" Mapping of broadband infrastructure in Albania"

11-12 April 2016, Warsaw, Poland

Market overview

❑ During 2015, the electronic communications market has increased regarding the use of mobile networks services and broadband Internet access.

❑ The broadband access has grown in both its segments: Fixed and Mobile networks.

Background

- ❑ Mobile operators, significant investment in 3G and 4G networks:

- ❑ Coverage: 85% of territory / 92% of population

- ❑ Albtelecom significant investment in NGN/NGA: 100% of subscribers connected to NGA (MSAN)

- ❑ Mobile broadband subscribers and data traffic are growing.

- ❑ More effective use of spectrum; focus on the provision of quality services and competitive prices for consumers

Broadband Access (2015)

	Number of users with fixed acsses broadband	Penetration/ Population	Penetration/ Families
QIV_2014	207,754	7.3%	28.8%
QI_2015	216,614	7.6%	30.0%
QII_2015	227,905	8.0%	31.5%
QIII_2015	229,859	8.1%	31.8%
QIV_2015	242,870	8.6%	33.6%
Change QIV_2015/QIII_2015	5.7%		

Penetration rate per capita

❑ **Penetration rate for population with fixed broadband access**
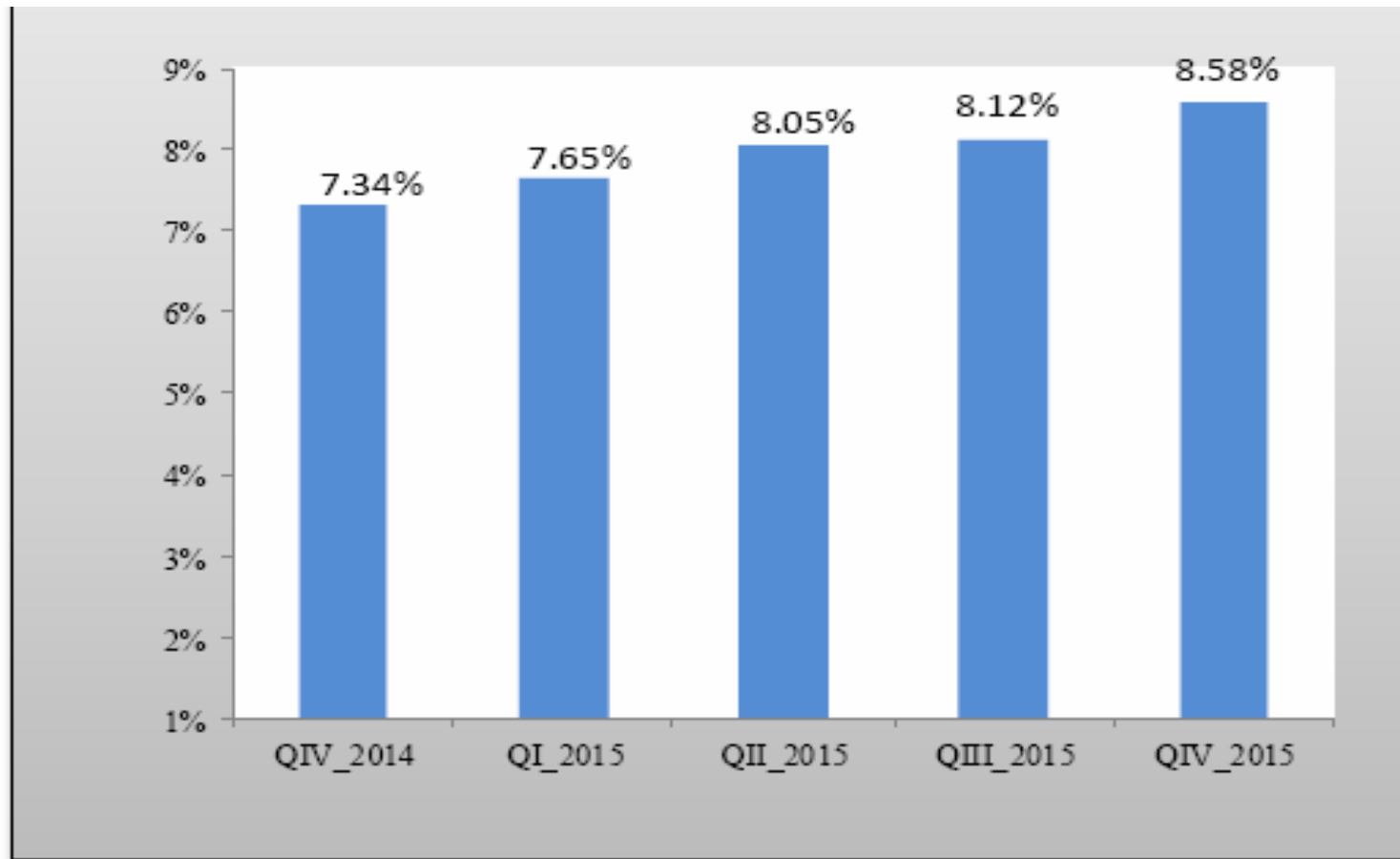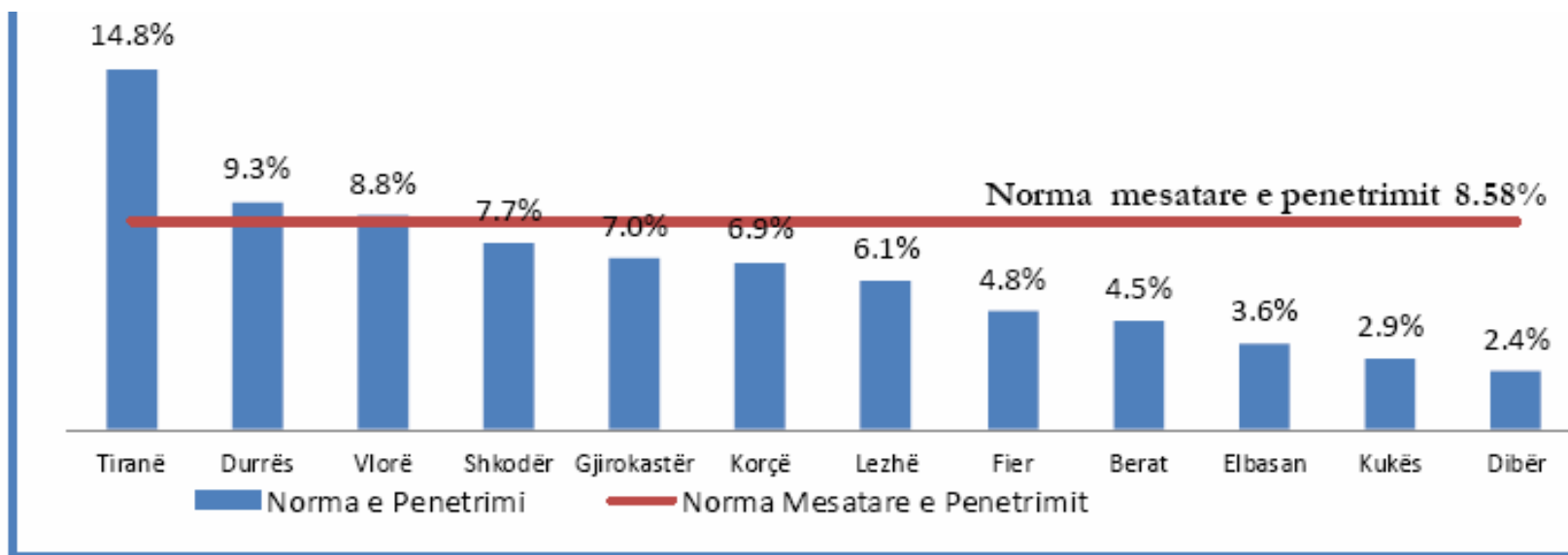
Number of lines

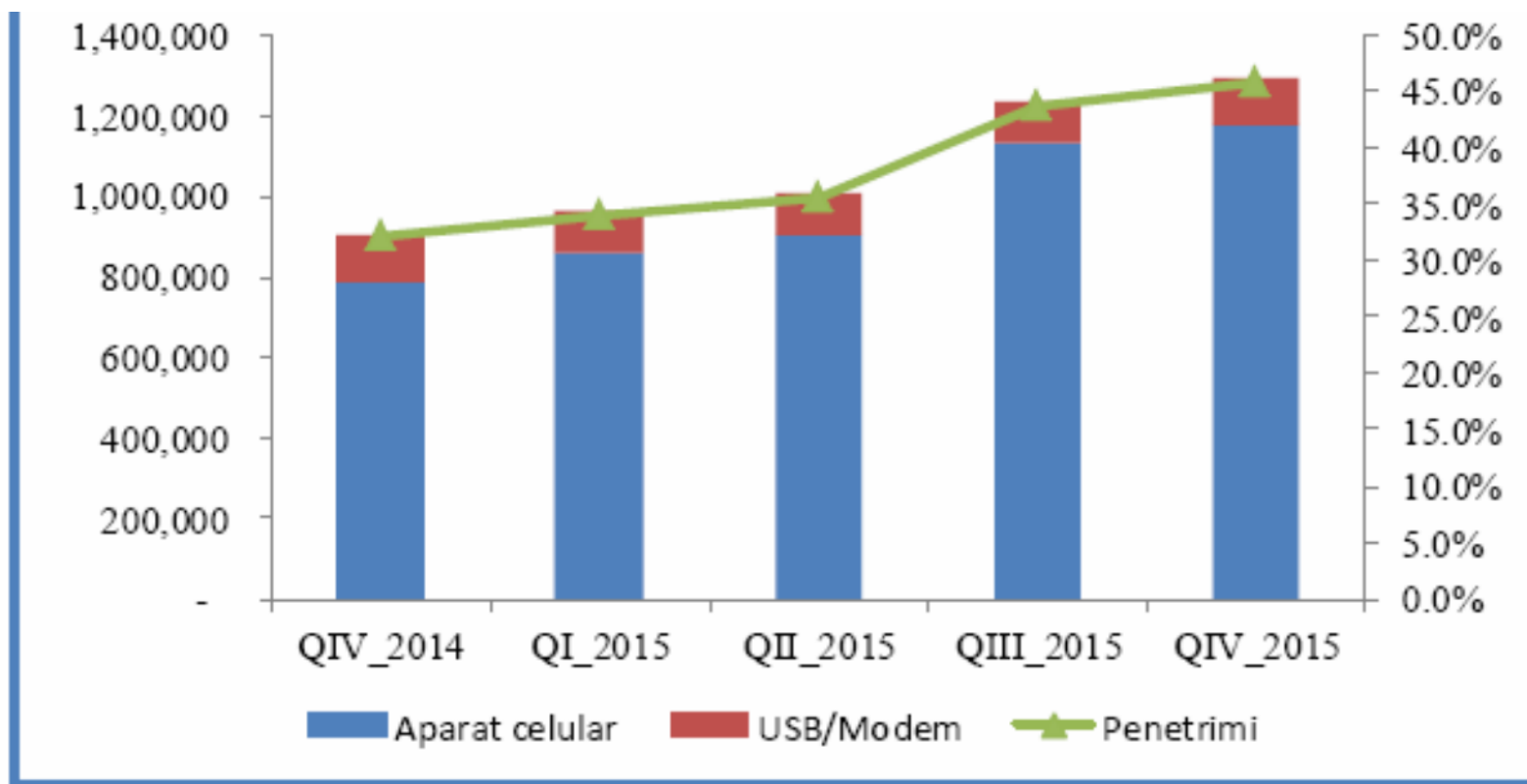❑ **Number of lines for users with fixed broadband access referring districts QIV_2015**
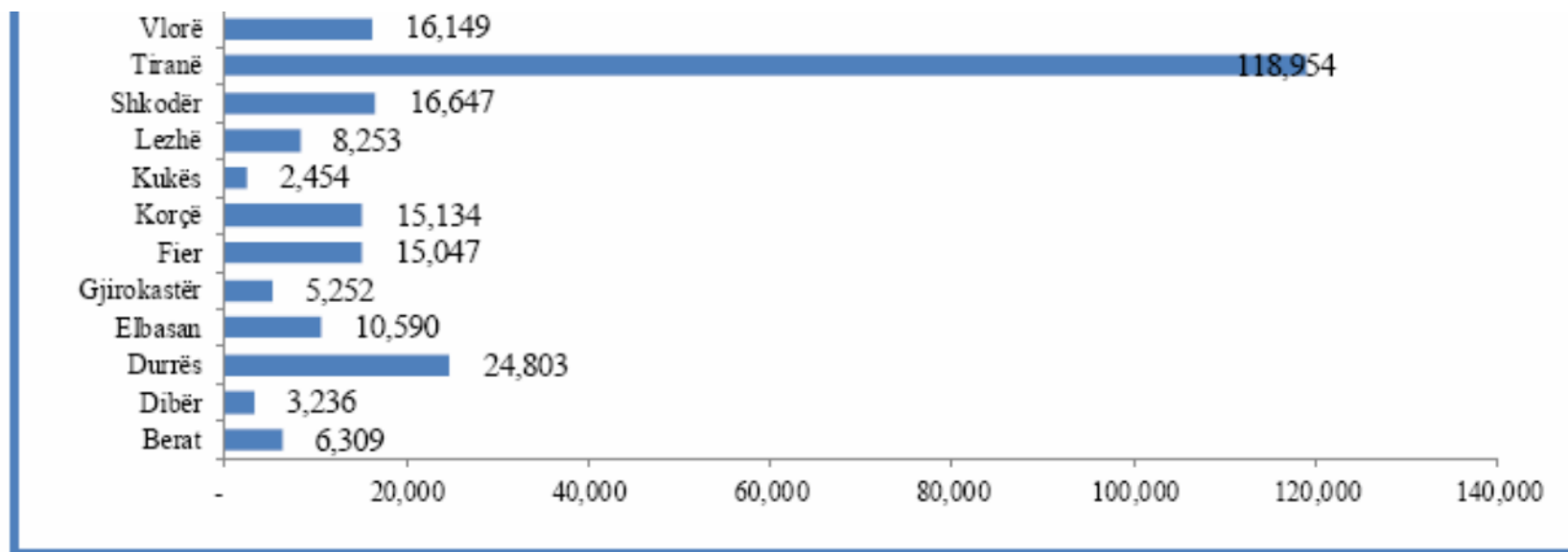
Penetration rate

❑ **Penetration rate of Access in Broadband Fixed Networks referring districts QIV_ 2015**

AKEP
AUTORITETI I KOMUNIKIMEVE
ELEKTRONIKE DHE POSTARE

❑ **Number of Subscribers with mobile broadband access (3G-4G)**

Internet/Broadband Infrastructure

- Broadband access services are provided through a variety of electronic communications networks:

  - Cable networks:
    - xDSL - networks based on copper cables
    - FTTx - networks based on optical fiber cables
    - Networks based on coaxial cables
    - HFC (Hybrid optical-coaxial networks).

  - Wireless networks:
    - GSM/GPRS/EDGE
    - UMTS / HSDPA / HSPA
    - Wi-Fi - wireless local area networks,
    - LTE

Broadband access in rural areas

❑ AKEP with decisions dated in 2015 has approved areas with low population density for covering them with broadband services and other areas for QoS improving.

❑ Stakeholders have deposited in AKEP a cooperation agreement for co-investing in low population density zones. Covering them with broadband services and QoS improvement.

❑ Decisions to offer broadband services in such areas have been taken in pursuance of the decision No. 300 of Council of Ministers (removing restrictions on technology and services) and in the framework of actions under "Plan for Universal Service in the field of electronic communications 2013-2016"

Regulatory measures

❑ Regulation No. 22 dated 24.06.2011 "On Technical Requirements for Construction of Urban Infrastructure and cable networks, fiber optics, suburban networks of Electronic Communications" (amended)

❑ Regulation No. 26 dated 16.08.2012 for "Content, form and functioning of Electronic Registry of public electronic communications networks in the Republic of Albania "

▪ Twice a year reports

▪ Within 30 days to reflect new installations

About the Project

❑ Objective of the project has been integration in a Web-GIS platform and establishing following systems:

- Radio frequency transmission systems

- Communication infrastructure mapping systems

- 180 Services Providers

- 4 Mobile Operators

- 6 months to collect the data.

❑ Integration of all information and establishing Mapping Infrastructure for electronic communications systems in Web-GIS enables AKEP a fast decision in: managing politics, monitoring, control, reporting etc.

Broadband ATLAS

❑ System is built as a multiuser system which offers the possibility to manage different roles for every user.

❑ Mapping system offer the possibility to the operators and Administrative Unit to easily update and create their own communication maps.

System characteristics

- GeoServer as Map Server,

- OpenLayers, Geoxt, Geoexplorer ect as Map client

- PostgreSQL/PostGis as a databaze

User Roles

- AKEP

- Operators

- Municipalities

- Public

Mapping System

broadband.akep.al

www.akep.al/broadband

Public interface view
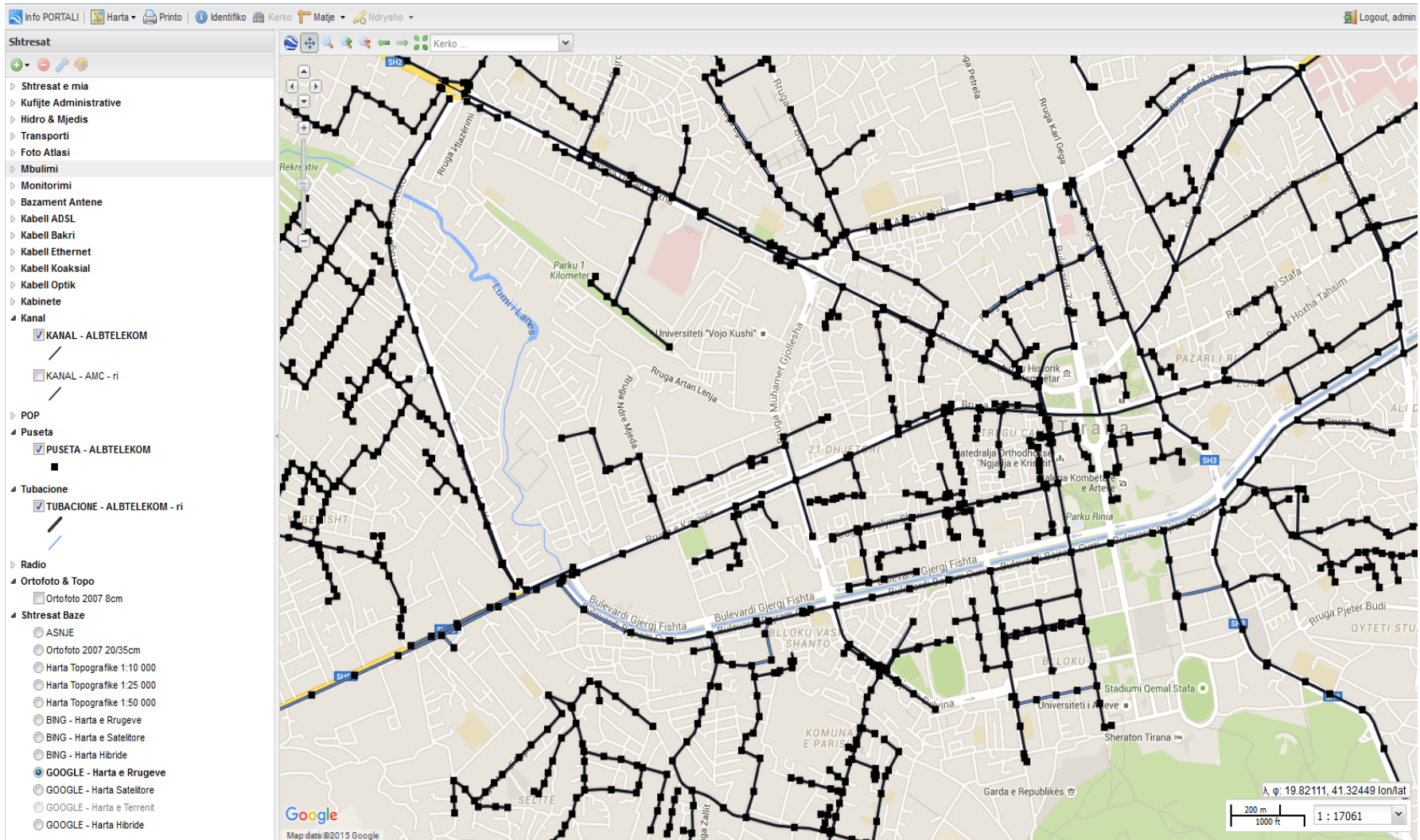
Mapping System
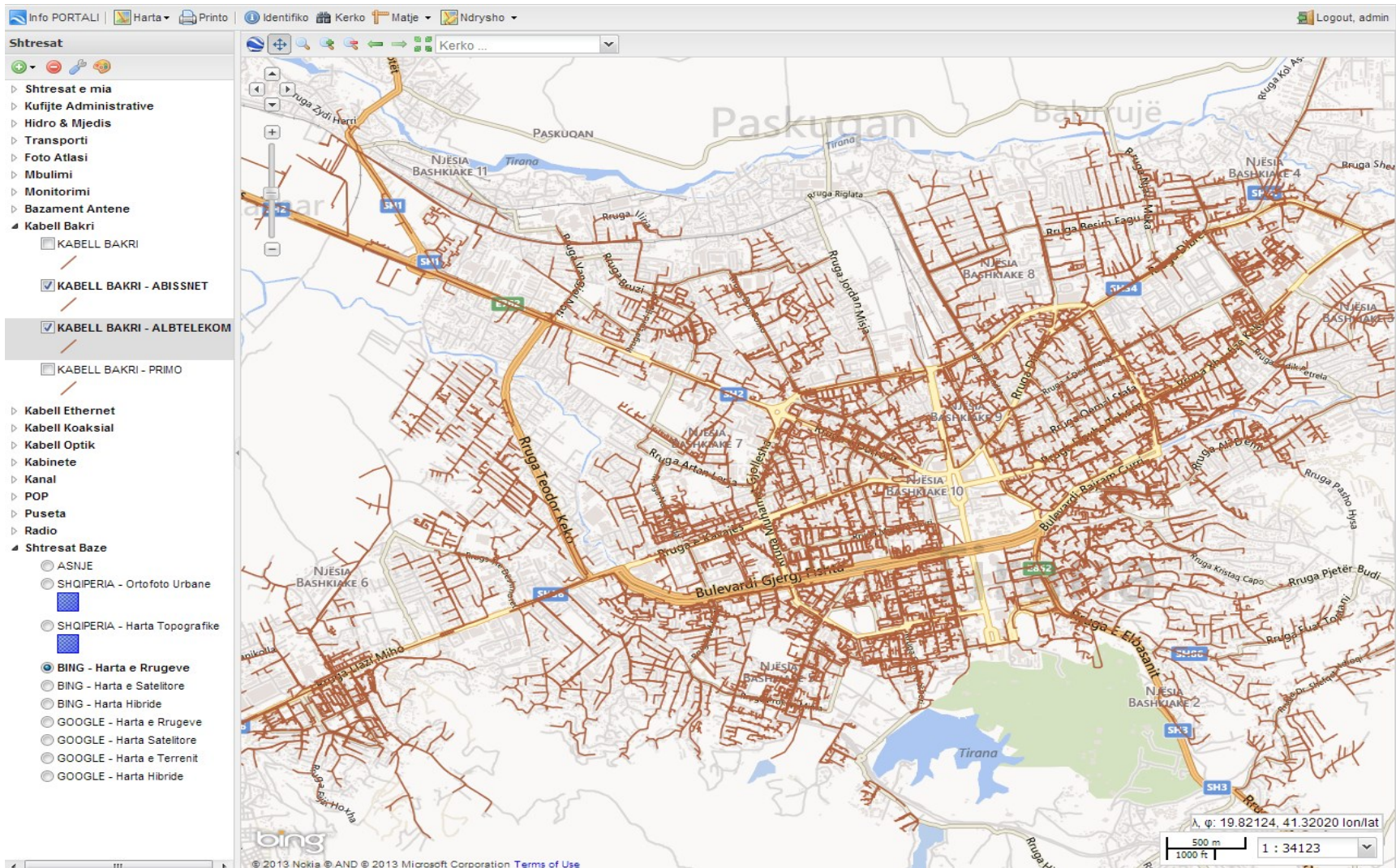
Network infrastructure map : Cooper Cable (by operators)
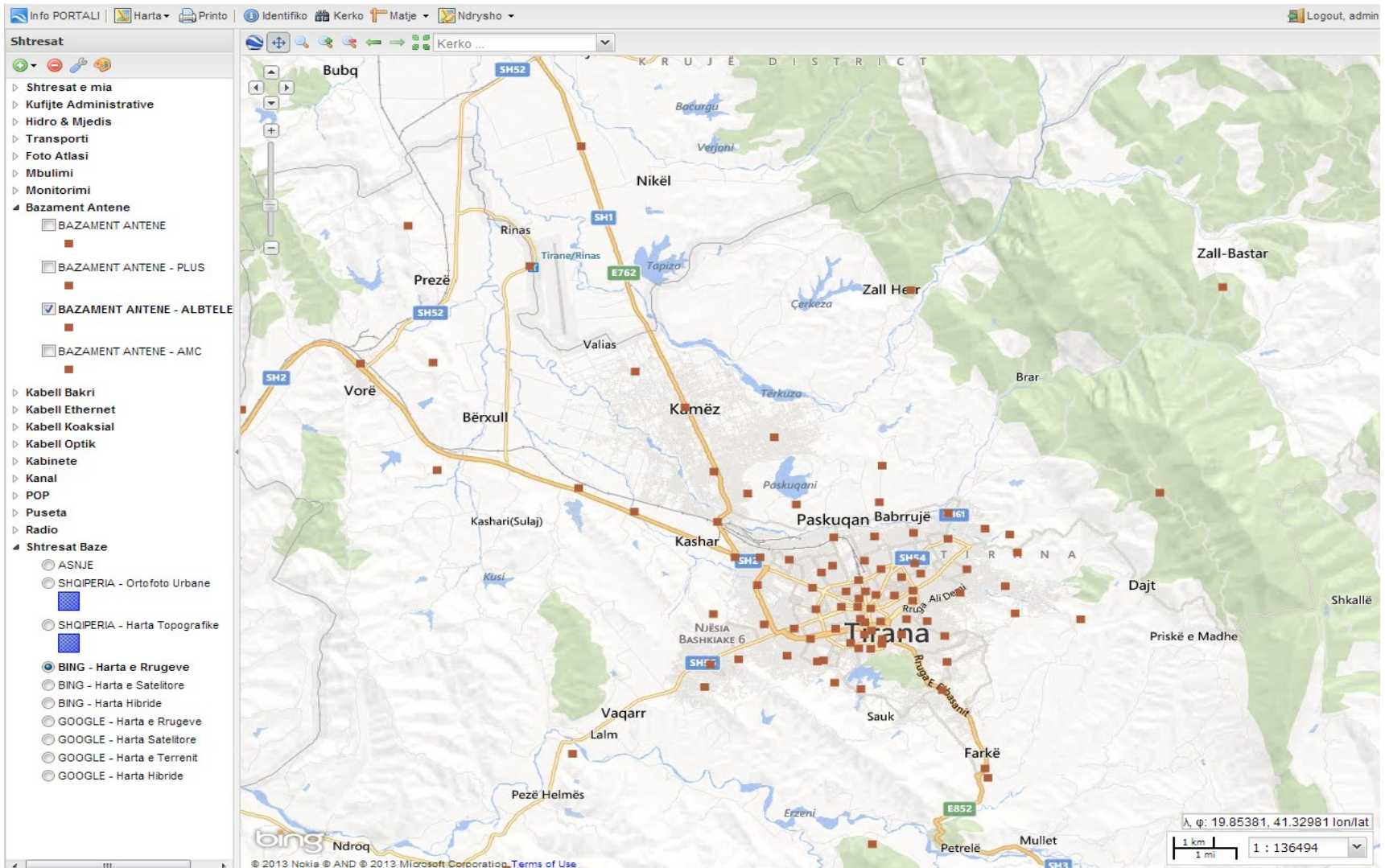
Mapping System
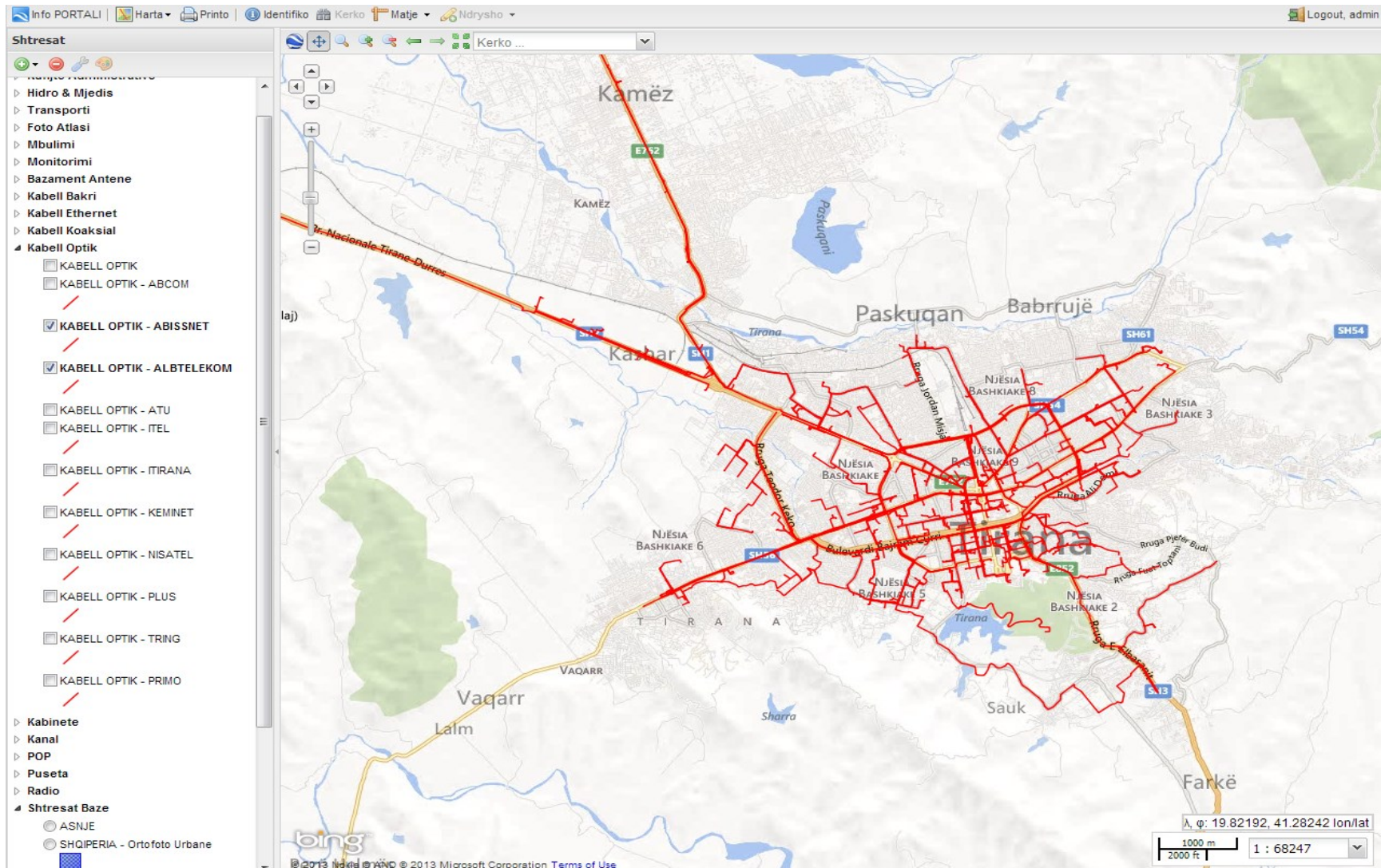
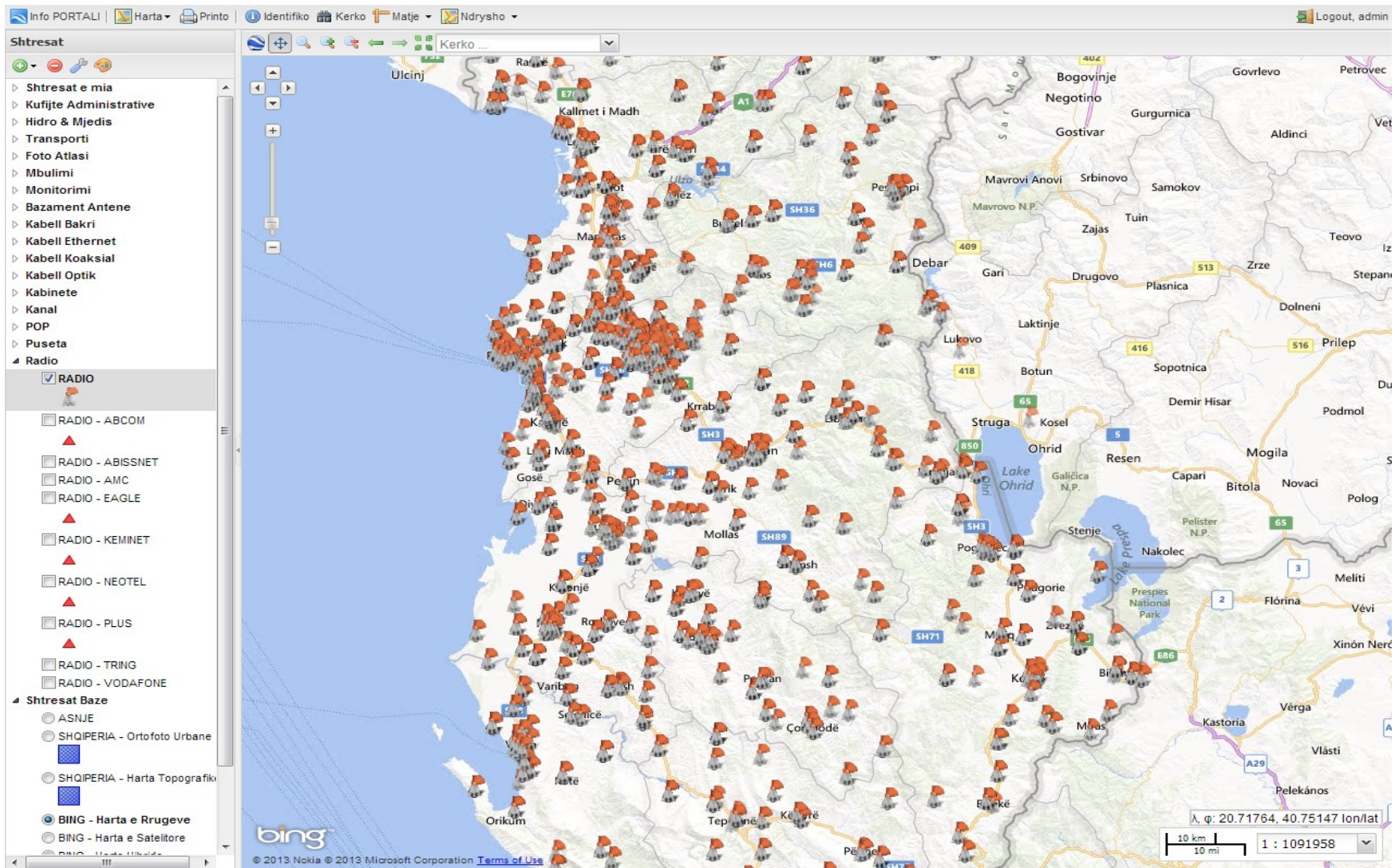Network infrastructure map : Optical Fiber

Mapping System

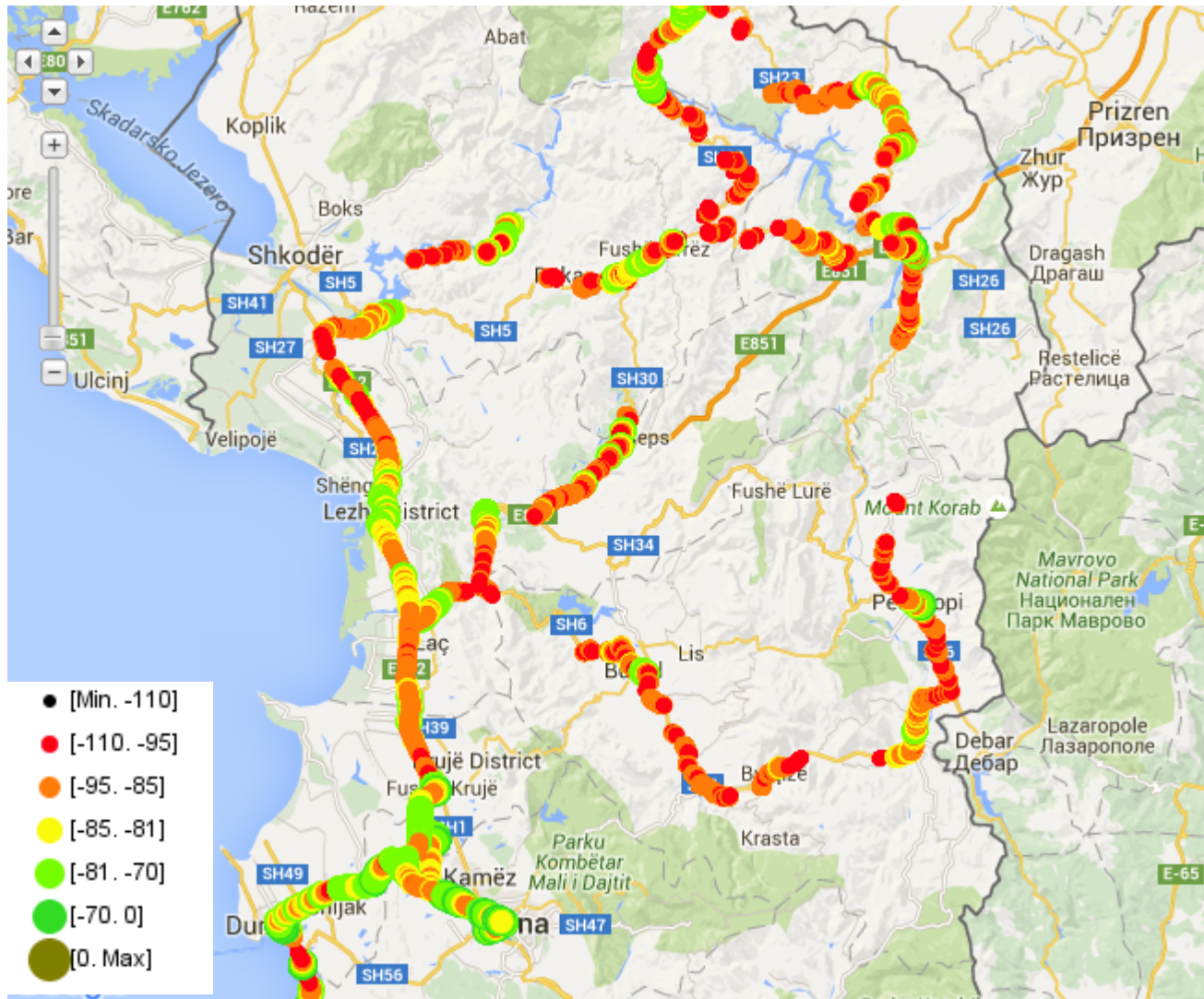Network infrastructure map: Passive infrastructure

Mapping System

Network infrastructure map : Antenna basement

Mapping System

Network infrastructure map : Radio Transmitters

Mapping System

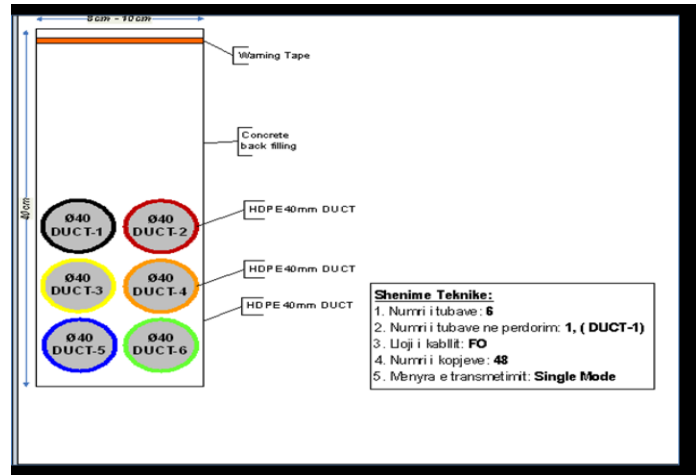**Mobile QoS Monitoring.**

Mapping System

Rezultatet e Kerkimit		
Emri	**Tipi**	**Linku**
Seksion Kanali ...	Kabell Optik ATU	
Antena Llogara	Radio	
Antena Shiroke	Radio	

Shenime Teknike:
1. Numri i tubave: **6**
2. Numri i tubave ne perdorim: **1, (DUCT-1)**
3. Lloji i kabllit: **FO**
4. Numri i kopjeve: **48**
5. Menyra e transmetimit: **Single Mode**

Population of the lawyer with antenna photos and other objects with a detailed information .

Mapping System

Reports module.

➢ **Mapping the services. Cooperation with ITU and AKOS (Agency for communication networks and services of the Republic of Slovenia)**

- ▪ Team from AKEP visited the AKOS premises
- ▪ Learning from the slovenian experience
- ▪ Optimization the mapping system. Improvement of technical parameters
- ▪ Single platform, service mapping, demand mapping
- ▪ Usefull reports from the huge amount of data.
- ▪ Integration of postal services information within the GIS platform

➢ **Using a single coordinative system standart in collecting information for mapping network infrastructure. (INSPIRE Standard).**

Consumer choise and protection

- 2012: AKEP approved broadband access general terms and conditions for 90 ISP focusing in the QoS.

- From 1.01.2013 all ISP have to:
  - Provide '**broadband speedtester**' for their subscribers on their webpage;

  - Include in the subscribers contracts broadband QoS:

Broadband QoS measurement tool
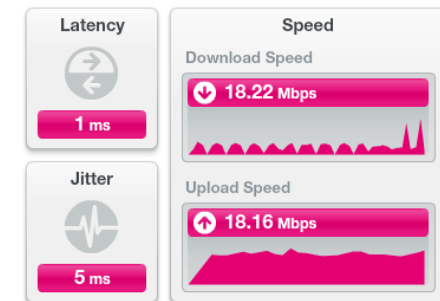
➢ Cooperation with ITU and UKE – Office of Electronic Communications, Republic of Poland

➢ QoS measurement tool
- User-friendly solution, Service and QoS mapping
- Centralized, Flexible and compatible, different OS
- Increase transparence and knowledge
- Improve the QoS
- Reports and Statistics

Thank You !