

# Emerging research networks in Albania and Kosovo - panel

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Arjan Xhelaj, ANA

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- the TERENA/GÉANT Networking Development Support Activity
- Designing the Albanian Academic Network Infrastructure
- The Future Kosovo NREN – KOSNet?
- Discussion/Questions

- Assist NRENs, regional and local R&E networks by helping integration in the European Research Area
  - Gain better understanding of the status of R&E networking in less advanced countries, inhibitors and opportunities
  - Transfer of knowledge in technical, managerial and policy areas
- Work method
  - Desk study, Visits, Report with recommendations
  - Specific support actions
    - *Knowledge transfer, consultancy, training, awareness raising, etc.*

- Country Needs Assessments in the Balkans, Mediterranean region and Eastern Europe:
- Work done in southeast Europe include Albania (2005), Bosnia and Herzegovina (2007) and Montenegro (2008)
  - Policy workshop to support the creation of research network in Albania. Tirana December 2005 - 30 people representing Government stakeholders, the major universities and the Academy of Sciences of Albania.
- Currently assisting with visibility, potentially with the exchange of information and providing expertise
- Future involvement could be assist in piloting added-value services to facilitate collaboration with other European countries

# Designing the Albanian Academic Network Infrastructure

Dr. Arjan Xhelaj

Academic Network of Albania (ANA)

Daniele Arena

CASPUR



# The Albanian Academic Network

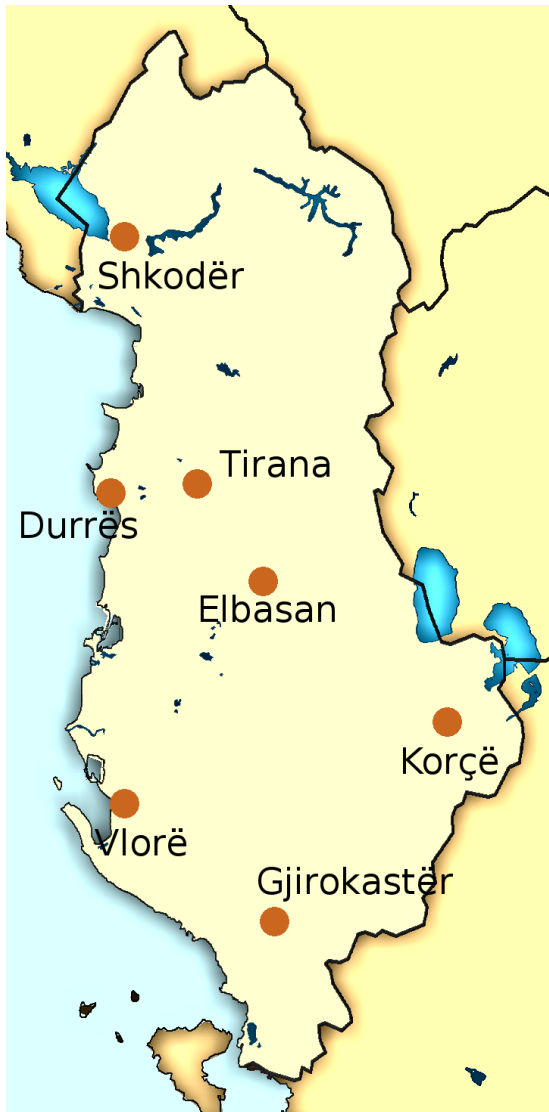
- There have been several initiatives to build an Academic Network in Albania (ANA) throughout the years
  - but none has led to the creation of a proper NREN
  - Albania is one of the last countries in Europe without NREN
- At the moment, each university has its own connection to the Internet
  - In fact, every faculty or department has a separate connection
  - Universities, Research Institutes, Technologies transfer Centers and the Academy of Science of Albania are not connected to each other
- In 2007, the Italian Government signed an agreement with the Albanian Government to fund the creation of the Albanian NREN
  - The funding is handled by the Italian Development Cooperation together with the Albanian Ministry of Education and Sciences (MASH)
  - This includes both design and deployment of the network, and common services for the universities
- This funding hadn't been used until 2010

# 2010: tender to support the set-up of the Albanian NREN

- The first tender to use the money from the Italian MFA was held in 2010
- The tender had several parts:
  - Design (not deployment) of the network infrastructure
  - Provision of common services to universities
  - Support to Universities for the Bologna Process
  - Training for NREN (ANA) and University staff
- The tender was awarded to two Italian University Consortia: CINECA and CASPUR
  - CINECA will deal with applications and Bologna Process support
  - CASPUR will design the network infrastructure
  - Both will also deal with training for their own part
- The Albanian NREN office and staff will be set up separately
  - Intercollegiate Service Center for telecommunication networks (ANA - Academic Network of Albania)
  - Supported by the Ministry of Education



# Designing the Network Infrastructure



- According to the tender:
  - The network has to connect 11 public universities in 7 cities
    - In Tirana: 5 universities, 3 research centers and the Ministry of Education
    - 6 universities outside Tirana
- In production, ANA will also connect
  - Subsidiaries of central universities in 3 more cities (Kukës, Peshkopi, Sarandë)
  - Research institutes and Technology Transfer Centers
  - Several Agencies which deal with HE and RTD
  - Possibly more education institutions (private universities, schools, etc.)
- Albania is roughly the size of Sicily (5% of France)
- By tender, initially the network has to be connected to GEANT through GARR



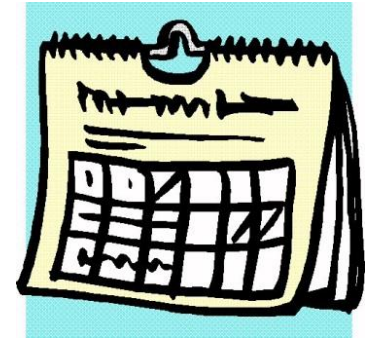


# The Challenges

- In Tirana: it is possible to build a MAN with dark fiber
  - Lots of fiber present
  - It is also possible to lay new fibers
  - The “GovNet” project (by the National Agency of Information Society) started the connection of public Higher Education Institutions in the Government network
- Outside Tirana: the only inter-city fiber available belongs to AlbTelecom (the incumbent)
  - They don’t provide dark fiber, only capacity (under 100Mbps)
  - GovNet has started connecting HEIs in central cities (Durrës, Elbasan)
  - Alternative: radio links
    - Many local ISPs do this: frequencies are already crowded
      - 1257km covered by radio links
    - Albania is hilly: several hops might be necessary for each link
  - Other ISPs have local fibers inside the cities
- International fiber
  - Old trans-Adriatic cable + ADRIA-1 to Greece and Croatia
  - Still no dark fiber provided, only (expensive) capacity
  - Plans to build another Italy-Albania fiber are uncertain
    - A license has been granted but is going to expire in a few months
    - The construction hasn’t started
- A survey of the Universities still has to be made
  - To see what’s there and what the needs are



# Projected Timeline



- Before the end of this month, the contract between the Albanian Ministry of Education and CINECA/CASPUR will be signed
- Staff recruitment for the “Intercollegiate Service Center for Telecommunication Networks” (ANA, the NREN organization) is ongoing
  - The Director has been selected (Dr. Arjan Xhelaj)
  - The rest of the staff still has to be hired. There will be three departments:
    - Advanced software applications
    - Network survey and support
    - Database
- When all bureaucracy is done, from the startup time CASPUR will have 6 months to deliver the design and technical specifications
- After that, probably still a few months to assign the tender for the implementation of the design plus a few more months to go live

# Request for Input

- We are trying to build a NREN from scratch
  - The infrastructure (including VoIP)
    - The tender to build the infrastructure
  - The support (NOC and SOC)
  - The policies (e.g. rules to access the network, AUP)
- We are looking for your input!
  - You run NRENs day-to-day
  - Let us know if you have BCPs, designs, suggestions, tips you can share
  - We will be here for the whole conference
- Fun fact:
  - When the network will be built, IPv4 addresses will be over
  - We would love to design an IPv6-only network, but it can't be done yet...

# Thank you!

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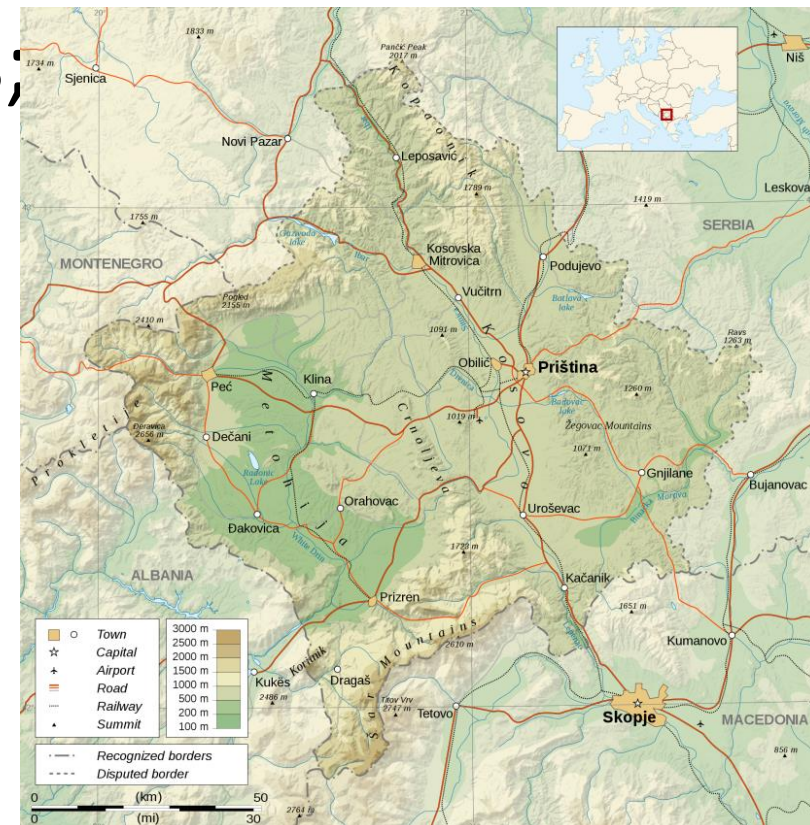
# The Future Kosovo NREN – KOSNet?

Goran Škvarč

CARNet

# Republic of Kosovo

- New state in Europe;
- Population 1,8 mil (2007 estimate);
- 450 000 pupils and students;
- 24 000 teaching staff;
- 1 250 schools;
- 2 universities.



# Present Status

- There is no NREN in Kosovo at the moment
  - At some point in past some connectivity has been established but nothing institutional;
- There are number of institutions that need network connectivity and access to the Internet:
  - 1 250 primary and secondary schools:
    - 950 main schools;
    - 300 of their outposts in smaller areas.
  - 2 universities (state) + private universities;
  - Didactic Centres, Municipality Educational Directorates, Afterschool Clubs, Ministry's Agencies...





EU-IT PILOT PROJECT  
IN THE FIELD OF EDUCATION

*Project title:*  
**EU IT Pilot Project in the Field of  
Education**

Project number: EuropeAid/127855/D/SER/KOS

Country: Kosovo

Duration: 24 months

Starting date: 01 February, 2010

End date: 31 January, 2012



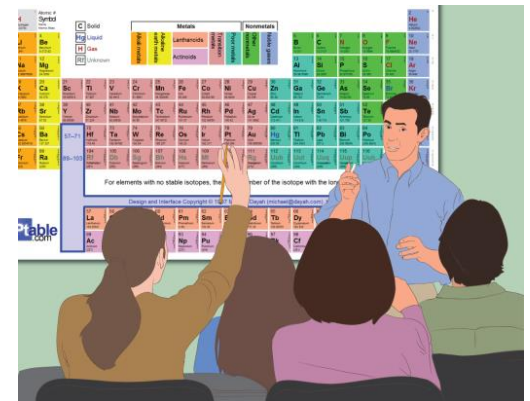
MAY 2011



# Goals and objectives

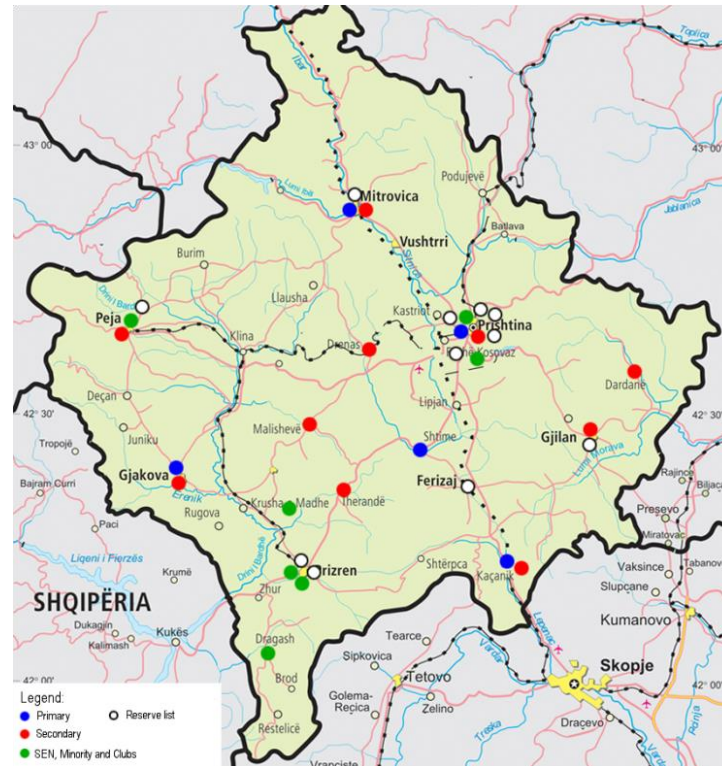
To support Kosovo Government to improve education system through support in :

- ICT, e-Education and e-Learning awareness, training and practice,
- development of e-Content and its delivery,
- improving e-Learning competence among teachers, teacher trainers and in school administration,
- **creation of an educational network!**



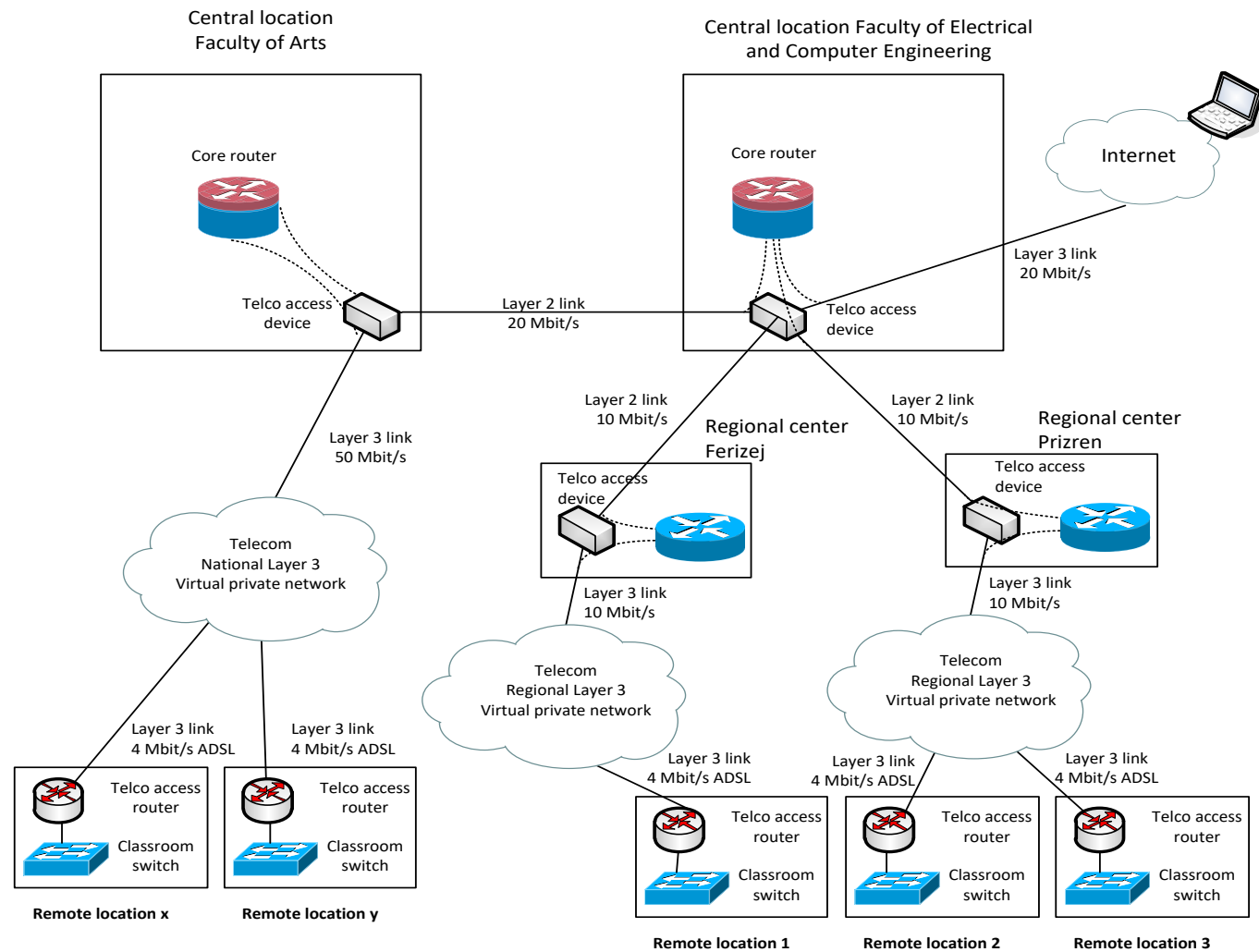
# 40 educational PILOT institutions

- 7 Primary schools
- 13 Secondary schools
  - 7 Gymnasiums
  - 6 VET schools
- 3 Special schools
- 4 Minority schools
  - 1 Bosnian
  - 1 Serbian
  - 1 Turkish
- 5 Didactic Centres
- 5 MED
- 2 Afterschool Clubs
- 2 University of Pristina



# PILOT PROJECT for KOSNet

Picture 1 – Pilot project network



# Infrastructure issues

- National Telecom Infrastructure:

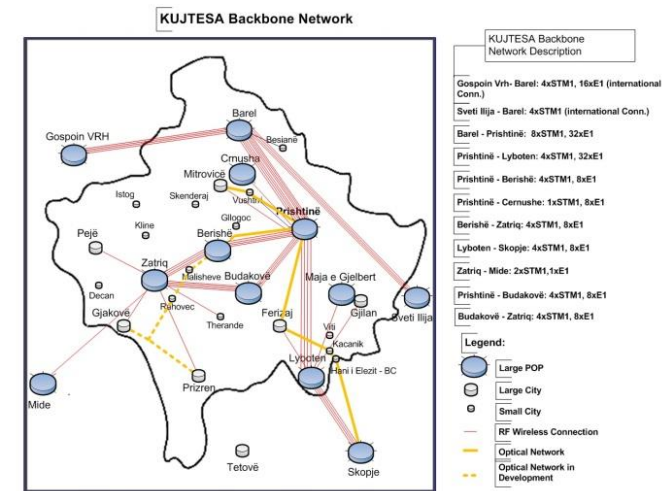
- Kujtesa backbone:

- To be privatised...

- Other Telcos

- ISPs

- Cost of commodity Internet

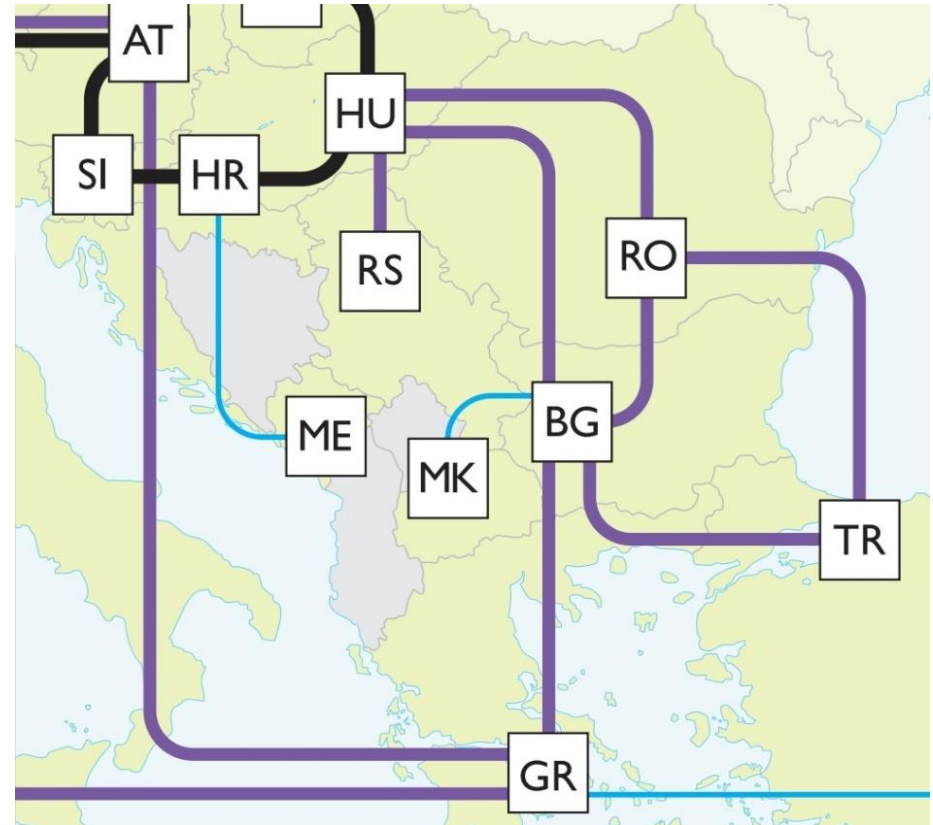


# The Challenges

- Legal and international status of Kosovo;
- Country code and domain;
- Ownership and governance of the institution KOSNet and the network;
- Organizational structure;
- Stakeholders;
- Services;
- Funding;
- International connectivity;
- Association with other similar organizations and projects.

# GÉANT

- Kosovo legal status;
- Status within FP7;
- Community “approval”;
- Which PoP and
- how to get to there?



# TERENA

- Some issues are the same as for GÉANT;
- Legal status of NREN;
- Membership status:
  - National Members – not an ITU member state;
  - International Member - not founded by the government with membership in the United Nations;
  - Associate Members and Permanent Observers?

# Thank you!

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