

ITU - AKEP

Implemented and ongoing projects



SHEFQET MEDA

Director

Technical Regulation and Infrastructure Department

Electronic and Postal Communications Authority (AKEP) Albania



Infofest
Budva - Montenegro
2016

Institutional developments

- ❖ The electronic communication sector in Albania is fully liberalized and is regulated by Law No 9918 dated 19.5.2008 “On the electronic communications in the Republic of Albania” (amended). This law is full in line with EU directives of 2002 and 2009 package on electronic communications.
- ❖ Over the last years the alignment of the national regulatory framework for electronic communications has undergone rapid growth. Competition in electronic communications market has increased as a result of the government's policies and regulatory measures through regulating termination tariffs, implementation of mobile and fixed number portability, etc.
- ❖ AKEP is the regulator body for electronic communication market. AKEP is an independent regulatory body which reports directly to the parliament for its annual activity and for the fulfillment of the regulatory tasks defined by the electronic communication law.

Market main trends

- ❖ During 2015 -2016, 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: from fixed and mobile networks.
- ❖ Mobile operators, significant investment in 3G and 4G
- ❖ Altelecom significant investment in NGN/NGA:
 - 100% of subscribers connected to NGA (MSAN)
- ❖ Mobile broadband subscribers and traffic are growing.
- ❖ More effective use of spectrum; focus on the provision of quality services and competitive prices for consumers

Broadband market

Albania population - 3.000.000 residents

- ❖ 2 million users of mobile broadband
- ❖ Subscribers with fix broadband access - **254,950**
- ❖ 1.5 million active users
- ❖ Subscribers with access in integrated services (Telephone, Internet and TV) -174,589
- ❖ Mobile subscribers number with access in UMTS/LTE broadband -1,515,684
- ❖ 550 MB average download per user

❖ **ITU - AKEP projects overview**

(2008 - 2016)



Frequencies

- ❖ Efforts and assistance from ITU regarding development and utilization of SMS4DC in Albania – 2008

- Achievements:

Establishing SMS4DC system which helped AKEP in creating a functional frequencies database.



Monitoring

- ❖ Design of a new monitoring system for AKEP in Albania - 2012.

Assistance in the development of the technical specifications of a new monitoring system.



❖ Achievements:

- Designing a National Frequency Monitoring System.
- Tech. spec. used by AKEP in tender procedures. (NFMS is underway and up to now are established two stations which cover two main cities of Albania, and two others are in tender process.

Numbering

❖ ITU-D – 2012

Revision of the Numbering Plan

- Options for removing geographic structure from Plan
- Market trends
- Regulatory best practice
- Recommendation

Achievements:

- ❖ Avoid Constraints on location for geographic numbers
 - first step: changing from 170 NDCs to 12 NDCs
 - second step: removing geographical information for all country and dialing “0” first for all calls regardless of location.
(implemented from 1st July 2016)


Trainings

❖ Training support for AKEP's staff on:

- Regulatory issues
- Broadband network and services
- Satellite networks and services
- Frequency management
- Numbering etc...

- ❖ **ITU twinning project to ALBANIA – SLOVENIA**
- Assistance to Albania in preparation Tech. Spec. for Upgrade of Broadband Infrastructure Mapping – ATLAS in cooperation with Slovenian regulator -AKOS

❖ Achievements targeted :

- Upgrade and maintenance of Web GIS viewer – “ATLASI Elektronik” of AKEP
 - Technical consultancy in supplementing the standard data exchange format for electronic communications networks and upgrading database for optimal management of spatial layers.
 - Establishment of a system for receiving, monitoring and administration of data of electronic communications networks.
 - Implementing regular and “ad-hoc” analysis depending on AKEP’s requirements
 - Providing professional technical support in the data management and GIS consultancy
- 

❖ **New systems enable citizens to have online information about:**

- level of connectivity
- type of physical connection (cable, copper, fiber)
- the maximum supported bandwidth speed at the particular geographical location
- for each location it is recorded if the broadband infrastructure is actually being utilized or not

Facilities

- ❖ **System to encourage:**
 - **coordination of civil works,**
 - **co-deployment and**
 - **passive infrastructure sharing**

ATLAS System (existing)

- ❖ Objective of the project implemented has been integration in a Web-Gis system and establishing mapping infrastructure of the following systems:
 - Radio frequency transmission systems
 - Mapping for electronic communications systems
- ❖ Integration of all information and establishing mapping infrastructure for electronic communications systems in Web-GIS gives the possibility the AKEP institution for a fast decision for managing politics, monitoring, control, reporting etc.

On ATLAS system

- ❖ System is built as a multiuser system which offers the possibility to the administrators to manage roles for every
- ❖ Mapping system offer the possibility to the operators and Administrative Unit to 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

Mapping System

E - AUTORITETI

- e - Operator
- e - Aplikime
- e - Portabiliteti
- e - Numeracioni
- e - P.P.F.
- e - Konsumatori
- e - Ankime
- e - Njohje Konformiteti

AKTUALITET

PUBLIKOHEH TREGUESIT STATISTIKORE TË TREGUT TË KOMUNIKIMEVE ELEKTRONIKE PËR 3 MUJORIN IV TË VITIT 2014

Viti 2014 u karakterizua nga një rritje e numrit të pajtimtarëve të internetit. Të dy segmentet e aksesit broadband dhe fiks dhe 3G (karta USB/modem), kanë pasur rritje me rreth 13.3 % dhe 10.5 % krahasuar me 2013, respektivisht. Norma e pentrimit për këtë segment tregu në fund të 2014 ka arritur rreth 11.66% ...

Lexo ma...



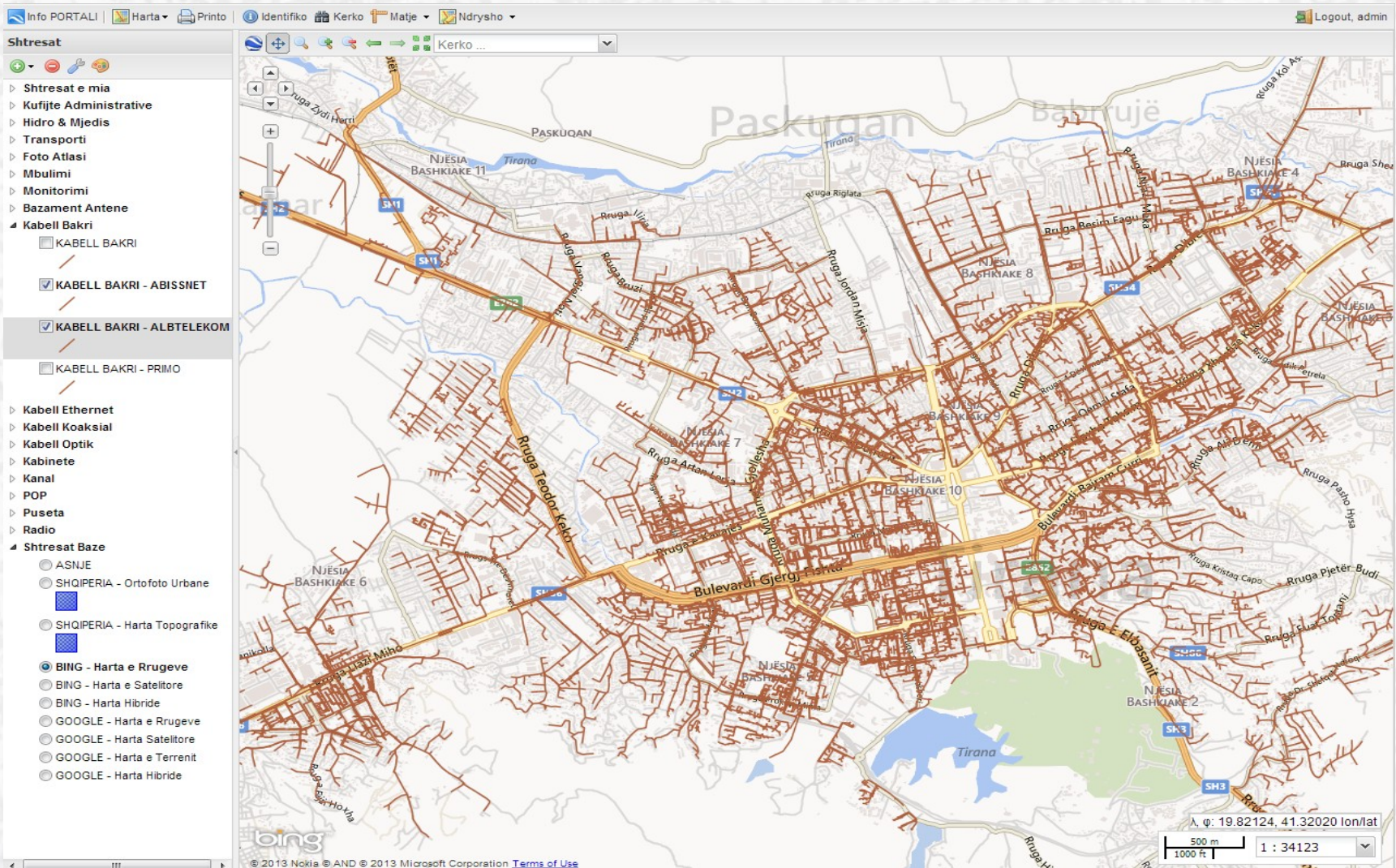
BROADBAND

broadband.akep.al

www.akep.al/broadband

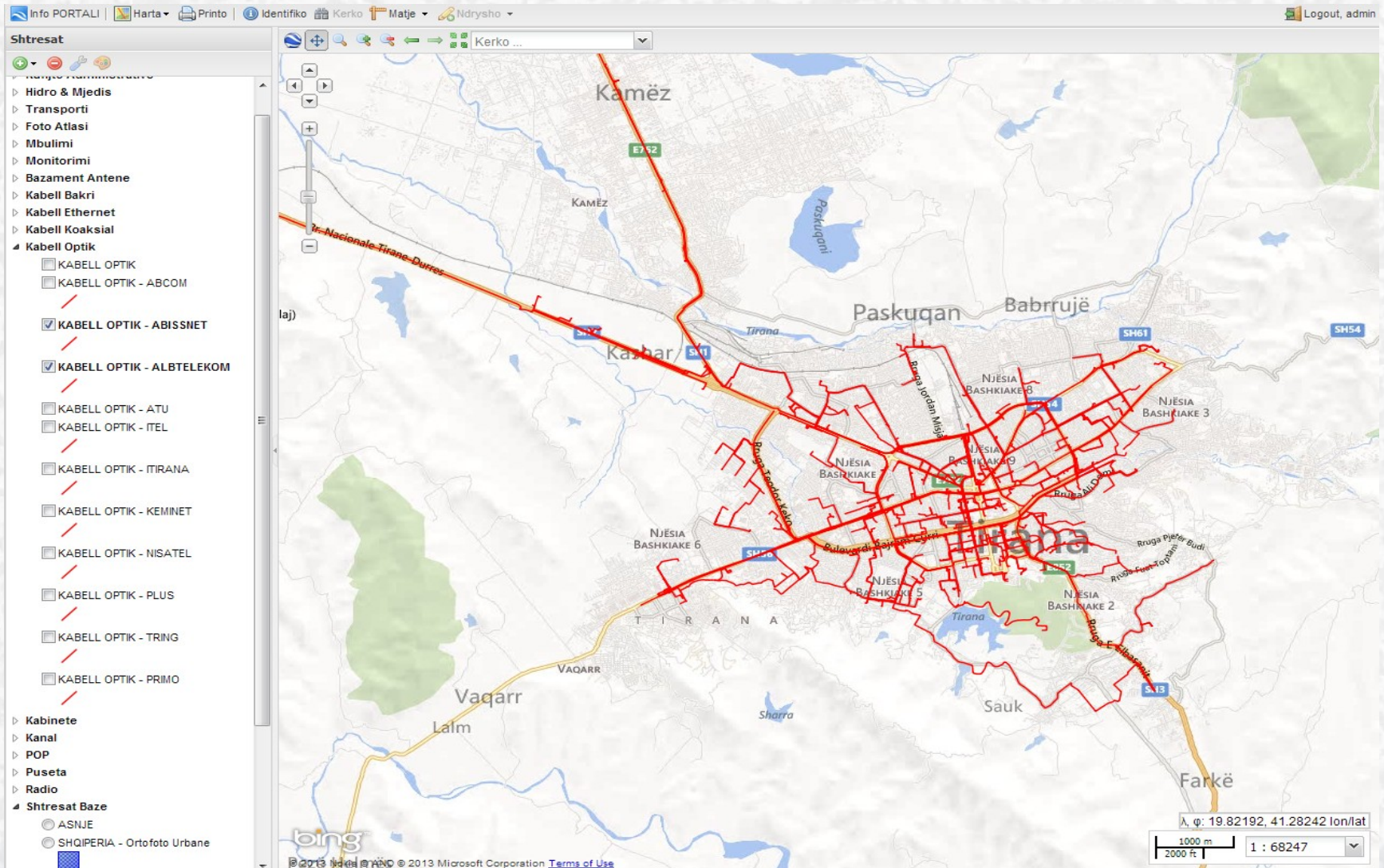
User interface view

Mapping System



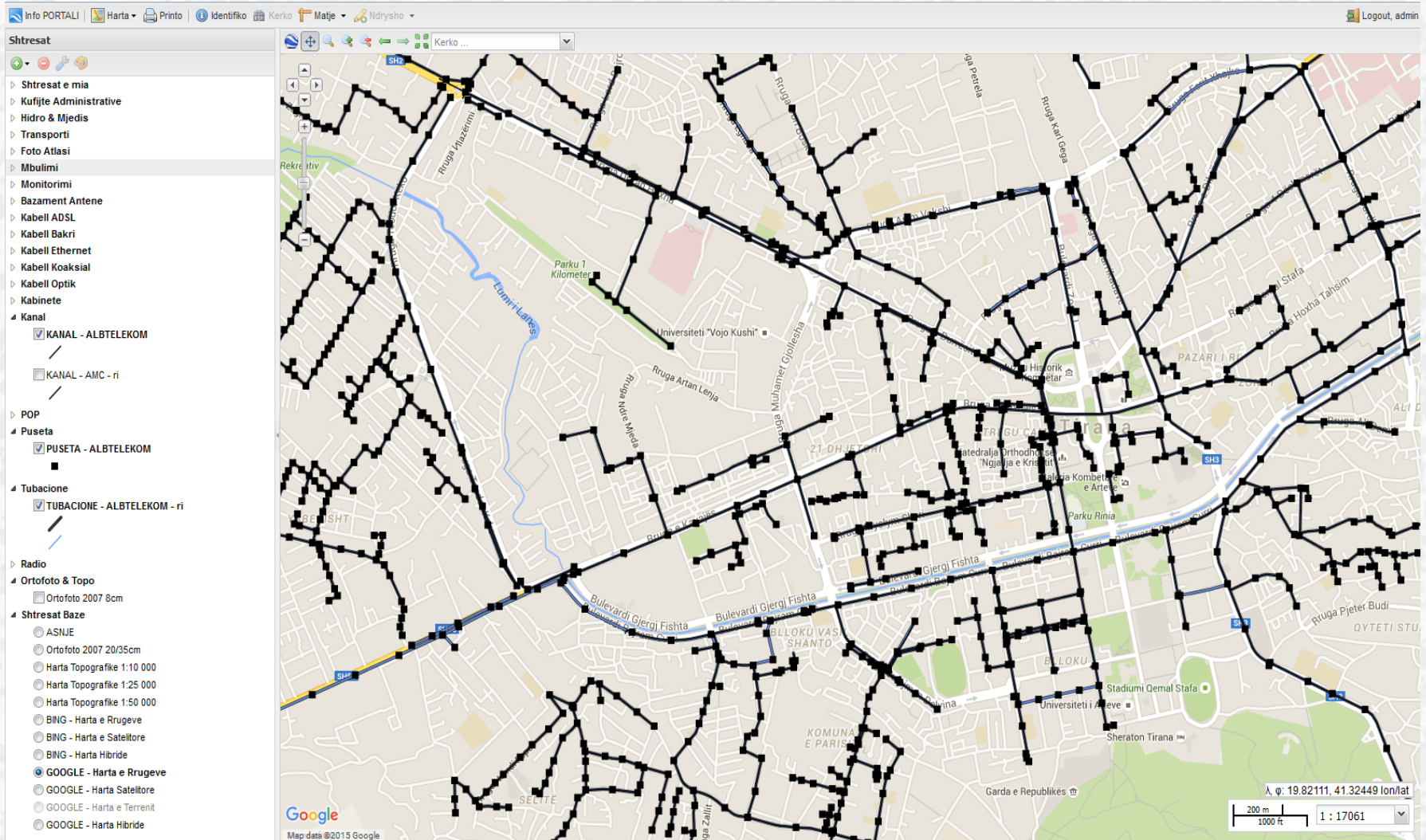
Network infrastructure map : Cooper Cable (by operators)

Mapping System



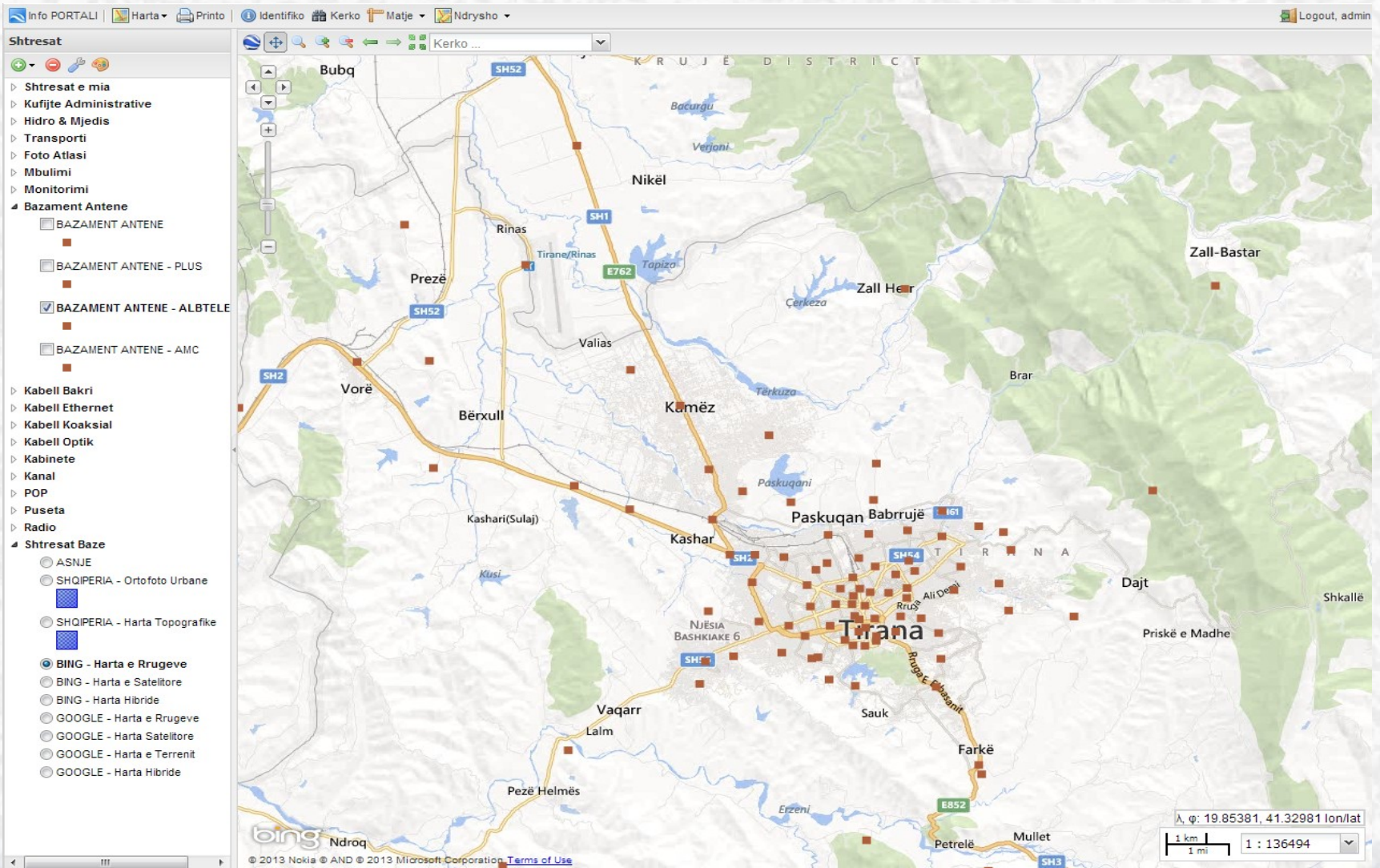
Network infrastructure map : Optical Fiber

Mapping System



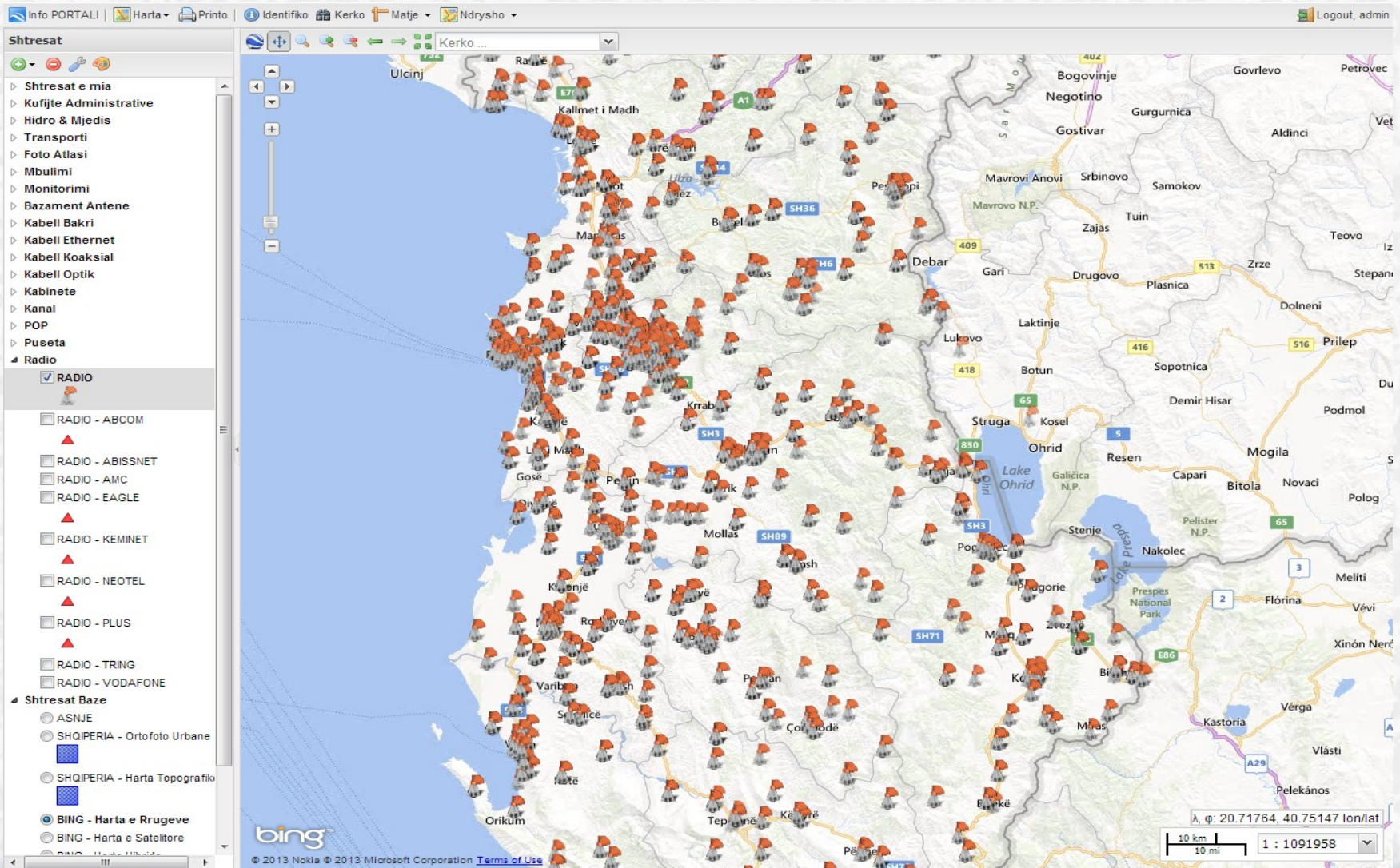
Network infrastructure map: Passive infrastructure

Mapping System



Network infrastructure map : Antenna basement

Mapping System



Network infrastructure map : Radio Transmitters

Mapping System

breadband.akep.al/akepi/atlas/

Info PORTALI | Harta | Printo | Identifiko | Kerko | Matje | Ndrysho | Logout, admin

Shtresat

- Shtresat e mia
- Kufijte Administrative
- Hidro & Mjedis
- Transporti
- Foto Atlasi
- Mbulimi
- Monitorimi
- Bazament Antene
- Kabell Bakri
- Kabell Ethernet
- Kabell Koaksial
- Kabell Optikal
- Kabinete
- Kanal
- POP
- Puseta
- Radio
 - RADIO
 - RADIO - ABCOM
 - RADIO - ABISSNET
 - RADIO - AMC
 - RADIO - EAGLE
 - RADIO - KEMINET
 - RADIO - NEOTEL
 - RADIO - PLUS
 - RADIO - TRING
 - RADIO - VODAFONE
- Shtresat Baze

Name	Value
shenja	
sher_rad	
aplikimi	
fuqja	
shfrytezim	
amplifikim	

Ruaj Anullo

Google

©2013 Google - Terms of Use

10 km 10 mi 1 : 1091958

Bull λ, φ: 19.76150, 41.11334 lon/lat

Mapping System



The screenshot displays a web-based mapping application. The main map shows a region including Albania and parts of Italy, with various cities and roads labeled. The sidebar on the left contains a list of layers and search options. The search results table at the bottom right shows the following data:

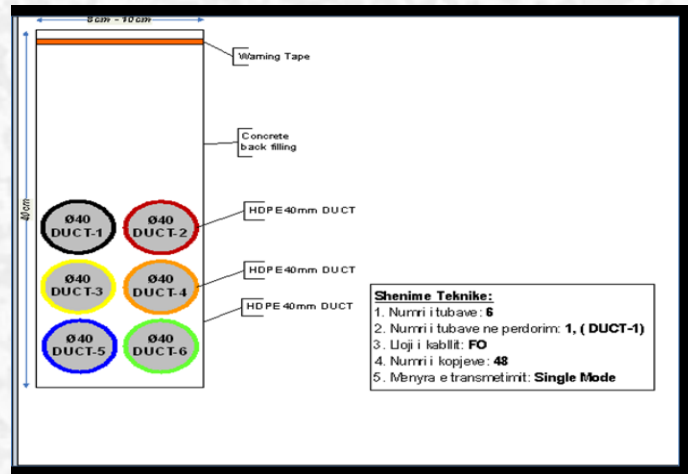
Emri	Tipi	Linku
Seksion Kanali ...	Kabell Optik ATU	
Antena Llogara	Radio	

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

Mapping System



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



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

Mapping System

admin Logout

Optical Fiber Distribution

Export Print all pages Print current page

1 2 3 4 11 51 101 > Last >> Define page size

Refresh Quick search

#	Actions	Gid	Operatori	Gjatesia	Tip Kabell	Men Transm	Vendosja	Nr Fije	Shfrytezim	District	Prefekt
01		1121	Istel	24.7492	NULL	NULL	NULL	0	0.0000	TIRANË	TIRAN
02		978	Albtelekom	3,764.0000	14	42	46	48	96.0000	LIBRAZHD	ELBAS.
03		30	Keminet	800.0000	DPTTV	NULL	0	0	0.0000	TIRANË	TIRAN
04		861	Albtelekom	2,191.0000	14	42	46	48	96.0000	BERAT	BERA
05		443	Istel	4.0103	NULL	NULL	NULL	0	0.0000	TIRANË	TIRAN
06		1275	Istel	4.7521	NULL	NULL	NULL	0	0.0000	TIRANË	TIRAN
07		28	Albtelekom	385.0000	4	43	46	48	12.0000	TIRANË	TIRAN
08		945	Istel	7.2768	NULL	NULL	NULL	0	0.0000	TIRANË	TIRAN
09		346	Albtelekom	437.0000	6	43	46	48	24.0000	SHKODËR	SHKOD
10		646	Albtelekom	521.0000	14	42	46	48	96.0000	TIRANË	TIRAN
11		927	Albtelekom	2,937.0000	14	42	46	48	96.0000	LIBRAZHD	ELBAS.
12		98	Albtelekom	690.0000	4	43	46	48	12.0000	TIRANË	TIRAN
13		787	Istel	10.6520	NULL	NULL	NULL	0	0.0000	TIRANË	TIRAN
14		329	Albtelekom	342.0000	4	43	46	48	12.0000	TIRANË	TIRAN
15		1811	Istel	141.2244	NULL	NULL	NULL	0	0.0000	TIRANË	TIRAN
16		2348	Istel	15.3648	NULL	NULL	NULL	0	0.0000	TIRANË	TIRAN
17		259	Albtelekom	1,790.0000	9	42	46	48	48.0000	TIRANË	TIRAN
18		1956	Istel	43.2631	NULL	NULL	NULL	0	0.0000	TIRANË	TIRAN
19		387	Albtelekom	271.0000	4	43	46	48	12.0000	KORÇË	KORÇ
20		230	Albtelekom	74.0000	9	42	46	48	48.0000	TIRANË	TIRAN

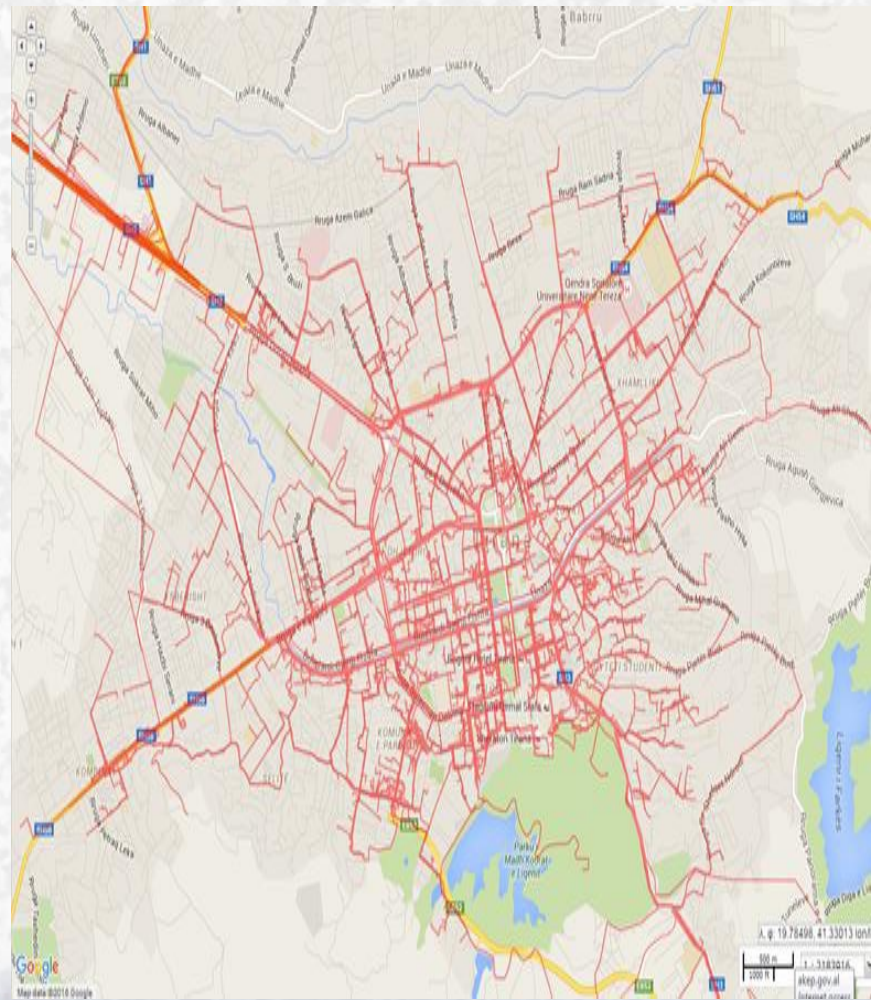
Create filter

Reports module for mapping system administrators.

Infrastructure

Optical Fiber in Tirana

- ❖ Good coverage in main urban areas with optical fibers: Tirana, Durrës, Vlorë, Shkoder etc.
- ❖ Many operators have their own urban/local FO infrastructure
- ❖ Inter-urban area only Albtelcom and ATU present

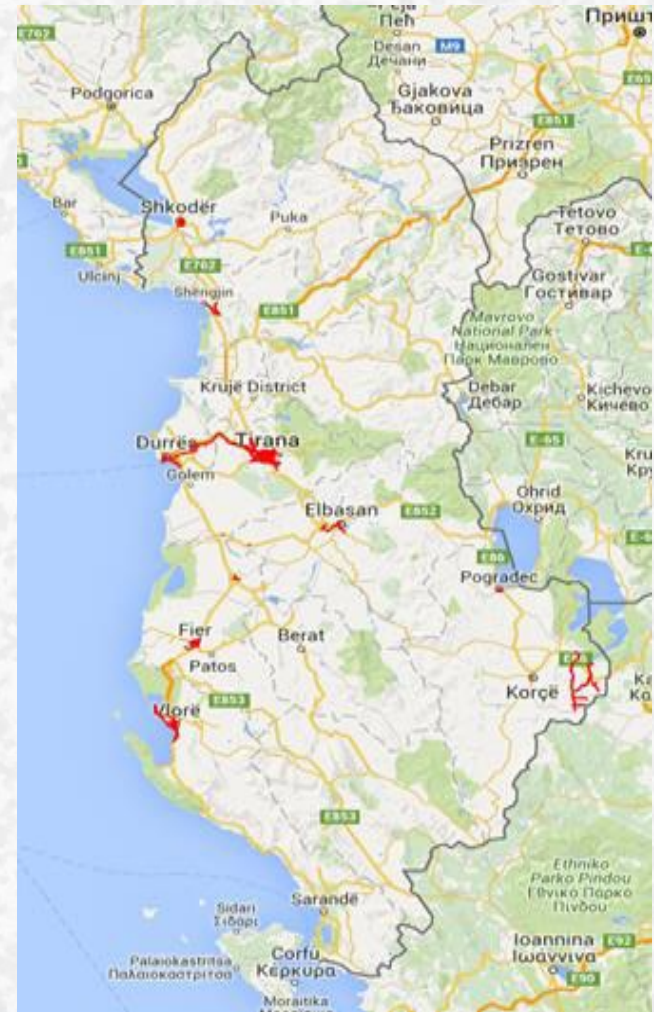


Optical Fiber: Interurban

Optical Fiber: all operators



Optical Fiber: All operators except Altelecom and ATU



Sharing infrastructure

AKEP approved a Regulation for passive infrastructure sharing in 2015

- ❖ There are obligations to roll-out empty ducts suitable for electronic communication when public works are undertaken and the NRA can impose sharing
- ❖ Most fixed operators with their own networks Infrastructure based competition
- ❖ LLU not effective
- ❖ Bitstream Access:
 - Albtelcom has signed agreements with 4 operators
 - End of 2015 approx.2000 connection
- ❖ Passive infrastructure sharing:
 - 924 km access to dark fiber
 - 61 km: access to ducts




QoS Project

❖ **QoS PROJECT - under the auspices of ITU**

and

twinning project Polish – Albanian (UKE-AKEP)



QoS Project

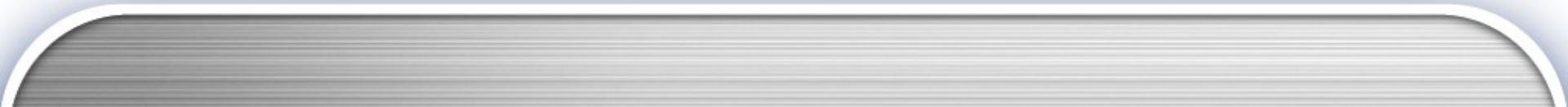
- The main purpose of the project is:

- ❑ to provide the users in Albania with a simple measurement tool allowing to get real information about the quality of the Internet service, and also
- ❑ to enable AKEP to get a clear picture and develop an analysis of broadband services in Albania based on customer's experience.



QoS Project

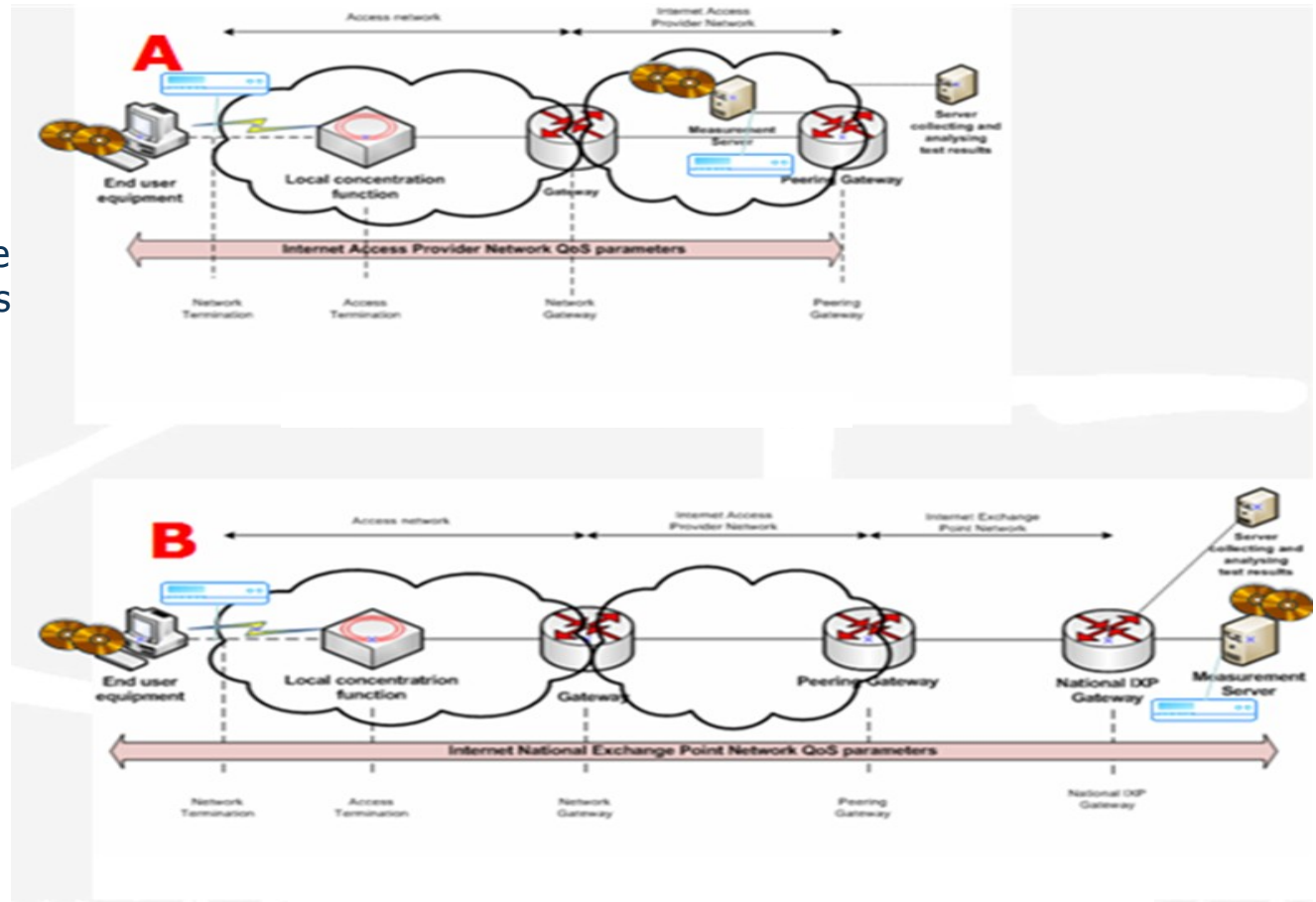
❖ QoS Project – ongoing

- actually (22-23 September) finished the mission of ITU expert for middle phase (development of project documentation)
- 

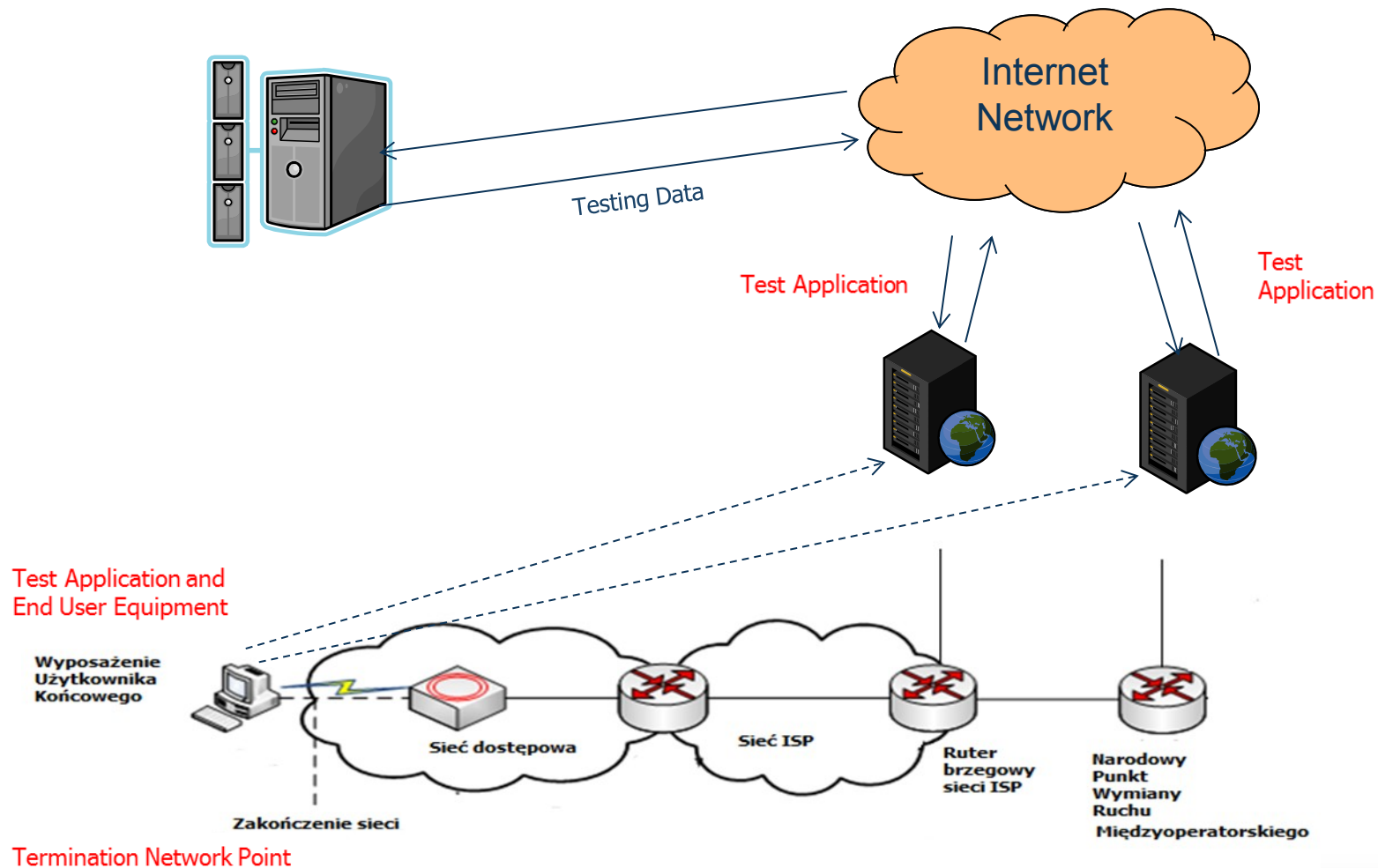
Data sources for the purposes of QoS mapping

BEREC Model of QoS evaluation of the ISP in the provision of internet access services (IAS)

- Applications for the auditors/testers
- Measurement probes



Model of Client Application Measurement



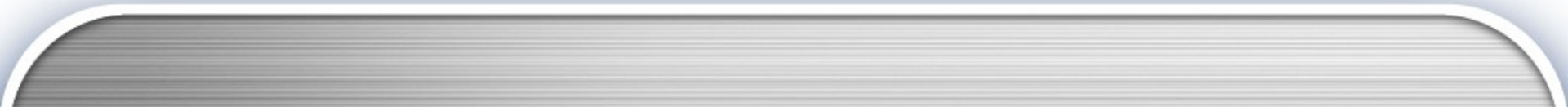
Coverage obligation

- ❖ **Broadband access coverage in zones with low population density**
- ❖ Allocation of free spectrum in 900/1800, 2100, 2600 MHz bands.
- ❖ Removed technological restriction without fees.
- ❖ Spectrum refarming in 1800 MHz band.
- ❖ AKEP approved areas with low population density for which mobile operators have obligation for coverage with broadband services.
- ❖ Mobile operators have deposited in AKEP, cooperation agreement for investing in low population density areas covering them with broadband services and areas for improving Quality of Service.
- ❖ Decisions were taken under way of Gov.Dec. No. 300, dated 08/04/2015.



Typical areas



- ❖ rural areas,
 - ❖ touristic,
 - ❖ national parks,
 - ❖ tunnels ways,
 - ❖ area involved in various development projects
- 

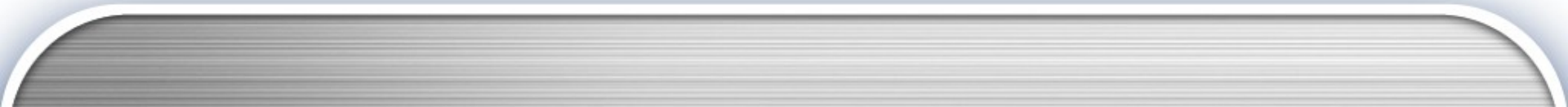
QoS parameters measured

- ❖ Network Coverage –GSM/UMTS/LTE
- ❖ Service Accessibility (voice or video-telephony)
- ❖ Call set up time
- ❖ Call Termination Rate (voice or video-telephony)
- ❖ Call Audio Quality (voice or video-telephony)
- ❖ Call Video Quality (video-telephony)
- ❖ Data Service Application Layer Downlink

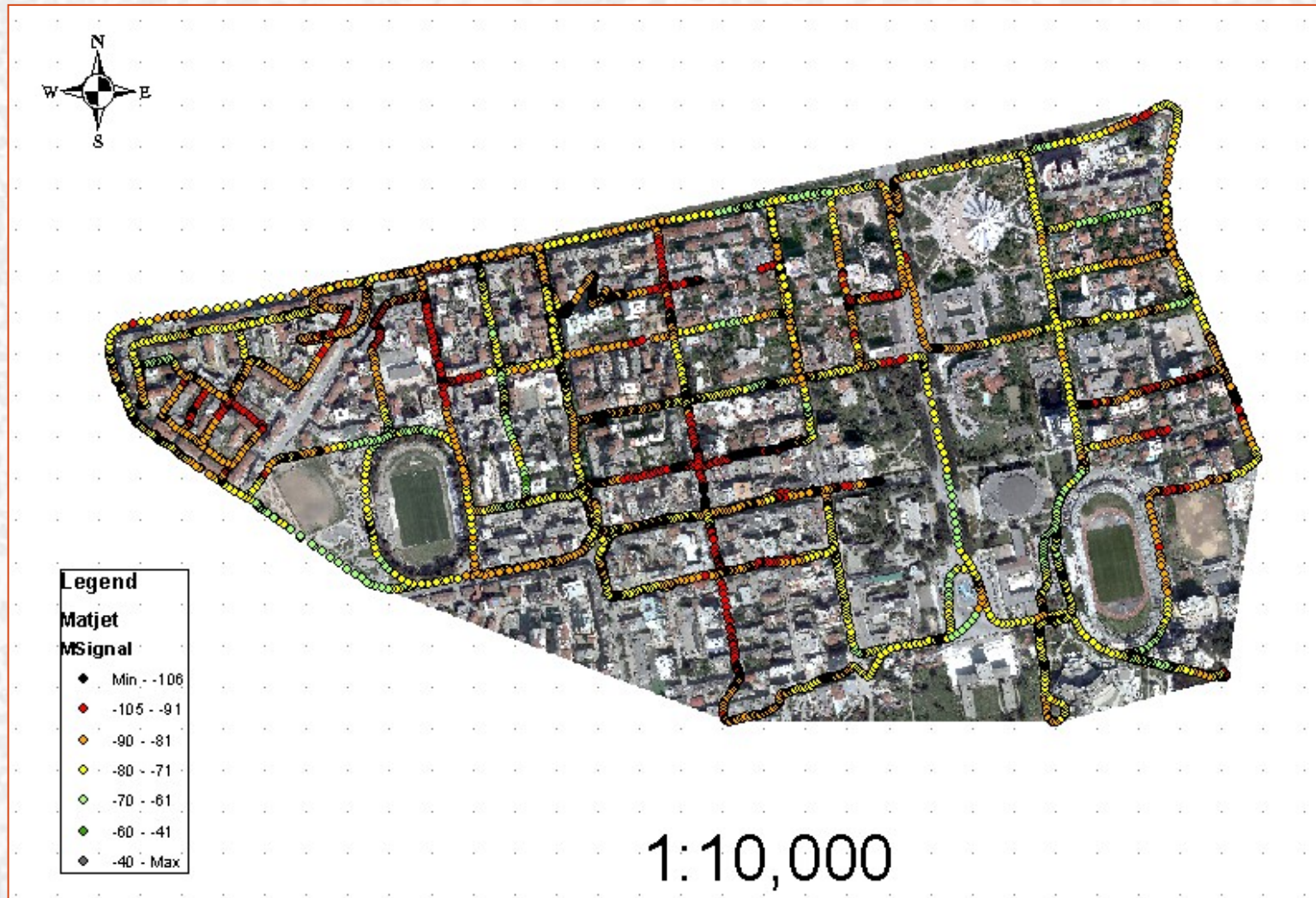


Programs used :



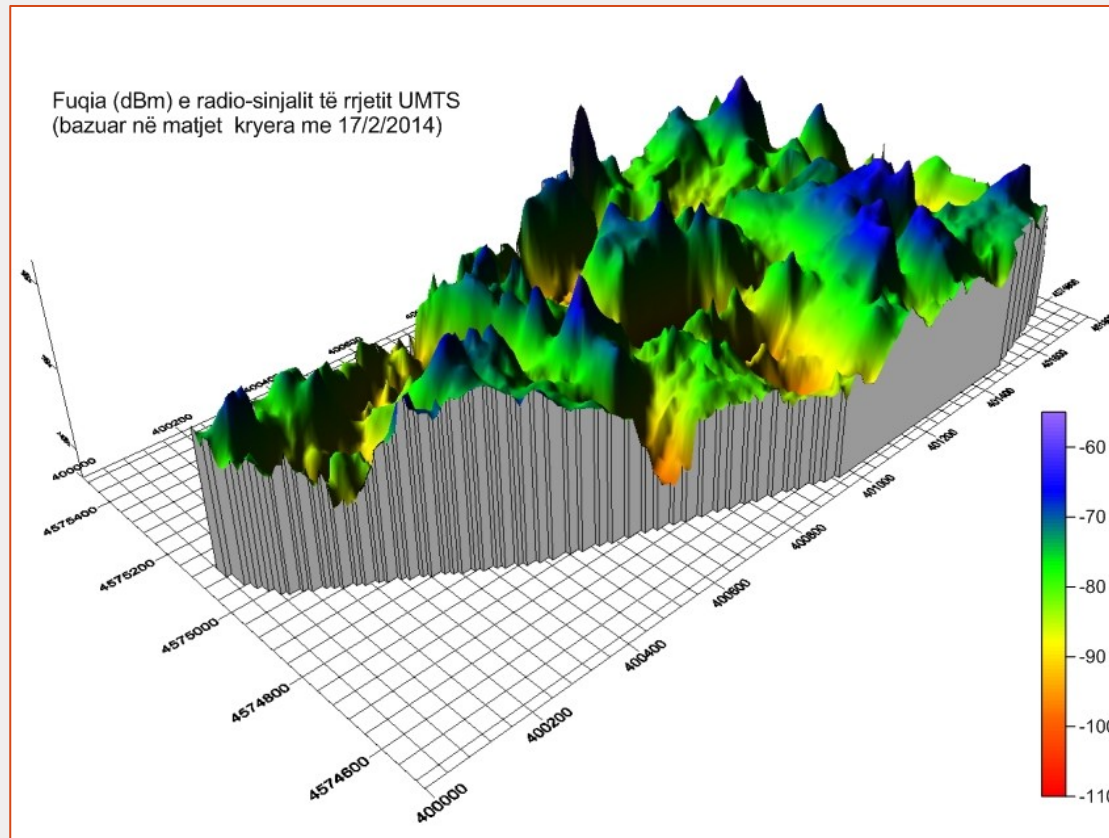
- ❖ TEMS Investigation 16.3.2
 - ❖ TEMS Discovery 10.0.7
 - ❖ TEMS Call Generator
 - ❖ TEMS Pocket Professional 14
 - ❖ Automatic Data processing option Professional GLS
- 

On the control and evaluation of the quality of coverage with Radio signals from mobile networks operating in our country



On the control and evaluation of the coverage quality with Radio signals from mobile networks operating in our country


Coverage Quality of UMTS network in the study area





Thanking



- Thanks to ITU for great efforts to AKEP,
 - Thanks to authorities that supported AKEP in implementing projects in electronic communications fields
- 

Thank you

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