

National report summary

Operational status

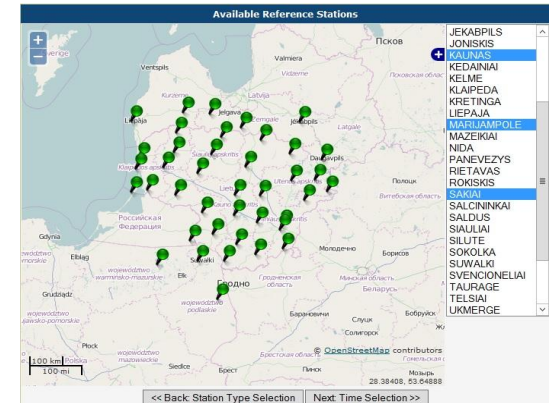
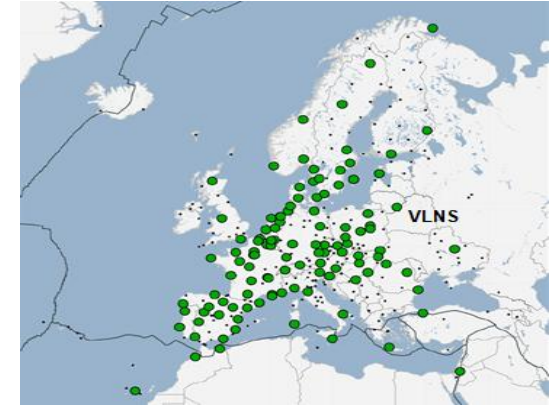
User access modernisation

GNSS jamming and spoofing

Infrastructure renewal

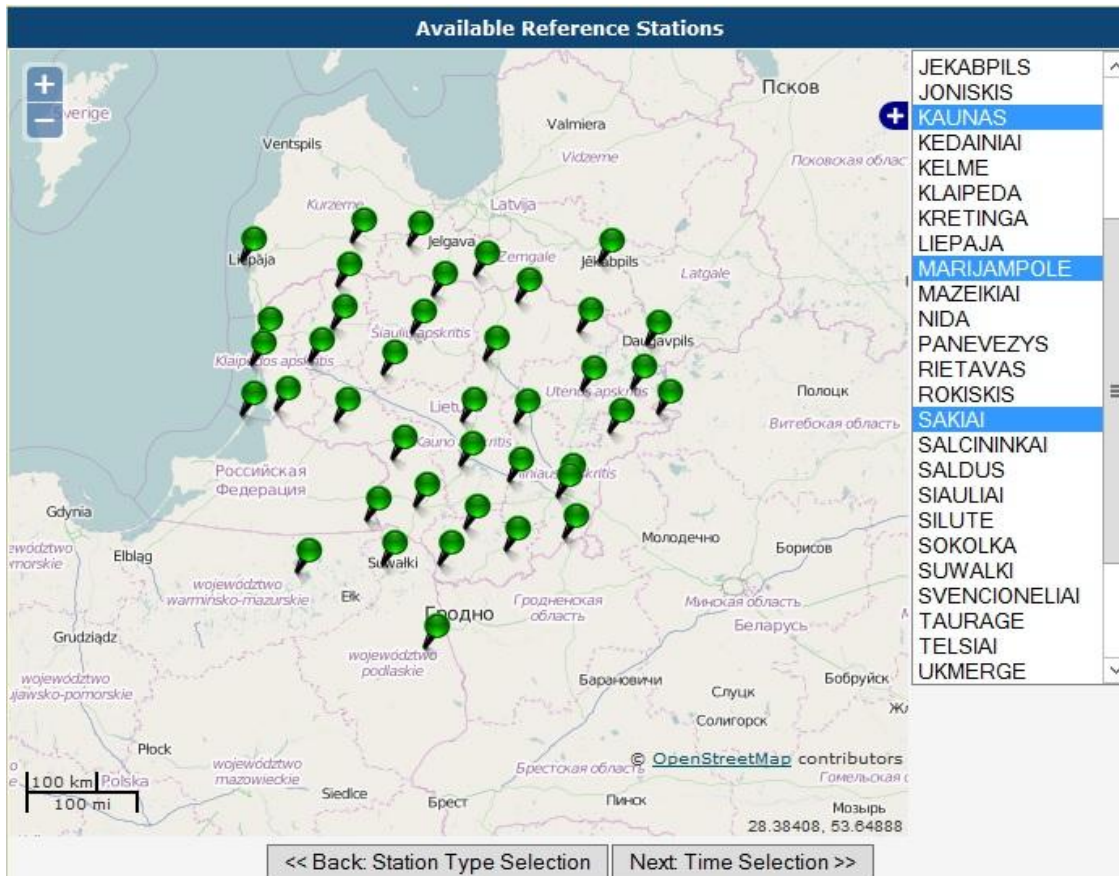
Levelling and marine gravity survey

PhD. Linas Bevainis
SSVA / LitPOS



Lithuania's national positioning infrastructure in a challenged environment

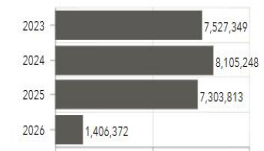
1 LitPOS network today



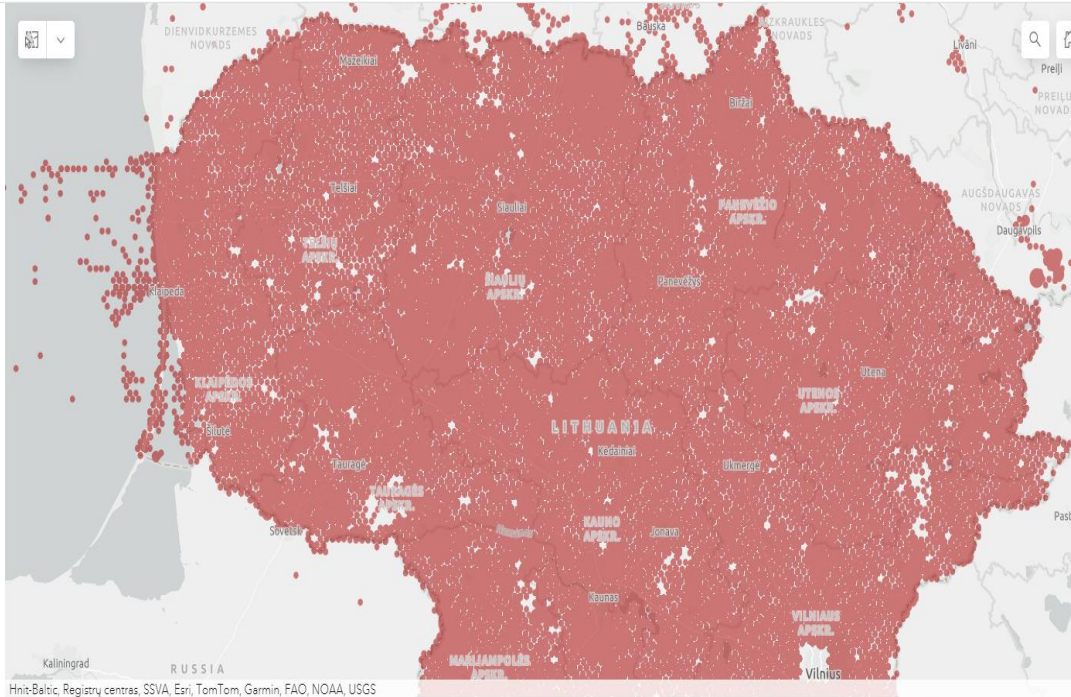
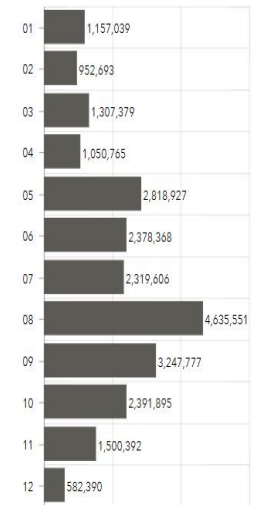
Users, service load and daily operations

Bendras prisijungimų
skaičius

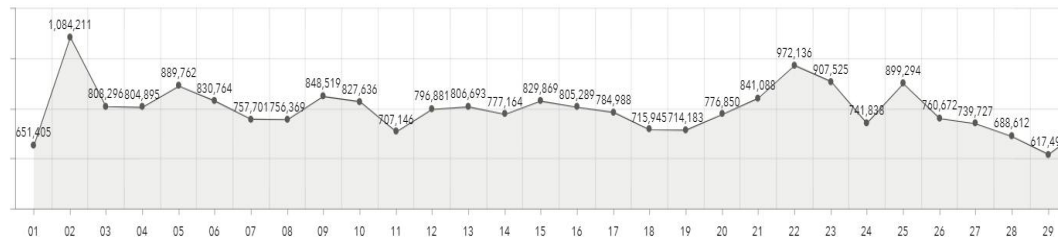
Metai



Mėnuo



Diena



~4,000

registered users

+148

new users in H1
2026

>2.6 M

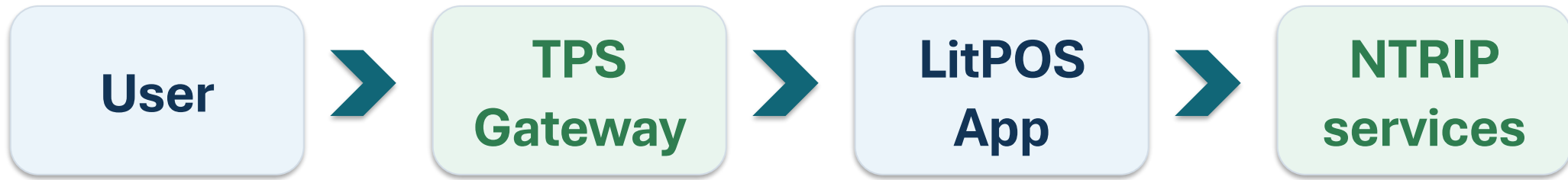
service uses in H1
2026

Typically about 500–1,000 users per day
A broad user community: surveyors,
construction, infrastructure, agriculture, GIS
and research

Positive user feedback and increasing
operational demand

Daily operational work

Service monitoring • account support • network
checks • quality control • coordinate-correction
maintenance



Self-service registration and account management

Automatic credential generation and password reset

Centralised identity management through government e-services

Lower administrative workload and more consistent user data

Secure communication between LitPOS components

Active-user migration completed in 2026

The positioning service did not change – only the access model became easier and safer

A good basis for future digital services

GNSS jamming and spoofing – Baltic region

Interference is no longer a theoretical issue. It is now part of the real operational environment.

Jamming

Blocks the GNSS signal

- High-power radio noise overrides satellite signals
- Receiver loses lock or accuracy drops strongly
- Usually easier to notice because the signal becomes weak or unavailable
- Can interrupt RTK work immediately

Spoofing

Fakes the GNSS signal

- Counterfeit satellite-like signals imitate real ones
- Receiver may show a wrong position instead of showing no fix
- More dangerous because the problem may be less obvious to the user
- A challenge for safety, trust and quality control

Baltic and neighboring countries have already seen many interference cases. For national CORS networks, this means that resilience and user warning are becoming essential.

How Lithuania responds

Regional context

Lithuania is not alone. The whole Baltic region is affected, so cooperation is necessary.

Equipment

Choke-ring antennas help to some extent, but hardware renewal is still needed.

Monitoring

We want LitPOS to detect unusual GNSS conditions and support faster user warning.

Cooperation

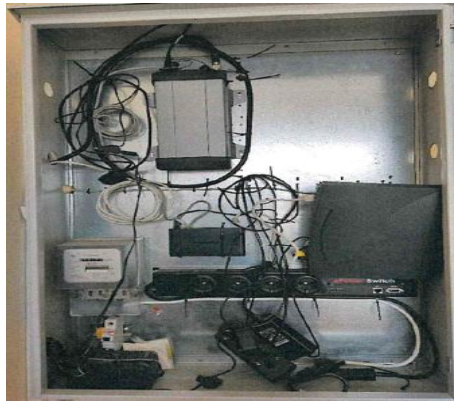
Work with Latvia, Estonia, Poland, EUREF and NKG is important for shared solutions.

Planned measures

Receiver upgrade, anti-spoofing / anti-jamming evaluation, anomaly detection, and clearer warning information for users

Goal:
from correction
service to resilience-
supporting
infrastructure

Station inspection and modernisation needs



All 34 stations were inspected; all were operational during the reporting period

A large part of the network still uses older Trimble NetR9 receivers and choke-ring antennas

Some equipment is already more than 10 years old

Local issues include missing UPS backup, cabinet corrosion and cable / power-infrastructure weaknesses



Modernisation priority

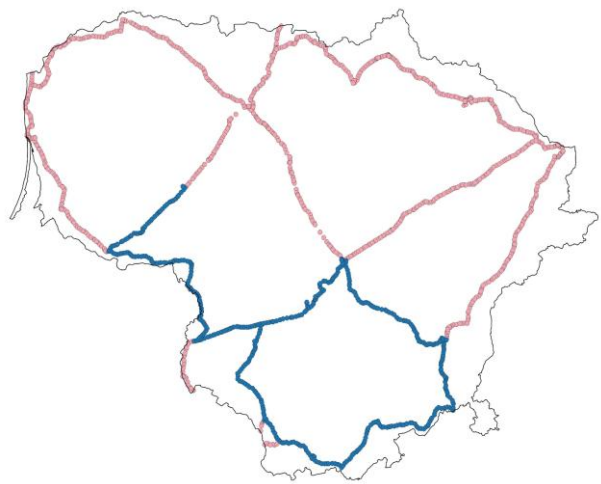
Phased renewal of receivers and antennas

Server and software update

Better backup power and site resilience

Preliminary national estimate for technical upgrading: about 1 million EUR.

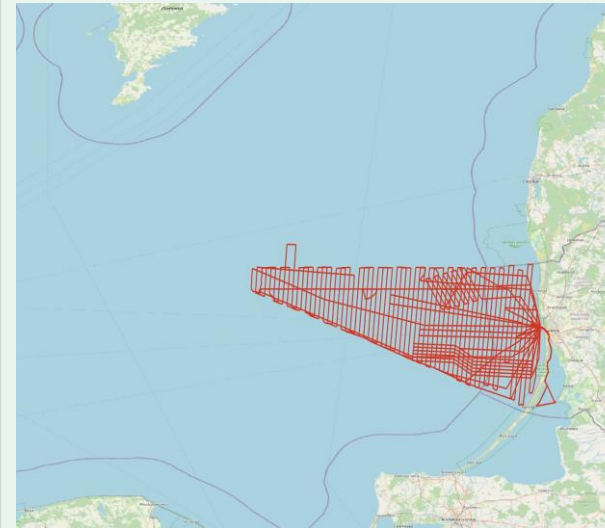
Vertical network – second levelling



~85% complete
Target: full network by 2027
~2,000 km total network
~1,700 km re-levelled by 2026

This work strengthens the vertical control network and supports reliable height infrastructure.

Marine gravity survey in the Baltic Sea and Curonian Lagoon

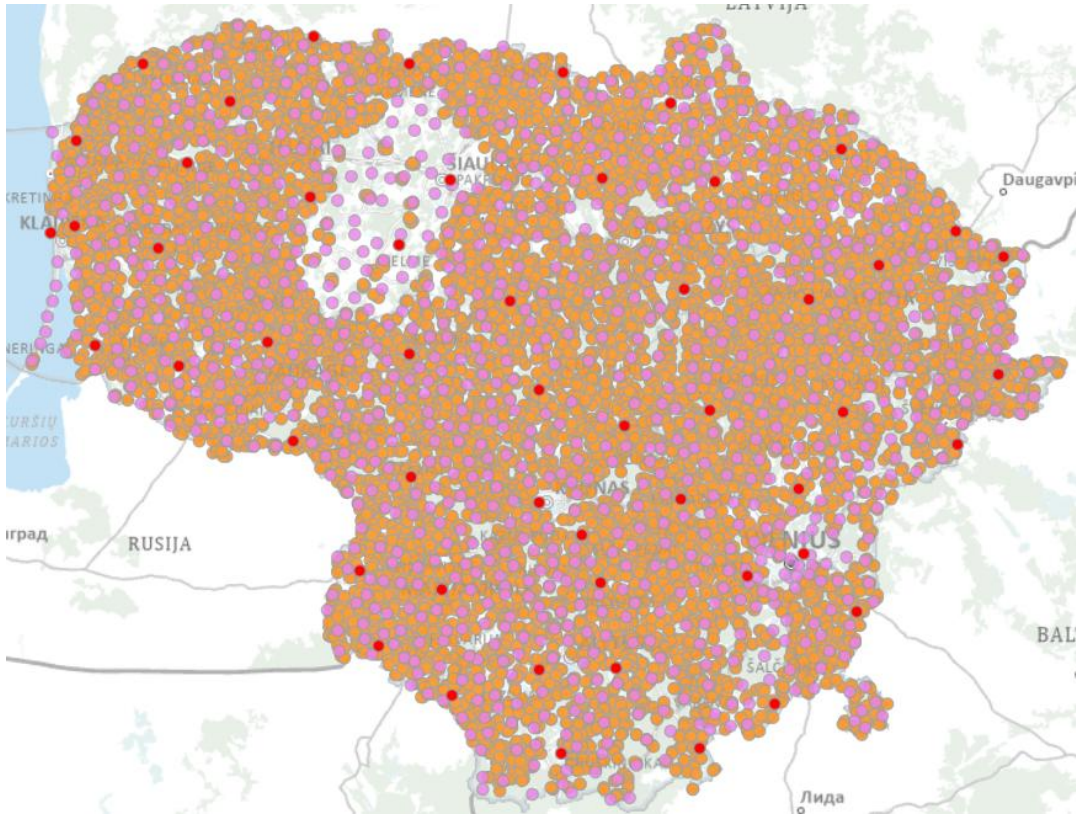


Survey year: 2024
~5,000 km of measurements
Final processing in 2025–2026
Supports gravimetric and geoid-related work

Together with LitPOS, levelling and gravimetric measurements strengthen Lithuania's national geodetic reference infrastructure.

8 Geodetic control reform

Third-order GNSS ground points



**Dense historical third-order point network
versus modern high-accuracy
infrastructure**

Main idea

Remove the obligation to preserve, restore or relocate state third-order GNSS geodetic points

Reason: their positional accuracy is lower and their further use in modern measurements is limited

Expected benefit: lower administrative burden for economic entities and about 289,000 EUR savings

Geodetic control	Accuracy	Number
0–I class	5 mm	53
II class	10 mm	1,029
III class	30 mm	10,129
LitPOS stations	10 mm	34

**LitPOS provides 10
mm-level modern
positioning
support with only
34 stations.**

**Message: the national geodetic control system is moving from
dense legacy points to fewer, better maintained and more
accurate modern references.**

1. Keep the service reliable

Stable operation and user support remain the base

2. Upgrade ageing infrastructure

Receivers, antennas, servers and site resilience

3. React to interference

More focus on jamming, spoofing, monitoring and warning

4. Work together

Cooperation with EUREF, EPN, NKG and neighbours

Main conclusion

**LitPOS is stable today but operates in a challenged environment.
Our goal is to move from a reliable positioning service to a more resilient national positioning infrastructure.**

Thank you for your attention!