

Campus Best Practices

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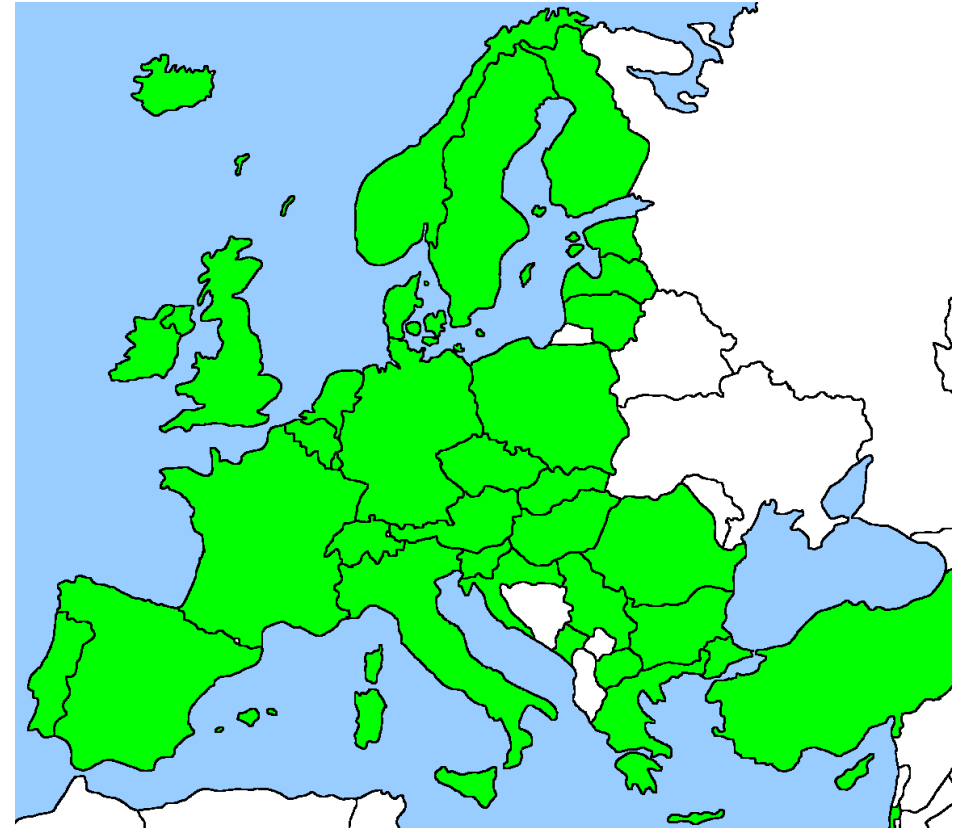
EUNIS 2011
Dublin, 15th June 2011

- Introduction to GEANT3 Campus Best Practices
- Our Challenge
- The Norwegian GigaCampus 2006-2009 Project
- Campus Best Practices Results
- Lessons Learned
- Future Work

- 4 year project
- 40 European countries
- 93 million Euro funding from EC
- Divided into 45 tasks

Objective

- Enable research communities across Europe to transform the way they collaborate
 - Enhance networks and services
 - Fight the “digital divide” across Europe



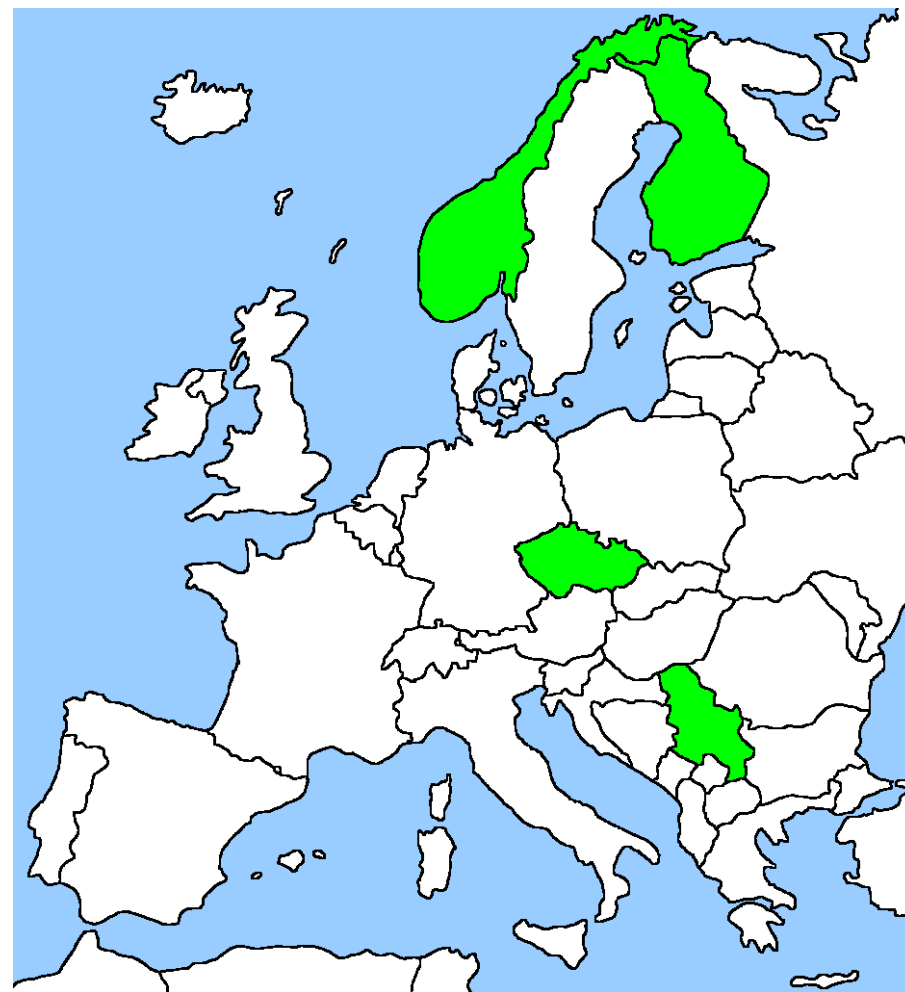
Campus Best Practices - a task within GEANT3



- Four countries:
 - Norway (UNINETT)
 - Finland (CSC/Funet)
 - The Czech Republic (CESNET)
 - Serbia (AMRES)
- 3.5 man years per year

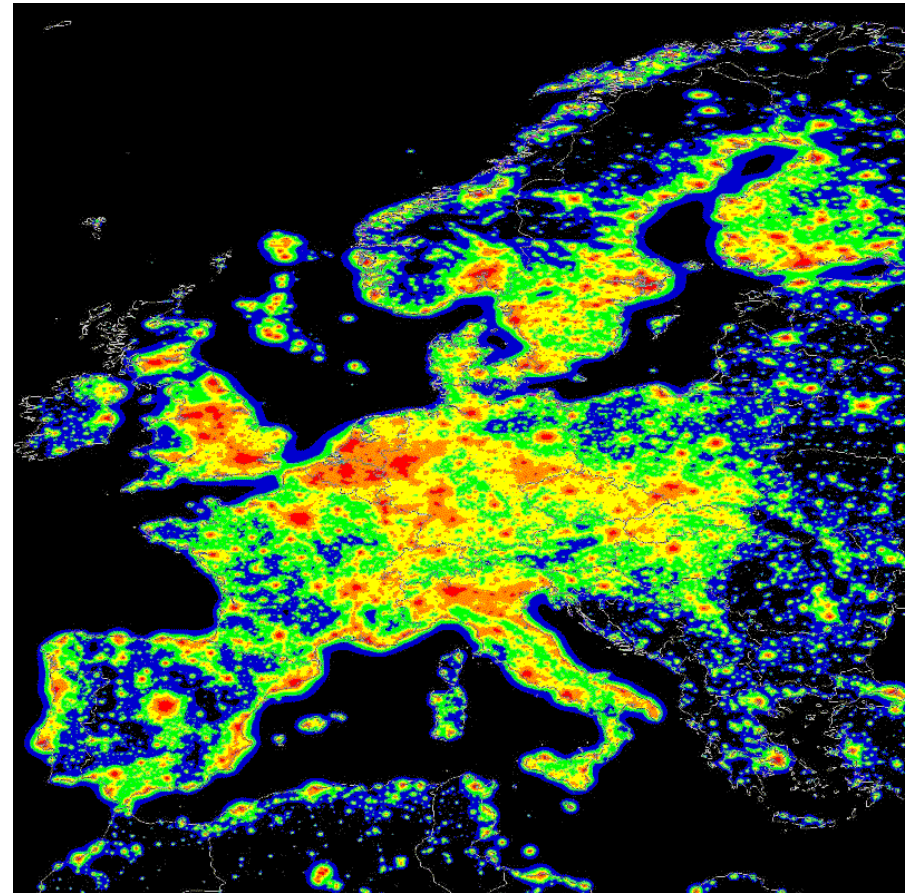
Objective

- Address key challenges for European campus networks
- Organise working groups
- Provide best practices
- Disseminate results across Europe



The challenge

- Thousands of universities across Europe...
- Same ICT challenges (more or less)
- Why repeat the same mistakes?
- Why fall into the same pitfalls?
- Spread your lessons learned!
- Disseminate your best practices!



Picture courtesy DMSP

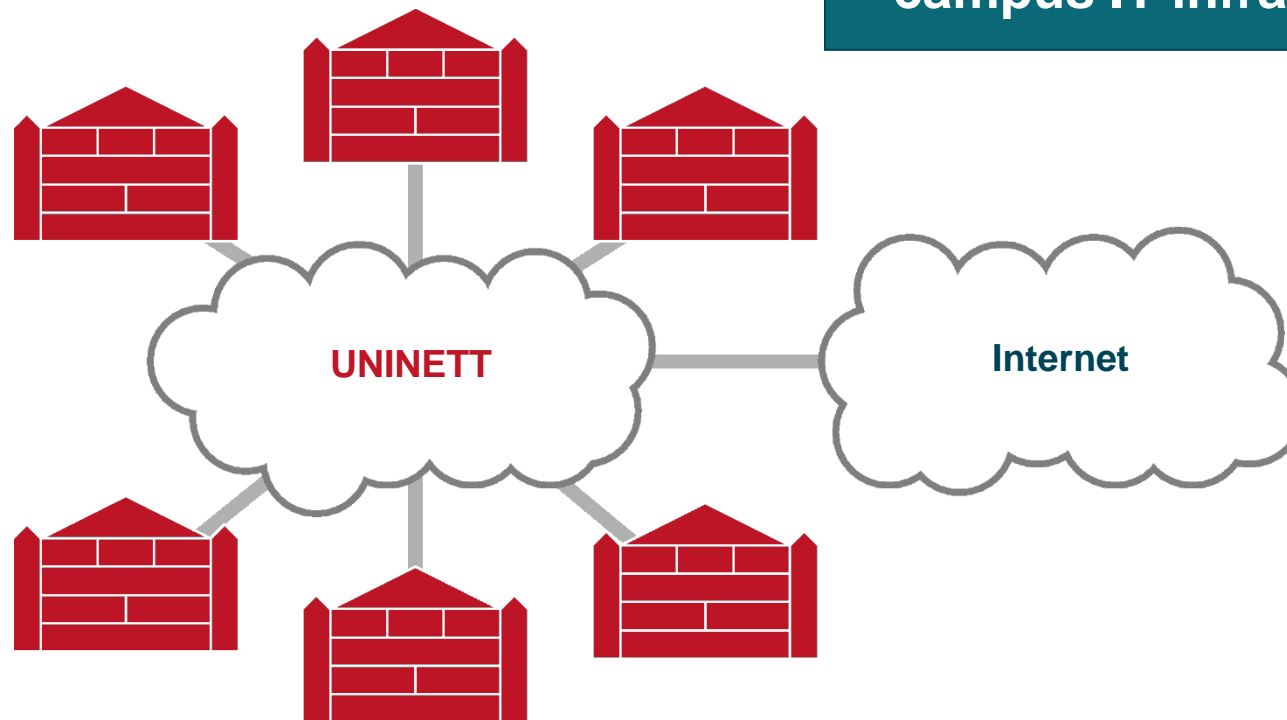
An example: eduroam

- How do we set up eduroam?
 - Radio planning
 - Wireless controller setup
 - Security
 - Encryption (802.1X)
 - Radius setup
 - User database integration (AD/LDAP/other)
 - Certificates (CA)
 - Supporting smart phones / tablets
 - Monitoring
 - etc, etc
-
- Can we learn from others?



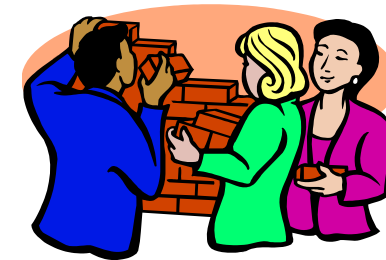
The Norwegian GigaCampus 2006 – 2009

Provide and coordinate
top international level
campus IT infrastructures

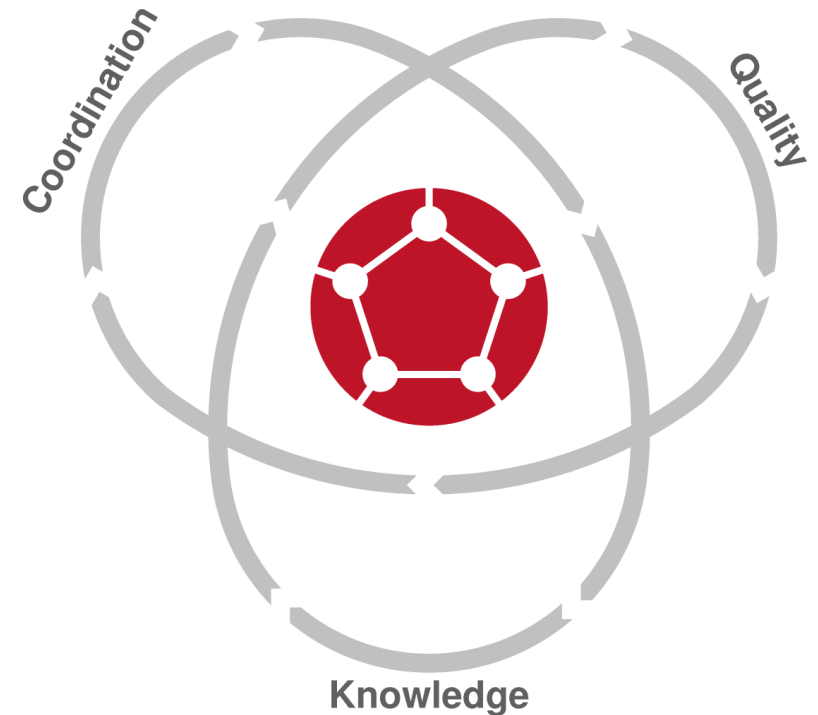
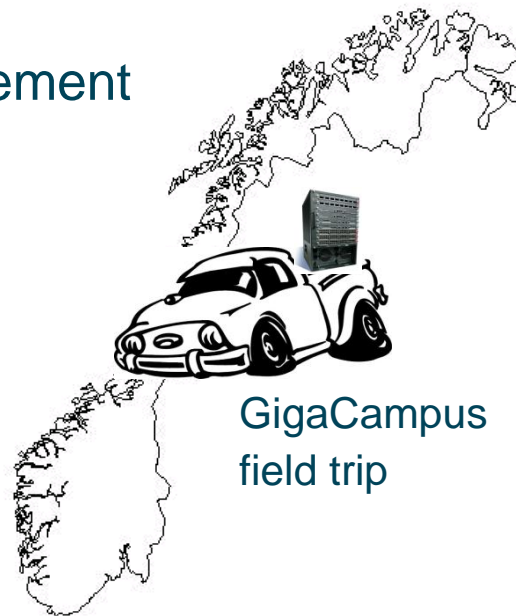


One HE community – many campuses – common solutions

- The Government
 - Showed responsibility
 - Provided initial funding
- The NREN
 - Dedicated campus project team
 - Facilitator
 - Got happy customers
- The Universities
 - Participates in working groups
 - Benefits from results

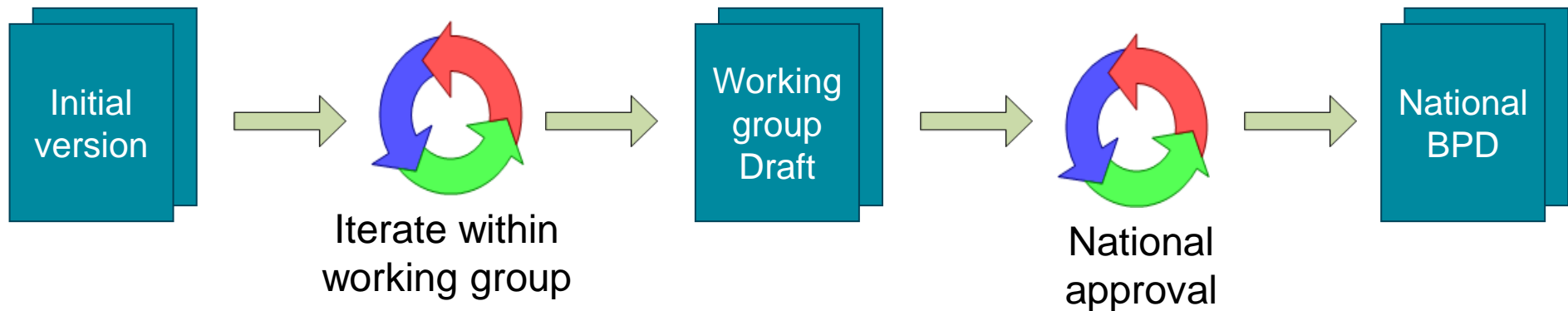


- Workshops and working groups
- Best practice documents
- Advise and support
- National procurement processes



- Provide an arena for people working with similar technical campus challenges
- Present and discuss challenges and solutions
- Technical updates with campus focus
- Discuss best (and worst) practices
 - Input for Best Practice Documents





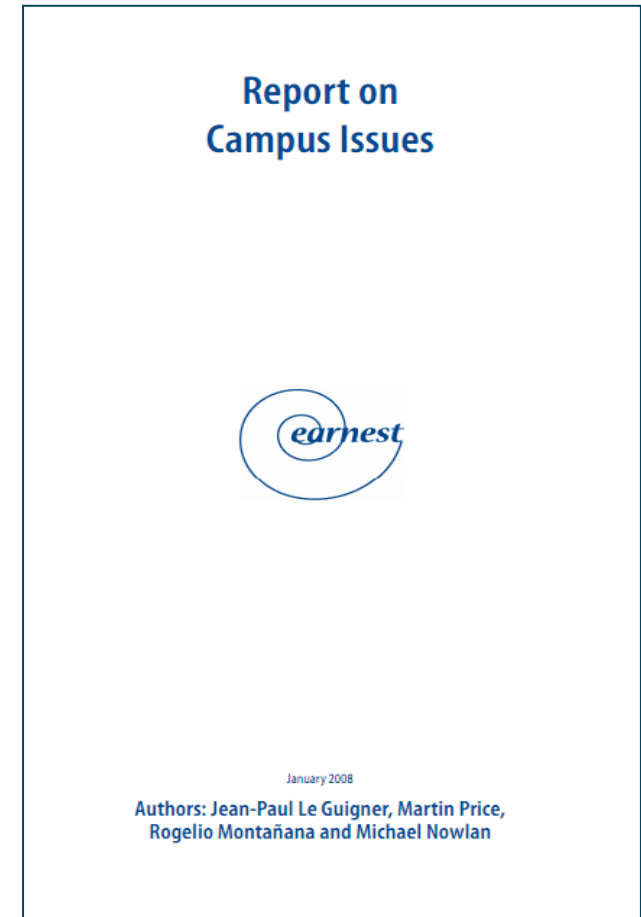
How are they produced?

- Facilitated in working groups (mainly)
- Active participation from NREN

How are they approved?

- Rough consensus in working groups
- Open hearing period of 4 weeks
- Approved by IT director at universities

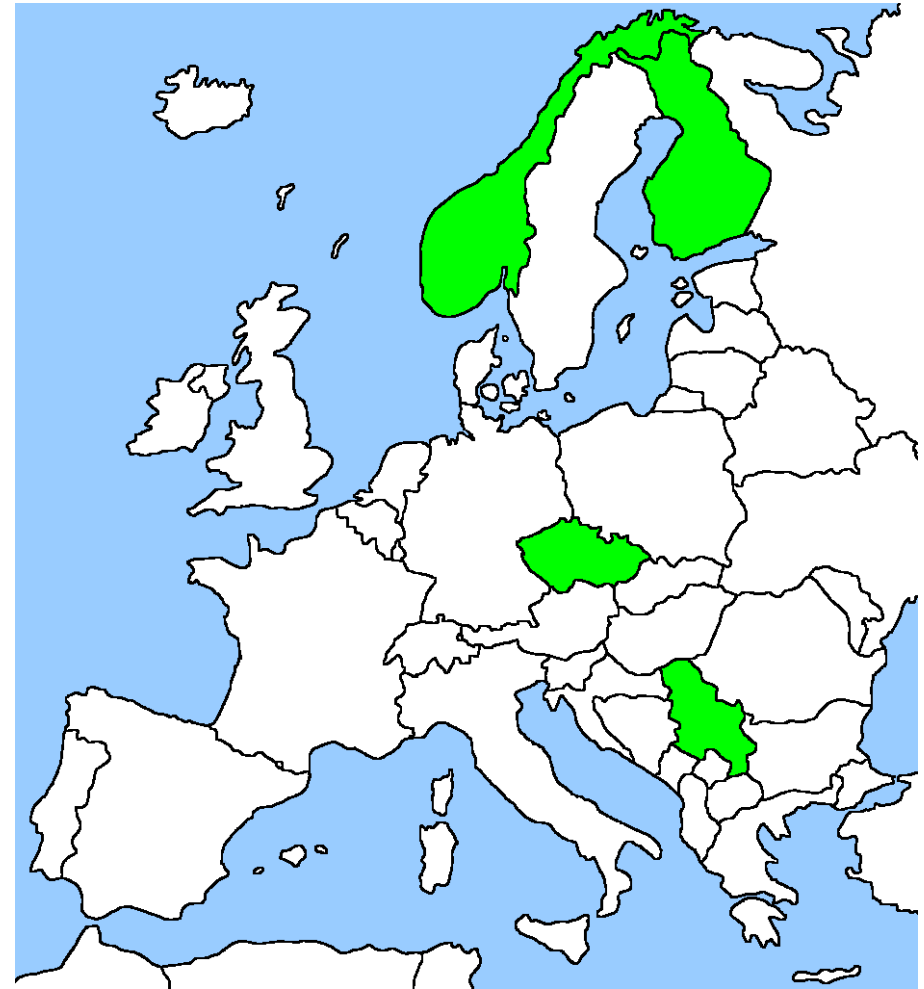
- EARNEST report on campus issues in 2008
- 52 recommendations – still relevant
- “**Strengthen the collaboration**
between National Research and Education Networking organisations and institutions
to **improve** the deployment of key services:
.....**co-ordinate working groups**,”



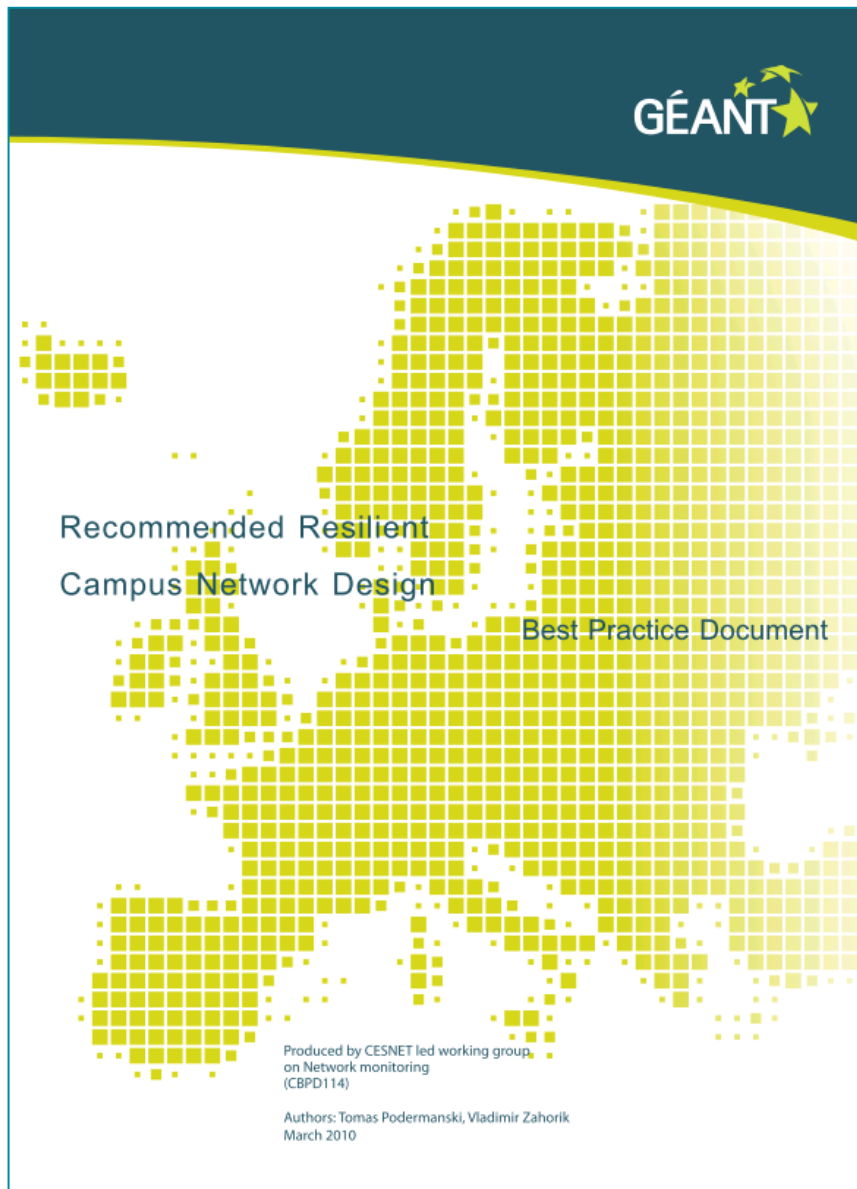
Campus Best Practices

Working groups

- Working groups in all countries
 - NREN facilitates
 - Local language
 - Joint culture
- Six areas of focus:
 - Physical infrastructure
 - Campus networking
 - IPv6, lighthpaths
 - Wireless infrastructure
 - Network monitoring
 - Security
 - Real-time communications



Best Practice Documents Published in English



Campus Best Practice documents:

- <http://www.terena.org/campus-bp/>
(under Activities at terena.org)
(or google “Campus Best Practice”)
- Currently 25 documents are translated to English and available

Announcements of new documents:

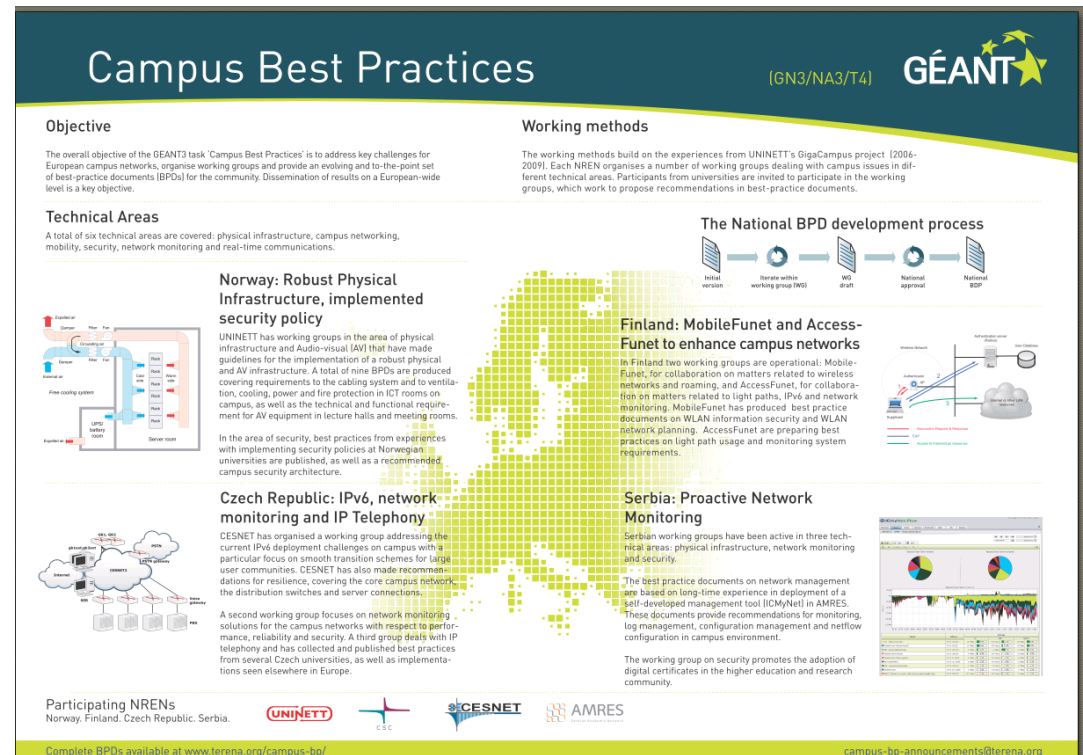
- campus-bp-announcements@terena.org

- Organizing workshops at the **European level**

- Network monitoring
- Real-time communications
- IPv6
- More to come

- Present papers at conferences

- European conferences (TERENA, EUNIS, IEEE)
- National conferences (France and Denmark confirmed so far)



Campus Best Practices [GN3/NA3/T4] GÉANT

Objective
The overall objective of the GEANT3 task 'Campus Best Practices' is to address key challenges for European campus networks, organise working groups and provide an evolving and to-the-point set of best-practice documents (BPDs) for the community. Dissemination of results on a European-wide level is a key objective.

Working methods
The working methods build on the experiences from UNINETT's GigaCampus project (2004-2009). Each NREN organises a number of working groups dealing with campus issues in different technical areas. Participants from universities are invited to participate in the working groups, which work to propose recommendations in best-practice documents.

Technical Areas
A total of six technical areas are covered: physical infrastructure, campus networking, mobility, security, network monitoring and real-time communications.

Norway: Robust Physical Infrastructure, implemented security policy
UNINETT has working groups in the area of physical infrastructure and Audio-visual (AV) that have made guidelines for the implementation of a robust physical and AV infrastructure. A total of nine BPDs are produced covering requirements to the cabling system and to ventilation, cooling, power and fire protection in ICT rooms on campus, as well as the technical and functional requirements for AV equipment in lecture halls and meeting rooms. In the area of security, best practices from experiences with implementing security policies at Norwegian universities are published, as well as a recommended campus security architecture.

Finland: MobileFunet and AccessFunet to enhance campus networks
In Finland two working groups are operational: MobileFunet, for collaboration on matters related to wireless networks and roaming, and AccessFunet, for collaboration on matters related to light paths, IPv6 and network monitoring. MobileFunet has produced best practice documents on WLAN information security and WLAN network planning. AccessFunet are preparing best practices on light path usage and monitoring system requirements.

Czech Republic: IPv6, network monitoring and IP Telephony
CESNET has organised a working group addressing the current IPv6 deployment challenges on campus with a particular focus on smooth transition schemes for large user communities. CESNET has also made recommendations for resilience, covering the core campus network, the distribution switches and server connections. A second working group focuses on network monitoring solutions for the campus networks with respect to performance, reliability and security. A third group deals with IP telephony and has collected and published best practices from several Czech universities, as well as implementations seen elsewhere in Europe.

Serbia: Proactive Network Monitoring
Serbian working groups have been active in three technical areas: physical infrastructure, network monitoring and security. The best practice documents on network management are based on long-time experience in deployment of a self-developed management tool (ICMNet) in AMRES. These documents provide recommendations for monitoring, log management, configuration management and network configuration in campus environment. The working group on security promotes the adoption of digital certificates in the higher education and research community.

The National BPD development process
Initial version → Iterate within working group (WG) → WG draft → National approval → National BPD

Participating NRENs: Norway, Finland, Czech Republic, Serbia. UNINETT, CESNET, AMRES.

Complete BPDs available at www.terena.org/campus-bp/ campus-bp-announcements@terena.org

Our poster

- Community building takes time
- Establish an inner core of contributors
 - but allow hang-arounds (open membership)
- Challenging for the working group leader to enforce progress (volunteering)
- Key experts are usually very busy and have no time to write...



- Initially the NREN should pick best practice topics.
 - Current challenges !
- Prepare draft documents in advance
 - Gives best discussions
- Do not write textbooks
- The meeting grounds are highly valuable
 - informal talks
 - discussions on related topics.



- Gigacampus 2006-2009
 - Customer survey => 90% wanted continuation
 - => permanent campus activity
- In addition a new initiative: **eCampus 2011-2015**
 - coherent nation-wide campus infrastructure
 - **support the lecturer**
 - Initial focus area:
 - *lecture recording*
 - *large-scale use of videoconferencing*
 - *mobile solutions*

- Continue to create Best Practice Documents
 - Examples:
 - *802.1X in wired networks (supporting Information Security)*
 - *Multicasting on campus (supporting more distributed lectures)*
 - *The legal aspects of wireless networks*
 - *IPv6 security in the local network*
 - *Requirements for ventilation and cooling in ICT rooms*
- Organise more European level workshops
- Organise training courses
- Dissemination continues
 - Present in your country?
- Meeting with your NREN?
 - Share experiences
 - How to organise a campus program

Follow the Campus Best Practice Ladder



Step 5

Common national procurements

Step 4

Work group assists with implementations

Step 3

Make own national best practices

Step 2

Working groups – discuss best practices

Step 1

Workshops to share experiences



GEANT3 NA3 Task 4: Campus Best Practices

- http://www.geant.net/About_GEANT/Campus_Best_Practice/
- <http://www.terena.org/campus-bp/>
- gn3campus@uninett.no

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Visit us at the GEANT stand here at EUNIS

- Stand 10 on the Lower Concourse.
- Today at 15:30 – 16:00
- Tomorrow at 15:00 – 15:30



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