



Latvian Geospatial
Information Agency

National report of Latvian Geospatial information agency

Nordic Geodetic Commission General Assembly: Planet Ocean and Geodesy
08.09.2022.

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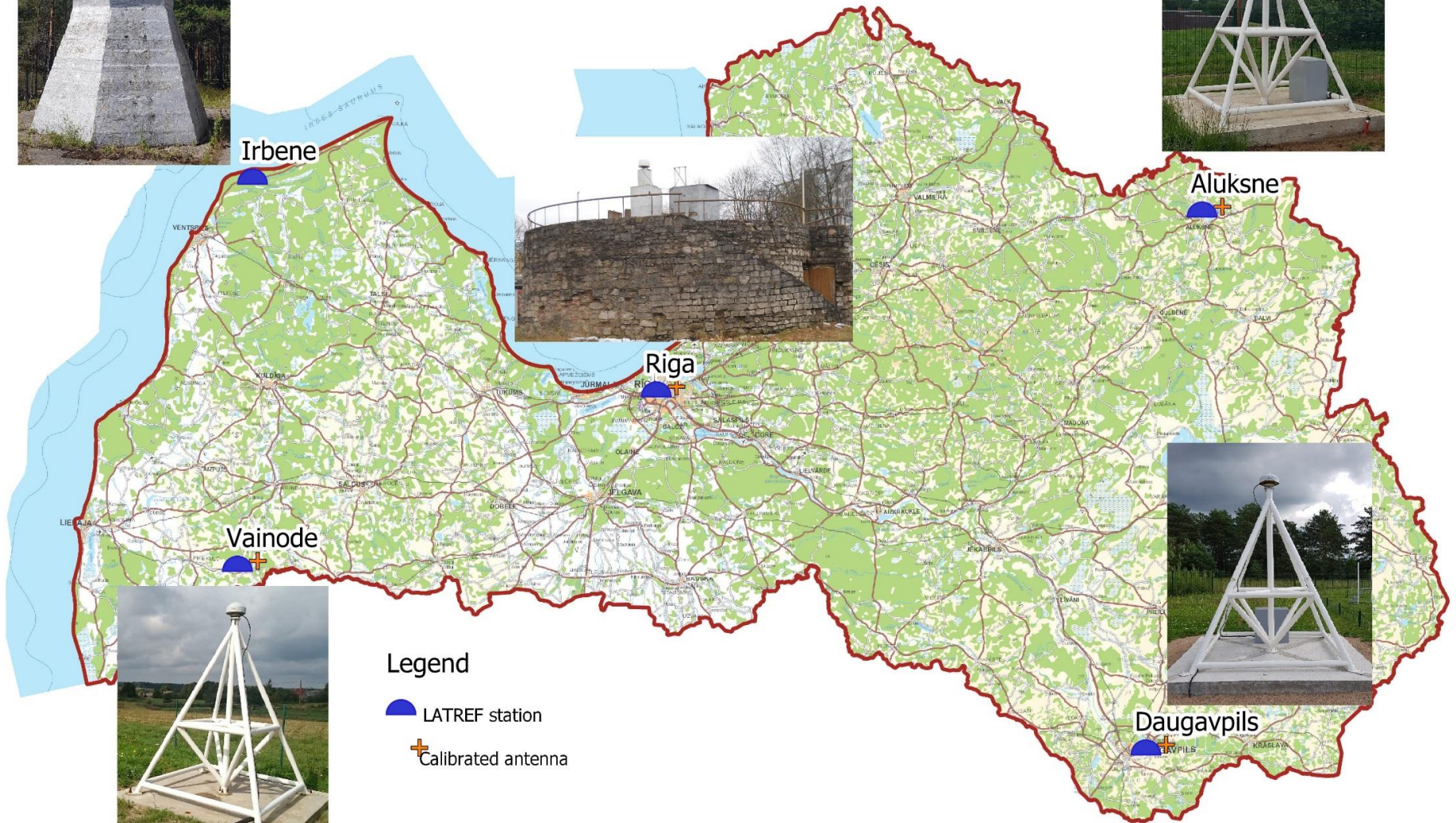


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Introduction

- Latvian coordinate system LKS-20
- LatPos RTK service
- Geomagnetic measurements
- Gravimetric measurements

LATREF stations



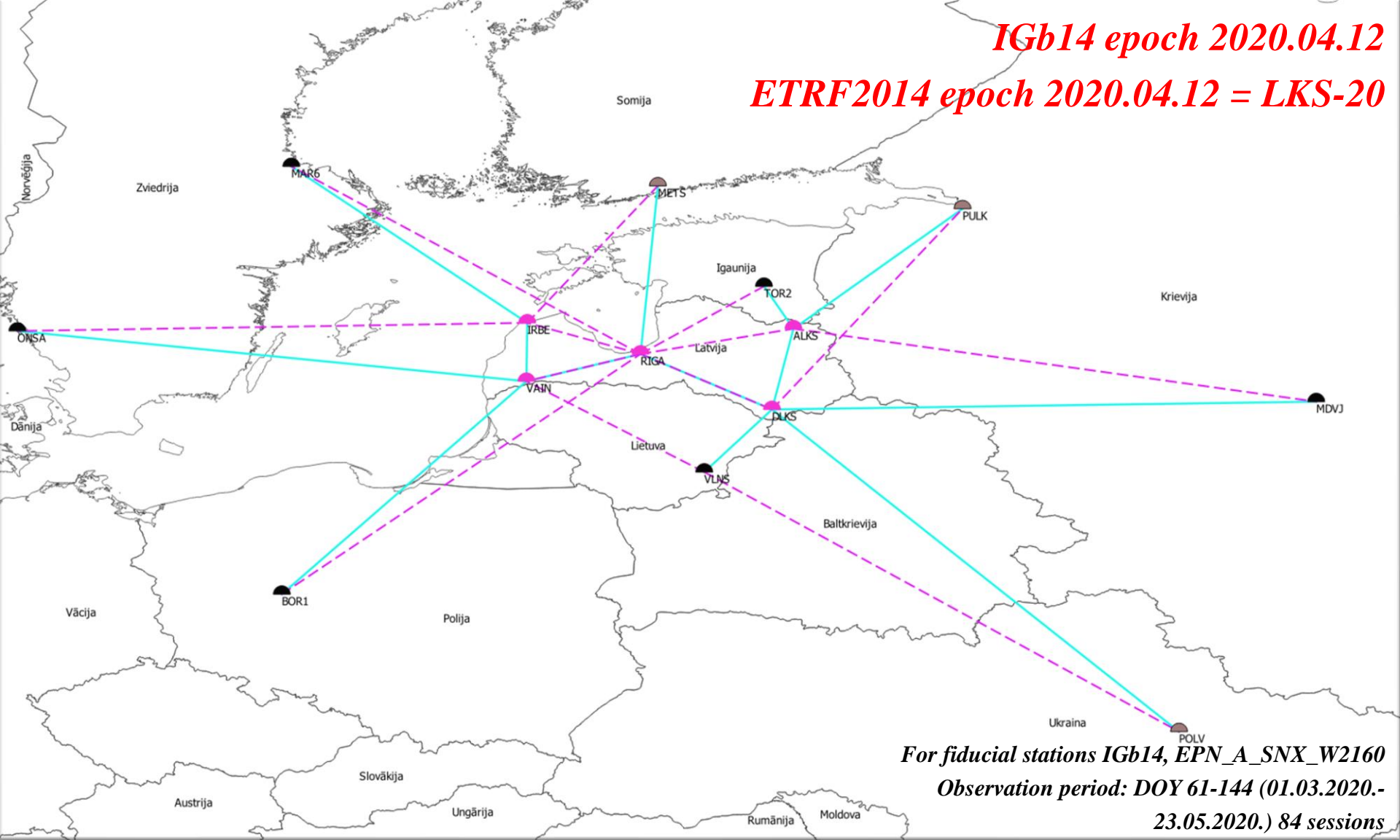
Legend

 LATREF station

 Calibrated antenna



IGb14 epoch 2020.04.12
ETRF2014 epoch 2020.04.12 = LKS-20



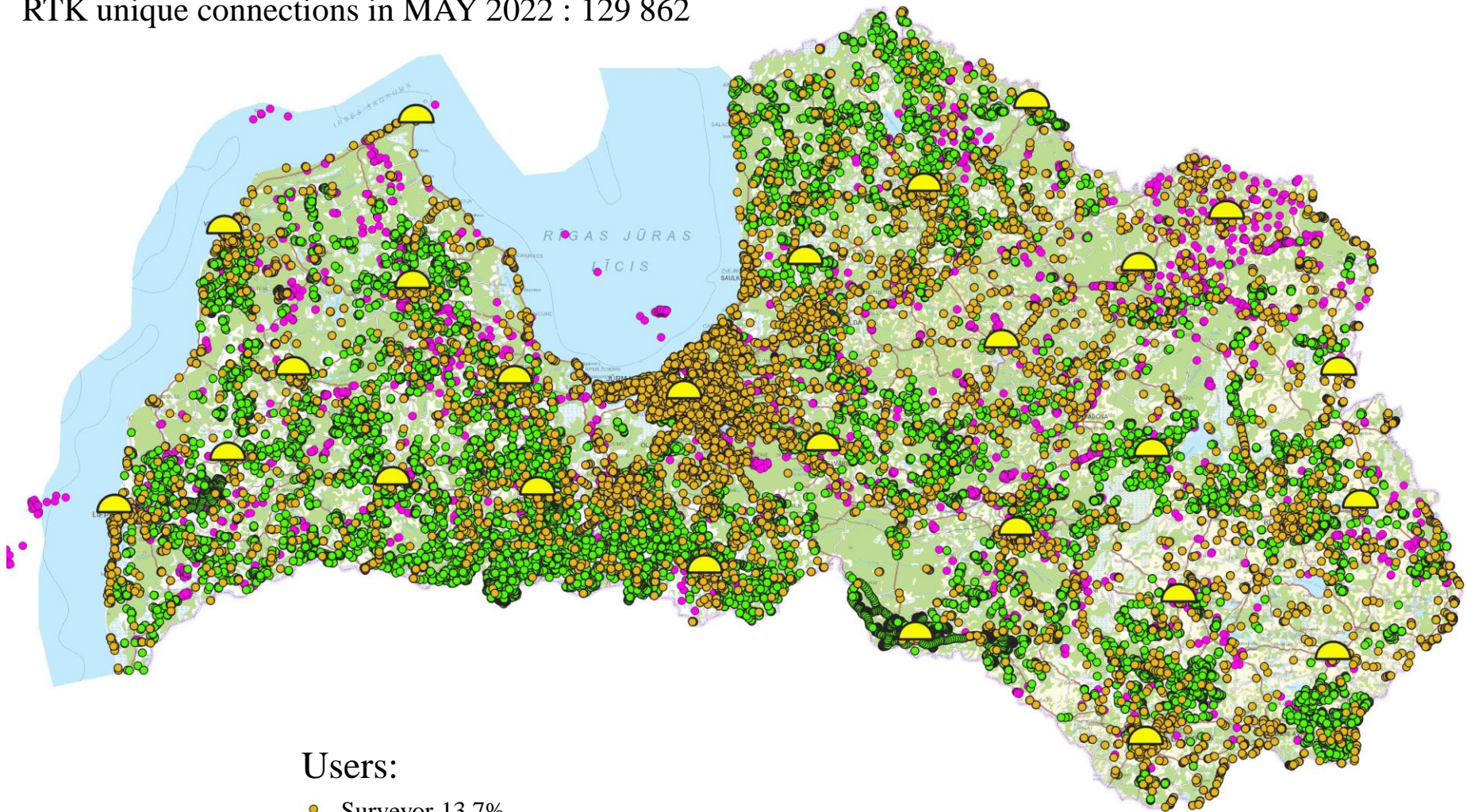
For fiducial stations IGb14, EPN_A_SNX_W2160
Observation period: DOY 61-144 (01.03.2020.-
23.05.2020.) 84 sessions

RIGA station coordinates of final version compare to EPN official coordinates in ETRF2014 (354/2014 – 261/2021)

	X (M)	Y (M)	Z (M)
LGIA	3183899,5126	1421478,2670	5322810,6819
EPN	3183899,5134	1421478,2671	5322810,6832
	X (MM)	Y (MM)	Z (MM)
Difference	-0,8	-0,1	-1,3

LatPos (GPS NAVSTAR, GLONASS, Galileo, BeiDou) RTK users

RTK unique connections in MAY 2022 : 129 862

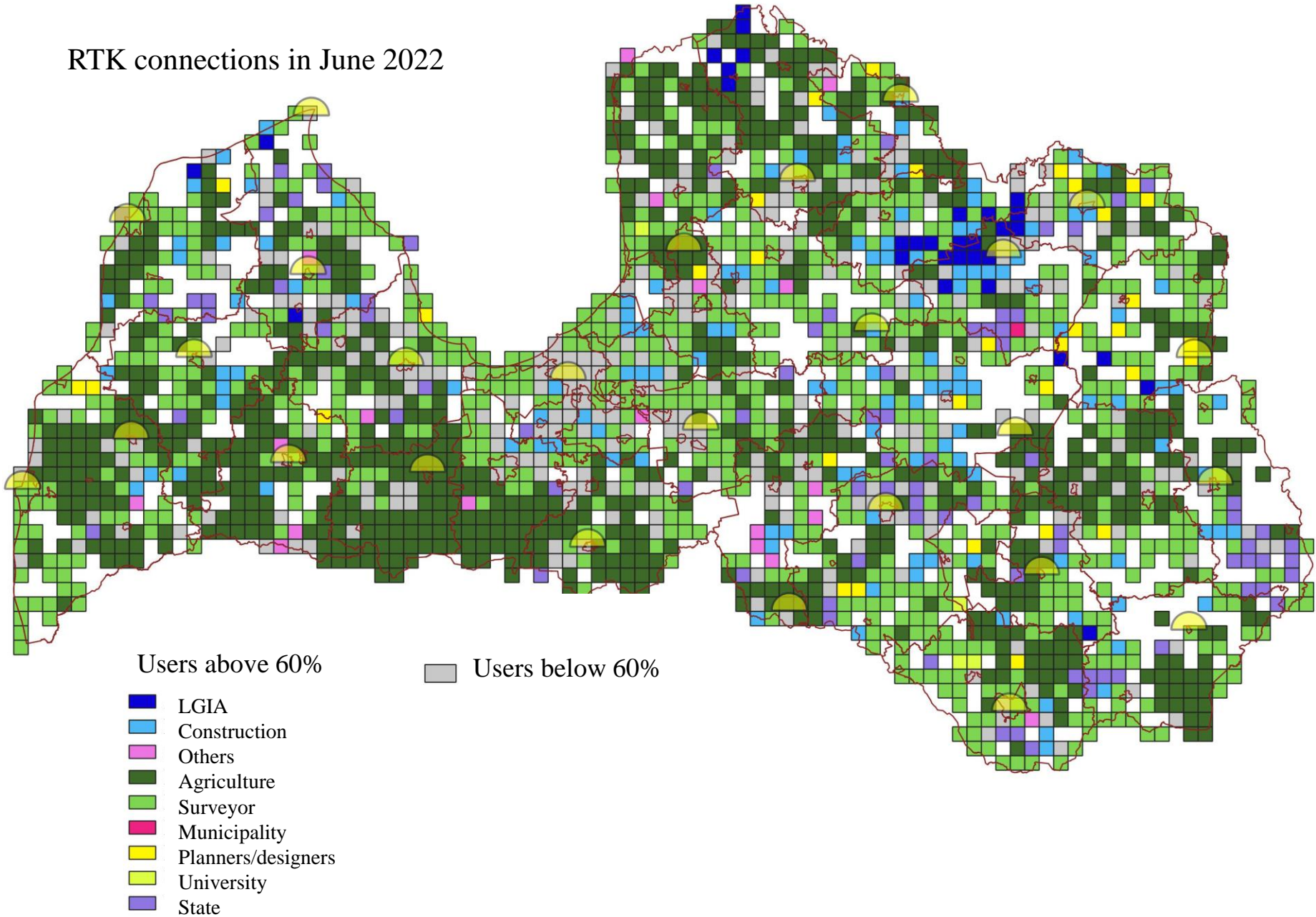


Users:

- Surveyor 13,7%
- Agriculture 65,4%
- Others 20,9%

LatPos RTK users 5x5 km grid

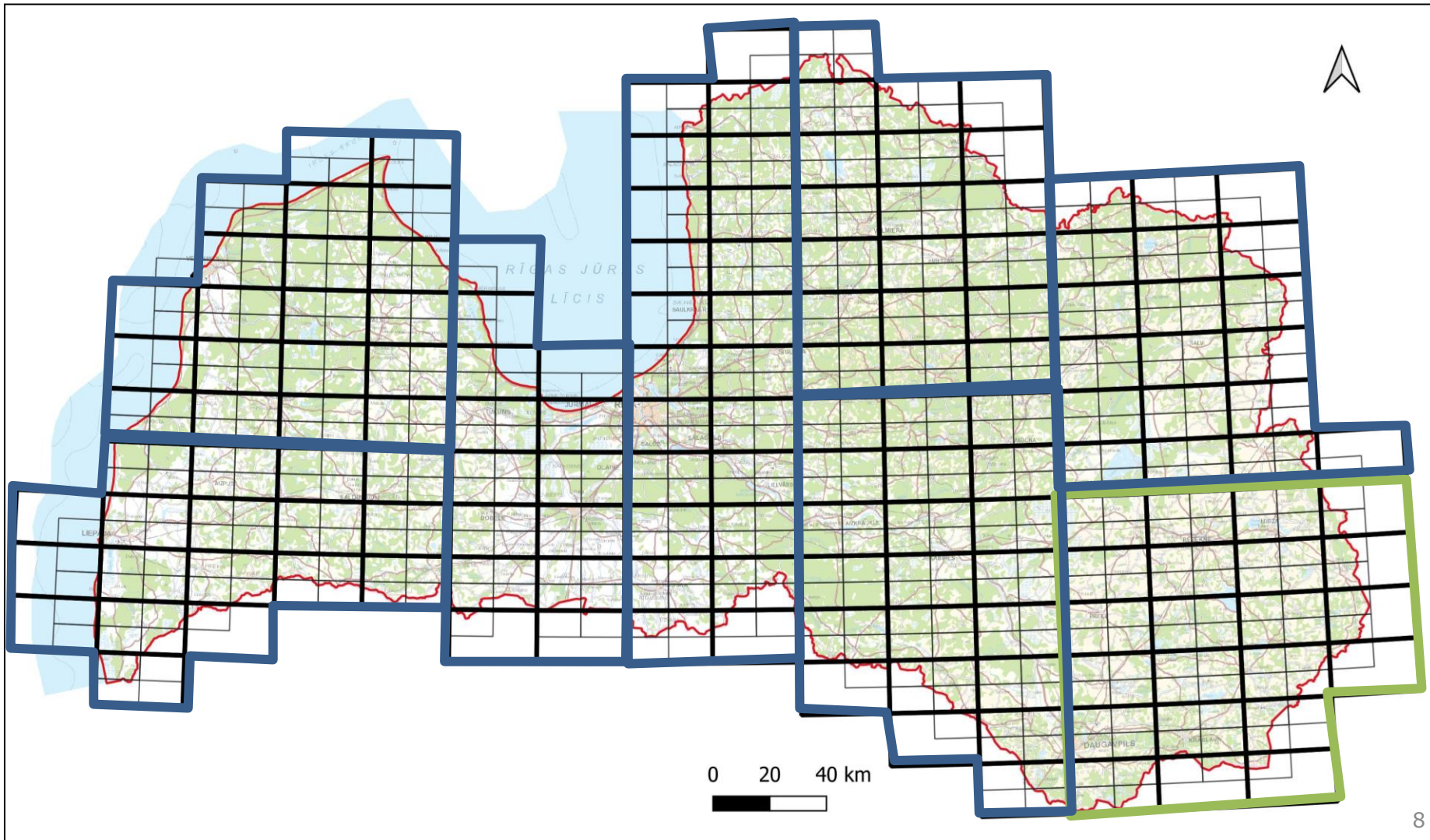
RTK connections in June 2022





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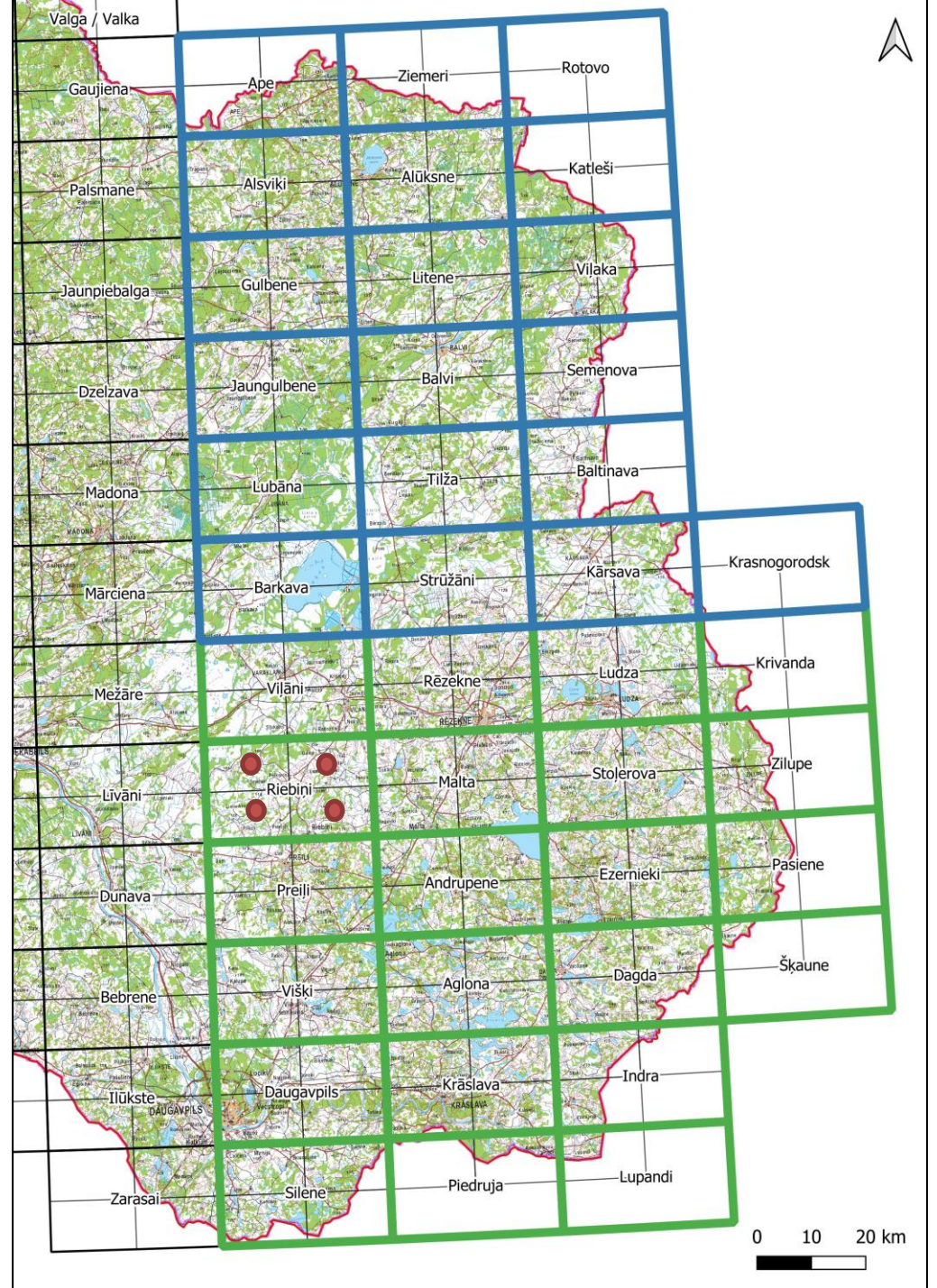
Geomagnetic Declination measurements for mapping purposes scale 1:50 000



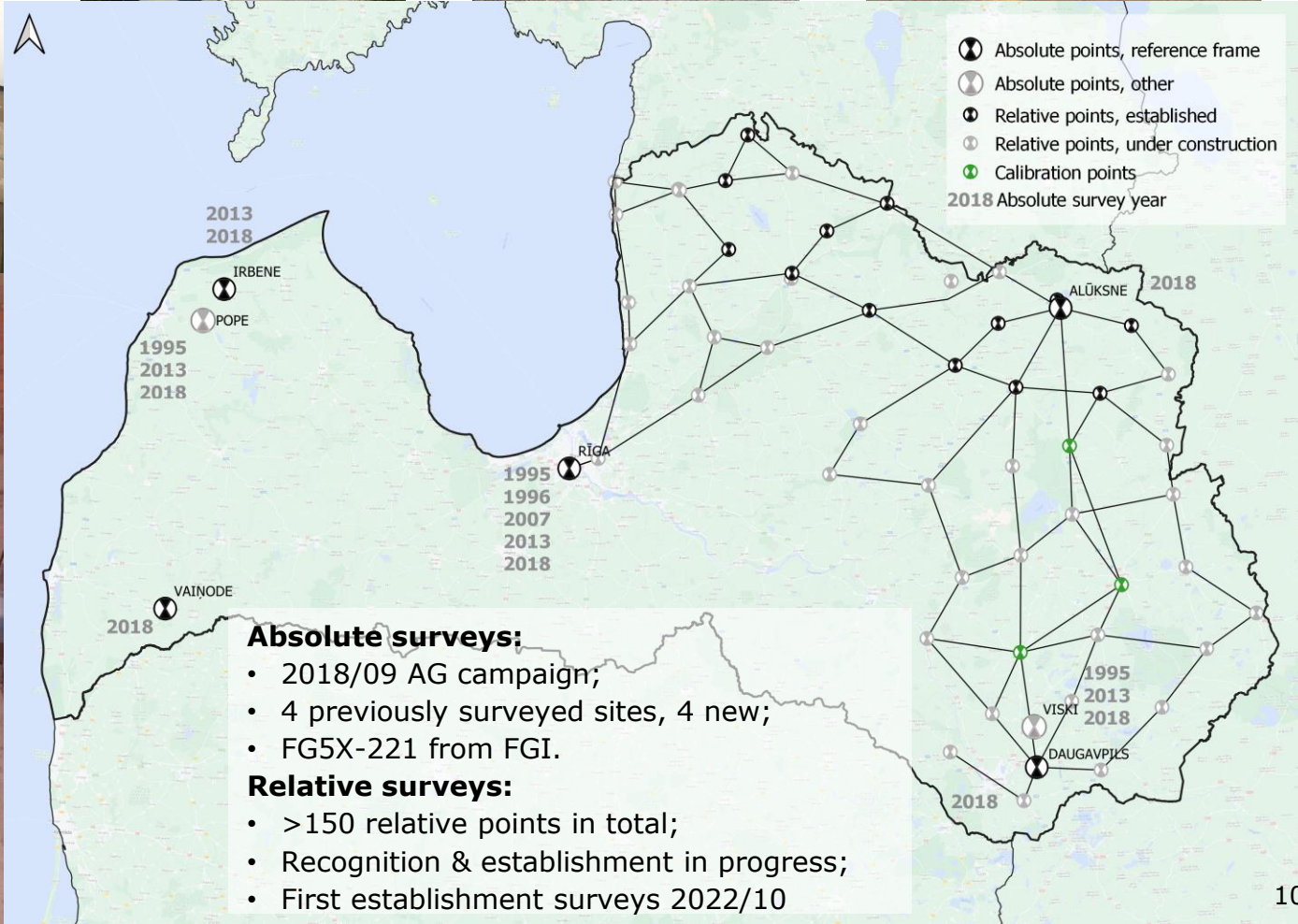


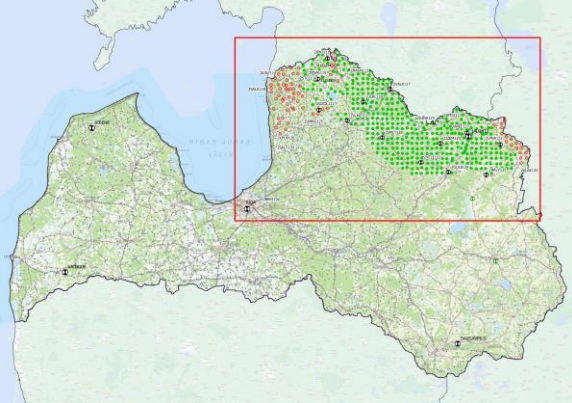
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Declination measurements
are performed in 4 places
for one map 1:50 000



Gravity reference frame establishment 2018-2022



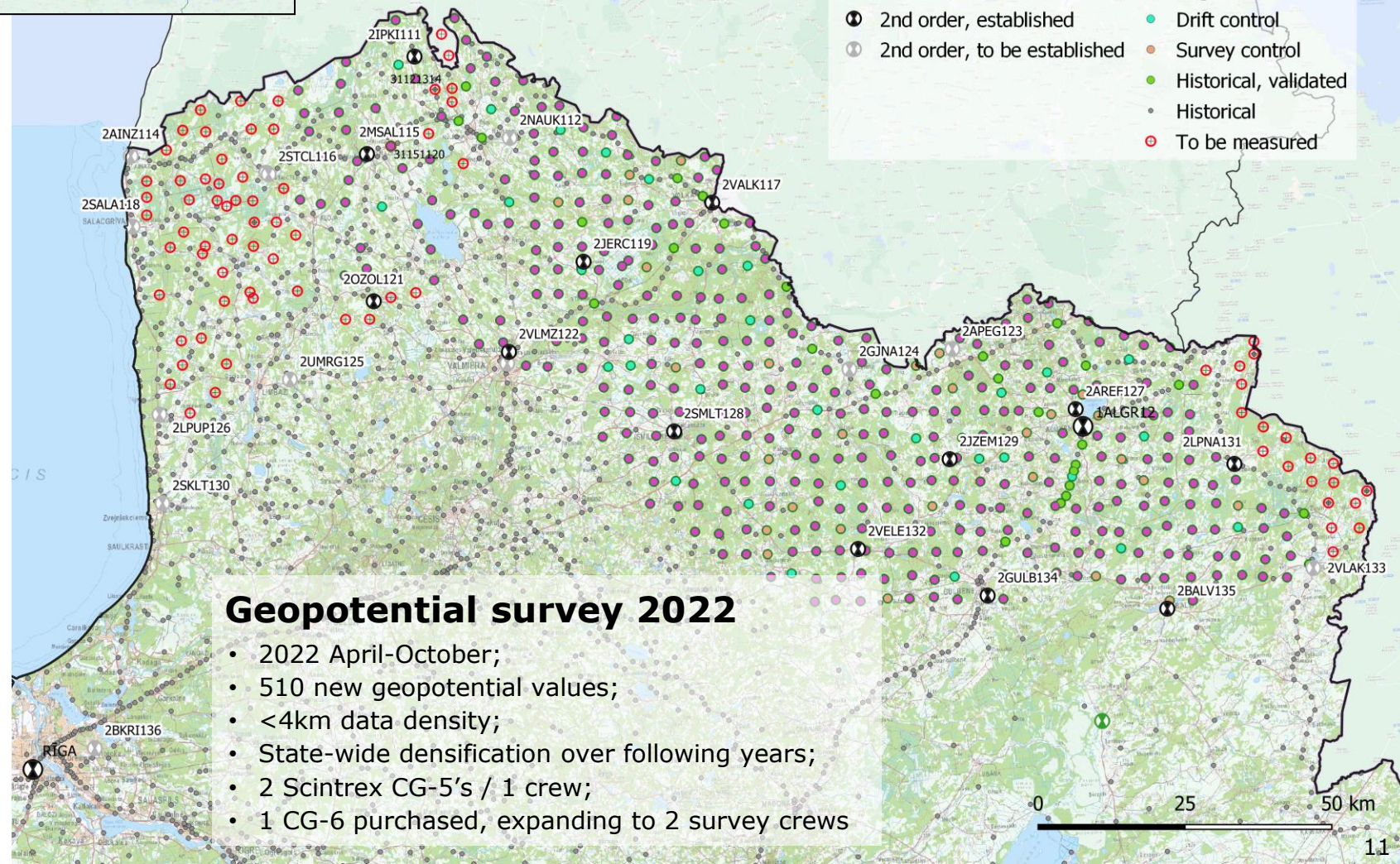


Reference points

- ⊗ 1st order
- ⊙ 2nd order, established
- ⊖ 2nd order, to be established

Geopotential stations

- Regular
- Drift control
- Survey control
- Historical, validated
- Historical
- ⊕ To be measured



Geopotential survey 2022

- 2022 April-October;
- 510 new geopotential values;
- <4km data density;
- State-wide densification over following years;
- 2 Scintrex CG-5's / 1 crew;
- 1 CG-6 purchased, expanding to 2 survey crews



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Outreach

- ✓ Annual Day of Geodesist (virtual ~130 participants)
- ✓ Work on Struve geodetic arc - Latvian preservation and development council
- ✓ GeoRefAct cooperation with Estonian Land Board
- ✓ Open day for students – introduction of LGIA Department of Geodesy



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Thank you for your attention!

Paldies par uzmanību!

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