Broadband Mapping System in Montenegro

Montenegro
Agency for Electronic Communications and Postal Services (EKIP)
Dubravka Aleksić – Manager for Electronic Communication Networks
Matija Tomčić – Main Specialist for Electronic Communication Networks

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NATIONAL LEGISLATION RELATED TO THE MAPPING

1. **THE LAW ON ELECTRONIC COMMUNICATIONS**

2. **THE RULE BOOK ON THE TYPE, MANNER OF DELIVERY AND DISCLOSURE OF DATA ON ELECTRONIC COMMUNICATIONS INFRASTRUCTURE AND ASSOCIATED FACILITIES WHICH MAY BE OF INTEREST FOR THE SHARED USE** *(IN ACCORDANCE WITH THE LAW ON ELECTRONIC COMMUNICATIONS)*

3. **STRATEGY OF INFORMATION SOCIETY DEVELOPMENT 2016-2020** *(WITH IT'S GOALS RELATED TO BROADBAND DEVELOPMENT)*

4. **LAW ON THE MEASURES TO REDUCE THE COSTS OF DEPLOYING HIGH-SPEED ELECTRONIC COMMUNICATIONS NETWORKS** *(IN PROCES OF ADDOPTION)*

MAPPING SYSTEM IN EKIP- COMPONENTS

Previous solution

Actual solution

Hardware:
2 servers in EKIP

Software-platform:
Java platform

Software-aplicative:
GeoServer
Geoportal

Database:
PostgreSQL

MAPPING SYSTEM IN EKIP- PARTS AND USERS

Parts of the Mapping System
- Electronic communication infrastructure and associated equipment
- Planned electronic communication infrastructure
- Broadband coverage

Users of the Mapping System
- Operators
- Planners
- National and local Institutions
- Interested parties - public access

MAPPING SYSTEM IN EKIP- RELATED TO THE RELEVANT DATA

Data from operators:
- Antenna poles
- Buildings for EC equipment placement
- Ducts and cables
- Air cables
- Planned EC infrastructure

File used within the system:
- .shp
- .xls
- .pdf
- .kml

Data from National institutions:
- National Cadastral Authority:
  - Municipalities
  - Settlements
  - Residential buildings
  - Cadastral parcels
- National Statistic Authority-MONSTAT:
  - Population
  - Households

MAPPING SYSTEM IN EKIP- STATISTIC DATA

Data related to EC infrastructure:
- 590 antena poles
- 685 buildings for EC equipment placement
- 5.732,62km ducts
- 2.642,12km air cables

Data related to users:
- 13 Operators
- 3 National and local Institutions
- 6 Planners

Data related to shared EC infrastructure:
- 308 antenna poles
- 210 buildings for EC equipment placement
- 686,16km ducts

MAPPING SYSTEM IN EKIP- ACCESS TO THE WEB PORTAL

Types of access, in accordance to the access rights:

- For EKIP
- For operators
- For planners
- For local and national institutions
- Public access

Via public access user can see:

- Geographical location and ownership of the EC infrastructure
- Review of actual broadband coverage

Username: **korisnik**
Password: **korisnik**

Link: http://212.69.25.52/ekipgis/login/auth
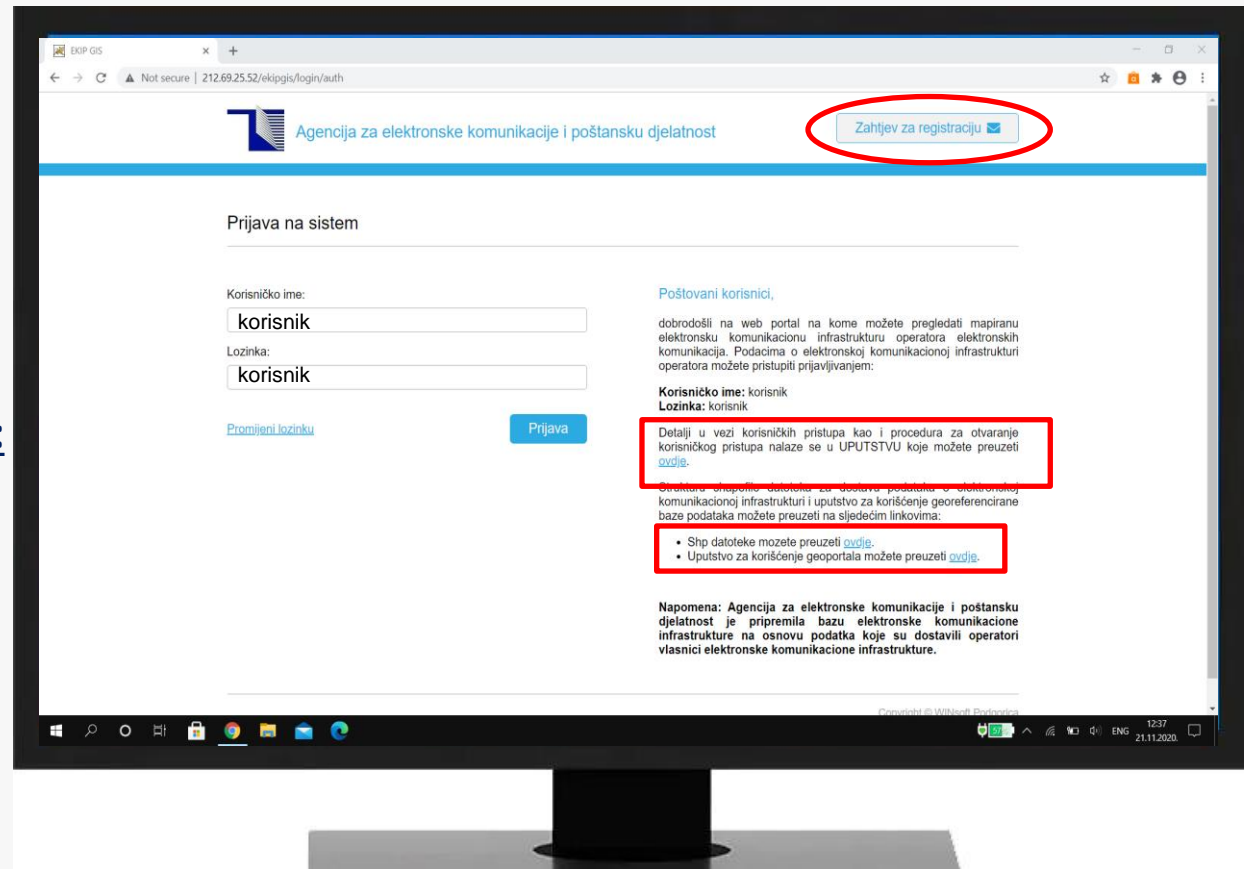
ELECTRONIC COMMUNICATION INFRASTRUCTURE – ACCESS FOR OPERATORS

Entry of individual data:
An individual entry is possible directly on the map, by adding the specific individual infrastructure.

Import of grouped data:
Group import is possible by sending a **shapefiles** for the group of objects who we want to add, update or delete.

**It is available the Tool for control of the individual entry as well as import of grouped data.**
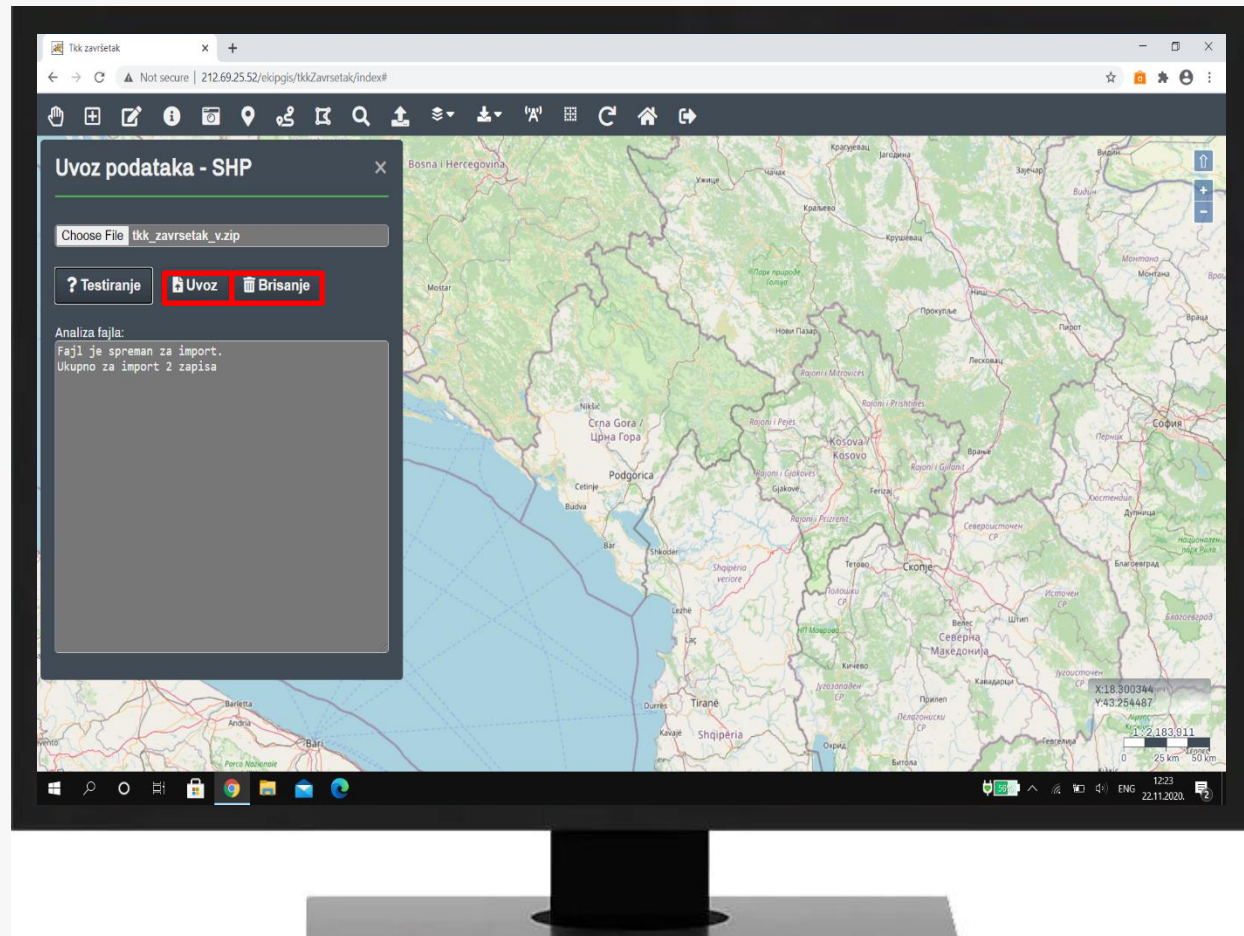
ELECTRONIC COMMUNICATION INFRASTRUCTURE – ACCESS FOR OPERATORS

Operators can import data related to planed EC infrastructure in the same way as actual EC infrastructure .

When the operators finalize the particular plan, then they can insert it as EC infrastructure immediately by one click.

Note: Local governments can enter roads construction plans and operators can see them. So operators can plan to expand their networks accordingly.
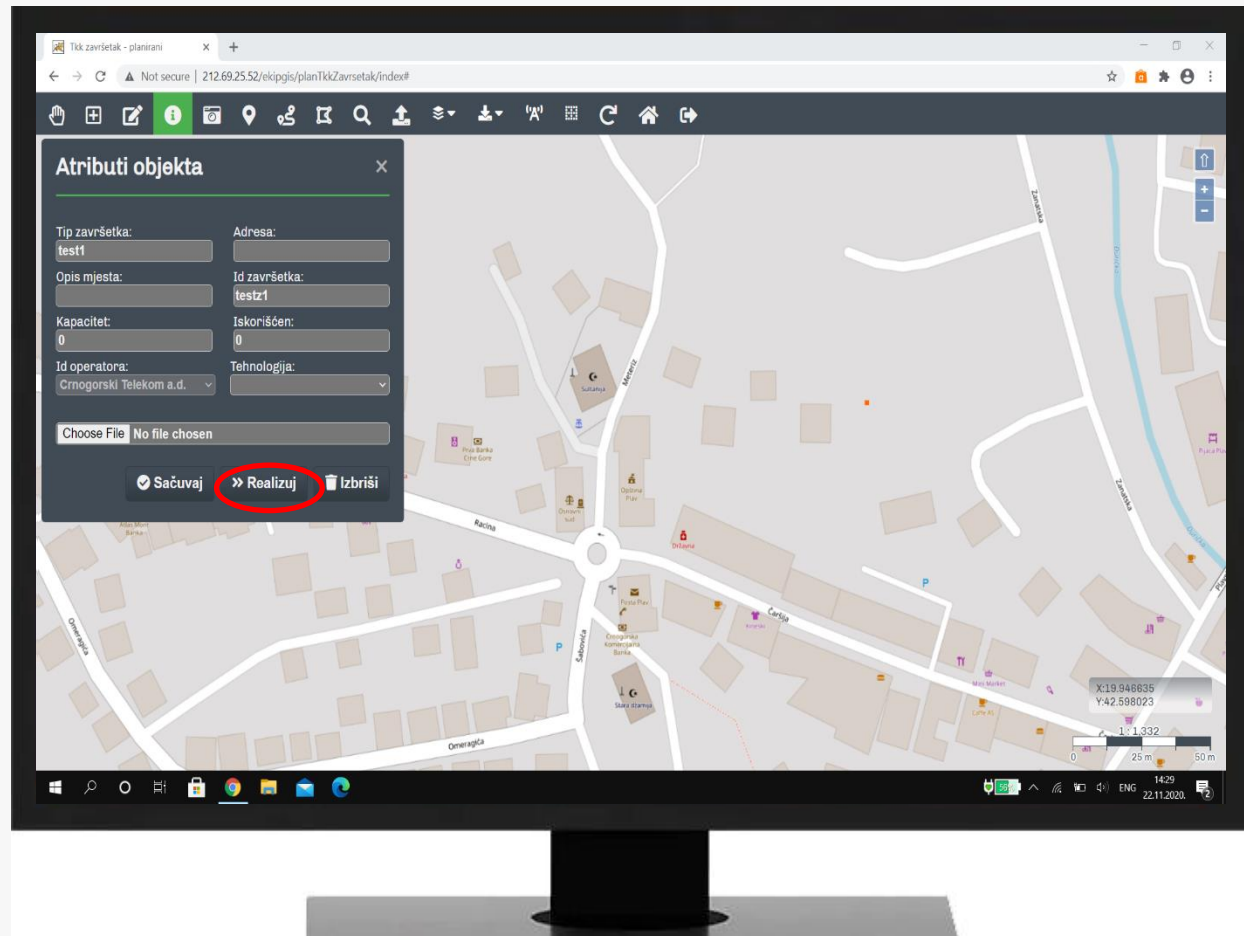
ELECTRONIC COMMUNICATION INFRASTRUCTURE – ACCESS FOR PLANNERS

Planners can insert the boundaries of the planning document in .**kml** or **.geojson** and drag those files into our system after that they can export data on the EC infrastructure within boundaries in shapefile.
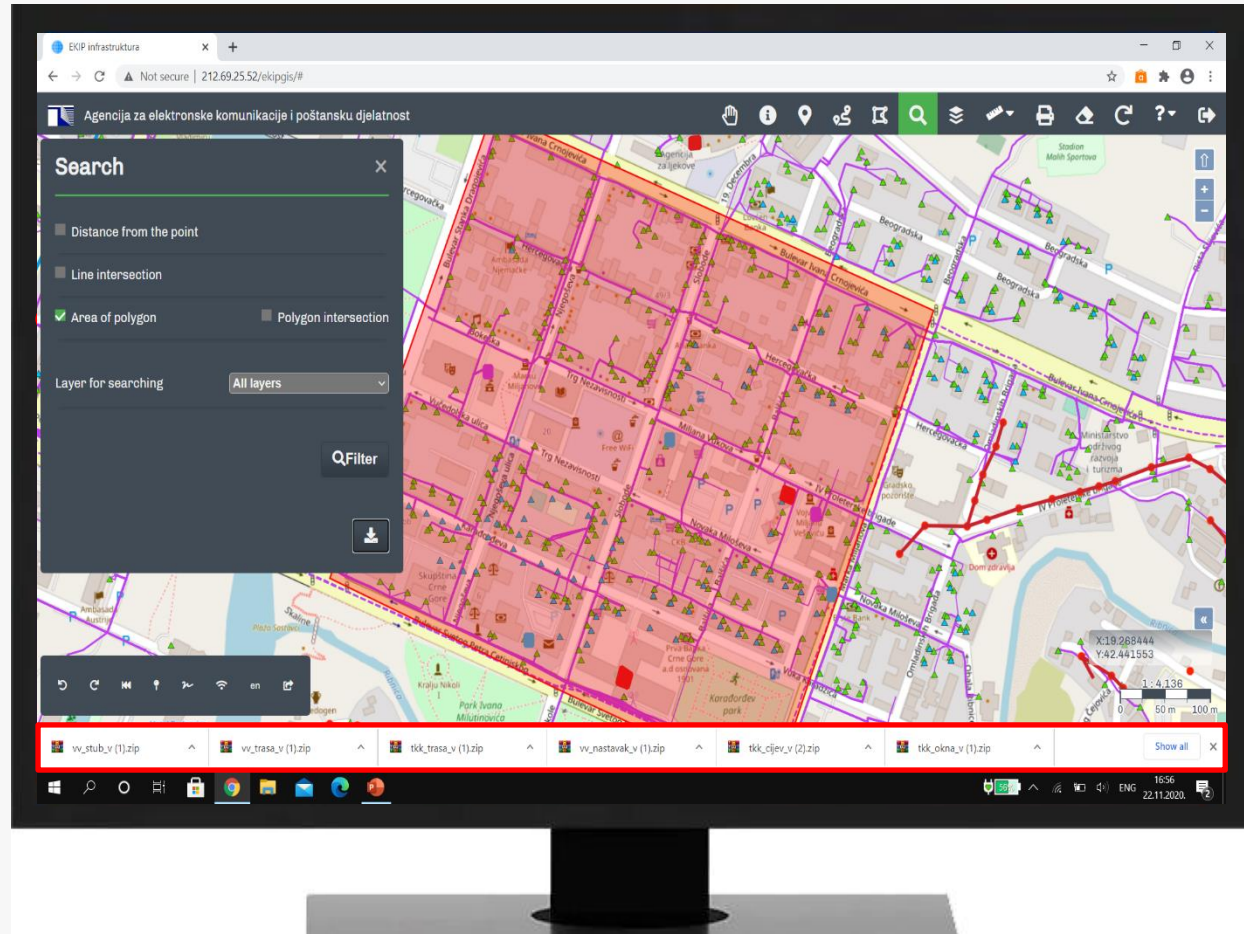
ELECTRONIC COMMUNICATION INFRASTRUCTURE – ACCESS FOR EKIP (REPORTS)

Users within EKIP can see all data in the system and use all function as well as all the reports of the mapping system.

Major reports are:

- Shared use of EC infrastructure,
- EC infrastructure by municipalities,
- Free / occupied capacities,
- Locations where there are two or more antenna poles,
- Operator participation in EC infrastructure,
- Contracts related to shared use of EC infrastructure...
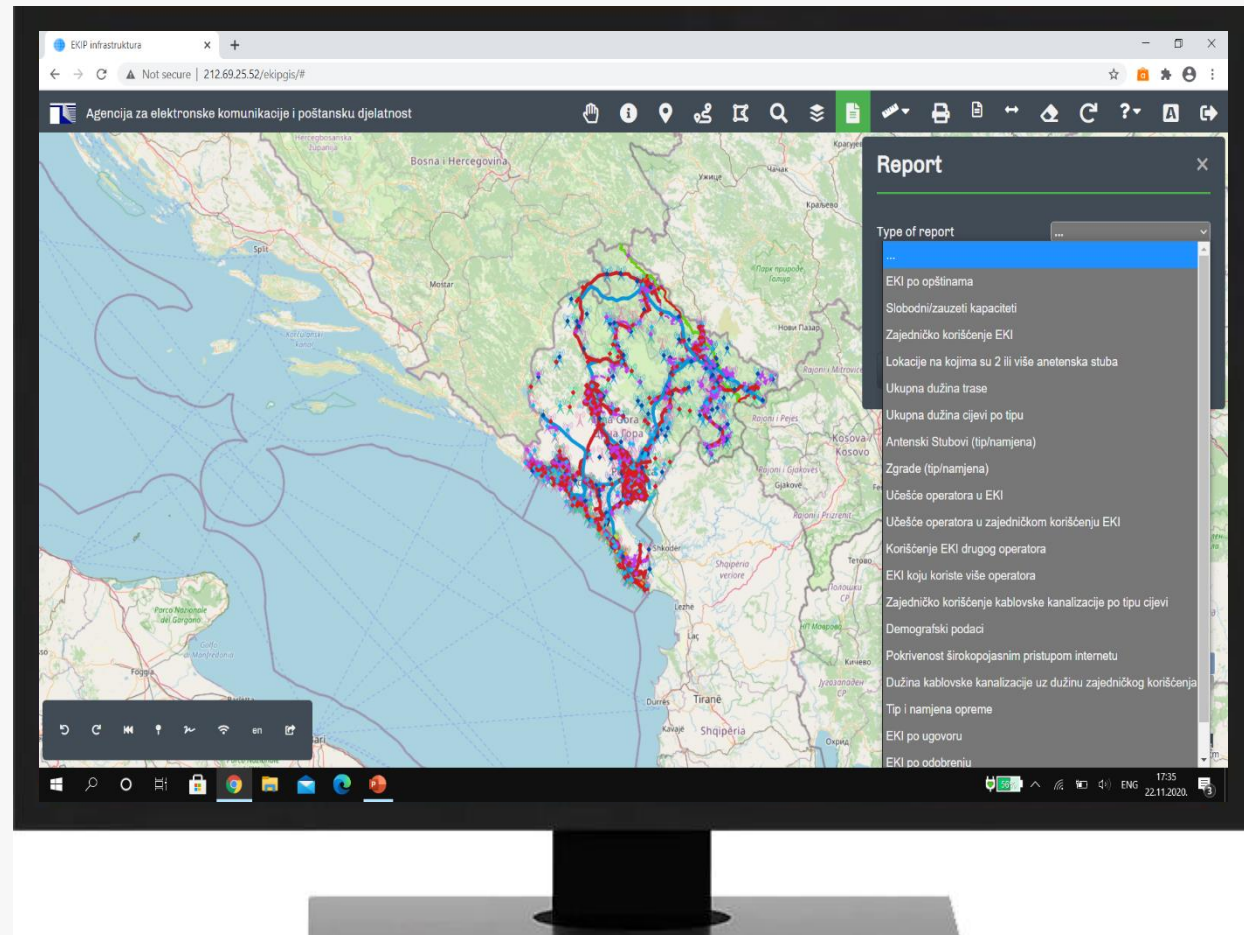
BROADBAND – TYPES OF VIEW

Layers

Steps to review coverage:

1. Chose icon "Layers"
2. Choose tab "coverage"
3. Chose coverage:
   o By speeds
   o By technology
   o By number of operators which provide broadband access

EKIP
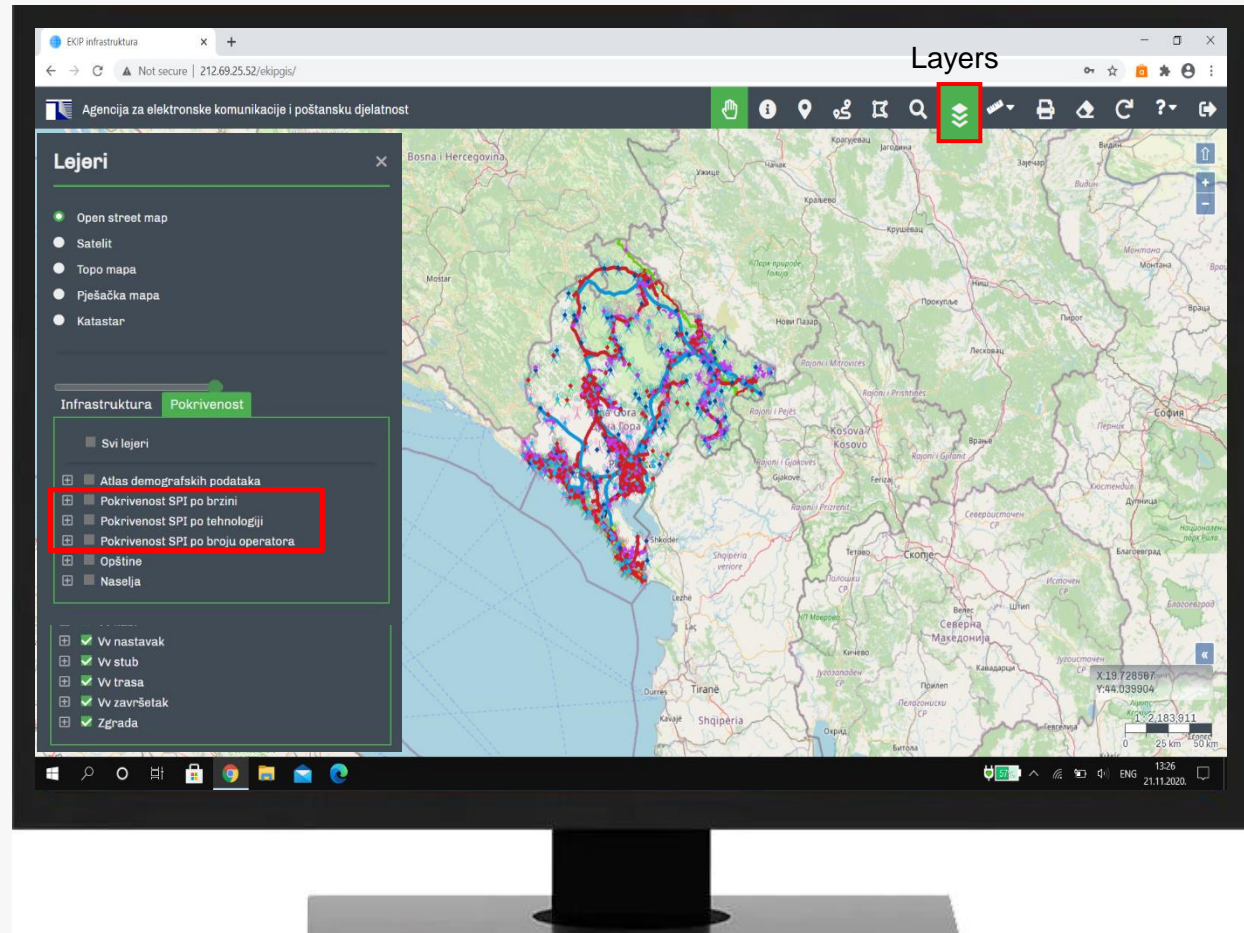
BROADBAND COVERAGE – CALCULATION AND SHOW

Broadband coverage is shown in grids of 100x100m, which are formed on the bases of locations of endpoints:
- By speeds (coloured by dominant speed in grid)
- By technologies (coloured by dominant technology in grid as well as show of all available technologies in grid)
- By number of operators which provide services (coloured by number of available operators in grid as well as show of all available operators in grid)
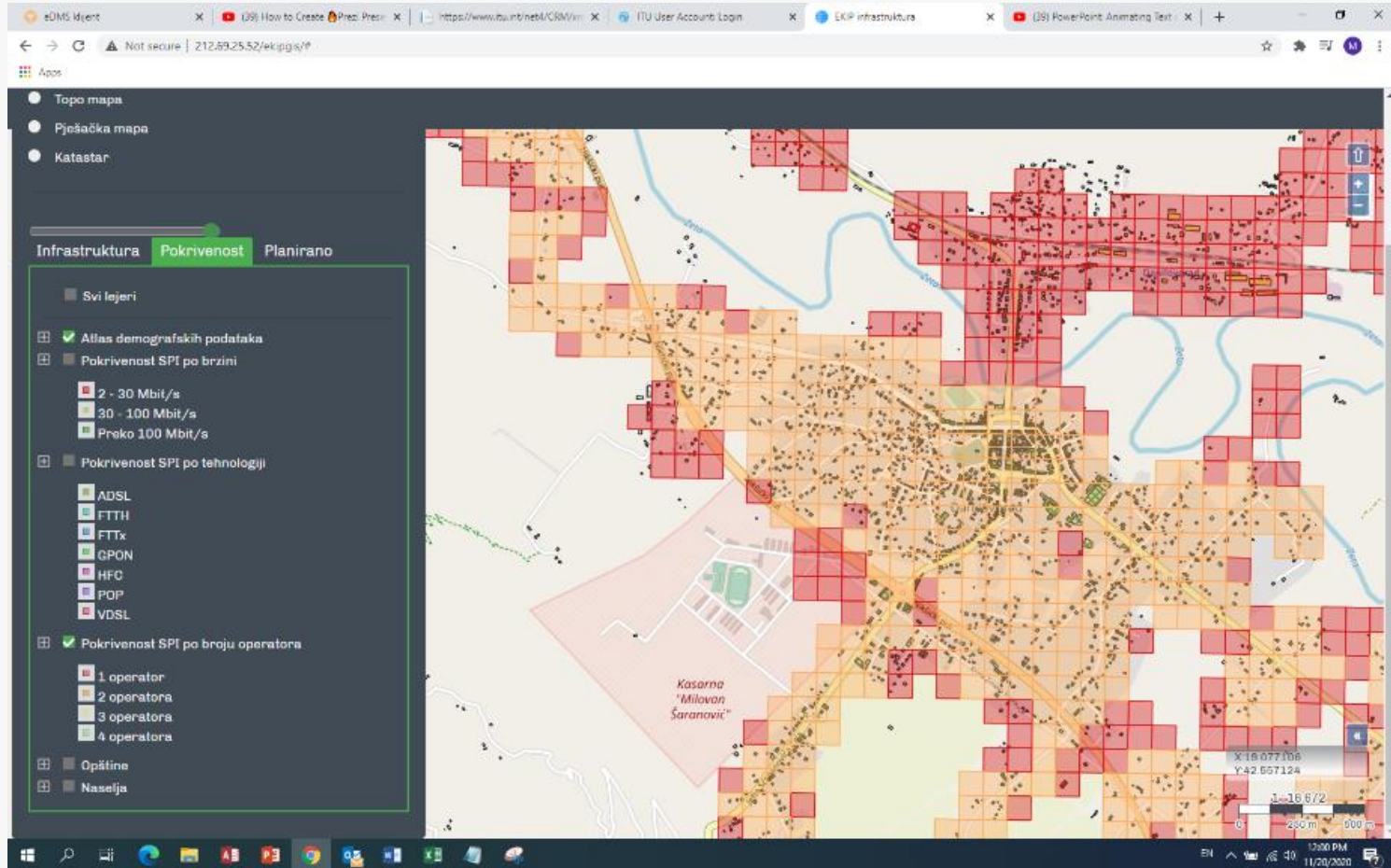
BROADBAND COVERAGE – VIEW BY SPEEDS
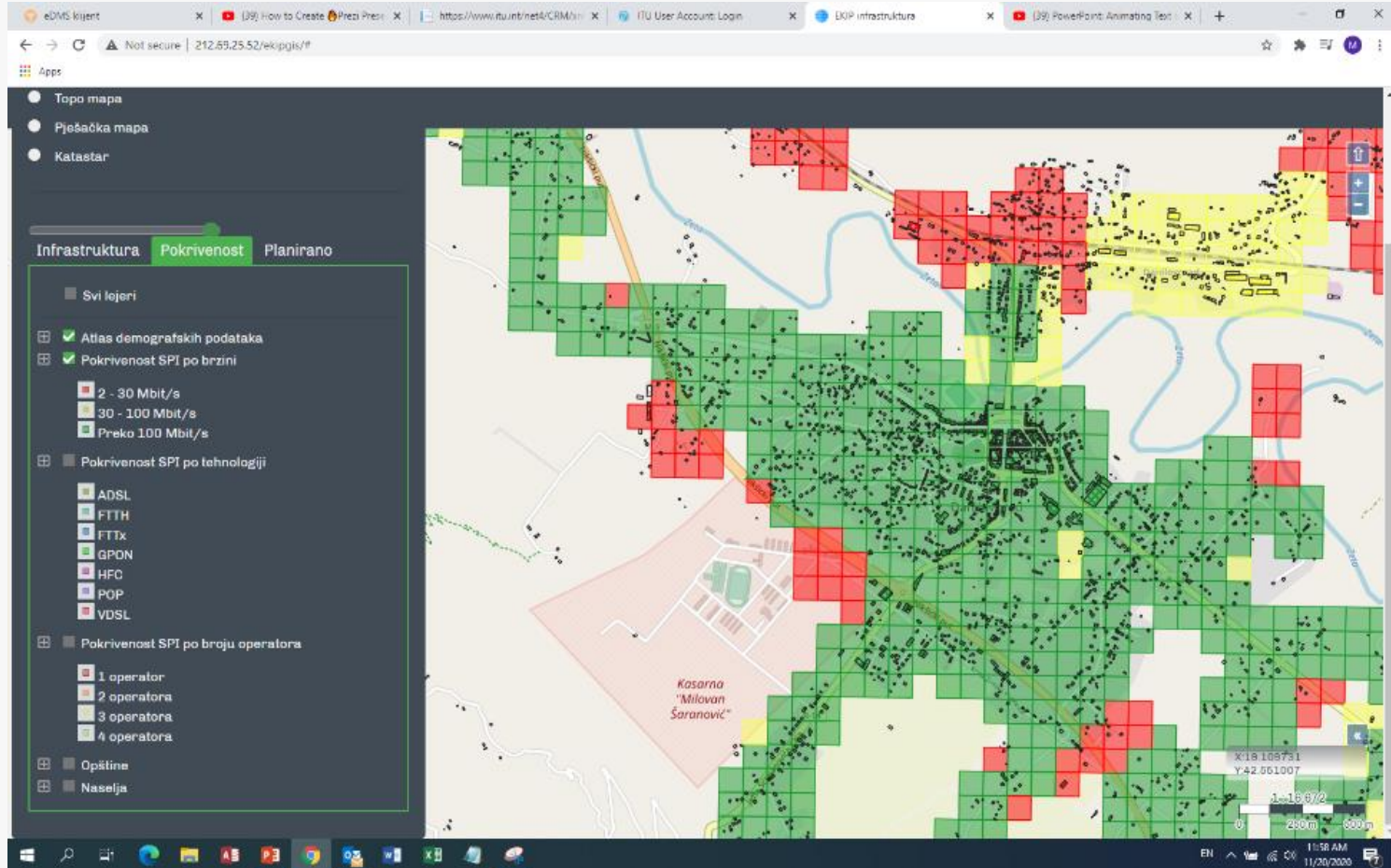
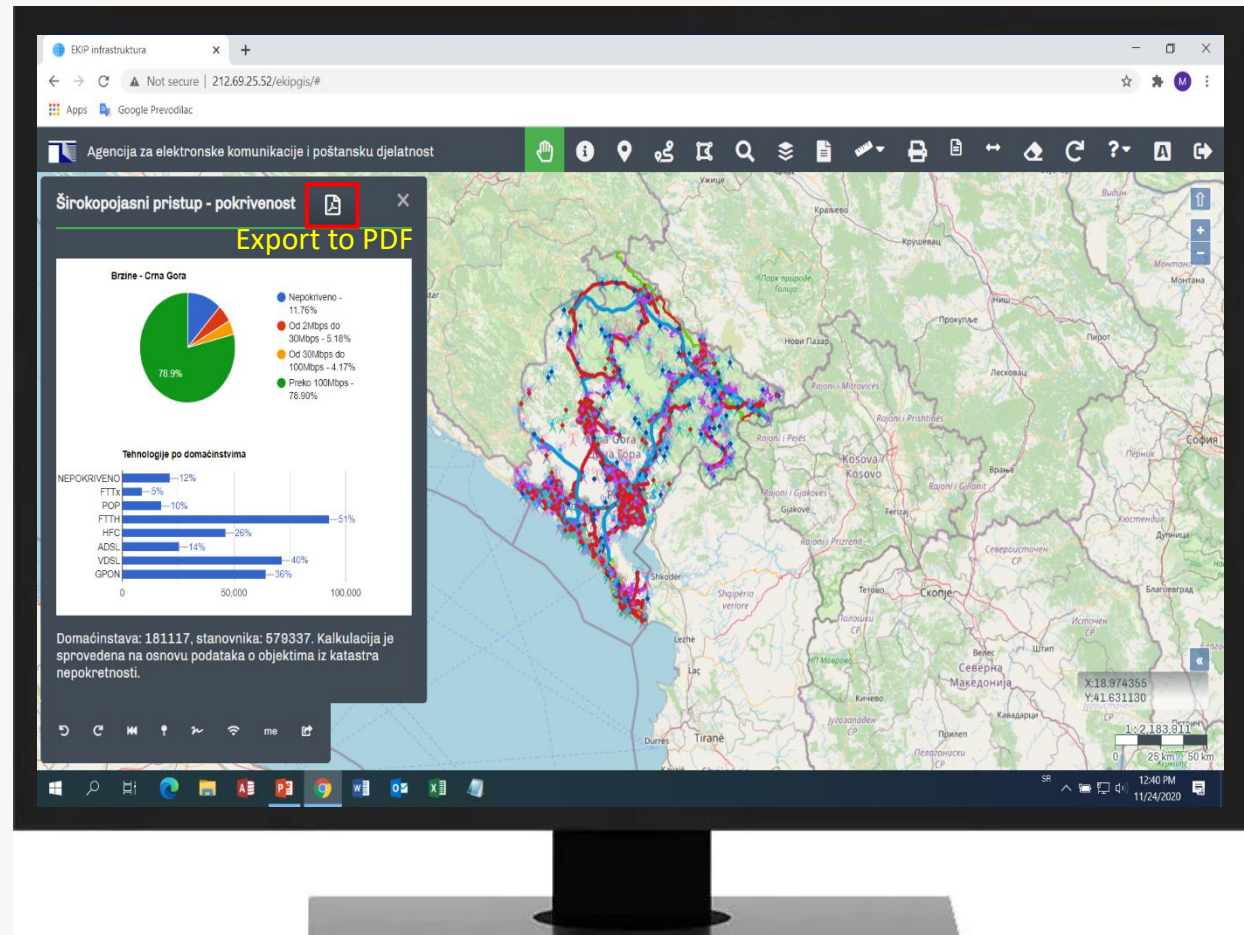# BROADBAND COVERAGE – VIEW BY TECHNOLOGIES
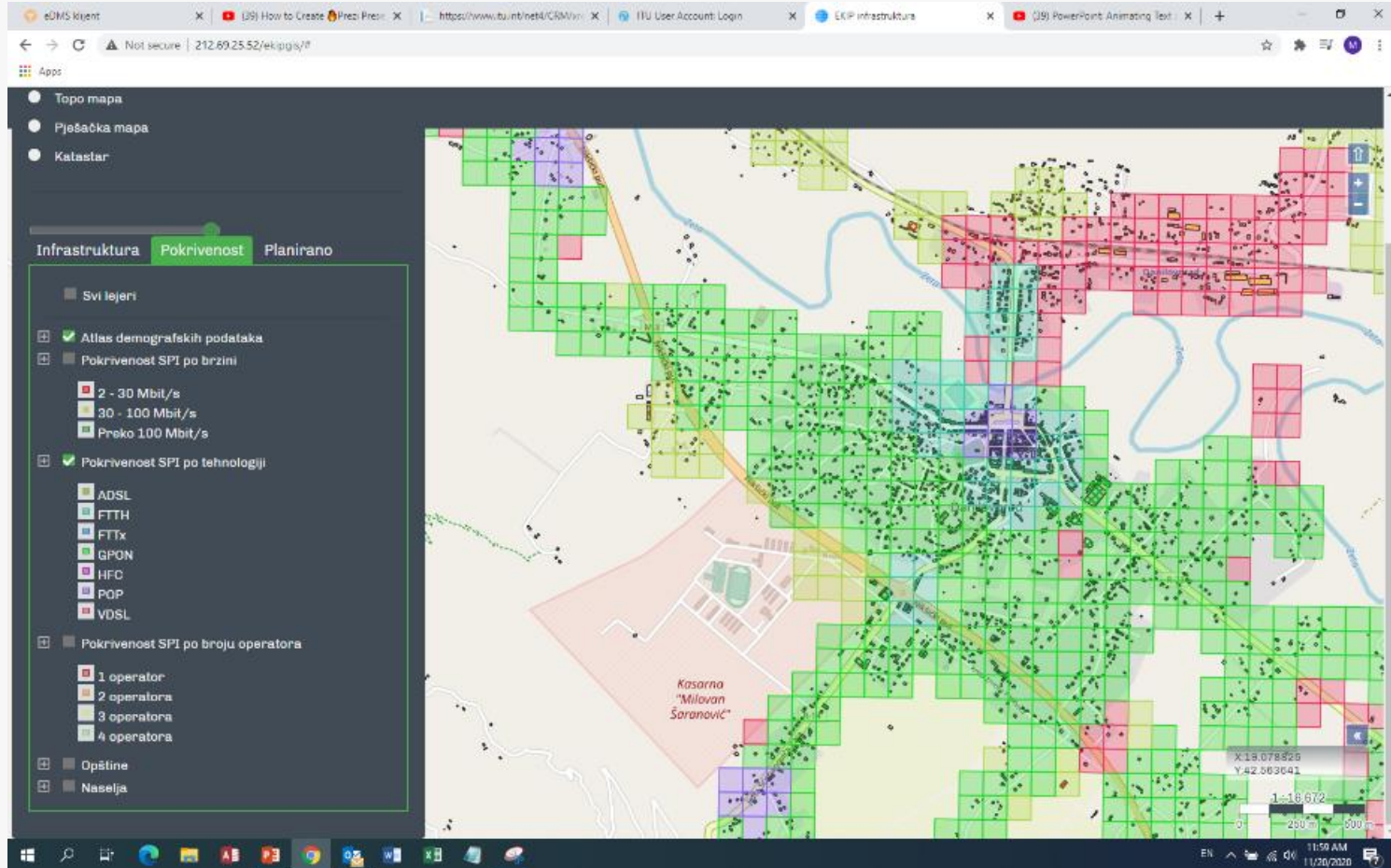
BROADBAND COVERAGE – VIEW BY NUMBER OF OPERATORS

BROADBAND COVERAGE - IN PERCENTAGE

o Broadband coverage within the selected **settlement** of Bajice.

o Broadband coverage within the selected Cetinje **municipality**.

o Broadband coverage within whole **Montenegro**.

FUTURE STEPS FOR THE DEVELOPMENT OF MAPPING SYSTEM IN EKIP

Obtaining the missing and additional data by operators and relevant institutions toward provision of effective reports and analysis, as well as achivement the conditions for development of the broadband coverage

Thank you for your attention!

Q/A

dubravka.aleksic@ekip.me
matija.tomcic@ekip.me