EU Research Information Event
Towards Integration into the European Research Area
Beograd, 29.06.2009.

e-Infrastructure Development in Serbia

Aleksandar Belić,
SCL, Institute of Physics Belgrade

SCIENTIFIC COMPUTING LABORATORY

seeRaei
South East European
Research Area
for eInfrastructures

EU Centre of Excellence
CX-CMCS
July 2006 - June 2009

June 29, 2009

eInfrastructure

- **Network**
  basic underlying physical infrastructure
- **e-Science grids**
  middleware layer to pool distributed resources
- **Scientific data**
  the knowledge layer
- **Supercomputing**
  increase competitiveness of the research by providing HPC resources
- **Virtual research communities**
  innovative way of doing e-Science

Policy

- European level:
  - ESFRI + eIRG
  - Overcoming the “digital divide” EC comm’s
- Regional level:
  - “Action Plan of EU-Balkan countries in the sector of R&D”, Thessaloniki 2003
  - “eSEE AGENDA +”, Sarajevo 2007
  - Projects: SEERA-EI, WBC-INCO-NET, SCORE, WINS-ICT, …
- National level:
  - In preparation;
    eInfrasturctures one of core priorities

Network

AMRES
Akademska mreža Srbije

- **AMRES** = Academic and Research Network of Serbia (http://www.amres.ac.rs/)
- Coordinating institution: Belgrade University Computing Centre (RCUB)
  - central infrastructure, operational and management node in AMRES
  - 30 employees
  - knowledge and experience in ICT (development, implementation, know-how, maintenance, support)
- International dimension:
  - Pan-European: GEANT3
  - Regional: SEELIGHT, SEERA-EI
  - Finished projects: SINSEE, SEEREN, SEEREN2, SEEFIRE

Network today

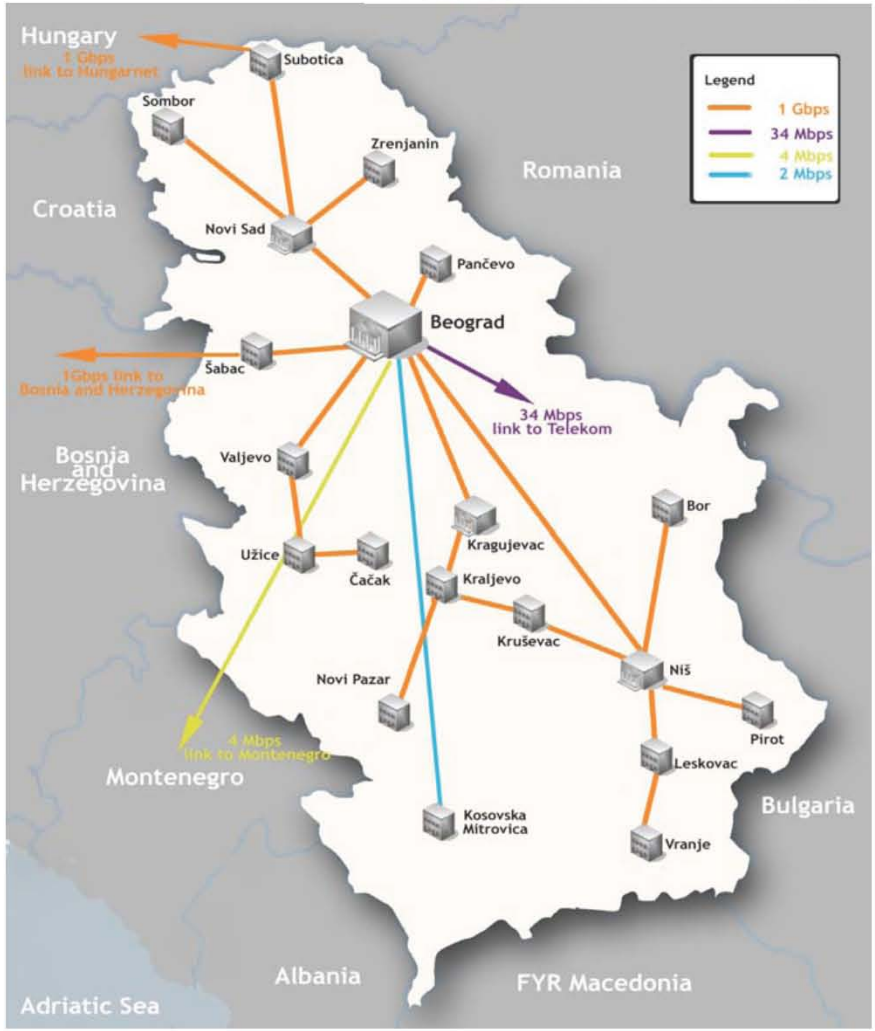
AMRES
Akademska mreža Srbije

Layout:

- 155 members
- 100,000 active users
- 2100 km fibre links
- 20 cities

Services:

- IPv4 multicast
- IPv6 multicast
- Eduroam service (in final stage of joining)



SCIENTIFIC COMPUTING LABORATORY

June 29, 2009

Grid

- **AEGIS** = Academic and Educational Grid Initiative of Serbia (http://www.aegis.rs/)
- Founded in April 2005
- Mission:
  To provide Serbian research and development community with reliable and sustainable grid infrastructure.
- Coordinating institution: Institute of Physics Belgrade
  - central infrastructure, operational and management node in AEGIS
  - national focal point for HPC
- International dimension:
  - Pan-European: EGEE-III
  - Regional: SEEGRID-SCI, SEERA-EI
  - Finished projects: EGEE-II, SEEGRID, SEEGRID-2

SCIENTIFIC COMPUTING LABORATORY

Grid today

Infrastructure:

- 9 core sites
- 1000 CPUs
- 40 TB storage space

Services:

- AEGIS CA
- Grid core services: VOMS, WMS, LB, BDII, LFC, PX
- Operational support
- Training

Academic and Educational Grid Initiative of Serbia
AEGIS

Scientific Computing Laboratory

June 29, 2009

Supercomputing

Blue Danube

- National Supercomputing and Data Storage Center Project – Blue Danube
  - Duration: 7 years
  - Coordinator: Institute of Physics Belgrade
- Objectives
  - eInfrastructure development
  - Development of human resources
  - Increasing competitiveness of R&D sector
  - Opening up new R&D venues
  - Collaboration with industry
- International dimension:
  - Pan-European: PRACE
  - Regional: SEERA-EI

Scientific Computing Laboratory

Knowledge layer

KoBSON
Konzorcijum biblioteka Srbije za objedinjenu nabavku

Data

- KoBSON library documentation consortium
  - > 35K journals available
  - ≈ 1M articles downloaded in 2007
  - Indexing of Serbian research papers

Virtual organizations

- AEGIS catch-all national VO
- Participation in regional catch-all VOs: SEE, SEE-GRID
- Discipline VOs: METEO, ENV, SEISMO
- European VOs: ATLAS, CMS

Scientific Computing Laboratory

Summary

- The importance of eInfrastructure recognized;
  full sustainability is not achieved.
- Network and Grid are success stories;
  HPC and knowledge layer are in development.
- Full integration at European and Regional levels achieved;
  particularly successful sequence of regional projects (SEEREN, SEEREN2, SEE-GRID, SEE-GRID-2, SEE-GRID-SCI, SEERA-EI)

seeraei
South East European
Research Area
for eInfrastructures

Scientific Computing Laboratory

June 29, 2009