ICT Infrastructure for Sustainable Development

▶▶ Future Infrastructure

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Member of Council, Electronic and Postal
Communications Authority (AKEP),
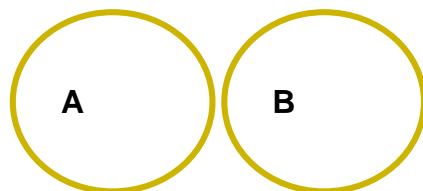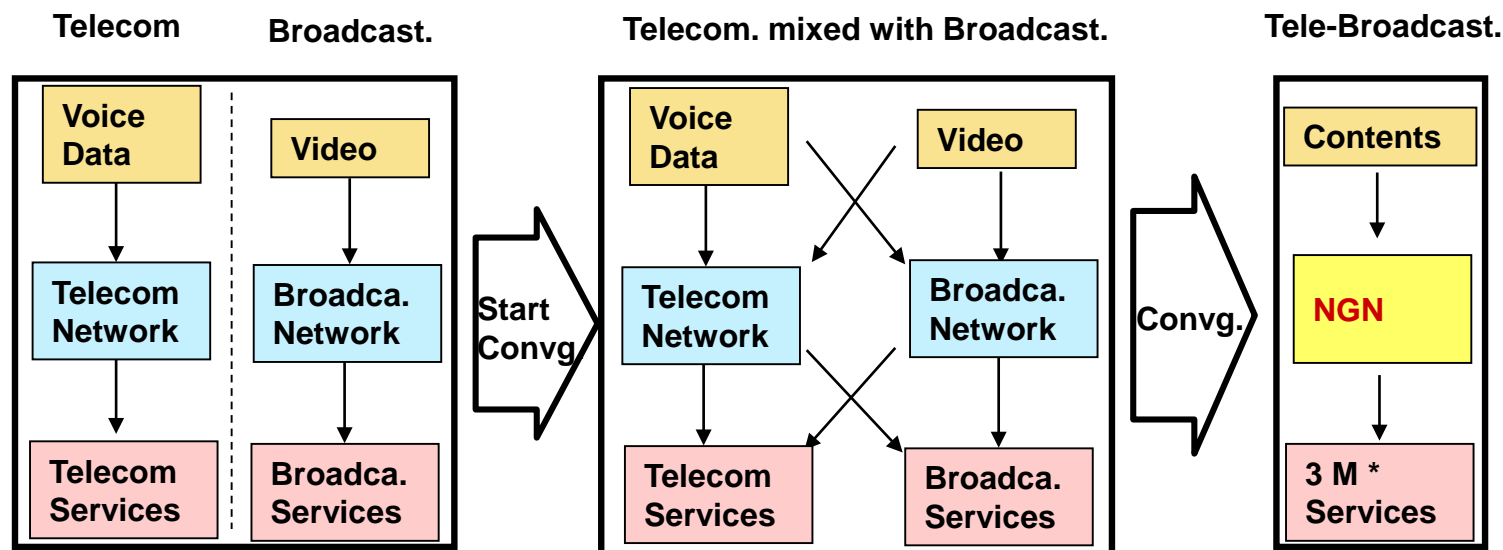**Albania**

26 April 2017, Vilnius, Republic of Lithuania

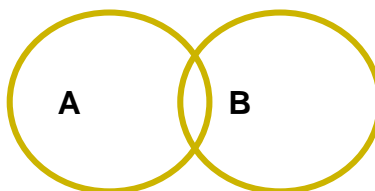# Infrastructure for Internet/Broadband

- Broadband access services may be provided through a variety of electronic communications networks. The most important electronic communications networks through which services of broadband access are provided are as follows:
  - Fix networks:
    - The existing telephone networks (xDSL - networks based on copper cables)
    - Next generation networks (FTTx - networks based on optical fiber cables)
    - Cable operators networks (networks based on coaxial cables)
    - Hybrid optical-coaxial networks (HFC),
    - NGN (Next Generation Network).
  - Wireless networks:
    - GSM/GPRS/EDGE - second generation mobile networks,
    - UMTS / HSDPA / HSPA + - third generation mobile networks,
    - Wi-Fi - wireless local area networks,
    - WiMAX - Fixed Wireless Access,
    - LTE - fourth generation mobile networks,
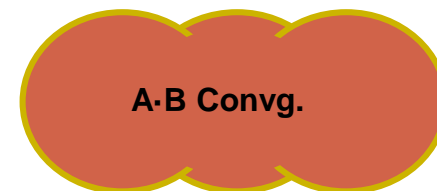   - 5G (Future Mobile Broadband).

Convergence

Telecom	Broadcast.	Telecom. mixed with Broadcast.	Tele-Broadcast.

Telecom
- Voice Data
- Telecom Network
- Telecom Services

Broadcast.
- Video
- Broadca. Network
- Broadca. Services

Start Convg

Telecom. mixed with Broadcast.
- Voice Data
- Video
- Telecom Network
- Broadca. Network
- Telecom Services
- Broadca. Services

Convg.

Tele-Broadcast.
- Contents
- NGN
- 3 M * Services

| A / B	A / B	A / B	A·B Convg.
• Sep. Reg. Authority • Stable Bus. Structure • Stable Tech. Infras.	• Sep. defini. (each side) • Exten. each Bus. area • Exten. of Tech. capa.	• Comp. btw. Reg. Aut. • Comp. btw. Bus. Play. • Comp. btw. Tech. Inf.	• Integ. Reg. Auth. • Confirmed Bus. Area • Stable Tech. Infras.

Role of the regulator

- Liberalisation and competitive safeguards
- Creation of better conditions for investors and service providers
- Creation of more consumer choice and protection

| Better regulation | Better markets | More Investment | Better services |
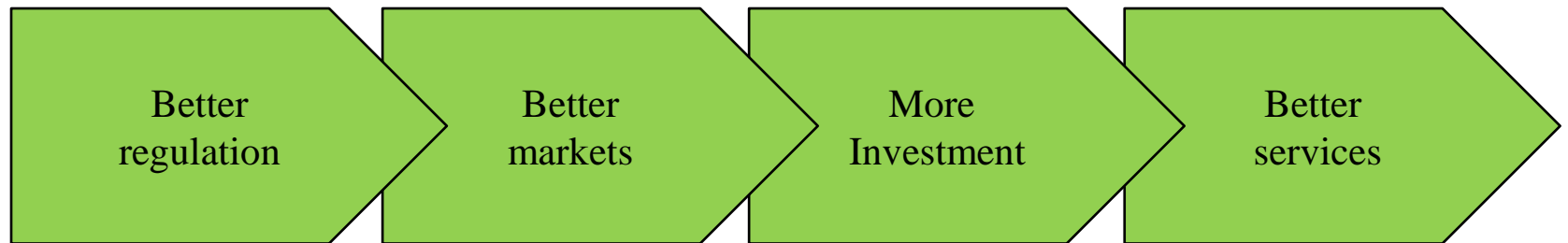
Better Conditions for Investments

- Backbone Infrastructure Atlas
- Digital data on:
  - Installed fiber networks
  - Radio links
  - Location of 2G/3G towers and BTS
- WebGIS portal (web Georaphic Information System) for online use.
- Improved information for Operators/investors:
  - Provides transparency and data for free capacities.
  - Improved capacity utilization of the public electronic communications networks.

New technologies

- Mobile operators significant investment in 3G/4G networks:
  - Coverage: 73-85% of territory/over 90% population
- Albtelecom significant investment in NGN/NGA:
  - 100% of subscribers connected to NGA (MSAN)
- Albtelecom/AO: significant investment in backbone networks in the last 2-3 years

Shared used of active and passive infrastructure in the fixed networks

- In order to promote the joint use of active and passive network infrastructure, AKEP has adopted a series of documents such as LLU market analysis, broadband access (bitstream) and leased lines and the regulation on the joint use of facilities in 2015.

- Some of these regulatory measures began to take effect in 2015, and in 2016 there was an increase in the use of active components (leased lines / capacities) and passive components of fixed network infrastructure.

- During 2016 in the provision of lease capacities significant growth was provided by interconnection lines by about 5 times reaching about 8Gbps from 1.4 Gbps in 2015.

- Positive developments also marked the provision of passive infrastructure such as access to dark fiber, pipes, which increased by 65% and 21% respectively.

New actions

Following the co-ordination of actions with all stakeholders interested in exchanging information on the electronic communications network, it is worth emphasizing the adoption of the following acts:

- Law no. 120/2016 on the development of high speed electronic communications networks and the provision of right of way,

- Decision of the Council of Ministers no. 851, dated 7.12.2016, which provides for the transfer of data on the extension of the engineering infrastructure network to the municipalities.
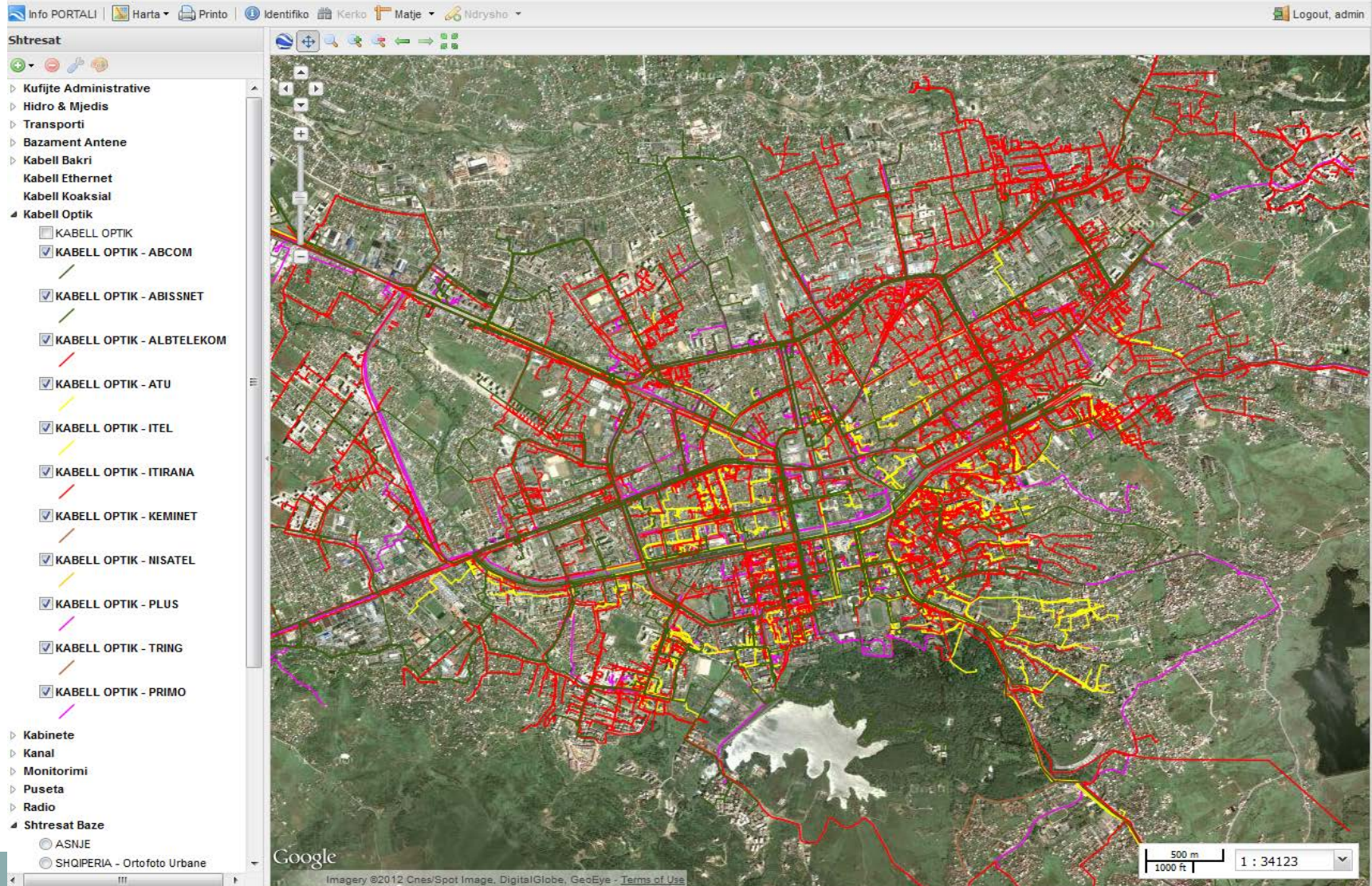
Atlasi

- Pursuant to the law no. 9918/2008, AKEP has adopted regulations regarding the joint use of facilities and assets of public electronic communications networks and Regulation on the content, form and functioning of the electronic register of public electronic communications networks in the Republic of Albania,

- The electronic register contains information on: public communications networks, electronic communications facilities, data for cableways and radio transmitters. This information is disclosed by the public communications network operators who have online access to the electronic register.

- Access to this electronic register also has other stakeholders interested in data on electronic communications networks such as Municipalities or other administrative units.

Atlas view: Uraban (Tirana) Optical Fiber and copper networks

Atlas view: National Optical Fiber and Copper Networks
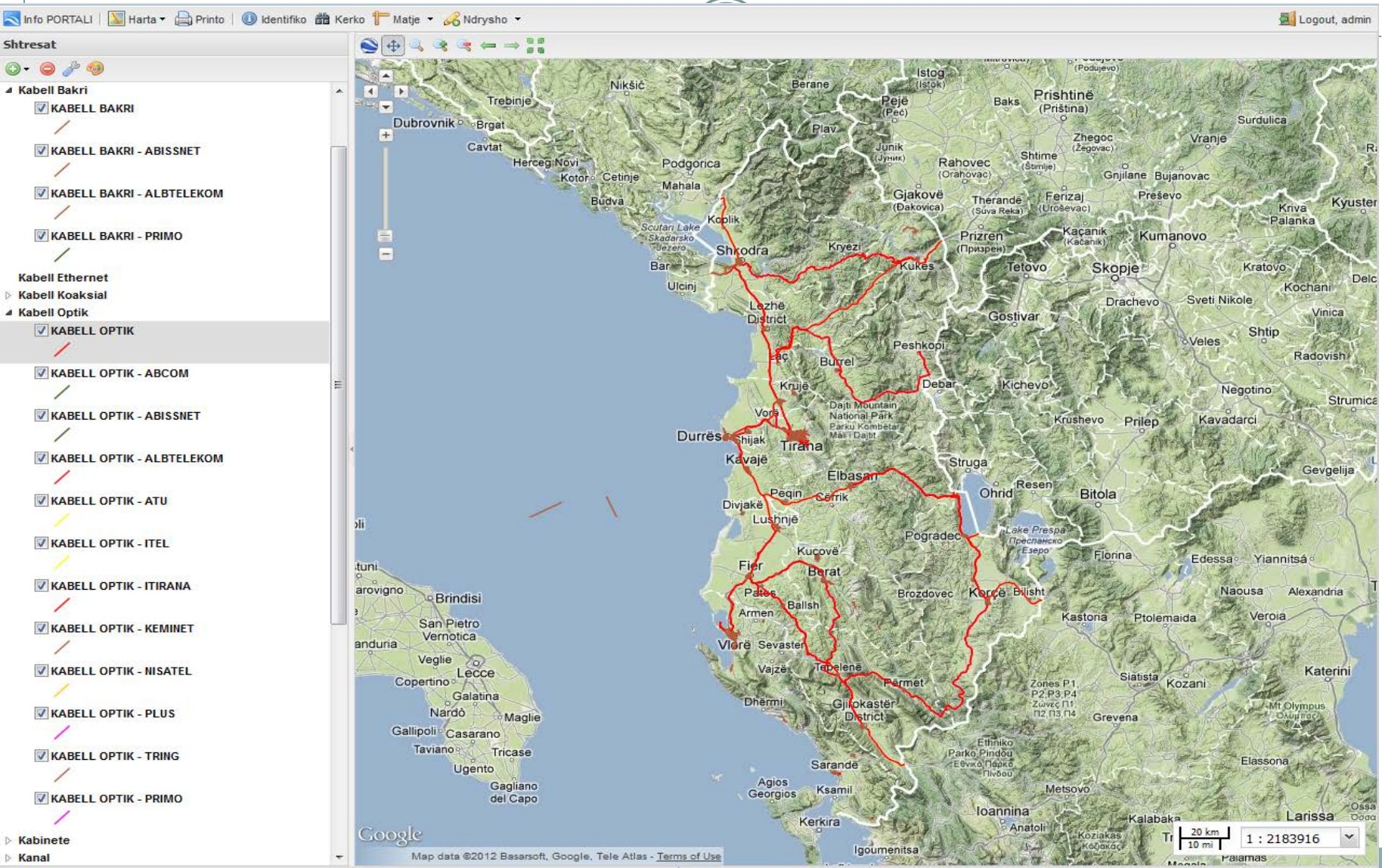
Upgrade of the system

In the framework of the further development of this infrastructure and to increase the level of existing system, it is possible to improve the current system and especially in the penetration of information to the end of the network, performing ad-hoc analyzes, generating regular reports etc.

Upgrade of the system

The project consists of:

- Upgrade and maintenance of the Web GIS platform - AKEP Electronic Atlas,
- Technical consultancy for additions to the standard of data format exchanged for electronic communication networks and improvement of the database for optimal management of spatial layers,
- Establish a system for receiving, monitoring and administering the data of electronic communications networks,
- Implementation of an "ad hoc" rule and analysis depending on AKEP requirements,
- Provide professional technical support in data management and GIS consultancy.

Albtelecom NGN network implementation

- Access network is based on MSANs (though which it can be provided POTS, ISDN, PRI, ADSL, SHDSL, VDSL).

- Local network consist of copper lines terminating to MSAN and providing the services.

- Internet service and all transportation in IP level for broadband and voice service are being offered through two main systems of access: MSANs and DSLAMs.

- Full deployment of MSAN aims to shortens the distance to the subscriber and improves bandwidth performance. The target for subscriber line is to be less than 1Km.

- Deployment of transmission network with optical fiber will ensure increasing of speed and capacity provided and quality of service for the subscribers.

Albtelecom NGN network

- Albtelecom is the incumbent operator in Albania providing fix/mobile and broadband services.

- The recent investments for modernizing the network aim to expand the presence of Albtelecom, to increase the quality of service and the variety of range of products and services.

- Currently are implemented 850 MSAN-s all over the country. The number of MSANs is increased based on users requests.

- Full implementation of NGN was finalized in beginning of year 2013.

- All traffic (voice, data, video) is transported over IP core network.

Future Spectrum Usage?
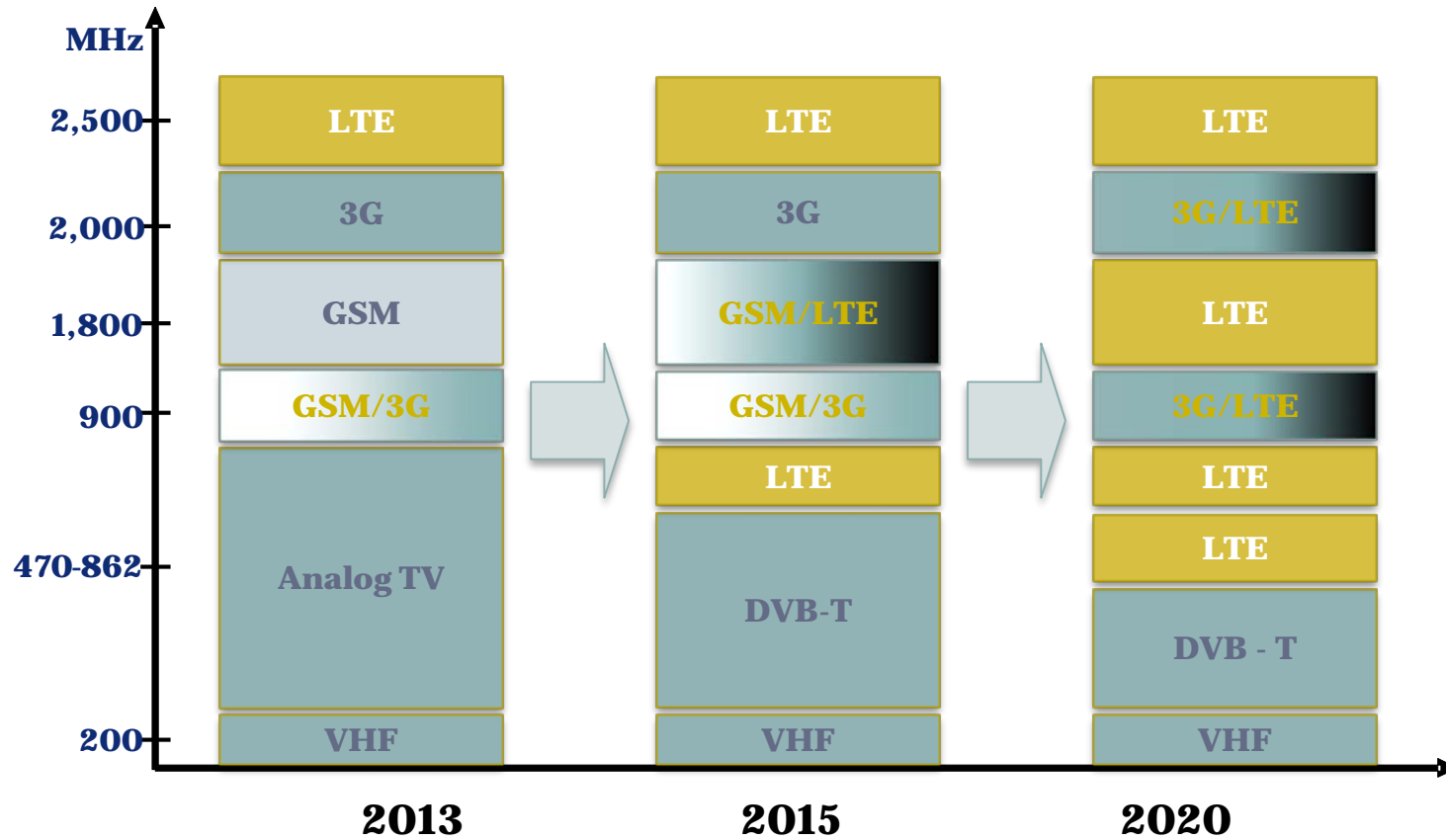
Actions undertaken by AKEP for harmonization with European legislation

- Some of AKEP's key regulatory decisions for the development of mobile broadband services are related to the introduction of conditions for the harmonized use of the radio frequency spectrum.

- The principle of neutrality in relation to the technologies used applies to the following frequency groups by transposing the provisions of European Decisions into Albanian Legislation:
    - 900 MHz;
    - 1800 MHz;
    - 2 GHz;
    - 2.6 GHz (2500-2690 MHz);
    - 3.6 GHz (3400-3800 MHz).

Actions undertaken by AKEP

- In pursuance of the National Broadband Development Plan approved by DCM 300, dated 08.04.2015, as amended, AKEP has consistently followed the fulfillment of the obligations assumed by mobile operators for covering broadband services in areas with low population density and areas to improve the quality of service provided.

- To coordinate actions between the entrepreneurs and institutions such as the Albanian Road Authority, the Albanian Development Fund, AKEP, has signed a Cooperation Agreement where the parties agree to coordinate the actions and exchange the necessary information in the field of electronic communications infrastructure construction.

- In this context, the information received from these institutions and the respective Municipalities have been made available to the operators by being published on the AKEP website.

REGIONAL INITIATIVE HIGH SPEED BROADBAND INFRASTRUCTURE AND SERVICES

- With the rapid development of information and communication technologies, the globally connected world has become a reality faster than expected, where the IoT and ultra high speed broadband technologies play a fundamental role in the fields of energy, transportation, health, agriculture, banking, disaster management, public safety and home network.

- High speed connectivity plays a vital role in transforming economies and societies as it empowers families, people, societies and businesses, in developing countries, transition economics as well as developed countries, when deployed bearing in mind the need for inbuilt resilience and promoting confident usage.

REGIONAL INITIATIVE HIGH SPEED BROADBAND INFRASTRUCTURE AND SERVICES

- Due to differences in European countries, there is a need for a regional initiative, through which administrations in need may be assisted in embracing ultra high speed broadband connectivity, including emerging 5G, to ensure accelerated sustainable development in middle and long term.

- **Objectives:** Accelerate and facilitate the deployment of ultraspeed new broadband services through the deployment of resilient and modern infrastructure which includes 5G technology and cross sectorial infrastructure sharing synergies (such as with the energy networks and other networks) equipped with effective mechanisms for Quality of Service monitoring for efficient and impactful ICT development.

Thank You

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