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Newsletter of Federation of Telecommunications Engineers of the European Union February 2012

51st FITCE Congress in Poznan, Poland.

Poznan FITCE 2012:

Message from Our President

Dear Fitce friends,

In October of last year I returned from my season holiday in the South of France where we experienced exceptional nice weather. After 16.00 o'clock the sun loses its power and is the time to sit down and do some work. In this case preparing a document with a package of proposals for the Fitce board next April.



Jos Gerrese FITCE President

Of course I wish everyone wisdom, joy, energy and health for 2012. I hope we can take steps to safeguard Fitce through a difficult period. The next two or three years will determine whether Fitce will have a second life or not. My intention is to give the utmost to keep Fitce alive. We have to look ahead and not dwell in the past. History is a nice hobby but rather useless for strategic planning. This is a strong statement but as a museum director the argument is on my side.

Amidst these renewal discussions we will have a meeting in Hungary. Hungarians have expressed the wish to become involved with Fitce and we shall explore the possibilities, hopefully somewhere February-March.

Preparations for the 2012 congress in Poznan Poland are in full swing and I hope we can meet a lot of colleagues there. I understand the subscription rate will be reasonable and lodging is very affordable. Keep in mind that participating in the congress means a full high standard technical program, social events with receptions and excursions, lunches and dinners. Details will soon be available on the Fitce website.

We have developed a liaison with the European Commission Directorate INFSO and we will explore possibilities for joint activities involving Fitce and its members. This should create challenging opportunities.

It is our intension to create a better involvement from the members. One way to stimulate that is to inform people by whatever means on what we are doing and (Continued on page 2)

Report from Palermo FITCE 2011.

FITCE 2011 in Palermo was a very successful Congress, and the National Fitce Association, the Italian Association for the Communications and Information technology (AICT), went to extraordinary lengths to ensure that everything in the Congress ran smoothly, and that delegates, presenters, and accompanying persons experienced the best of Palermo while ensuring that the Technical Program was at a high level consistent with previous FITCE Congresses. Indeed the Congress for the first time was co-sponsored by the IEEE, and the proceedings of the Congress are now found on the IEEE Digital Library.



Congress Location

There were over 150 Delegates and accompanying persons. While this number wasn't as high as we would have liked, it was a good number considering

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planning.

We will make use of social media but still have to find out how. The website and email are our current vehicles to reach you and we will use them. We would however prefer a two way traffic. Please send us your ideas and comments so that we can perform our tasks better.

Looking forward to spring time. I am not a winter person.

Jos Gerrese

(Continued from page 1)

the downturn of the European Economies, and the knock on effect on the Telecomms Industry. The location of the Congress, the Chiaramonte Steri Palace was an excellent choice and the large Courtyard area ensured that delegates had excellent opportunities for networking with old and new friends.



Congress Delegates.

The historical charm of Palermo added significantly to the ambience of the Congress. The Theme of the Congress "ICT: bridging an ever shifting digital divide" was particularly apt for Palermo and southern Italy, where the issue of the Digital Divide is a real one, and great expertise and wisdom exists in tackling this problem.



Andrea Penza Opening the Congress

The Congress was opened by our President Andrea Penza, with a distinguished Panel of Guests including Salvatore Iacolino (European Parliament), Francesco Vatalaro (Professor of University of Tor Vergata), Roberto Viola (General Secretary of AGCOM), Robert Madelin (DG of

Information Society and Media of the European Union), Ruben Razzante (Board Member of FUB), and Luigi Gambardella (Executive Board Chairman of ETNO). Each Speaker presented their perspective on the digital divide issue. The Congress proper then got underway with 42 Presentations and 7 keynote speeches.

One of the highlights of the Congress was the roundtable session entitled "European Digital Agenda and Digital Divide". It was chaired by Raffaele Barberio (Key4biz, Italy). A report of this roundtable session is found separately in this forum.

All presentations and keynote speeches are available on the Fitce Website.



Best Presenter Frans Heitkamp

The Paper Selection Committee also spent some time adjudicating on the Paper Awards for FITCE 2011. This year the awards went to

Best Presenter.

Frans Heitkamp— the Netherlands. "Small Scale living for the Elderly, through information and House Automation." **Best Young Presenter.** Marlees van der Wee Belgium. "How to measure the success rate of fibre based access net-

The Congress closed with the General Assembly where FITCE Delegates were addressed by the outgoing FITCE President Andrea Penza, the incoming President Jos Geresse, the General Secretary and Treasurer.

Great credit is due to the outgoing President Andrea Penza who committed himself tirelessly to the vision and welfare of FITCE during 2010 and 2011, and ensured that the vision of FITCE was kept alive during two very difficult years for the European Telecoms community.

A sincere welcome is given to the new President Jos Gerrese of the Netherlands, and all the FITCE CD members and delegates at the Congress wish him the best in his new and challenging role. Jos is a longstanding FITCE Member and has contributed at many FITCE Congresses.



New President Jos Gerrese with outgoing President Andrea Penza.

Looking to Poznan, Poland. FITCE 2012.

"Everything in the Net - IPv6 and Internet of the Future Prospects"

5th September to 8th September 2012

Once again Polish Telecommunication Engineers Association (SIT Polska) is delighted to invite you to our country for $51^{\rm st}$ FITCE Congress in Poznań, the capital of Wielkopolska Region, historical birth place of the Polish state.

We've been honoured already to host 46th FITCE Congress in 2007 in Warsaw, the watchword of that Congress was "The Broadband Way to the Future". This was



Congress Centre 2012

the sign of our expectations of intense investments in new broadband technologies and of connecting new users and giving them new telecommunication services.



Congress Lecture Hall.

Nowadays we see new prospects: everything will be connected to the net, not only terminals for the people and computers offering them services, but also any other equipment: TV and video sets, home devices, mobile terminals, measuring

equipment, monitoring sensors, power equipment and many other components of new wide area systems. This new prospects of future telecommunication are the main subject of this year 51st FITCE Congress in Poznań.

How IPv6 and new technologies of the Internet will meet new requirements of the quality of services, transportation of big volumes of data, diverse traffic and connecting new devices? All telecommunication professionals, engineers and researchers, friends and members of FITCE will find in the city of Poznań an interesting forum for friendly meetings and bright discussions.

The 51st FITCE Congress starts the second half of the first century of its activity. For the members of FITCE this is good reason to meet together and to sum up the results of previous congresses and make plans for future activities of our telecommunication society. New participants are warmly invited to take part in those discussions, especially we invite students and young adepts in telecommunication engineering and research. We value very much this nice opportunity to host you in 51st Congress of the Federation of Telecommunication Engineers

Associations of the European Community.

Poznan has direct flight connections to 21 European Cities and the conference centre has a number of 3 to 5 star Hotels located close by.

The conference theme, location and city promise to make FITCE 2012 an excellent Congress.



Wojciech Hałka President of SIT Polska



Zbigniew Krawczyk Chair of the Congress Vice President of FITCE



Centre of Poznan.



Palace of Rogalin outside Poznan.



FITCE Vice President

Steering Commit-

Jos Gerrese FITCE President

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Conference Web-

site: www.fitce2012.pl

IMPORTANT DATES

Submission of Abstracts/Full Papers or Tutori-

March 31, 2012

Notification of acceptance:

May 31, 2012

Submission of camera-ready: June 15, 2012 The 51st FITCE (Federation of Telecommunications Engineers of the European Community) Congress provides the international forum for the exchange of new results among engineers, scientists and researchers on advances in telecommunication and other related areas.

The Conference will be held in Poznan, Poland on September 5th—8th, 2012. Poznań, the capital of Wielkopolska region, is the birthplace of the state of Poland. The theme of FITCE 2012 is "Everything in the Net - IPv6" and Internet of the Future Prospects". We encourage submission of technical papers especially on topics related to this theme, but the Conference will cover all subject areas of interest both to the FITCE international community and to IEEE Communications Society members.

Papers will be peer-reviewed by the international TPC. When an abstract is accepted a paper is required for the proceedings and paper should be presented at the conference in oral or poster sessions. The best paper will be selected for award

AREAS OF INTEREST

Areas of interest include but are not limited to the following topics:

Access infrastructures and networks

Wireline communications

Optical networks

Next-generation access networks
PON, WDMA and OCDMA architectures

P2P networks

Home and in-building networks NGAN economics and business models

Optical networking and high-speed networking Operators' experience in broadband deployment

Communication Systems & Signal Processing

Communication theory Source coding, channel coding

Signal and image processing

Speech and multimedia signal processing Transmission, access and optical systems

Power-line communications Smart grid communications

Radio communications

Wireless communications

Cross-layer design

Satellite communications

Communication electronics and circuits

Multimedia Applications and Services

Service creation, discovery, delivery, management

Multimedia communications

Energy-efficient protocols and networks Wearable and implantable sensors for healthcare

Data fusion and context elaboration Privacy and security issues in e-health systems

Artificial intelligence and expert systems

Usability and acceptability of e-health systems

Applications and services for healthcare Home monitoring & e-health ambient-assisted applications Wireless Body Area Networks

System architectures and protocols for e-health systems

Internet and Next-Generation Networks

Switching, routing, multicasting Internet services and applications

Advances in Internet protocols

Distributed and mobile middleware

Web services and Service Oriented Architectures

Cloud computing Future Internet

Overlay and peer-to-peer networks

NGN network infrastructures and management

Network reliability

Quality of Service management techniques

Security management, trust and privacy

Traffic engineering and traffic theory

Network operations and management

Charging, pricing and business models Trials and demonstrations

Regulation and standardization

Wireless and Mobile Networks

Ad Hoc, sensor and mesh networks MIMO and diversity techniques

Cognitive and opportunistic wireless networks

Cooperative wireless networks

Wireless apps in swarm systems and relevant services

Spectrum optimization and DSA Wireless services and applications

Radio network and terminal self-configuration LTE and 4G networks & techniques

Radio-over-fiber techniques, Femtocells

Wireless network protocols, design and performance Spectrum coexistence and future frequency bands

Wireless and mobile systems trials Regulation and standardization

QoS, Reliability and Performance Modeling

Communications systems integration and modeling Quality and performance evaluation

Reliability of systems and networks Standardization aspects of QoS and reliability.

ABSTRACT/PAPER SUBMISSIONS

We solicit submission of high-quality abstracts and/or full papers (in English) reporting original research results, and field experiences related to new ne-twork deployment and innovative services on above topics. The TPC will review the abstracts/Full Papers on the the criteria: innovative subject, fit for FITCE, clearness. Electronic submission is ONLY possible via the website http://edas.info/N1231 . Abstracts should contain name of author and affiliation and an indication of the area of interest as defined in this Call for Papers. Full papers should not exceed 6 pages, including all figures and references.

TUTORIAL SUBMISSIONS

Proposals are invited for tutorials on topics of interest of the conference. Proposals must be submitted to the Tutorials Chair (tutorials@fitce2012.pl) and include title, abstract, full contact information, introduction to the subject, length, past history, biography of the lecturer, and detailed outline. Continued

REGISTRATION FEES

FITCE/IEEE member: Euro 475.00 before July 15th, Euro 550.00 before August 15th, Euro 600.00 on site

Non FITCE/IEEE member: Euro 675.00 before July 15th, Euro 750.00 before August 15th, Euro 800.00 on site

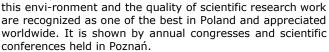
For more information on this please visit: http://fitce2012.pl

ABOUT POZNAN

Poznań, the capital of Wielkopolska region, is the birthplace of the state of Poland. Being located at the intersection of important routes joining East and West Europe, Poznań has been the trade cen-tre of Poland for 80 years. In the general opinion, Poznań is an example of thrift and its dwellers constitute a model for diligence. Since 1551 this all has been witnessed by two Poznań Goats which fight under the clock at the tower of the Town Hall at noon every day.

There is a positive atmosphere felt for cultural activity and various forms of social life. Everyone can choose something for themselves from the rich offer of cinemas, theaters, museums, galleries and clubs, restaurants and pubs. In Poznań, there are international theater festivals such as Malta, Masks, Off Cinema or the International Young Audience Film Festival "Ale Kino". The name "alternative theater heart" has permanently clung to the capital of Wielkopolska region. The city is also named "the music capital of Poland" in tourist guidebooks because of boys and men's choirs that are active here, The Henryk Wieniawski International Violin Competition held here every 5 years. Poznań is an important academic centre. There are 8 state universities and academies here. At these universities and academies, there are almost 150 thousand students. Poznań belongs to the leading centres of scientific research in Poland. Scientific research is carried out here not only by

universities but also by the branches of Polish Academy of Sciences and numerous scien-tific research and development units. The research potential of this envi-ronment and







ABOUT POZNAN UNIVERSITY OF TECHNOLOGY

Poznan University of Technology (PUT) grew out of the State School of Mechanical Engineering which was established in 1919. Currently, it is one of the leading techni-cal universities in Poland which has beco-me one of the most recognized landmarks of the region and even the whole country. PUT grew out of the State School of Mechanical Engineering which was esta-blished in 1919. Currently, it is one of the leading technical universities in Poland which has become one of the most re-cognized landmarks of the region and even the whole country.

Poznan Universi-ty of Technology offers education at 9 faculties, which altogether provide 23 fields of study. There are almost 20 thou-sand students studying at the Bachelor and Master levels, PhD, and postgraduate studies. Over 1200 academic teachers, including 240 professors and almost 900 administrative personnel and technical service staff, take care of their students' education. It is the mission of Poznan University of Technology to educate highly qualified personnel in engineering in its broad sense, in a close relationship with scientific research, the development of technologies and innovations, in the cooperation with industry and community.



The realization of such a mission allows for materialization of a vision of Poznan University of Technology as a leading national technical university, aspiring to being a partner of European universities with respect to the quality of education and the level of scientific research.



Round Table

The Digital Agenda and the Digital Divide.

The Round table entitled the Digital Agenda and the Digital Divide was chaired by Raffaele Barberio (Key4biz, Italy). The panel consisted of Roberto Saracco(*Telecom Italia*), Millie Banerjee(*Senior UK Telco consultant*), Panos Exarchos (*OTE*), Emilio Marchionna(*H3G*), Salvatore Lombardo (Infratel) and Prof. Allessandro Busacca (Univ of Palermo).

Mr Barberio asked the panel to focus on the forces that were resisting the Digital Agenda and any strategies on



Mr Raffaele Barberio Chairing the Round Table Session.

how to reduce the Digital Divide. The following is a summary of what the Panellists contributed to the discussion.

From a strategic point of view the Digital Agenda changes all things and there are supporters and resistors of change. The Digital Agenda gives rise to low transaction costs which limits intermediation and value added costs and gives rise to disintermediation and razor thin margins, which need higher volume to sustain business. This will have a large effect on the Mobile Business as lower transaction costs and disintermediation will give rise to lower revenue streams which will result in a weak incentive to build out and expand the network. In Italy for instance if each Mobile Customer is to get 2mbs, there is a need for about 90,000 base stations, which is 6 times as much as now. Who is going to give the money to build this, with reducing revenue streams.

From a regulatory point of view there are serious challenges and the Digital Agenda is very important across Europe to ensure that Europe does not fall behind US

and Asia. A real difficulty for Network Operators is what business model should they use in order to make a profit considering the huge amount of investment required to progress in the Digital Agenda.

With this open market business model, it is difficult for Regulators to find a way forward, when there is very little room for investing in expanding the digital network and addressing the considerable infrastructure gap.

Some Regulators have taken initial steps to address this infrastructure gap e.g, Ofcom in the UK is suggesting a regulatory holiday to allow BT to build an extensive fibre access network with the view that when built the network will be open at all levels to alternative network operators. This is a big challenge and Regulators are not ensured that all levels of the network will opened in the way they would like, especially in the absence of a business model that would integrate the needs of the public Network Operators and the alternative Network Operators.

OTE, as the Greek Public Network Operator, indicated that the expansion of broadband access in the Greek network has a target by 2020 to reach all Customers with a minimum of 30Mbits/s and 50% of them with 100Mbits/s using FTTC. This is seen as a considerable challenge considering the great number of islands. Nonetheless OTE are committed to tackling the digital divide, in as best a way as is possible.

From a Mobile Operator point of view, the main problem in addressing the Digital Divide, is the cost of backhauling from base stations to the main network. In addition regulatory difficulties and unavailability of frequency spectrum are inhibiting development.

A point was made that solving the Infrastructure Gap for Italy would cost EUR1 Billion, and Operators are not willing to invest in the digital divide without a reasonable return on investment. However over a number of years the Digital Divide in Italy has been reduced from 15% to 7%.

A discussion also took place on a number of issues such as the practicality of encouraging local community effort to address the digital divide, and on why the Health Sector in general has not fully embraced the Digital Agenda. One answer for the latter is due to a lack of understanding of the business model operating in the Health Sector.

A lively discussion followed, and there was a general conclusion that without a fit for purpose visionary business model, the infrastructure gap, that needed to be closed to significantly advance the Digital Agenda and close the Digital Divide, would still exist.



Roundtable Panel.

Best Presenter FITCE 2011.

Frans Heitkamp

Small Scale Living (SSL) for the elderly through House Automation (Domotica).

By. Jacques Aarts, Frans Heitkamp

In The Netherlands as well as other Western European countries specific measures must be taken to cope with the increase of elderly population demanding for higher quality services based on the application of more and more expensive technology and the decrease of the workforce available for the care sector. That is why Dutch Authorities has initiated programs enabling people to stay longer in their homes when they grow older. Specific programs support longer stay by applying Information - and House Automation, in short 'domotica'. In this way people are supported in their daily life by means of systems and devices that monitor both personal conditions like their blood pressure, heartbeat or other critical biotic values, emergency calling and environmental conditions like safety, lighting and comfort.

In the Netherlands and other Western European countries future demographic changes require increased introduction of information and communication technology in care services. Those changes include considerable increase of the number of elderly people depending on services provided by a decreasing number of staff working in the care sector. It will result into diminished time spent by staff and less customer intimacy. Focus will be on operational excellence i.e. efficiency and effective use of labor force. Organizations in care will focus on binding their employees due to scarcity. Acquisition and selection of new staff will become an important role in the organization. In parallel research for optional production means will take place and implemented if they proof to be useful. Also the lack of resources will lead to co-operation of the organizations by outsourcing noncore tasks and positioning in the supply chain.

A second change is the 'separation of living and care'. In the Netherlands the propositions of organizations in the care sector included both living and care services. Nowadays regulations prescribe living and care to be offered separately. Consequently customers may choose to live on their own premises combined with the delivery of care services on the spot. It is also enlarging their freedom of choice out of a a number of providers of care services. For staff it will include larger working domains with larger distances to the customer as well as the provision of remote services.

In addition to the 'separation of living and care approach' competition between the organizations involved will grow. Also the relationship between customers and care providers will become more formal and ruled by contract. While financing of care services become cumbersome it should be envisaged that service provision will be carried out on transaction base. All parties involved require solutions for meeting the need of effective contract – and transaction management.

Last but not least the technological evolution will also have impact on the way care organizations will provide services to their customers. New applications and devices will be implemented requiring advanced network designs including:

 Facilities for interactive/real time communication between care providers and (potential) customers using public networks;

- Advanced facilities for mobile workstations (PDA's, mobile telephone, iPAD);
- Care dedicated information systems for workflow management and efficiency improvement;
 - Workflow management systems;
 - Application platforms;
 - ERP (enterprise resource planning)
 - Increased extensive supply of communication applications and technologies;
 - Chat programs/forums;
 - House automation;
 - Touch screens;
 - Video conferences:
 - Voice processing
- Facilities for supporting remote care.

With the objective to enlarge the ICT capabilities of the parties involved in care services, the Dutch Government has initiated a program aiming for identification of the core problems, definition of required changes and applicable solutions. In this program care organizations have been invited to submit project proposals for improving their ICT/domotica capabilities. Certain strict conditions were put forward:

- The project proposal should include the delivery of 'Small Scale Living for the elderly through Information and House Automation (domotica) within 2 years.
- An additional project requirement was the delivery of new methods, structures and standards.
- The production of a Shareholders Business Case (SBC), functional and technical specifications were obliged.

A number of 13 care organizations have been selected. Part of the stimulation program included the addition of external expertise on accountancy for the production of the SBC, business re – engineering and production of functional and technical specifications. Figure 1. presents the project approach.

STAKEHOLDERS BUSINESS MODEL (SBC)

Co-operating parties achieve the definition of the business model step by step through:

Including:
Project objectives
Project plan

Project
Project
Project
Project
Definition

Evaluation

Evaluation

SBC

Figure 1. Project Approach

The program identified a number of common themes requiring additional investigations. Please refer to Figure 2.

This paper mainly deals with service provision and technical platform.

Examples of the services provided are:

Security

(Continued from page 7)

- Central electronic door-key management
- Remote care through Video connections
- Alarming by the users
- Follow up of alarms
- Actions to be provided by a central care desk to the users of the system
- Remote management and control of the system

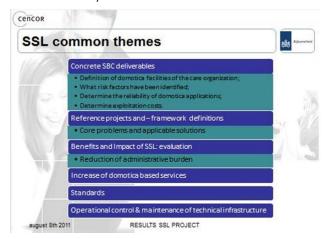


Figure 2. SSL common themes

To provide for these services networks become a vital element, both inside the living area as well as the environment. Because of the vital role of the network requirements regarding capacity and availability must be considered seriously.

Capacity

The applications that must be supported over the network are:

- Surveillance
- Remote diagnostics
- Remote control of doors
- Fire and Burglar alarms
- Video conferencing with experts\

This will lead to the following requirements for the Network Capacity:

- Bandwith more than 2 Mbit/s full duplex
- Because of the different streams of services is the use of Quality of Service essential. to ensure a good user experience

<u>Availibility</u>

Since the users of the system rely for their health and safety on the network (and also of the servers that provide the services) the networks need to provide a high level of availability. It should meet at least 99,99%. (Which still results into 52 minutes downtime on yearly basis).

Because the network must consist of standard available networks services, it is essential to implement the networks using a back-up service. Because the backup networks is there for emergency only, the back-up facility could provide a lower bandwidth. Examples are:

- Main network SDSL, back-uop via UMTS/LTE
- Main network SDSL, back up Cable network
- Main network Cable, back-up SDSL
- Main network Cable, back-up UMTS/LTE

 Main Network Fibre to the home, back-up network UMTS/LTE.

To ensure costs are acceptable it is essential to use standard available public networks services. As described a single network will not provide the availability required for the service. Therefore a back-up networks is foreseen. In the care infrastructure measures must be taken to a) detect the outage of a particular network service and report it for repair and b) provide automatic switch over to the back-up network service. For this purpose the central care system must have an interconnect to all the public network services .

Figure 3 presents the network architecture.

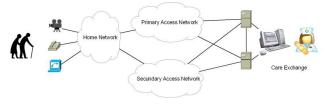


Figure 3. Network Diagram Care service

Essentially the cost of those type of services should be kept low. In principle the cost are low while application of standard commercial networks are proposed. However, even those costs might prove to be too high for elderly people to afford them, especially for the redundant solution.

From practice it become clear that current systems operating independently must be either integrated or interconnected. This will have also significant impact on the Software Infrastructure/landscape.

On the network side it means that two aspects become of vital importance:

- There must be a call center that becomes the pivot in the handling of request and alarms coming from then users of the system. This call center will dispatch the actions towards other parties involved in the care process such as doctors and nurses.
- The network must should provide for sufficient capacity to carry the video traffic envisioned. On the other hand the network must have a high availability through a reliable backup network, because an outage of the networks may have severe impact. However due to the scale of usage the network must also provide a low cost solution. Eventually those contradicting requirements need to be investigated in more detail.

Because the projects are proposed by different types and scales of care institutions in the Netherlands the proposals differed significantly.

Based on the projects that are in progress it can be concluded that the use of domotica provides powerful tools enabling people to stay longer in their how environment. The projects also prove that, taking into account realistic ambition levels, real progress can be made. Also it clearly shows that there is no one size fits all solution, but that tailored solutions are needed depending on the scale, environment and function of the involved institutions.

Two members of CenCOR have contributed to this paper. The Dutch ministry of Healthcare has assigned CenCOR to

evaluate and monitor the above projects. In this position CenCOR is offered sheer views of developments and best practices in those areas.

Jacques Aarts Frans Heitkamp
Chairman of the Board CEO
CenCOR Foundation RVS Networks BV

FITCE Forum

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The opinions expressed in this publication are those of the Authors and are not the responsibility of FITCE.

FITCE values and Aims

- Keeping in touch with leading edge ICT developments.
- Ensuring that our Members benefit from the experience acquired by other Members in all ICT fields.
- 3. Building strong cultural and business ties between European ICT Professionals.
- Ensuring that Young Professionals are able to use FITCE as a valued resource in their career development.