Broadband infrastructure and services mapping Latvia case study

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The Second Workshop on "Strengthening Broadband Infrastructure and Services across the Europe Region and beyond"

November 8, 2023

Where is my broadband?

TARGET

- Advancing digital transformation at local and national level
- Bringing together all data related to broadband provision in one platform
- To make the results of the broadband availability survey available to anyone
- Identify white areas in broadband coverage

- According to the European Commission's strategy for the European gigabit society, by 2025, all European households, both in rural and urban areas, must have an Internet access service connection with a download speed of at least 100 Mbiti/s, which can be upgraded to a gigabit speed.

Legal acts

- Directive (EU) 2018/1972 of the European Parliament and of the Council of 11 December 2018 establishing the European Electronic Communications Code
    - Article 22 of the EECC requires regulators to carry out a survey of the coverage of electronic communications networks before the end of 2023
- Electronic Communications Act of Latvia
    - The Ministry of Transport, in accordance with its competence in the electronic communications sector, ensures: creation of a geographical information system for broadband availability, as well as its maintenance and operation;
- Rules for submitting information in the electronic communications industry

Functions and Responsibilities

- **The Ministry of Transport** ensures the establishment of the geographic information system for broadband availability, as well as its maintenance and operation
- **Electronic Communications office of Latvia** develops and maintain Broadband infrastructure and services mapping system
- **The Public Utilities Commission** (PUC) or the **Regulator** collects data from telecom operators for the geographical survey on the availability of broadband Internet access service

Additional Documents and Consultations

- BEREC Guidelines on Geographical surveys of network deployments
- Consultations with:
  - mobile operators on 3G, 4G and 5G data and formats
  - fixed access operators on network data and formats
  - state authorities on geographical, property, busines and socioeconomic data
- Experience from others
- And ... we asked ourselves - what we need and what we want to see

VAS Elektroniskie sakari

PPĢIS

Broadband Availability Geographical Information System

Logical parts of system

VIEW

- PUBLIC access
- Broadband availability data view
- Best, fixed or mobile

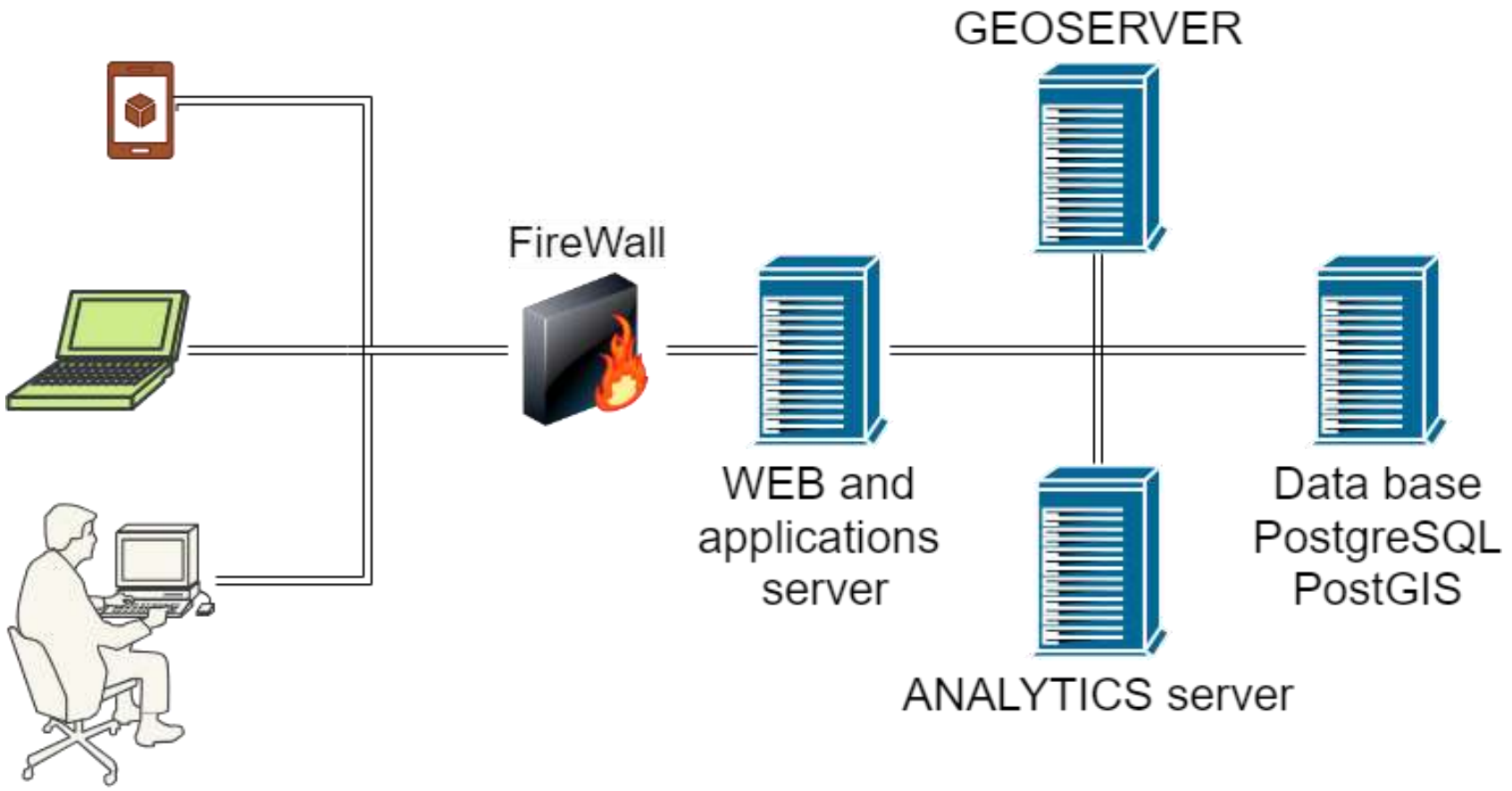
ANALYZE

- Restricted access
- Analytics
- Detailed data view
- Reports

INPUT

- Restricted access
- Data INPUT
- Data from online sources

Keep it simple



System development timeline

2022

Specifications

What are the user requirements?
Technical requirements
Graphical design
Input data
Calculated data
Security requirements
Performance

April 2023

System development

Software, IT infrastructure, connections to other data systems, user data samples collection, legal basis for data collection

September 2023

Tests

System funkcional tests

User interface tests

Performance tests

Security tests

November 2023

Data

Data collection and input in system; xlsx, shp, online data.

Calculation and Analysis of data and creating new data layers

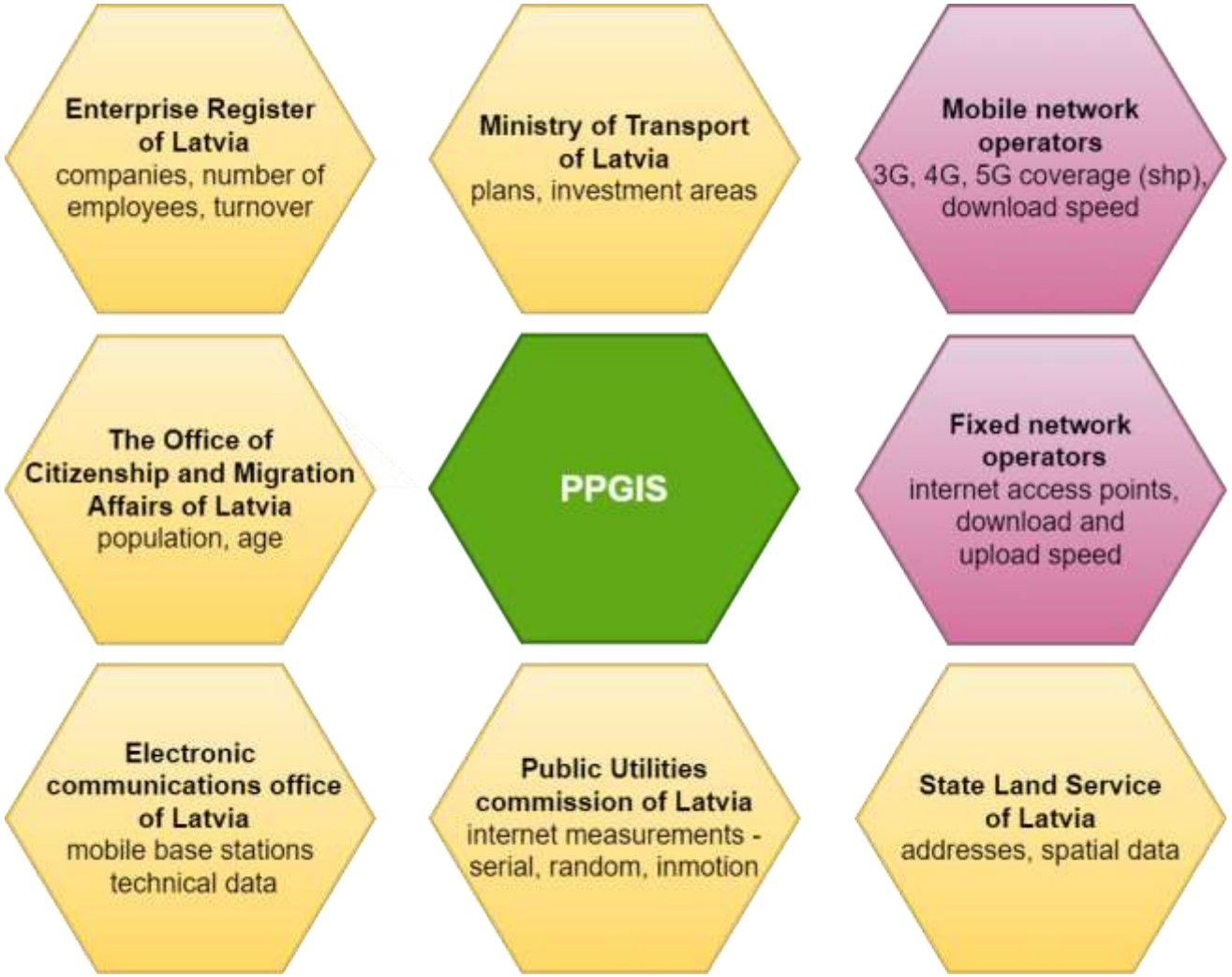
December 2023

Operation

Data collection challenges

- Lack of vector format data
- Lack of accurate data (addresses, coordinates)
- Data formats
- Automatic data gathering
- Normalizing data from different data sources

Data providers

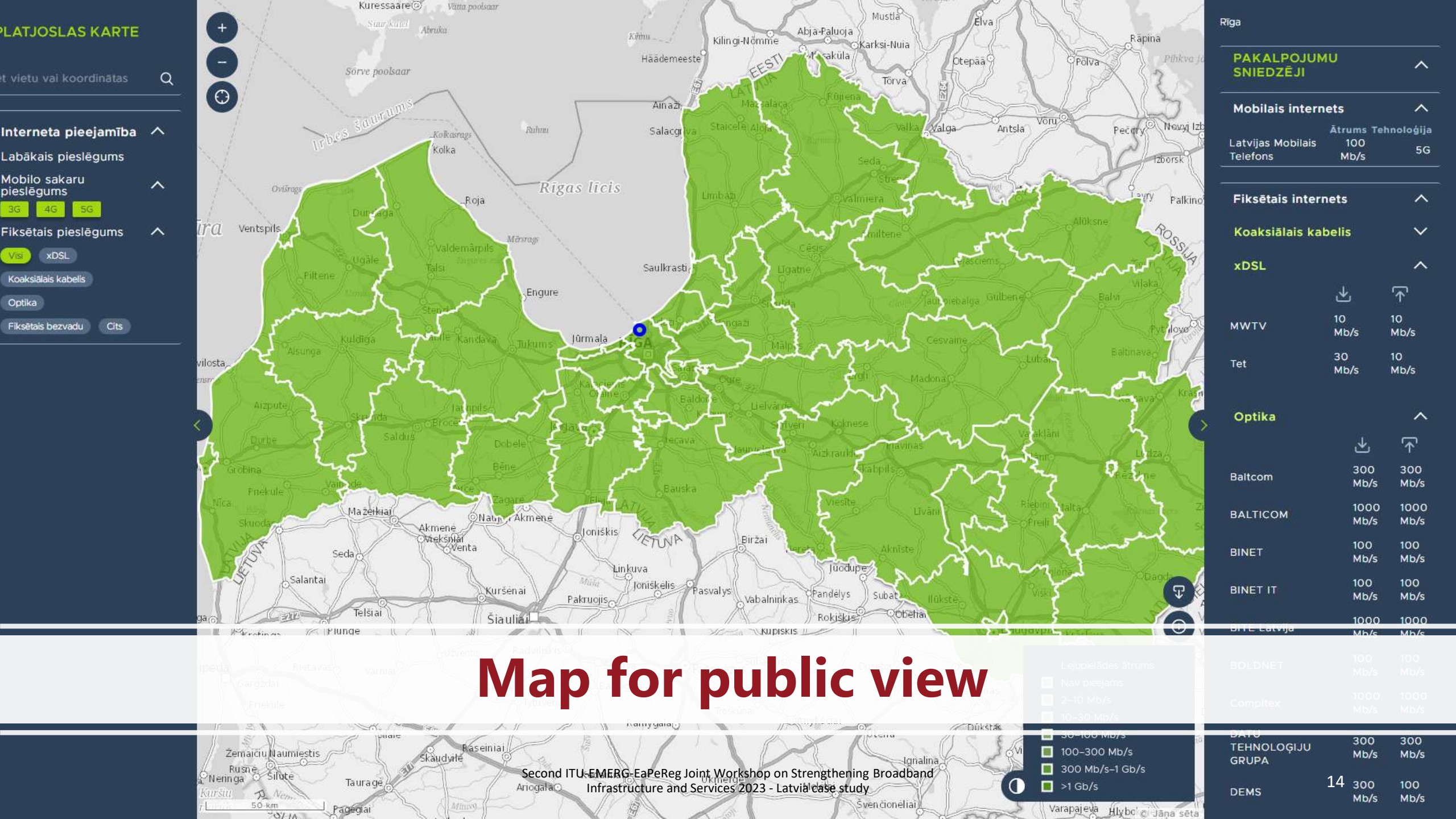


Geographical survey data

The geographic survey is a set of data that characterizes the availability of the broadband Internet access service, including the available broadband electronic communication network technology and the quality of the broadband Internet access service, displaying it in a geographic section (map) using the geographic information system.

Broadband Internet access service availability data

Availability of broadband Internet service in a fixed network	Availability of broadband Internet service in a mobile network
- address or location - upload/download speed range - technology (optics, DSL, Satellite, etc.) - very high performance network availability	- 100x100m grid - download speed range - technology (3G, 4G, 5G) - very high performance network availability



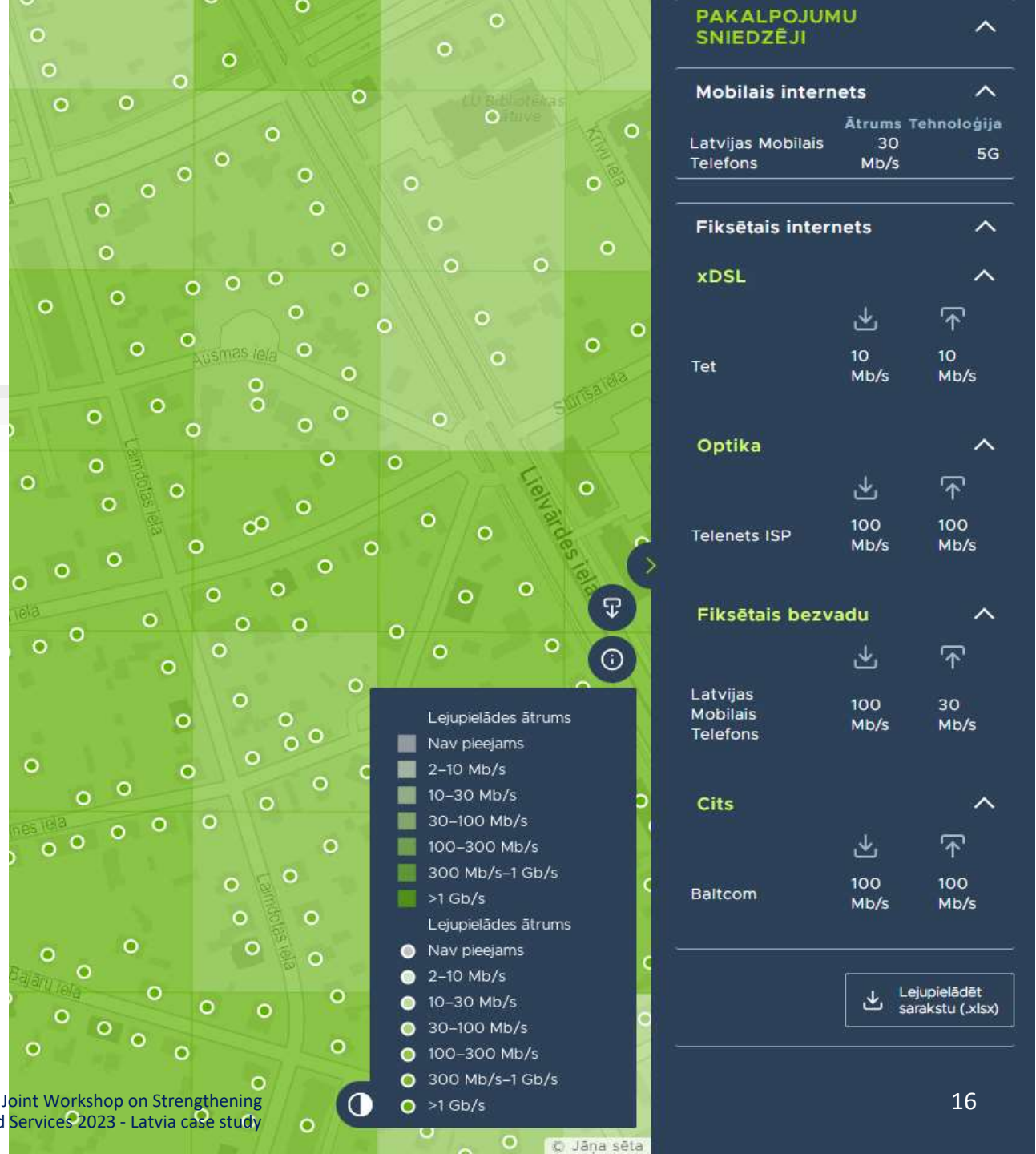
Map for public view

Filters

- Best coverage
- Mobile
  - 3G
  - 4G
  - 5G
- Fixed
  - All
  - xDSL
  - Coaxial
  - Optics
  - Fixed wireless
  - Other

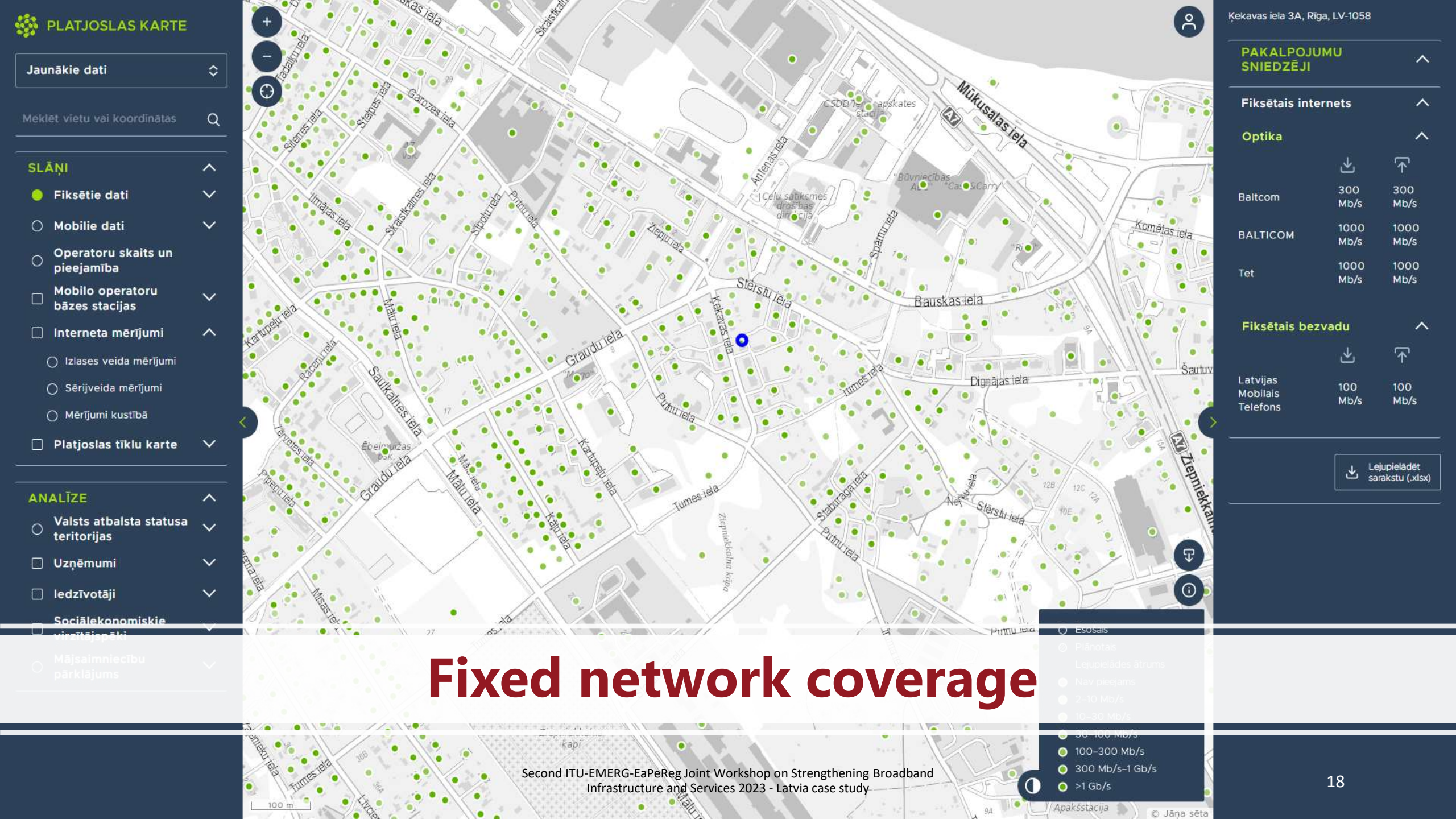
Detailed broadband data

- Mobile coverage
  - Download speed and technology
- Fixed coverage
  (address level download and upload speed)
  - All
  - xDSL
  - Coaxial
  - Optics
  - Fixed wireless
  - Other
- Download list of providers

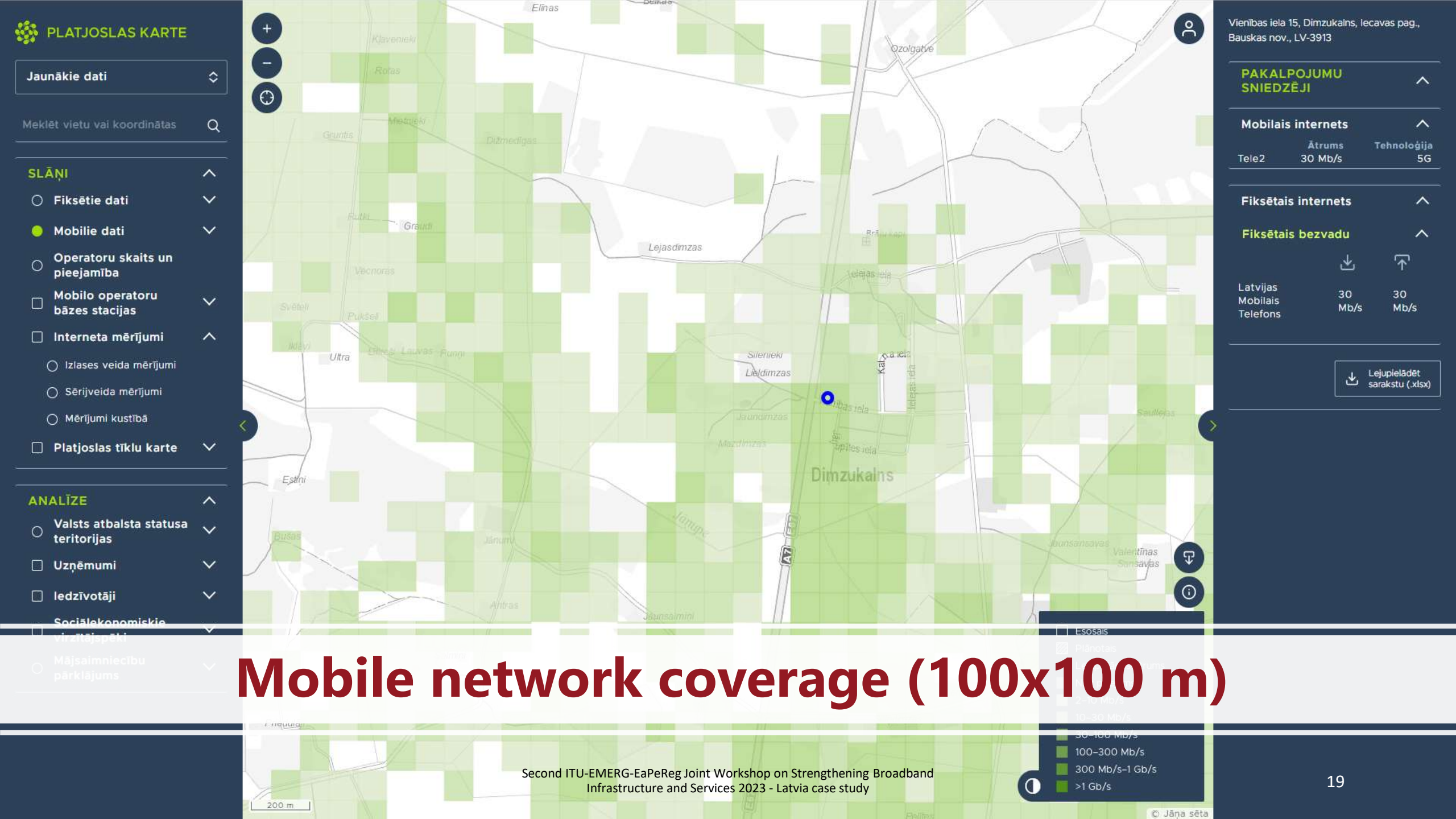


The analytics part of the system

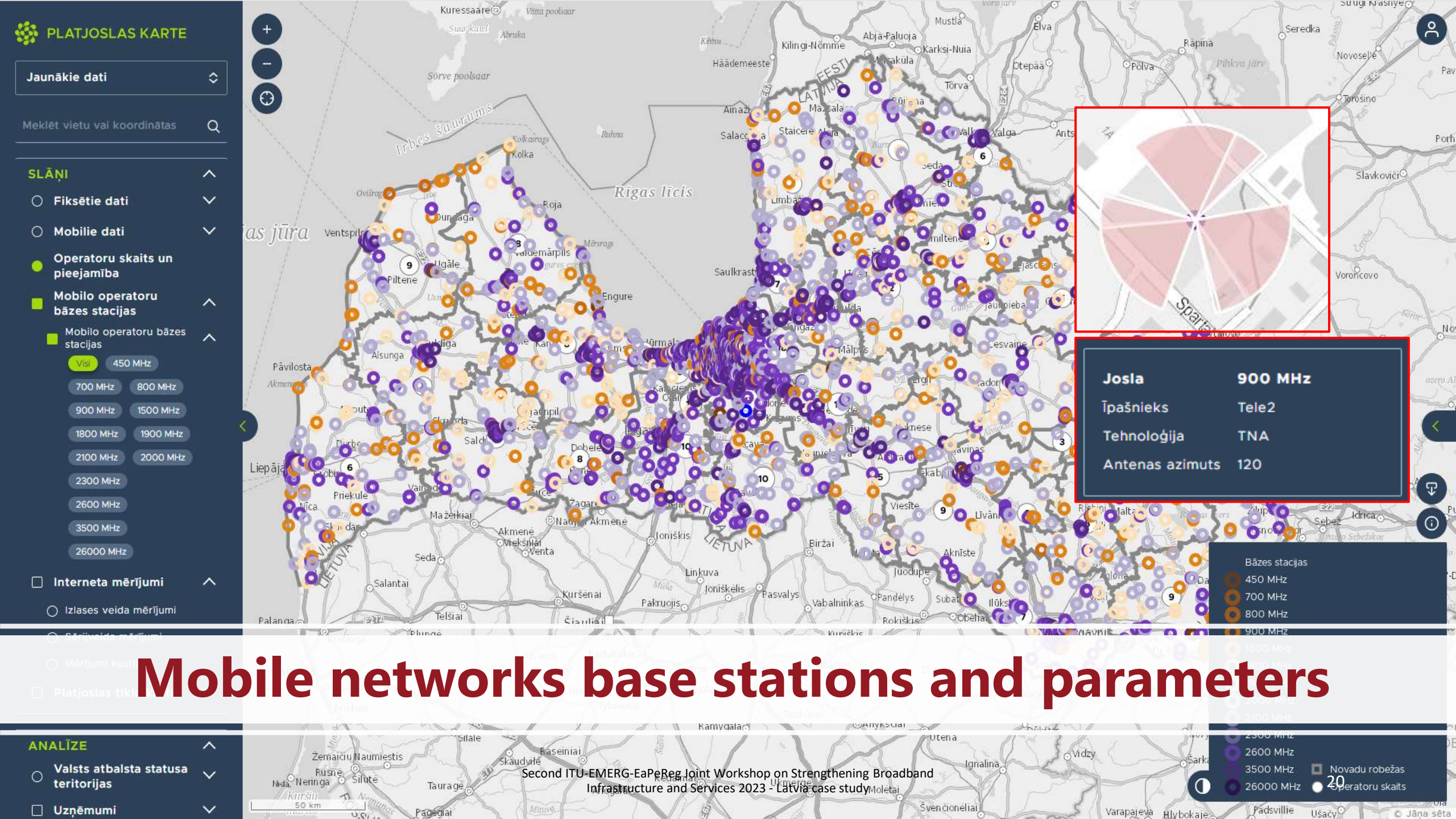
- Fixed network coverage
- Mobile network coverage
- Mobile network base stations and parameters
- Internet measurements (random, serial and in movement)
- Count of operators in area
- White/grey and black areas
- Businesses and population
- Socioeconomic drivers
- Household coverage



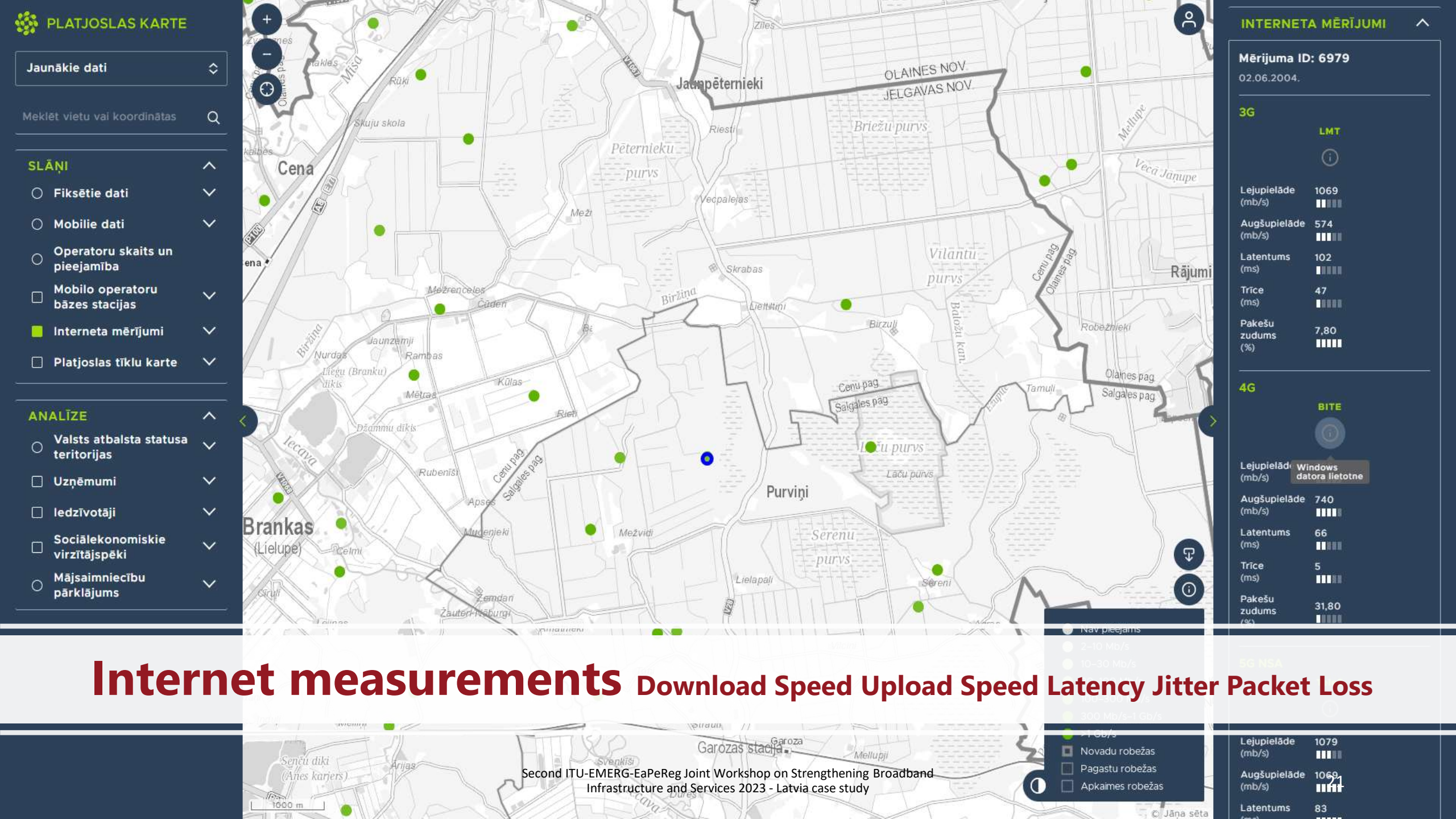
Fixed network coverage



Mobile network coverage (100x100 m)

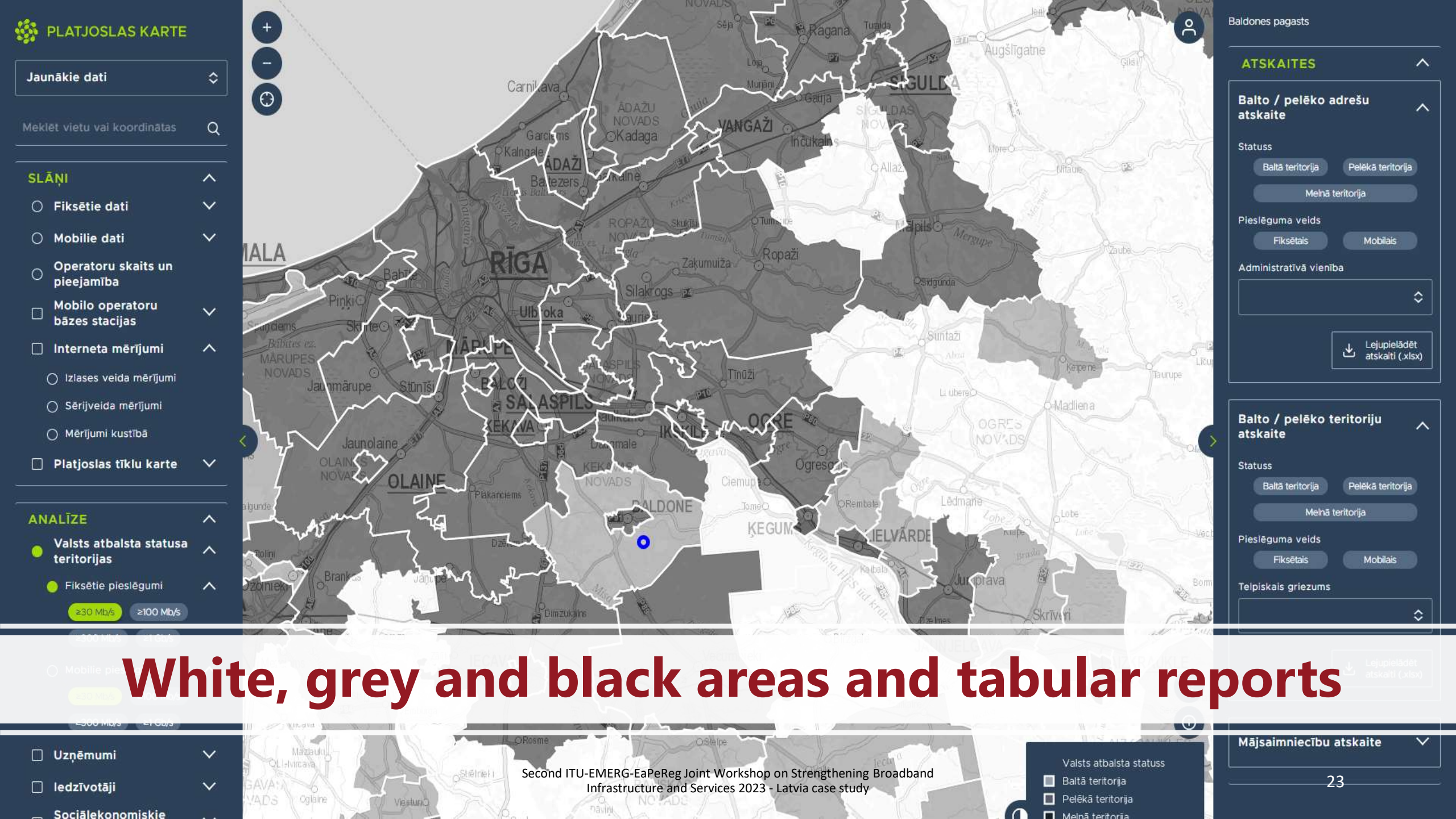


Mobile networks base stations and parameters



Internet measurements Download Speed Upload Speed Latency Jitter Packet Loss

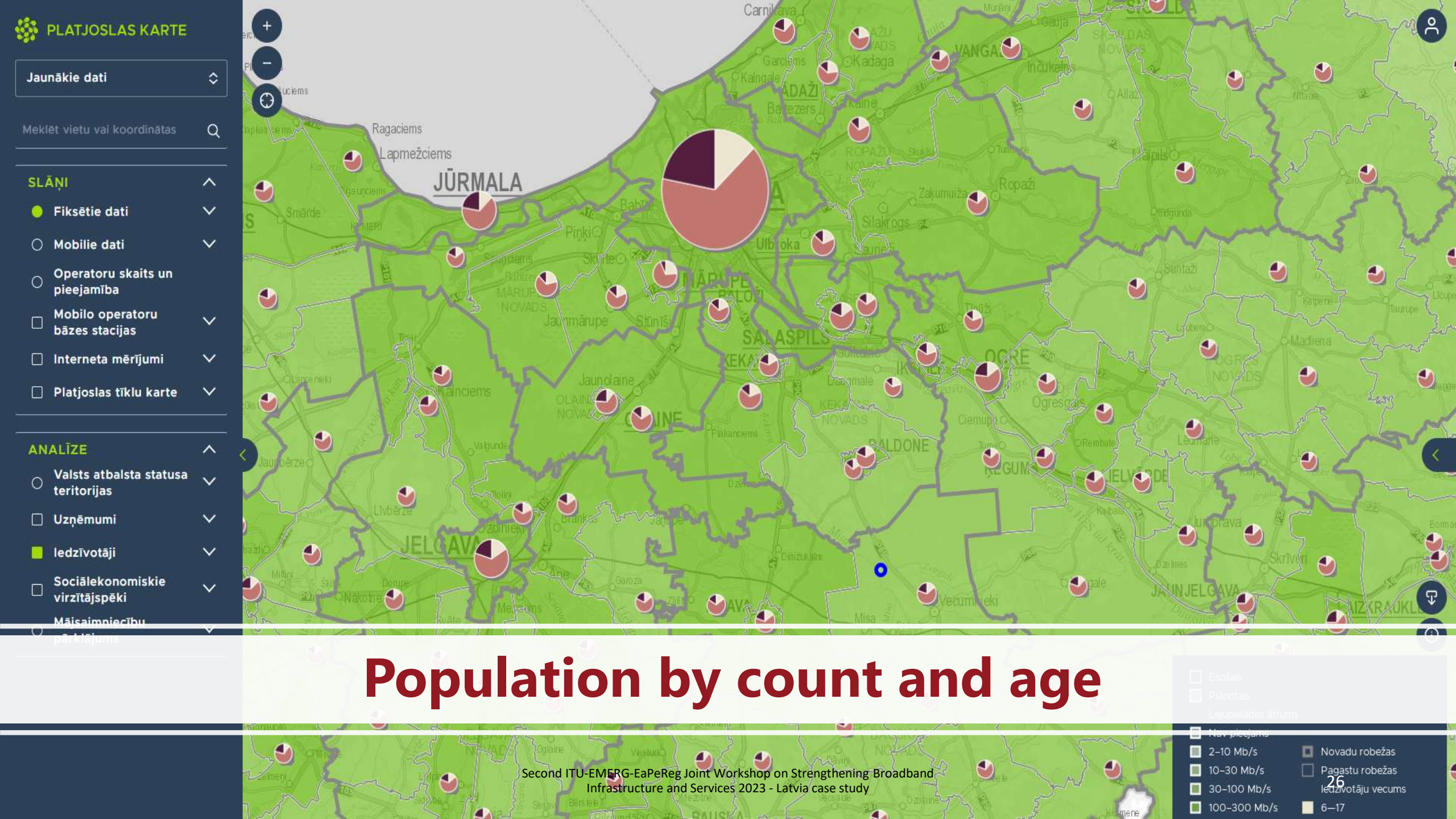
Count of operators in area



White, grey and black areas and tabular reports

White and grey areas and tabular reports

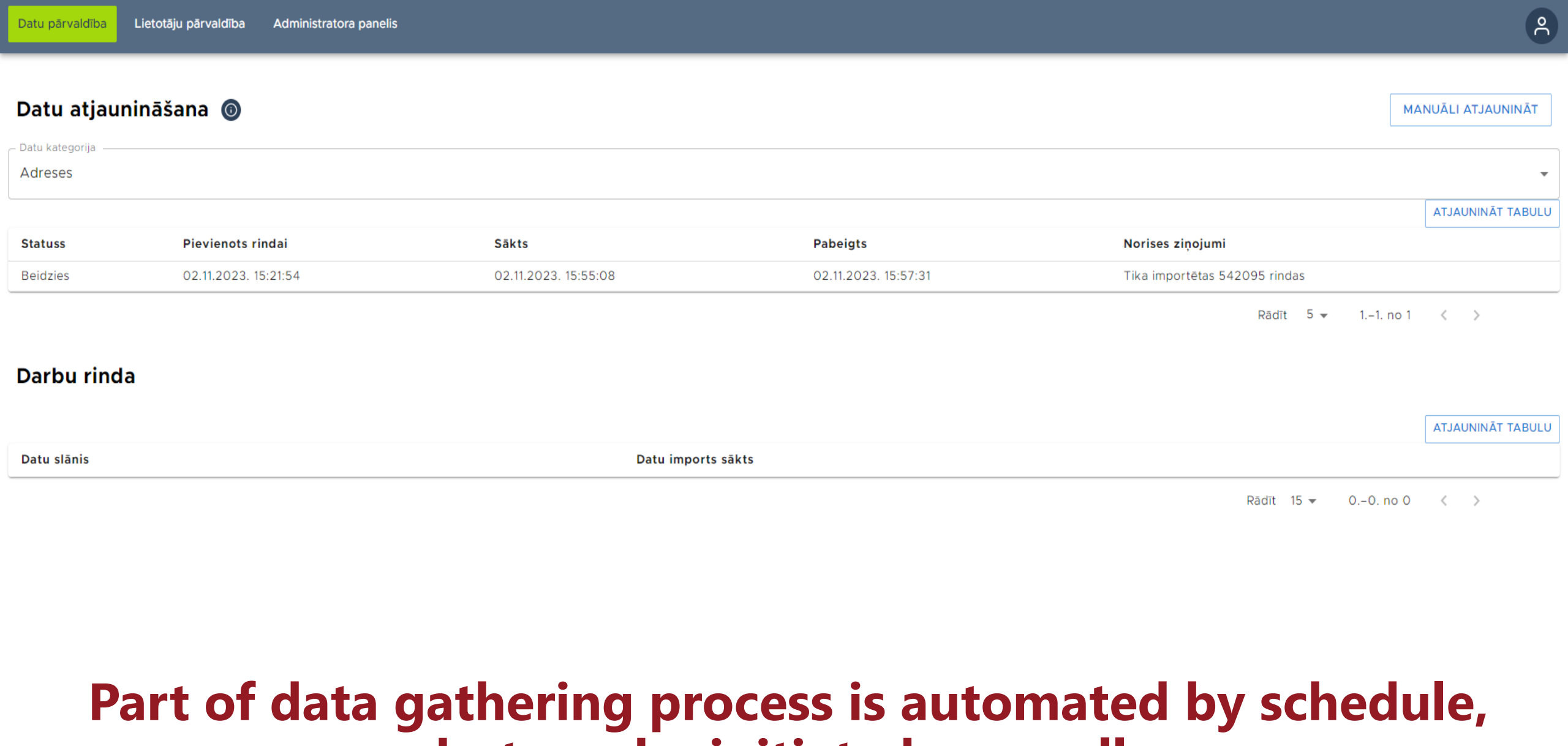
Businesses by turnover



Population by count and age

Data input options

- Automatic data gathering from online sources
- Manual data upload xls (specially adapted for data sources)
- Manual data upload xls (open interface for future data used in analytics)
- Manual data upload shp (coverage, optical networks)



Part of data gathering process is automated by schedule, but can be initiated manually

Datu pārvaldība | Lietotāju pārvaldība | Administratora panelis

Datu atjaunināšana

DZĒST

Datu kategorija

Fiksētā pieslēguma tīkls

Atjaunināšana no faila

IZVĒLIES FAILU

ATJAUNINĀT TABULU

Statuss	Pievienots rindai	Sākts	Pabeigts	Norises ziņojumi	Datu priekšstatījums
Pirmskata režīmā	05.10.2023. 12:00:06	05.10.2023. 12:00:08		Tika importētas 44 rindas	SKATĪT PUBLICĒT ATCELT
Beidzies	04.10.2023. 20:12:02	04.10.2023. 20:12:05	04.10.2023. 20:27:37	Tika importētas 815633 rindas, 245 ieraksti tika izlaisti	
Beidzies	03.10.2023. 19:04:25	03.10.2023. 19:04:27	03.10.2023. 19:09:49	Tika importētas 815665 rindas, 213 ieraksti tika izlaisti	
Beidzies	18.09.2023. 14:00:58	18.09.2023. 14:00:58	19.09.2023. 10:44:24	Tika importētas 730887 rindas	
Kļūda	18.09.2023. 10:02:03	18.09.2023. 10:08:37	18.09.2023. 10:11:09	Kļūdas paziņojumi	

Rādīt 5 1.–5. no 23

Darbu rinda

ATJAUNINĀT TABULU

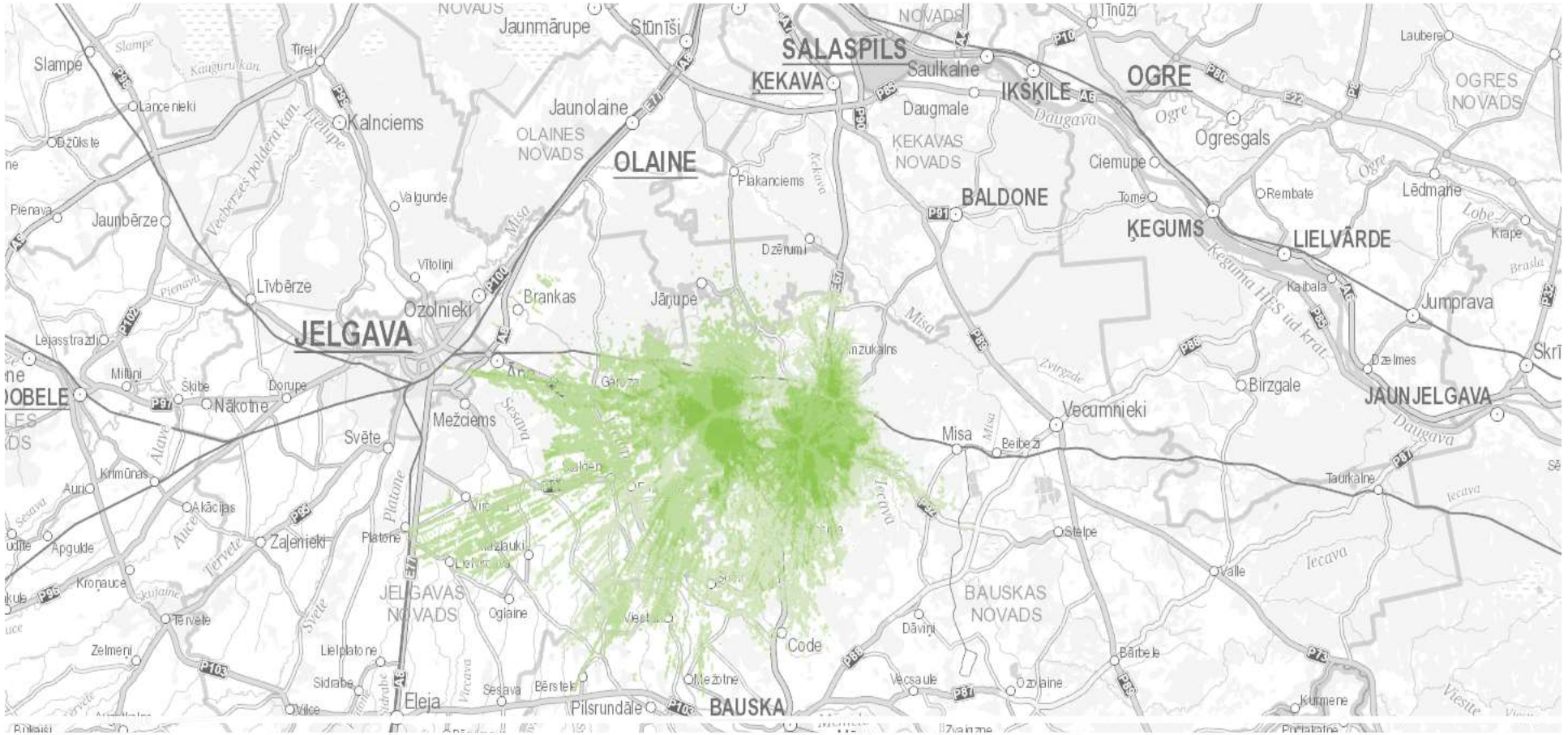
Datu slānis

Kultūras dati (Notiek)

Kultūras dati (Notiek)

Rādīt 15 1.–2. no 2

Manual data xls upload, validation, deletion, preview and publishing



Manual mobile network coverage shp upload and validation before publishing

Second ITU-EMERG-EaPeReg Joint Workshop

Strengthening Broadband Infrastructure and Services

8 November 2023

Part of the Digital Regulation Network (DRN) Initiative

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