

# Designing the Albanian Academic Network Infrastructure

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# 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

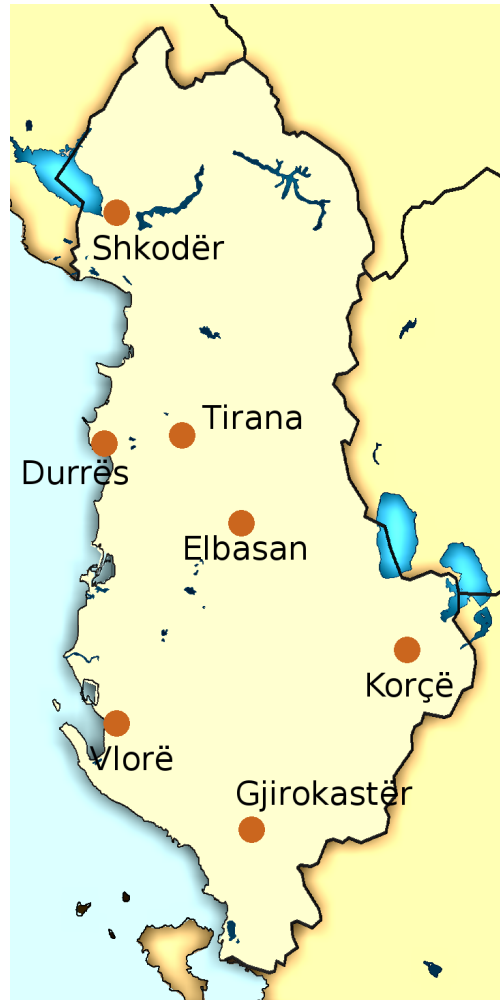


# 2010: tender to support the set-up of the Albanian NREN

- 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

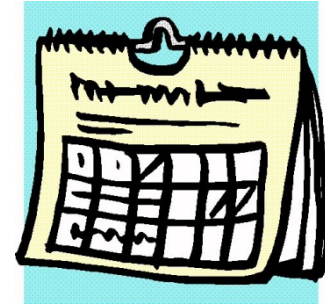


# The Challenges

- 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 Tirana to the Government network
- Outside Tirana: the only operator covering the whole country is AlbTelecom (the incumbent)
  - They don’t provide dark fiber, only capacity (under 100Mbps)
  - GovNet has connected HEIs in central cities (Durrës, Elbasan)
  - New projects are ongoing to lay fibers in Albania and connect it with adjacent countries
  - 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 the construction hasn’t started
- A survey of the Universities is about to start
  - To see what’s there and what the needs are



# Projected Timeline



- The contract between the Albanian Ministry of Education and CINECA/CASPUR has been signed in July
- Recruitment of “Interuniversity Service Center for Telecommunication Networks” staff (ANA, the NREN organization) is ongoing
  - The Director has been selected (Dr. Arjan Xhelaj)
  - The rest of the staff is being hired. There will be three departments:
    - Advanced software applications
    - Network survey and support
    - Database
- From the startup in September 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
- 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!

## Questions?

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