EURESCOM mess@ge
Issue 1/2000
Newsletter 27

How European Collaboration Can Enhance Your Competitiveness

- Evolution out of a revolution
- The Heidelberg experience
- BOBAN: A major collaborative effort
- Tutorial: WAP made easy

Evolution out of a revolution

Irish families have a tradition of having one or two members working abroad. It often was normal for one member of a family to be in England or America. This was caused by the economic hardships in the past. Today we can observe the same phenomenon because people are much more mobile in their work and leisure. A number of us consider ourselves to be Europeans and happy to live or work anywhere within Europe.

The interesting consequence of this mobile lifestyle is that our circle of communication, both in work and our private lives, is geographically much larger than for any previous generation. Combined with the reductions in telephony costs and travel costs we maintain business and personal relationships over considerable distances without any difficulty.

The individual adaptations to a new, mobile lifestyle have in turn effects on our society. Working abroad in an international environment opens our mind for different cultures and work styles; it brings Europe closer together. In this issue of the EURESCOM mess@ge, our newsletter's first issue under its new name, you find some articles which give you an impression of the challenges and experiences working in an international environment in Heidelberg can involve.

One of the underlying infrastructures facilitating to the increase in people's communication horizons is the efficiency of the communication networks and services. You can make a phone call to anywhere in the world and a phone is a phone anywhere in the world. The value of a communication device is directly related to the number of other similar interoperable communications devices in the world. The first facsimile machine was worth nothing; its practical value showed only when several (or several million) facsimile machines where connected to the network.

If you have a videophone you are limited in the sense of to whom you can talk. The videophone typifies the sort of emerging problem that the current dramatic pace of development in the electronics and communications industry causes. There are many interesting and exciting innovations that can today be offered as services to users of communication but they face the introduction problem. Nobody wants to be a first adopter if there is no one else with a similar communications device that they can talk to. Similarly no operator today wants to offer a universal service that will only ever communicate within their customer domain.

What use is an IP telephony service if it can only talk to the set of other IP telephony equipped surfers who happen to be logged on to the Internet at the moment you want to communicate?

New services must also be capable of integrating with the existing communications technologies. This is often the limiting factor. What use is an IP telephony service if it could only talk to the set of other IP telephony equipped surfers who happen to be logged on to the Internet at the moment you want to communicate? Today all network and service operators are faced with the same problems: how to handle the dramatic changes in technologies, the changes in business demands and the changes in customer expectations. They have to address all these changes in such a way that they preserve, if not increase, their customer satisfaction and contracts.

This is where the collaborative research model, as operated by EURESCOM, has something valuable to offer the network and service operators of today. For a fraction of the cost of a full internally developed solution they can access the combined R&D resources of 24 network operators to find solutions to the common problems. The value of sharing and discussing problems and views with their peers from other European countries can probably not be rated highly enough. Not only do they share the understanding of the issues, but also the sharing of solutions goes a long way towards protecting the interoperability of services across different networks and domains.

This interoperability of services is one of the key assets of the telecommunications business. It is a fact that every other business in the world cannot survive without basic communication services. However customers today are very aware of and hungry for advanced features and facilities that they have seen in magazines and on the television. Collaboration here is again an efficient way of sharing a problem and getting an effective solution. If any individual company tries to solve the issue of, for example, the introduction of IPv6 into their network they will repeat the work done in other network operators. Similarly if we individually try to work out how to handle call control over a mixed telephony/Internet scenario it is quite likely that our individual solutions will not be compatible.

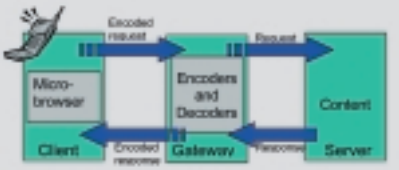
By collaborating together within our community of common interest, EURESCOM, we can evolve solutions to the problems presented by the computer age revolution. Evolution out of a revolution: a high ambition, so let's get to work!

David Kennedy, EURESCOM

(The opinion expressed in this article are solely those of the author.)

Contents

Learn more about Internet roaming, page 4



WAP made easy, page 9

The Heidelberg experience, pages 12 and 13

Meet Belgacom, pages 14 and 15

The EURESCOM MTM 2000 Workshop, page 17

Editorial Board and Distribution

Editors: Heidi Walther, Peter Stollenmayer, Magnus Krampell

Press deadline: 15 March 2000

Distribution: EURESCOM mess@ge, our newsletter is distributed quarterly.
Further copies are available on request.

If you would like to contribute, or send any comments, please contact:

Heidi Walther
EURESCOM GmbH
Schloss-Wolfsbrunnenweg 35
D-69118 Heidelberg

Tel.: +49 6221 989 - 215
Fax: +49 6221 989 - 209
E-Mail: newsletter@eurescom.de

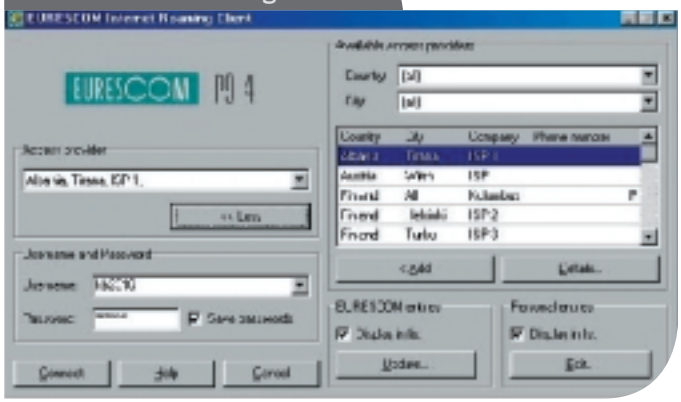
The EURESCOM mess@ge text can be found on:
http://www.eurescom.de/Public/Publications/Newsletters/NLhome.HTM

Internet Roaming – an opportunity for business units?

Project P914 on Internet roaming with bilateral agreements completed

Giuseppe Sisto

EURESCOM Roaming Dialer



Internet roaming enables travelling users to avoid paying international telephone costs when accessing e-mail or using other intranet applications. Making local calls and connecting to home using the Internet is a more convenient way.

This kind of service is currently offered by third party clearing agencies. (cf. i-Pass and GRIC). However, there are costs to the ISPs involved.

The EURESCOM Projects P717, P805 and P914 verified a different business case – Internet roaming with bilateral agreements (see figure) and defined technical specifications for its realisation.

Management: a critical aspect of a decentralised roaming scenario

A roaming service based upon bilateral agreements is much more complex to run than a service centrally managed by a third party clearing point, and the degree of complexity grows with the number of bilateral agreements.

Therefore it is of paramount importance to have harmonised management procedures and accounting data representation formats, used in the same way by all the ISPs who decide to adopt this model, to keep the service and all its implications "under control".

Project P914 studied the commercial services offered by the third parties' clearing houses, and analysed available specifications (i.e. RADIUS accounting mechanisms).

Requirements were identified and the project formulated proposals on how these aspects could be addressed in a decentralised scenario.

Need of a client interface

A client interface for roaming users is used by the traveller to connect via a local ISP – and to roam like people are accustomed to roaming with cellular phones. A generic interface (a so called dialer) was developed with the ability to build the user's own phonebook.

DIAMETER: a new protocol for Authentication, Authorisation & Accounting (AAA)

DIAMETER can be seen as an enhancement to the widely deployed RADIUS protocol. The Project joined the Merit AAA Consortium (www.merit.edu) which develops code for DIAMETER. The membership has given the participants opportunity to get a deeper knowledge on this emerging standard, and verify its suitability in a roaming scenario, where also RADIUS-based legacy systems can be employed. This suitability was also proved by trials performed by the Project Participants.

This knowledge will allow Shareholders to take the lead if DIAMETER is selected as an AAA protocol by IETF.

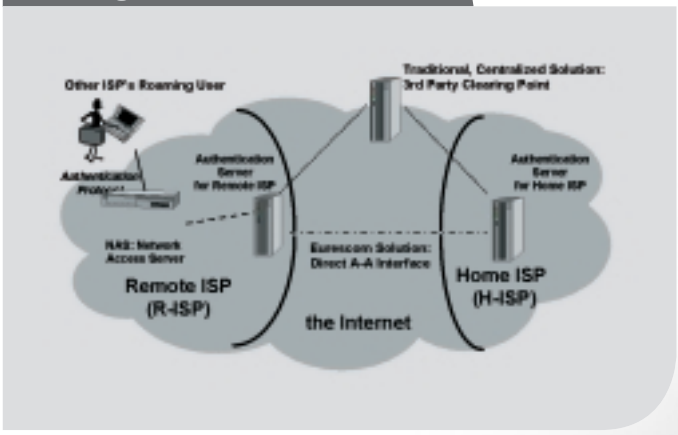
But is it feasible?

The results of the EURESCOM Projects on Internet roaming show that a de-centralised scenario is feasible.

Now, the research and technical work are completed and the results are available for the business units of our Shareholders. If they like the idea they must take it further!

Giuseppe Sisto, CSELT

Roaming Service Reference Model



Why OSS Interconnection Gateways?

Project P908 investigating the challenges of interconnecting the OSS of service providers

Paul Duggan

The liberalisation of the European market will result in service providers establishing trading relationships with many other service providers, both within their domestic markets and internationally. These relationships can ultimately result in the interconnection of their OSS systems, both as a regulatory requirement and as a result of the volume of transactions involved.

The service provider is generally a separate autonomous company, each making its own decisions regarding OSS deployment. This has led to a proliferation of heterogeneous OSS, each with its own software, networking standards and protocols. Sharing information between service providers' OSSs involves, at the very least, some form of protocol conversion. The more trading relationships that are involved, the greater the number of protocol conversions that are needed.

However, with the use of an OSS interconnection gateway, the number of protocol conversions can be reduced to a manageable size. The gateway uses, in effect, an intermediate protocol. For each trading relationship that occurs across the gateway, the Service Provider's protocol needs only to convert into this intermediate protocol. Without a gateway, the service providers would need to support multiple protocol conversion resulting in a major overhead on the operation of inter-service provider communications. Over time, this initial diversity of protocols is expected to reduce and converge on the application of mainstream e-commerce solutions adapted for the communications service market.

EURESCOM Project P908, entitled "OSS Interconnection Gateway System Validation – (by application to case studies)", investigates the challenges of interconnecting the OSS of different service providers using an OSS interconnection gateway. This Project focuses on experiments with gateways in a laboratory environment, through identification of a small number of well-defined case studies; Carrier Pre-Selection, Number Portability and Infrastructure Capacity Ordering. Gateway products from the participating vendors (GE Information Services, HP and Telcordia Technologies) are evaluated. The main objectives are to:

- develop and verify gateway requirements and specifications for the application process case studies with the objective of converging on e-commerce solutions.
- investigate the security aspects of gateways.
- investigate the flexibility of gateways in an ever-changing environment.
- evaluate the basic functionality of a gateway platform.
- examine requirements and emerging technologies for the evolution of gateways to support future business and regulatory requirements.

Live demonstration of results

The main results of this Project will be demonstrated at the "Workshop on Regulatory OSS Interconnection, Gateways and e-commerce" to be held at EURESCOM in Heidelberg on 17/18 May 2000.

Paul Duggan, eircom

See also the Project website at

www.eurescom.de/Public/Projects/p900-series/P908/P908.htm

A voice from a Project: BOBAN – a major collaborative effort

Project Leader Giovanni Destefanis reports on Project P917: Building and Operating Broadband Acccess Network

Giovanni Destefanis

Even though today a telecom engineer sees himself more and more connected to the world both personally and professionally, when he joins a project with a European dimension, he may wonder how this new "adventure" – besides producing the expected added value to his company – could further strengthen his culture and skills.

A big EURESCOM Project like BOBAN – Building and Operating Broadband Access Network – creates an ideal framework for this kind of experience.

Here an exceptional team of engineers, equivalent to a manpower of 25 man-years over a 15 month project duration, is aiming at the whole spectrum of wired technologies that are becoming available now or will come in the near future, to be deployed in the Broadband Access Network arena.

In fact BOBAN is studying and experimenting with fibre and copper based systems and considers also an alternative based upon power line transmission.

Theoretical studies cover service management, network monitoring, planning and the application scenarios of Wavelength Division Multiplexing and Fibre To The Home in access networks.

Thirteen operators are devoting experts to this project, from Portugal to Cyprus and from Mediterranean countries to Norway and Finland.

Besides scheduled meetings, electronic mail is the everyday communication tool, exploited to provide each member with equivalent opportunities of giving his comments, getting information and contributing to the preparation and amendment of documents.

Distributing efforts – sharing results

As BOBAN is putting a specific emphasis on broadband access systems trials, the existing co-operative framework sets a very favourable background supporting a variety of complementary approaches.

Three different Fibre-to-the-X type platforms are tested: Fibre-to-the-cabinet is adopted by CNET Laboratories of France Telecom, the CSELT centre of Telecom Italia has a Fibre-to-the-building architecture and KPN in the Netherlands is testing a Fibre-to-the-home System. A variety of services will be carried on each platform, and a group of experts will deal also with management aspects.

Therefore a European level collaboration, in this case, provides a terrific amount of complementary information and data to be exchanged, analysed and compared.

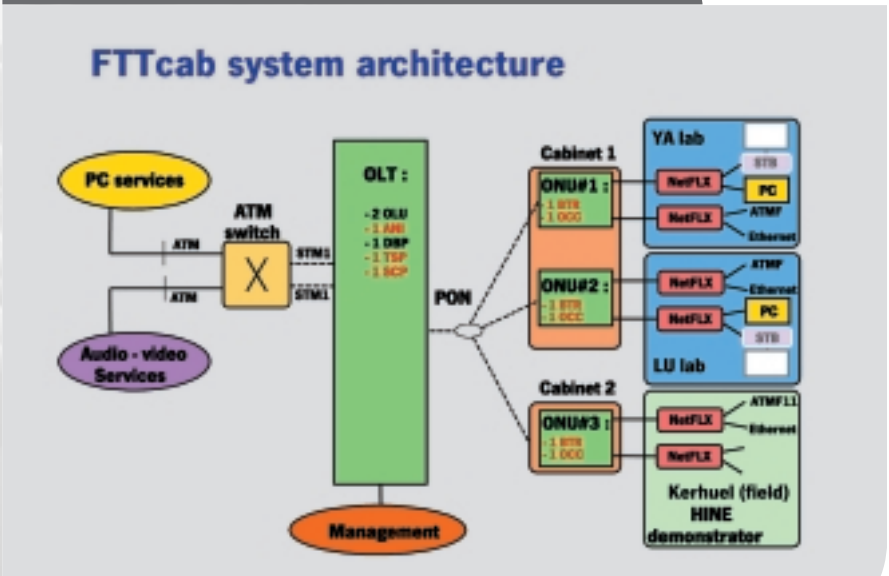
Similar advantages are also expected from eight field trials that make use of low cost DSL systems, each of them providing broadband services over copper to 20-30 customers. The considerable amount of experimental data and the results of their analysis will constitute a valuable reference to all BOBAN and EURESCOM partners for strategic decisions about large scale deployment of this technology.

Sharing risks – sharing chances

While in the cases quoted above the BOBAN co-operations at the European level enables a variety of testing conditions yielding a great quantity of data, there has been at least one case where collaboration has shown to be a real "life-saver" for a group of BOBAN engineers: those who are carrying out an assessment of the availability and functionality of equipment for communication over powerlines. Since the very beginning of this project they faced great difficulties in finding suitable equipment. It became possible to secure an agreement with a manufacturer over the release of equipment only in December. Now with the help of one Partner the results obtained will become available to the whole working group and to EURESCOM Shareholders, in perspective.

But there are also theoretical investigations that a single company would loath to undertake alone, because many unknowns and unclear boundary conditions discourage the investment of sufficient resources. Nevertheless managers and system architects should be able to identify the most suitable evolution path for broadband access. This, for example, is the case of the application of WDM and Fibre To The Home in different parts of the access network and for different customer

The Fibre-to-the-cabinet platform as adopted by CNET



segments, for which BOBAN will provide telcos with realistic introduction scenarios.

Standard solutions – lower costs

The increased demand in broadband services has created the need for an upgrade of the access network infrastructure. In an effort to assist the telecommunications operators to formulate development strategies starting from legacy access networks, a major working group within BOBAN is studying the available technology for this upgrade, including also the development and testing of a prototype street cabinet to house broadband technology and exploring powering schemes to support the roll-out of such cabinets.

The development of the 'European' broadband cabinet makes sense because it helps to achieve economy of scale and telcos should not wait for the vendors to take the initiative, as none of them is willing to make the required initial investment. BOBAN has therefore formed a Cabinet Development Team committed to specifying a cabinet prototype and implementing examples of it for partner testing. The cabinet delivery is scheduled for March 2000.

The BOBAN specifications for the cabinet have also been presented to the recent FSAN "Deployment" group meeting in Phoenix (USA) and will soon become a part of their world-level specifications.

Co-operation vs. internal procedures: a conflict or a relay race?

A telco's engineer joining a co-operative project may wonder: "How many internal procedures of my company should be affected by the outcomes of the project?"

Telcos invest a huge amount of capital and human resources to implement internal procedures for Operation Administration, Management and Planning. Therefore legacy aspects may initially lay down some barriers to the introduction of new procedures even if these are successful for another partner of the project.

Nevertheless telcos see more and more clearly that, once Broadband access technologies have reached a good level of maturity, there are still obstacles to rapidly reach a critical mass of subscribers through a successful and effective deployment.

Service provisioning, for instance, does not scale well to mass market situation and keeps the overall cost of the access solution too high for the average residential customer. Therefore a harmonisation of views on the management of the Access Network for seamless service deployment and integration on a variety of platforms is becoming more and more crucial.

"Automation may mean the difference between weeks and seconds." is the slogan invented by the BOBAN working group that, leaving behind the heterogeneity of backgrounds of seven Shareholders, is now capable of evaluating and defining co-operatively the feasibility of a new automated service provisioning in the access network.

Co-operation as the key to higher productivity

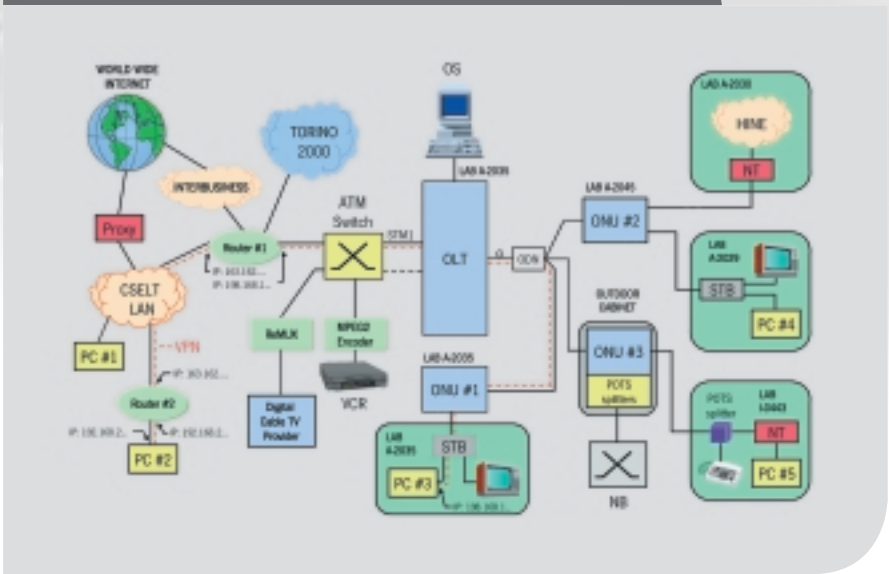
The need for collaboration in EURESCOM projects in Europe is demonstrated looking at the internal functioning of BOBAN, one of the major Projects, that creates an opportunity of sharing results along with the distribution of efforts among 13 partners. In the BOBAN project a variety of performed tests are producing a great amount of data, but collaboration is also effective in creating chances of success, when the studies are more risky.

Co-operation is the appropriate means to reach economy of scale through consensus on standard solutions, enabling higher volumes of production, with a consequent reduction of costs.

Co-operation is also proving to be essential to effectively study new solutions for more advanced automated OAM procedures to provide services at a lower cost.

Giovanni Destefanis,
Optical Technology Centre, Turin, Italy

The Fibre-to-the-building architecture that CSELT apply



Technical Development and Support for European ATM Service Introduction

Project P813 successfully closed

John Boyles

Project P813 built on the work of earlier projects such as P613 and P708. Where these previous activities were concerned with pilot trials, they neglected to address planning, capacity management, and ongoing operational processes. They were simply concerned with getting a single limited lifetime network up and running.

This project applied the work done in P811 on an OSS Interconnection Framework and showed how this was relevant to a practical operational network situation.

Significant results were achieved in three areas:

Support of pan-European ATM Introduction

- A set of European standards was produced for management of interconnected ATM networks.
- Guidelines were developed on how to integrate and apply these ETSI standard to the practical interconnection of the management systems for ATM Network. They focus on the management services for provisioning, repair, performance and accounting of ATM PVP, PVC and SVC network services.
- An Operator's handbook was written describing the procedures for establishing and operating these management interfaces.

ATM Evolution

- Solutions were provided to support a range of services using ATM networks. This covered Leased Line services including circuit emulation, VPNs using ATM SVCs, IP MPLS, and ATM as a backbone for IP.
- A proposal was developed as to how IP VPNs can be configured across multi-operator interconnected ATM networks using management solutions based on the ETIS Standards.
- An analysis of the mechanisms for call-level congestion avoidance and control was conducted. The analysis included practical laboratory tests of ABR Explicit Rate (ER) congestion control and IP over ABR/UBR measurements, recommendations on adaptation of the congestion indicators used in PSTN ([E.411]), and integration of traffic classes with different ATCs and cell level QoS demands. Further results covered restoration capacity, dynamic VP bandwidth management
- A technical study of the issues in delivering of new ATM services such as Wireless and roaming services was carried out.

ATM Performance Limitation Study

This part of the project carried out an investigation into the practical establishment of ATM performance limitations. This covered availability assessment using in-service OAM measurement methods and the interaction between policing and in-service measurement methods.

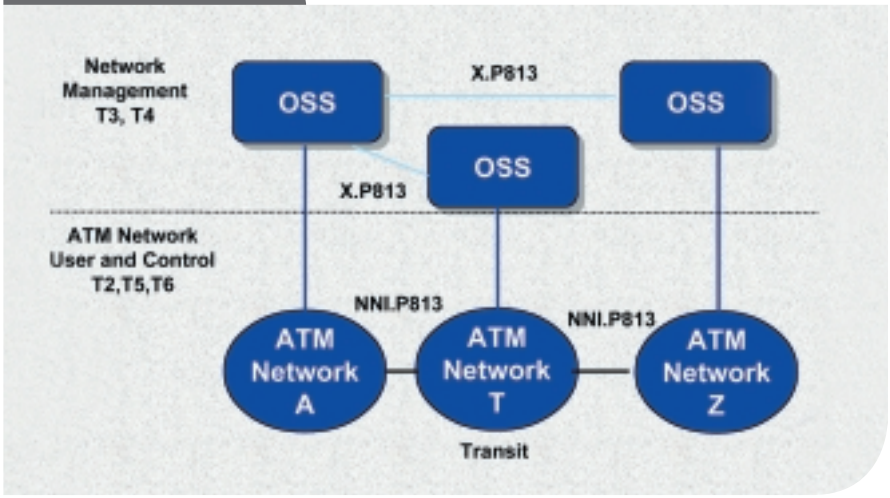
It also produced proposals on how to overcome ATM performance limitations which were developed in conjunction with equipment vendors.

State-of-the-art of performance measurement function implementations were produced based on information collected from ATM switch vendors.

Copies of these deliverables are available in the P813/Final Deliverables directory on the EURESCOM Website.

John Boyles, Consultant

Scope of P813 tasks



News in Brief

Forthcoming Workshops

- The HINE Demonstrator Workshop, Berlin, 11 May 2000
- Workshop on Regulatory Interconnection of Operations Support Systems, Heidelberg, 17-18 May 2000
- BOBAN Workshop, Turin, 11-12 July 2000

Please visit the EURESCOM Events page at

www.eurescom.de/Public/Events/events.htm

for more details on all Workshops.

Launch of Project P1011 on hold

Launch of the planned EURESCOM Project on "Enabling broadband wireless services" (P1011) is currently on hold, and the Project is in danger of not starting at all. After the designated Project Leader left and some Shareholders indicated their possible withdrawal the Project is significantly under-resourced. One solution might be the rethinking of the Project and change of scope.

Technology made easy: WAP – the Wireless Application Protocol

Of all the acronyms that are used in the telecommunications world today, there is one that seems to have stimulated people's imagination – WAP. The Wireless Application Protocol, used in our mobile phones will once and for all solve the problem of Mobile Internet – or will it?

What is WAP?

WAP is a way to access web pages on the Internet with a mobile phone. On your PC at home, you dial up your Internet Service Provider (ISP) node and that way connect to the Internet when you want to surf the Web. On the mobile phone, you dial up to a so-called WAP gateway (see figure). This gateway will access the Internet and pass on the web pages over the radio connection to your mobile phone. In the phone there needs to be a simple web browser, a so called "micro-browser. That's all there is to it! (The more technical parts are described briefly below.)

The WAP Programming Model

Compared to the Internet/World Wide Web (WWW) model, which features the client and a server, the WAP programming model introduces a gateway between them. The role of the gateway is to act as a proxy, translating/decoding requests from the (WAP-based) client, passing them on as "normal" HTTP requests to the server and then to translating/encoding the web pages from the server to a format suitable for the WAP-based client. In theory this means that the client can browse the WWW and access any pages. In reality, though, this would be very impractical, since pictures and text cannot be presented very efficiently on the small screen in the mobile phone. Specific pages, made with the limited user interface in mind, are needed. To make it easier for the development of such pages, a new protocol was developed – the WML.

WML

WML, Wireless Markup Language was designed to enable powerful applications within the constraints of handheld devices. It does not assume a QWERTY (standard) keyboard and Mouse for user input and introduces the concept of a "Card" rather than a "web page". Users can navigate between Cards using soft-buttons on the device. The "Microbrowser" used in the device interprets the WML in a way similar to how HTML code is interpreted by web browsers.

WAP on the Air Interface

WAP does not only comprise an architecture and WML language. Also new protocols used on the air interface are specified. The reason why the Internet protocol (IP) suite of protocols is not used "as is" is that wireless networks are more constrained than fixed networks by low bandwidth, high latency, and unpredictable availability and stability.
For example, the ASCII headers used by HTTP is replaced by binary encoded headers. The WTP – Wireless Transaction Protocol is used instead of the standard Transport Control Protocol (TCP). A session re-establishment protocol is also introduced to allow sessions to be suspended and resumed without the overhead of initial establishment.

Critical voices...

As is often the case for new technology, critical voices are not lacking. They criticise for example the limited user interface and the need for specific web pages to be constructed for WAP services. (Does anyone remember when web pages had "push here for text only" buttons?) Also the use of a specific transport protocol (rather than standard IP) is criticised. Finally, a well known columnist wrote: "...they are remaking wireless into a proprietary jumble. Microsoft just joined WAP to ensure that the published standard will be incomplete. WAP is nothing more than an attempt to proprietarize open standards..."

The future will tell

Whether WAP will be the ultimate solution (or maybe, in what form WAP will be when it is widely used) may be an open question. A big drawback is that you need to call up a gateway in order to access the services. This problem may be solved when GPRS arrives later this year. Also, alternatives to WAP do exist, for example STK (SIM application ToolKit), which is based on Java code down loaded into the SIM card and executed in the mobile phone. The interested reader can spend many hours indulging in the ubiquitous information about WAP available on the Web.

Magnus Krampell, EURESCOM

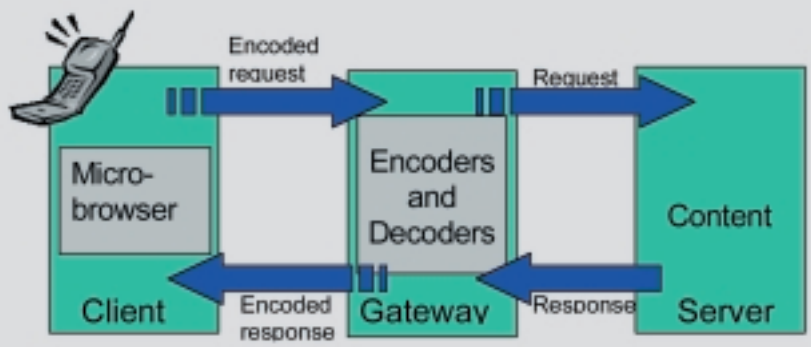
Try these links to find out more about WAP:

www.wapforum.org

www.asptoday.com/articles/19991115.htm

www.useit.com/aletrbox/991031.html

The WAP programming model



Fifteen new EURESCOM Projects and Studies kicked-off

Area	Title	Project No	Participants	Project Leader	Project Supervisor	Kick-Off Meeting
Strategic Studies	Customer Loyalty in the Virtual World	P1041-GI	AF, BT, CH, IT, NT, OG	Annakaisa Häyrynen, AF	Peter Stollenmayer	25-26 Jan
	Access Network Services for Service Providers	P1042-GI	AF, BT, IT, ST, TI	Arto Saikanmäki, AF	Peter Stollenmayer	16-17 Mar
Services and Applications	PKI Implementation and Test Suites for Selected Applications and Services	P1001-PF	AT, BT, FT, NL, NT, OG PT, RB, ST, TE, TI	Antti Siltanen, AF	Anastasius Gavras	20-21 Jan
	Distributed Multimedia Storage, Retrieval and Filtering Technologies	P1002-PF	IT, NL, NT, OG, TE, TI	Willem Jonker, NL	Heinz Brüggemann	21 Jan
	Exploiting the "Always On" concept	P1003-PF	FT, IT, NT, ST, TE, TF	Erik Bergersen, NT	Heinz Brüggemann	24-25 Feb
	ICE-Commerce (Framework for Interoperable and Customised E-Commerce Solutions)	P1004-PF	DT, FT, IT, NT, OG, PT, TE	Luc Mathan, FT	Anastasius Gavras	20-21 Jan
	RealCast: Real Time Services with IP Multicast	P1010-PF	DT, FT, IC, IT, OG, PT	Peter Feil, DT	Magnus Krampell	24-25 Jan
Management of Networks and Systems	JINI & Friends @ Work: Towards secured service access	P1005-PF	AF, BT, CH, DT, FT, PT, TI	José Bonnet, PT	Anastasius Gavras	13-14 Jan
	DISCMAN: Differentiated Services – Network Configuration and Management	P1006-PF	BT, DT, HT, IT, NT, PT, TE	Hans Joachim Einsiedler, DT	Magnus Krampell	20-21 Jan
	Application of Intelligent Techniques to Telecommunications Fraud Detection	P1007-PF	BT, NL, OG, PT, ST, TE, TI, TE	Keith Start, TI	Peter Stollenmayer	8-9. Feb
	Inter-operator Interfaces for ensuring end to end IP QoS	P1008-PF	AU, BT, ST, TE, TI	Andrew Kelleher, TI	Heinz Brüggemann	16-17 Feb
	Armstrong: IPv6 Deployment and Transition Strategies	P1009-PF	AF, BT, DK, DT, FT, NT, PT, TE	André Zehl, DT	Magnus Krampell	10-11 Feb
Networking	First steps towards UMTS: Mobile IP Services. A European Testbed	P1013-PF	CY, DK, DT, FT, HT, NT, TF, TE To be finalised	Maria-Amparo Sanmateu, DT	David Kennedy	24-25 Feb
	IP over WDM Optical Transport Networks: experiments and technical guidelines	P1014-PF	AF, CH, FT, ST, TE	Ahmed Madani, FT	Adam Kapovits	15-17 Mar
	FREEHANDS – Fibre and Radio Enhanced IntEgration in Heterogeneous Access Networks for Delivery of broadband Services	P1015-PF	BT, CY, DT, FT, IT, NT, PT, SV	Valerio Palestini, IT	Adam Kapovits	8-10 Mar

Project-Highlights

The “virtual world” context is Studies becoming increasingly important also for TelCos to attract and keep a sound customer base. This Strategic Study will help to clarify the complex inter-relationships between players, services, etc. in the area of customer loyalty. This includes the basic concepts of customers, customer loyalty, virtual world in relation to customer loyalty, and business environment.

Considering the rapid changes the (tele-) communications market, business structures, regulatory environments and he emergence of new network technologies, how will the concept of access services (local loop services) for service providers develop in the future? The objective of this Strategic Study is to identify the current status and direction of thinking on the above mentioned issues in Europe, and thus support the strategic work at EURESCOM Shareholders by providing an early view of the strategic, technical and business implications.

Consideringthat Public Key Infrastructures (PKI) are crucial for providing trust over the Internet and that applications, services and technologies utilising certificates will have an important position in the future e-commerce infrastructure, EURESCOM started this two year Project, with the objective to study and pilot major functions of Trusted Services in order to identify, define and verify (e.g., for completeness and consistency) operational, technical, regulatory and legal aspects in such detail that the results can be used to assess the effectiveness, economics and acceptability of Trusted Third Party Services.The purpose of this work is to establish competitive PKI solutions to govern the use of cryptography for integrity, authentication and confidentiality in Trusted Services for inter-telecommunication operators’ applications in a Pan-European telecommunication infrastructure. The major focus of the pilot is on interoperability of PKI solutions.

The combination of broadband networks and Web-technology opens the way to new multimedia information and transaction services such as next generation web hosting, multimedia search engines, and broadband browsers. Handling of multimedia information is a central element in such services and as a result technology for storage, retrieval, and filtering of multimedia information will become a cornerstone for this future generation of services. The Project will develop a scaleable architecture for distributed multimedia information storage, retrieval and filtering based on the above technologies that enables the deployment of future Internet services. Based on this architecture a distributed prototype implementation will be developed that validates and tests the architectural concepts.

The ‘Always On’ concept is a powerful one as it represents a potentially major change in the TelCos approach to network design and provision. The nearest analogy to ‘Always On’ is the home or business LAN, which once you are logged onto will provide the user with continuous access to e-mail, software updates, etc, without the user having to make specific requests. The ‘Always On’ concept could be divided into three main sub-categories: “Transport infrastructure”, “Customer service surround” and “Service and application”. The Project continues the work of Study Project P945 which finished in January 2000. It will look more specifically at the user aspects related to AO and at possible scenarios how Always On can be provided by suppliers.

E-commerce in the US is currently in a huge expansion and the European market represents a natural target for this wave. Whilst this dominance is disturbing, there is still a short window of opportunity for European telecommunication operators to become major e-commerce actors in their respective markets. EURESCOM started this 2 year Project with the objectives to establish a standard for a framework of e-commerce platforms for the purpose of rapid deployment and customisation of e-commerce solutions, and to produce specifications for e-commerce components interoperable across platforms to allow 1) end-to-end e-commerce transactions on a global scale and 2) common exploitation of solutions by e-commerce operators.

In P911 (IP Multicast) the basic IP Multicast have been examined. P913 (Real-time Services on the Internet) evaluated multimedia IP-based applications. Building on the results of P911 and P913 this Project will integrate the network capabilities and the requirements from the multimedia applications into useful suggestions for new services demanded by the customers – combining the areas of IP Multicast and QoS provision. This will be tested in trials focusing on solutions for a particular service. Solutions for Reliable Multicast (a special form of QoS support) will be examined. An ongoing activity will be to keep track of and test the newest developments in the area of IP Multicast routing. QoS routing with Multicast is still a research issue, which will specifically be examined.

Imagine a networked information society with billions of small, intelligent devices equipped with spontaneous networking capabilities, having access to any information and providing access to any service “on the net”. For the purpose of evaluation and advancement of the enabling technologies for this vision of “Ubiquitous Computing”, this 18 month Project is aiming at providing the basic technological building blocks that allow EURESCOM Shareholders to take advantage of these technologies, in particular with respect to their secure and safe use in large-scale telecommunication operators’ environments.

Currently the IETF discusses the Differentiated Services (DiffServ). This approach is based on minimum signalling and on agreements between the connected Internet Service Providers (ISPs). Inter-working tests and management issuessuch as signalling, charging, management and network engineering are undefined and still under discussion. The goal investigate Service Models and Architectures, evaluate existing Differentiated Service implementations (especially interoperation issues) and to assess Traffic Engineering mechanisms such as Multi Protocol Label Switching (MPLS) for their use in the framework of Differentiated Services. With the collected knowledge and experiences, it is possible to provide guidelines on how to set-up multi-provider QoS IP networks and to manage the QoS resources.

The main focus of this work is the investigation of Artificial Intelligence techniques, such as Neural Networks and Data Mining technologies to the application of the Fraud Detection. This work will include an analysis of existing methodologies and products in this area and a prototyping phase, which will attempt to validate such techniques. Customer analysis such as churn analysis, will also be considered and prototyped.

The telecommunications world has broadly accepted IP as the access technology of the future and is investigating a range of schemes for including Quality of Service (QoS) in IP technology. The Internet Engineering Task Force (IETF) is standardising differentiated and integrated service approaches to QoS whilst the Telecommunications Management Forum (TMF) is considering what needs to be done to offer a commercial, telco-quality IP service. Customer perceived QoS is an end-to-end concept. If service is offered across multiple operators then those operators will need to co-operate to ensure customer requirements are met. Inter-domain management processes, interfaces and models are needed to support that co-operation. The details of how IP QoS will be provided and the choices of underlying network technology to support the IP layer are unclear. The inter-domain management implications of different options need to be understood.

The IETF working group IP Next Generation (IPNG) has asked the Internet community to start deployment of IPv6, to gain experiences. Deployment of IPv6 will happen incrementally over time and transition mechanisms and strategies for this are needed. UMTS might decide on using IPv6 to get a sufficiently large address space. UMTS might thus be the first large-scale public IPv6 network. This Project should be seen as an IPv6 deployment trial with a European “production” testbed. Earlier Projects have mainly focused on the experimental 6BONE network. The Project proposes to set up such an environment between major telecommunication companies and Internet Service Providers in Europe. Experiences are to be gained on IPv6 issues in a multi-provider environment.

This project will techno-economically evaluate Mobile IP service implementations through first doing a Market analysis of IP services in the Mobility Context (both wired & wireless access), then developing a European Mobile IP Test-bedwhich will use the Mobile IP protocol for providing macro-mobility. The conclusion will be an evaluation of IP Architectures to provide Mobile IP services in connection with future UMTS complete implementations to be able to recommend implementation strategies for evolution to operators supported by demonstrations.

The transport of IP based data is becoming ever more important to TelCos, because it represents a quickly growing part of traffic efficiently in a WDM backbone network. This Project will take on board the experimental verification of the findings of P918 by laboratory and field trialing of a few selected architectures. In particular it will look into interoperability in a multi-vendor environment. The Project is expected to provide technical guidelines and engineering rules for IP/WDM network integration and deployment.

Access systems are progressively attaining compliance to FSAN/ITU standards. Telcos want to exploit access systems to their full potential and deliver broadband services to the customers. Increasing competition and the variety of customer needs require a high level of flexibility from telcos. Radio solutions have unique advantages in this respect and the integration of wireless and optical technologies holds a great promise. Therefore continuing the work on broadband access networks started in Project BOBAN (P917) P1015 will look into two particular aspects: service delivery on FSAN access platforms – how management systems and OAM procedures can successfully support this and integration of FSAN systems with standard and advanced broadband radio technologies

The EURESCOM Challenge

Amardeo Sarma worked as a EURESCOM Project Supervisor for three years. This is his account of the challenges he met during that time and on his return to his parent company.

Amardeo Sarma

Early 1995, when I first heard of an opening as Project Supervisor, EURESCOM was somewhat of an unknown challenge. I had led some projects at Deutsche Telekom and was involved in the RACE programme, but my contacts with EURESCOM were limited to some workshops and people I knew well. One of them, Ove Færgemand, who is now back at TeleDanmark, and I were both involved in ITU-T Study Group 10 at the time.

Two questions occupied me most at the time. Will EURESCOM and I mutually benefit from a limited contract? For me, being binational myself, the prospect of working in an international environment at the forefront of technological development was the driving force. At the time, the second question was much more of an unknown parameter: Will I be able to resettle at Deutsche Telekom, and under what conditions? Formally, of course, all Shareholder companies of EURESCOM guarantee a suitable return. But in the dynamic world of telecommunications, this seemed very uncertain ground.

43 EURESCOM months

With the help of my fellow Project Supervisors, I was quickly able to dive into my new responsibilities. It was no trouble at all getting accustomed to the friendly atmosphere. Most processes were well established, and this allowed the hand-over from my predecessors Ove Færgemand and Otto Baireuther to proceed smoothly. It turned out that I had a mix from down-to-earth network-oriented topics, such as ATM, to the more abstract and IT-oriented Software Issues and Middleware.

This suited me quite well, and the years at EURESCOM helped me gain a broad yet not superficial overview of the telecom domain.

Below, I focus on major points that followed a select few of the Projects I supervised. They reflect my personal view, so I do not necessarily imply a EURESCOM or Deutsche Telekom view. I sincerely hope that they provoke debate.

With IP looming ahead, are switched networks and ATM dead ducks?

We all remember the wars we fought to introduce "real" email into EURESCOM and at each of the Shareholders. For a while we were bullied into using a thing called X.400. We all knew that the only sensible thing to do was to have Internet e-mail. When I started at EURESCOM, I insisted on not wasting space on the X.400 address. Well, it worked, and the time for Internet seemed ripe...

Today, not being euphoric about Internet and IP places you in danger of being branded as stone age. Take P702 for example, which looked at guaranteed bandwidth for audio and video transmission, also using IPv6 and RSVP. The Project showed as early as 1997 that this is possible, but in a way the Project cheated. It was plain IP only at the access and ISDN and ATM were used between the two termination points at the access. So guaranteed quality was achieved by using switched networks. I do not believe the situation has changed much over the past two years.

Returning to Deutsche Telekom

About a year before the termination of my contact at EURESCOM, I began inquiring about opportunities at Deutsche Telekom. I had heard about the upcoming creation of a separate R&D company that was later coined "T-Nova". It appeared to me that this period of rapid change was as good a time as ever to return to my parent company. I finally decided to return, but not to Darmstadt. The offer of T-Nova, to help creating the new Section dealing with Technology, Methods and Competence Management in Bonn at T-Nova Headquarters was one that I just could not resist.

The objective of the Section is to provide an overall orientation of T-Nova on technologies and their priorities, to reduce and optimise the development platforms (methods) and to provide guidelines on competencies required by T-Nova for the future. In addition, the Section plays a crucial part in defining the overall corporate programme in close co-operation with our corporate customer at Deutsche Telekom. Here is where the broad overview I was able to gain at EURESCOM is very beneficial. Having been involved in differing fields, one does have some idea of what is being discussed and is able to put the discussion into context.

T-Nova consists of eight competency centres, two of which – TZ and Berkom – are better known at EURESCOM. Each of the centres has its own history and priorities, which poses a considerable task to align quite disparate views. This is one of the many circumstances where EURESCOM experience turns out to be very useful: Achieving consensus is a great asset if possible, but finding other ways out of a disagreement – some at EURESCOM needed to be very creative – if need be.

To join or not to join as Permanent Staff

Having gone through being part of permanent staff at EURESCOM and then returning to my home company, is there any advice I could give to someone in a similar situation as I was about five years ago? There are few work opportunities that offer a comparable scope to be able to shape R&D at an international level in such a creative and constructive environment. Project Supervisors play a crucial role at EURESCOM. You will find a friendly, dedicated atmosphere and creative minds. And I believe no German town matches Heidelberg as a place to live and work in.

However, personal and private issues should not be forgotten. If you are not single, the family or partner should fully support the decision to move to Heidelberg. Even the best of jobs – and I certainly count EURESCOM as one of them – cannot compensate for a disrupted family or the breaking up of a relationship. Of course, you should carefully check whether the role of "shaping" rather than doing is what you really want. Finally, and I believe this should be taken into consideration before joining and not be forgotten during the time at EURESCOM: Check your return path to your parent company, not only formally but on how it works in practice. And make sure that you keep in contact with your home company. Opportunities for a good return are not open at all times, so you should plan on some amount of flexibility on this.

If you do decide to join EURESCOM and are accepted: Prepare for hard but rewarding work in a great team that you will miss when you leave.

Amardeo Sarma, Deutsche Telekom

Living and Working in Heidelberg

When Magnus Krampell moved to Heidelberg to work at EURESCOM, it took him some time to settle in. Here is how he overcame the initial problems.

Collaboration in Europe can be done in many different ways. One, very practical way to experience "Europe" is to leave your country and go to the centre of Europe to work for a company that promotes European collaboration. This article describes my experiences when I moved from Telia in Sweden to Heidelberg to work as a Project Supervisor at EURESCOM.

How it started

Through Projects many people come into contacts with EURESCOM. In the around 40 Projects that are running during each year at EURESCOM, some 1000 people are active. With the turnover (promotion, changes in jobs, etc.) we estimate that around 1500 people are in more or less regular contact with EURESCOM. (Our database contains over 1500 names of people that receive Newsletters, Newsflashes, etc.)

Personally, I had not worked in a EURESCOM Project before I applied for the job here. However, I was involved in the start-up of one Project (does anyone remember P408, the PET-Lab?) and I also read the EURESCOM Newsletter and the occasional Project Deliverable.

As a Project Leader at Telia, I still did come in contact with people from other countries. Having been in USA for some time, the thought of going abroad again was always there. Going to a European country seemed like a good target. The ad about EURESCOM Project Supervisors in the Telia internal magazine came very timely and seemed to be speaking directly at me!

Not speaking very much German, the prospect of living and working in Germany was of course thrilling. The working language at EURESCOM is English, so this would not be a major problem. I applied, was called for an interview and got the job!

Moving with the family

The family, wife and two boys (aged 5 and 14) were positive and we made a list of things to be arranged before moving. We needed a place to live. A house should be rented. School and Kindergarten should be found for our two boys. Selecting a house and kindergarten could not be done from a distance, but the selection of schools could be. The older boy was 14 years old. He would start 8th grade, spoke no German but had gone to school in the US. The alternatives (apart from the traditional German school) seemed to be:

- A European School in Karlsruhe, which had tuition in many of the languages of the EU.
- An American School in a U.S. Army base just outside Heidelberg.

The European School had tuition in the languages of the 12 member states from before 1995, so Swedish was not one of them! So, the American school was contacted. They did accept pupils from other countries. Also, the school had a closely-knit web of school buses, since many of the Americans live in different parts of the city.

The move

In order to avoid moving to Germany with the whole family without having somewhere to live, we arranged it so that I lived in a hotel the first couple of months and I spent afternoons and evenings roaming the city looking at different houses. The family would come later. A few anecdotes concerning houses:

- The agent charges the tennant the fee, which may be 1.5 – 2 months' rent. (In some other countries the owner pays the fee, so you will never see it mentioned.)
- Most houses in Germany are rented without kitchen and cupboards installed! This is a tradition in Germany. The logic is that if you buy a nice kitchen, you will want to take it with you when you move, don't you? Some have a "Einbauküche" and sometimes you may "take over" the existing kitchen from the previous tennant. However, this is often tied to a so-called "übernahme".

The family came for a few days visit and we went to look at the few houses I had found to be within the requirements that we had set up. One of the houses was close to the EURESCOM office, not far from the river and close to a pathway to the forest. This seemed to be the best on offer, so we agreed to take it. A nearby Kindergarten had space for our younger boy.

Working in Germany

As a citizen of an EU member state, the formalities are not overwhelming. Once you arrive at work there are a few forms to be filled in and the work permit in Germany is provided. However, for citizens of countries outside EU there is a little more paperwork.

Traditional German companies are more hierarchical than Scandinavian ones. Also, the language is more formal than we are used to. In EURESCOM this is not so evident. Since we are only 25 people, representing many different countries, we have a collegial atmosphere. Each of us contributes to the results in his or her way.

An educating experience

Well, there were problems to be solved before actually coming here and being installed. Once here, there is a lot to see and a lot of things to learn. Shops are not open like we are used to and people have different habits in Germany than in Sweden. But being in the heart of Europe makes a difference when you want to go visiting. Coming from the flat part of southern Sweden we enjoy the hills around Heidelberg, where there are many pathways and small roads to walk and cycle.

Looking back at the almost three years here in Heidelberg, time has gone by at an astonishing speed. With an interesting work and an interesting surrounding there is always something to do!

Magnus Krampell, EURESCOM

More than just a pretty façade: Magnus with his son in Heidelberg

Belgacom, Belgium's national telecommunications company

Francis Depuydt

Belgacom SA, headquartered in Brussels, the heart of Europe, is a supplier of global telecommunications solutions on the Belgian market. The company is owned by the Belgian state (50 per cent plus one share) and ADSB Telecommunications (50 per cent minus one share), an international consortium made up of Ameritech (recently taken over by SBC), Singapore Telecom, Tele Danmark and a group of investors from the financial sector.

New challenges

Belgacom is the incumbent operator that, like other European telecommunication companies, faced liberalization in its market. The logical consequence of this open market was that the telecom landscape in Europe (and beyond) changed at an incredible speed. Not surprisingly, the company's activities changed as well: Belgacom adapted its strategy to the changing market and over the last two years has concentrated mainly on the booming Internet and mobile telecom markets, striving for a prominent position in both fields.

Mobile

The 1999 figures for these two business fields prove that Belgacom is perfectly in line with that demanding objective, despite fierce competition in both.
Proximus, Belgacom's mobile subsidiary, now holds a 65 per cent market share, representing more than 2 million customers. During the second quarter of 1999, Proximus (75 per cent Belgacom, 25 per cent Vodafone-Airtouch) will launch WAP. Mobile operator BEN, located in the Netherlands and in which Belgacom holds 70 per cent, became operational last year and currently has 330,000 customers.

The Belgacom Towers in the heart of Brussels

R&D at Belgacom

The Network Services division (NTS) in Belgacom contains an R&D department called Technology and Process Management (TPM). The mission of this department, 320 people (engineers and technicians) strong, is somewhat larger than the classical R&D mission in a telecom company: not only technology scan and solution development, but also bringing new solutions to the field – both for the short as well as the long term – with the accompanying process adaptations and training, as part of the mission. There is a strong focus on improvement and performance of the network operations.
In the scope of TPM are included: technology strategy and architecture for the core network (switching, intelligent network, signalling, charging and transmission) and the access network, selection and deployment of new technology for telephony products, leased line products, interconnect services, together with the operations support systems supporting the provisioning, repair and quality management processes.
Field support regarding processes, work instructions and systems is also part of the attributions of TPM. The department also has a systems integration and testing lab for testing new solutions before they go into the field.

Internet

Belgacom has the lead on the Internet market in Belgium. Skynet, Belgacom's Internet Service Provider, is Belgium's first ISP with both free and paying subscriptions. Together with Belgacom.Net (free access for residential users), Belgacom Business.Net and WIN, the amount of Internet users amounts to 250,000.
Mobile communications and data are the most successful spearheads of the company. To concentrate fully on the optimized development of data activities, in October 1999 Belgacom decided to create a new division: Data Networks and Applications or DNA.

More activities

Apart from the activities mentioned above, the Belgacom Group offers local, intercity and international telephony services (voice and data), satellite services, leased lines and terminals. Belgacom is also very active in the multimedia field through Belgacom Multimedia Ventures (BMV) and the portal site Belcast, which offers services and information for the Belgian web user. Lastly, the company is actively involved in the security market through Belgacom Alert Services Holding.

Abroad

Belgacom is active in France (Belgacom France), in the 'Euregio' encompassing Maastricht, Heerlen, Aachen, Hasselt and Liège (Tritone Telecom) and in the Netherlands (BEN). Belgacom is also active in North America through Belgacom North America and has a subsidiary in Zurich. To strengthen its position, Belgacom has set up Belgacom UK Limited, Belgacom Deutschland GmbH, Belgacom Nederland BV and Belgacom USA. In these countries, Belgacom has numerous local Points of Presence (POPs).

Francis Depuydt, Belgacom

Further information on Belgacom can be found in:

www.belgacom.de

News in Brief

HPY becomes Elisa Communications

We just introduced the FINNET Group's R&D partner to our readers (see Newsletter 26), and already there is more news to report from Helsinki: Elisa Communications is the new name for the Helsinki Telephone Corporation Group and the Group companies. According to Elisa, the new corporate name symbolizes the Group's internationalization, as its business focuses by no means on the Finnish or even local Helsinki market only. The name change will be announced officially in April 2000.

For more information see the Internet at:

www.elisa.com

Meet Český Telecom

Former SPT Telecom, the Czech Republic's national telecommunications company, will enter the third millennium with a completely new name and identity. Through their new name of Český Telecom and new Corporate Identity this EURESCOM Shareholder wants to present himself as a modern, efficient and reliable telecommunications company that provides services which measure up to the most demanding standards. Together with the new identity we want to introduce a number of new products and services to our customers, new customer programmes and other benefits.

More information on Český Telecom can be obtained from their website

www.ceskytelecom.cz

New Deliverables

C = EURESCOM confidential, F = For full publication, S = For specified purposes

Strategic Studies

P944 Impact of PKI on the European Telecommunications Business

D 1 Main Report C

P946 Smart Devices "When Things Start to Think"

D 1 Strategic Study . . . . . F

Services and Applications

No new Deliverables in this Programme Area were issued.

Management of Networks and Systems

P715 EURESCOM Services Platform

D 2 Experiments on the EURESCOM Service Platform C

Internet and IP Technology

P913 Socrates – Streaming and Online Conversational Real-Time Services

D 2 Results and Recommendations for Real-time Internet Services . . . . . F

P914 Study and Trials for Internet Roaming in Europe

D1 Specification and trials of an Architectural and Management Framework C

D2 Specification of the User Interface, documentation, source code and windows help files C

D3 Use of the DIAMETER protocol to deploy a roaming service offering: specification and trial C

Networking

P813 Technical Development and Support for European ATM Service Introduction

D 1 Guidelines to ETSI TS 101 674-2 . . . . . F

D 4 Requirements for network management of switched ATM services and IP VPN Quality of Service . . . . . F

D 5 Recommendations on traffic-related implementation issues . . . . . F

EURESCOM Deliverables may be downloaded from:

http://www.eurescom.de/secure/secure.htm (for EURESCOM confidential publications)

http://www.eurescom.de/public/newpub.htm (for publicly available publications)

New online reporting system for Projects

Two winners in our survey on WS online reporting

After a successful pilot phase EURESCOM has introduced a new online reporting system for all running Projects from the first quarter of this year. The online reporting is intended for the quarterly Work Summaries (WS). It provides an easy reporting mechanism through a standard web interface. Additionally, the online reporting means more efficient budget and work control for all Project participants through a direct access to our EMIS Project database.

In order to design a useful and user-friendly reporting system a pilot was run for the Q4/1999 reporting. Eight Projects with a total of 65 participants were selected for the pilot. From 65 possible WS reports a total of 59 reports were received electronically. The other six reported in the traditional way by Word attachments.

In order to produce a summary assessment of the pilot a survey was sent out to all participants. We received a response of 35 returned surveys, which equals 54 per cent - a very good result! By far the most participants (approx. 90 per cent) were satisfied with the handling and the user interface of the tool. Most of the users had no problems filling in the form and sending the data to the EMIS database. However, some participants reported on minor (25 per cent) or even major problems (21 per cent) that they had encountered during the online reporting. There were hardly any problems in reading WS reports sent through exploder lists or with internal company infrastructures.

All of the reported problems will be solved before the online reporting will start for the first quarter reporting. We hope that the new system will further improve our electronic EMIS database for the benefit of all Project participants.

From the received questionnaires of the survey, two participants were drawn for a nice prize. The lucky winners are:

- Mr. Leif Aarthun Ims from Telenor and
- Mr. Salvador Pérez Crespo from Telefonica I+D

Congratulations! The winners won this leather manicure case for the frequent traveller.

Are we migrating too fast?

The EURESCOM MTM 2000 Workshop, Dublin, 16 to 17 February

"Who thinks there will be an all IP network?"

This general question put to the audience at the EURESCOM MTM 2000 workshop in Dublin showed that there could be a difference between the R&D view of the network evolution and the operational world's view. We asked the question and only three people out of the 50 attendees from European telcos thought this scenario would soon be a reality. This conflicts with the views of the IPv6 forum, the 3GIP group and the work of many other standards groups who see IP as the way all networks – mobile and fixed – will evolve. The response from the audience might have been more reassuring if the question had been posed as "Who thinks that IP traffic will be by far the most dominant traffic on future networks?" People with operational experience have learnt the hard way how difficult it is to wind down legacy networks and services, and so were conservative in predicting a 100 per cent IP network.

The future of Smart Devices

Apart from that concern, the workshop was a very interesting mix of detailed technical aspects of the evolution of networks and technologies. "Our aim was to debate the future of Smart Devices and how our world will change when they think and communicate for us" explains David Kennedy, EURESCOM's Senior Programme Manager. He adds: "We also had illuminating discussions about the status of security for new mobility scenarios." Among the speakers who contributed to the discussions were Georg Neureiter of Deutsche Telekom, Dave Wake of BT, Peter O'Sullivan of Ingenium Systems and Enzo Mingozzi of Pisa University, Italy.

A large vote of thanks must go to eircom who organised the excellent venue of the Royal Dublin Hotel in the centre of Dublin and provided lunch for all the attendees.

David Kennedy, EURESCOM

Best speaker was Mihai Mateescu of T-NOVA/Deutsche Telekom

More information on this and other EURESCOM workshops is available at:

www.eurescom.de/Secure/Events/events.htm

Staff News

EURESCOM's new Project Supervisor from France Télécom

Valérie Blavette

In March, Valérie Blavette joined EURESCOM as new Project Supervisor.

Valérie's international experience in R&D has taken her as far as Japan, where she started her career at the NTT laboratories in Tokyo. From 1994, she worked in France Télécom's research centre, CNET. Valérie has been involved in standardisation activities in ETSI and ITU, contributing to work in the area of Intelligent Networks evolution.

Valérie has been familiar with EURESCOM operations for many years as she participated in our Projects P506 and P607, amongst others. Valérie is currently also leading the task "Architecture for IN evolution and IN-Internet integration" of Project P909.

We are happy to welcome Valérie Blavette as seventh Project Supervisor to our EURESCOM team and wish her success in her new position!

Second "Open PAC Meeting" with Shareholder Representatives

Helsinki, 14-15 March

The second "Open PAC Meeting" open to all EURESCOM Shareholder representatives took place in Helsinki 14-15 March 2000 at the kind invitation of FINNET Group. Beside the nine PAC members, four EPS members and five representatives from four non-PAC Shareholders attended this meeting.

The prime objectives of this type of "Open PAC Meetings" are to

- discuss specific PAC related topics and
- learn how the hosting Shareholder is organised, what are his major business areas, his R&D activities and how he is involved in EURESCOM activities.

FINNET Group as one of the two larger TelCos in Finland is a dynamic organisation. Their main business areas are Mobiles and Internet besides offering basic POT services to customers throughout Finland. FINNET Group is maintaining a small R&D unit of 60 people managed by Mr. Aimo Maanavilja. Their research activities are concentrated on developing new services and applications based on the Internet. Being a rather small organisation by European standards, FINNET Group is heavily exploiting the possibilities offered by EURESCOM to establish contacts and co-operation with other TelCos in Europe.

The specific PAC related topic of this meeting was to review and discuss last year's Work Programme Generation process and to recommend changes and improvements for the Work Programme Generation process 2001.

The meeting recommended the following improvements for further considerations by the Board:

- Make the Stimulus Paper (stimulating new ideas for EURESCOM Projects) a living document through a continuous update and use it to stimulate spontaneous proposals
- Combine the Stimulus Paper and the Calling Letter for new Projects to stimulate more speculative and longer term Projects
- Schedule the Proposers' Day (to discuss new Project proposals) shortly after the deadline for preliminary Project titles allowing possible clustering of proposals
- Make the form used for Project proposals more focused
- Eliminate some of the current deficiencies in the technical assessment of Project proposals
- Change the current Shareholder voting procedure and allow a maximum of 10 points for any individual Project
- Ask the Shareholders to submit their participation announcement (PAF) after it is known which Projects are likely to start
- Introduce a weighted voting for Projects in addition to the equal voting as a trial for the Work Programme 2001

It was felt by all attendees that the "Open PAC Meetings" are very successful and an efficient way of discussing issues of concern to all Shareholders.

Shareholders volunteering to host such an open PAC meeting are kindly invited to contact the PAC Chairman, Dr. Grierson, BT, e-mail: john.grierson@bt.com.

Karin Becker and Harald Johansen, EURESCOM

The attendees of the Open PAC Meeting

EURESCOM feature at the ICIN 2000 conference

The ICIN 2000 was held near Bordeaux, France, on 17-20 January

This year's International Conference on Intelligence in Networks (ICIN) was held in D'Arcachon, near Bordeaux. The conference addressed the fact that intelligence is present in every aspect of our communications systems. Already today we communicate many kinds of information through the use of different devices, ranging from plain ordinary telephones to very smart communicators. As we start the new century, the explosion of intelligence in networks, servers and terminals is dramatically changing the nature of communications.

The conference opened with a few stimulating key note speeches – one of which was provided by our Director, Dr. Claudio Carrelli. There were at least eight project-related papers featuring in the different sessions of the conference and some papers that seemed to be directly derived from EURESCOM Project work. The Intelligence in Networks world got a very good impression of EURESCOM as an active influence on the evolution of networks and services. It was good to see that our work compared very well with the results described by American and Asian presenters.

Traditional rather than futuristic

In terms of innovation, the conference was not as futuristic as might have been expected. Many discussions related to how traditional IN could be used to put intelligence in the Internet and in this field EURESCOM Projects seem to be leading the research.

David Kennedy, EURESCOM

Please visit this website for more information on the conference:

www.adera.fr/icin2000

European R&D for the next Millennium – EURESCOM and the IST Programme

Following up successful European R&D Programmes such as ACTS and many others, the "Information Society Technologies" (IST) Programme will, for the next four years, be the major European ICT related R&D Programme. The IST programme has a total budget of 3.6 billion Euro. The main focus of IST is on

- providing user friendly services and systems to the citizens
- electronic commerce
- application of multimedia (e.g. for education)
- enabling technologies to achieve all this

The IST Programme is part of the European Union Fifth Framework Programme with a total budget of about 15 Billion Euro (see box). The proposals of the second call (with a budget of 400 million Euro) for IST projects are now being evaluated. Projects of the first call with a budget of 800 million Euro have just started or will be started soon.

Can we compare the EURESCOM Programme to the IST Programme?

The IST programme is spread over 4 years. If we compare its budget of 3.6 Billion Euro with the EURESCOM Project budget (roughly 27 Mio Euro per year), the IST budget is about 35 times bigger.

EURESCOM runs about 25 new Projects every year, IST will roughly comprise 2500 Projects over its four year lifetime. Thus, during the lifetime of the IST programme, IST will run about 25 times more Projects than EURESCOM.

Many more companies participate in the IST programme than in EURESCOM Projects. EURESCOM has 24 Shareholders who regularly participate in Projects; in IST probably a total of 1000 to 2000 different companies will participate.

In average the EURESCOM members' participation in EURESCOM Projects is in the same order of magnitude as their participation in IST projects, although the overall IST budget is much bigger than the EURESCOM budget.

In addition IST is also dealing with specific applications (e.g. for car industry, health care, etc.) and supports the development of devices, chips etc. EURESCOM is mainly focusing on telecommunications-related themes; within those themes it takes an operator view. One could say that EURESCOM deals with providing the infrastructure for all the other industries' use of advanced ICT.

Possible synergies for EURESCOM

EURESCOM is closely monitoring the content of the IST Programme and co-ordinating as appropriate. It is very likely that there will be several projects dealing with overlapping issues and there is a high potential for synergy between IST and EURESCOM. And of course, since the number of researchers in the ICT area is limited, we need to avoid performing the same work at two places.

EURESCOM has a good tradition of co-operating with European R&D programmes and therefore we will also fruitfully co-operate with IST.

Peter Stollenmayer, EURESCOM

What is the European Union Fifth Framework Programme?

The 5th Framework Programme is the main R&D programme of the EU for the next three years until 2002, to stimulate European science and technology to improve economic competitiveness and quality of life, and to create jobs. The total budget is about 15 billion Euro. There are five "Thematic Programmes" each containing two to six "Key Actions":

- Quality of life and management of living resources (2.4 billion Euro)
- User friendly information society (3.6 billion Euro) "IST"
- Competitive and sustainable growth (2.7 billion Euro)
- Energy, environment and sustainable development (2.1 billion Euro)
- Energy, environment and sustainable development – EURATOM (1 billion Euro)

And four "Horizontal Programmes":

- International role of community research (0.5 billion Euro)
- Promoting innovation and the participation of SMEs (0.36 billion Euro)
- Improving human research potential and the socio-economic knowledge base (1.3 billion Euro)
- Joint research centre (1 billion Euro)

Latest EURESCOM Publications

To order any of these publications, please send an e-mail to info@eurescom.de

Understanding Real-Time Internet Services
P913 Socrates Project results
booklet, 26 pages
March 2000

EURESCOM Portfolio 2000
Overview of all running
EURESCOM Projects
booklet, 96 pages
March 2000

Achieving Quality in New Multimedia Services
P807 JUPITER II Project results
booklet, 38 pages
March 2000

Supporting of H.323 by IN
Project P916 Project objectives
flyer, 6 pages
February 2000

Community Communication Networks (CCNs)
P801 Project results
CD-ROM
December 1999

EURESCOM

EURESCOM is the European institute for collaborative research and strategic studies in all areas of telecommunications. Currently there are 24 Network Operators from 23 European countries participating as shareholders in EURESCOM.
It acts as a technical forum for sharing visions and concepts, as an initiator of targeted activities, and as a facilitator for common undertakings on technical issues.
EURESCOM is open to any European Network Operator or Service Provider who may wish to join.

European Institute for Research and Strategic Studies in Telecommunications GmbH
Schloss-Wolfsbrunnenweg 35, D-69118 Heidelberg, Germany
Tel: +49 6221 989-0, Fax: +49 6221 989 209
www.eurescom.de