



Celtic-Plus

Newsletter 2/2018

Outlook 2019: CELTIC-NEXT Cluster starts in January 2019

Events: CELTIC Proposers Day in Madrid

Project Highlights: E3 – Successful business development of e-health services

Start-up Success Stories: A new paradigm in digital asset management



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Dear reader,

The CELTIC-NEXT Cluster was endorsed by the EUREKA High Level Group at the 3rd and final meeting of the Finnish EUREKA Presidency on 20th June 2018 in Helsinki. CELTIC-NEXT will formally start its operations in January 2019. In this issue you will find the most important facts on what is new and what remains, when CELTIC-NEXT will start next year.

Maybe the shortest information of this Newsletter is at the same time the most exciting: Innovate UK has announced that they will fund CELTIC projects in 2019. So if you have good partners from the United Kingdom, please invite them to join you and to participate in CELTIC project proposals.

Start-ups are of critical importance for our research activities. We have asked Steny Solitude from Perfect Memory, a French SME that exists since 2008. It is an SME that has already overcome a number of difficulties in its first 10 years of existence and that generates now more and more business. Steny explains how his company can help to make any data and document actionable for the business. Perfect Memory was created thank to two CELTIC projects. See this and more information in Steny’s Article.

The Project Highlight of this issue is about a very good CELTIC project, the E3 project. You may recall the announcement one year ago on “the first live transmission of awake surgery”. E3 has now ended, and the coordinator, Oscar Chabrera from Vilynx, explains the outcome of this project. Vilynx is a start-up company that was created after a successful CELTIC project. I would like to highlight the impressive achievements and feel proud that we at CELTIC have facilitated their success.

In this issue, you can also read about our Proposers Day in Madrid, which was hosted by CDTI the Spanish funding agency. We had 70 registered participants from eight different countries. Highlights of the day were the keynote on Artificial Intelligence and the panel on successful CELTIC projects showing impressive results such as “The world’s first 100G quantum safe transport over 2,800 km”. The Public Authorities from Spain, Germany and Sweden presented their national funding schemes and 8 project ideas were shown and discussed in the networking session.

In the Celtic-Plus Autumn Call that closed on 15th October, we received four CELTIC project proposals – the evaluation by the Group of Experts, the Public Authorities and the CELTIC Core Group is currently ongoing and the results will be known after the Label Meeting that will take place in Heidelberg in mid-November 2018.

Celtic-Plus is fast evolving towards CELTIC-NEXT and we expect that CELTIC-NEXT will continue to attract our highly innovative community, which is constantly pushing the borders of ICT technology. If you are not yet part of the Celtic-Plus community and would like to join, there are ample opportunities, like, e.g., the online Proposer’s Day on 29 of November 2018. Other Proposers Days for early 2019 will be announced shortly and, of course, the next call for proposal, which ends in April 2019. Feel free to talk to me or any other colleagues at the Celtic-Plus Office – I look forward to hearing from you.

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IMPRINT

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UK to join funders supporting Celtic-Plus projects

In October 2018, the UK announced that it will be supporting Celtic-Plus cluster projects in 2019. Innovate UK, part of UK Research and Innovation, is the UK public authority for granting national funding of Celtic-Plus labelled international projects. Further information will follow in the coming months.

Innovate UK

CELTIC-NEXT Cluster starts in January 2019

CELTIC-NEXT, the successor of Celtic-Plus, will start its operation in January 2019. The EUREKA Cluster dedicated to next-generation telecommunications has a duration of 8 years until December 2026. On 20th June 2018, the CELTIC-NEXT Cluster had received the EUREKA Label in Helsinki, based on a decision by the EUREKA High Level Group.

At the HLR Meeting in Helsinki, CELTIC-NEXT was represented by the two CELTIC Vice Chairs Valery Blavette from Orange and Jari Lehmusvuori from Nokia as well as the CELTIC Office Director, Peter Herrmann.

Foundations of CELTIC-NEXT

The CELTIC-NEXT Core Group is composed of 8 operators, 7 technology providers and 1 research organisation. In 2017 the CELTIC Core Group identified the critical technological and societal issues that need to be addressed in the coming years. These topics are documented in the CELTIC-NEXT White Paper [1] and the CELTIC-NEXT Scope and Research Areas document [2].

CELTIC-NEXT will be based on the core values that have been supporting the Celtic community for 15 years, i.e. a bottom-up industry-driven approach, along with large flagship projects aimed at solving issues of strategic importance through a combined effort and coordinated approach of public authorities and industry.



Peter Herrmann presenting CELTIC-NEXT to the EUREKA High Level Group. On stage (from left) representatives of the Finnish EUREKA Chairmanship team: Kenneth Nyholm, Heikki Uusi Honko (Chairman), and Tom Warras.



Main technological trends

The main technological trends on the critical technological and societal issues that need to be addressed in the coming years are laid down in the CELTIC-NEXT Scope and Research Areas document, which is briefly summarised below.

Networking and Cloud enablers addressing and using technology from such research areas as cyber security, artificial intelligence, 5G and beyond, FinTech, big data, business analytics, and IoT are considered as important orientations to develop. A special focus of CELTIC-NEXT will be on applications and services serving vertical sectors such as content (video, gaming), e-health, smart cities, agriculture, mobility, energy, automotive, e-commerce, and industry/ manufacturing. Those verticals are equally important to advance, along with optimising and improving efficiency and reliability with the best end-to-end connectivity and security. The evolution of ICT services over the next period will be achieved via a partnership model where the vertical sectors collaborate in determining their ICT solutions. This will be a key focus of the CELTIC-NEXT end-to-end perspective.

Another key issue for CELTIC-NEXT will be to develop communications infrastructures and services that can adapt to the requirements of various business sectors. The needs of communications between vehicles are, for example, quite different from the needs for piloting electrical power in buildings and houses. The same applies to the virtual and immersive reality techniques that will become a critical element in the health and media/digital industry in the coming years. There will be many unique challenges behind innovative manufacturing processes that must be supported by one ubiquitous infrastructure. We expect that many of the CELTIC-NEXT projects will define and develop self-adaptable solutions, able to fit the needs of many different sectors and societal challenges. CELTIC-NEXT with its end-to-end approach is key for allowing the development of dedicated applications using the network with all the required features for a given economic sector.



Representatives from vertical sectors will be progressively invited to participate in the CELTIC-NEXT Industry Core Group to ensure the continuous cross-fertilisation of ideas. In parallel, the telecommunications industry shall exploit the full power of cross sectors technologies such as Artificial Intelligence and Big Data, to define and provide customised and smart solutions for the different economic sectors and the whole society.

First CELTIC-NEXT project

The official start date of CELTIC-NEXT will be the 1st of January 2019. The Spring Call will close in April 2019 - the precise date will be decided shortly after the editorial deadline of this newslet-

ter. The label decisions will be known within 6 weeks after submission, and the first project will start in autumn 2019.

References

- [1] CELTIC-NEXT White Paper – <https://bscw.celticplus.eu/pub/bscw.cgi/d26025/CELTIC-NEXT-WhitePaper.pdf>
- [2] CELTIC-NEXT Scope and Research Areas document – <https://bscw.celticplus.eu/pub/bscw.cgi/d27676/Celtic-Next-Scope-and-Research-Area.pdf>

CELTIC Proposers Day in Madrid

On 26th September 2018, CELTIC and CDTI jointly organised a Proposers Day hosted by CDTI in Madrid. The goal was to help boost the participation of Spanish companies in CELTIC Projects. The Proposers Day provided information on funding opportunities and project topics. This time the focus was on Artificial Intelligence.

The Proposers Day was opened by Mrs Ángeles Valbuena, Head of Foreign Technology Action Programmes Department from CDTI, and by Mr Riza Durucasugil, Celtic-Plus Vice-Chair from Netas. They welcomed the 70 participants and explained why progress in the technology field of communications for the digital society is of critical importance for Spain and Europe. The Spanish contribution has an important place in the European activities of CELTIC.

Artificial Intelligence at Telefonica

Dr. Richard Benjamins, Telefónica's Data and AI Ambassador presented how Artificial Intelligence is changing the business of telecom operators. He explained that Telefonica is one of the most digitalised telecom operator in Europe. Artificial Intelligence helps the company to optimise the business internally and improves operations of business with the customers. It allows better predictions of communication behaviour and therefore allows to better meet the needs of their customers.



Dr. Richard Benjamins presenting the keynote speech about Artificial Intelligence



Welcome by Mrs Ángeles Valbuena (right), CDTI, Head of Foreign Technology Action Programmes Department and Riza Durucasugil, Celtic Vice Chair from Netas, Turkey



Audience of the Proposers Day in the meeting room at CDTI

CELTIC-NEXT project framework in Spain, Germany and Sweden

Juana Sanchez from CDTI presented the Spanish involvement in CELTIC projects. Spanish companies are among the most active in Celtic during the period from 2012 to 2018. There is no other country that had more participation in CELTIC projects than Spain. The next speaker from CDTI, Emilio Iglesias, explained the funding mechanisms of Innoglobal Calls and the open calls from CDTI. CELTIC projects that will be submitted to the Celtic autumn call will be eligible to apply to the coming Innoglobal Call that will close on 5th December 2018.

Matthias Kuom from DLR explained the main focus of funding in Germany on new mega trends

and the challenges for applying these trends in the ICT domain. The current main topics are production systems (Industry 4.0), energy systems for the future and social systems able to cope with demographic changes. Influencing and boosting the digital revolution is one of the top priorities of the German government. Lars Gustafsson from VINNOVA introduced the current main challenges in Sweden on Artificial Intelligence, digital security and the investment in competences and education. He explained that the EUREKA Clusters are strategically important for the internationalisation of SME and Swedish industry. He also explained how the process for receiving funding in Sweden works.





Juana Sanchez and Emilio Iglesias explaining CELTIC projects at CDTI



Lars Gustafsson from VINNOVA



Jaime Ruiz from Nokia presented the CELTIC project MONALIS focussing also on Video delivery technology that is the most bandwidth-hungry application. It is targeting QoE assessment and evaluation techniques for adaptive streaming. Jaime underlined that the optimum experience in terms of perception and delivery guarantee happens when the delivered format is the minimum required for a given display.

Oscar Chabrera Villarreal from Vilynx presented a series of very successful SME-led CELTIC projects commercializing e-health solutions. The last, the E3 project, only finished last summer. Very important in this project is that 4 hospitals are directly taking part in this project. Among many results in the course of the project the first live awake brain surgery retransmission at TELECOM Nancy and Nancy University Hospital has been realized thanks to the E3 project.

Project proposal pitches

Another core element of the Proposers Day was the pitching of project ideas. 8 proposers presented their ideas on a wide range of ICT topics. They included autonomous vehicles, traffic monitoring in cities 5G-related technologies, Artificial Intelligence, automotive telecoms, future service platforms, data sovereignty, and tourism services. The presentations led to productive discussions with the audience. Since then, two of these pitch presentations have already turned into project proposals in the CELTIC Autumn Call in October. The evaluation by the CELTIC Experts is currently progressing.

■ Further information

All presentations and project pitches are available at <https://www.celticplus.eu/event/proposers-day-in-madrid-26-september-2018/>



Matthias Kuom from DLR



José Tomás Romero, head of innovation department at AMETIC opened the panel on business impacts of CELTIC projects



Panelists (from left): Bruno Duval from Citypassenger, Antonio Cuadra Sanchez from INDRA, Jaime Ruiz from Nokia, Oscar Chabrera Villarreal from Vilynx, and Reijo Savola from FTT

Panel on business impacts of CELTIC projects

José Tomás Romero from AMETIC opened and guided through the panel session. Bruno Duval from CityPassenger (a France SME) presented the results of the CELTIC projects ODSI and SENDATE-TANDEM both working in the Security domain. The project allowed developing a new security concept “Network-as-a-dongle” that has already been implemented by a manufacturer. CityPassenger highlighted the commercial and technological advantages thanks to participating in these projects.

Reijo Savola from VTT presented the flagship project SENDATE, which is also working in the Security domain. Reijo reported the impressive

result that the world’s first safe 100G quantum transport over 2,800 km has been achieved in a trial of this project. In addition, a new world-record capacity of 400 Gb/s with single-photon-reception has been achieved in this project.

Antonio Cuadra Sanchez from INDRA presented the EUREKA Innovation Award winner, CELTIC project NOTTS – Next generation over-the-top multimedia services. The project was awarded due to its excellence in providing a scalable and robust video streaming solution to deliver adapted media content, with the guaranteed level of quality that customers expect and demand. Antonio explained why he and the projects partners are excited about the Business impacts that the project has generated.

E3 – Successful business development of e-health services



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■ Further information
E3 project page - www.celticplus.eu/project-e3/
or please visit our website:
<https://medvc.eu/>

Celtic-Plus project ‘E-health services Everywhere and for Everybody’ (E3) ended on 30th June 2018. After 42 months of research and development, it will take less than 24 months for the project to reach break-even and pay back the investment made by the partners reaching a ROI of 1.3X. This is due to expected annual recurrent revenue of 2.6 million euro.

E3 designed and implemented an end-to-end platform able to allow everybody access to e-health services everywhere, exploiting and extending the results of Celtic-Plus project HIPERMED and testing the developments in 15 healthcare scenarios (professional to professional, professional to patient and patient to patient) validated by doctors and professors testing the platform results.

The E3 project is a cross-domain SME driven project involving 8 SMEs, 1 Industry firm, and 3 universities. E3 has proved that international cooperation encourage by EUREKA and Celtic-Plus is a must – not only to join the necessary expertise to master the project, but also to ease cross-partner and cross-country exploitation of the project results or even to help other partners exploit the developed solutions.

The international cooperation in E3 has allowed us to get the inputs from the medical system of 5 different countries – Spain, Finland, France, Poland and Turkey. This facilitated tuning the solutions to match the e-health sector needs in a broader scope. In addition, the collaboration with external self-funded potential final users – 6 SMEs and 4 hospitals and medical institutions – has proven to be the right approach for going to market faster, as solutions are tailored to end-user needs.

The E3 project has also fostered the medVC company (see Celtic-Plus Newsletter 1-2018), a Polish spin-off commercializing video assistance

systems for both doctors and hospitals, establishing medVC as a transmission platform for the European Surgery Association and deploying the solution in 15 clinics.

UL (Université de Lorraine) adapted the video encoding to the specificity and constraints of the medical world, both in terms of visual quality of the compressed videos and compression ratio thresholds. UL has developed an original method of data hiding to produce smart videos by carrying more information within a compressed video stream without generating any additional payload in terms of bit rate or degradation in visual perception. A patent is in progress and a start-up company is under construction with the support of Lorraine incubator.

VESTEL, a Turkish manufacturer is fostering Android-based STB, HDTV and mobile phones by offering E3 applications by default as they are easy to use and accessible everywhere where the other partners’ solutions can be sold.

Finnish SME SENIORSOME SENEScreen NO touch User Interface is allowing elderly to use voice to manage the healthcare platform allowing seniors to interact without having to understand how the system works as people voice commands and controls the system.

Spanish SME IDI EIKON medical WebRTC provides low-cost advanced healthcare services, which are currently on sale at both Spanish and Latin-American hospitals.

Institut Mines Télécom has put forward the living lab methodology and the co-design concept. IMT, thanks to E3, was able to increase the expertise and skills of the living lab PROMETEE, especially with the development of a methodology to measure satisfaction of scenarios’ participants.

The face2face solution by Spanish SME CALBOQUER provides health support to over 10 million users.

Turkish SME SoSoft has launched the E3 nurse-patient monitoring system at home, where the patient’s vitals are collected via a wearable bracelet and processed to determine his/her health status (normal or emergent). The system also interacts with the patient verbally in case of anomalies such as unconsciousness.

VITEC, a French medical devices provider, plans to integrate E3 solutions in their hardware and software medical products enhancing product competitiveness.

Finnish SME eHOIVA offers an HR planning and management solution for healthcare professionals, which has improved efficiency in healthcare processes, provided digital signing for patients and ensured accurate healthcare data on patient home visits and shortened invoicing processes as well as allowed activity tracking.

The ViLynx ML technology has been adapted to iOS, Android and Roku TV and deployed for media customers in both US and Europe. This helped ViLynx to be included by Gartner as “Cool Vendors in AI for Media and Entertainment”. The ViLynx AI-powered platform uses unsupervised learning techniques to provide solutions for the creation of automatic trailers, automatic video editing, content generation, semantic search, recommendations, personalization and insight analytics from day one, without the requirements of specific datasets opening a new world of possibilities for taking advantage of eHealth databases.

Dr. Gallet, ENT surgeon at Nancy University Hospital, said: “The E3 project was used to organise an international course between France and Canada. The E3 solution was stable, user-friendly, with a remarkable audio and video quality, despite low speed networks”. He added: “We used the E3 solution to carry out surgical coaching during live surgeries: this tool opens new perspectives in surgical education.”



A new paradigm in digital asset management

Innovative DAM solution by Perfect Memory based on Celtic-Plus results



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Perfect Memory is a French SME which has created an innovative digital asset management (DAM) solution based on results by Celtic-Plus projects MediaMap and MediaMap+. Perfect Memory has designed a semantic micro-services platform called DAM-as-a-Brain to collect and interpret data and make them actionable for business. The platform collects any kind of content from any source, maps it into the organisation's living business vocabulary and provides intuitive and contextualized access to any authorised user.

Organisations need to cope with the increase of internal and external connections between users, data sources and business channels. It increases the volume of data generated by organisations' activities. To be understandable and actionable, this big data must be normalised, refined and exposed to the users through one unique access point. It cannot be done with any DAM that relies on the principle of closed, not IP-compliant, and non-agile database.

Providing the organisation with a DAM that can help to improve the customers' privacy and the business workflow requires building the DAM upon a semantic micro-service architecture where the number of connected services is scalable and the capability of process content in volume is guaranteed.



The DAM-as-a-Brain concept

The DAM-as-a-Brain merges the best of DAM, BPM and semantic processing and machine learning. It provides a business-centric data governance to simplify the user experience and to enable flexible monitoring of business workflows in an open information system.

Google, Apple, Facebook, Amazon and Microsoft (GAFAM) have demonstrated how strategic it can be to let the ecosystem work for one's organisation. The DAM-as-a-Brain implements this paradigm shift; it:

- makes any content and data accessible by the users
- makes the DAM customizable using organisation's business rules
- lets the organisations connect to its ecosystem
- makes the IT as agile as the organisation's data model

As a consequence, it improves the organisation's capability to evolve with the market needs.

Conclusion

Perfect Memory has delivered its DAM-as-a-Brain solution to Broadcasters like RTL, Radio France, and Eurovision Media Services.

Today Perfect Memory is extending its market to retailers and we are at the heart of the project of the French intelligence platform with ATOS as our first integrator.

Perfect Memory's DAM-as-a-Brain is a product to:

- generate new business opportunities
- collaborate seamlessly between business lines and IT
- accelerate workflows matching business needs
- provide dedicated business lines tools to streamline content exploitation
- enrich and offer a more intuitive UX Experience vs. existing systems

DAM-as-a-Brain is the direct result of two ambitious Celtic projects: MediaMap and MediaMap+ Plus which included the following consortium partners: Radio France, RTBF, SGT, Compiègne University of Technology, Limecraft, VRT, Belgavox, Memnon Exalead, and Vitec.

- Further information
Perfect Memory website - www.perfect-memory.com
MediaMap - www.celticplus.eu/project-mediapmap-2/
MediaMap+ - www.celticplus.eu/project-mediapmap/



www.celticplus.eu

About Celtic-Plus

Celtic-Plus is an industry-driven European research initiative to define, perform and finance through public and private funding common research projects in the area of telecommunications, new media, future Internet, and applications & services focusing on a new "Smart Connected World" paradigm. Celtic-Plus is a EUREKA ICT cluster and belongs to the inter-governmental EUREKA network. Celtic-Plus is open to any type of company covering the Celtic-Plus research areas, large industry as well as small companies or universities and research organisations. Even companies outside the EUREKA countries may get some possibilities to join a Celtic-Plus project under certain conditions.