



Latvian Geospatial
Information Agency

Latvian Geospatial Information Agency

National report

NKG Working Group of Reference Frames (WGRF)

Lantmäteriet, Gävle, Sweden, 27.-28.03.2025.

Department of Geodesy
Geodetic data control division
Head of Division Aigars Keiselis

Main objectives of the report



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- to inform about the achievements of the past year and plans for year 2025
- to show current status of data processing as LAT LAC
- to ask for consideration of the proposal



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Latvian coordinate system LKS-2020

- The changes to the Law on Geospatial information of Republic of Latvia entered into force on 18.03.2025.
- Changes to the Cabinet regulation (*Regulations Regarding the Geodetic Reference System and the Topographic Map System*) will follow soon.

GeoRepository

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Geodetic Parameters

Search Database

Text Search

LKS-2020 Clear all

Search Results (5 Objects Found)

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Report Selected Results

CRSs (4)	Transformations (0)	Point Motion Operations (0)	Concatenated Operations (0)	Conversions (0)	Datums (1)	More...
☐ NAME	CODE	TYPE	EXTENT	DATA SOURCE	REMARKS	REVISION DATE
☐ LKS-2020 🔗	10303	geocentric	Latvia	EPSG	Replaces LKS-92 (CRS code 4948...	March 1, 2023
☐ LKS-2020 🔗	10304	geographic 3D	Latvia	EPSG	Replaces LKS-92 (CRS code 4949...	March 1, 2023
☐ LKS-2020 🔗	10305	geographic 2D	Latvia	EPSG	Replaces LKS-92 (CRS code 4661...	March 1, 2023
☐ LKS-2020 / Latvia TM 🔗	10306	projected	Latvia	EPSG	Replaces LKS-92 / Latvia TM (C...	March 1, 2023

First < Previous 1 Next > Last

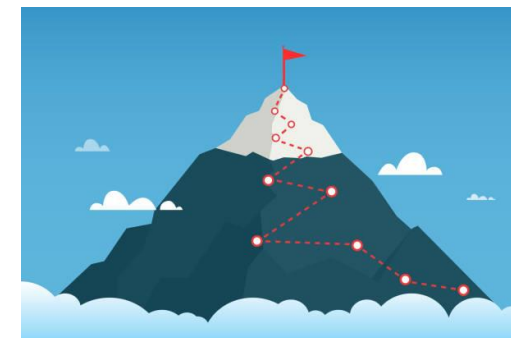
Items per page: 50

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W3C XHTML 1.0

EPSG Dataset : v10.084
GeoRepository : v2.33.9

- The other works of implementation of LKS-2020 will be done till the end of transition period (October 1st, 2025).





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Operating base
stations:

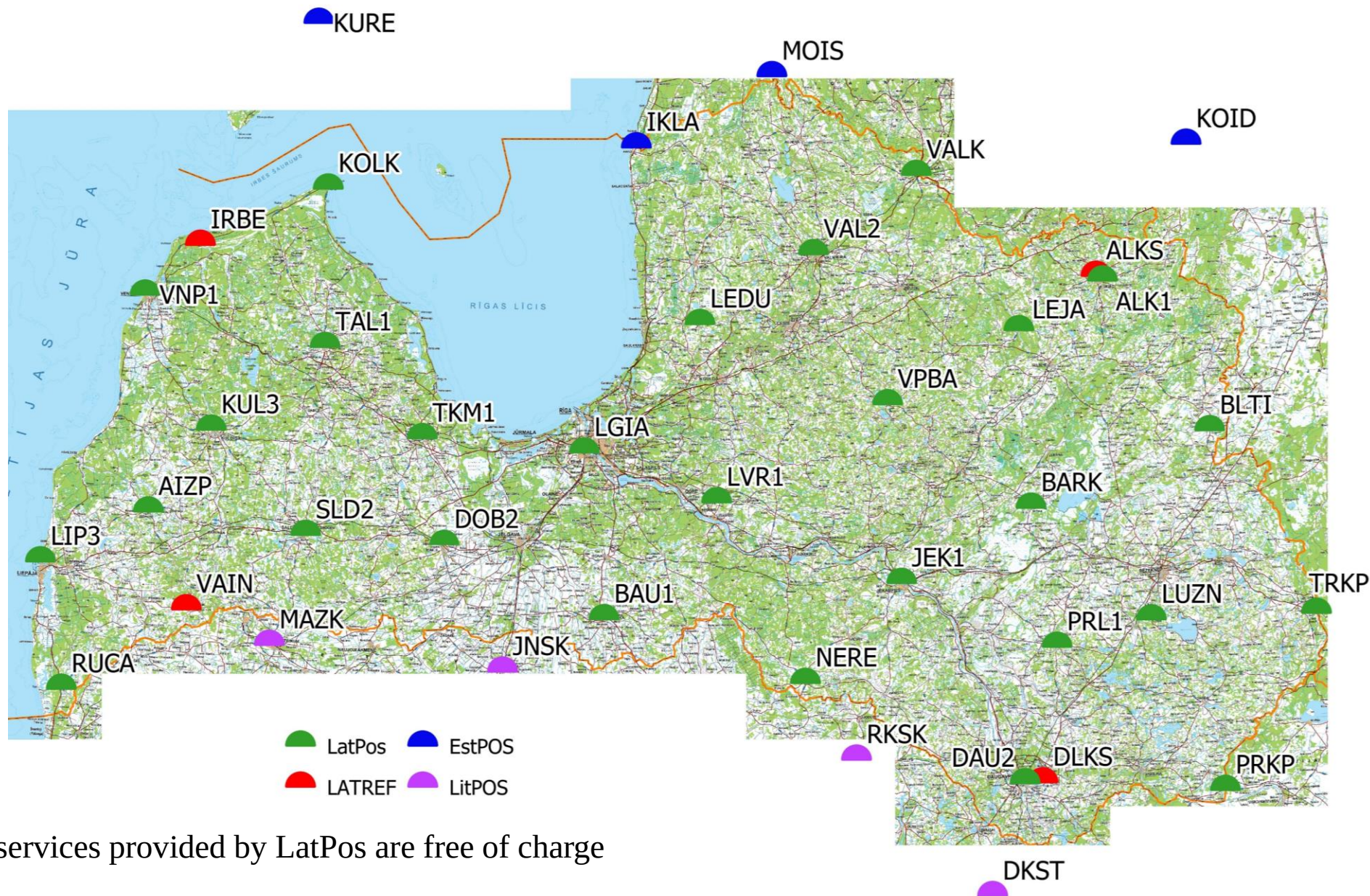
- LatPos 28
- +
•EstPOS 4
- +
•LitPOS 4

Received GNSS
systems:

- GPS NAVSTAR
- GLONASS
- Galileo
- BeiDOU

Software: GNSS Spider

Technical characteristics of LatPos

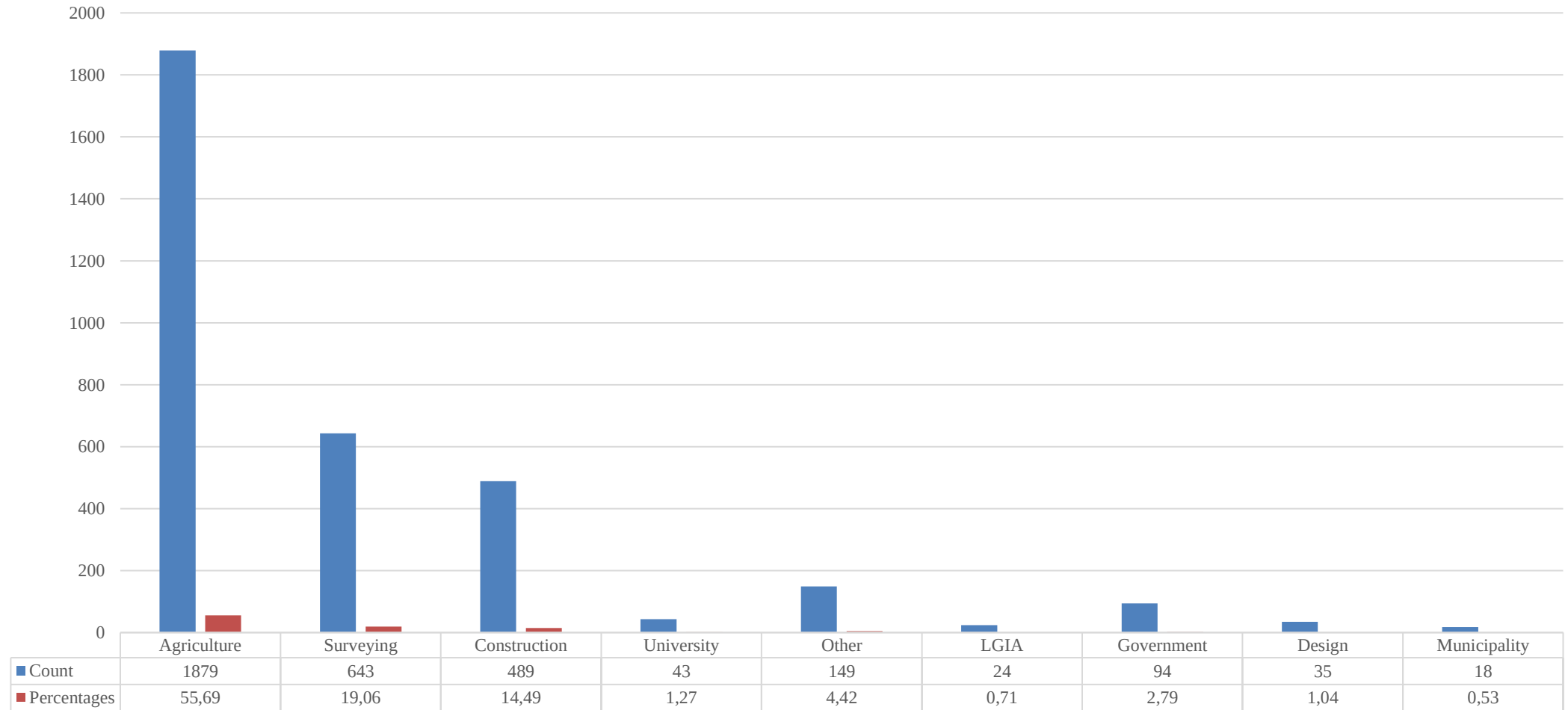


Since July 1, 2018, all services provided by LatPos are free of charge

Distribution of LatPos users by group, till 25.02.2025

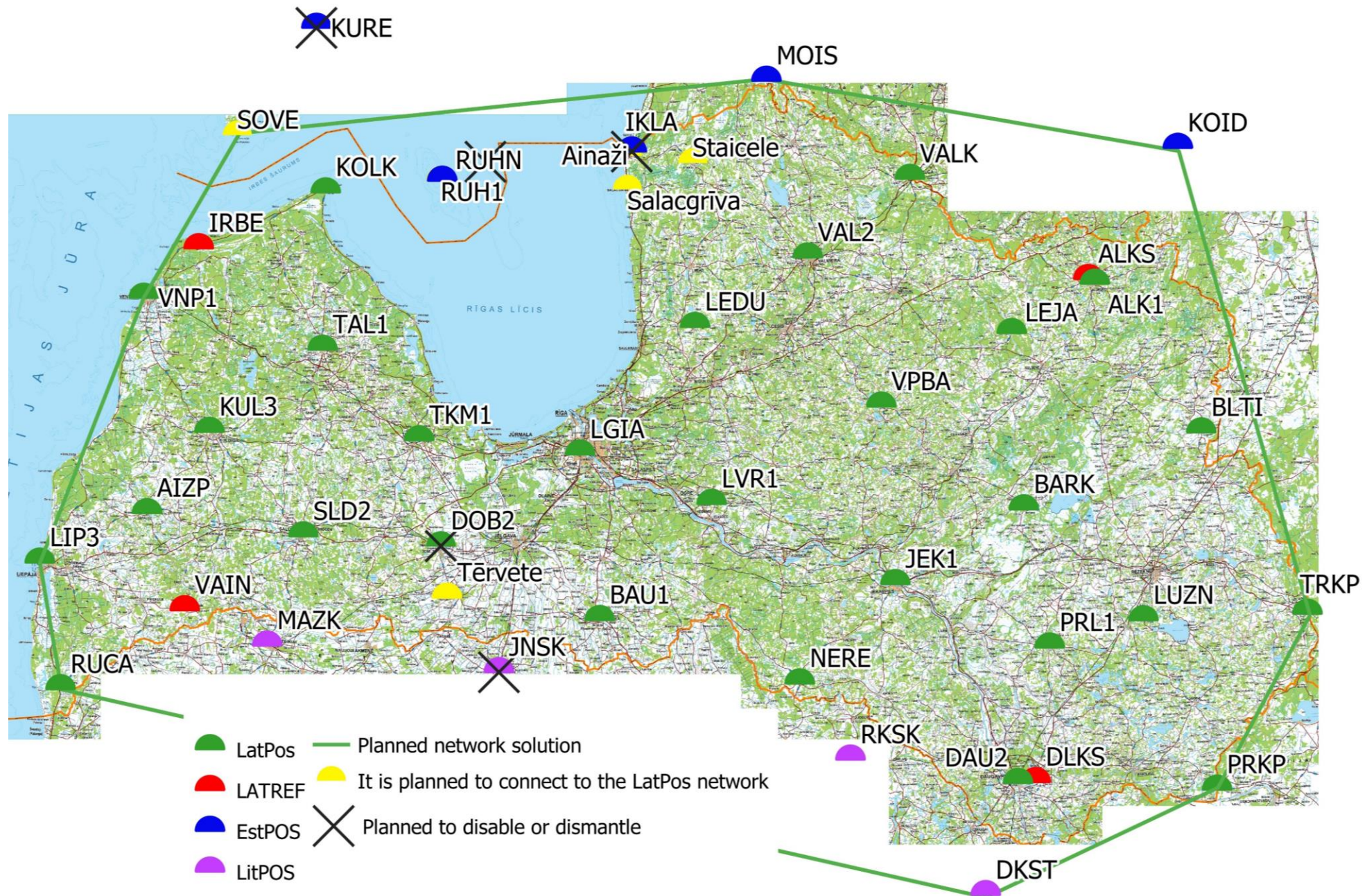


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Users themselves choose which field of activity is most suitable for them, based on the LatPos terms of use

Future plans for LatPos

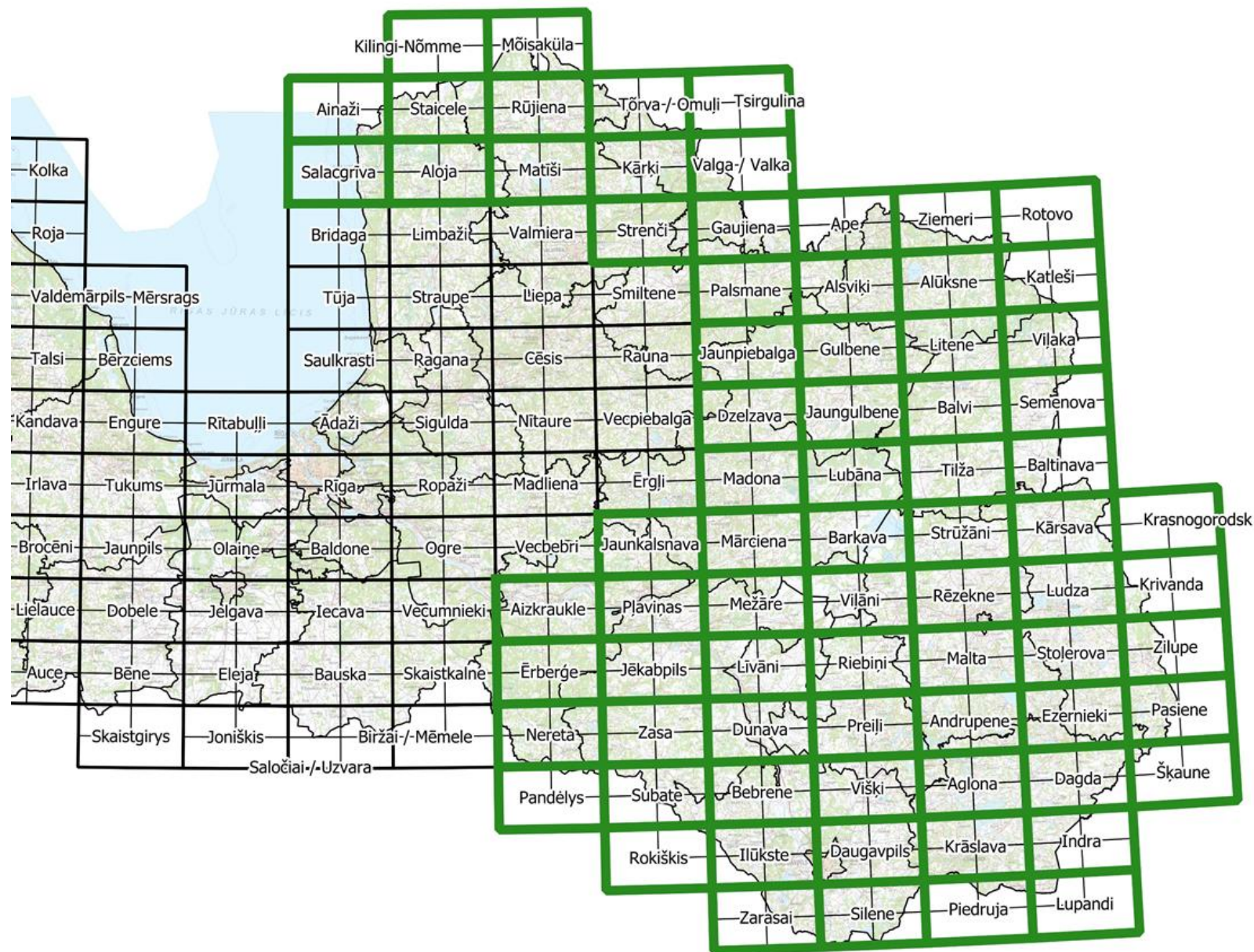


Observations and calculations of geomagnetic parameters in 2024

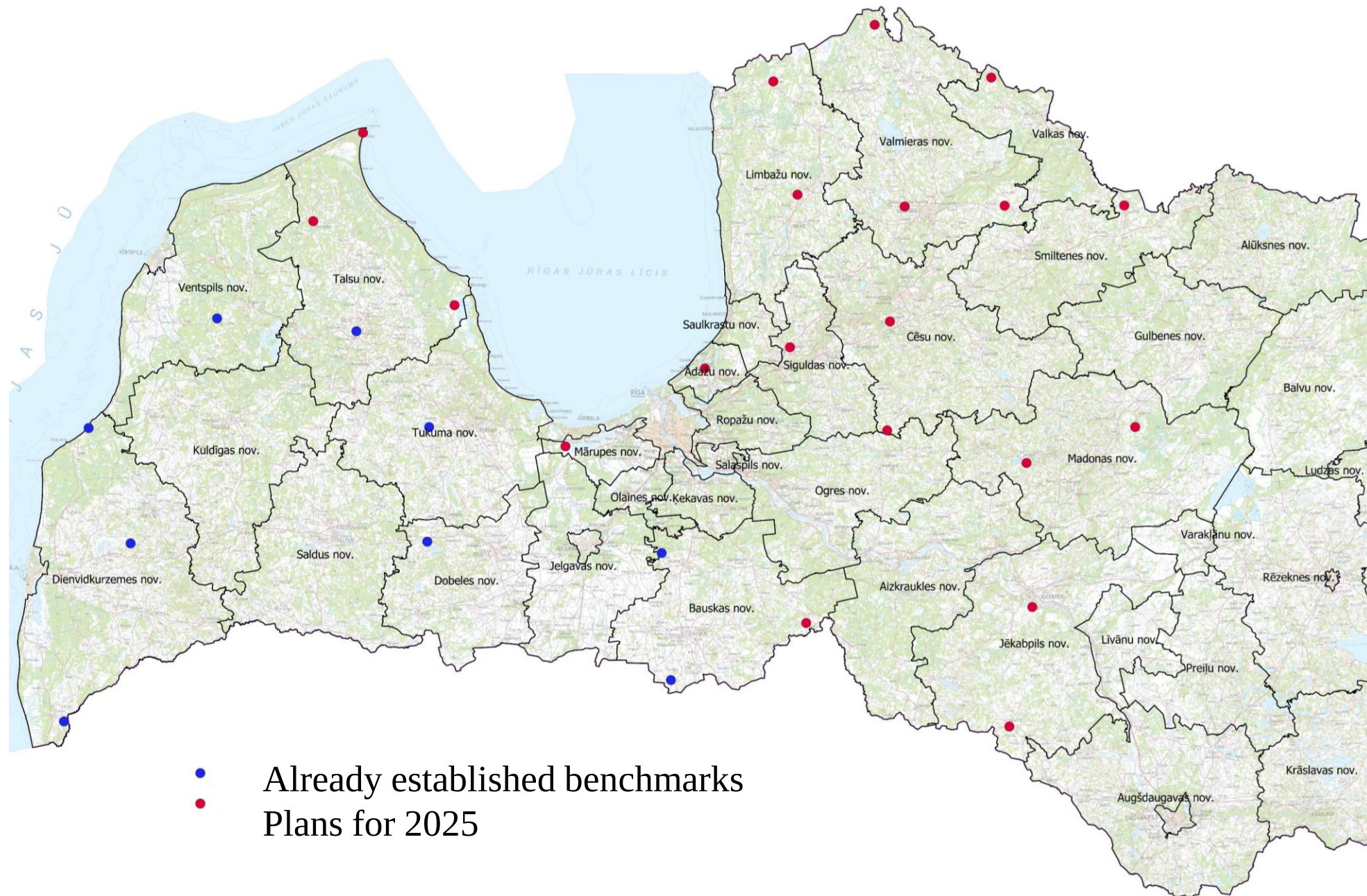


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- Declination,
inclination and total
intensity of
geomagnetic field
measurements for
maps in scale 1:50 000



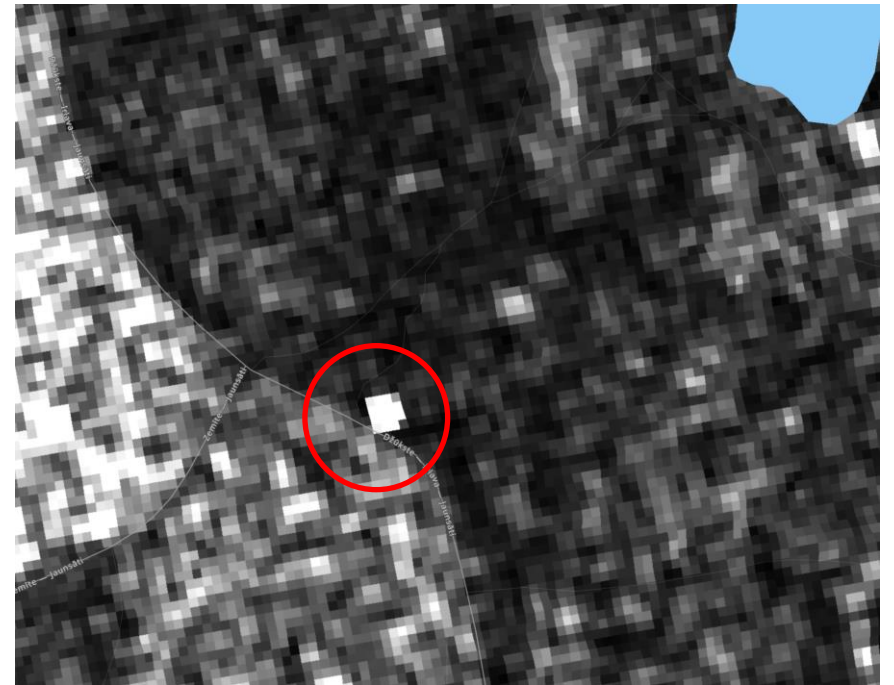
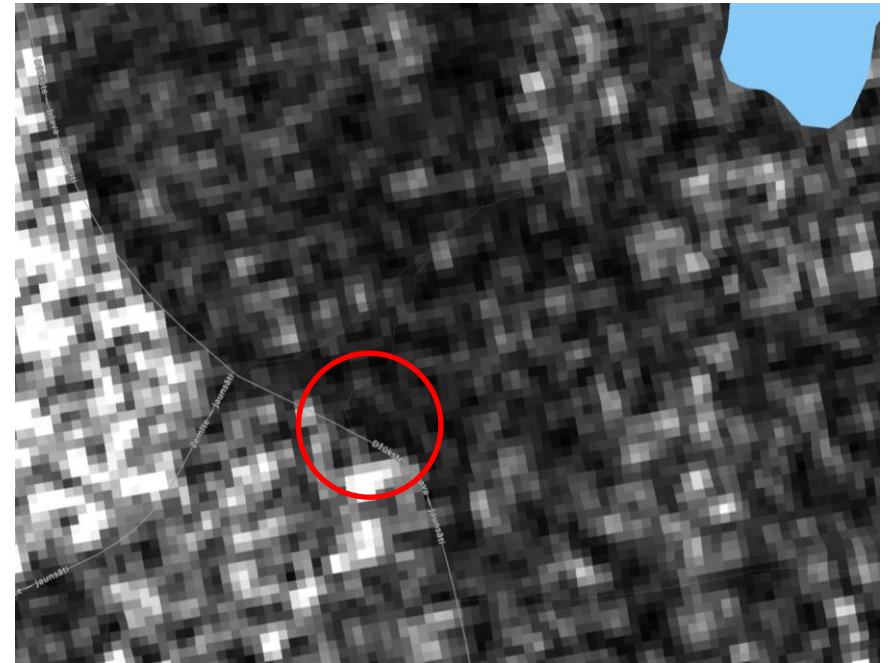
The Great network



Corner reflectors for InSAR



- First test measurement in autumn of 2024
- Reflection is visible, but reorientation is needed
- Learning post processing software Gecoris

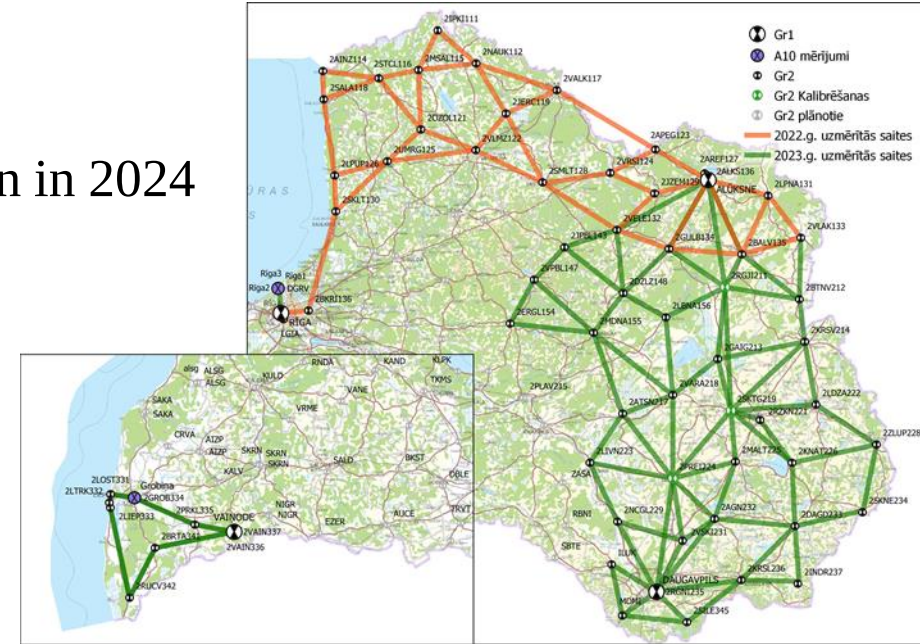


Second order gravimetric network

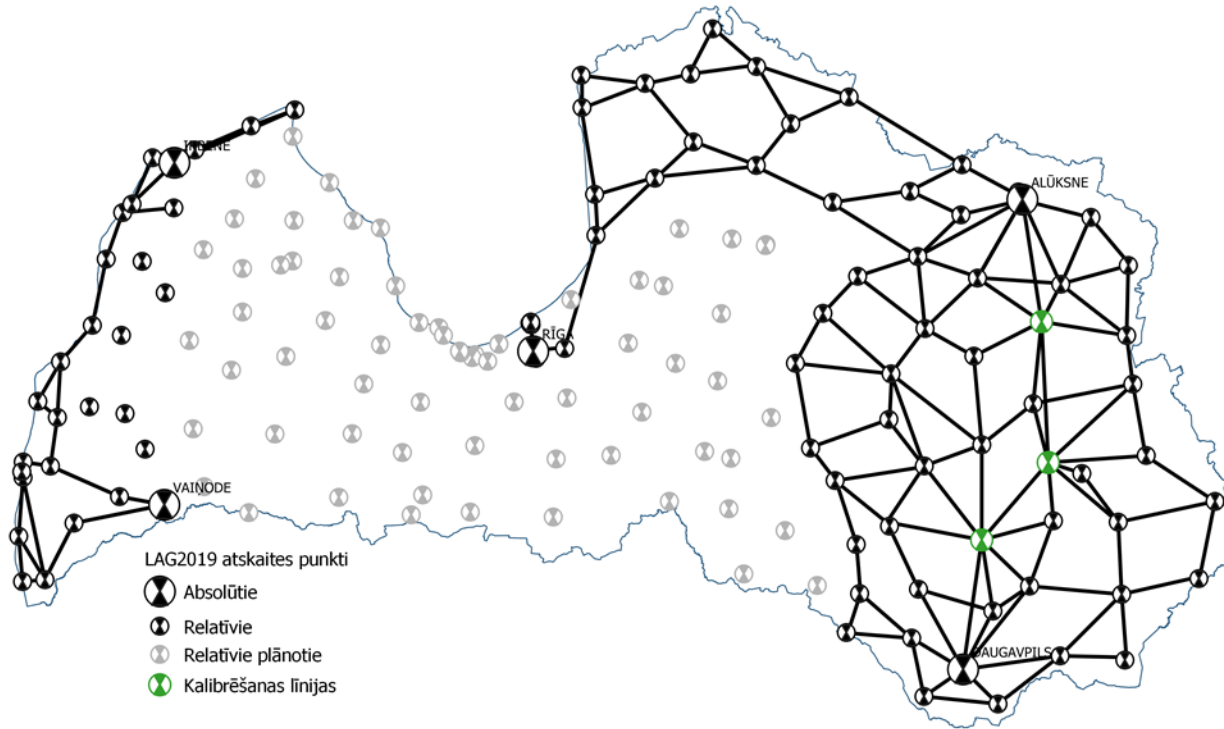


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➤ Situation in 2024



➤ Situation in 2025



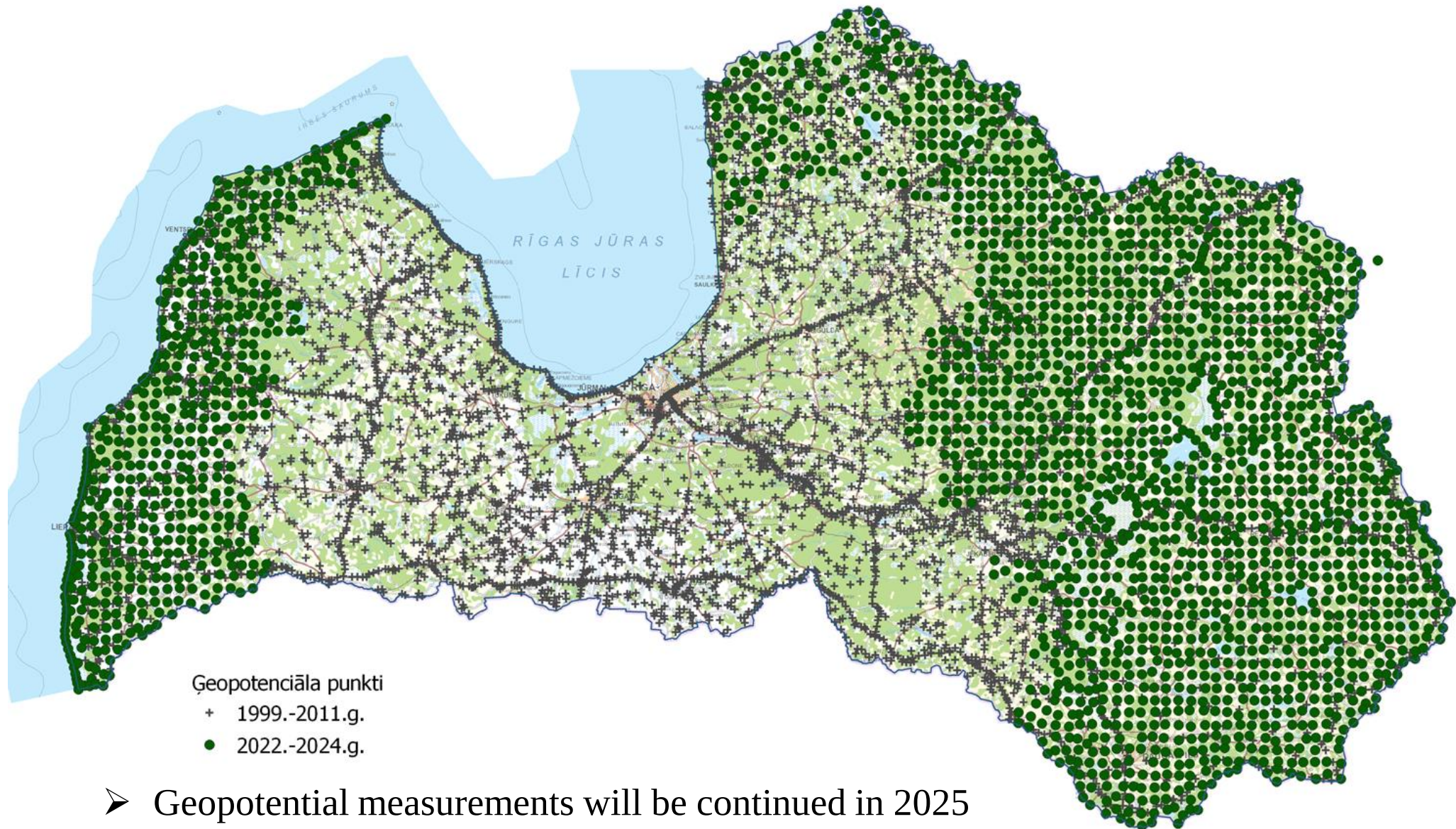
Temporary adjustment

Post processing point value
accuracy <20microGals

Adjustment tie residuals
<15microGals

Values consistent with results from
previous years, increasing slightly

Geopotential measurements in 4 kilometer grid





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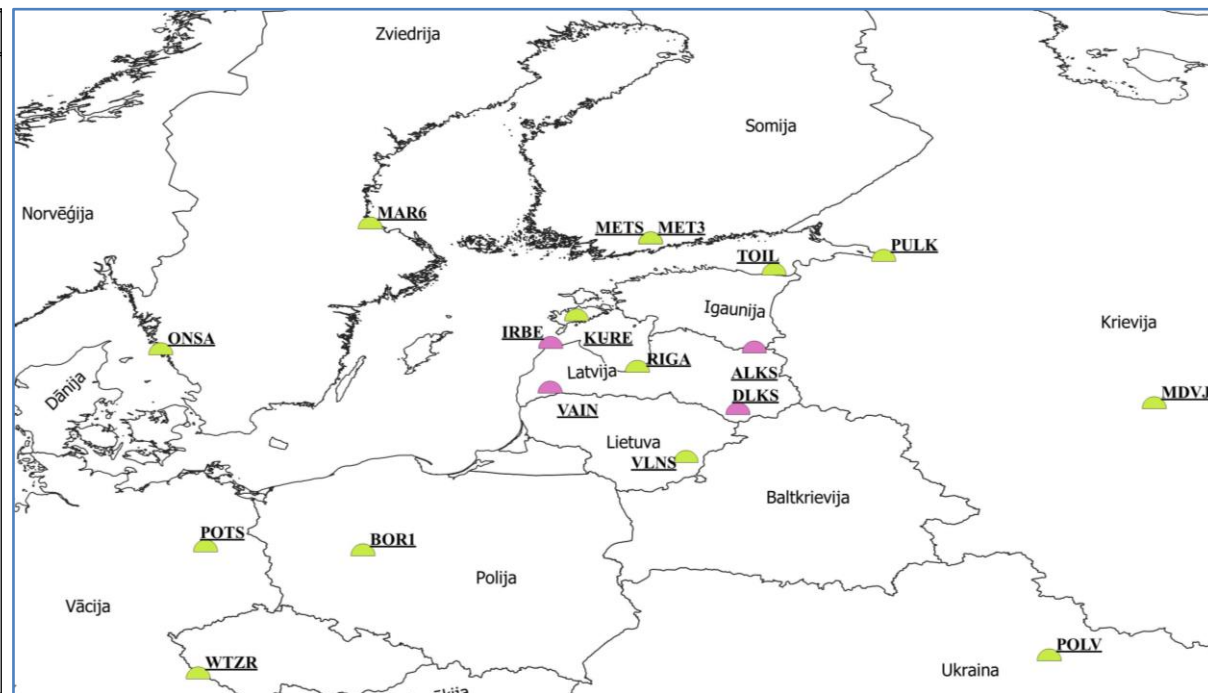
NKG GNSS AC: LAT LAC (1)

LAT base stations

ALKS (10731M002)
DLKS (10704M003)
IRBE (10726M001)
VAIN (10736M001)

RN base stations

BOR1 (12205M002)
KURE (10604S001)
MAR6 (10405M002)
MDVJ (12309M005)
METS (10503S011)
ONSA (10402M004)
POLV (12336M001)
POTS (14106M003)
PULK (12305M001)
RIGA (12302M002)
TOIL (10605S001)
VLNS (10801M001)
WTZR (14201M010)
MET3 (10503M010)



For Operational:

- Final Daily Coordinate Solution till GPS week 2357
- Final Weekly Coordinate Solution till GPS week 2357

NKG GNSS AC: LAT LAC (2)

Latvian base stations for Repro2

BAUS (10703M001)
BAU1 (10740M001)
DLKS (10704M003)
MADO (10712M001)
OJAR (10713M001)
LGIA (10713M002)
PREI (10714M001)
PRL1 (10741M001)
SIGU (10716M001)
SGD1 (10716M002)
TALS (10717M001)
TAL1 (10717M002)
IRBE (10726M001)
ALKS (10731M002)
VAIN (10736M001)



- Repro2 data calculations were made for 2022
- The remaining calculations are planned to be completed this year
- ❓ Facing a problem creating directory on NKG FTP server and uploading data for Repro2



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Proposal for NKG WGRF

💡 Maybe it is reasonable to upload one extra file with weekly solution with covariance matrix for every week on NKG FTP server and suggest EPND to download necessary data for them from NKG FTP server. Cause lately with weekly solution they ask for daily solutions too and its almost uploading same solutions twice.

- + Benefits for NKG LAC`s: no need for uploading twice.
- + Benefits for EPN:
 - no need for administration of users on their SFTP server;
 - the one known source of necessary data for them.



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Thank you for your attention!
Tack för din uppmärksamhet!
Paldies par Jūsu uzmanību!

Aigars Keiselis

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