

NATIONAL REPORT OF SWEDEN

NKG WGRF 2026 IN HELSINKI

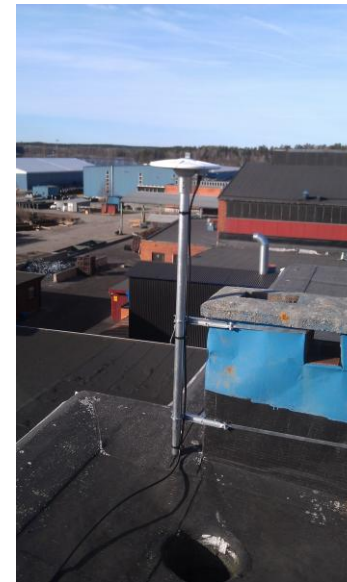
SWEPOS

~500 SWEPOS stations

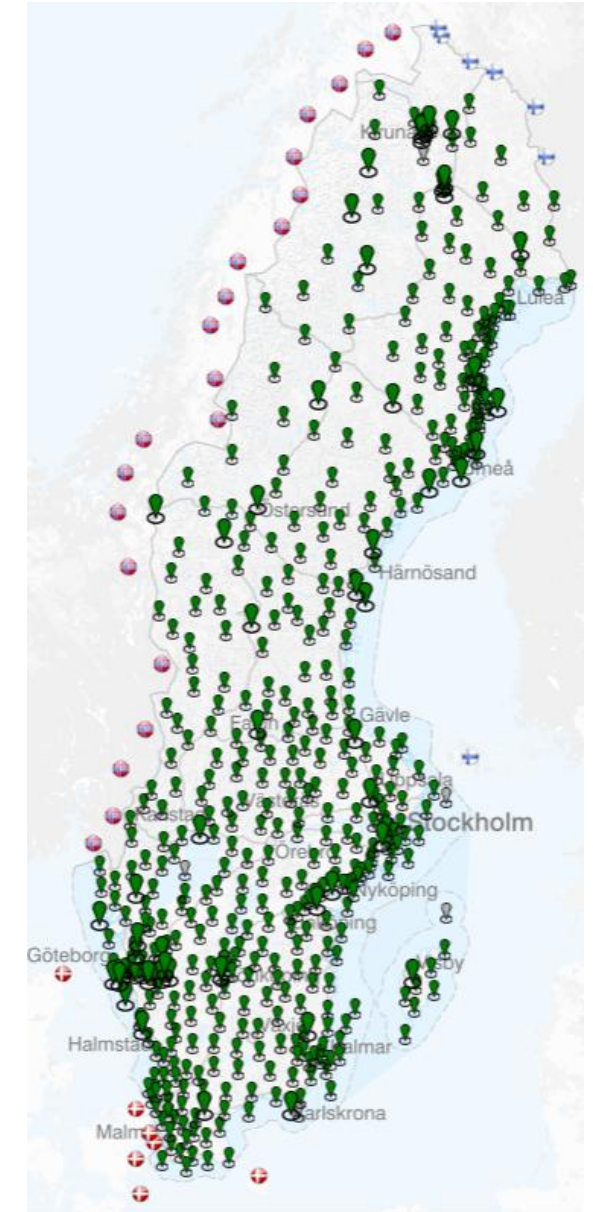
- SWEPOS has taken over 22 stations from Trimble (class C)
- New antennas on all SWEPOS fundamental stations (except ONSA)
Pillars: JAVRINGANT_DM OSOD (except 3)
Masts: TPSCR.G5 OSOS/TPSH (2 LEIAR20 LEIM)
- Still a few snow-melting systems to install to have it on all northern stations (both pillar and mast)



SWEPOS class B

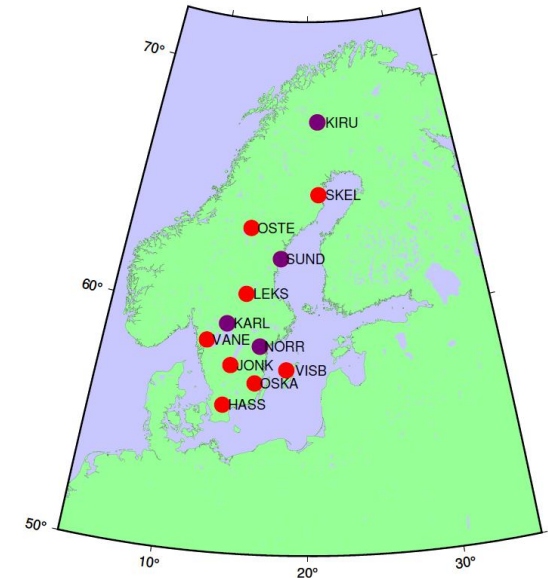


SWEPOS class C
(earlier Trimble)



GNSS STATION CALIBRATION (IN-SITU)

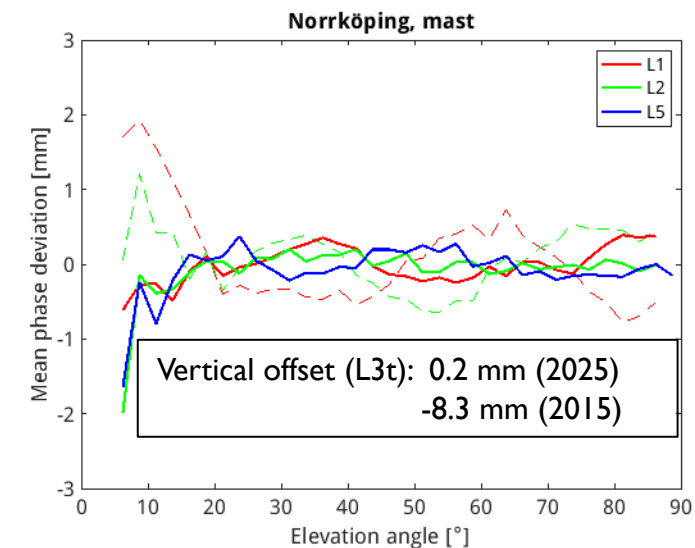
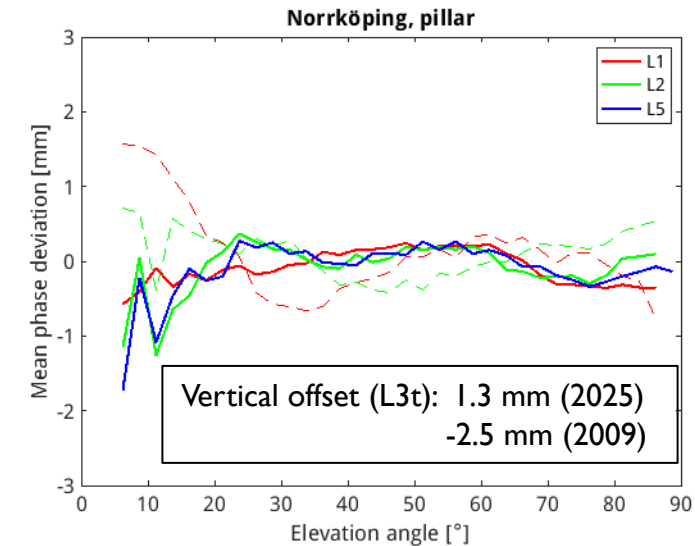
- Station calibrations have earlier been performed 2009-10 (pillars), 2014-15 (pillars+masts)
- New calibrations 2025 – 4 stations (pillar+mast, multi GNSS, new antennas on SWEPOS)
- Local control network including pillar and mast
- 3 reference antennas (calibrated with Eccosorb), 5x24 h
- Analysis using in-house Matlab scripts
 - Estimate baselines between SWEPOS-monument and reference antennas
 - L1, L2, (L5), L3t
 - Comparison to known values from the control network → PCO (phase center offset) for height
 - Post-fit residuals averaged in 2.5° bins → PCV (phase centre variations)



STATION CALIBRATION - RESULTS

- The new antennas (+ receivers + firmware?) seem to be less sensitive to reflections from below than the old equipment
- Test on baselines between mast and pillar gives much better result when using the estimated PCO+PCV than the standard IGS20.atx.
- Problems: growing forest, environment for the reference antennas, birds
- Will calibrate more stations 2026 and in coming years
- Future analysis:
 - Horizontal PCO + PCV
 - Other GNSS than GPS
 - More tests to use the updated PCO+PCV

Poster at IAG 2025 in Rimini, the manuscript for the proceedings has been accepted

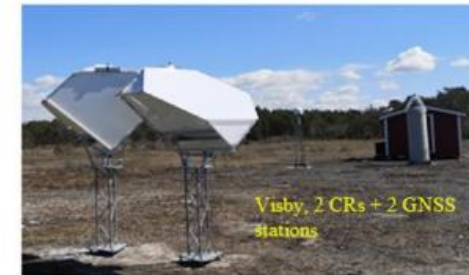
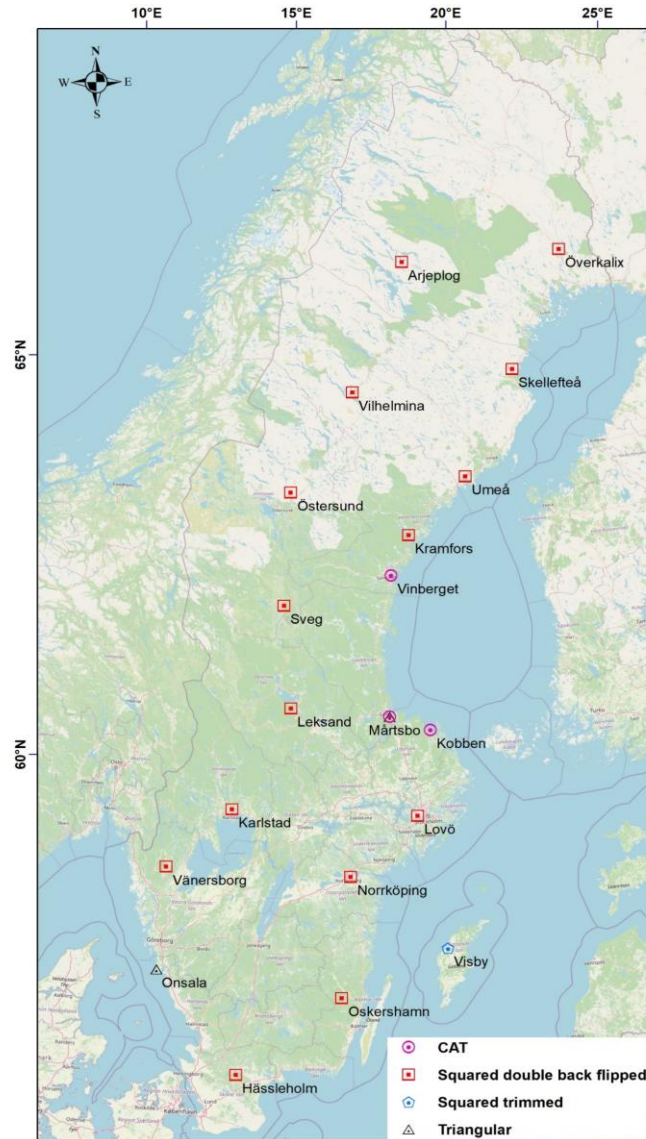


Dashed lines = 2009/2015, solid lines = 2025

SAR TARGET INFRASTRUCTURE, 2020-2026

Two types: Passive: corner reflectors and Active Transponders (CAT)

- **3** Transponders and **20** passive corner reflectors installed, **co-located with fundamental GNSS stations (SWEPOS).**
- **Main Purpose:** Development and maintenance of geodetic infrastructure in Sweden (Using InSAR technique)
- **Different types of passive corner reflectors** were designed and tested.
- **Getting permission** (for transponders and generally from landowners), the main problem!
- One more CR in the house for installation in the north, waiting for permissions.
- Data analysis **SNAP + Gecoris, SCT and SARvey (open source)**



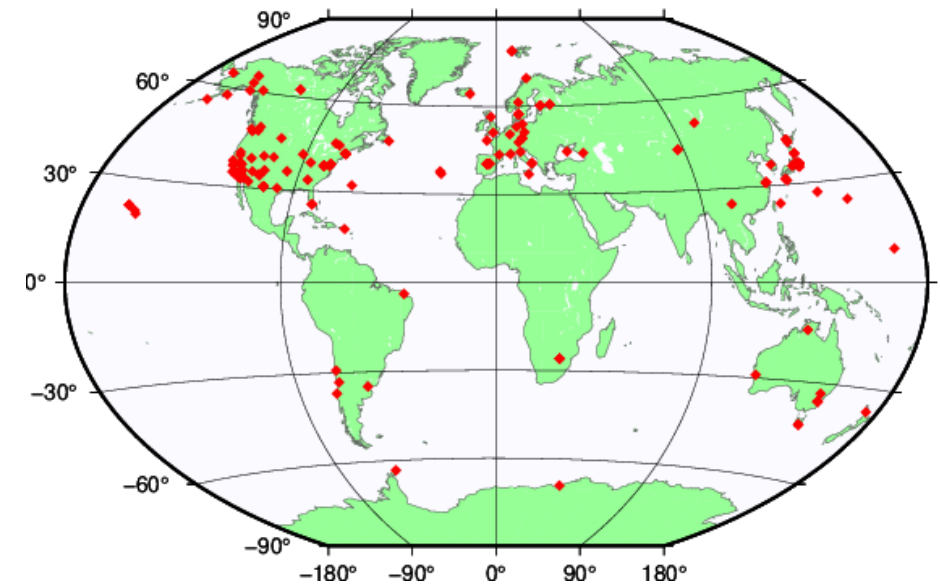
CONTRIBUTION TO IVS FULL REPROCESSING FOR ITRF2020-u2025

IVS decided to do a full reprocessing of all VLBI data 1979-now for the next ITRF2020 update (ITRF2020-u2025)

- New/updated models, e.g., for gravitational deformation, are available for several telescopes
- Some issues with the ionospheric corrections have been identified and corrected
- Some other minor issues with the data files (station naming etc.)

We (OSO AC) have contributed to this effort

- 7533 legacy S/X sessions
- 240 VGOS sessions
- 179 station, 5812 radio sources
- Analysed with the ASCOT software
- Solutions submitted to IVS, IVS combination should be ready in April



THANKS FOR YOUR ATTENTION!

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