ODYSSEAS: The Greek Educational Network for Secondary Education

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Abstract: The purpose of this paper is the description of the project ODYSSEAS. The aim of the project is the design, development, and pilot operation of an integrated network of schools in secondary education in the Greek areas of Achaia, Thrace and Aegean Islands. A special network infrastructure will be created and network software and services (containing a WWW server, network software for teaching the Greek language, applications of administrative support and so on) will be developed. Training of the teachers and pupils and evaluation of the project results will be the final project actions.

Keywords: Secondary Education, network, services, training, evaluation.

1. INTRODUCTION

In our days it is clear that the need for the operational reorganization of the educational community in European level in the fields of the educational procedure and the administration and intercommunication of the educational units, has become quite essential. The purpose of the ODYSSEAS project is to build an integrated system of schools with the appropriate technological tools that can support the educational procedure, certain actions for the enhancement of the cultural level of the pupils and administrative operations. Although the presence of these educational units has become an absolute necessity, the way that the development of such an environment has to be developed is neither clear nor trivial. ODYSSEAS has to investigate and answer all the issues that arise from such an effort, before the expansion into European level.

2. DESCRIPTION OF THE PROJECT

Project ODYSSEAS (Integrated Network of School and Educational Regeneration in Achaia, Thrace and the Aegean) started in the end of 1996, in the bounds of the broader targets of the Greek Ministry of National Education and Religious Affairs (YPEPTH), aiming at introducing Informatics in schools. The Research University Institute - Computer Technology Institute (CTI) is the main partner in the implementation of the project. The Hellenic Pedagogical Institute (HPI) and the Institute for Language and Speech Processing (ILSP, department of Xanthi) are cooperative sponsors of the implementation of the project, while YPEPTH supervises its whole progress. The duration of the project is expected to be 36 months and its total funding comes up to 2,9 million ECUs and it is under the programme E.P.E.A.E.K. of the Greek Ministry of National Education and Religious Affairs.

The goal of this project is, generally speaking, the design, development and pilot operation of an integrated network of schools composed of approximately 60 school laboratories, which will be probably used by more school units, in the areas of Achaia, Thrace and a part of the Aegean islands with the incorporation and utilization of network technologies (Local Area Networks and Internet) in order to support teaching, upgrade the cultural level of pupils and support various administrative needs of the educational community.

The main purposes of the project are:

- The pedagogical utilization (from the whole school community in a significant number of schools situated at three different areas) of integrated educational services in three fields (teaching, cultural enhancement and administrative support). These services are based in a computer network which will have multimedia capabilities and will interconnect all the schools to each other and all to the INTERNET.

- The development of network services in software level and in preparation of the educators level in a way that the exploratory learning and the use of computing and networking technology will be supported as a mean for special educational exploration, expression of ideas and communication between all the factors in the school community.

- The use of the network services for a long period of time in order for the to be evaluated. The evaluation will be done in terms of pedagogical, technological and organizational point of view.

3. NETWORK ARCHITECTURE

About 60 school laboratories will be supplied with modern computing and network equipment. An especially designed network architecture will ensure the needed credibility with the minimum possible functional cost. The main network of ODYSSEAS will be consisted of 3 main points of access, one in each area (Achaia, Thrace and Aegean islands). All these three points will be connected in one main

network, which will be connected to the INTERNET. Each one of these main access points will serve the networking needs of the schools in its own area. The schools will get connected with each other and will have access to international network services and Internet. The architecture of the network can be shown in Figure 1.
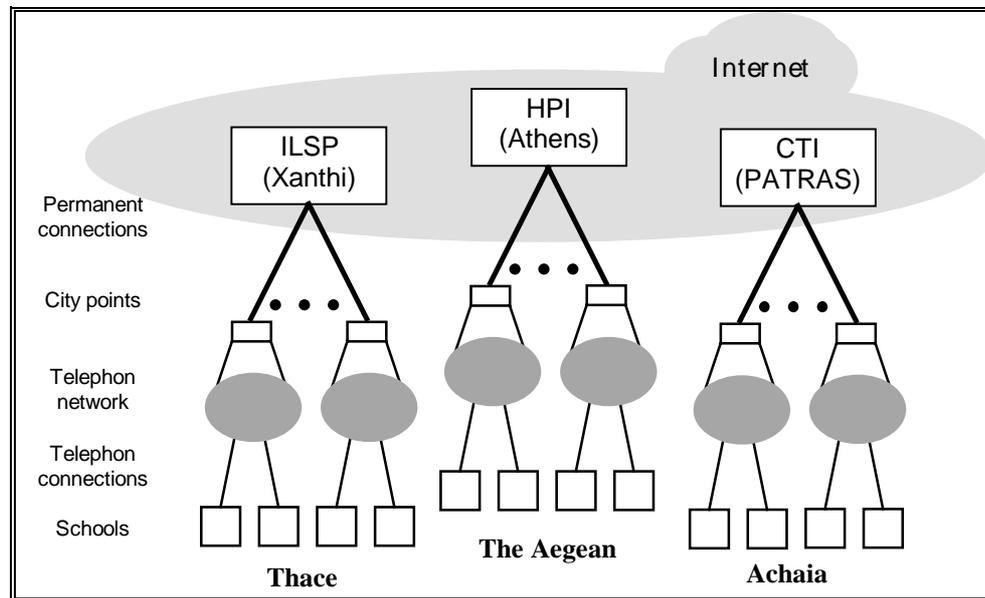

Figure 1. The architecture of the ODUSSEAS network

According to the previously written the model of the network is the following:

- The main network consists of 3 main points, each in one of the 3 main geographical areas. These main points are interconnected to each other through the INTERNET. Each main point serves the connection needs of the schools in each geographical area concerning their access to the main network.

- The first 5 schools in each of the 3 geographical areas (approximately 15 schools in the first phase) will be in the same urban area with the main access point (possible exceptions can be the schools in the Aegean Islands). Thus the cost of the telecommunications will be kept low and the provided services by the Greek Telecommunications Organization will be quite reliable.

- The main access point to the main network will be situated in an Academic Institution, which will accept to provide connection services without charging the ODYSSEAS project. Thus the operational expenses of the whole project will be significantly reduced.

- The connection of the schools from the main access point to the main network will be done either using leased lines or dial-up connections, depending on the needs of the particular school

- A small number of schools will be selected where advanced computing and networking infrastructure will be installed and the connection to the main network will be done using advanced services by the Greek Telecommunications

Organization (ISDN, leased lines using high speed of data transfer and so on). This will give the opportunity for advanced network services to be tested, both in local (LAN) level and in global (urban or geographical area-WAN) level. One or two schools will be selected, where advanced services with wide bandwidth needs.

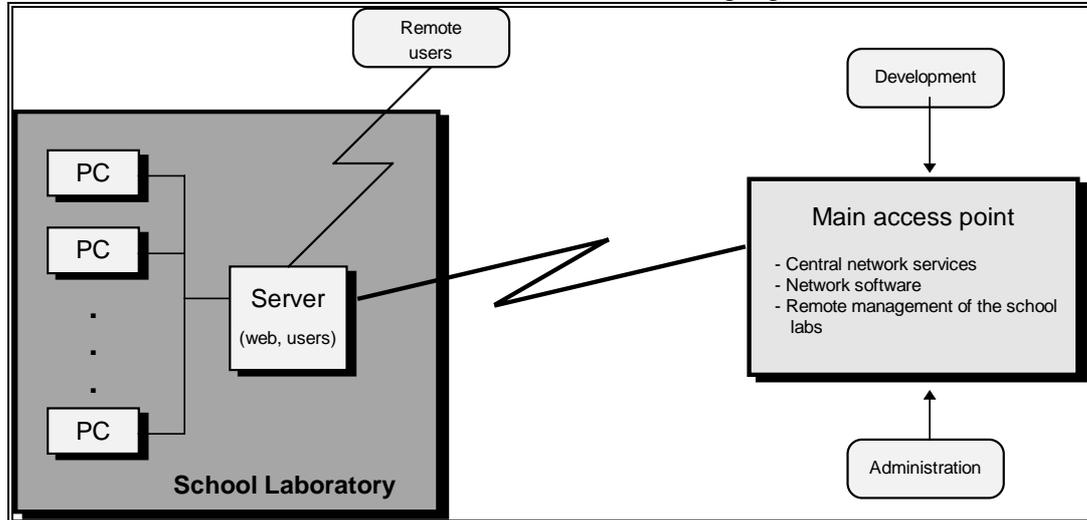The basic network structure is described in the following figure:

Figure 2. The basic network structure of the ODYSSEAS project

5. SERVICES

New tools and software products will be developed and already existing ones will be properly adjusted in order to supply important educational aspects of the network, like cooperative work among children in areas faraway from each other.

A WWW server will be designed and developed for the needs of ODYSSEAS. This WWW server will contain the following:
- An introduction of the ODYSSEAS project.
- The schools that are connected via the ODYSSEAS network
- News from the whole ODYSSEAS project.
- Events Calendar.
- Schools area.
- Cultural studies.
- Knowledge studies.
- Teachers area.
- Educational studies.
- Recreational pages.
- Documents library.
- Support material.
- Search engines in the INTERNET.
- Statistics about the WWW server

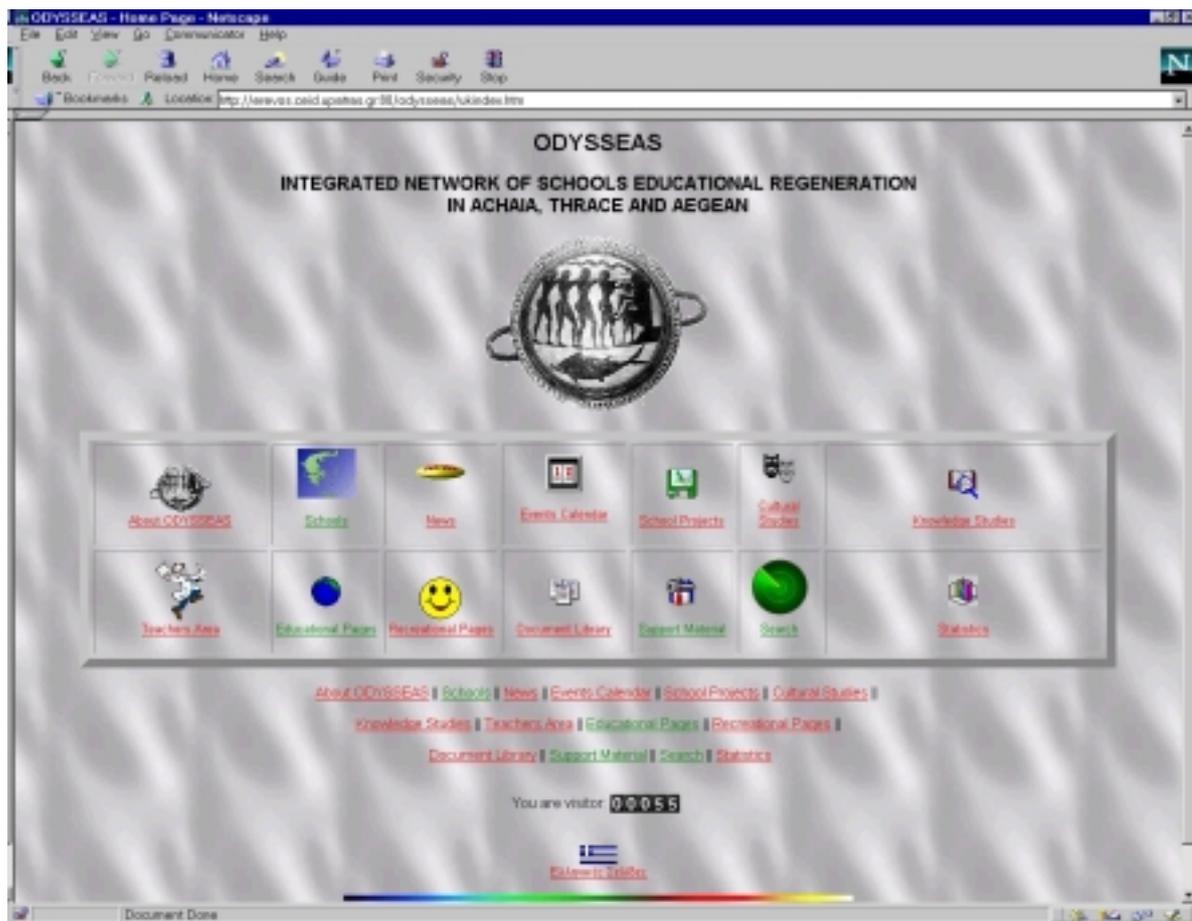The main page of the WWW server can be seen in the Figure 3.

Figure 3. The main page of the WWW server of the ODYSSEAS

The WWW server can be found in the URL http://odysseia.cti.gr/odysseas

Also, network services will be developed and supported for common use by all schools, like selective access to educational links worldwide and communication between pupils and teachers. More specifically, the following tasks will be developed:

- Network study of knowledge objects: as part of the project, analytical scripts of teaching will be designed and the corresponding network software for about 15 studies concerning 3 knowledge objects (for example Geography, Physics, Mathematics, chosen at the first stage of the project) will be developed.
- Network software for teaching the Greek language.
- Applications of cultural studies.
- Applications of administrative support.
- Network services and Internet services. More specifically the services of the electronic mail, discussion lists and bulletin board will be developed. A powerful and extremely user friendly Graphical User Interface will be build in order to support the network services. The capabilities of the services will not be presented to the user from the beginning. The presentation of these services will be completed in well designed steps and tips will help the user at each step. Thus the exploitative learning will be encouraged.

The teachers will be not only centrally, but also inside the schools, trained to the use of the new technologies, joining a continuous training program consistent with the basic ideas of educating teachers within the programme E.P.E.A.E.K. of the Greek Ministry of National Education and Religious Affairs.

The results of each operation stage will be evaluated from a pedagogical, technological and social point of view, feedbacking the tasks of the other stages. External international evaluators will participate in this task.

6. CONCLUSIONS

The aim of the ODYSSEAS project is to develop a comprehensive resource on teaching material for secondary school education. On the other hand it is not only thought as a resource for teaching material, but will have entry points for students as well. The ODYSSEAS project will not only offer Educational Multimedia, but also enable the social contact between students through discussion forums and mail applications. All aspects of a real school will have their virtual image, wherever technically possible. A success criteria will be the acceptance within schools, and even more specifically schools, who up to date use only rarely multimedia products. The objective is therefore to develop the ODYSSEAS system in close collaboration with school educators in order to evaluate its contents and networking architecture.

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