

Using structural funds for R&E networking

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Networks of research and education

- The requirements of research and educational sector are specific and can not be covered by services offered on the market (e.g. broadband internet access)
- Therefore special networks are built across Europe in a hierarchical way
- The technology requires usage of optical fibres which are used only for this purpose.
- In every country there is an organisation called NREN (National Research and Education Network)
- In most cases NREN is a separate legal entity, non-profit and owned by the government or by universities
- NRENs build and manage national network. For this purpose they lease or buy fibre from telecommunication infrastructure providers, buy suitable equipment and manage the network and provide services required
- International connectivity is realised through the pan-european network Geant. Geant is designed, built and managed as a project in Framework Programme 6.
- Local connectivity (on the campus) is done by universities

Where are the problems ?

- International connectivity is not a problem any more for most NRENs because of GEANT and support through Framework Programme (It is still a problem for smaller countries on the border of Europe).
- National connectivity is in many cases limited by the availability and cost of optical fibres and cost of the equipment
- Knowledge and human resources are not a problem in most cases

Optical fibres on certain relations

There are following situations:

- There is no optical fibre
- There is optical fibre but already fully used for other purposes (e.g. telephony)
- There is optical fibre but the owner of the infrastructure does not want to lease it or sell it
- There is optical fibre and the owner is ready to lease or sell it but the price is very high – in many cases it is too expensive for NREN and reseach and education institutions

Guidelines on criteria and modalities of implementation of structural funds in support of electronic communications

This Comm. staff working paper describes the criteria for ERDF intervention:

- ERDF support should be linked and determined by the information society development strategy of the region. There should be an analysis of regional need and opportunities, taking into account specific economic and institutional conditions as well as the pre-existing infrastructure.
- ERDF investments must be targeted towards areas that would otherwise be neglected under free market conditions. The main focus should be on rural and remote areas which are not covered by adequate infrastructure.
- Selection criteria for investments in electronic communication infrastructure must adhere to the principle of »technology neutrality«.
- ERDF support should be limited, in principle, to infrastructure and equipment which is open to all operators and service providers.

We found the following problems (1)

ERDF investments should be done *in rural and remote areas*.

On the other hand universities, research institutes and bigger schools are located in towns and not in rural areas. In rural areas there are only smaller schools which do not need high speed connections and special optical cables because existent technologies based on copper offered by operators (as ADSL) are sufficient.

We found the following problems (2)

ERDF investments should be done *where there is no infrastructure yet*.

The problem is that it is not easy to find out if optical cables exist in a certain region.

Telecommunication operators in most cases do not reveal this information because they do not want to lease the infrastructure to others. Also, sometimes there are optical cables but they are already fully occupied.

We found the following problems (3)

ERDF investments should not be done *where the market can provide the solution.*

It is in principle always possible to go to the market and ask for laying new optical cables. The problem is that the price could be enormous. Could ERDF investments be used in such a case?

We found the following problems (4)

ERDF funded infrastructure should be *open to all operators and service providers*.

If optical cables are built between public education and research institutions for their traffic and it is not possible to give the same cables to all operators and service providers. This network is a closed (not public) one.

(But equal opportunities could be reached in another way. If each education and research institution is the owner of the optical cable going from their premises to the telehouse in the same town it can freely choose services from different operators which are present at the telehouse.)

We found the following problems (5)

Question connected with the previous one: can a public institution become the owner of the infrastructure funded by ERDF ? More specifically: can a public university become the owner of the optical cable built with ERDF funds going from their premises to the centre of town (e.g. to the telehouse in that town).

We found the following problems (6)

In every optical cable there could be 2 or more optical fibres. Cables with many optical fibres are relatively cheaper than those with fewer fibres. The main cost in laying cable is connected with construction work. The consequence of this is that laying 100 pairs of optical fibre is not much more expensive than laying one pair. Each school need only one or two pairs. If it is not much more expensive to lay more than this many more questions arise:

- the additional optical fibres not used by a public institution should probably be financed by other (e.g. private) sources
- how to divide the cost (e.g. by number of fibres used for public sector and for the market)
- the cost for additional fibres will be in any case low – does this present a disturbance in the market?
- should additional fibres be available to all the operators under equal conditions? How to achieve this?

We found the following problems (7)

- Those companies who win at the tender will have to show at the end of the project exact specification of the costs for every work item. Is it really necessary as they were chosen at a tender ?
- Only new infrastructure can be financed by ERDF. Sometimes part of the required infrastructure is already there (e.g. a duct or even an optical cable at one part of the required relation). Can this be bought from the present owner (via tender procedure) ?