CELTIC N • E • W • S
Telecommunication Solutions

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EDITORIAL

Dear reader,

The year 2009 started, as earlier year, with two major events at Celtic: the start of the next call for project proposals (Call 7) and the annual Celtic Event, which took place from 10 to 12 March in Paris.

In this issue I will provide a summary on both aspects in the following article.

Another important news are the Celtic Awards in gold, silver, and bronze, which were given to the three most successful projects TIGER, MOVIES, and CARLINK, which finished in 2008.

Finally, we give two very interesting Celtic projects the floor to present their work results and expected impact on future business and innovations. These projects are GENESIS and HD-VIPER.

I hope you enjoy reading this issue of the Celtic News, and I invite you to send me comments and suggestions for future issues.

Heinz Brüggemann
Director Celtic Office

Celtic Call 7

Improved process for better projects

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The new 7th Celtic call for proposals has been running from 10 March 2009, and the submission deadline for proposal outlines is 18th May 2009.

Based on the experiences from former calls we have modified and significantly simplified the PO phase of the proposal process. The PO phase for proposal outlines will now only require a very brief description of the project idea, focusing mainly on the expected business impact, the innovation, and the expected results. The PO will no longer be reviewed by the group of experts but by the Celtic core group, who will give for each proposal a "GO" or "NO-GO" decision. This approach reduces significantly the work load for preparing a proposal and full description will now only be needed for the full project proposal (FPP) at the second call phase. This should also help to prepare proposals both for FP7 Call 4 and Celtic Call 7 without to heavy requirements on resources.

Complementarity between Celtic Calls and FP 7 Calls

For the coming FP7 calls, a large number of thoroughly prepared proposals are expected because of the substantial budget of this call. It is therefore obvious and understandable that most researchers will mainly focus on the IST Call and will use much of their resources to prepare a solid and well-defined project proposal. Experiences from the former framework programmes show that the success rates of proposals to be accepted and funded have been rather low. The majority of the work invested in the preparation of failed proposals must be considered as lost, if the proposal was only submitted to that particular IST call. Because of the heavy competition, it is obvious that many of the failed proposals would still be of very good and profound quality, and it would be a pity if those proposals could not be started at all.

To assure that a proposal may have a second possibility to be launched, even if not as an FP7 project, it is advisable to submit a project proposal to FP7 but, in parallel, also a proposal outline to Celtic. As such a proposal outline would not require too much additional effort, this strategy could considerably increase the chances of a proposal. By following this approach the requirements for a two-phase call phase in Celtic can be fulfilled. The project may then still decide to prepare a full proposal for the second phase in case the FP7 call failed and provided the proposal outline received a good review and was invited to submit a full proposal.

Further aspects for consideration if a proposal should be prepared as FP7 or Celtic proposals should be the duration and industrial focus of a project. Especially shorter-term (i.e. between 2 to 3 years), more pre-product development oriented as well as more bottom-up defined projects could be a better target for Celtic than for FP7.

In any case the recommended strategy of preparing the best proposals should be to keep a close focus on assuring the best possible and broadest coverage of work items that are defined in the Strategic Research Agendas of the related technology platforms (NEM, eMobility, NESSI and ISI) and in the Celtic work programme. This could best be done by considering both FP7 and Celtic project calls.

Expected research items in Call 7

As for all previous calls, call 7 proposals shall focus on the technology issues described in the latest version of the Celtic Purple Book (Version 2008-2009), which is covering the following main areas:

- Towards Future Internet
- The new telecommunications scenario
- The new scenario for media and content
- Challenges of mobility
- Ubiquitous services, connectivity and networks
- Service Elements Framework
- Understanding the business landscape
- The satellite component
- Development of the Pan European Laboratory

It is also possible to consider research topics of the Strategic Research Agendas (SRA) from the following European Technology Platforms:

- NEM (Networked and Electronic Media Technology Platform)
- eMobility (Mobile and Wireless
- Communications Technology Platform)
- NESSI (Networked European Software and Services Initiative)
- ISI (Intergral Satcom Initiative)

The detailed descriptions of Purple Book and SRAs are accessible through the Celtic web site (*www.celtic-initaitive.org*).

Future directions in telecommunications and ICT

4th Celtic Event in Paris

Celtic held its fourth annual Event in Paris from 11 to 12 March 2009. Similar to previous years, over 200 high-level people from industry, politics, and research attended the event. The main objective of the event was to present the current status, results and developments of the ongoing Celtic projects

Keynotes on innovation

The Celtic Event was opened by Christophe Ravier from the DGCIS, which is providing the public funding from France. In his talk Mr Ravier stressed that the support for Celtic will continue to remain high, as the French ministry is still very much focusing on national and international initiatives on market-driven reserach, involving in particular small and medium-sized enterprises.

In another keynote speech Olivier Coste, Management Committee Secretary at Alcatel-Lucent, presented his views on the future of the Internet. The rapid evolution of the current Internet is increasingly approaching the limits of the current networks. Very soon, the Internet will have to serve an estimated 5 billion users, including around 50 billion machines sharing high traffic volumes over increasingly complex networks. The network, Mr Coste said, must become an intelligent partner serving seamless connectivity, autonomic networks, agile Mobility Management, security, fraud, privacy, trust features, eco-innovation and battery life issue. The Future Internet may be built on four pillars: Internet by and from people, Internet of content and knowledge, Internet of things, and Internet of services.

José Jimenez, chairman of Celtic

Thierry Bonhomme, Director of R&D, Orange-FT, gave a very interesting overview on the strategic relevance of Open Innovations. He pointed out that the ICT ecosystem is changing significantly: Boundaries are blurring across the value chain, there is a faster innovation in products and services, and by the emergence of global players. Orange has launched an Open Innovation Initiative consisting of a Orange Partner Program to develop the use of Orange's "Dream Orange Program", Innovation-TV and Interacting with user's; Orange Start-up program (invest in start-ups); partnerships with universities; and cooperative projects like the European Framework programs including EUREKA clusters, and French regional clusters.

His speech was followed by a talk of Christophe Diot, Chief Scientist, Thomson, France, on Thomson's vision of the Future Internet. According to him it will be the Internet of content and emotions to carry emotions, to provide access transparency, and an easy content selection. Thomson's three strategic research programs are on Home Networking (Home Gateway at the center of the media experience); Workflow & content access (Automated metadata data insertion and Simplify content manipulation, search, access); 3D & content coding (3D technology (TV, mobile, virtual), High quality audio/video and adaptation to various devices and networks).

After these technical keynote presentations the current EUREKA chairman, Manuel Nunes da Ponte, provided an overview on the Portuguese Chairmanship of EUREKA. Priorities include particularly to focus on increasing EUREKA's public visibility in regard to achieved results and impacts and also on including more countries outside Europe into the EUREKA framework programme.

Panel discussion

At the panel discussion, chaired by David Kennedy, Eurescom, high-level experts form public administration, EU Commission, Spanish ministry, and telecommunications industry discussed the needed technical innovations for the coming year,

which the extended Celtic cluster should cover in the coming years to sustain the European leadership in telecommunications. For the Spanish authorities there will be a priority in 2009 on future of Internet and digital content. Celtic will remain an important instrument and an extension of Celtic-Plus is indeed required.

As Jaoa da Silva from the EU Commission pointed out, the Celtic workprogramme, but also the EU programmes, lack from their ability to clearly demonstrate the impact tat was really achieved by these programmes. The discussion turned around the question which focus will become important for Celtic-Plus including the complementation of coming EU initiatives on the Future Internet. Celtic-Plus may, however, not loose its main advantage of building a strong community among European companies, on being very close to the market needs and allowing, through its bottom-up approach a fast reply on immediate requirements from the industry. What has been missing in the current Celtic workprogramme was a mechanism to better assure future implementation of results and the provision of platform also beyond the life of projects. Panlab was seen as a potentially interesting tool to provide testing means via federated labs and platforms. The input from the discussion and the expressed new ideas will help top construct a new programme which answers better to the coming needs.

Exhibition

In the parallel exhibition, 18 Celtic projects presented their results. Among many very interesting projects some highlights were the demos of 100GET on new and cost-efficient high-speed optical networks that can deliver between 40 to 200 Gb/s over Ethernet based protocols. These solutions are desperately needed to make the requirements of the future Internet happen. Another interesting demos, only to mention a few of them were shown by the project Carlink, showing inter-car communication solutions to prevent and reduce accidents, BOSS, focusing on providing public safety against attacks e.g. at public transportation. HDVIPER provided a very interesting new service opportunity for high-definition video conference systems over IP networks. Also several more telecommunication operations oriented projects, like TRAMMS (providing immediate traffic analysis), TIGER on new emulation platform allowing to test implementations and compare different Ethernet solutions competing for the Metro Ethernet market.

One external project, which is very much related to many Celtic projects, was the demo provided at the Panlab booth. The Panlab concept, which was originally developed by Celtic, was taken further and is now closer to real implementation. Panlab, as a federated network of test labs, is seen as very important cornerstone for the development and enrolment of the future Internet.

Further information about the Celtic event is available on the Celtic website at *www.celtic-initiative.org/Events/Celtic-Event09-Paris/welcome.asp*

Celtic Excellence Awards 2008

Three most successful projects honoured during Celtic Event

After the assessment of the closed projects in 2008 the Celtic Core Group has decided to give the 2008 Celtic Excellence Award to the following projects:

Celtic Excellence Award in Gold:

TIGER (Together IP, GMPLS and Ethernet Reconsidered)

The TIGER results on carrier-grade Ethernet technologies have significant scientific, standard and business importance and impact. These technologies are gaining importance and are expected to play a major role for the design of the Future Internet. The results are expected to help the involved companies to better focus their strategies on this important market segment – the worldwide revenue for business Ethernet services is expected to reach $31 billion by 2012. Furthermore the project had direct impact on several product lines and contributed to the world-wide standardization.
www.celtic-initiative.org/Projects/TIGER

Celtic Excellence Award in Silver:

MOVIES (Mobile Video and Interactive Services)

MOVIES has focused on Mobile TV, which is probably one of the next hot topics for both mobile network operators, broadcast operators and content owners. The project .achieved significant technical innovation in the field of integration of DVB-H mobile broadcasting with return channels through the mobile network. MOVIES provided new interactive mobile services by combining mobile cellular and digital broadcast communication technologies. The project focused especially on the co-operation between DVB-H and wireless networks (UMTS/ GPRS, WiMax).
www.celtic-initiative.org/Projects/MOVIES

Santiago Cáceres (left) from ETRA, Spain, receives the Bronze Award for CARLINK from Celtic chairman José Jimenez (middle) and Celtic Office director Heinz Brüggemann

Celtic Excellence Award in Bronze:

CARLINK (Wireless Traffic Service Platform for Linking Cars)

CARLINK developed an intelligent wireless traffic service platform which improves traffic safety, reduces traffic accidents and provides new types of vehicular services. The project provides uniform and specified solutions for a tailored, hierarchical vehicular communication network for a variety of different end users from simple end devices to integrated vehicle communication centers. The commercial impact of the Carlink platform can boost a variety of new businesses and jobs in the near future.
www.celtic-initiative.org/Projects/CARLINK

The Awards were handed over to the project coordinators during the Celtic Event on 12 March 2009.

GENESIS

Deployment of Next Generation Services

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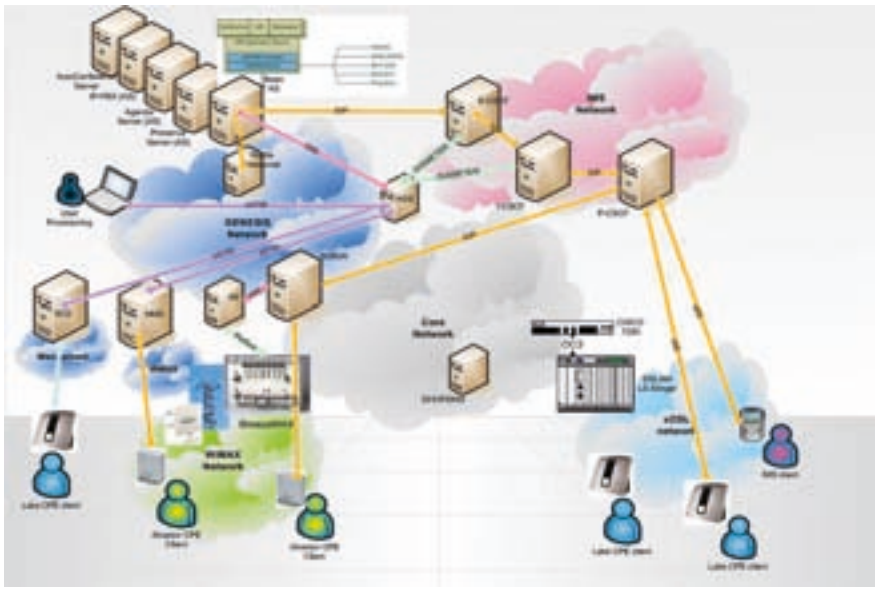
Telecommunications operators are under extreme pressure from flat or declining revenues in their traditional services. To address these challenges, they must cut costs radically, and/or invest heavily in new technology or deploy additional value-added services.

GENESIS architecture

In order to develop and deploy advanced services to corporate users, GENESIS uses the NGN/IMS as a reference. GENESIS has built a global business service, which includes an application and service deployment framework.



GENESIS architecture

The GENESIS project has built a prototype platform that is capable of serving and deploying advanced and integrated voice services over IP (VoIP) and value-added business services for enterprises. The platform has been deployed on an NGN/IMS core network and the customers access all provided services from wired and wireless access networks using NGN xDSL and WiMAX customer premises equipment (CPE).

The figure describes the full GENESIS architecture with three layers: The Access Networks, including xDSL and WiMAX networks, Core Network and Application Layer. Deployments of advanced services are only possible with CPEs compatible with the NGN that use standards such as SIP or Web Services. The platform allows the rapid creation, deployment and testing of new advanced services. The deployed architecture can integrate and manage new services like session control, call management, presence or any other advanced services related to NGN.

A typical example of an advanced service developed in Genesis is a presence-aware AutoConference, which allows users to schedule conferences with other users so that conferences are launched automatically from the network, based on user presence. The service includes a Web based agenda GUI (graphical user interface), which allows the user to select whether the conference should start at a given time or when all participants are available. The user's presence information is collected by the service from a standard IMS presence service. In addition, the services include standard HTTP/REST interfaces for third-party integration. This feature provides access to the services from external applications, including Facebook applications, also developed in the project.

Testbed and demonstrator

The testbed makes possible rigorous, transparent and replicable testing of communication technologies.

The main objective of this testbed is to allow a smooth transition to the real user testbed located in the rural area of Aragón, Spain. To achieve this, the testbed is composed of several parts; one for each access network and another for the core network, with the GENESIS platform overlaid.

A real scenario demonstrator, with real users, has been deployed to evaluate the GENESIS platform. This network infrastructure, deployed on a WiMAX and xDSL scenario, can be divided also into three main parts:

- Access Network composed of BaseStations and CPEs
- Backbone Network – WiMAX network used to connect the BaseStations
- Exchange Nodes to connect the demonstrator to the laboratory test bed and the core and application layers.

Conclusion

The GENESIS project has developed an integrated telecommunications system capable of offering innovative services on a next-generation broadband access network to real users. It demonstrates how VoIP communications services can be offered to users, corporations and SMEs on an advanced infrastructure under a common NGN/IMS. As a future work Genesis has planned to add mobility enablers on top of the service and deployment platform providing ubiquity and convergence of users.

Further information is available on the project Web page at *www.celtic-initiative.org/Projects/GENESIS*

HDVIPER

High Definition Videoconferencing over IP Environment

The HDVIPER project focuses on designing an open and scalable HD video conferencing platform, called Snake. This platform is based on the Service Oriented Architecture (SOA) that will allow users to access HD video conferencing services.

The goal for HDVIPER is to provide basic video conferencing services, such as media plane and control plane services, and extra services, such as network and presence services. These services are designed accordingly to the SOA paradigm and can be easily accessed through defined and unified Web Services interfaces, thus creating a fully open HD video conference platform. The session control mechanism for establishing video conferences is based on the Session Initiation Protocol (SIP), a widely extended protocol in many Voice over IP solutions.

Approach

Nowadays, video conferencing services are becoming more and more popular thanks to the improvement of IP networks and broadband access to the Internet. Network needs (in terms of bandwidth, delay and jitter) required to perform HD video conferences are high and strict, but the "best effort" paradigm applied in Internet (currently used for most of the current SD video conferencing solutions) is not good enough to assure the Quality of Service (QoS) needed by HD system. Therefore, one of the main issues for the HDVIPER project was to create those services needed to provide the high quality HD video conferencing system, attractive for both end users and operators.

Innovative aspect

As stated earlier, the Snake platform is completely based on software and the SOA paradigm. Thanks to this, a variety of different services can be easily

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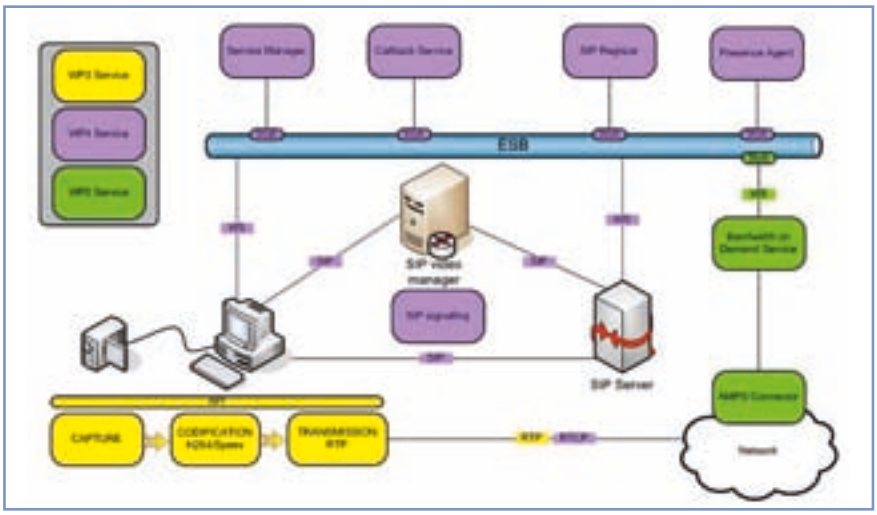
deployed and offered to the end user. In the scope of the project, the use of an Enterprise Service Bus (ESB) helped to create an open platform where the network reservation services and the presence agent service were deployed and made them fully independent, so they can be accessed without knowledge of their underlying implementation.

At the present time, there is no commercial or pre-commercial solution providing this kind of video conference services, including both the middle-ware and the network layer. Moreover, since the platform is open, third-party service providers could offer extra services within the same platform.

Achievements and future steps

At this point of the project, we had been able to confirm the benefits provided for such an open HD video conference platform as the one aimed by the project. Several commercial softphones could establish conferences in various HD and SD resolutions, and moreover they can be easily integrated with the presence and bandwidth reservation services. The major incompatibility found was the difference in the implementation of video codecs used by every manufacturer, especially for the H264 codec which has been chosen as the best solution for most usage scenarios.



HDVIPER platform

We will concentrate our next efforts to complete development of the framework and interoperability tests in different scenarios, such as eHealth in and outside hospitals, eLearning, business and residential scenarios.

Consortium members

The HDVIPER consortium is formed by the following companies: Alcatel-Lucent España (Spain), Androme Ibérica (Spain), Alkit Communications (Sweden), Borderlight (Sweden), Fundació I2CAT (Spain), Karolinska Institutet (Sweden), Poznan Supercomputing and Networking Center (Poland), Royal Institute of Technology-KTH (Sweden), and Telefónica I+D (Spain).

More information about HDVIPER can be found at *www.hdviper.org.*

IMPRINT

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About Celtic

Celtic is a Eureka cluster, which initiates and runs privately and publicly funded R&D projects in the field of telecommunications. The cluster, which runs until 2011, is supported by most of the major European players in communication technologies. Celtic projects are focusing at telecoms networks, applications, and services looking at a complete system approach. The size of the Celtic budget is in the range of 1 billion euro. Celtic is open to any kind of project participants from all Eureka countries..