C O N T E N T S

Background

One of the main motives for creating the network is the very good results from the **TEMPUS S_JEP- 11392 "Restructuring Degree Courses in Computing",** finished in 1999, that united for three years the five Bulgarian departments of Computing and five similar departments in England, Germany, Italy and Greece. **The Coordinator of this Project was the Department of Computing at the University of Rousse**. The organization of the work within this project and mainly the results of the consortium's work were the main reason for electing the project as a **flagship**. The network, created within this project will be used as a model when establishing the new thematic network.

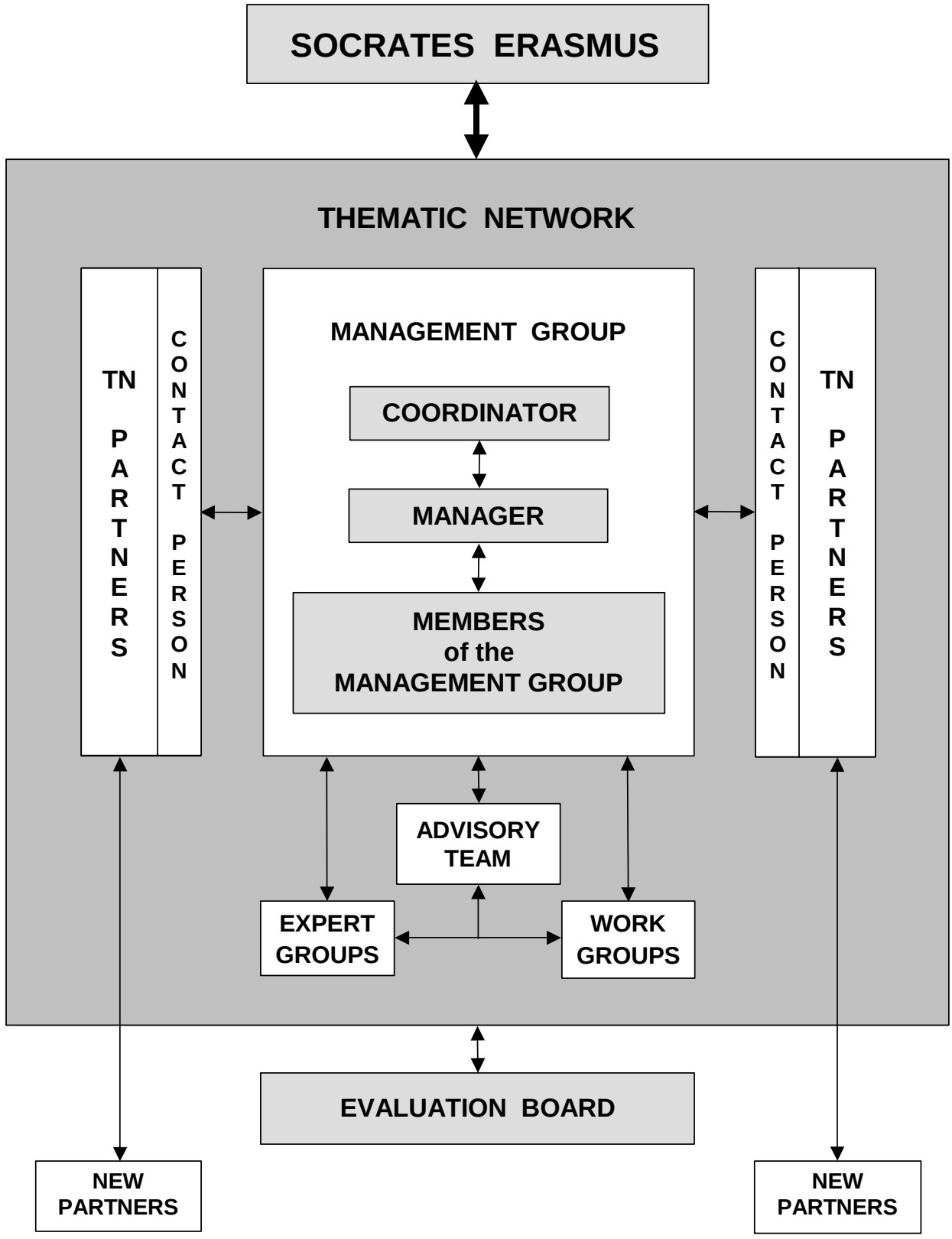
Another major motive comes from the following. According to forecasts by many specialists the 21st century will be an **Information Technology Century**. It is expected that new Information and Communication Technologies will enter absolutely every area of human activity – material as well as mental, which will cause a third industrial revolution. This will lead to the establishment of a new quality of society, which is called **the Information Society**. This society will be based on a continually expanding network of computers with continually improving performance whose infrastructure is the INTERNET. The stability of this platform and of this society will depend mainly on the people who are assigned by the society, the tasks of developing, producing and maintaining its separate components, i.e. on the quality of trained **computer specialists**. Following this logic we inevitably come to the universities and more particularly to **the departments that teach Bachelors and Masters in Computing.** Is it possible for the individual departments, using only their own resources and facilities and bearing in mind the current boom in the field of the Information Technologies, to ensure the necessary quality of the final product of their activity? Obviously this would be possible only through the close cooperation of a widely representative commonwealth of **Computing and Information Technologies Departments in Europe**. Therefore, in order to meet the requirements of the Information XXI Century, these departments should integrate their efforts from the very beginning of this century linking in a Thematic Network – **E**UROPEAN **C**OMPUTING **E**DUCATION and **T**RAINING (TN **ECET**), an opportunity given by the SOCRATES-ERASMUS programme. Applying the Information Technologies they must join their efforts in creating a **V**IRTUAL **E**UROPEAN **D**EPARTMENT **o**f **C**OMPUTING (**VEDoC**)**,** which should become a powerful producer of specialists capable of developing the latter technologies according to the constantly rising needs of the Information Society of Europe as a whole.

ECET is being established on the principle of good will and is open to all departments, associations, societies and companies from the computer branch willing to join in. It is based on an Academic Society established as a result of the above-mentioned project work. Its main objective is to combine the efforts of lecturers in Computing to improve and maintain the quality of teaching and research at a level determined by European and world standards.

Objectives

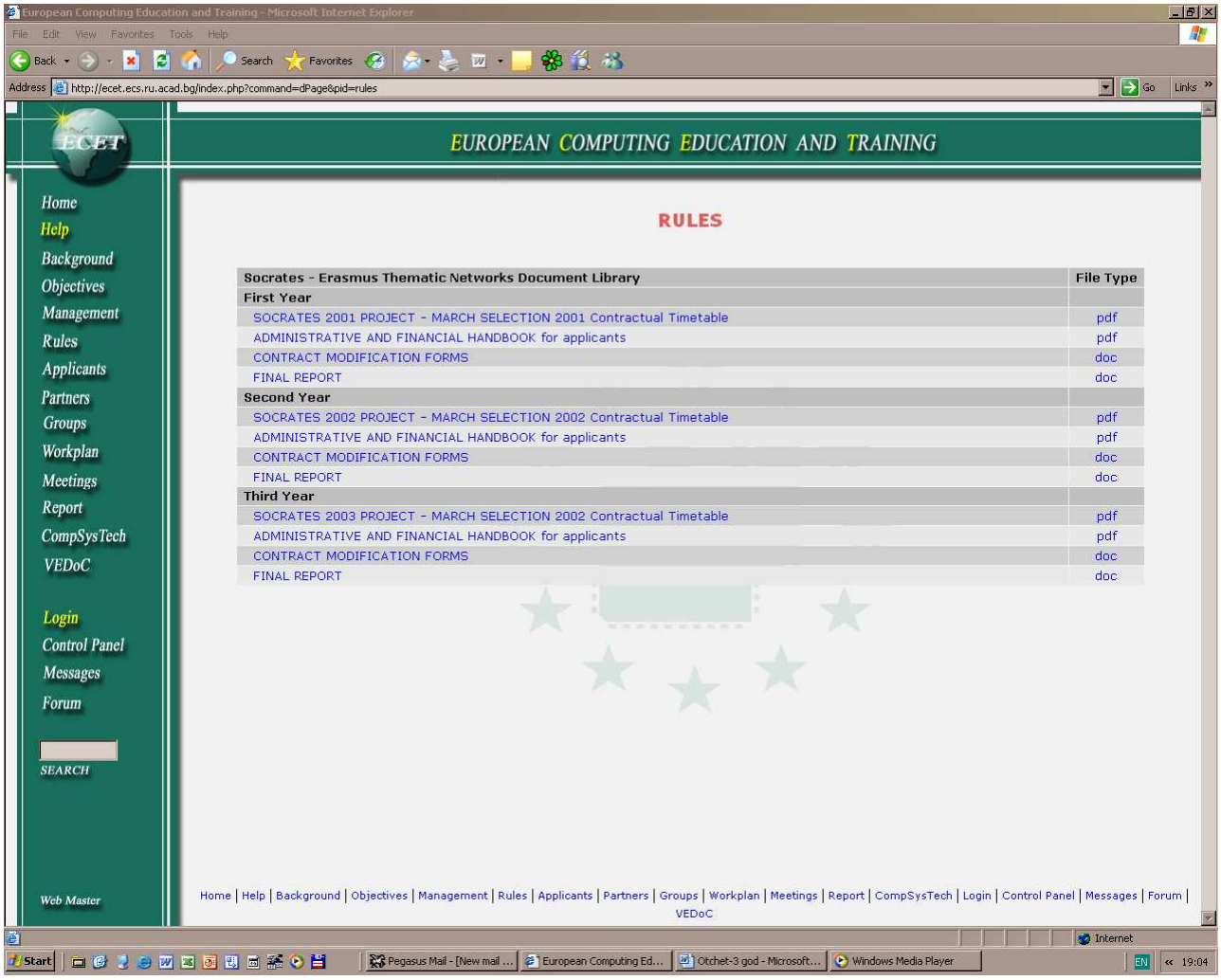
1. Establishing the Thematic Network **E**UROPEAN **C**OMPUTING **E**DUCATION and **T**RAINING (**ECET**) - at the end of the third year the number of departments and organisations included in the network has to reach 150.
2. Establishing a model **V**IRTUAL **E**UROPEAN **D**EPARTMENT of **C**OMPUTING (**VEDoC**).
   2.1. Creation of Virtual Recommended Professional Standards in Computing.
   2.2. Creation of Virtual Recommended Curricula and Syllabi in Computing.
   2.3. Creation of a WEB based Courses in Computing.
   2.4. Creation of a Virtual Library in Computing.
   2.5. Use and development of the **E**uropean **C**redit **T**ransfer **S**ystem (**ECTS**) and the **S**ystem for **Q**uality **C**ontrol (**SQC**).
3. Establishing an EUROPEAN **C**OMPUTER **E**DUCATION **A**SSOCIATION (**ECEA**).
4. Evaluating and disseminating ECET project results.
5. Planning the future activities of ECET.

Management


SOCRATES ERASMUS
THEMATIC NETWORK
TN PARTNERS
CONTACT PERSON
MANAGEMENT GROUP
COORDINATOR
MANAGER
MEMBERS of the MANAGEMENT GROUP
CONTACT PERSON
TN PARTNERS
ADVISORY TEAM
EXPERT GROUPS
WORK GROUPS
EVALUATION BOARD
NEW PARTNERS
NEW PARTNERS

Rules

The working rules, to which all Thematic Network members must stick, are formulated by DIRECTORATE-GENERAL EDUCATION AND CULTURE at the EUROPEAN COMMISSION and are published on the project web site.



Applicants

University Departments that teach Bachelors and Masters in Computer Science, Computer Engineering, Software Engineering and Information Systems, as well as companies from the computer branch can join the Thematic Network. Those who wish to join the Thematic Network must fill in and send a New Partners Form and a Letter of intent and after that they should register on the project web site by clicking “Applicants” menu item and filling in the following form. It is desirable that the Applicants are recommended by a TN member.

Connection mode: Standard | Secure	
Country*	-- Select a country --
Institution*	
Department/Unit	
Web site Department/Unit web site	
Address	
Contact person*	
Sex*	Select your sex
Photograph Maximum photo size: 180x250 px Only jpg, gif, pnp and bmp files are allowed	
Position	
Homepage Personal web site	
E-mail*	
Office phone Example: +359 82 450 734	
Home phone	
Cell phone	
Languages Example: English, German	

Taught courses	
Research field	
Hobbies	
Other information	
Motivation	
Username* Alphabetic characters only	
Password* Case sensitive	
Retype password*	
Submit	
Please note that fields marked with * are required!	

Partners

1. Austria
Technical University of Vienna

2. Belgium
BIKIT
University of Ghent
Vartec nv

3. Bulgaria
ACMBUL Bulgarian Chapter of the Association for Computing Machinery
ASL in CST
Bulgarian Association of Information Technology (BAIT)
Bulgarian Branch Association of Electronic Industry and Informatics (BBAEII)
Bulgarian Academy of Sciences - Central Laboratory for Parallel Processing
IEEE Bulgaria Section
Technical University of Sofia
Technical University of Varna
Technical University of Gabrovo
University of Veliko Turnovo
University of Rousse

4. Cyprus
University of Cyprus

5. Denmark
Aalborg University

6. Estonia
Tallinn Technical University

7. Finland
Lappeenranta Technology University
University of Turku

8. France
National Institute of A. S., Rennes
UVSQ

9. Germany
Artur Speer Akademie
Comhard Gesellschaft für Computer Kommunikation Bildung mbH
University of Applied Sciences Berlin (FHTW)

10. Greece
University of Ioannina

11. Hungary
University of Szeged

12. Iceland
Reykjavik University

13. Ireland
Dublin City University
National College of Ireland
University College Dublin

14. Italy
Pavia University
Palermo University

15. Latvia
Riga Technical University
Vidzeme University College

16. Liechtenstein
University of Applied Sciences Liechtenstein

17. Lithuania
Kaunas University of Technology
Vilnius Gediminas Technical University
Vytautas Magnus University

18. Malta
University of Malta

19. Norway
Norwegian University of Science and Technology

20. Poland
Warsaw University

21. Portugal
Coimbra University
New University of Lisbon

22. Romania
Academy of Economics Studies Bucharest
University of Pitesti

23. Slovenia
University of Ljubljana
Nova Gorica Polytechnic

24. Spain
Polytechnic of Madrid
University of La Laguna
University of Malaga
Polytechnic of Valencia
University of Almeria

25. Sweden
University of Gävle
Växiö University

26. The Czech Republic
Czech Technical University in Prague
University of Ostrava

27. The Netherlands
Eindhoven University of Technology
Hogeschool Rotterdam
Leiden University

28. The Slovak Republic
Comenius University of Bratislava
Slovak University of Technology
University of Constantine the Philosopher, Nitra

29. Turkey
Bilkent University
Middle East Technical University
Kocaeli University
Selcuk University

30. UK
Leeds Metropolitan University
Liverpool John Moores University
University of Plymouth
University of Ulster

Groups

Group Name	Group Email
Management Group	mg@ecs.ru.acad.bg
Advisory Team	at@ecs.ru.acad.bg
Evaluation Board	eb@ecs.ru.acad.bg
Expert Groups	
Foundation of Computer Science	egfcs@ecs.ru.acad.bg
Computer Architecture	egca@ecs.ru.acad.bg
Computer Communications & Networks	egccn@ecs.ru.acad.bg
Algorithms, Programming & Software Engineering	egapse@ecs.ru.acad.bg
Data Processing, Data Bases, Information Systems & Human Computer Interaction	egdpdb@ecs.ru.acad.bg
Artificial & Computational Intelligence	egaci@ecs.ru.acad.bg
Project Work & Industrial Placement	egpwip@ecs.ru.acad.bg
Visualisation & Multimedia	egvm@ecs.ru.acad.bg

Working practices of the groups

1. The project manager sends via E-mail to the leaders of each group the tasks which have to be completed.
2. The Group leader distributes these tasks to all group members.
3. The Group leader devises a work plan and sends it to the Manager and to all group members. The group work plan has to be synchronised with the project work plan.
4. The Group leader with the help of the kernel of the group works out a proposal for the comparable Professional Standards (Advisory Team), respectively of the curricula (Expert Groups) and sends them to all other group members.
5. The group members send via E-mail to the Group leader their suggestions for revisions and amendments.
6. The Group leader makes the necessary modifications and sends the new version to the group and to the Project Manager.
7. The Manager publishes the received comparable Professional Standards, respectively curricula in the Forum of the project web site and sends them to all network members in this way opening a virtual meeting to discuss the materials.
8. Suggestions and comments of the network members are considered.
9. The final versions are discussed and adopted at the next work meeting of the Management Group and published on the project web site and in the Project Annual report.

Workplan
for 2003 / 2004

No	Activity	Responsible	Date
1.	Elaborating the TN Workplan for 2003 / 2004.	Rousse University, MG	30.08.2003
2.	Submitting a proposal for continuing the TN ECET project in 2004 / 2005 for the purpose of disseminating the project results.	Rousse University, MG	28.02.2004
3.	Strengthening and developing further the Virtual European Department of Computing.	All Partners	Continuous
4.	Establishing a Virtual Library in Computing: • Creating a database of existing and newly developed on-line teaching aids in Computing. • Providing access to the database for all partners	Rousse University, all Partners	01.06.2004
5.	Opening a Virtual Center for preparing WEB based courses: • Developing the WEB based courses for the main courses of the comparable curricula; • Including the developed courses in the Virtual Library in Computing.	Rousse University, all Partners	01.06.2004
6.	Opening a Virtual Laboratories	Rousse University, University of Palermo, all Partners	01.06.2004
7.	Establishing and developing the open and distance education / training network.	EGs, WGs	01.05.2004
8.	Establishing a Site for virtual conference.	Rousse University	01.05.2004
9.	Organising and conducting an International conference on Computing	Rousse University, MG, EGs, WGs	17-18. 06.2004
10.	Participation in organising and conducting the International conference on Virtual Management and Open, Distant and Virtual Education	Gent University MG, EGs, WGs	05.09.2004
11.	Publishing Conference proceedings – both paper and electronic.	Coordinator	31.08.2004
12.	Attracting new members to the TN.	All Partners	30.01.2004
13.	Strengthening and developing further the EUROPEAN COMPUTER EDUCATION ASSOCIATION (ECEA):	MG, Society and Associations	15.06.2004
14.	Organising and conducting an international seminar for the purpose of disseminating ECET project work results.	TU-Sofia, Contact persons	20.09.2004
15.	Informing the public about the project work results by means of regional and national mass media.	All Partners	Continuous
16.	Preparing a report about project work results in the third year.	Rousse University, MG	30.10.2004

17.	Convening a MG Meeting for the purpose of: • Discussing and adopting the report; • Evaluating the ECET project results; • Planning the future activities of ECET. Discussing and adopting the Workplan for 2004 / 2005.	Rousse University, Contact Persons, EB	30.09.2004

Meetings

MINUTES
and
MAIN RESULTS
of the
MEETING
held on 16 to 20 June 2004 in Rousse

In this First Meeting **55 representatives of 25 European countries** took part, including Belgium, Germany, Greece, Spain, France, Ireland, Italy, The Nederland, Austria, Portugal, Finland, Sweden, UK, Lichtenstein, Island, Bulgaria, Czech Republic, Estonia, Cyprus, Latvia, Lithuania, Poland, Romania, Slovenia, Slovak Republic.

The project meeting was conducted with the following agenda:

- Welcome Address of the Rector of the University of Rousse to the Meeting participants.
- Introduction of the Meeting participants.
- Report about completed work.
- Discussion.

- Discussing and adopting the first version of the Constitution and Bylaws of the Association for European Education in Computing
- Specifying future activities.
- Discussion.
- Planning the Final Meeting.
- Clarifying some of the financial rules for project work.
- Any other business.

The following decisions were taken at the meeting:

- The Report about completed work up to that moment was adopted.
- Each project partner should send by 15.07.2004 URLs of WEB based teaching materials and URLs of Centres for open and distance learning.
- By 30.07.2004 partners should send their comments and suggestions for amendments of the Constitution and Bylaws of the Association for European Education in Computing, so that the final versions can be prepared by the end of August and adopted at the Final meeting in Belgium.
- To extend the deadline for submitting paper abstracts for the E-learning conference to 30.06.2004.

- To extend the deadline for submitting full paper for the conference to 31.07.2004.
- The Final project meeting and the E-learning conference will take place from 05.09 to 09.09.2004 in Brussels, Belgium.

All participants in the meeting were present at the CompSysTech'2004 conference, whose organization is included in the work plan of TN ECET for the third year. In the CompSysTech'04 conference 218 Bulgarian and 51 foreign scientists took part.

The conference was opened with an address of the Minister of Education and Science (MES), presented by Mr. Dimitar Tzvetkov - Director of the Directorate "Higher Education" at the MES. The participants in the conference were also welcomed by Prof. DSc Veliko Ivanov – vice rector of the University of Rousse, by Mr. Orlin Kuzov – Director of the ICT Development Agency, by Dr. Jennifer Trelewicz, IBM representative for Eastern Europe and Russia, as well as by representatives of Microsoft – Bulgaria and CISCO - Bulgaria.

During the plenary session two papers were presented:

- Key Trends in the Information and Communication Technologies
- The eSkills Gap – Challenges and Solutions

In parallel to the conference the 30-th anniversary of Department of Computing of the University of Rousse and the 5-th birthday of the Academic Society of Computer Systems and Information Technologies were celebrated. An academic speech about the department was presented by Mrs. Stoyanka Smrikarova, Deputy Head of Department. Many greeting addresses and flowers were received.

The renovated and re-equipped building, where the computer labs of the Department of Computing are situated, was opened.

The conference continued its work on the next day in sections. The number of the papers totalled 118, which were distributed in 5 sections as follows:

1. Computer Systems (Hardware) – 10 papers.
2. Computer Systems (Software) – 20 papers.
3. Application aspects of computer systems and technologies
3A. Application aspects of computer systems and technologies – 25 papers.
3B. Application aspects of computer systems and technologies – 24 papers.
4. Educational aspects of computer systems and technologies – 29 papers.

During the conference a Work Shop for PhD students took place. Its main lecturers were Prof. Dr. Michael O hEigeartaigh and Prof. Heikki Kalviainen. 10 papers were presented by doctoral students too.

In the end, in each of the five sections, the authors of the most interesting and well presented papers as well as the best young scientists and PhD students were given awards form the IBM (USA).

Names of awarded in Sections as follows:

Section 1 „Computer Systems (Hardware)":

- Algorithms for DMA communications - **A. Kemalov**
- The Communication Infrastructure of the MAPNET Mobile-Agent Platform – **D. Staneva, P. Gacheva**

Section 2 „Computer Systems (Software)":

- Schema Integration Framed in Modal Logic – **V. Boeva**
- MAPNET: A .NET-Based Mobile-Agent Platform – **D. Staneva, D. Dobreva**

Section 3A „Application Aspects of Computer Systems and Technologies":

- Transition Matrix Generation – **A. Antonov, Y. Yanakieva**

- Image-space Based Collision Detection in Cloth Simulation on Walking Humans - **V. Dochev, T. Vassilev, B. Spanlang**

Section 3B „ Application Aspects of Computer Systems and Technologies":

- A Flexible Table Driven LR(1) Parser – **S. Bonev**
- Metadata Driven Code Generation Using .NET Framework - **I. Damyanov, N. Holmes**

Section 4 „Educational Aspects of Computer Systems and Technologies":

- An Electronic Learning Assistant – **V. Kolovski, S. Jordanov, J. Galletly**
- Virtual Laboratories for Collaborative Working in Environment Water – **K. Holz, G. Hildebrandt, T. Neltchinova**
- Modeling of e-Learning Processes: an Approach Used in Plovdiv e-University - **G. Totkov, E. Somova, M. Sokolova**

Section 5 - PhD students:

- Model of an intellectual search engine represented by the fuzzy sets theory. **H. Moneva**
- A Case Based Reasoning Approach for Development of Intelligent Services - **S. Stojanov, I. Popchev, D. Chaushkova, M. Trendafilova**

MINUTES
and
MAIN RESULTS
of the
FINAL MEETING
held on 06 to 07 September 2004
at the Flemish Academic Center
for Science and the ArtsKoninklijke
Brussel, Belgium

In this Meeting **98 representatives of 27 European countries** took part, including Belgium, Germany, Greece, Spain, France, Ireland, Italy, The Nederland, Austria, Portugal, Finland, Sweden, UK, Lichtenstein, Island, Norway,Bulgaria, Czech Republic, Estonia, Cyprus, Hungary, Latvia, Lithuania, Poland, Romania, Slovenia, Slovak Republic.

The project meeting was conducted with the following agenda:

- Address of the President of the Flemish Academy for Science to the participants in the meeting.
- Introducing the participants in the meeting.
- Reporting about project progress.

- Discussing and adopting the Constitution and Bylaws of the Association for European Education in Computing.
- Listening to the opinion of the Leader of the Evaluation Board.
- Discussion.
- Specifying the activities until the end of the third year.
- Discussion.
- Information about the Tuning project and identifying subject-specific competences in the field of computing.
- Information about project financial rules.
- Preparation of financial documents.
- Information about the ETN DEC project.
- Any Other Business.

The meeting was opened and chaired by Prof. Fernand Vandamme from the University of Gent.

The meeting participants were greeted by the President of the Flemish Academy for Science.

The Project Coordinator presented a report about project progress in the third year.

The Constitution and Bylaws of the European Association for Education in Computing were discussed and adopted.

The project evaluators Mr. Stanley Oldfield - Lecturer from the Open University, UK and Mr. Dimitar Tsvetkov - Director of Information Technologies and Services Directorate, BG familiarized the partners with their Evaluation Reports. In addition the Evaluation Report of Mr. Orlin Kouzov - Director of the Agency for Information and Communication Technologies Development, BG was read.

Dr. Alan Hagerty familiarized the colleagues with the main results of the TUNING project and the possibilities to use them in the TN ECET and the new Thematic Network.

TN ECET manager gave detailed instructions about the activites, which have to be completed by the formal end of the project as well as information about project financial rules.

On 7 and 8.09.04 the E-LEARNING CONFERENCE was held. Out of 37 papers 32 were presented by TN ECET members.

At the formal closing of the meeting the manager and coordinator of the Thematic Network were given Charles Babbage plaques from the Institute of Information Technologies in Gent.

MINUTES
and
MAIN RESULTS
of the
ROUND TABLE
held on 24 to 26 September 2004
at the St. Constantine resort
Varna, Bulgaria

In this Round Table **23 representatives of 8 European countries** took part, including Spain, Austria, UK, Bulgaria, Czech Republic, Estonia, Latvia, Lithuania.

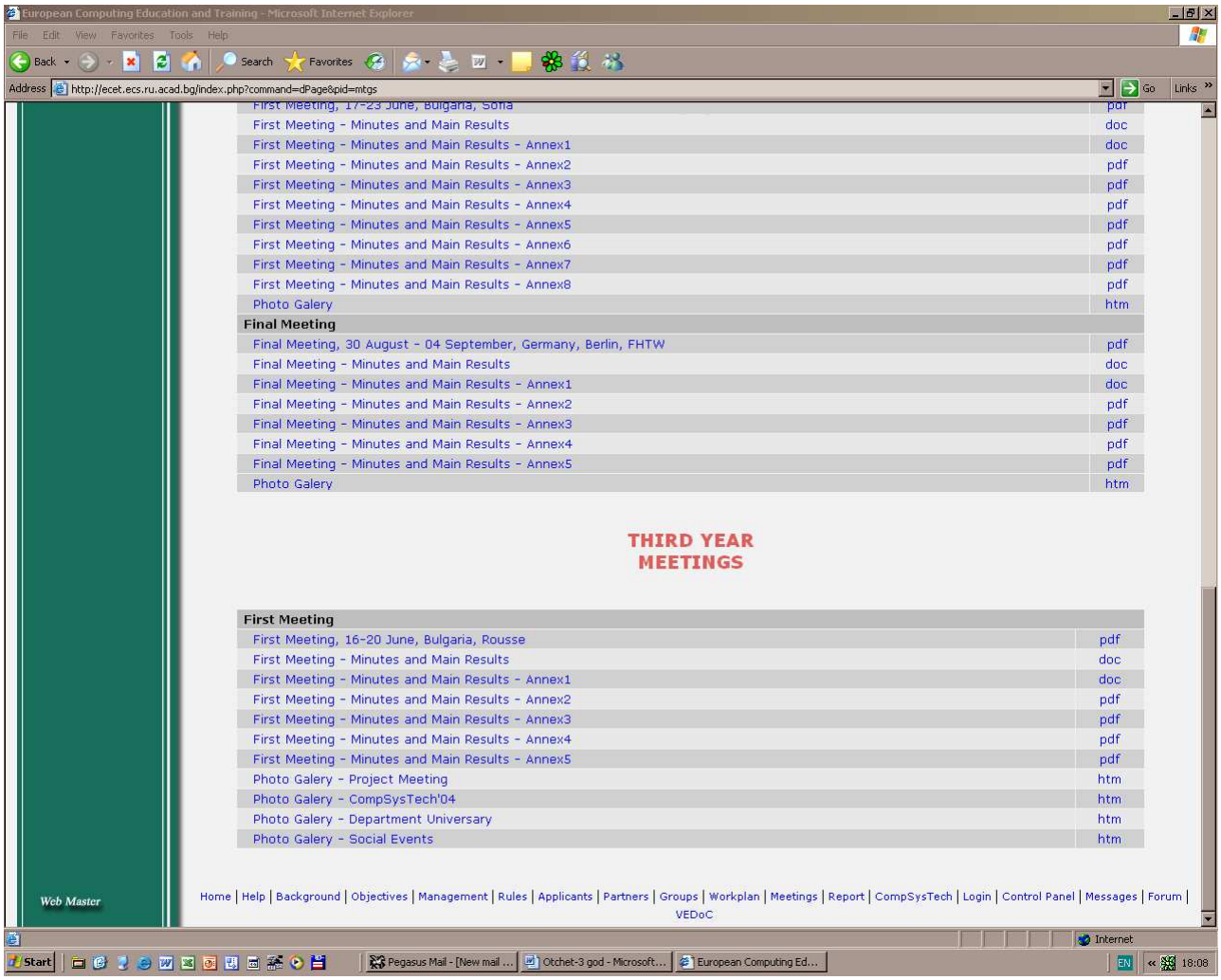
According to the work plan for the third year this round table was dedicated to project results dissemination and multiplication. In regards to this the project coordinator presented two developments:

- Software Platform for e-Learning and
- Virtual Laboratory on Computer Organization.

The Software Platform is already used in 17 universities and companies, and the Virtual Laboratory is given to 29 universities, which teach Bachelors and Masters in the field of Computing.

The coordinator also presented some details about the new project „EUROPEAN THEMATIC NETWORK for DOCTORAL EDUCATION in COMPUTING" (ETN DEC), which encompasses most of the TN ECET partners.

For more Information see ECET WEB site: http://ecet.ecs.ru.acad.bg/



Report
for 2003 / 2004

1. A proposal for a new Thematic Network (TN DEC) for 3 year has been written and sent to the Socrates Office in Brussels. The project has been approved.
2. A detailed Work Plan for 2003/2004 was drawn up and has been acted on.
3. A link with the Tuning project was established. The Tuning counsellor was contacted and correspondence was initiated about defining subject-specific competences.
4. The Virtual European Department of Computing has been strengthened and further developed (http://ecet.ecs.ru.acad.bg/vedoc/).
5. The Virtual Library in Computing was established and is being continuously updated (http://ecet.ecs.ru.acad.bg/vedoc/index.php?cmd=vlib).
   - A database of existing and newly developed on-line teaching aids in Computing has been created.
   - Access to the database for all partners has been provided.
6. A Virtual Centre for preparing WEB based courses has been opened (http://ecet.ecs.ru.acad.bg/else/).
   - 30 WEB based materials for the main courses of the comparable curricula have been developed;
   - The developed courses have been included in the Virtual Library in Computing.
7. The Open and Distance Education/Training Network has been established and further developed (http://ecet.ecs.ru.acad.bg/vedoc/index.php?cmd=dPage&pid=voden).
8. A Site for the conference CompSysTech'04 has been developed (http://ecet.ecs.ru.acad.bg/cst04/).
9. The CompSysTech'2004 conference was held in Rousse, Bulgaria, with a wide participation of members of the TN consortium. **218** Bulgarian and **51** foreign scientists took part in the conference. There was a special "e-Learning" section dedicated to the role of the TN in the development and application of Information and Communication Technologies (ICTs) and in the e-Learning initiative of the European Commission. In parallel to the conference the 30-th anniversary of Department of Computing of the University of Rousse and the 5-th birthday of the Academic Society of Computer Systems and Information Technologies were celebrated.
10. During the conference a Work Shop for PhD students took place on "Network Algorithms". Its main lecturers were Prof. Dr. Michael O hEigeartaigh and Prof. Heikki Kalviainen.
11. CompSysTech'2004 conference proceedings have been published in a paper version and as a CD.
12. The First TN project meeting (http://ecet.ecs.ru.acad.bg/index.php?command=dPage&pid=mtgs) took place in Rousse in association with the CompSysTech conference on 17 June 2003, and **55** representatives from **25** European countries took part. The following activities were completed at the meeting:
    i. A Report about completed work. Discussion.

ii. Discussing and adopting the first version of the Constitution and Bylaws of the Association for European Education in Computing
iii. Specification of future activities.
iv. Planning the Final Meeting.
v. Clarification of the financial rules for work on the project.

13. An International conference on Virtual Management and Open, Distant and Virtual Education, shortly called the e-Learning conference (http://www.lotuswebtec.com/e-conf/), was organised and took place in Brussels jointly with the Final project meeting.
14. EUROPEAN COMPUTER EDUCATION ASSOCIATION (ECEA) was established. The Constitution and Bylaws of the ECEA have been developed and adopted.
15. Through periodical publications in professional journals and newspapers the project results were disseminated. The developed Forum on the project web site was used for discussing project materials and outcomes.
16. The government and the public in Bulgaria are regularly informed about the objectives, activities and results of the TN ECET by means of regional and national mass media.
17. A report on the work carried out during the third year of the project has been elaborated.
18. The project was periodically evaluated by the Advisory team and the Evaluation board. The project was also evaluated by two external evaluators.
19. The final meeting for the third project year took place in Brussels on 6 September 2004. It was hosted by the University of Gent, BIKIT-Gent, VARTEC NV-Gent and **98** representatives from **59** institutions in **27** European countries took part. The following activities were completed at the meeting:
    - The third year report was discussed and adopted;
    - The Constitution and Bylaws of the Association for European Education in Computing were discussed and adopted
    - The work completed in the third project year was evaluated;
20. The SAER-2004 conference was held in Varna, Bulgaria on 24-26 September 2004. During the conference a round table discussion on dissemination of project results was conducted.

A N N E X 1

CONSTITUTION
of the European Association for Education in Computing (EAEC)

ARTICLE 1. *Name*

This organization shall be called the ***European Association for Education in Computing.***

ARTICLE 2. *Purposes*

The purposes of the Association are:

a) To promote the free interchange of methods, approaches, technologies and information about European Education in Computing to the public using the best educational, scientific and professional traditions.
b) To develop and maintain the integrity and competence of individuals engaged in the practice of computing education in European or others Universities and high schools.
c) To advance the processes, sciences and arts of education and training in computing.
d) To be a European Association for Education in Computing and its applications.

ARTICLE 3. *Membership*

Item 1. *Eligibility.* Any European or other person or institution, accepting the purposes of the Association and eligible for membership in accordance with this Constitution and Bylaws, will become a member upon the approval of the completed application form for membership and the payment of dues in accordance with the Bylaws.

Item 2. *Classes of membership.* The Association has three classes of membership:

2.1. *Members.* Persons qualified to be Members are those who accept the purposes of the Association and have professional experience by demonstrating intellectual competence and ethical conduct in the area of computing education and training. Members shall have voting rights.

2.2. *Student Members.* PhD students and full-time students in an accredited educational institution are the only persons qualified for student membership.

2.3. *Institutional Members.* Institutions qualified to be institutional members are those that accept the purposes of the Association. The institutional member will nominate one person who will be a Member.

Item 3. *Resignation.* A member may at any time file a resignation application in writing with the Secretary, and it will become effective as of the date it is filed.

ARTICLE 4. Officers

Item 1. *Titles.* The officers of the Association are:
President, Vice President, Secretary and Treasurer.
The officers of the Association are the members of the Association Council.

Item 2. *The President.* The President is chairman of the Executive Committee and the Council of the Association.

Item 3. *The Vice-President.* In the temporary absence of the President, the Vice-President shall act as chairman of the Association main Committees.

Item 4. *The Secretary.* The Secretary will keep a record of all proceedings and meetings of the Association, Council and Executive Committee. The Secretary has the general supervision of arrangements made by the Association in connection with the business meetings. The Secretary will maintain a list of all members at the business office of the Association.

Item 5. *The Treasurer.* The Treasurer will have responsibility for the charge, protection and spending of all funds of the Association. The signature of the Treasurer is the main financial signature of the Association. The Treasurer will see that accurate accounts are kept in all books belonging to the Association, that dues and other sums are collected, that all properly approved bills are paid, and that financial statements and budges are prepared.

ARTICLE 5. *Executive Committee*

Item 1. *Composition and Authority.* The Executive Committee of the Association shall consist of the President, the Vice-President and the Secretary. The Executive Committee shall appoint representatives of the Association for specific goals and shall manage in general the affairs of the Association between Council meetings. The President shall call a meeting of, or cause questions to be presented to, the Executive Committee upon the request of any member of the Committee.

Item 2. *Place of Meeting.* Meetings of the Executive Committee shall be at the principal office of the Association, or at the place of and in connection with a meeting of the Association, or at such places as the Executive Committee may determine.

ARTICLE 6. *Council*

Item 1. *Membership.* The Council includes Members of the Association only and consists of the Association officers, the Past President of the Association, the representatives from each European country which has at least one Member of the Association as defined in the Bylaws, and the Chairman of the Publications Board.

Item 2. *Authority and Duties.* The Council shall define the policies of the Association and supervise their execution by the officers of the Association.

Item 3. *Meetings.* The Council shall meet at least once a year It will meet when the Association has a Meeting, upon the call of the Executive Committee , or if half the members of the Council call a meeting. Meetings of the Council shall be at the principal office of the Association or at the place of the Association meetings in general, for example at the annual event of the Association.

Item 4. *Annual Report.* The Council will report annually to the members of the Association by e-mail or by one of the Association's publications which is sent to all members.

Item 5. *Annual Budget.* Each year the Council shall adopt an annual budget for the Association for the following year. The budget must be published in one of the Association's publications, which must be distributed to all members.

Item 6. *Code of Professional Ethics.* The Council shall adopt and conspicuously publish to all members a code of professional ethics.

ARTICLE 7. *Elections*

The Association Officers (without the treasurer) and all Council members (without the Chairman of the Publications Board) shall be elected as of June in each third year. The Treasurer and the Chairman of the Publications Board will be elected from among the Members of the Association by a majority of all members of the Council. No person may hold two Council positions.

ARTICLE 8. *Nominations*

Nominations will be made by a notice mailed to the members as provided in the Bylaws. Prior to distribution of the ballot, nominations by petition of at least one percent of the Members of the constituency shall be received and entered on the ballot described in the Bylaws.

ARTICLE 9. *Association meetings by Ballot*

Each Member of the Association will be notified of a meeting of the Association where the ballot will be implemented. Each Member may cast a vote personally at the meeting or they may return a proxy ballot to the authorized secretary by ordinary mail, e-mail, or other on-line technology.

ARTICLE 10. *Bylaws*

Bylaws may be adopted or edited by an affirmative vote of at least two-thirds of all members of the Association. The Council has the authority to interpret the Bylaws.

BYLAWS
of the European Association for Education in Computing (EAEC)

BYLAW 1. *Principal Offices and Resident Agent*

Item 1. *Principal Office*. The principal office of the Association for European Education in Computing, referred to as the Association or EAEC, is located during three consecutive years in the territory of one of the European institutions that signed the constitution. After the three-year period the principal office passes to the territory of an institution of another European country. The address of the resident agent is the address of the same institution. The Council shall determine the current place of the Association.

Item 2. *Business office and Executive Director*. The EAEC has an office for conducting Association business. The location of this office is determined by the Association Council. An Executive Director is there and he or she shall be a paid employee of the Association. The Executive Director shall be responsible for the general administration of the affairs of the EAEC in accordance with the policies set by the Association Council and Officers of the Association. The Executive Committee, with the consent of the Association Council, shall appoint the Executive Director.

BYLAW 2. *Definitions*

Item 1. *Member*. In the Bylaws, the term “Member” without qualifier shall exclude student members and institutional members.

Item 2. *Notices.* A requirement for publication of an Association notice shall be deemed to be satisfied if it appears in the *Communications of the EAEC (CEAEC).*

BYLAW 3. *Dues*

Item 1. *Members*. Each Member must pay annual dues and receive some publications of the EAEC, which are determined by the Association Council. The membership candidate must have at least a bachelor’s degree (or comparable) in computing or education of computing (or comparable).

Item 2. *Institutional Members*. Each Institutional Member shall pay annual dues and receive some publications of the EAEC, which are determined by the Association Council. The institutional member will nominate one person of the institution who will be a Member.

Item 3. *Student Members*. Each PhD Student or Student Member shall pay annual dues and receive some publications of the EAEC, which are determined by the Association Council.

BYLAW 4. *Nominations and Elections*

Item 1. *Nominations procedure*. The Nominating Committee consisting of five Members of the EAEC shall determine the nominations. The Nominating Committee must determine the nominations for all elected key people of the EAEC by an affirmative vote of at least two-thirds of all the members of the Nominating Committee. The nominations procedure will be organized every three years. Each nomination must include at least two nominees for each officer to be filled in the forthcoming elections and must be published in the CEAEC.

Item 2. *Elections*. The Elections of all elected key people will be organized by on-line procedure (e.g. Internet).

BYLAW 5. *Chapters*

Item 1. *Purposes of Chapters*. A Chapter is a unit of the EAAC formed to serve a given European region, country, or country region and to realize the connection points to local or national organizations. Those chapters that have a general scope are called “Chapters”, and those that serve PhD students or students at colleges and universities are called “Student Chapters”. All chapters will be organized and operated exclusively for educational and scientific purposes in the field of education in computing.

Item 2. *Establishment*. Five or more persons in a given European institution who are members of EAEC may petition the Association Council for charter as an EAEC chapter in that place. The petition for charter as a Student Chapter shall contain: 1. the name of at least one EAEC member who is willing to serve as its Chairman; 2. the names of at least ten PhD Students or/and Students of the local University or College or any other European scientific organization that accept the constitution and purposes of the Association.
The Association Council shall accept or reject the petitions at its discretion, specify the duration of all chapters, and inform the petitioner in writing of its decision.

Item 3. *Membership*. Membership in a chapter shall be open to all EAEC members within the locality of the chapter, but the membership is not obligatory in any way.

Item 4. *Finance.* The responsibility for collecting, holding and disbursing funds is entrusted to all chapters under terms of a EAEC Financial Policy established by the Council. Each chapter must create an annual financial report.

Item 5. *Revocation of Charter*. A chapter’s charter may be revoked by a 2/3 vote of all members of the Council.

BYLAW 6. *Committees and Boards*

Item 1. *Authority, Structure, Tenure and Membership*. There are two Committee classes: Standing Committees and Ad Hoc Committees. The Standing committees are established by the Association Council and have a long-term purpose. Ad Hoc

Committees are also created by the Association Council or President, but have a short-term purpose.
The Standing and Ad Hoc Committees are grouped into boards as described in Item 2. Each Board chairman will have line management responsibility for the committees assigned to the Board including such matters as generating and monitoring budgets, but not including the right to dictate committee activity. The board chairman will report administratively via the President to the Association Council at each Council meeting on the extent to which each committee or board has discharged its responsibilities.
All funds held by a dissolved committee shall become the property of EAEC.
The list of committees and board and committee chairmen must be published annually in the Communications of the EAEC.

Item 2. *Boards*. The Management Board of the EAEC includes the Finance Committee, the Nominating and Election Committee, and all other committees concerned with the main goals and structure of the Association.
The main Board of the Association is the Educational Board in Computing, which includes all committees concerned with curricula, aid to the education institutions in Computing, and all other educational activities in Computing in Europe.
The Conferences Board shall be responsible for the approval, budgeting, supervision and conduct of all technical meetings including conferences, symposia, workshops, tutorials and professional development seminars of the EAEC and any of its chapters.

BYLAW 7. *Financial Safeguards*

Item 1. *Audit.* The Association Council will appoint a certified public accountant to audit annually the books and accounts of the EAEC.

Item 2. *Withdrawal of Funds of Deposit*. Checks and withdrawal slips executed in the name of Association may be drawn over the signature of the Treasurer alone. The Treasurer may delegate these authorities as follows:

A. To the Executive Director alone with the letter of delegation.
B. To the chief full-time paid finance and accounting employee of the EAEC alone with the letter of delegation.

BYLAW 8. *The Budget*

Before January 1 of each year, the Association Council will give budgetary advice to the Executive Committee on programs and priorities for the next fiscal year. The Executive Committee will prepare a detailed budget following the policies adopted by the Association Council.
The Association Council shall consider, update and adopt the budget.

BYLAW 9. *Meetings*

Item 1. *Meetings of Members*. Meetings of all classes of members may be held at such times and at such places within an European country as may be determined by a vote of the Members of the Association or by the Council.

Item 2. *Notice of Meetings of Council and Executive Committees*. The meetings of the Council & Executive Committee may be held on 30 days notice by e-mail.

BYLAW 10. *Ballots*

Item 1. *Mailing*. Ballots for elections or for referendums will be e-mailed under the supervision of the Elections Committee as instructed by the Association Council.

Item 2. *Return and Counting*. The last date for receipt of a completed ballot will be at least 15 days after the last ballot is e-mailed out. All ballots shall be returned to the Elections Committee by e-mail and shall be counted. If a ballot is determined to be invalid, it will not count. The Elections Committee must publish the final results in the Communications of the EAEC.

BYLAW 11. *Publications Board*

Item 1. *Authority*. The Publications Board will be responsible for, and have authority over, all EAEC subscription publications including proceedings, newsletters and journals of record.

Item 2. *Membership and Tenure*. The Publications Board will comprise the Chairman and at least five but not more than eight other members of the EAEC. The Publications Board shall include at least the following standing committees: Editorial Committee and Publications Planning Committee. Both Committees work in accordance with the Rules, which are created by the special Work Group, determined by the Association Council.

BYLAW 12. *EAEC Code of Professional Conduct*

PREAMBLE

Recognition of professional status by the public depends not only on skill and dedication but also on adherence to a recognized code of Professional Conduct. The following Code sets forth general principles (canons), professional ideals (Ethical Considerations), and mandatory rules (Rules of Conduct) applicable to each EAEC Member.

CANON 1

An EAEC member shall act with integrity at all times.

Ethical Considerations

EC1.1. An EAEC member shall preface any partisan statements about educational, training process in computing by clearly indicating on whose behalf they are made.

EC1.2. An EAEC member shall properly qualify the member's expressed opinion outside the member's area of competence. A member is encouraged to express an opinion on subjects within the member's area of competence.

Rules of Conduct

DR1.1. An EAEC member shall not make deliberately false or deceptive statements as to the present or expected state of affairs regarding any aspect of the capability, delivery, or use of educational and training systems in computing.
DR1.2. An EAEC member shall disclose any interest of which the member is aware which does or may conflict with the member's duty to a present or perspective employer or client.

CANON 2

An EAEC member should strive to increase the member's competence and the competence of the profession.

Ethical Considerations

EC2.1. An EAEC member shall undertake only those professional assignments and commitments for which the member is qualified.
EC2.2. An EAEC member should maintain and increase the member's competence through a program of continuing education encompassing the techniques, technical standards, and practices in the member's fields of professional activity in the area of education and training in computing.
EC2.3. An EAEC member should provide opportunity and encouragement for professional development and advancement of all professionals and those aspiring to become professionals.

Rules of Conduct

DR2.1. An EAEC member shall not use his or her professional credentials to misrepresent the member's competence.
DR2.2. An EAEC member shall not undertake professional assignments without adequate preparation in the circumstances.
DR2.3. An EAEC member shall not represent a product of the member's work as one that will perform its function adequately and will meet the receiver's operational needs, when the member knows or should know that the product is deficient.

CANON 3

An EAEC member should use the member's special knowledge and skills for the advancement of human welfare.

Ethical Considerations

EC3.1. An EAEC member should consider the health, privacy, and general welfare of the public in the performance of the member's work.
EC3.2. An EAEC member, whenever dealing with data concerning individuals, shall always consider the principle of the individual's privacy and seek the following:

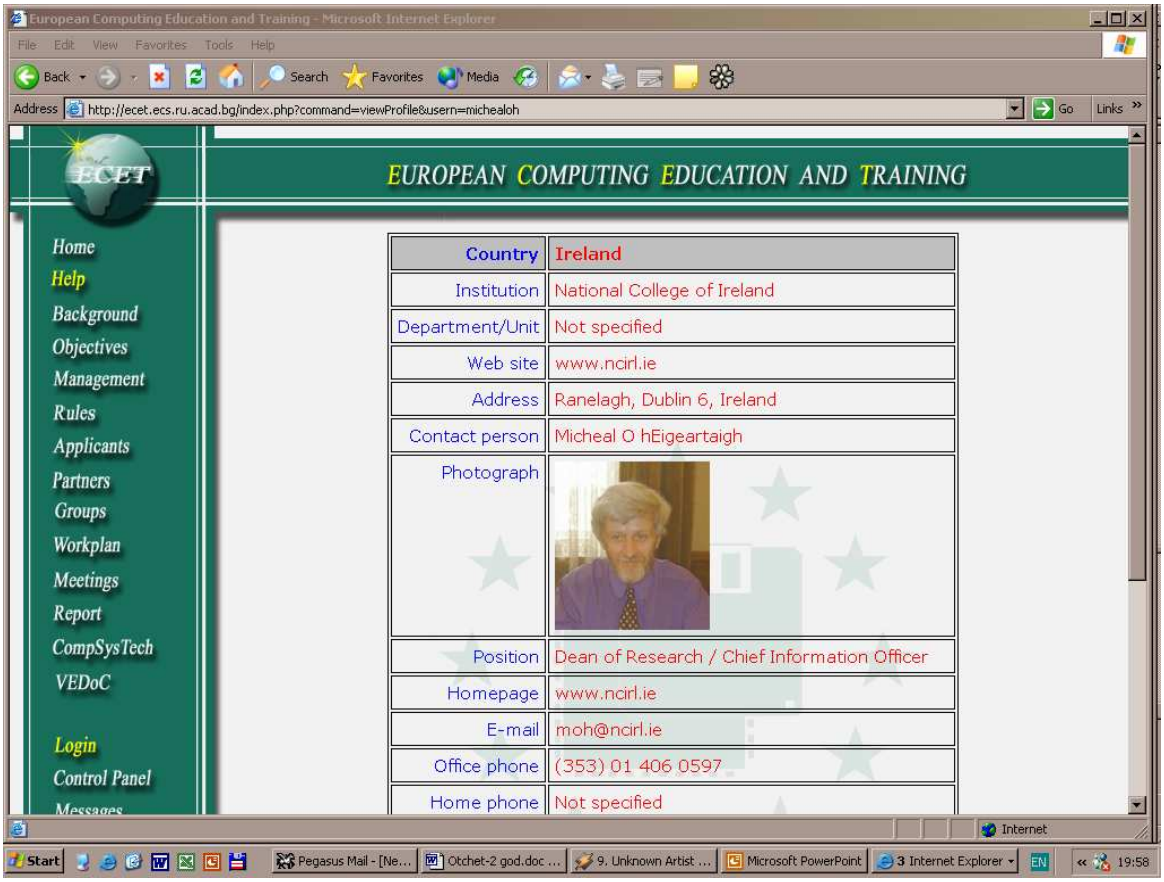
- To minimize the data collected,
- To limit authorized access to the data,
- To provide proper security for the data.

Rules of Conduct

DR3.1. An EAEC member shall express the member's professional opinion to the member's employers or clients regarding any adverse consequences to the public that might result from work proposed to the member.

A N N E X 2

WEB site of the Thematic Network ECET
URL: http://ecet.ecs.ru.acad.bg/



WEB site of the Virtual European Department of Computing
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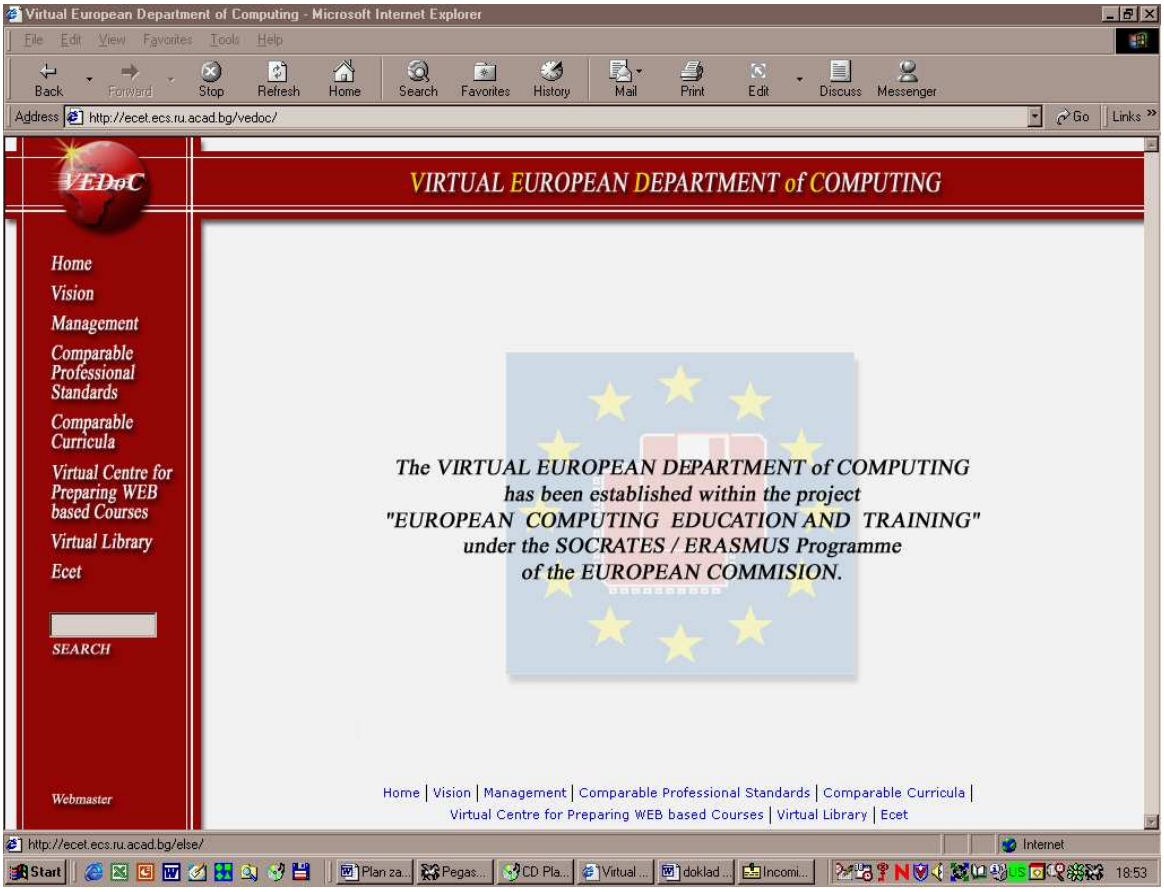
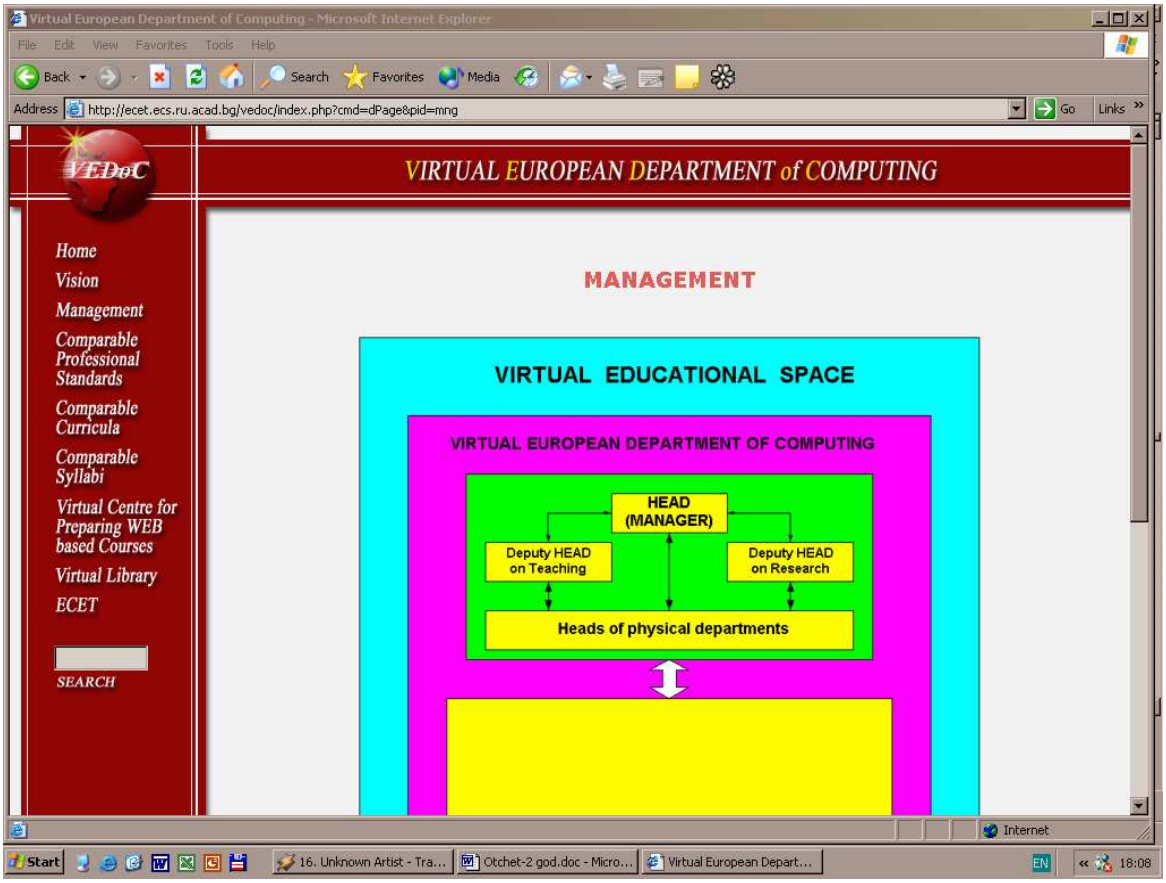
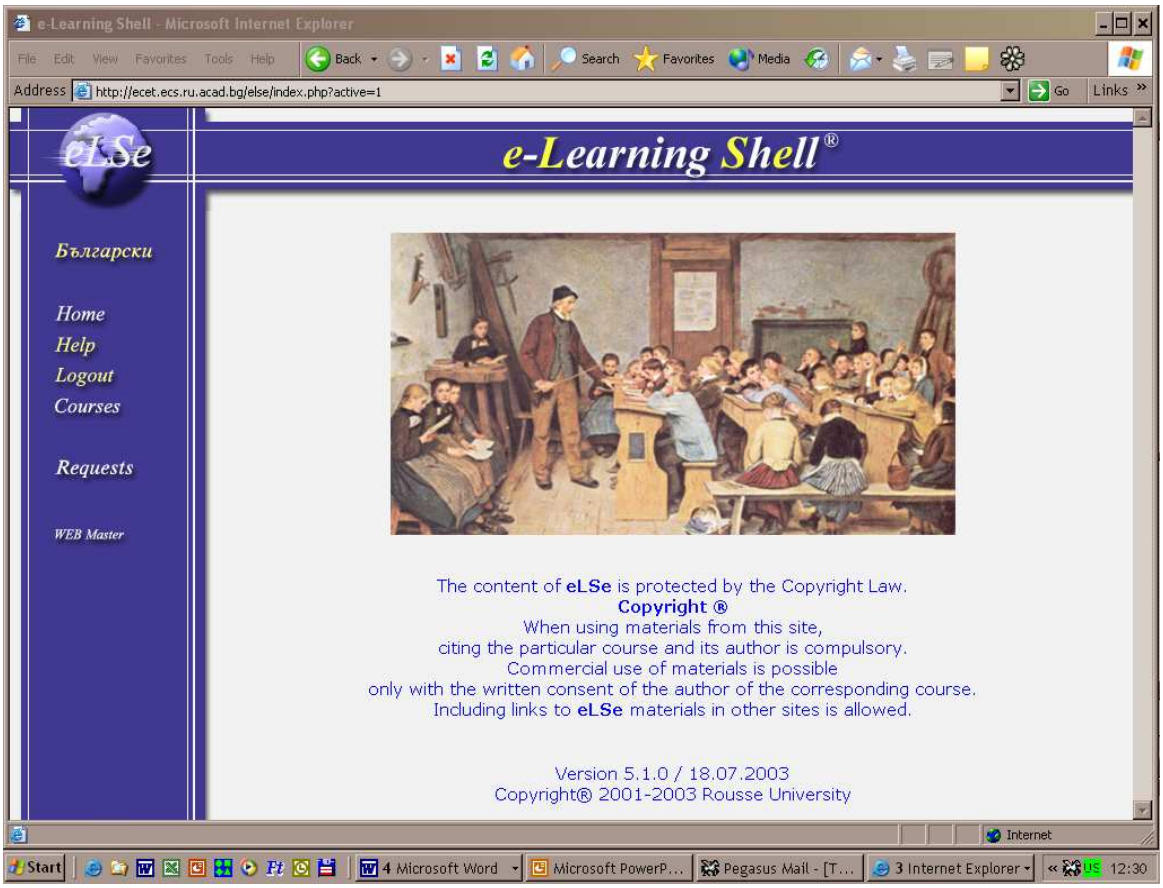
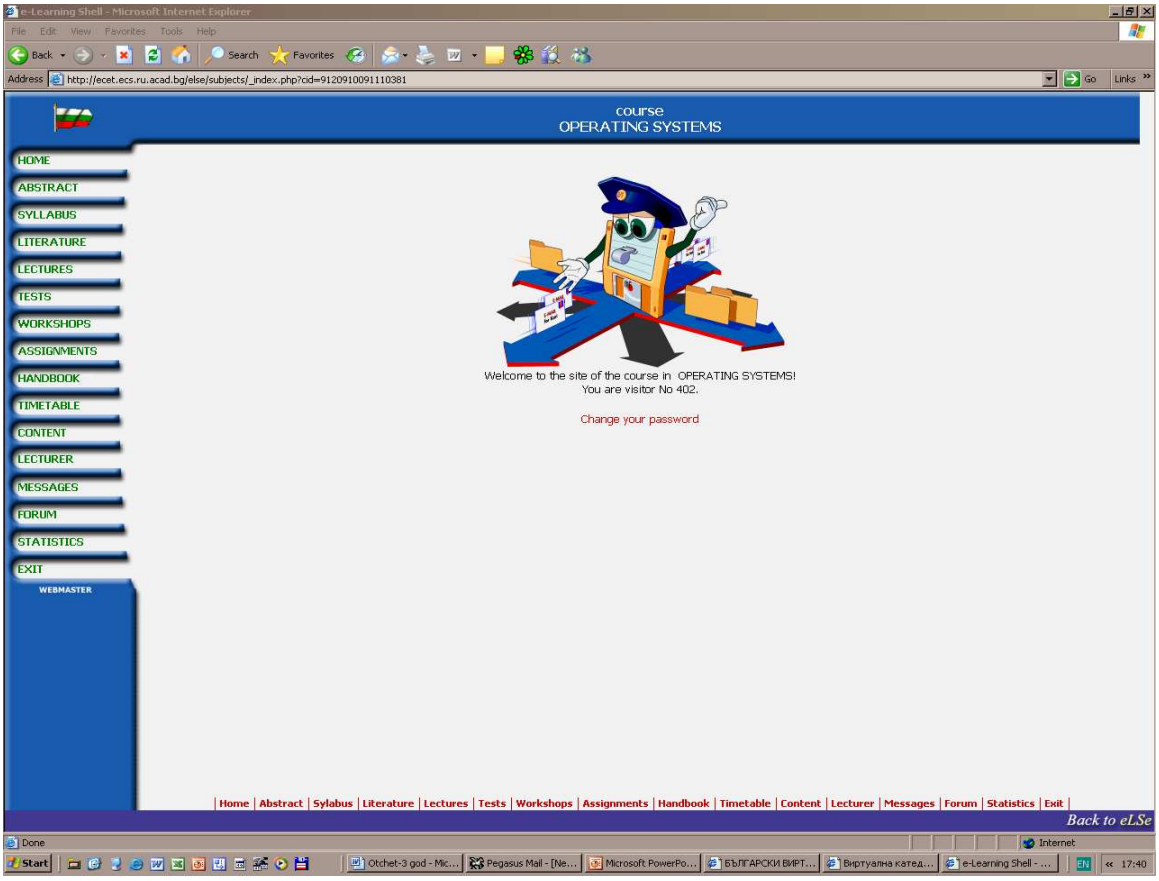


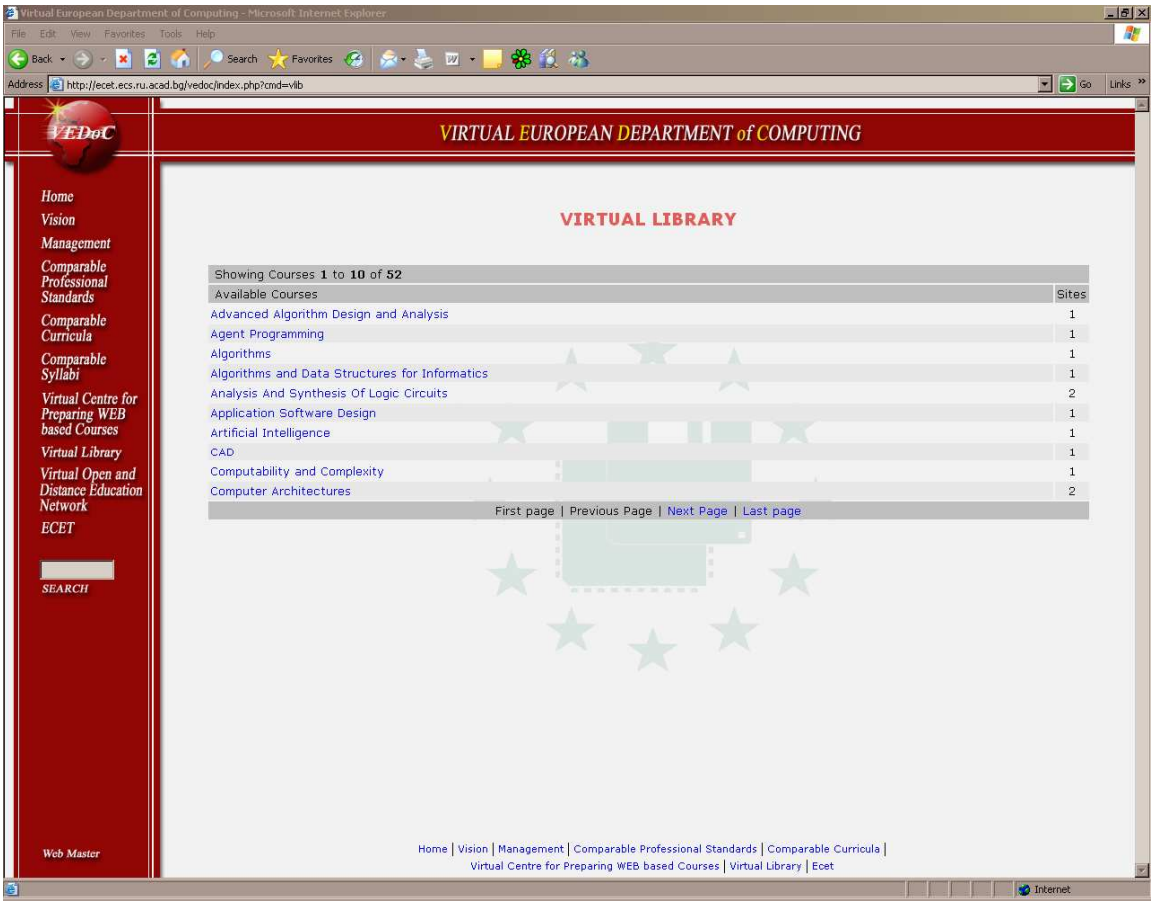


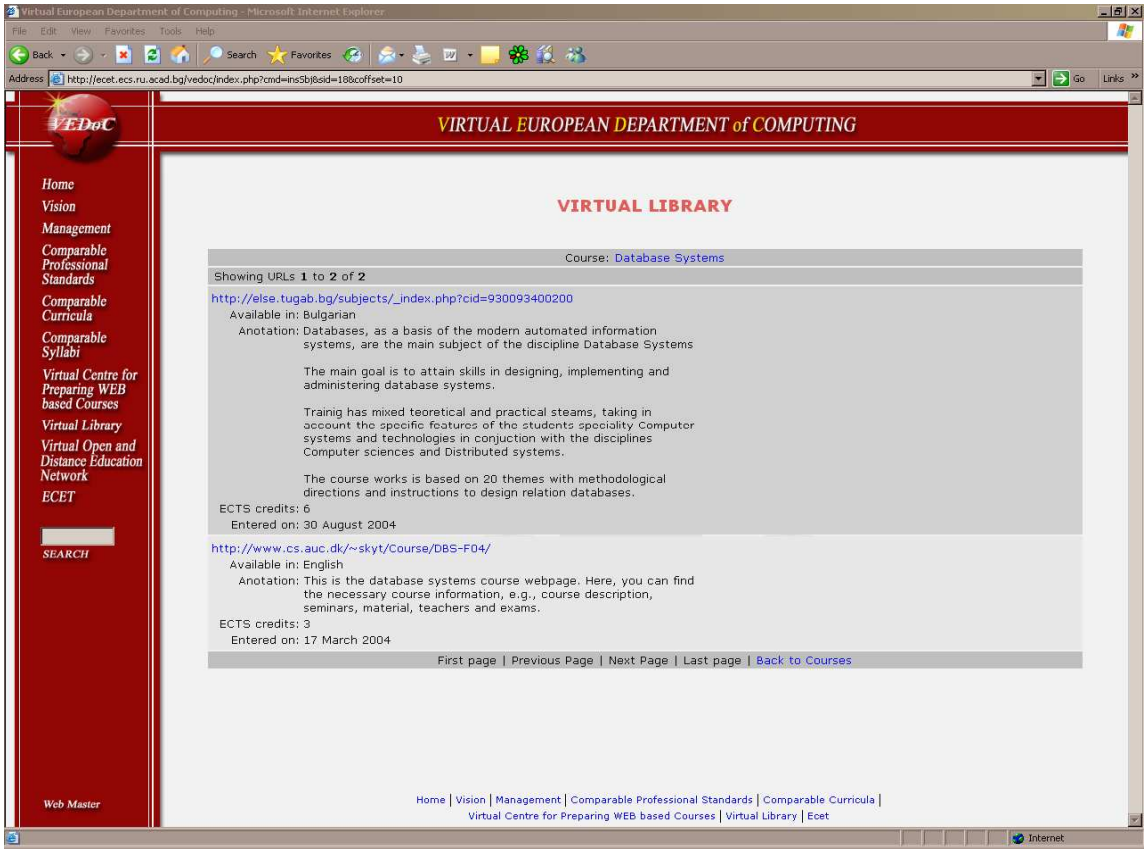
Virtual Centre for Preparing WEB based Courses
URL: http://ecet.ecs.ru.acad.bg/else/



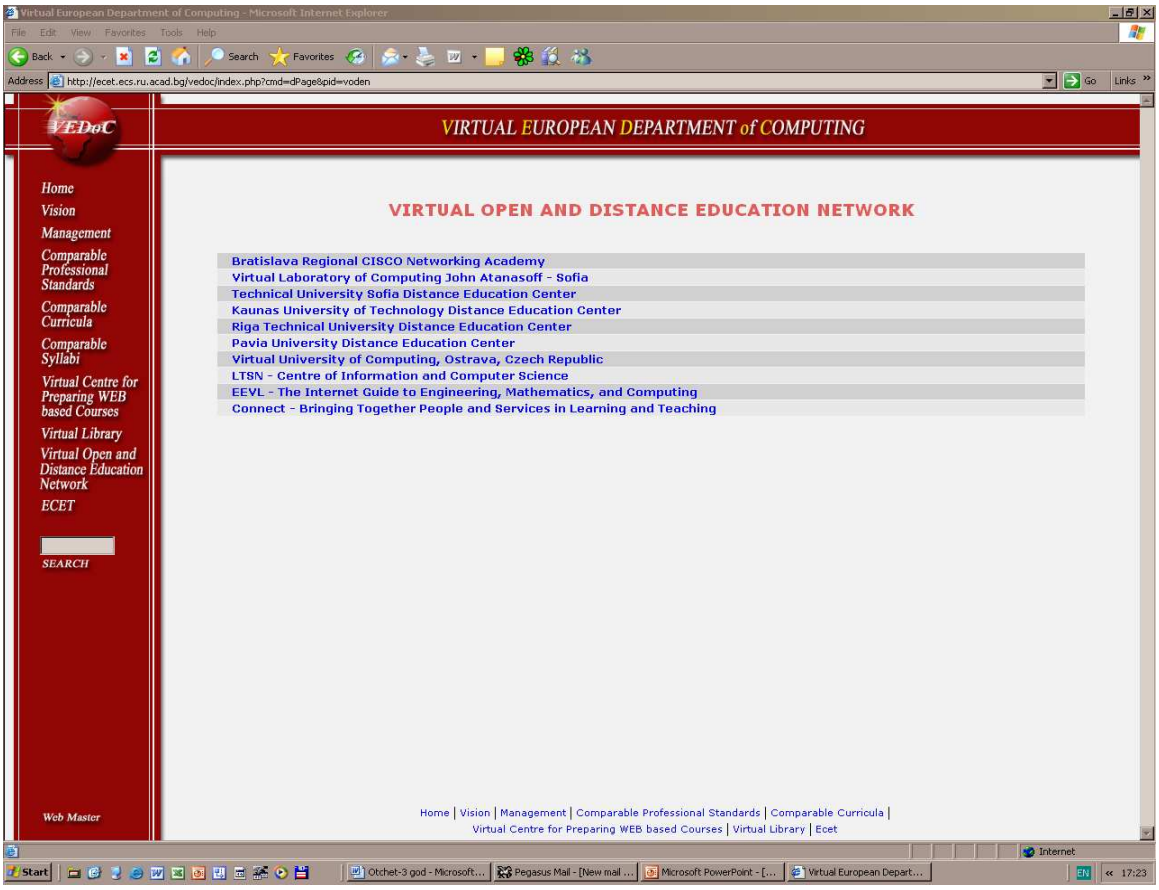


Virtual Library
http://ecet.ecs.ru.acad.bg/vedoc/index.php?cmd=vlib





Virtual Open and Distance Education Network
http://ecet.ecs.ru.acad.bg/vedoc/index.php?cmd=dPage&pid=voden



WEB site of the CompSysTech'2004
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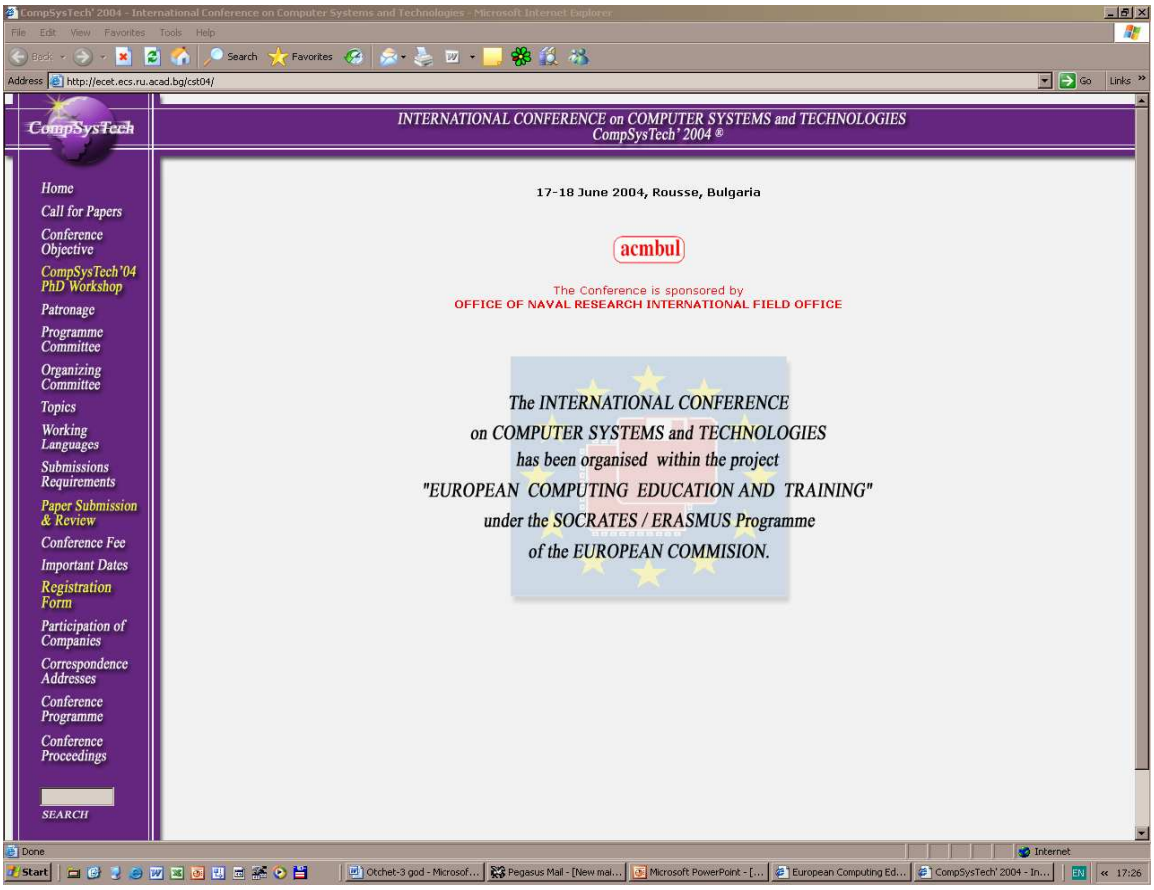
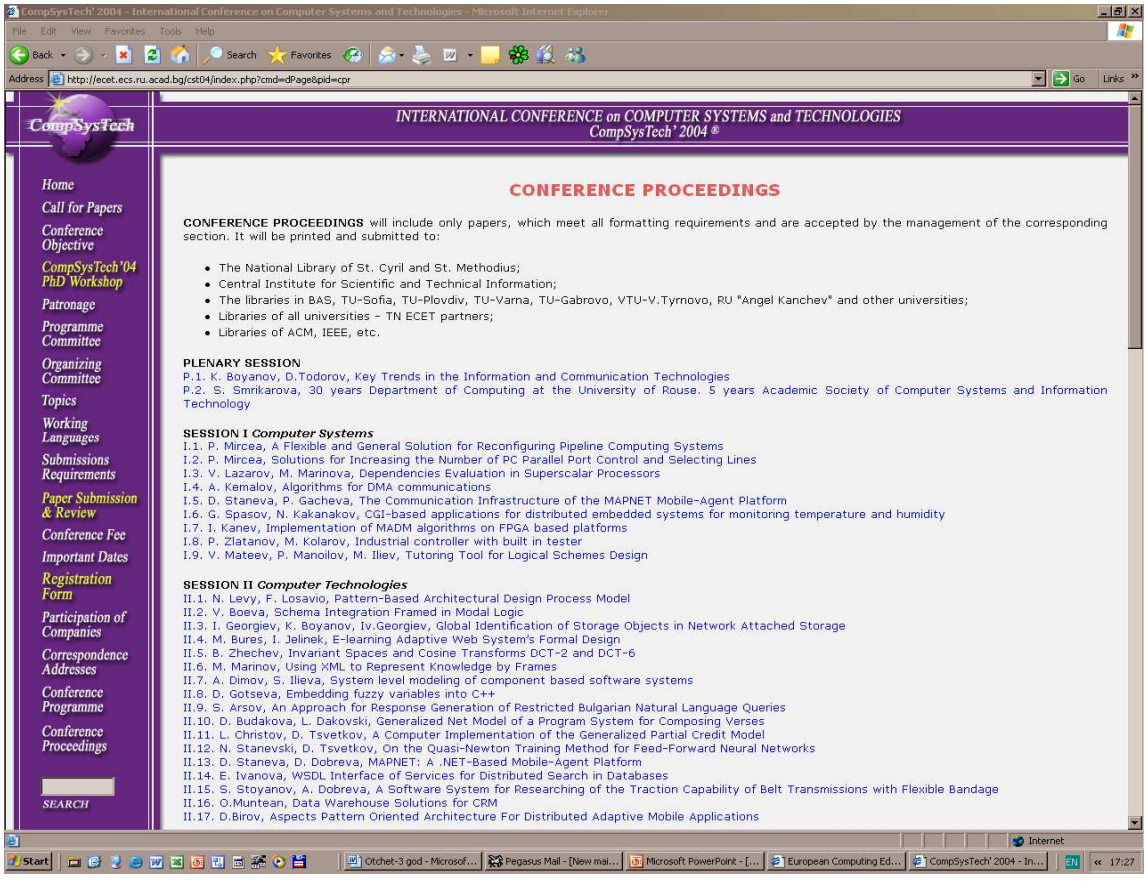
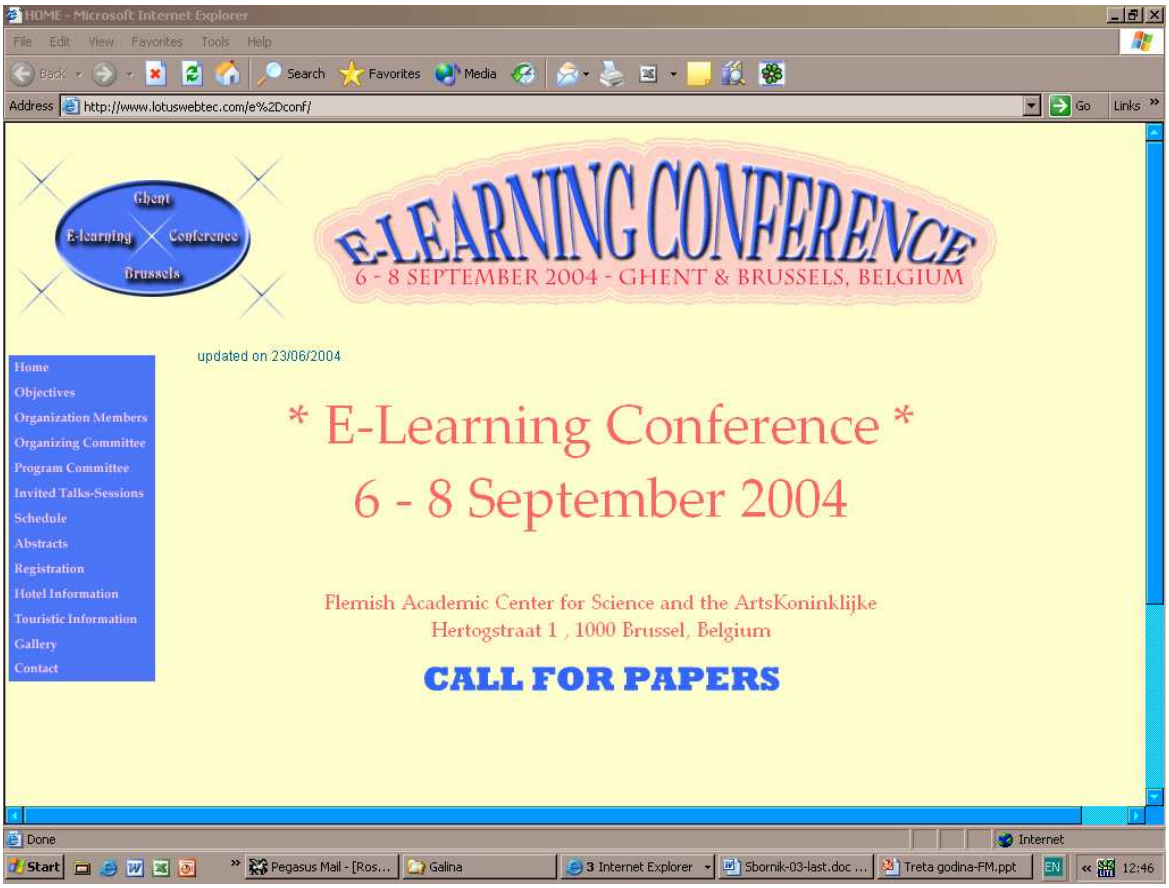
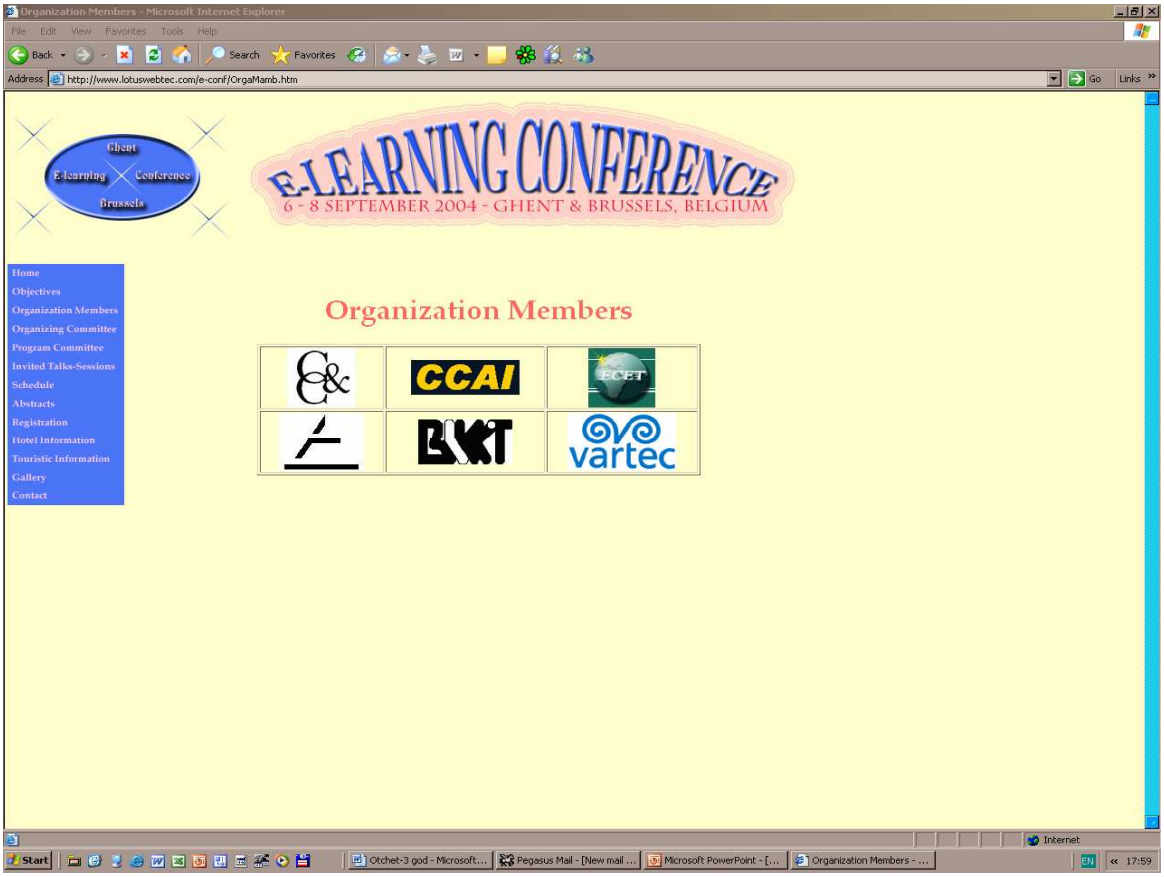


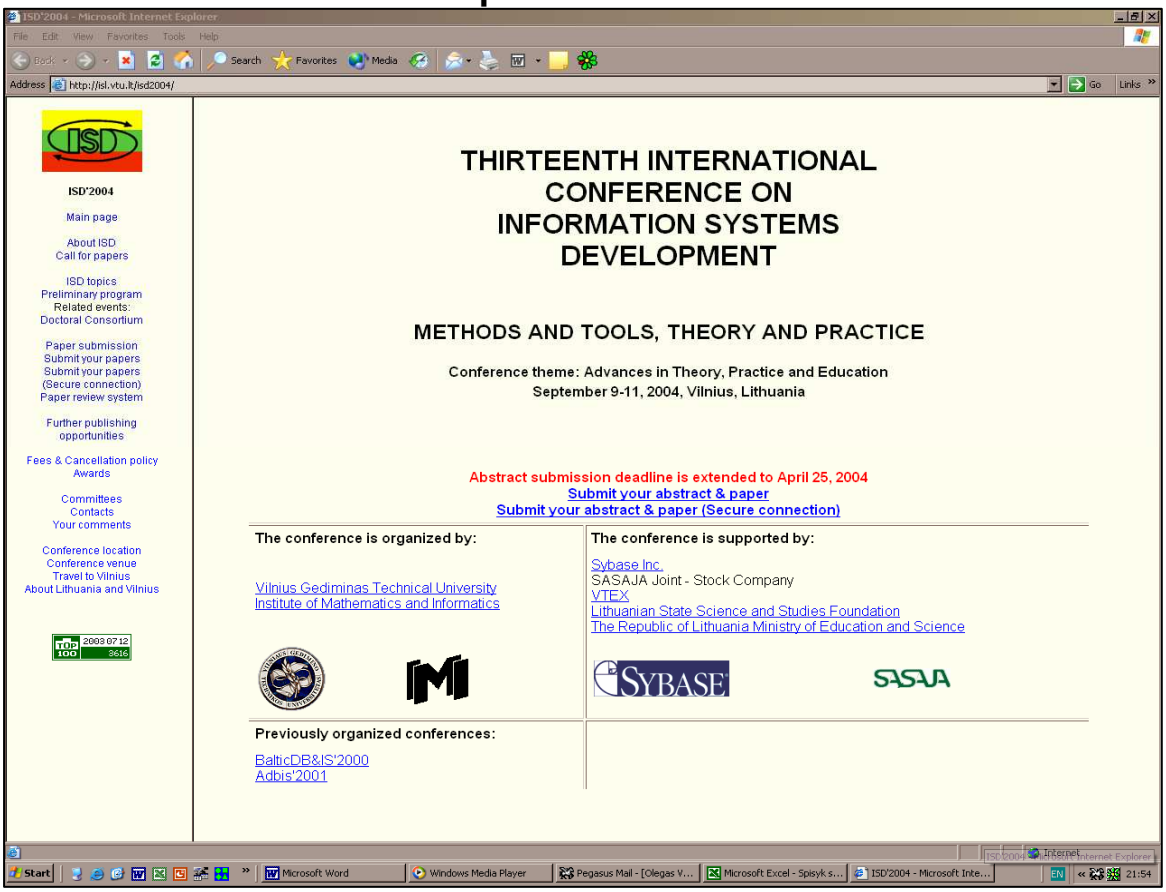


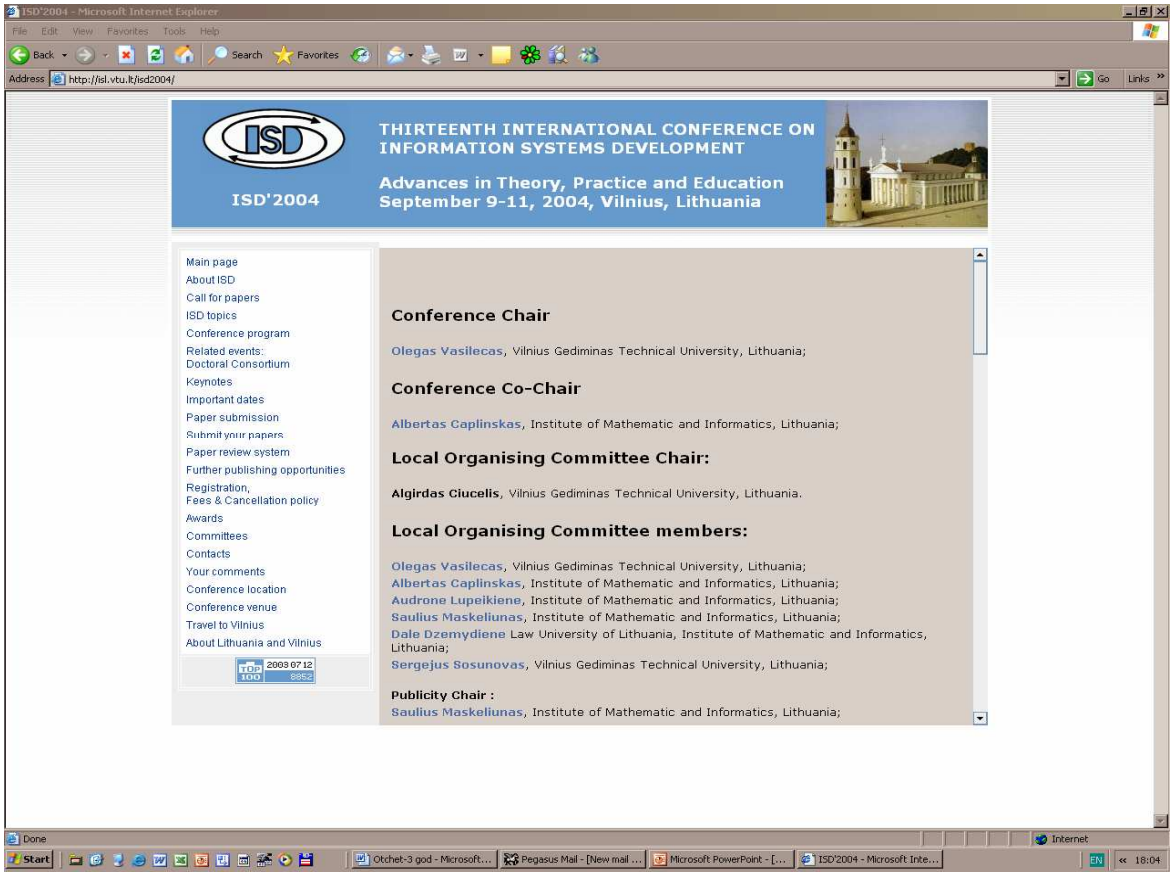
WEB site of the e-Learning Conference
URL: http:// http://www.lotuswebtec.com/e-conf/



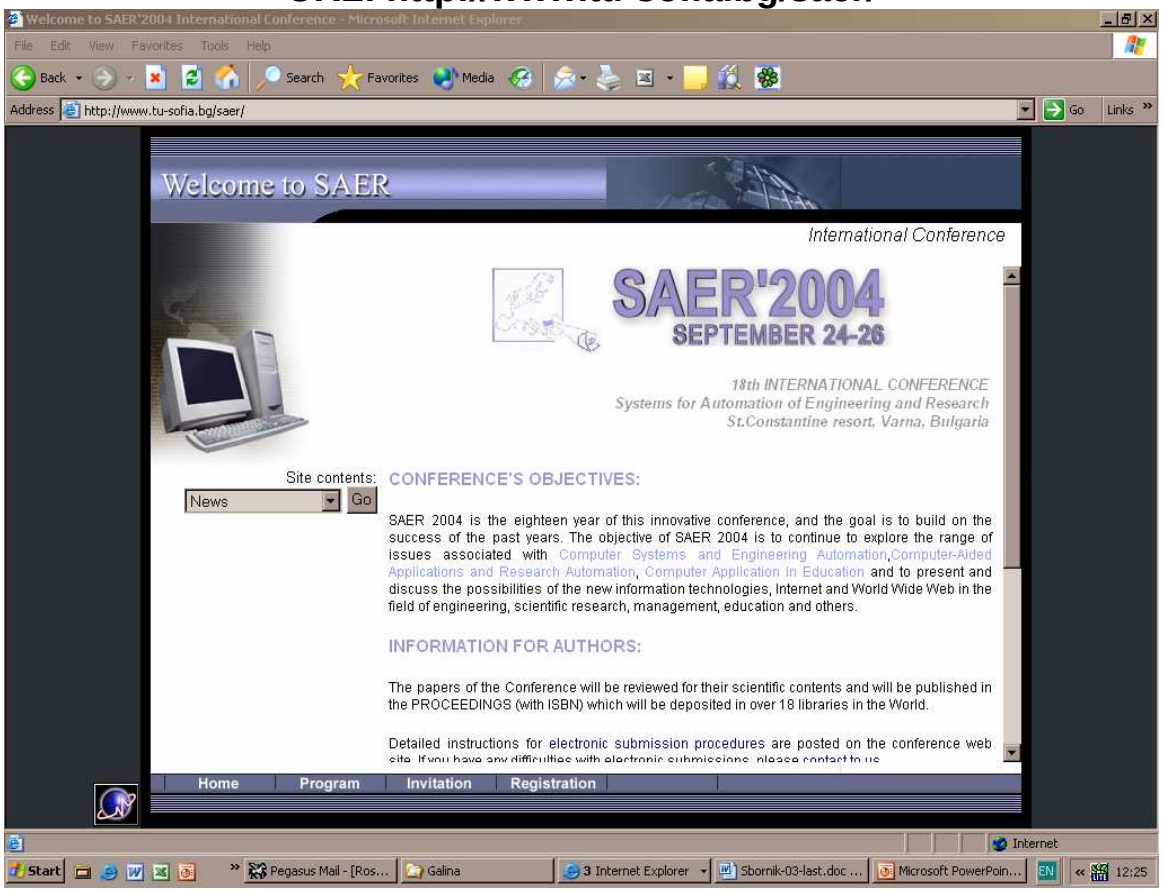


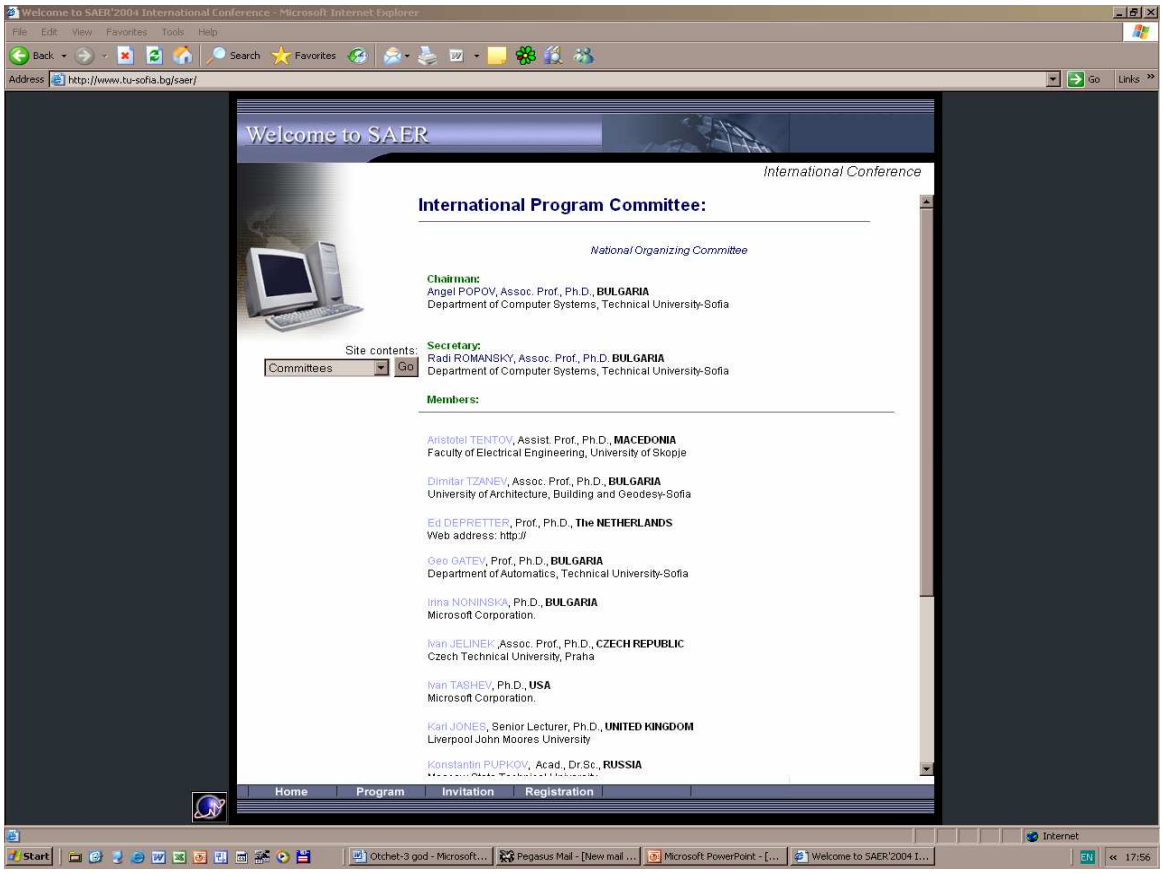
WEB site of the Thirteenth International Conference on Information System Development URL: http://isl.vtu.lt/isd2004/





WEB site of the 18th International Conference Systems for Automation of Engineering and Research URL: http://www.tu-sofia.bg/saer/





A N N E X 3

Partner Agreement

CONTRACT

European Computing Education and Training

213871-CP-2-2002-1-BG-ERASMUS-TN

This contract is made and entered into by and between

ANGEL KUNCHEV UNIVERSITY OF ROUSSE

whose registered office is at 8 Studentska Str., 7017 Rousse, Bulgaria

represented by Angel Sotirov Smrikarov, Vice Rector,

hereinafter referred to as Contractor

and

_____

(Name of the partner institution)

_____

whose registered office is **at *(address of the partner)***

represented by _____

hereinafter referred to as **Partner.**

Whereas, within the framework of SOCRATES ***Erasmus Thematic Networks*** the Contractor has concluded an agreement with the Commission of the European Communities (hereinafter referred to as **Commission**) for the Project called **European Computing Education and Training** (hereinafter referred to as **Project**). This agreement (hereinafter called **CEC Contract**) shall form an integral part of the present Contract.

The Contractor and the Partner shall be bound by the terms and conditions of the CEC Contract SOCRATES ***Erasmus Thematic Networks*** No. **213871-CP-2-2002-1-BG-ERASMUS-TN** signed between ***Boris Tomov, Rector of the University of Rousse*** and the Commission on ***24.01.2003.*** The Annexes of the CEC Contract constitute Annexes A, B and C of the present Contract. Annex A of the present Contract gives the Work plan. Annex B contains forms to be used by the Partner for financial reporting to the Contractor. Annex C includes a booklet of Financial Documents, containing a copy of the Financial Agreement (FA), Administrative and Financial Handbook (A&FH).

The Contractor and the Partner shall be bound by the terms and conditions of any further amendments to the CEC Contract in accordance with the procedure set out in Article 13.

The Contractor and the Partner have agreed to define their rights and obligations with respect to carrying out specific tasks relating to the Project as described in Annex A of this Contract. Therefore, the following is hereby agreed between the Contractor and the Partner.

Article 1. - The Objective of the present Contract

On the basis of the present Contract the Contractor and the Partner shall contribute to the achievement of the requirements of the CEC Contract together with the other parties (Partners and Subcontractors) performing the CEC Contract in accordance with the terms and conditions as stated in the present Contract.

Article 2. - The Project Period

The present Contract shall come into force on the day when it has been signed by both the Contractor and the Partner respectively but shall have retroactive effect from ***1/10/2002***. This Contract will cover the period up ***1/10/2002*** to ***30/09/2003.***

Article 3. - The Obligations of the Contractor and the Partner

The Contractor and the Partner shall perform and complete their share of the work under the present Contract in accordance with the requirements set out in Annex A of the present Contract. The Parties to the present Contract shall carry out the work in accordance with the timetable set out in Annex A using their best endeavours to achieve the results specified therein and shall carry out all of their responsibilities under the present Contract in accordance with recognised professional standards.

The Partner shall provide the personnel, facilities, equipment and material necessary to be able to perform and complete the Partners share of the work under this Contract.

The Partner shall carry out the work in such a way that no act or omission in relation thereto shall constitute, cause, or contribute to any breach or non-compliance by the Contractor or by any Partner or any Subcontractor of any of their respective obligations under the CEC Contract. The Partner shall impose the same contractual conditions on any consultants that the Partner engages in the Project for the undertaking of the work.

Article 4. - Allocation of Funds

The maximum financial contribution by the Partner to the Project during the Contract period shall be ……. EURO, in accordance with the financial provisions set out in Annex A.

The maximum Project funding for this contribution from the Commission grant shall be ……. EURO. **This amount does not include funding for subcontracting and other costs**. These type of funding will be given only to those partner who perform activites from Annex A requiring making such expenditure. The Partner shall make an institutional contribution of 30%. Should the declared total expenditure by the Partner be lower than the maximum contribution stipulated above, the percentage funding will be applied to the Partner's real total expenditure.

The allocation of Project funding to the Partner is subject to receipt by the Contractor of the respective Project funding from the Commission.

Article 5. - Record Keeping and Reporting

The Partner shall keep a record of any expenditure incurred under the Project and all proofs and related documents for five years after the end of the period covered by the present Contract.

All invoices to the Contractor must be dated and certified as true and exact by the Financial Officer of the Partner. The Contractor may reject any item of expenditure which cannot be justified in accordance with the rules set out in the Rules for Eligible Expenditure (Annex C - A&FH).

The Partner is required to present to the Contractor on ***10/08/2003*** firstly, interim declaration of the real and total expenditures of the work undertaken during the periods ***01/10/2002*** to ***31/07/2003***, separating expenditures paid out by the Partner and expenditures committed by the Partner but not paid out; and secondly, report on the course of development of the Project activities undertaken by the Partner.

The Partner agrees to supply to the Contractor all the information that the latter finds necessary to ask for concerning the implementation of the present Contract.

The Contractor shall provide the Partner with the appropriate forms (Annex B) for the Declaration of Expenses and the respective instructions for the filling of them.

The Partner shall promptly inform the Contractor of any delay in the performance of the activities undertaken by the Partner under the present Contract.

A Final Report on the Project activities, including a final Declaration of Expenditure, must be submitted by the Partner to the Contractor no later than 10 days after the end of the period covered by the Contract, i.e. **10/10/2003**.

Upon request the Partner shall make available any documentation on Project finance and activities required by the Commission.

Article 6. - Schedule of Payment

University of Rousse shall pay the Partner for work completed satisfactorily according to the description and schedule of this work in Annex A of the present Contract. Payment shall be made within twenty (20) days after the signing of this Partner agreement, and shall not exceed 75% of the total remuneration due to the Partner from Commission funding on the basis of the CEC Contract. The next 15% will be paid after reception and approval by the Contractor of the Declaration of Expenses and the interim activity report by the Partner (by 31/07/2003).

Declarations of Expenditure shall be made in the Partner's local currency and recalculated in EURO using the exchange rate applied by the bank on the day the expenditure is made. The final payment (20%), after the Final Report has been accepted by the Commission, will be paid to the Partner.

Article 7. - Banking Details

The remuneration to be paid to the Partner shall be paid into the Partners institutional account in accordance with the following banking details:

Name and Address of the Account Holder:

Name of Bank:

Address of Bank:

Bank Code:

Swift Code:

Account Number:

The National VAT Number:

Article 8. - Ownership

Subject to constraints imposed by national legislation, the deliverables of the Project, patents, copyrights and Intellectual Property Rights, as well as reports and other documentation resulting from the present Contract, shall be the property of the Contractor and all the Partners of the Project, apportioned between the Contractor and each Partner pro rata to their shares of the total of all the financial institutional contributions made by the Contractor and the Partners together.

Article 9. - Termination

In the event that the Partner fails to perform any obligations under the present Contract or the CEC Contract and does not remedy such failure within 30 days after having received a notice in writing from the Contractor specifying the failure and requiring such remedy, then without prejudice to any other rights or remedies, the Contractor shall be entitled to terminate the present Contract forthwith, without the application of any juridical procedures, by notice in writing to the Partner.

If the Partner or the Contractor breaches the terms of the present Contract, the other party shall have the right to terminate this Contract.

Either party to this Contract shall have the right to terminate this Contract if the other party is insolvent or enters into bankruptcy or liquidation or any other arrangement for the benefit of its creditors.

The Contractor shall have the right to terminate the present Contract if a change in the bye-laws or composition of the Partner affects the conditions for developing the Project.

The Contractor shall have the right to terminate the present Contract if the Partner has made false declarations to the Contractor on work carried out or on expenditure. If the present Contract is so terminated, the Contractor may require the Partner to reimburse all or part of the payments made under this Contract.

Article 10. - Damages for Non-performance

If the present Contract is terminated for the reason that the Partner fails to perform its obligations under the present Contract, the rights and licences granted to the Partner pursuant to this Contract shall cease immediately, and the Partner shall forfeit the right to reimbursement for obligations performed.

Furthermore, if the Contract is terminated by the Contractor due to non-performance of obligations by the Partner, the Partner shall be responsible for and pay any direct cost increase resulting from the necessity to remedy the Partners breach of responsibilities and to assign the tasks of the Partner as specified in the present Contract to one or several parties.

Article 11. - Liability

The Partner shall be solely liable for any loss, destruction, damage, death or injury to the persons or property of the Partner or of the Partners employees or of third parties resulting directly or indirectly from performance of the work under the present Contract.

The Partner shall indemnify the Contractor and any other partner against any claim made against or liability incurred by the Contractor in respect of any infringement by the Partner of any copyright or other industrial property right or any statutory protection in respect of any report or other material supplied by the Partner to the Contractor pursuant to the present Contract.

The Contractor shall not be required to provide insurance cover to persons participating in activities undertaken by the Partner under the present Contract.

Article 12. - Confidentiality

The Contractor and the Partner must treat as confidential and must use all reasonable effort to ensure that they do not disclose to any person any information of technical, commercial or financial nature or otherwise relating in any manner to the execution of the Project, except in the circumstances detailed in the following paragraph below.

The above clause relating to confidentiality shall remain in force for a period of five years after the completion of work under the CEC Contract but shall not in any case be deemed to extend to any information which the receiving party can show

X was at the time of receipt published or otherwise generally available to the public;

X has after receipt by the receiving party been published or become generally available to the public otherwise than through any act or omission on the part of the receiving party;

X was already in the possession of the receiving party at the time of receipt without any restrictions on disclosure;

X was rightfully acquired from others without any undertaking of confidentiality imposed by the disclosing party;

X was developed independently of the work under the CEC Contract by the receiving party.

The above clause relating to confidentiality shall not be deemed to extend to academic publications and public presentations provided that information beyond the general framework of the project deliverables and the characterisation of single test items is not disclosed. However, the Contractor shall be notified of any intention on the part of the Partner to produce such publications and make such presentations.

Article 13. - Modification of the Contract

Changes or amendments to the present Contract shall be approved by both parties to the Contract and become effective when signed by authorised representatives of both parties.

Article 14. - Settlement of Disputes and Applicable Law

If there is a dispute or difference between the parties arising out of or in connection with the present Contract or out of activities undertaken under the present Contract, including disputes regarding quality, the parties shall first endeavour to settle it amicably.

Provided that a dispute cannot be settled amicably, the arbitration of the dispute between the Contractor and the Partner in connection with the present Contract shall be conducted through one-man arbitration in accordance with the laws of Bulgaria.

This Contract is governed by the laws of the ***coordinating country- Bulgaria***.

Article 15. - The Annexes

Annex A. The Workplan of the Project

Annex B. The forms to be used for reporting.

Annex C. Booklet of Financial Documents, containing a copy of the Financial Agreement (FA), Administrative and Financial Handbook (A&FH).

Signatures

For the Contractor:	**For the Partner:**
Name: Angel Smrikarov	Name:
Position: Vice Rector	Position:
Date and Place	Date and Place:
Stamp	Stamp

Annex B
The forms to be used for reporting

Appendix 1: Time Sheet

Project: Thematic Networks 213871-CP-2-2002-1-BG-ERASMUS-TN

Institution:

Period: 01.10.2002 - 30.09.2003

Amount of time spent on the project by*:*

Function in the project:

Date				
day	**month**	**year**	**Activities related to the project**	**hours**
			Total	

Date Signature:

Appendix 2: Internal Report Sheet - Personnel Costs

Project: Thematic Networks 213871-CP-2-2002-1-BG-ERASMUS-TN

Institution:

Period: 01.10.2002 - 30.09.2003

Personnel involved in the project:

Name:

Normal monthly salary: _____ = _____ EURO

Cost to employer per day: _____ =_____ EURO

Time spent on project: _____ days

Total cost: _____ **EURO**

Total Personnel costs	
Personnel Costs to be covered by Socrates grant	
Personnel Costs to be covered by own resources	

Date Signature:

Appendix 3: Internal Report Sheet - Travel + Subsistence Costs

Project: Thematic Networks 213871-CP-2-2002-1-BG-ERASMUS -TN

Institution:

Name of the person:

Period:

Travel

Date	Reason for travel	Destination	Means of transport	Costs
Total costs in EURO				

Subsistence (incl. accommodation)

Number of days	Subsistence costs per day	Total costs

Total costs of travel and subsistence	
Costs to be covered by Socrates grant	
Costs to be covered by own resources	

Date Signature:

Appendix 4: Internal Report Sheet – Equipment and Materials

Project: Thematic Networks 213871-CP-2-2002-1-BG-ERASMUS-TN

Institution:

Period: 01.10.2002 - 30.09.2003

Purchase						
Description of the equipment, technology and/or software purchased	Date acquired (month & year)	**A.** Installation, maintenance, insurance costs	**B.** Cost	**C.** Depreciation rate*	**D.** Utilisation % for project	Amount for project A+(BxCxD)
					%	
					%	
					Total costs for the project in EURO	

* Purchases costing over 1.000 EURO (VAT excluded) must be depreciated over a 3-year period

Rental / Lease						
Description of the equipment, technology and/or software rented/leased	Starting date of the rental / leasing contract	Duration of rental/lease for this contractual period	**A.** Installation, maintenance, insurance costs	**B.** Costs for this contrac-tual period	**C.** Utilisation in % for project	Total amount for project A+(BxC)
					%	
					%	
					Total costs for the project in EURO	

Total costs of equipment and materials	
Costs to be covered by Socrates grant	
Costs to be covered by own resources	

Date Signature:

Appendix 5: Internal Report Sheet - Subcontracting Costs

Project: Thematic Networks 213871-CP-2-2002-1-BG-ERASMUS-TN

Institution:

Period: 01.10.2002 - 30.09.2003

Name of subcontractor	**Description of activity**		**Number/date of subcontract**	**Costs**
Name of consultant /expert	**Description of activity**	**Cost per day**	**Number of days**	
			Total costs in EURO	

Note: The remuneration of a consultant /expert should not normally exceed 400 EURO per day (VAT or equivalent sales tax and travel/subsistence costs excluded)!

Total costs of subcontracting & consultancy	
Costs to be covered by Socrates grant	
Costs to be covered by own resources	

Date Signature:

Appendix 6: Internal Report Sheet – Other Costs

Project: Thematic Networks 213871-CP-2-2002-1-BG-ERASMUS-TN

Institution:

Period: 01.10.2002 - 30.09.2003

Production costs for: ***(Product)*** _____

Printing	Number	Costs per unit	Total costs in EURO
Translation	Pages/lines	Costs per page/line	Total costs in EURO
Dissemination	Number	Costs per unit	Total costs in EURO
Other:			
		Total	

Other (please specify):

Type of cost	**Description of activity:**	**Total costs in EURO***
Bank charges, bank transfer		
The hiring of conference halls		
Internet communication costs		
	Total	

Total costs of documentation	
Costs to be covered by Socrates grant	
Costs to be covered by own resources	

Date Signature:

Appendix 7: Internal Report Sheet – General Costs

Project: Thematic Networks 213871-CP-2-2002-1-BG-ERASMUS-TN

Institution:

Period: 01.10.2002 - 30.09.2003

Type of cost	**Description of activity:**	**Total costs in EURO***
Communication costs (postage, fax, telephone, mailing, etc.)		
Office supplies		
Photocopies		
	Total	

Total costs of documentation	
Costs to be covered by own resources	

Date Signature:

A N N E X 4

EVALUATION REPORT

by Stanley Oldfield
Member of the Evaluation Board

Introduction

This report provides an internal evaluation of the work undertaken on the TN-ECET project during its third and final year of operation. It covers the period from October 2003 to September 2004. It considers the plan of activities for that period as agreed at the end of the second year of the project and assesses the activities undertaken and the outputs delivered during the year in relation to that plan. Insofar as this is the final year of the original project proposal it also considers the overall achievement during the three years over which the TN has been operating.

The overarching aim of the thematic network was stated in the project proposal as seeking 'to improve the quality of training of computing specialists in Europe'.
Project Objectives

The objectives stated in the original proposal were to cover a 36 month period and were to:

1. Create a Thematic Network
2. Create a model Virtual European Department of Computing (VEDoC)
3. Create Virtual Recommended Professional Standards
4. Create Virtual Recommended Curricula and Syllabi
5. Extend the European Credit Transfer System (ECTS) and the System for Quality Control
6. Create an open and distance training network
7. Create a Virtual Library in Computing
8. Create a Virtual Centre for developing teaching materials
9. Create a European Computer Education Association (ECEA)
10. Participate in dissemination activities including conferences, seminars, round tables, ECET Journal.
11. Evaluate work internally and externally.

The main agreed objectives for the third year were:

1. Submit a proposal for continuation of the TN ECET project in 2004/5 to facilitate dissemination of the project results
2. Further strengthen and develop the VEDoC
3. Extend the Virtual Centre for preparing Web based courses
4. Extend the Virtual Library in Computing
5. Open a Virtual Laboratory
6. Organise an international conference on Computing in Rousse, Bulgaria
7. Help to organise and participate in an international conference on e-Learning in Brussels.
8. Further develop the concept of the ECEA

9. Establish mechanisms for disseminating the results of the ECET Thematic Network activities

The third year objectives were discussed and agreed at the final meeting for the second year of the project, held in Berlin in September 2003. These final year objectives, and indeed the original intentions of the project, have broadly been met by the activities undertaken by project managers and project members during the year. The following sections of this report contain more specific comments on particular aspects of these activities.

Project Management

Management of the TN was well-established during the first two years, and the network has continued to operate effectively throughout its final year. Plans for the scheduling of activities and responsibilities for carrying out the various tasks during the year were communicated to all partners in a timely manner, and all activities proceeded smoothly.

Much of the work to establish comparable syllabuses and curricula for Bachelor and Master Degrees in Computing across EU higher education institutions was successfully completed and published during the first two years of the project and the third year has been directed more towards consolidation activities to strengthen the infrastructure needed to maintain the developing cooperation between institutions in different countries in the provision of, and access to, facilities proposed for the Virtual European Department of Computing.

Unfortunately, it has not proved possible to gain further funding to extend the TN-ECET into the coming year for the purposes of dissemination of the results achieved. However, most probably because of the efficient and effective way that this project has operated, it is gratifying to note that a new Thematic Network proposal (TN-DEC) to extend the work done by the members of the current project into the third cycle of the Bologna process, by consideration of the equivalence of Doctoral level qualifications in Computing across the EU, has recently been approved.

Although this was the final year of the current project, a small number of new members joined the project for this period. More importantly, the majority of existing project members indicated their intention to participate in the follow-on TN-DEC project. This continuity should allow the dissemination of project results to continue despite the absence of any specific funding for this activity.

Project Activities

Meetings and Conferences

During the final year two major project meetings were held. The first of these took place in Rousse, Bulgaria in June 2004 and the second in Brussels, Belgium in September 2004. As in previous years, there were also TN-ECET project related sessions in the SAER conference held in Varna, Bulgaria in September 2004. As in previous years these meetings have ensured that the process of familiarisation by

partner members with the backgrounds and approaches which characterise each member country's educational practices in Computing has continued, and a shared understanding of the similarities and differences in member's practices, opportunities and constraints has been further developed.

These meetings, and in particular the associated organisation of the Educational Aspects of Computer Systems and Technology thread of the CompSysTech conference in Rousse in June, and major participation in the e-Learning conference in Brussels in September have enabled a significant number of TN members to present papers on, and to engage in discussions of, the pedagogical aspects of teaching Computing at degree level, which has continued to be an effective method for members to share their experiences. All the papers for these conferences and for the equivalent conferences in previous years are available as project deliverables.

During the year an important link has been established with the Socrates project “Tuning Educational Structures in Europe”. Work has begun on the issue of feeding information relating to subject-specific competences in Computing, as identified during within the TN-ECET, into the work of the Tuning project and it is envisaged that this valuable activity will continue under the aegis of the new TN.

The VEDoC

It is apparent from the final year report that the Virtual Library framework established in the second year of the project has been extended both in terms of its contents and of its use. Consideration has been given to the problems of transferability of materials and conformance to standards for interoperability.

The principle of sharing of resources has been further enabled by the establishment, by the project managers and partners in Bulgaria, of a virtual learning space, the VEDoC “John Atanasoff” named after one of the founding fathers of Bulgarian computing. This has been implemented across the Computing departments of most Bulgarian universities, with financial support and encouragement both from the Bulgarian government and commercial partners. Materials were prepared within the framework of the Virtual Centre for preparing Web based courses. Further work has been done on developing materials for the associated Virtual Laboratory in order to allow students access to simulated experimental activity.

The experience gained from this activity demonstrates what can be achieved within a relatively coherent national framework, but should provide useful experience and insights that are potentially general sable to a wider constituency.

Problems associated with generalising this activity across national borders, which were raised in previous evaluation reports have not yet been fully resolved within the current project. They relate to issues such as how it is envisaged that the “virtual” facilities will be used, and how the “not invented here” attitude is to be overcome. For example, are the facilities seen as an additional resource for existing teaching activity in existing institutions, or are they seen as a stand-alone vehicle by

which the material could be delivered, possibly at a distance? If the latter, then how is access to be controlled, how is provision to be financed, how is student activity to be monitored, how are students experiencing difficulties to be supported tutorially, what facilities will be available to ensure that disabled students can use the materials, how is student achievement assessed, etc?

Existing experience from institutions offering significant amounts of distance learning, whether web-based or delivered by more conventional media, indicates that these are not easily answered questions. The debate on such issues is ongoing but it is essential that such questions are addressed if the results of the TN-ECET are to be successfully disseminated.

Subject groups

A number of subject groups were established at the beginning of the project in order to more meaningfully discuss the content of the various curricula and associated syllabuses for the families of degree awards considered by the project. Membership of the subject groups was spread across the full range of countries and institutions represented by members of the TN and this ensured that a considerable range of experience of teaching Computing at university level was brought to the discussions. These groups should be able to extend their considerations to the Doctoral level discussion that will take place in the new ETN-DEC.

Comparable standards

Over the course of the project these groups developed and published recommended comparable standards for both Bachelors and Masters Degrees in Computing. They also produced and published two collections of associated curricula and syllabuses. These documents should provide a medium for enhancing dissemination of the work of the project and material for further discussion.

In carrying out this work it was clear that considerable differences of emphasis exist in curricula for Bachelor degrees in Computing delivered in institutions represented by TN members, in particular about the role of mathematics in the computing curriculum, about the balance between theoretical knowledge and practical skills, and about the need to incorporate material to further the professional, legal, ethical and social education of the IT practitioner.

These differences were, if anything, seen to be even more marked in the delivery of Masters degrees in Computing, with further issues such as the difference between generic and specialist Master's degrees, or taught versus research-oriented Master's degrees to be considered. It is anticipated that even greater variations will become apparent when the TN-DEC considers existing practice across EU institutions for Doctoral qualifications in Computing, and the results of both projects need to be seen more as providing a framework within which comparable student experience and achievement can be established and assessed, rather than a blueprint for the creation of identical content and structure for all courses delivered in Computing across the EU.

As indicated in previous evaluations, there is limited awareness of these differences on the part of many individuals involved in the teaching of what is nominally the same subject across the various countries represented in the TN. There is also limited awareness, in this context, of the implications of the Bologna agreement for the content and structure of degree qualifications across the EU.

Co-operation between TN members in the work they have undertaken over the past three years, and the resulting project publications, provide a starting point for removing this lack of awareness. Further dissemination activity, to be of significant value, must address such issues.

ECTS and SQC issues

One of the stated objectives of the TN was to further the understanding and use of the European Credit (Accumulation and) Transfer Scheme (ECTS) and, alongside this, an associated System for Quality Control (SQC). Without a mechanism for monitoring and maintaining comparability of standards of delivery and assessment of the materials involved in the recommended curricula and syllabuses across institutional, and more critically national, boundaries, there is little hope of the ECTS being applied successfully.

Once again discussions between TN members have revealed enormous variations in the way that quality assurance activity related to the delivery and assessment of academic courses is understood and practised across Europe. While some preliminary work has been done on this topic during the project there is still a need to extend awareness of what mechanisms are currently in use, and to report on the relative success of various national and institutional initiatives.

ECEA

The formation of a European Computer Education Association (ECEA) was one of the TN objectives. This could be seen as cutting across the activities of existing organisations at national and international level. However it does reflect the fact that most of these organisations focus rather more on research into, and the development and application of, new technology than on the pedagogical issues of how to teach students about that technology and its implications.

The success of the TN in bringing people together to present papers and to discuss issues of “what” and “how” to teach students on Computing degree courses, in the many conferences which have taken part alongside the project's business meetings, is an indication of the need for such an association and the existing members could well form the core of the proposed association.

Any attempt to bring together the concerns of, and to represent the interests of, those individuals responsible for educating future generations of Computing specialists is to be encouraged, although to be effective this will have to be done in close cooperation with existing organisations. To date TN members have discussed the issue in some detail and have accepted a proposed Constitution and Byelaws for such an organisation. However, much work remains to be done on the mechanisms for management and financing of the proposed association.

Overview

The work of the ECET Thematic Network over the past three years has made significant progress towards meeting its original objectives. All the major issues have been addressed and the published reports and other associated deliverables demonstrate just how much has been achieved through the wide range of activities undertaken by TN members. Further work on the dissemination and uptake of the products and insights resulting from these activities is required, and the existence of the follow up TN-DEC should allow this to happen in a more effective way than would have been the case if the end of the dissemination had coincided with the end of funding for the current project.

Stanley Oldfield

September 2004
UK

EVALUATION REPORT

by Dimitar Georgiev Tsvetkov
Director of Information Technologies and Services Directorate
Ministry of Education and Science, Bulgaria

It is an indisputable fact that during the last few years the steady development of information and communication technologies introduced changes that are global in scope. We are now witnessing a transition from industrial to information, knowledge-based society. People from different layers of society are experiencing an urgent need for acquiring new knowledge and skills. There is a raising demand for qualification upgrading and lifelong learning.

On the other hand for several reasons the number of people occupied with teaching is decreasing. According to an UNESCO's survey in the next couple of years globally there will be a shortage of 10 million teachers.

Obviously the education system with its traditional methods is not in a position to satisfy completely the ever-growing demand of the society. For this reason I am convinced that making use of contemporary information and communication technologies and distance learning is this problem's most appropriate solution.

As a Director of the of Information Technologies and Services Directorate at the Ministry of Education and Science I have been following the work of this project since 2002. Ongoing information about specific results of the project work I also get from the TN ECET web site, as well as from the sites linked to it: those of the Virtual European Department of Computing, CompSysTech and e-Learning Shell.

Currently 63 universities and companies from the ICT sector participate in the consortium working under the project. That is, in comparison to the first year the number of partners has increased with 10. The project is coordinated by the Department of Computer Systems and Technology at the University of Rousse, which has an experience of many years in the management of large national and international consortiums.

As more significant results of the work in the third project year the following can be indicated:

- A link with the Tuning project was established. The Tuning counsellor was contacted and correspondence was initiated about defining subject-specific competences.
- The Virtual European Department of Computing has been strengthened and further developed.
- The Virtual Library in Computing was established and is being continuously updated.
- A Virtual Centre for preparing WEB based courses has been opened.
- The Open and Distance Education/Training Network has been established and further developed.

- A Site for the conference CompSysTech'04 has been developed.
- The CompSysTech'2004 conference was held in Rousse, Bulgaria, with a wide participation of members of the TN consortium. 218 Bulgarian and 51 foreign scientists took part in the conference. There was a special "e-Learning" section dedicated to the role of the TN in the development and application of Information and Communication Technologies (ICTs) and in the e-Learning initiative of the European Commission.
- CompSysTech'2004 conference proceedings have been published in a paper version and as a CD.
- The First TN project meeting took place in Rousse in association with the CompSysTech conference on 17 June 2003, and 55 representatives from 25 European countries took part.
- An International conference on Virtual Management and Open, Distant and Virtual Education, shortly called the e-Learning conference, was organised and took place in Brussels jointly with the Final project meeting.
- EUROPEAN COMPUTER EDUCATION ASSOCIATION (ECEA) was established. The Constitution and Bylaws of the ECEA have been developed and adopted.
- Through periodical publications in professional journals and newspapers the project results were disseminated. The developed Forum on the project web site was used for discussing project materials and outcomes.
- The government and the public in Bulgaria are regularly informed about the objectives, activities and results of the TN ECET by means of regional and national mass media.
- The project was periodically evaluated by the Advisory team and the Evaluation board. The project was also evaluated by third external evaluators.
- The final meeting for the third project year took place in Brussels on 6 September 2004. It was hosted by the University of Gent, BIKIT-Gent, VARTEC NV-Gent and 98 representatives from 59 institutions in 27 European countries took part. The following activities were completed at the meeting:
- The SAER-2004 conference was held in Varna, Bulgaria on 24-26 September 2004. During the conference a round table discussion on dissemination of project results was conducted.

Successful realization of this project gives an opportunity for practical implementation of "blended education" – education where traditional education forms are extended with widespread use of modern information and communication technologies.

Dimitar Georgiev Tsvetkov

October 2004
Sofia, Bulgaria

PROJECT EVALUATION REPORT

Evaluator's name	**Orlin Ivanov Kouzov**
Position	**Director**
Institution	**ICT Development Agency – Ministry of Transport and Communications Republic of Bulgaria**
Project name	**Thematic Networks 213871-CP-3-2003-1-BG-ERASMUS-TN EUROPEAN COMPUTING EDUCATION AND TRAINING**
Project year	**3**
Date	**September 3, 2004**

I have direct observations on most aspects of the project inside Bulgaria in my capacity of Director of the nationally responsible Agency for Information and Communication Technologies development. As Chairman of the National Research Information Network and Board Member of European Software Institute – Center Bulgaria, as well as Member of the Managing Body of the national "Telecenters" project I also had the perfect opportunity to participate in most discussions which envisioned using the results of the project for a much bigger community and a broader audience than the initial project plan. So my evaluation report will **not only cover the results directly achieved by the project, but will also follow up with the best initiatives that were inspired directly or indirectly by it**.

Our Agency has been partnering with the ERASMUS project for almost two years now and has pretty good visibility on some of its results, as well as on the added value that was achieved on a national level. In terms of **project dissemination achievements and perspectives**, I would like to mention a few figures:

- Within the nationwide program i-Bulgaria the ERASMUS project received huge publicity and was announced within all computer labs that were established for the initiatives i-University and i-Class

- The initiative **i-University** (known also as Bulgarian Virtual University) was supported by the State in 2004 through the establishment of more than 100 new multimedia labs with 1200 new computers and servers for distance education on the territory of 38 universities and 30 scientific institutes. Among the basic arguments for the hardware donation was the valuable educational content that has been created within the ERASMUS project framework. Most of the universities have already started preparing multimedia educational courses and there is already a serious interest in preparing courses in all specialties and not only in computer science. Among our active members we could mention the Naval Academy, the Medical Universities in Sofia and Plovdiv, the National Military Academy, the National Sports Academy and many others

- The initiative **i-Class** has just been launched and by the beginning of the new school year more than 60 secondary schools will be equipped with one modern computer classroom (one server, 10 workstations, 2 printers and scanner) which will be used for teaching basic ICT skills, as well as for giving the kids the opportunity to start studying different disciplines though the Internet and online educational tools. Among the basic targets of the initiative we could mention encouraging kids to start creating their own web sites and valuable educational content. In this aspect we seriously applied the results achieved within the BG-ERASMUS-TN project.

- The initiative **i-Center** is directly related to overcoming the digital divide in poor rural areas through the creation of a chain of telecenters nationwide. The major goal of the telecenters is allowing people to acquire ICT skills and access modern technology, as well as to access the newly established e-Government services. 25 telecenters will be established by the end of September and their number is expected to reach 70 by the end of the year. There is a direct relation between the i-Centers and ERASMUS project as they are using the same educational libraries and databases for educating people or encouraging them to use new technologies. As both projects use huge online portals many information catalogues or online courses could be exchanged and the knowledge could be spread very fast within the established infrastructure.

- Last but not least I would like to mention the project **i-Net**, which targets the establishment of homogeneous broadband information infrastructure connecting all universities and research departments in the country. By the end of September more than 15 universities and almost 80 research institutes (about 90% of the Bulgarian Academy of Science institutions) will be connected with speeds ranging from 1Mb to 100Mb per institution. The network allowed the partners to the ERASMUS project to connect efficiently to each other, as well as to their international partners through the established 34Mb link to the Pan European research broadband network GÉANT. The network was supported by the NATO Science Program which donated 25 powerful servers for all i-Net partners allowing them to improve the quality of communications and increase the opportunity for creation of valuable educational content. NATO supported also a series of workshops (including one in Bulgaria last September) where the issue of supporting e-infrastructures for social development was largely discussed.

There are many other smaller initiatives which were somehow influenced by the ERASMUS project. For the period September 2003 - September 2004 more than 30 different conferences, workshops, round tables or public discussion forums were organized by the ICT Development Agency and its partners, where the topic for online education and content development had leading roles. Some of these events can be found on the ICT Development Agency web site: http://news.ict.bg/en/headline.asp. Among the most important we could mention the International Conference “Economy of Education: Challenges and Possibilities for Bulgaria”, the Conference ASTEL 2004 “European Framework

2002", the National Conference "Information Technologies in Education – the Necessary Investment for the Future of Bulgaria" etc.

A series of talks have been completed between ERASMUS project partners and the staff of the newly established **European Software Institute – Center Bulgaria** for implementing elements of ESI courses on CMMi and BITs in the standard educational curricula. The idea of the proposed synergy of interests was the encouragement of young graduates to opt for a software career, as well as to achieve some basic level of software engineering competence before graduation.

Students are encouraged to prepare innovative mini-projects (most of them being oriented to educational projects and online teaching platforms). The ICT Development Agency and United Nations Development Program have already started to support on an annual basis the Education Innovation Booth within the framework of the Annual Technical Fair in Plovdiv. In 2003 and 2004 competitions more than 30 candidates applied and the best 10 presented their achievements, some of them being a result of the ERASMUS project.

The issue for online education and development of talented human resources of the country become the fundament of the "ICT competitiveness of Bulgaria in the Global Markets" strategy and many of our university partners took active participation in the discussions on the role of education in modern economy, the necessity of ICT literacy on every level and the need to invest in educational tools, where the good achievements of the ERASMUS project were mentioned.

Valuable partnerships were created between academic and business partners, as most of the IT forums throughout the period attracted both (university and business people). Many valuable ideas have been exchanged and more and more visible contributions have been made in order to overcome the gap between science and industry.

An important aspect in many forums for this period was the subject of computer security and the necessity to extend the ERASMUS framework towards the concept of achieving more secure and more reliable networks, especially having in mind the upcoming cyber terrorism.

To conclude the good achievements of the ERASMUS project and the big synergy of interest between government, academia and business I would like to stress that most of the initiatives started in late 2003 were successfully completed encouraging partners to invest more efforts in creating digital content, valuable educational tools and increased security awareness in order to raise the confidence in computer networks and online technologies.

It is my firm belief and hope that the ERASMUS project in its current format will receive further support on behalf of the European Commission as it is a perfect demonstration for good community work, technological achievements and social values.

I would like to thank the project partners for the opportunity to evaluate the project results and to share that it was a real honor and pleasure for me to do so.

Orlin Ivanov Kouzov

October 2004
Sofia, Bulgaria

A N N E X 5

ECET and the TUNING PROJECT

Alan Hegarty
University of Limerick, Ireland
on behalf of the Tuning Management Committee

A presentation on the Tuning Project was made to delegates at the ECET meeting in Brussels, and the nature of the future cooperation between ECET and the Tuning Project was explored. Each aspect is summarised here.

Background.

The TUNING project is a project by and for universities. It is the Universities' response to the challenge of the Bologna Declaration. Its motto is "Tuning of educational structures and programmes on the basis of diversity and autonomy".

The objectives are:

- to implement the Bologna - Prague - Berlin process on university level,
- to find ways to implement two cycles,
- to identify common reference points from discipline and university perspective,
- to develop professional profiles and comparable and compatible learning outcomes,
- to facilitate employability by promoting transparency in educational structures (easily readable and comparable degrees),
- to develop a common language which is understood by all stakeholders (Higher education sector, employers, professional bodies).

General tendencies in higher education include:

- a shift of paradigm: moving from a staff oriented approach to a student centred approach,
- less specialised academic education in the first cycle,
- more flexibility in first and second cycle programmes.

The Tuning Methodology comprises **5 lines**:

• **Line 1: Generic competences**
Consultation with graduates, employers and academics on the importance of 30 generic competences and an evaluation of how well HE institutions develop them.

• **Line 2: Subject specific competences (knowledge, understanding and**

skills)

Mapping of subject areas and development of common reference points and subject specific competences of each of the pilot disciplines.

• **Line 3: ECTS as a European credit accumulation system: new perspectives**

Development of ECTS as a tool for programme design: basis is student workload measured in time.

• **Line 4: Mapping of approaches to teaching / learning and assessment in different countries.**

• **Line 5: Quality enhancement.**

Competences and learning outcomes.

The Tuning Project focuses on subject specific competences and generic competences. These competences represent a dynamic combination of attributes, abilities and attitudes. Fostering these competences are the object of educational programmes. Competences will be formed in various course units and assessed at different stages.

Learning outcomes are statements of what a learner is expected to know, understand and/or be able to demonstrate after completion of learning. They can refer to a single course unit or module or else to a period of studies, for example, a first or a second cycle programme. Learning outcomes specify the minimum requirements for award of credit.

In summary**,**

- Learning outcomes according to Tuning methodology should be formulated in terms of competences.
- Learning outcomes are minimum requirements of a unit or a programmes and are expressed in terms what the learner knows and is able to do at the end of the learning experience.
- Competences may be developed to a greater degree than the level required by the learning outcome.

Cooperation between ECET and Tuning

The possible modes of cooperation are:

Exchange of Information
Cooperation as a Synergy Group – implementation of methodology in some lines.
Cooperation as a Core Area – implementation of methodology along all five lines.

ECET had already decided to cooperate as a Core Area, so the required actions are listed here.

Line 1 and 2: Generic and Subject Specific Competences

Objective: Develop academic and professional profiles for a degree programme within the Thematic Network area. Identify the learning outcomes expressed in generic and subject specific competences.

Task 1: Obtain information on the findings and methodology of Tuning.
Task 2: Produce a Map of Professions in Europe in relation to the area.
Task 3: Choose a degree programme and debate how to find out the importance of generic competences for the degree chosen and select a number of competences from the Tuning list.
Task 4: Reflect and debate on Levels particularly in relation to First and Second Cycle
Task 5: Identify the most relevant generic competences for the subject area.
Task 6: Identify the most relevant subject specific competences, taking into account the input from professional bodies and graduates (stakeholders).
Task 7: Make a questionnaire with the most relevant subject specific competences and distribute it among academic colleagues in Europe.
Task 8: Send the set of completed questionnaires (minimum 250) to the coordination team for analysis.
Task 9: Discuss the outcomes in the TNP and with stakeholders.
Task 10: Write a final report; formulate the learning outcomes expressed in terms of competences by identifying the common, diverse and dynamic elements of the subject area. Distinguish the learning outcomes by level (first and second cycle).

Line 3: Use of ECTS as an accumulation system

Objective: To build up knowledge and experience on ECTS both as a transfer and accumulation system and to be able to use it in curricula design and delivery in the specific subject area.

Task 1: Understanding of ECTS principles, tools and key features through awareness and group debate on ECTS key documents.

Task 2: Raise awareness of the relation between ECTS and the concept of learning outcomes and competences for curriculum design and development by using Tuning documentation.

Line 4: Approaches to Teaching, Learning and Assessment

Objective: Obtain a deeper understanding of competence based -student-centred learning and the impact it has on approaches to teaching, learning and assessment.

Task 1: Choose a number of generic and subject specific competences, relevant for the thematic area and debate how to implement them in curricula.

Task 2: Collect ideas and examples of good practice of teaching, learning and assessment methods regarding the implementation of generic and subject specific competences in degree programmes.

Line 5: Quality Enhancement

Objective: Develop an understanding of the Tuning methodology as an internal system of quality assurance in relation to programme design and programme delivery.

Task 1: Raise awareness on the Tuning approach in relation to Quality assurance in programme design and delivery.

Task 2: Apply this approach to the subject area.

Task 3: Write a report on the experiences.

Publication and Dissemination

A report is envisaged at the end of the process for every Thematic Network which has completely followed the Tuning methodology. This publication will consist of the reports of the different lines. It will be a joint publication of Tuning and the ECET Thematic Network.

ECET publications.

ECET has already produced publications detailing professional standards, curricula and syllabi for Bachelors and Masters programmes in Computer Science, Computer Engineering, Software Engineering and Information Systems. In each case, the professional standards are defined in terms of general characteristics, common skills, practical or subject specific skills, additional skills and body of knowledge. This seems quite close to some of the tasks in Tuning Lines 1 and 2; a questionnaire would help to validate, or perhaps refine, the current list of skills or competences. To a certain extent Lines 3 and 4 have been also been addressed in the work of the project, in that syllabi are all presented in terms of ECTS credits, and e-learning has been a key topic for ECET.

I would like to thank the ECET project for its hospitatilty in Brussels and look forward to fruitful cooperation between Tuning and ECET in the coming years.

October 2004.

A N N E X 6

PowerPoint Presentation from the Final Meeting in Brussels

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