

# NATIONAL REPORT OF LITHUANIA



*Working Group of Reference Frames*  
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2025, Sweden

# National GNSS Network – LitPOS

- **LitPOS Overview:**

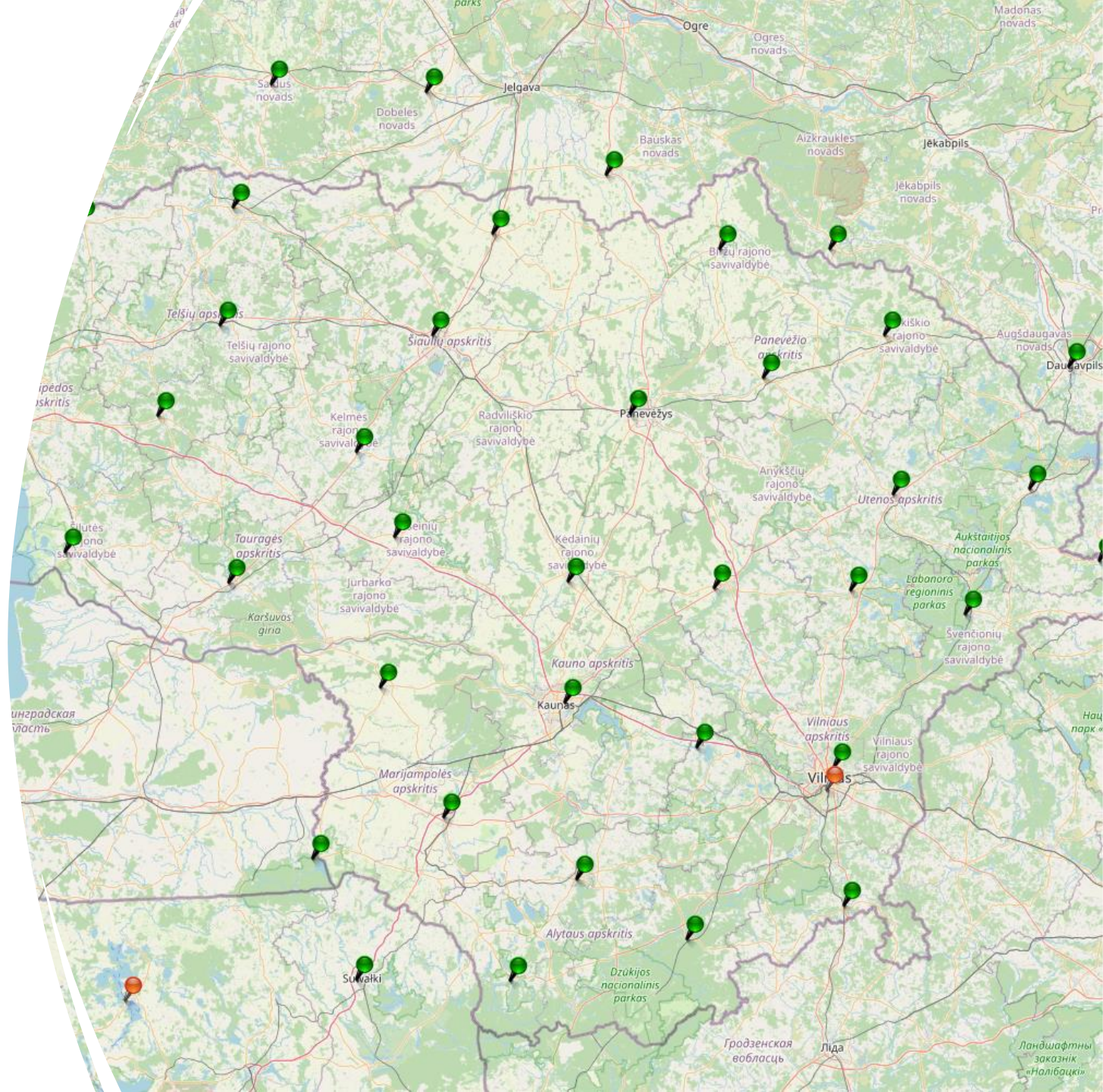
- Total stations: **44** (35+6 in Latvia + 3 in Poland).
- A service for precise positioning in real time.

- **Equipment:**

- **Antennas:** Trimble TRM59900.00
- **Receivers:** Trimble NETR9

- **New Stations (2021-2023):**

- MLTI, RSNI, SKDA, KPSK are the most recently established stations in Lithuania.



# Operational Status

## Software:

- Bernese GNSS Software (updated to v5.4 in 2024).
- PIVOT upgraded from v4.7 to v5.1 (2023).

## Processing:

- Automated operational reprocessing (manual checks reduced).
- Current GPS week: **2351**
- Repro status: processed until year 2014, working on it

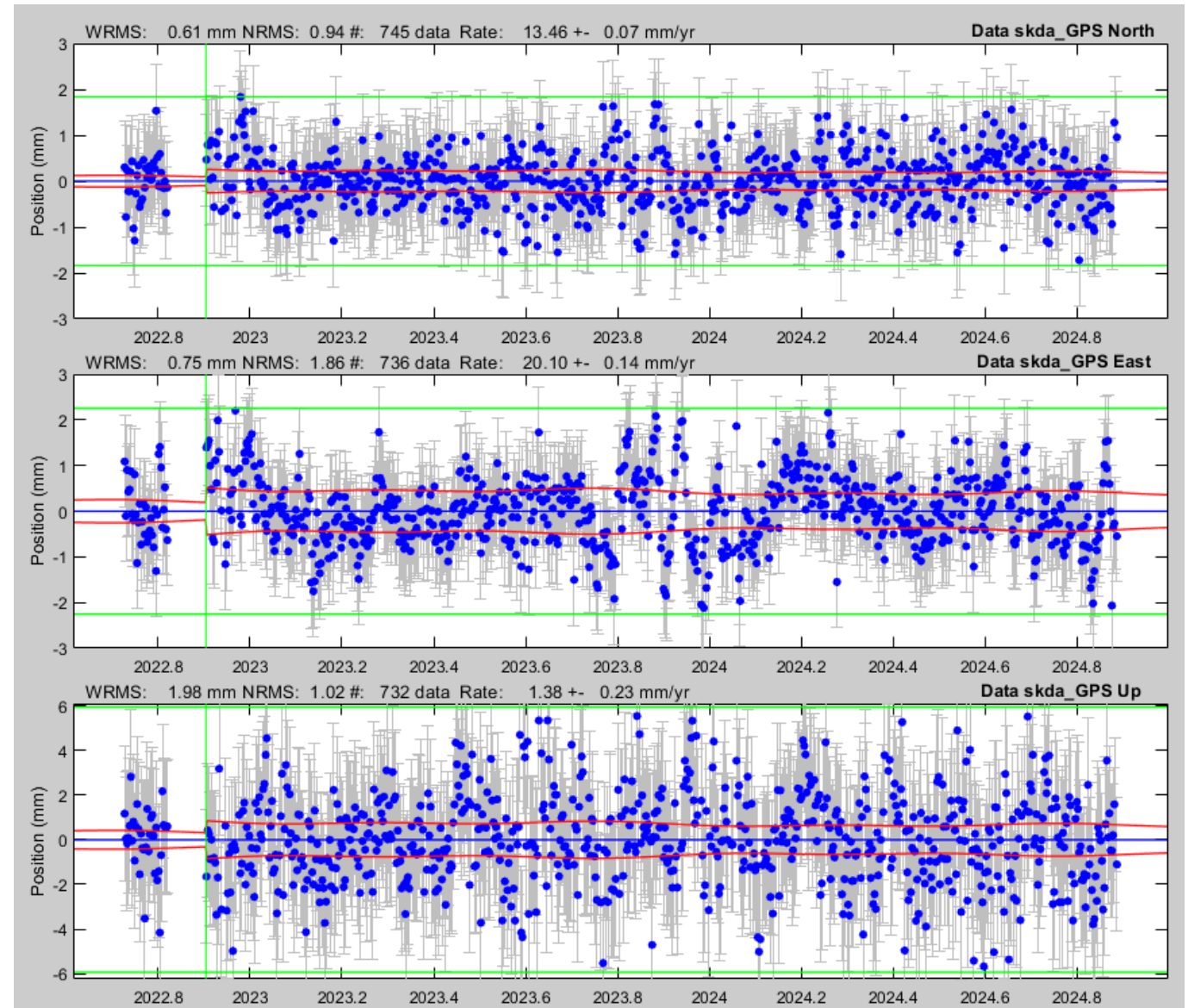
## Performance:

- ~3 hours per week for reprocessing (if no errors occur).



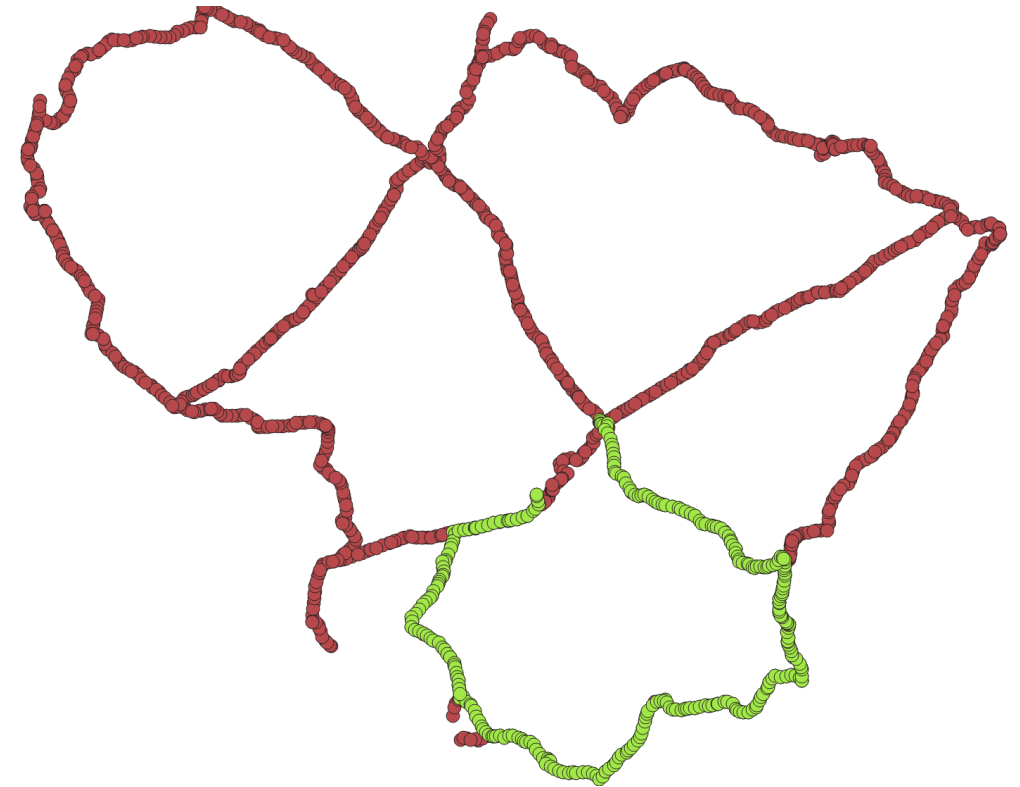
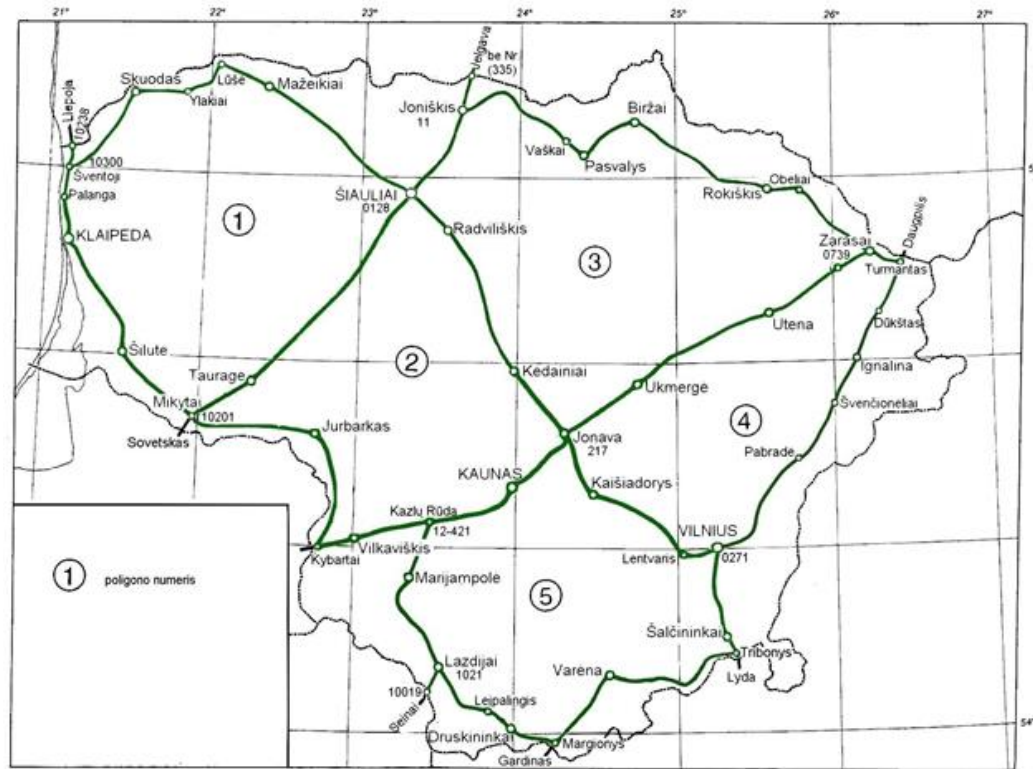
# Velocity Analysis (Example: SKDA Station)

- SKDA Station (Skuodas) Time Series:
  - **North:**  $13.46 \pm 0.07$  mm/yr
  - **East:**  $20.10 \pm 0.14$  mm/yr
  - **Up:**  $1.38 \pm 0.23$  mm/yr
- **Graphs:**
  - Include simplified trends for North, East, and Up velocities (2022–2025).



# Vertical network

- Second levelling of the First order vertical network



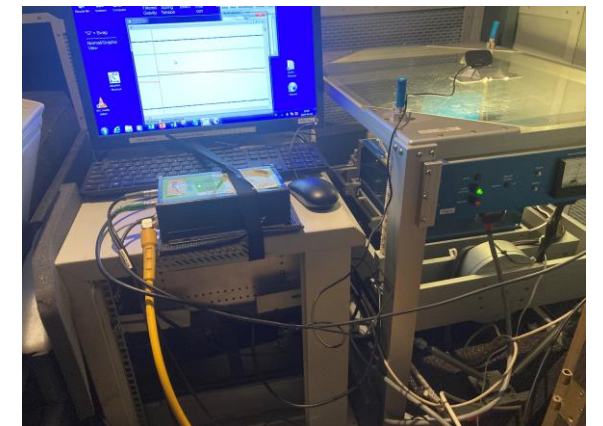
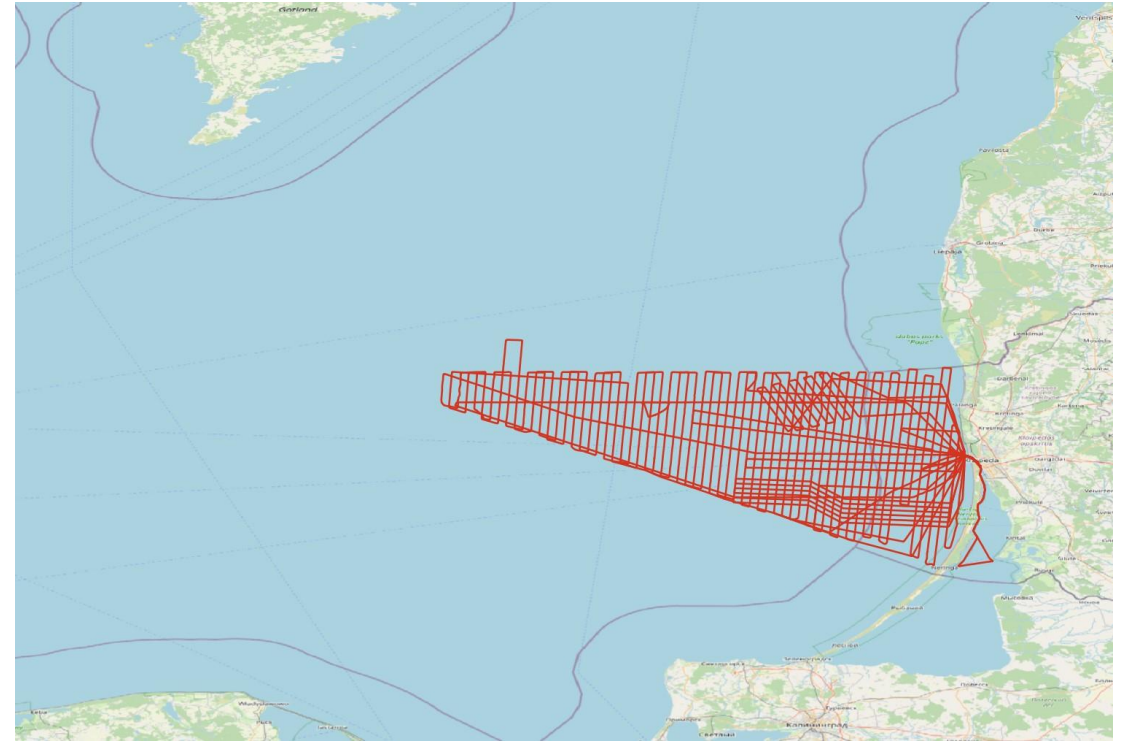
# Gravity survey in the Baltic sea

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**Gravimeter: Lantmäteriet, ZLS D13**

**About 5000 km**

**Year 2024**



# Achievements

- 1.Expansion of LitPOS network (4 new stations since 2021, one removed).
- 2.Improved automation in reprocessing.
- 3.Participation in historic data reprocessing.

# Future Plans

## Network Expansion:

Add 4+ new GNSS stations (target: 35 km coverage radius).

## Software Enhancements:

Fully automate BPE reprocessing checks (e.g., SNXCHK validation).

## Collaboration:

Continue contributions to NKG and EUREF projects.





## **Conclusion**

Lithuania's LitPOS network is robust, with ongoing upgrades and expansions.

Velocity analyses provide critical insights into regional crustal movements.

Future focus: automation, accuracy, and international collaboration.

Thank you for listening!!

A thick, hand-drawn style orange line that underlines the text "Thank you for listening!!". It starts under the first letter and ends under the last letter, with a slightly wavy, irregular edge.