

AMRES -
organizational
overview



AMRES

Akademski mreža Srbije

TF-CPR meeting, Belgrade September 16th 2011



Who are we? - Why AMRES/UoB?

- ❖ In '90s UoB (computer centre) was appointed by the Government to develop and operate Serbian NREN. Other computer centres (NI, NS, KG) were also involved.
- ❖ UoB Computer centre (RCUB)
 - ❖ Approx. 40 employees
 - ❖ Two main teams:
 - ❖ Networking (AMRES)
 - ❖ Software - university IS, network monitoring tools, GN3 tools, other commercial software
- ❖ 2007-2010 - AMRES project financed by the Government
- ❖ Recently Serbian Government made a decision to establish new legal entity called AMRES



AMRES development

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199x-2000

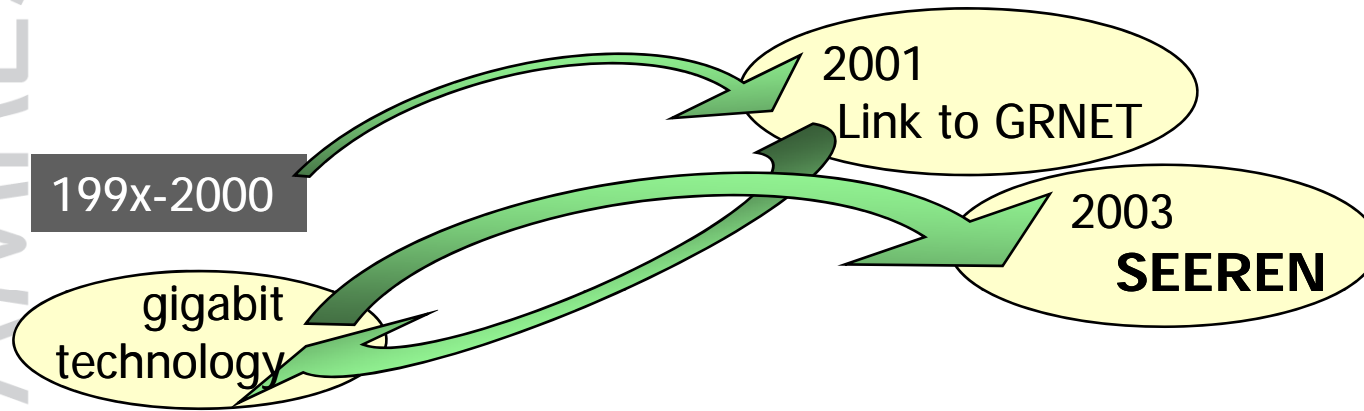
2001
Link to GRNET

- Internal infrastructure
 - more than 130 institutions
 - small capacities (up to 2 Mbps)
- Small capacity of the external link – congestion
- Significant digital divide
- 2 Mbps towards GRNET
- Additional 2x2 Mbps
- International cooperation
- First step



AMRES development

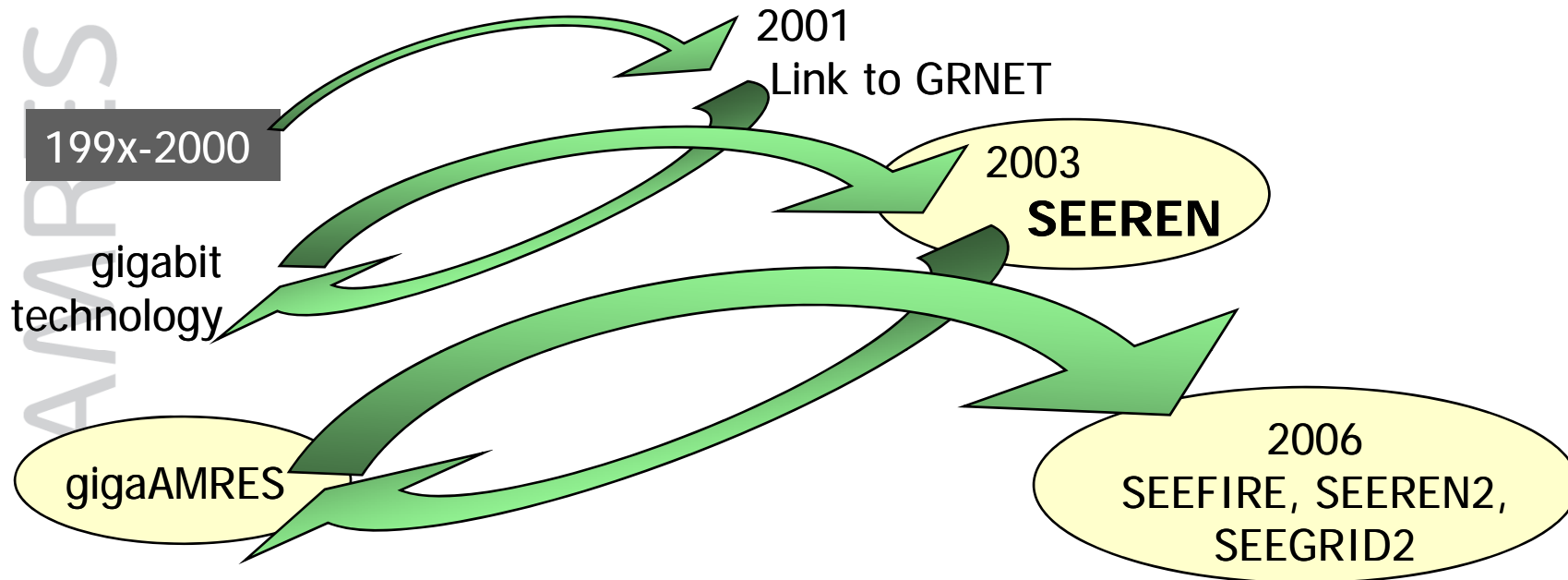
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- Donation from Germany and Max Planck institute
- Support by the Ministry of Science
- Leap frog – Gigabit backbone, dark fibre
- Internal traffic increase
- External link still congested
- First regional project
- 34 Mbps capacity
 - heavily utilized, but not congested
- Improved cooperation with end-institutions and users



AMRES development



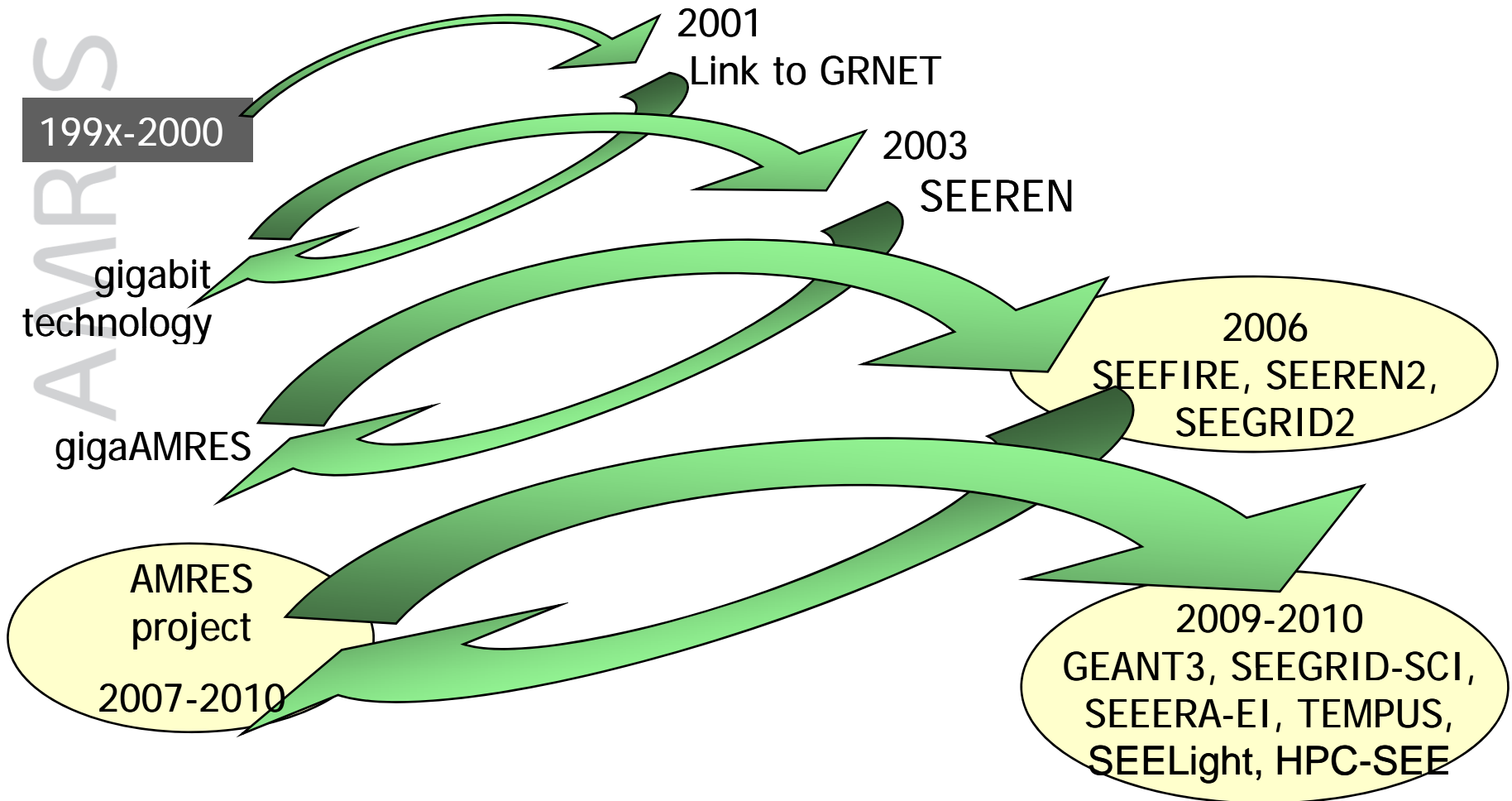
- New gigabit network – dark fiber
 - >20 gigabit intercity links many intra-city DF links
 - 1 Gpbs CBF towards HUNGARNET
 - Backup Internet link through Telekom Srbija

- New FP 6 projects
 - infrastructure
 - regional connectivity
 - GRID





AMRES development





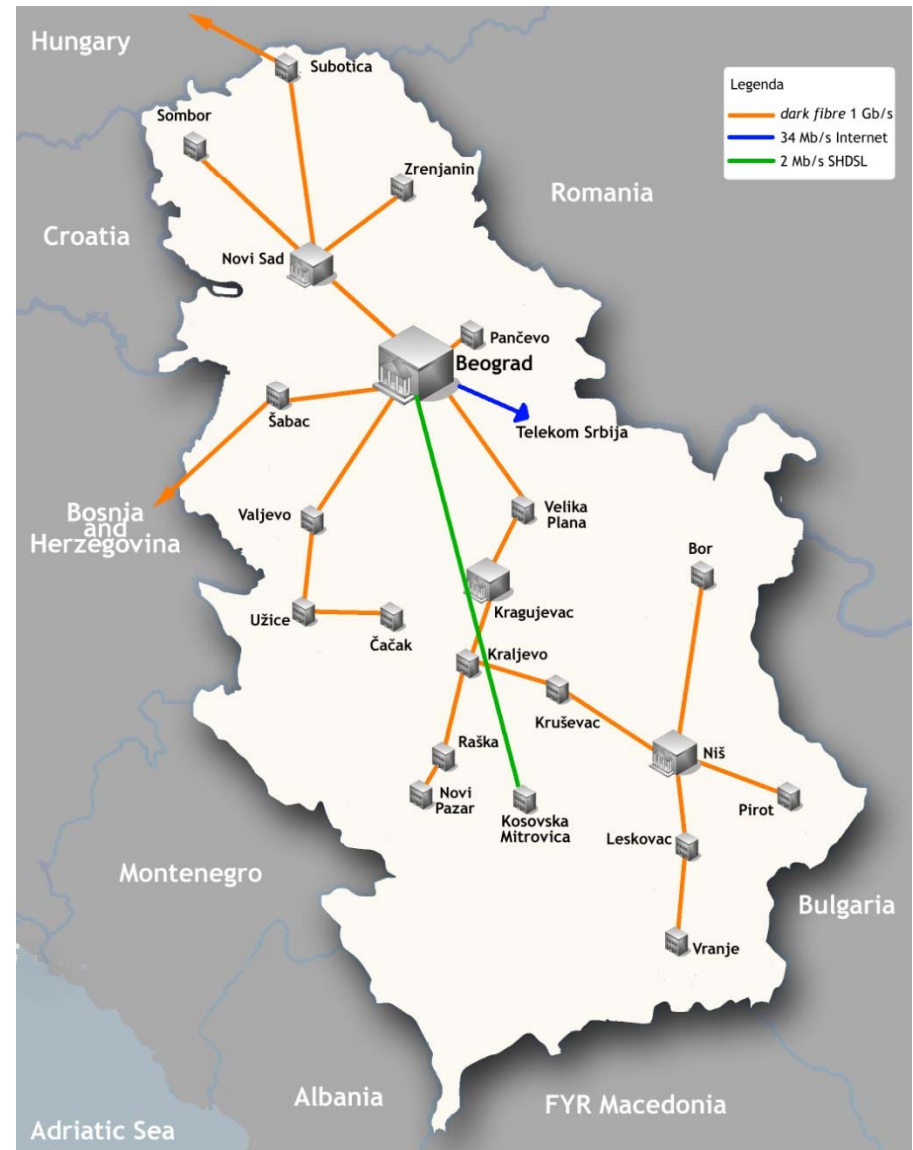
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AMRES network - current status

➤ AMRES:

- ❖ 155 member institutions
- ❖ 150,000 active users
- ❖ ~2200 km dark fibre links
- ❖ 20 cities covered
- ❖ Managed by UoB/RCUB and other service centres

- ❖ CBF towards HU, BA, primary Internet link towards HU (1 Gbps)
- ❖ Backup links and exchange over Telekom Serbia and SBB (34 Mbps, 1Gbps)
- ❖ All the regular network services: IPv4, IPv6, multicast, web, mail, eduroam, DNS, domain registration, VPN, videoconferencing, media portal, server hosting, virtualization, 3-level NOC operating 24/7...





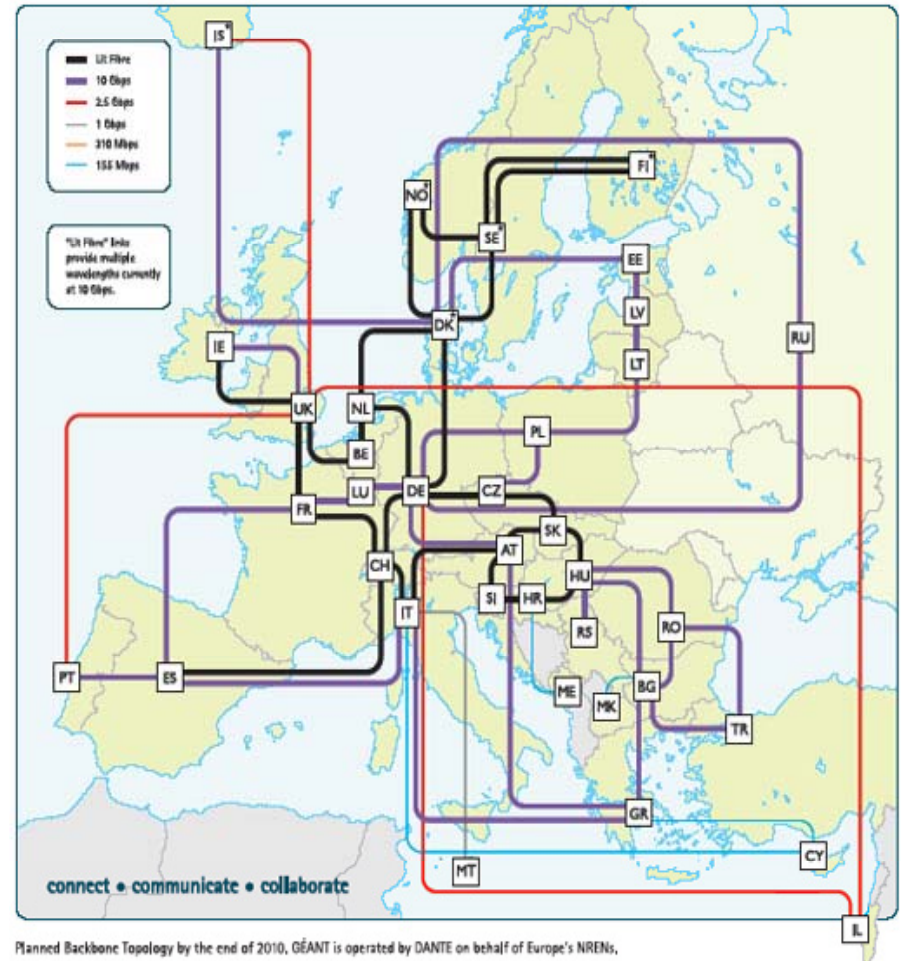
Current international projects

SEERA-EI, HPC-SEE, ViCES (Tempus project)

GN3 project

Active in:

- SA2T3 - Perfsonar
- SA3T2 - eduroam
- SA3T3 – EduGain
- SA4T1 – Software governance – best practice
- SA4T2 – Software quality assurance
- JRA2T1 – Control and Management
- NA3T4 – Campus Best Practice
- SA3T4 - educonf
- NA2 - PR network





AMRES legal entity

- ❖ Established by the Serbian government
- ❖ AMRES takes over all NREN tasks, rights and obligations as of the day of the operational start.
- ❖ AMRES is about to start these days
- ❖ AMRES will have approx. 40 employees
- ❖ AMRES has managing and supervisory board appointed by the Government
- ❖ University of Belgrade (Computer centre) remains a crucial partner in NREN operation
 - ❖ AMRES has Technical council consisted of service centre employees
 - ❖ AMRES will offload some of the service operation duties to service centres.



AMRES projects and plans: 2011 and beyond

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SEELight project

Financed by the HiPERB plan of the Greek government (80%) and Serbian government (20%)
November 2010 - contract for long term dark fibre lease (15 years) signed. Fibres to be delivered by November 2011.

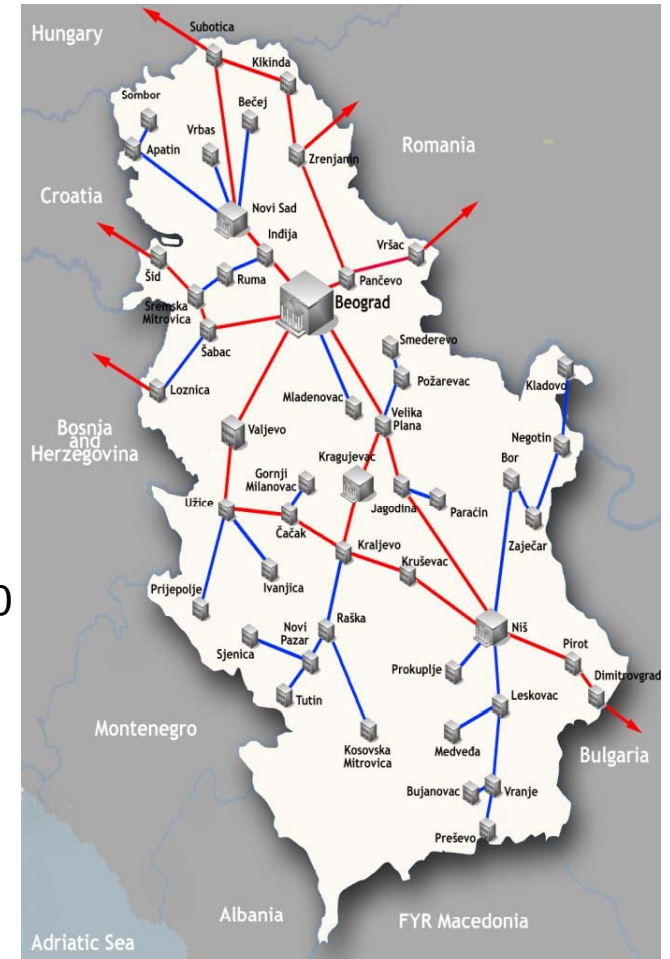
Rich and redundant dark fibre footprint with approx 4000km of dark fibre in 50 cities. Each city at least 2 institutions – totally 110 new institutions

New CBF connections (Bulgaria, Romania and Croatia)

Next activities: DWDM equipment procurement (N x 10 Gb/s)

L2/L3 equipment procurement.

Operational start expected: Q2 2012





Plans: School network

- Around 3000 school buildings (2000 schools)
- Majority of schools connected currently via commercial providers (DSL, 3G)
- When AMRES starts its operation the traffic from schools will be routed to AMRES
- Content filtering equipment already in place
- AMRES will take over the operation of the school network in future



Plans: Geant PoP and services

- Geant PoP procurement procedure started
- Eduroam is being spread throughout the country
- Federated services under development
- Enriched service portfolio

**Thank you for
your attention!**



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