



Latvijas Ģeotelpiskās  
informācijas aģentūra

## **CORS network in Latvia**

9th EUPOS® Technical Meeting

Academic and Science centre of the University of Latvia, Riga

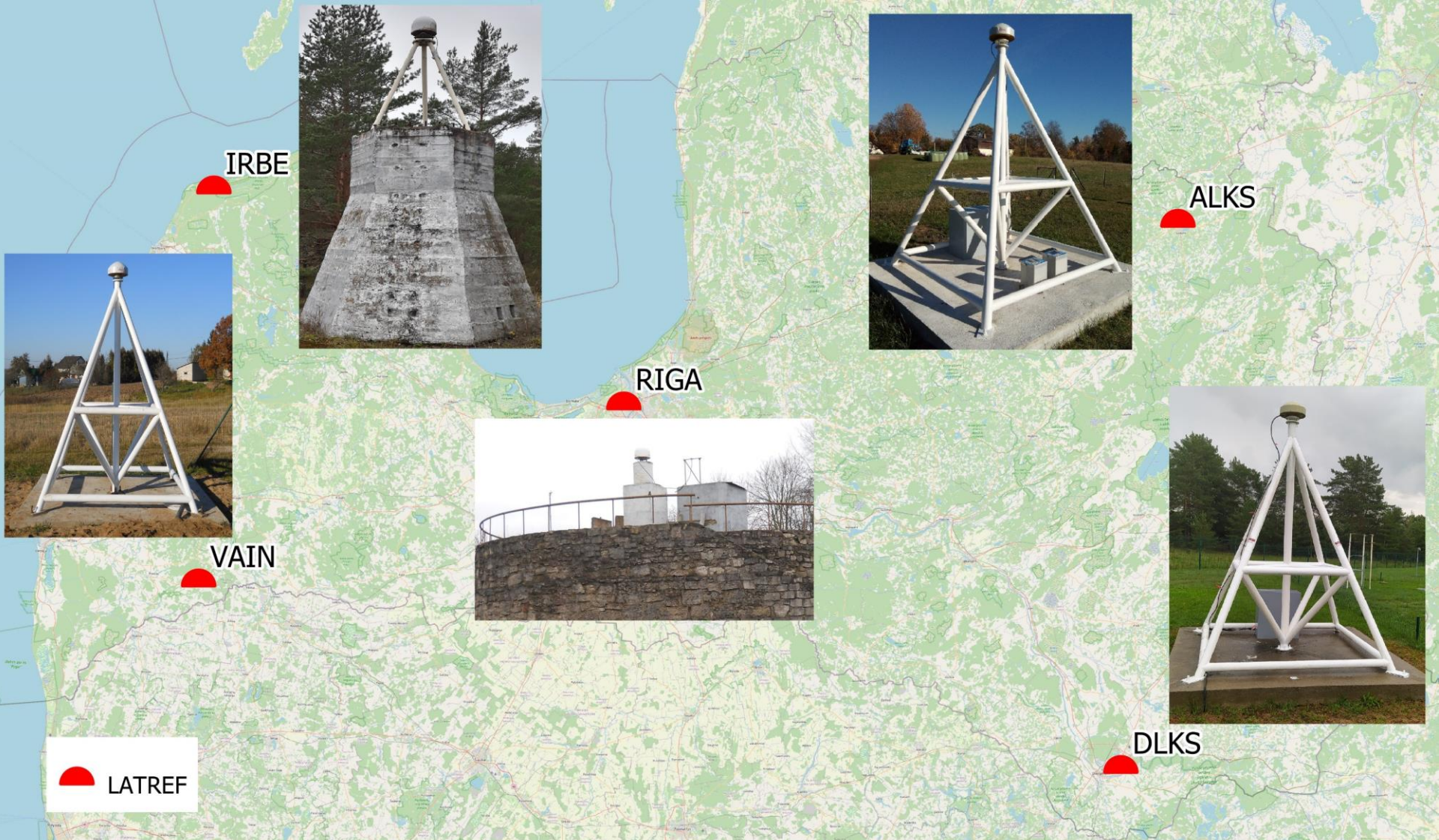
22.-23.11.2023

Department of Geodesy  
Geodetic measurements division  
senior geodetic engineer Andris Priževičs

# LATREF base stations



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IRBE

ALKS

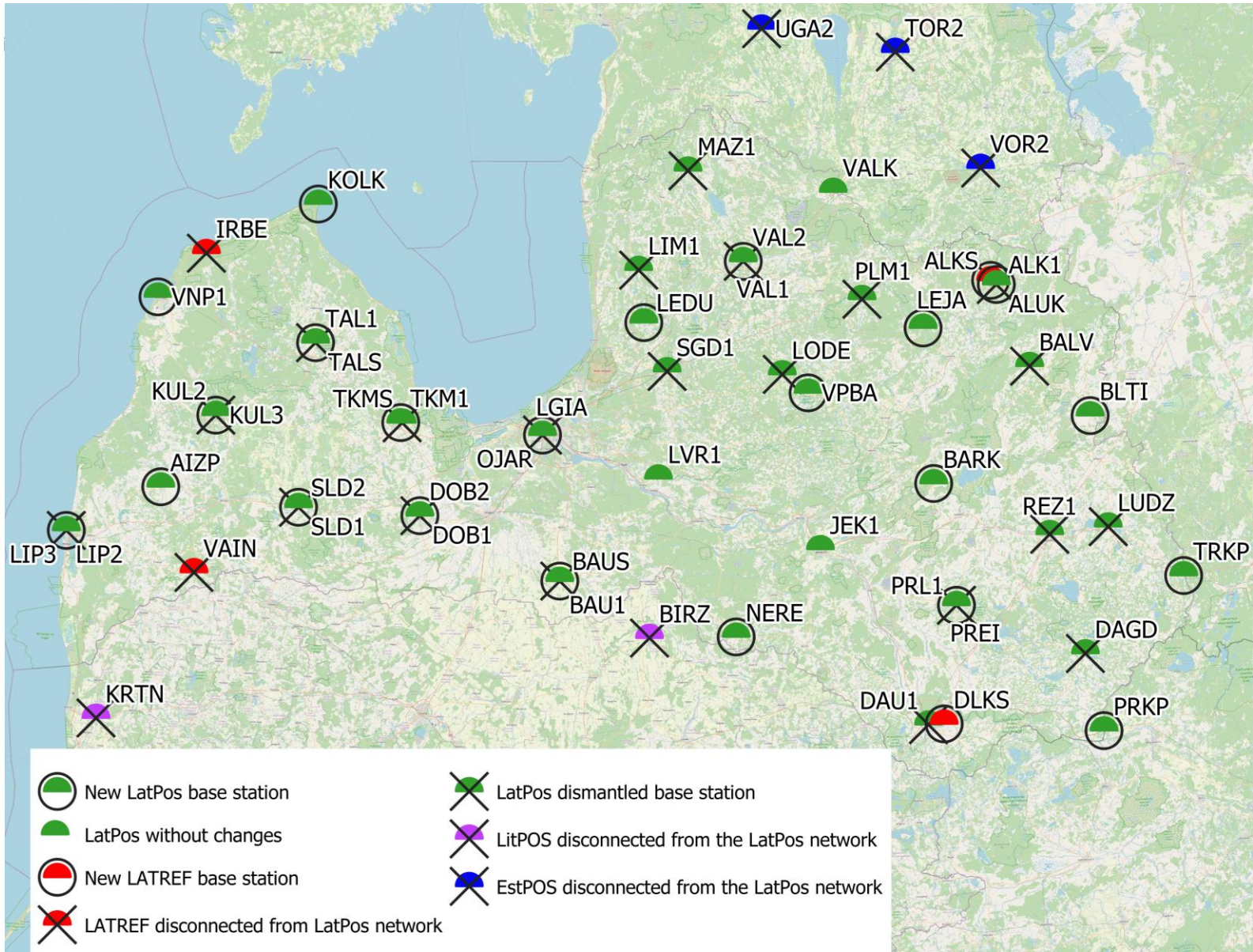
RIGA

VAIN

DLKS

 LATREF

# Base station changes since 2019





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# Technical characteristics of LatPos 15.11.2023 (1)

Funding for the maintenance of LatPos and LATREF (except RIGA) base stations is received from the Ministry of Defense.

**Free of charge since July 1, 2018**

LatPos support is available every workday from 8:30 to 17:00

Operating base stations:

- LatPos 25
- LATREF 1
- EstPOS 5
- LitPOS 4

Received GNSS systems in LatPos and LATREF base stations:

- GPS NAVSTAR
- GLONASS
- Galileo
- BeiDOU

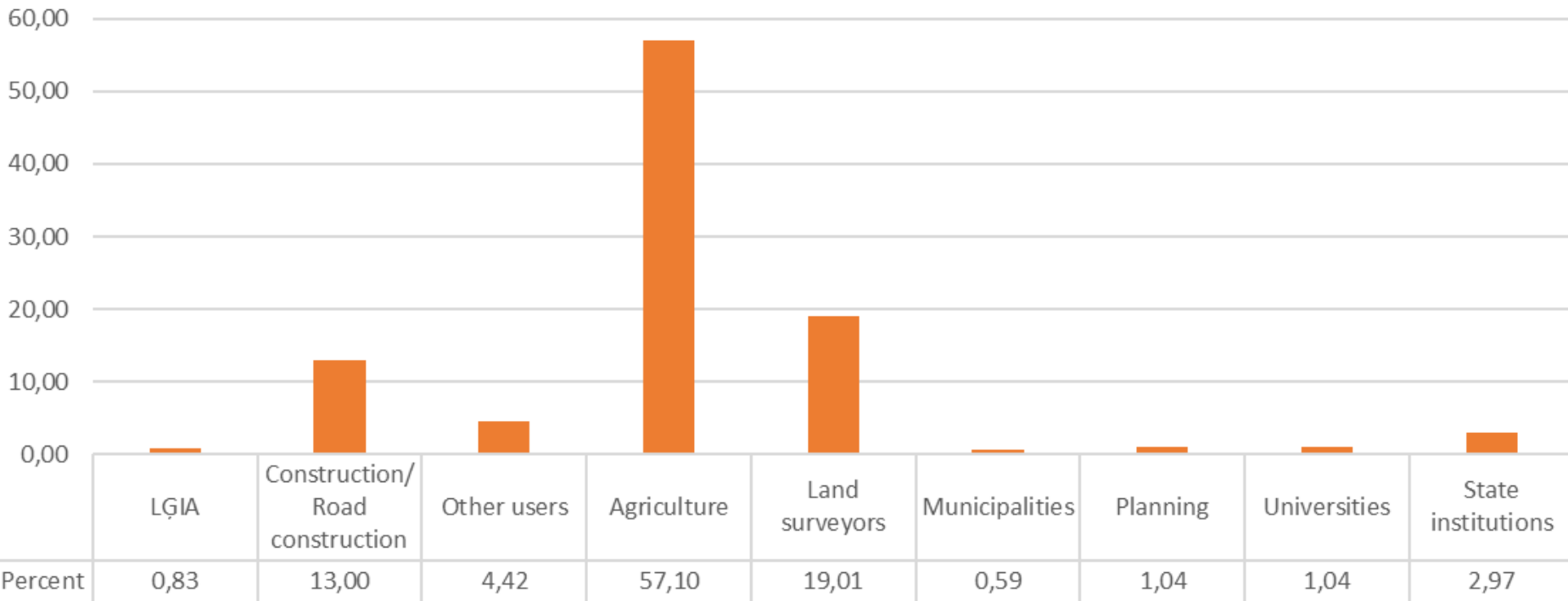




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# Distribution of LatPos users by group, as of 15.11.2023

Distribution by groups

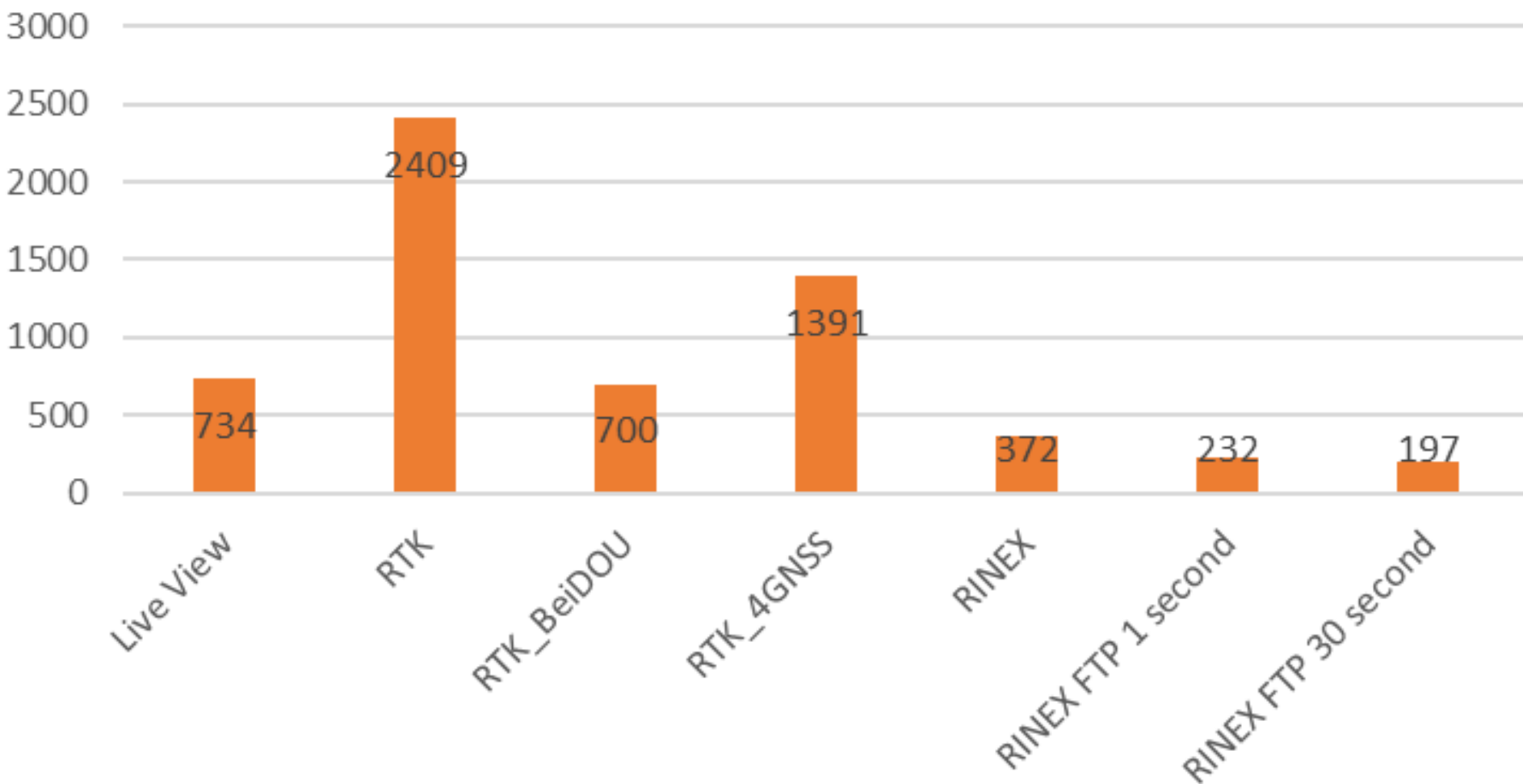




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# The number of users by products, as of 15.11.2023

## Number of service subscriptions

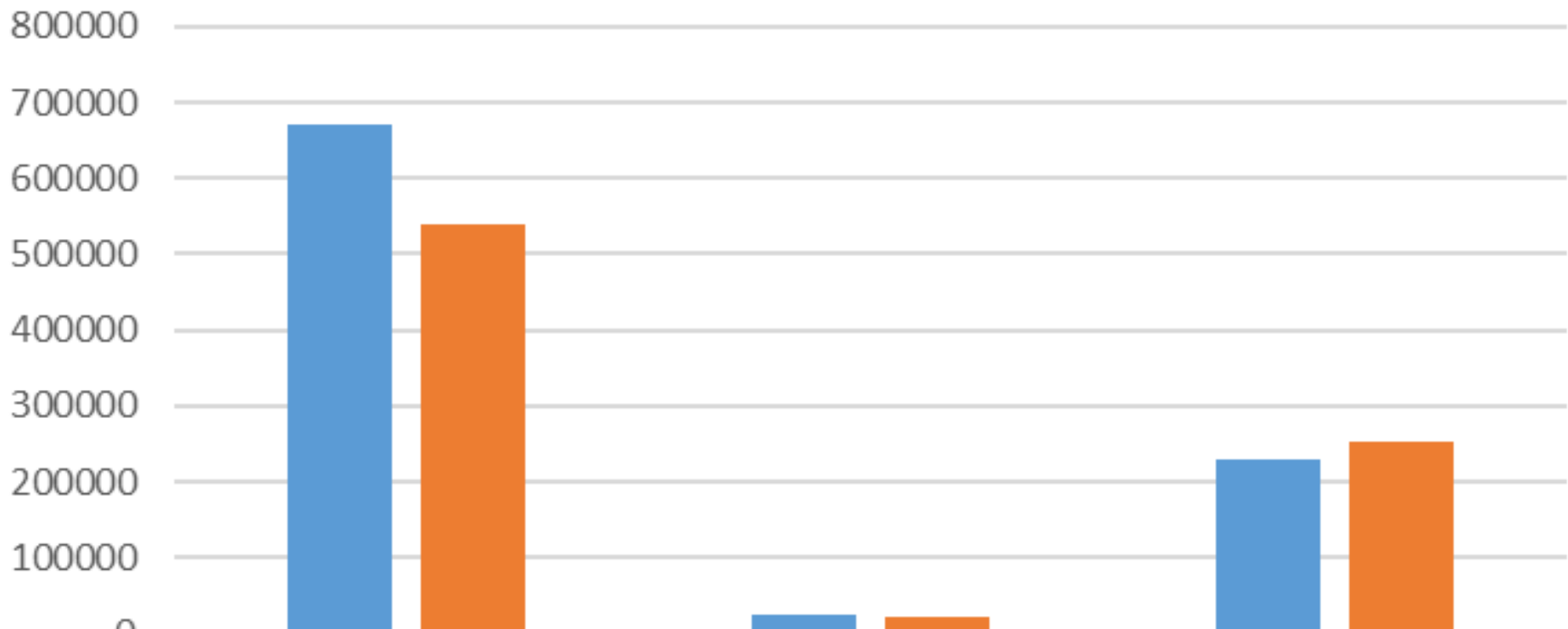




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# Use of RTK services by product

## Number of connections by RTK service



	RTK	RTK_BeiDOU	RTK_4GNSS
■ 2022	671219	24850	228546
■ 2023	538867	23211	251630

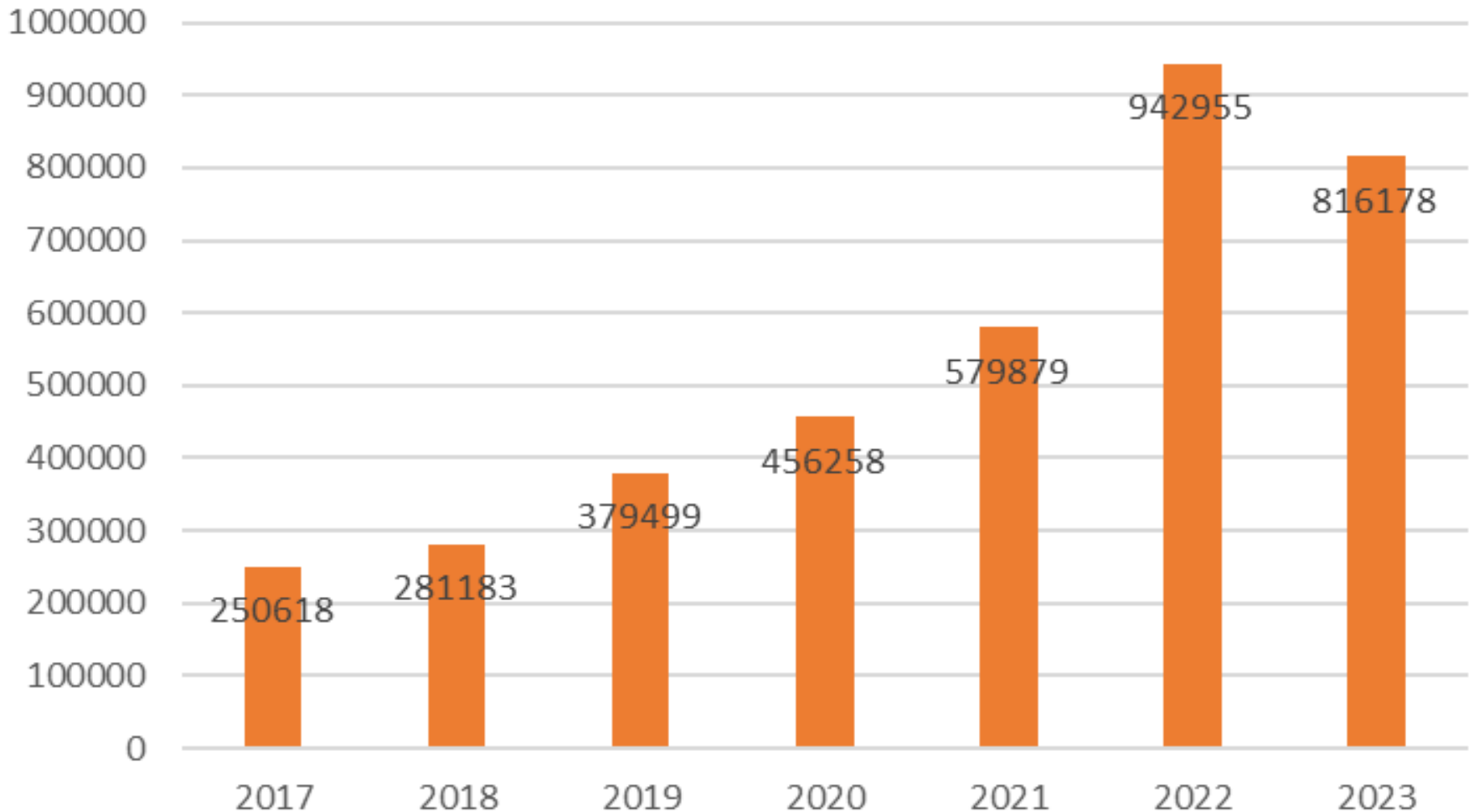




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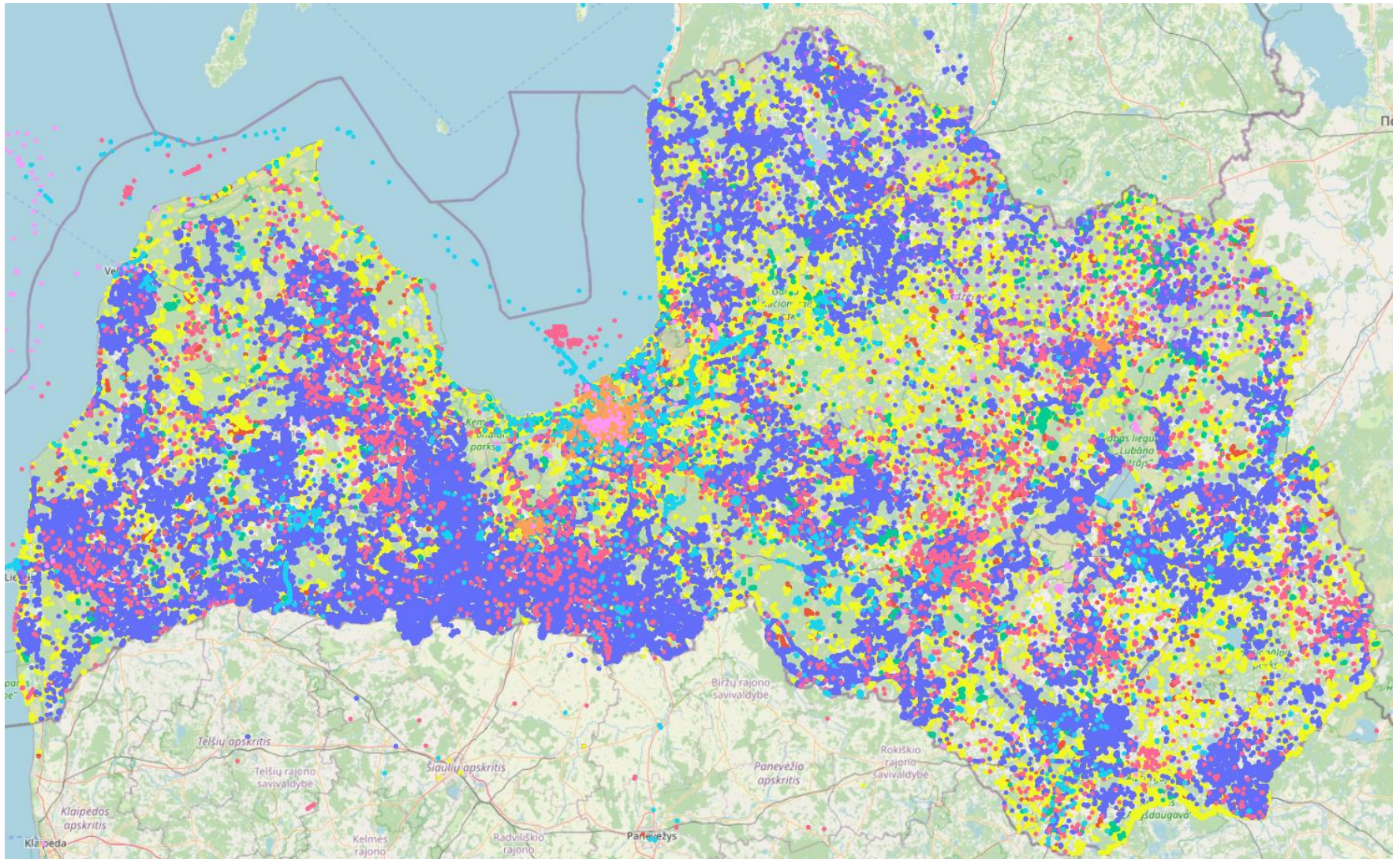
# Activity of LatPos users (RTK) connections by years

The number of connections by year





# Location of RTK users in the territory of Latvia in 2022



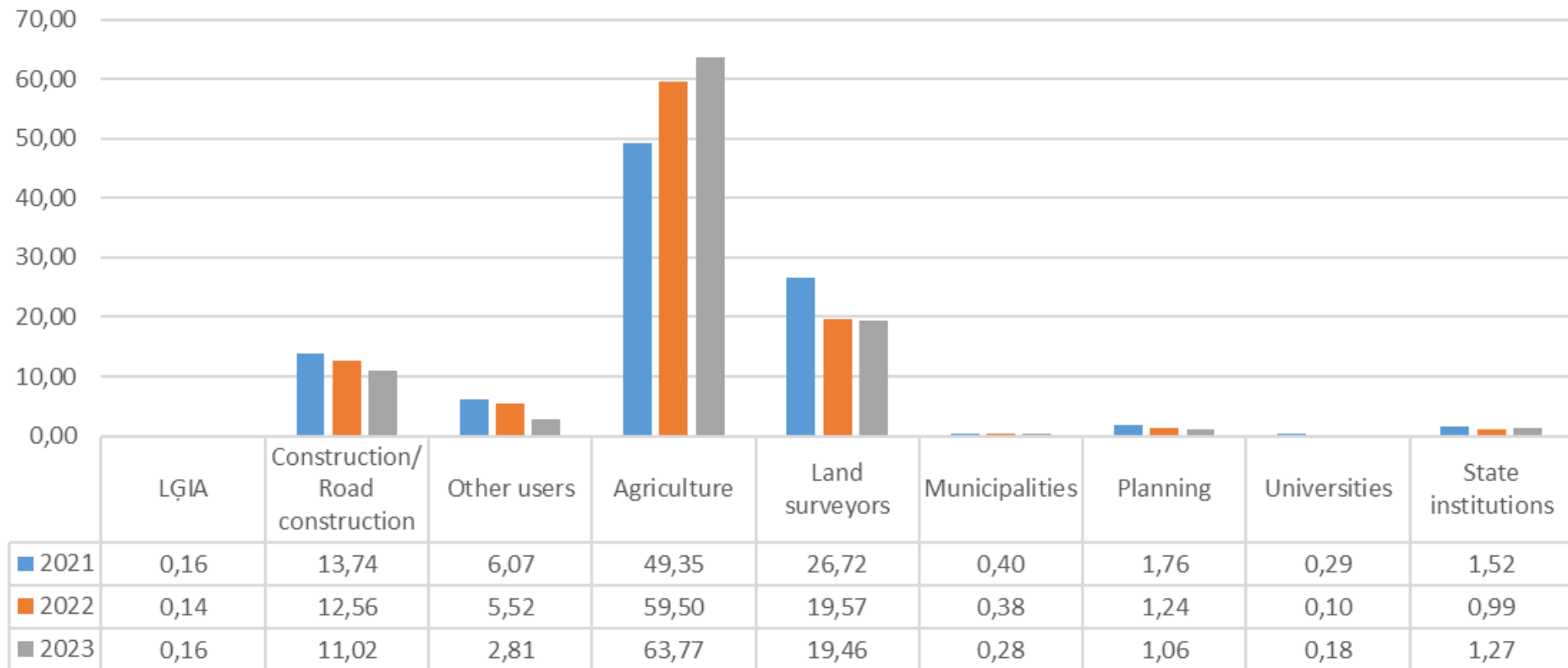
In 2022, a total of 942,955 connections to the LatPos network were registered



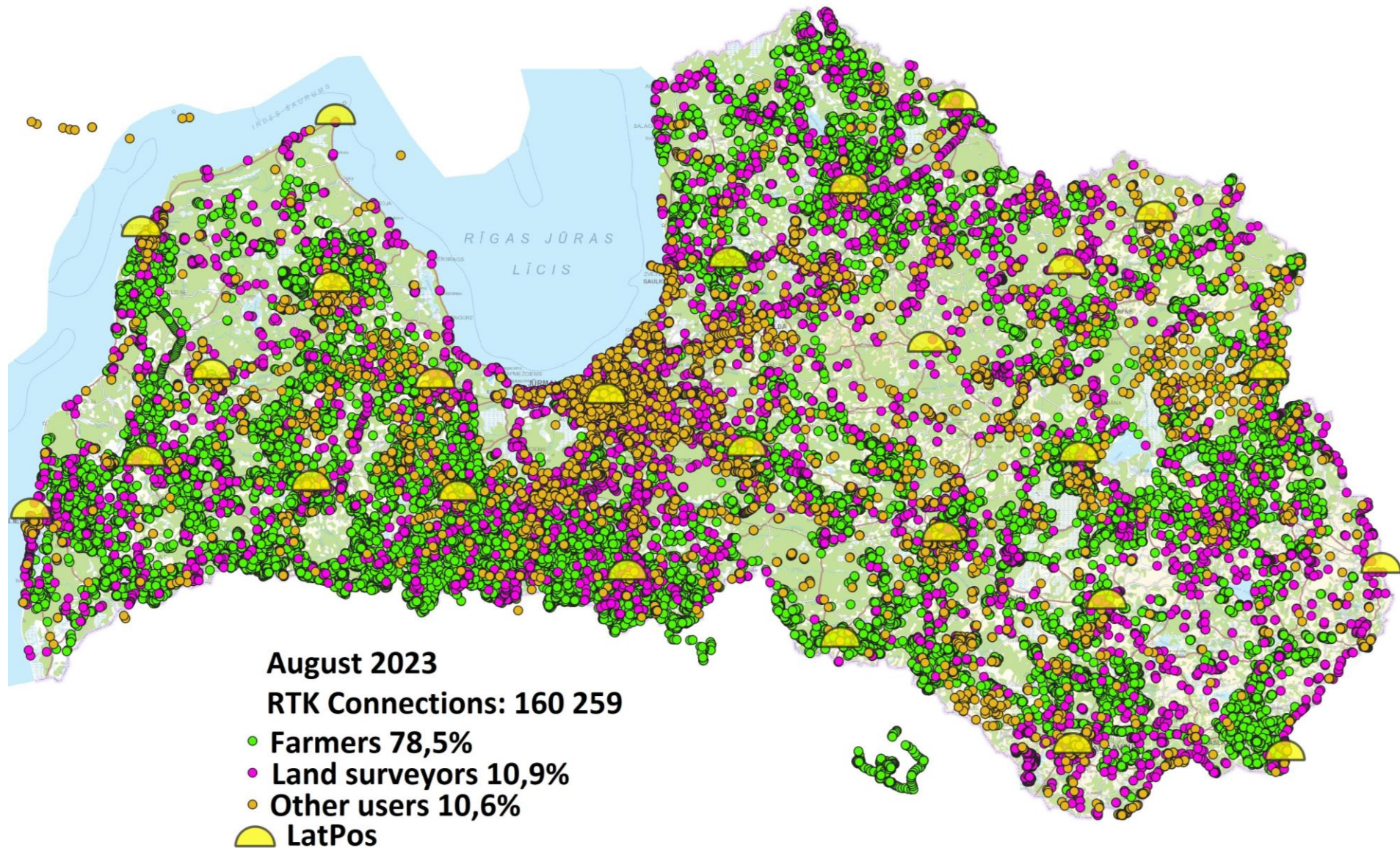
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# LatPos RTK users percentage distribution by group

Percentage of connections by groups



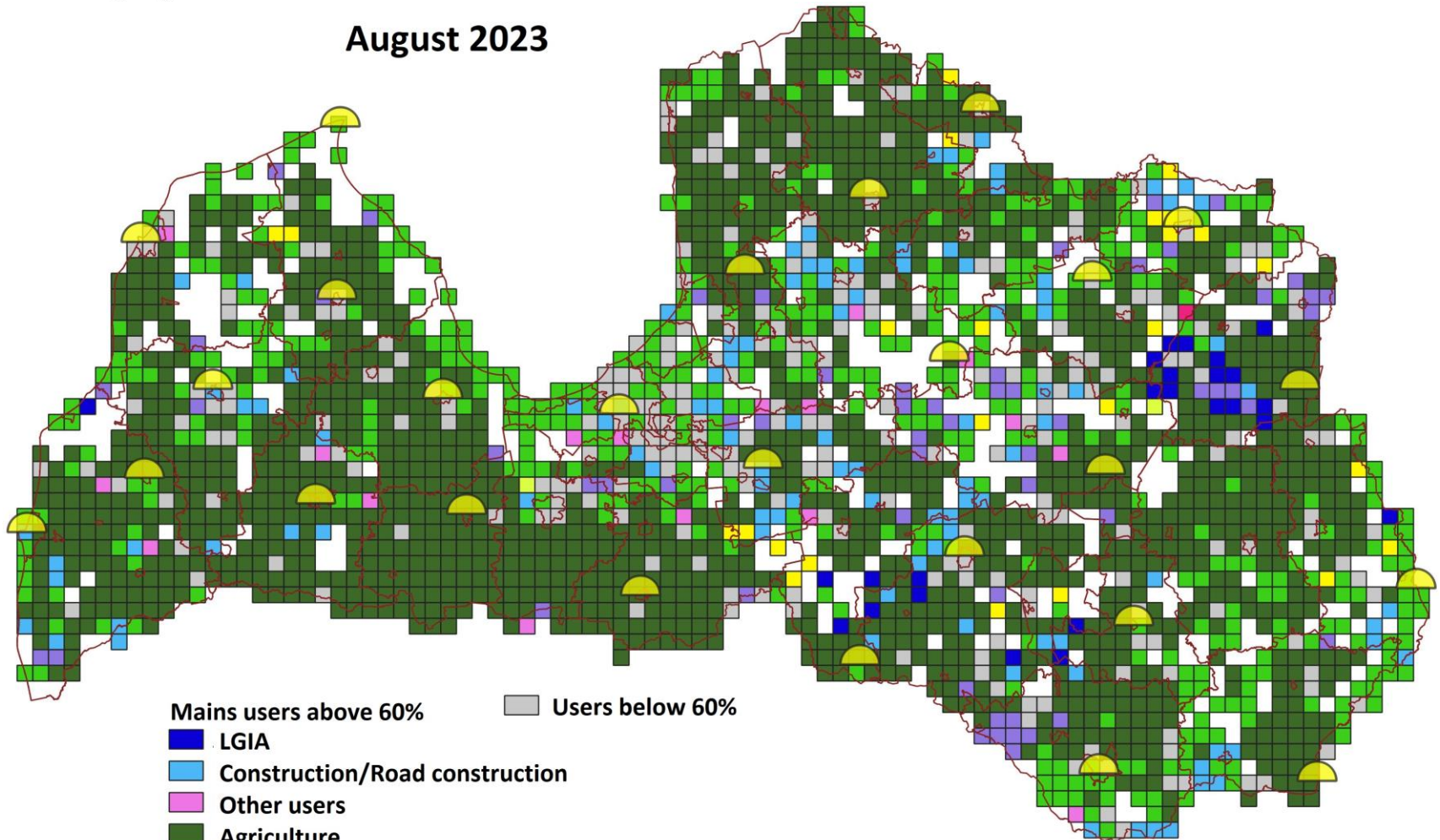
# Main users of RTK, 2023 August (1)



# Main users of RTK, 2023 August (2)



August 2023



Mains users above 60%

Users below 60%

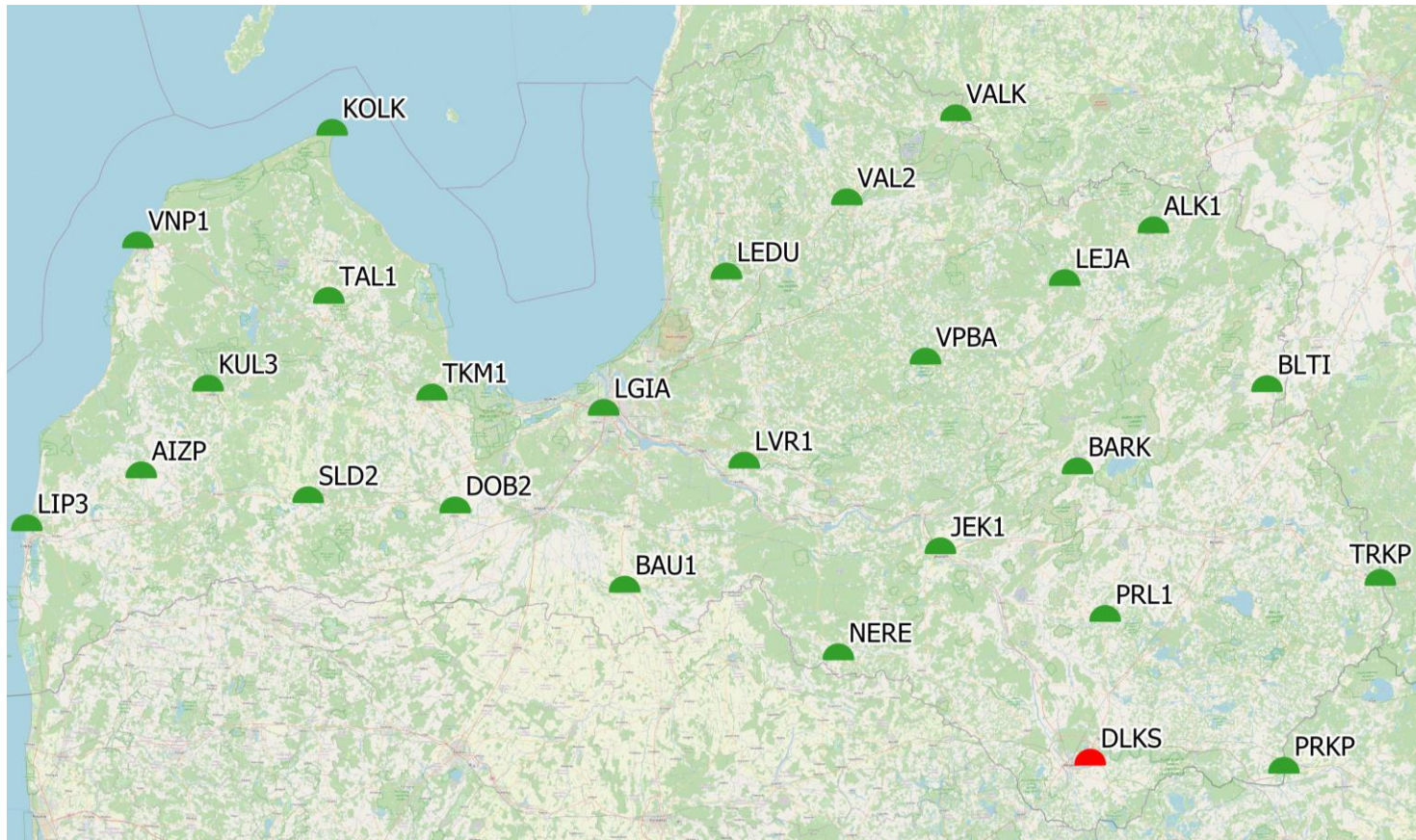
- LGIA
- Construction/Road construction
- Other users
- Agriculture
- Land surveyor
- Municipalities
- Planning
- Universities
- State institutions



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# RINEX file distribution

- RINEX data can be downloaded using the LatPos SBC website or FTP server.
- RINEX files can only be downloaded from LatPos base stations.
- Raw data files are not available for download.
- Files are generated only in RINEX 3.04. version since 2022. 19. August.

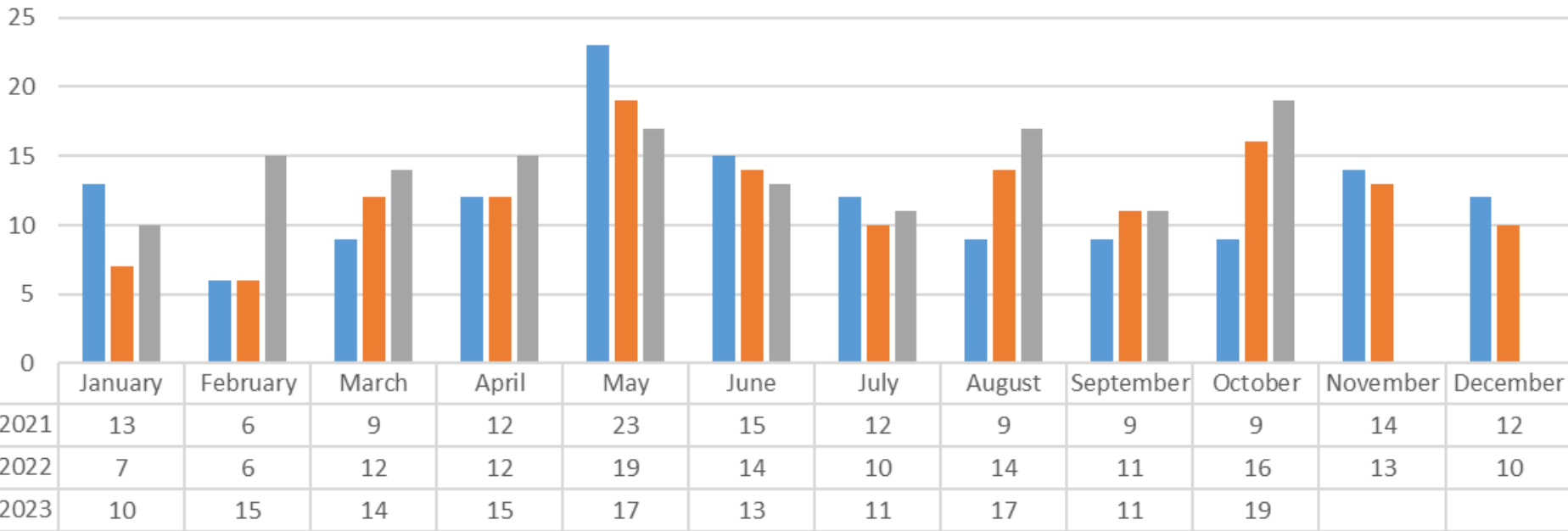




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# The number of users of the RINEX service on the LatPos SBC website

Unique users of the RINEX



Main users:  
Land surveyors  
Universities



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# RINEX file quality control and future plans

- The license currently in use of the LEICA QC data quality control software does not provide automated data and data stream control, so the decision has been made to use the recently purchased G-Nut Anubis RT software for data quality control.
- Efforts are being made to ensure continuous data flow for all LatPos and LATREF base stations. Where the biggest hurdle is to provide a continuous electrical connection to the data network equipment. Which would ensure uninterrupted provision of RTK services to users and uninterrupted data stream.
- Information about interference in GNSS signals is collected, which is obtained using the built-in LEICA GR30 receiver tool: Interference Detection







Latvian Geospatial  
Information Agency

**Thank you for your attention!**