



Connecting Schools to NRENs



Technical Group

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Outline

- Background
 - What are the Needs of Schools?
 - What are *appropriate* Bandwidth Targets and Connection Technologies?
- Collaboration
 - In what areas can we collaborate in order to help meet the needs of schools?
 - What do we need to do to enable European Collaboration between schools?



What are the Needs of Schools?

- Access to local, regional, national and global educational resources (content) from school, by pupils and teachers
- Connection to the local authority
 - For local resources and support
- Interconnection to other schools, universities and colleges
 - For collaboration and access to resources
 - Via local, regional and national networks
- Connection to the Internet
 - For access to resources not available via the “Education Network”

...and access to the same educational resources from home



Needs of Schools - Quality

But, all of these must be

- Safe
 - Content filtering
- Secure
 - Authentication and authorisation, *Shibboleth*
- Trusted
 - Approved quality resources
- Reliable
 - If the connections are not reliable, teachers will not use them
- Standard
 - To ensure technical interoperability and enable seamless collaboration



Needs of Schools - Services

- Content Services
- Media Streaming
- Directory Services
- Videoconferencing Services
- Gateways to other sectors, e.g. Health

- Authentication and Authorisation
- Single Sign On



Appropriate Bandwidth Targets

- Bandwidths
 - For example - UK targets by 2006:
 - 2Mbps for Primary Schools in England & Wales
 - 4Mbps for Primary Schools in Scotland
 - 8Mbps for all UK Secondary Schools
 - What are appropriate bandwidths?
 - Why are these important?
 - Do rural schools have a need for greater bandwidth?



Appropriate Connection Technologies

- Digital Subscriber Lines (DSL)
 - Are ADSL connections appropriate?
- Leased Lines
- Short Distance Ethernet
- Long Distance Ethernet
- Satellite
 - Are Satellite connections appropriate?
- Wireless



In which areas can we collaborate in order to help meet the needs of schools?

Areas for consideration

- Design & Development
- Security & Safety
- Services
- Support
- Management

Aim: identify new areas for collaboration



Design & Development

- Network design
- Router management
- Advanced technologies



Security & Safety

- Network security
- System security
- Incident response
- Security & Safety of People



Services

- Network Services
 - Domain Name System (DNS)
 - External Access
 - Location of Network Services
 - Disaster Recovery
- Application Services
 - E-Mail
 - Web Services
 - Content
 - Voice and Video



Support

- Support Services
 - Technical Support
 - Network Monitoring
 - Information Dissemination and Staff Development
- User Education
 - Awareness and Good Practice
 - Terms and Conditions
 - Training and Updating
 - User Support



Management

- Policies
- Resources
- Chain of Responsibility



Areas for collaboration

- What are the successes?
- What are the areas for NREN collaboration?
 - Development of advanced technologies
 - Incident response
 - Content hosting and access (AAA)
 - Voice and Video
 - Dissemination of good practice
 - Europe-wide policy development (Standards)
- Some of these are already underway



Discussion

- How can we, as NRENS, collaborate to enable and encourage Safe and Secure Collaboration between Schools throughout Europe?