

Report on the 2nd TERENA Workshop on Connecting Schools to NRENs

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TERENA and UKERNA organised the 2nd workshop on Connecting Schools to NRENs in London, UK on 24-25 October 2005. The workshop was sponsored by UKERNA and Becta.

The workshop was attended by about 40 people from many European NRENs, vendors, regional networks, organisations responsible for funding and policies.

The workshop featured a case study session about particular countries, a brainstorming session about success factors and problems faced, a technical session with particular focus on videoconferencing, security and content delivery networks as well as the closing session where the delegates focused on the way to continue collaboration in the future.

The delegates were very keen to improve the information exchange mechanism and start more concrete collaboration in particular areas, e.g. videoconferencing. A set of actions was agreed. These actions are detailed at the end of this report.

All presentations of the workshop are available on the website:
<http://www.terena.nl/schools/workshop-2/>

Background, first workshop

The first workshop on connecting schools to NRENs was held in Amsterdam on 22 February 2005. This workshop focused on sharing information and best practices among the participants. It was agreed to create a mechanism for information exchange and to collect additional information about the situation with connecting schools to NRENs in different countries. A dedicated area on the TERENA web site was created as well as a mailing list for information exchange.

The group also met during the TERENA Networking conference in Poznan, Poland in June 2005 for a short BoF. The presentations and discussions focused on value added services that the NRENs could provide to schools.

The second workshop focused on in-depth information sharing and areas where the NRENs could collaborate.

Case study session

The case study session featured three in-depth presentations about the NRENs connecting schools in Slovenia, Ireland and Luxembourg. The speakers discussed technical issues of connecting schools, e.g. connecting method, speed, network monitoring tools used, what

kind of value added services were provided by the NREN, as well as funding and managerial situation, user support and historical background. The list of issues to cover in the presentation was prepared before the workshop by Tomi Dolenc and Marko Bonac from Arnes. Participants shared their experience on how the NRENs were engaged into the connecting schools business.

This session highlighted challenges that the NRENs are facing when connecting schools and providing services to them, e.g. management complexity, security and content filtering issues, user support, competition with other ISPs, etc.

The conclusion from this session was that people would like to have information about particular solutions each country has chosen to be able to consult other people and get advice when needed.

Technical group sub-session

Workshop participants were divided into two sub-groups to brainstorm about success factors and problems faced regarding the technical and management/funding/political issues when connecting schools to the NRENs.

The technical sub-group was chaired by Robert Symberlist from UKERNA. He spoke about the needs of the schools and how to ensure the quality of the services NRENs are providing to schools. Multiple areas of potential collaboration among the NRENs were identified, e.g. security and safety, services, support, etc.

Participants of this sub-group were invited to talk about success factors and problems faced in their experience with schools as well as about the collaboration possibilities.

The NRENs experience in connecting schools and the ownership of fiber networks were mentioned as success factors. Among the problems faced the participants pointed out availability of technology and connectivity means in particular regions or schools, lack of feedback from schools about their needs, awareness raising regarding the available services and technologies as well as knowledge of using them, need for a register of available services, difficulties in reaching teachers directly, standardisation needs.

It was agreed that the NRENs should collaborate in order to enable schools from different countries to collaborate and participate in joint projects. The participants have suggested many different areas and items of possible collaboration, e.g. sharing information and exchange of tools, targeted workshops, content hosting and access to it (AAA infrastructure), video and voice, Europe-wide policy development, dissemination of best practices among schools, access to national heritage resources, etc.

The participants discussed how schools could benefit from the high speed and quality of the GÉANT network and which services the NRENs could provide to schools better than ISPs. The consensus was that video conferencing is the most demanded service. The NRENs should try to involve teachers (for example via teacher training establishments)

as well to inform them about the available services in their own country and Europe-wide.

Management / funding / political group sub-session

The management/funding/political sub-group was chaired by Dorte Olesen, director of UNI-C and president of TERENA. She spoke about the need for political agreement before NRENs start connecting schools. Many cases in Europe showed that it was easier to get funding for setting up the network, but much harder for running costs. The economy of scales has also played a role – the NRENs of smaller countries (e.g. Luxembourg, Portugal, Greece, Slovenia, Estonia, Ireland) are connecting schools to increase their customer base while the NRENs of larger countries are not always involved in that business.

An issue of communication with teachers has been raised. A “top-down” approach with initiative from ministries could make the process faster. The ministries could be influenced by EC officials, which could be approached by TERENA representatives.

A significant part of the discussion was devoted to identify the benefits of connecting schools to NRENs, the added-value of this in terms of quality of the services schools are able to get and the benefit of the synergy between school networks and research networks.

It was proposed to prepare a white paper, clearly setting out for the NRENs the pros and cons of connecting schools. That would be available to the NRENs to assist them in preparing arguments for negotiating with their local authorities and funding bodies.

Results from both subgroups were reported and discussed with the whole group in the last session of the first day.

Technical session

The technical session on the second day of the workshop focused on areas where NRENs could start some collaboration and share valuable experience.

1. Videoconferencing

Videoconferencing has been identified as a topic of great interest for both – schools and the NRENs. The videoconferencing session presented developments in this area in the UK, discussed the technical and administrative challenges to enable schools to use videoconferencing for collaboration and learning.

The technical issues of videoconferencing including GDS and standards were presented and discussed. John Martin, Manager of the JANET Videoconferencing Service Management Centre emphasized that collaboration requires guaranteed interoperability among the MCUs and between the end-points and the MCUs. Also technical issues

should be well documented and connections tested before the real event takes place. The connectivity requirements for schools increase if schools want to do videoconferencing, this should be taken into account when planning and procuring connections for schools.

A large number of schools in the UK has been involved in videoconferencing during the last year. The speakers emphasized the need to consider videoconferencing not as a goal but as a tool for schools to participate in various activities. Some very interesting initiatives in the UK were presented, e.g. e-missions with museums, national archives, space center, Eden project, etc. UKERNA has taken the initiative to find the content providers (upon demand from schools) and if necessary to provide them with better connectivity to be able to deliver content to schools. This could set a good example for other NRENs.

Schools in the UK were actively looking for international collaboration with other schools. To support international collaboration, a register of interested schools or “dating agency” should be created. Also content provider involvement from other countries could enrich the collaboration.

2. Security

Security has been identified as an area where the NRENs have to devote a lot of resources to provide safe and secure connections to schools. Depending on agreements for connecting schools the NRENs may have to provide IP filtering, anti-spam and anti-virus filtering, content filtering, management access, router IOS upgrade and other services.

Solutions and experiences about these security issues were presented from two countries – Denmark and Portugal. In both cases schools have access to web-based “toolbox”, where they can influence settings for content filtering, spam and IP filter, as well as the DNS and mail configuration. A standard “base” configuration could be useful at the beginning to connect a school but later there should be possibilities to customize the settings and to apply individual approach for every school. As a major security concern the wireless access points for schools were mentioned.

Lino Santos from FCCN also spoke about the CERT.PT perspective. They have not received any reports coming from schools, but about 65% of the received reports did compromise schools. About half of those incidents were probes, the rest – SPAM, malware and copyright violation. It could be concluded that pupils experience their first “hacker” trials from schools, school computers very often become parts of BotNETs and peer-to-peer programs are used to violate copyright. The situation could be improved by awareness raising, issuing “light weight” security bulletins and teaching pupils about the security issues.

The delegates agreed that information sharing about the NRENs security solutions would be very valuable and could potentially improve the provided services, e.g. white lists, black lists.

3. Content Delivery Networking

Mike McKeown from Cisco presented “Enabling Media Rich Curriculum with Content Delivery Networking”. It was explained that caching is a reactive action, but content delivering network (CDN) – proactive. To use CDN teachers have to identify the content and download it before the event (lesson) takes place. CDNs are suitable for schools with small bandwidth and can improve their experience of rich content usage. CDN systems have been implemented for all schools in Scotland.

Closing session of the workshop – the way forward

The closing session of the workshop focused on the way forward for the group. Various different scenarios of continuing the work were discussed, a few concrete areas of collaboration and names of people taking responsibility for them were identified.

All the NRENs’ representatives present in the workshop were asked why they are participating in the workshop. The two main goals were identified, i.e. a need of collaboration for providing better services to schools and a need to justify the NREN involvement in connecting schools business. The agreed actions were targeted to support these needs.

The workshop clearly showed that many NRENs are interested in sharing experience and best practices as well as in participating in projects that could improve and enrich services that they are providing to schools.

The following **actions** were agreed:

1. TERENA will provide a dedicated and password protected wiki area on the TERENA web site where NRENs will be able to share information about available services, service models, goals and conclusions of the group, etc. Ronan Byrne from HEAnet agreed to provide a first draft of the structure of the wiki.
2. Delegates agreed to prepare a white paper, clearly setting out for the NRENs the pros and cons of connecting schools. These will be available to the NRENs to assist them in preparing arguments for negotiating with their local authorities and funding bodies. Tomi Dolenc from Arnes and Valentino Cavalli from TERENA will prepare the first draft.
3. Robert Symberlist from UKERNA proposed to start a project to enable schools from different countries to make video conferences with each other. He will send out the project description and call for participation. The first steps in the project will be to collect information about the available services and contacts in other countries.
4. Speakers of the first workshop session (Case studies – Tomi Dolenc, Ronan Byrne, Stefan Winter) will prepare a written report about their country to complement the slides of the presentation.