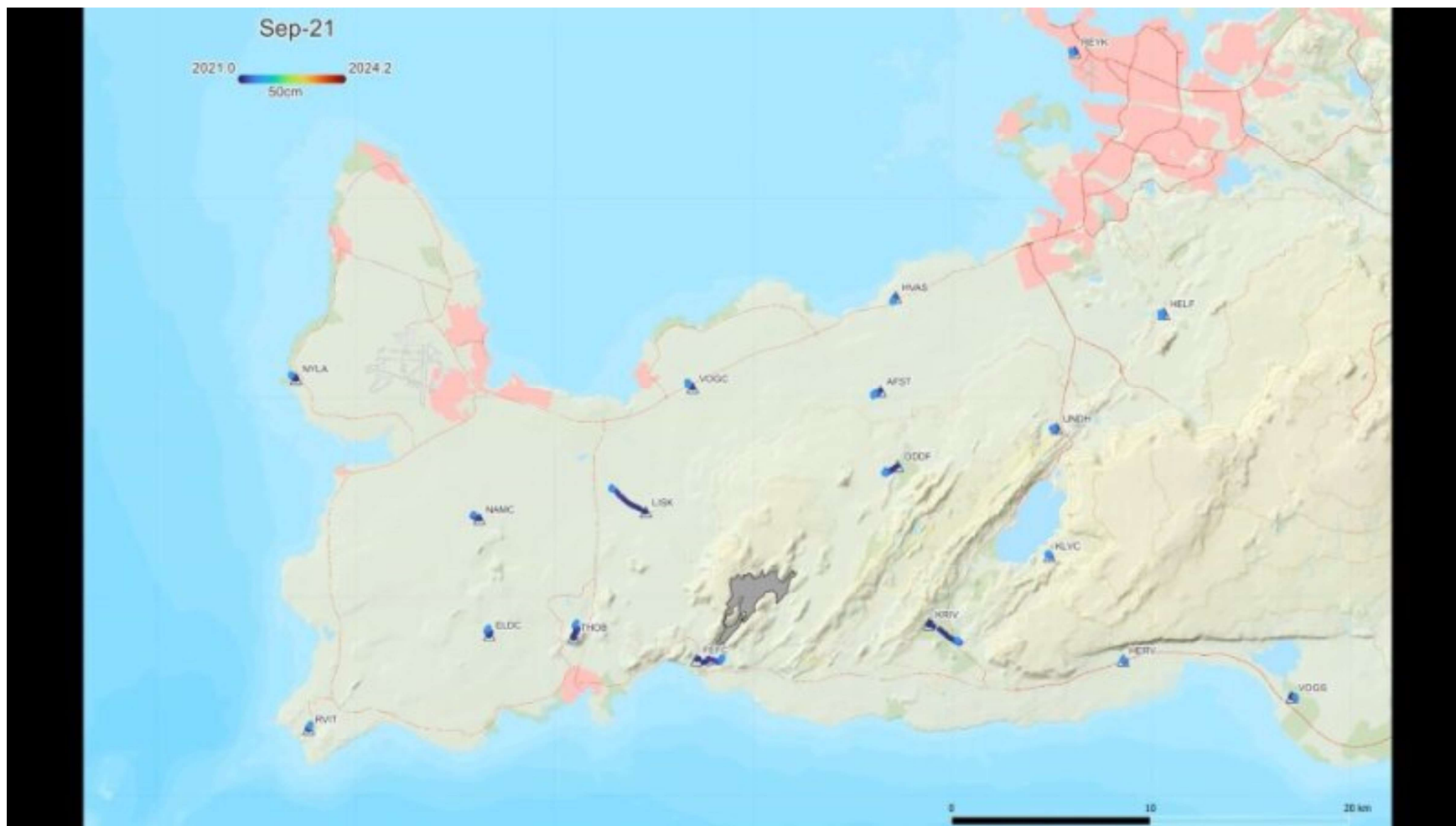


Time series of stations in Reykjanes peninsula



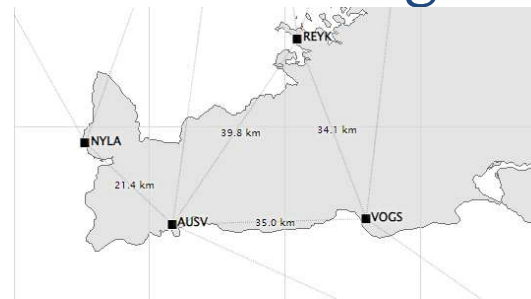
The main segment 2023/10/24- 2024/03/09

Reykjanes peninsula



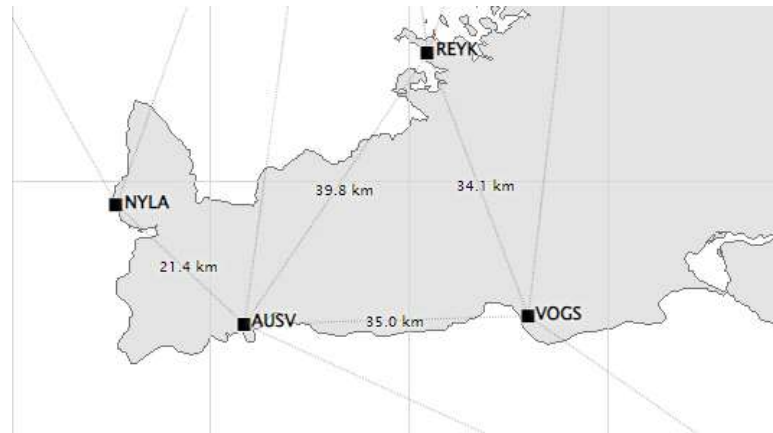
Maintenance/monitoring of the geodetic networks due to crustal deformation

- Unrest in Reykjanes peninsula
 - NYLA, 20km NW of the magma tunnel, deform. about 18cm (E)
 - VOGS, 33km E of the magma tunnel, deform. about 10 cm (E)
 - REYK, 40km NE of the magma tunnel, deform. about 3 cm (E)
- Reykjanes peninsula
 - Investigate and determine deform. in the geod. Networks
 - InSAR
 - GNSS
 - Trigonometric leveling
 - Gravimetry
- In near future ISN2016 in this area will be redefined



Changes in IceCORS network

- Technical coordinates implemented for stations: NYLA, REYK, VOGS because of the movements in Reykjanes peninsula.
 - NYLA, 20km NW of the magma tunnel, deform. about 18cm (E)
 - VOGS, 33km E of the magma tunnel, deform. about 10 cm (E)
 - REYK, 40km NE of the magma tunnel, deform. about 3 cm (E)



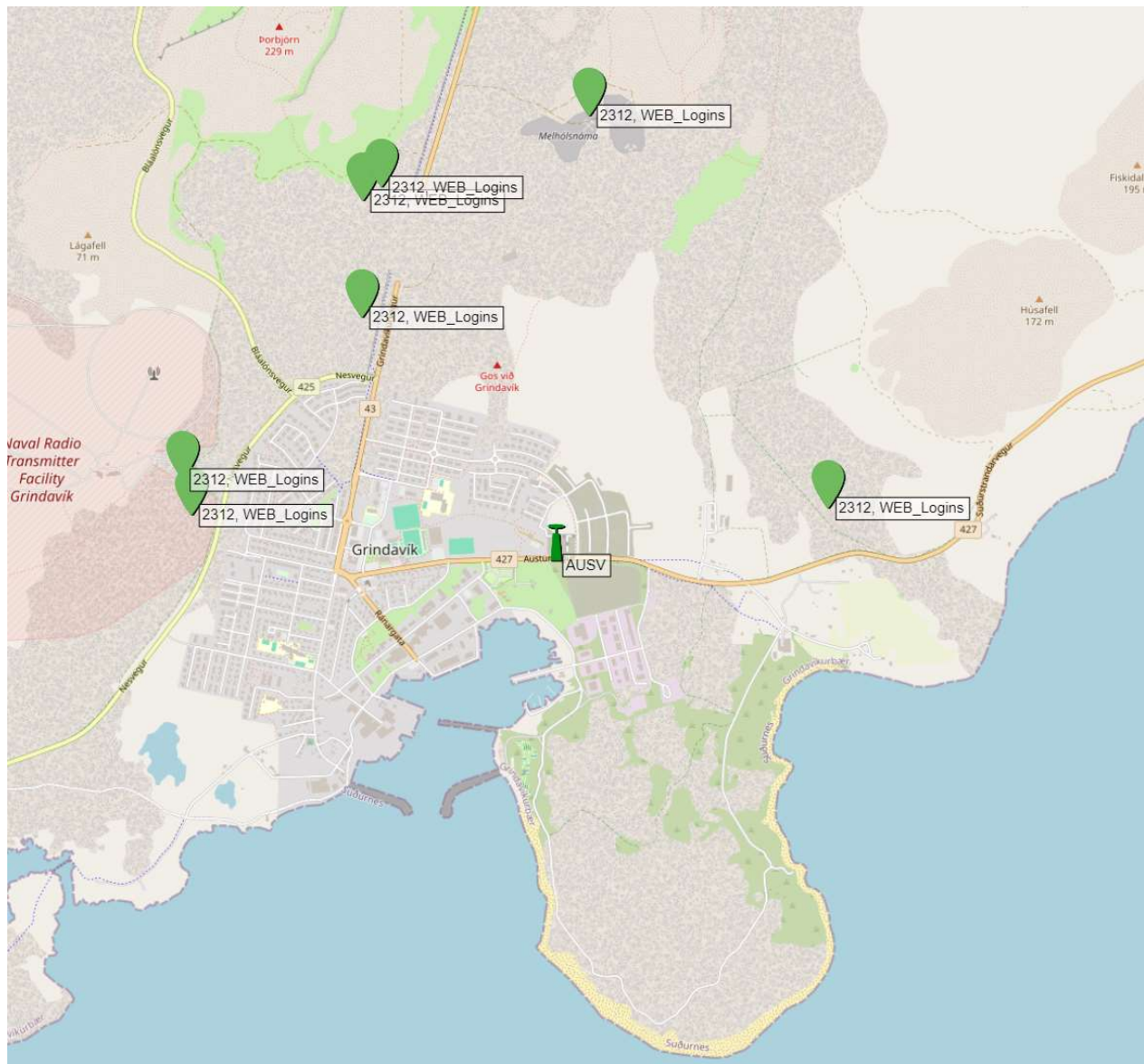
Changes in IceCORS network

- AUSV, station in Grindavík.
 - The station belongs to IceCORS network, but with coordinates in dynamic environment (updating after bigger movements).
- SENG, GEVK stations in Reykjanes peninsula
 - Do not belong to network, provides only single station RTK and coordinates are in different epoch than main network frame.

SENG has coord. in 2023-11-29 epoch

GEVK has coord. in 2024-02-23 epoch

- Users of IceCORS network around Grindavík



NKG processing

- Operational processing is finished up to week 2300
- Reprocessing REP2 (IGS20)
 - Started to download needed data
 - Adjusted the PCF panels
 - From 1999, week 1002 there are 3 stations (HOFN,REYK,VOGS), this will be starting time.
 - fixed stations are: BRUX(2009-01) ,HERS(1994-021) , HOFN(1997-180), MAR6(1999-060), POTS(1994-301), QAQ1(2001-290), SCOR(2004-256), TRO1(1998-071)
 - Finished processing years 2000-2001
 - Expecting to finish in September 2024

Thank you

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