

CELTIC News 1/2019

The newsletter of EUREKA Cluster CELTIC-NEXT

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Dear readers,

As planned, the CELTIC-NEXT Cluster started its operations in January 2019. CELTIC-Next will issue two calls for proposals per year, one in spring and one in autumn. All information related to our calls and projects can be found on the CELTIC-NEXT Web site.

The start of CELTIC-NEXT was synchronous with the take up of the new function of Valérie Blavette, the new Chairperson giving CELTIC a new face. It is seen as a strong point that Valérie comes from a big European operator, Orange in France. Together with the two Vice-Chairpersons, Jari Lehmusvuori from Nokia and Riza Durucasugil from Netas and the entire CELTIC Core Group the European industries are very well represented. In her article on the view of the CELTIC Chair, Valérie explains how CELTIC-NEXT is evolving to support Europe's competitiveness. In March Valérie has also been elected by the EUREKA Clusters as the new inter-Cluster-spokesperson. She will take this additional function for one year, starting in July.

After the decision of Innovate UK in late 2018 to fund CELTIC projects we organised for the first time a CELTIC Proposers Day in the United Kingdom. It took place on 5th February in the prestigious building of Institute of Contemporary Arts in London. The clear goal of the day was to stimulate the UK community to participate in CELTIC projects. Very important for this is that the UK ICT community builds up a close relationship with the existing CELTIC communities from other EU countries. The Proposers Day gave some new insights on recent technological developments, provided information on funding opportunities and showed 12 new project Ideas. You can find more information about this event in the article "CELTIC Proposers Day in London".

Another highlight was the SENDATE Closing Event that took place on 27th March 2019 in Sweden. After three years the CELTIC flagship project SENDATE that targeted "secure networking of data centres in Europe" held its closing event. The 73 million euro project generated numerous new security technologies that resulted in new and improved products and it realised four world records. More than 100 high-level representatives from industry and public funding organisations participated at the event, which was held at Ericsson headquarters in the high tech city of Kista close to

Stockholm.

In this issue, you can also read about EGIS, the EUREKA Global Innovation Summit, which took place in Manchester on 14-16 May. CELTIC and the other six EUREKA Clusters jointly contributed with a large numbers of speakers to the success of this event. A highlight was the handover ceremony of the EUREKA Global Project of the Year Award 2019. Two CELTIC projects were among the 5 finalists for this prestigious price: the CELTIC flagship project SASER and one of the very first projects on SDN (Software Defined Networks), SIGMONA. Finally the EUREKA Global Project of the Year Award 2019 went to CELTIC project SIGMONA - read more about it under Events in the article about EGIS.

Another interesting event is coming soon: The CELTIC Event 2019 will take place in Valencia on 19-20 June, collocated with EuCNC. The programme includes keynote speeches, a panel on successful CELTIC projects, and an exhibition of CELTIC projects.

A brand new information is that the CELTIC Core Group will have two new members. The German companies ADVA and Bosch will strengthen the CELTIC Core Group and will contribute to generating new CELTIC projects.

In this edition of CELTIC News our start up story is a Spanish SME: Raul Herrero, CEO of Smart Health TV Solution, explains how his company achieved better access to telemedicine for the elderly. The company uses the innovative multimedia platform that was developed in CELTIC project E3 to eliminate the digital divide in telemedicine. Please have a look at his article.

Peter Herrmann
Editor-in-chief

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Editor-in-chief:
Peter Herrmann
herrmann@celticplus.eu

Contact:
Celtic Office
c/o Eurescom GmbH
Wieblinger Weg 19
69123 Heidelberg, Germany
Tel: +49 6221 989 381
Fax: +49 6221 989 451
www.celticplus.eu

How CELTIC is changing to support Europe's competitiveness



Valérie Blavette
Orange
blavette@celticnext.eu

The first half of 2019 has seen significant changes at CELTIC, which reflect and support changes in the European ICT industry. First, the name of our EUREKA Cluster changed from Celtic-Plus to CELTIC-NEXT. Second, I took over the function of CELTIC-NEXT chairperson from Jacques Magen, who had done a great job for CELTIC since the Cluster was launched. And third, the scope of CELTIC has expanded.

The composition of the CELTIC-NEXT Core Group and management team shows how important our Cluster is for the European ICT industry. I am coming from a big European network operator, Orange, and the two vice-chairpersons are representing major equipment manufacturers – Jari Lehmusvuori is from Nokia and Risa Durucasugil is from Netaş.

Besides the personnel changes, the domain covered by CELTIC is undergoing dramatic changes, as the ICT domain moves towards a new era of very powerful infrastructures and immersive services that will change the way we live. Therefore many ICT companies and vertical industries are currently considering how they can adapt and accelerate the innovation process to stay competitive. This is where CELTIC-NEXT comes into the picture – the pressure to innovate means that there is an increased need for R&D activities in Europe, which transcends the bounds of the ICT sector.

Accordingly, CELTIC-NEXT will involve actors from the vertical sectors in the CELTIC Core Group who complement the ICT sector representatives. This will result in closer cooperation between telecom players and verticals in areas like smart industry, mobility, and health.

In addition to our Cluster, also EUREKA as a whole is changing. This is most visible from the way Clusters interact with EUREKA and how Clusters work together..

In the inter-Cluster meeting in March, CELTIC-NEXT has been elected to represent the Clusters during the Dutch EUREKA Chairmanship for one year from July 2019. I will assume the role of inter-Cluster chairperson with pleasure in these exciting times. The strengths of the Clusters with their huge industry communities are getting more and more attention in the whole EUREKA network and beyond. I am convinced that EUREKA will make an even stronger contribution to the European research landscape and the competitiveness of European industry in the near future.

New countries participating in CELTIC

Not only the topical scope, but also the regional scope of CELTIC is expanding. While everyone is talking about Brexit, the UK has decided to participate in our activities and fund CELTIC projects. I am optimistic that the first Proposers Day 2019, which took place in London on 5th February, will be the start of a long-lasting cooperation between Innovate UK and CELTIC. In our Spring call, we already got the first project proposals with UK participation. We are also working with the Canadian public authority and Canadian companies to extend cooperation within CELTIC-NEXT projects. A possible collaboration with Japan will be explored soon.

Faster time to market

The time from new ideas to market readiness is getting shorter and shorter. Therefore time-liness is a key factor for a competitive European industry.

In the next year it will be one of the most important duties of CELTIC and the Inter-Cluster group to convince stakeholders to come to more pragmatic and shorter decision processes.

CELTIC is already on a good way when it comes to funding decisions. In countries like Sweden, Luxemburg, Israel, and Spain CELTIC projects get the decision in about three months. We should build on those examples. CELTIC will discuss with its Public Authorities how to enable a quick start of projects across all countries participating in our Cluster.

SENDATE and the success of CELTIC flagships

From the start of CELTIC, its flagship projects have made a strong contribution to innovation in European ICT. Our recent flagship project SENDATE for secure networking of data centres in Europe showed it again in a brilliant way. At its closing event at the Ericsson headquarters in Kista, Sweden on 27th March, the high-level representatives from industry and public funding organisations learned about the impressive impact of the project.

Thanks to SENDATE results, cybercrime, which causes very high costs for enterprises and the whole society, will be reduced. Among many great achievements the project has developed new datacentre technology which has the potential to make European suppliers globally more competitive. SENDATE is also a good example of impactful collaboration between large and small enterprises.

We are already defining our next flagship project. We encourage flagships on topics that are important for a number of countries like AI, green ICT, digital sovereignty, and more.

Please join us, if you would like to take part in those initiatives!

Next CELTIC Event

The CELTIC Event 2019 will be collocated with the European Conference on Networks and Communications (EuCNC) in Valencia on 19–20 June. Please come to Valencia to enjoy an interesting programme of keynote speeches, panel discussions, and proposers sessions. There will be also an exhibition of our most successful projects and the awards of the best CELTIC projects.

Conclusion

As you can see, exciting developments are going on at CELTIC-NEXT, which involve new players from vertical sectors and also new countries.

We look forward to fruitful collaborations on bottom-up subjects as well as on the countries' strategic priorities using our flagship instrument. In all cases we will foster collaboration among the different stakeholders by organising a number of Proposers Days and ad-hoc networking events. I look forward to meeting you there!

CELTIC Proposers Day in London

On 5th February 2019, CELTIC, Innovate UK and KTN jointly organised a Proposers Day in the prestigious building of Institute of Contemporary Arts in London.

After the decision of Innovate UK in late 2018 to fund CELTIC projects, the very clear goal of the day was to stimulate the UK community to participate in CELTIC projects. Very important for this is that the UK ICT community builds up relationships with the existing CELTIC communities in many other EU countries. The Proposers Day gave some new insights on recent technological developments, provided information on funding opportunities and showed 12 new project ideas.

The Proposers Day was opened by Mr Jon Kingsbury from KTN and by Ms Valérie Blavette, CELTIC Chair Person from Orange in France. They welcomed the 70 participants and explained why this decision of Innovate UK to fund CELTIC project was exciting news that is so important for the UK and Europe.

Beyond 5G

Paul Crane, Converged Networks Research Director at BT said that virtualization is a radical change to the way networks are build and he showed his vision on how future developments will change and boost the businesses of his company and the world of communication.

CELTIC-NEXT project framework in UK, Germany and Spain

Jean-Francois Fava Verde from Innovate UK presented the first Call for EUREKA CELTIC projects in the UK: The CELTIC Call for the international proposals was open until 8th of April. It was closely followed by an Innovate UK Call for the national application. The priorities for this Innovate UK Call are on "Innovative 5G infrastructure technologies" and on "Applications and services that leverage 5G networks, as well as 5G features in satellite networks or 5G applications and services integrating satellites". On the 2nd of April Innovate UK organised an additional briefing event to get CELTIC projects funded by Innovate UK.

Matthias Kuom from DLR explained the main focus of funding in Germany and how important it is to actively shape the digital revolution to maximise the benefits for our



Welcome of Mr Jon Kingsbury, KTN from UK and Mrs Valérie Blavette, Celtic Chair Person from Orange in France



Audience of the Proposers Day in the Meeting room in the Institute of Contemporary Arts in London

society. Today, the main researched topics in Germany are production systems (Industry 4.0), energy systems for the future and social systems able to cope with demographic changes.

Juana Sanchez from CDTI presented the Spanish involvement in CELTIC projects. Spanish companies are among the most active in CELTIC. There is no other country that had more participation in CELTIC projects than Spain. She also explained how the application for public funding to the open CDTI Call works in Spain.

Panel on business impacts of CELTIC projects

Richard Foggie from KTN opened and guided through the panel session.

The first panellist, Ian Cooper from BT presented the results of the CELTIC projects 4GBB, HFCC/G.fast and GOLD all developing the G.fast technology that allows G-bit bandwidths over copper. The technology is currently rolled out by BT. Ian highlighted the commercial and technological advantages of this technology that avoids opening roads and gardens (Digging becomes even more expensive when coming closer to the homes).

Valérie Blavette from Orange reported on the high impact of CELTIC projects and she reported two examples: ODSI and SOOREEN. The first, "On Demand Secure Isolation" of a Network segment resulted in 12 new or improved products and allowed to win tenders in Paris, Hong Kong and with the company Bayer. The second SOGREEN attacks the en-



Jean-Francois Fava Verde explains the new funding scheme of CELTIC projects from Innovate UK



Paul Crane from BT presenting the Keynote "Beyond 5G"



Matthias Kuom explains funding of CELTIC projects at DLR



Richard Foggie from KTN opened the panel on business impacts of CELTIC projects



Juana Sanchez explains funding of CELTIC projects at CDTI



Christiane Reinsch from the CELTIC-Office introduces 13 pitch presentations



Peter Herrmann from the CELTIC-Office explained how to submit a CELTIC proposal

ergy consumption of communication networks helping to keep power consumption at an acceptable level, while the traffic doubles every two years.

Steve Clements from the UK start-up company aXenic reported how the 80 million euro CELTIC flagship project SASER that resulted in 55 new or improved products and 3 start-ups, generated a new business outside the initial scope of the project. After quite some struggle the project partners were able to develop a new type of modulators (electronic device that modulates the information on the light beam of the optical fiber) with higher bandwidth and with only half of the volume. It is therefore much lighter and ideal for satellite applications; aXenic took up this challenge successfully and sells today this new type of modulators for space applications.

Steny Solitude from the French start-up Perfect Memory explained how the CELTIC Project MediaMap+ initiated a new paradigm in Digital Asset Management (DAM). This allows translating factual knowledge, using semantic technics into formal knowledge that can be injected in datamining and machine learning systems. Today the technology is used in audio visual productions. Partners are ATOS, Cap Gemini and BPI serving clients in the audio-visual domain such

as RTL-TVI Belgium, Radio France and RTBF. In ten years of existence Perfect Memory has established the technology and has grown to 15 employees.

Marco Mattavelli from EPFL (the Federal University of Lausanne) presented how the CELTIC 4KREPROSIS project integrated technologies for 4K TV content production. The system integrates 4K UHD Wireless Camera Heads and Recording Units for Remote pro-

duction. It further integrates an advertisement insertion system and it is able to selectively protect contents. The full system was used for audio-visual production at the FIFA World Cup 2018 in Moscow where the system successfully covered the whole event. Today there are 10 new products based on 4KREPROSIS technology that are commercialised.



Panellists (from left): Steny Solitude from Perfect Memory (France), Steve Clements from aXenic (UK), Marco Mattavelli from EPFL (Switzerland), Valérie Blavette from Orange (France) and Ian Cooper from BT (UK).

Project proposal pitches

Another core element of the Proposers Day was the pitching of project ideas. 13 proposers presented their ideas on a wide range of ICT topics. They included future 5G vertical aspects, Industry 4.0, Agritechnologies, Autonomous intelligent systems, verification and proof of 5G enabling IoT topics and other cutting edge 5G-related technologies such as Artificial Intelligence and edge computing. The

presentations led to productive discussions with the audience and CELTIC consortium building webinars for the different pitches had been announced to the audience.

> Further information

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

After the pitch presentations the participants had enough time to discuss the project ideas

that had been presented. This possibility has been largely used and appointments were made for follow up telcos that were scheduled in the following week.

Making the Internet more secure – Closing event of CELTIC flagship project SENDATE

On 27th March 2019, SENDATE, the CELTIC flagship project for secure networking of data centres in Europe, held its closing event. More than 100 high-level representatives from industry and public funding organisations participated at the event, which was held at Ericsson HQ, in the high tech city of Kista close to Stockholm.

The participants discussed SENDATE's achievements. The project created a secure, distributed data centre environment, which meets the requirements of industrial communication, autonomous driving, and more. SENDATE helps to limit cybercrime that causes very high costs for enterprises and the whole society. The project has initiated a new datacentre technology which has the potential to make European suppliers globally more competitive.



Mr Magnus Frodigh, Head of Ericsson Research



Ms Valérie Blavette, CELTIC Chairperson from Orange



All the speakers who made the SENDATE Closing Event a success.

The event started with presentations by representatives of ministries and funding agencies from the countries financing SENDATE. After that industry leaders from the consortium presented the achievements of the five SENDATE subprojects. These presentations were complemented by demonstrations of technical results. The event concluded with a panel discussion on SENDATE outcomes and business impacts.

High-level opening speakers

The Event was opened by Mr Magnus Frodigh, Head of Ericsson Research, and Ms Valérie Blavette, CELTIC Chairperson from Orange.



Left: Mr Ole Hitzemann, Officer at BMBF being introduced by, Mr Tor Björn Minde Ericsson, the moderator of the day.



Ms Darja Isaksson

Ms Darja Isaksson, General Director at Vinnova, was the first speaker from the funding agencies. She stated that digital infrastructures may very well be one of the most important areas for human collaboration, as digital infrastructure is now a geopolitical matter and the threat of cyberwarfare is real. She said: "It is fantastic to see even competitors co-creating pre-commercial solutions together and to prove the value of interoperability. SENDATE is an example of not only top class research but also on collaboration that build trust between big and small industry and academia." This has been shown in a common field trial in Stockholm as a joint activity between the two SENDATE subprojects FICUS and SECURE-DCI.

Mr Ole Hitzemann from BMBF stated that SENDATE made the internet more European and contributed to creating a digital world with its own requirements and standards for privacy and data protection. He said: "We can only achieve this goal of digital sovereignty if we do this together." According to Mr Hitzemann, it gives Europe the chance to become a pioneer in privacy and data protection. Furthermore, it offers the opportunity for European ICT providers to create innovations that are data protection friendly and generates a competitive advantage compared to the American and Asian providers. Europe can never be digitally sovereign

without its infrastructure. SENDATE has developed ideas and solutions for the Internet and makes Europe more independent from the rest of the world. Innovations in privacy and data protection will strengthen Europe's competitiveness and create new markets.



Ms Outi Keski-Äijö

Ms Outi Keski-Äijö, Head of AI Business at Business Finland, looked into the future, where 5G, IoT and AI will form a new digital critical infrastructure that is essential for the operations of a modern society and businesses. In this world, security will be the biggest challenge. She proposed that AI should be part of the solution that will make digital networks more secure. This will be achieved by recognizing anomalies in digital networks to better protect privacy.

SENDATE success stories

The event continued with presentations by high-level representatives of the SENDATE project partners, including Nokia, Ericsson, Coriant, ADVA, and Thales. These presentations focused on the five subprojects and the four transversal focus themes.

Ms Julie Byrne, Head of External Programs at Nokia Bell Labs, showed that SENDATE PLANETS achieved the first security architecture that supports different data centres. The project realized 26 demonstrators, 12 new products and an open ecosys-



Ms Julie Byrne

tem based on standardized APIs and open source software. She also explained that SENDATE TANDEM has made data centres more secure with a new integrity monitoring for data centre network elements. It also has realized a new dynamic network interconnection for future data centre network elements.



Mr Tor Björn Minde

Mr Tor Björn Minde from Ericsson showed the latest developments in bringing another level of intelligence into the network which enables to predict its failure before it actually happens. In the future this data-driven modelling in dynamic environments technology will help to avoid failures that are very costly for network operators and the whole society. He said that the project was the ignition of a new data-centre technology

that brings European suppliers back into the competitive data centre business.



Mr Bernd Sommerkorn-Krombholz

Bernd Sommerkorn-Krombholz from Coriant explained how SENDATE FICUS strived for innovative solutions at the technological edge and how the industry-first multi-vendor SDN field trial was carried out with equipment from ADVA, Coriant, Highstreets Technologies and VPIphotonics. These were integrated in the Telia network in Sweden and the field trial allowed testing the new autonomous intelligent functionality of the optical network elements.



Mr Jörg-Peter Elbers

Mr Jörg-Peter Elbers, Vice-President Advanced Technology from ADVA explained the recent developments in a new type of secure data centre interconnect. Among other ground-breaking developments he mentioned the pioneering field trial where ADVA achieved the world-first quantum-safe transport over a 2,800 km fibre network. In another trial Fraunhofer realized a 400 Gb/s super-channel for the connection of data centres with a single diode.

Mr Emmanuel Dotaro (Technical Director, Thales) explained how the work between the subprojects was carried out and explained the main results that were achieved. In a white paper the partners agreed on a high-level security architecture that was shared and agreed among the project partners. This was introduced into the 5G Security Working Group of the 5G Infrastructure As-



Mr Emmanuel Dotaro

sociation. He also mentioned the sustainability of the research work and the impact performed through CELTIC.

Demos

During the break different demos were shown that generated a high level of interest and lively discussions.



Mr Andreas Aurelius

Panel discussion

Andreas Aurelius, ICT Manager at Vinnova at Sweden's innovation agency VINNOVA moderated the panel on the "Outcome and Business Impact of SENDATE". The panel discussed the

project impact on business, the strategy forward and for SMEs the value of collaboration in a large project:

- › Telia has a big scope in the optical business and SENDATE has helped to establish confidence in new technologies that were still far away only one year ago.
- › VTT is very active in cybersecurity and could establish new cooperation's with European SMEs that were quite unknown before the SENDATE project.
- › Airbus implemented the security in critical radio communication systems allowing now fully networked airport services. An aircraft can be considered as a data platform transmitting the relevant data to the different service providers. This allows to increase efficiency.
- › Orange has used machine learning to allow fibre intrusion detection before fibre actually breaks – example: digging incident during civil works. It is very important for the customers that the traffic can be redirected before the failure actually happens. Orange also worked on automatic reconfiguration of the optical connectivity for the interconnection of data centres.
- › SENDATE has enabled the consulting firm ArctosLabs, an SME, to offer network optimisation solutions on how to distribute micro services in the cloud by modelling data-centre cost versus transportations costs.
- › New data centres are installed in the northern part of Sweden. ABB has realised modelling of the cooling of data centres, where an efficiency increase of 10% was achieved.
- › Thanks to SENDATE the people working in the field of data centres in her company RISE have been increased from 3 to 23 Persons.



Panellists at the SENDATE event (from left): Mr Mauro Costa, Head of planning, strategy & architecture at Telia, Sweden; Mr Pertti Raatikainen, Research Manager - Connectivity at VTT, Finland; Mr Hugues Favin Lévêque, Airbus Connectivity Roadmap Owner at Airbus France; Ms Valérie Blavette, Open Innovation Manager at Orange France; Mr Alf Isaksson, Group Research Manager - Control from ABB Sweden; Mr Mats Eriksson, CEO at ArctosLabs Sweden and Ms Jeanette Nilsson, Industry Relations Manager from RISE, Sweden.

EUREKA Global Innovation Summit in Manchester

CELTIC project SIGMONA wins EUREKA Award

This year's EUREKA Global Innovation Summit was hosted by Innovate UK in Manchester under the UK EUREKA Chairmanship on 14 – 16 May 2019. A record number of around 2,000 participants had registered for the event, which took place at the Victoria Warehouse close to the Old Trafford stadium, the home of Manchester United, one of Europe's top football clubs. CELTIC was strongly represented at the event.

CELTIC speakers in inspiring sessions

The motto of the event was 'Innovating across borders for business growth', and the numerous sessions proved that the EUREKA network lives up to this ambitious claim. In a number of these sessions, speakers from CELTIC projects and the CELTIC Core Group shared their insights.

On the first day, CELTIC chairperson Valérie Blavette from Orange was on stage at the EUREKA Academy session, where companies had the opportunity to learn from a panel of EUREKA experts how to apply to different funding opportunities across the EUREKA instruments. Valérie Blavette also participated in a thought-provoking session with the title 'If Industry Designed the Global Innovation Ecosystem'. The panellists discussed how the innovation ecosystem would look different, if it was designed by industry alone.

Also on day one, an interesting session on 'Collaborating with Africa' took place, which provided first-hand information on how companies can collaborate with partners in Africa and how to best access the African market. Jose Costa-Requena from Finnish start-up Cumucore, which participated in CELTIC project SIGMONA and which provides a solution that integrates Network Function Virtualization (NFV) and Software Defined Networking (SDN), shared his business experiences in South Africa.

On day 3, CELTIC Core Group member Riza Durucasugil from Netaş participated in an interesting session on the main stage about 'Benefits of SME and Large Industry Collaboration', in which the panellists offered their advice on where the next opportunities for SME collaboration will come from and the best ways to approach corporate collaboration.

Also on day 3, Milon Gupta, CELTIC Office communication manager at Eurescom, chaired a session on the 'Business Impact of



CELTIC Core Group member Riza Durucasugil from Netaş (second from left) in the session on 'Benefits of SME and Large Industry Collaboration'



SIGMONA project participants and officials at the EUREKA Award ceremony in Manchester (from left): Philippe Vanrie (Head of the EUREKA Secretariat), Juana Sanchez (CDTI), Tim Bestwick (UK EUREKA Chairperson), Jose Costa Requena (Cumucore), Marco Hoffmann (Nokia), Reijo Savola (VTT), Tarik Sahin (Tubitak) and Valérie Blavette (Celtic Chairperson and Orange).

EUREKA Clusters'. Speakers from different Cluster projects presented the impacts they generated and explained how their companies benefitted from these projects. Among the speakers was Stephen Clements, CEO of British SME aXenic, which participated in CELTIC flagship project SASER.

EUREKA Award goes to SIGMONA

On the final day of the EUREKA Summit, CELTIC project SIGMONA received the EUREKA Global Project of the Year 2019 Award. The project had developed an innovative software-defined network (SDN) concept in generalized mobile network architectures, which

has contributed to the development of 5G networks. SIGMONA won the award together with EUROSTARS project Kids4LIFE. Among the five finalists of the award was also CELTIC flagship project SASER, which has made an important contribution to the development of safe and secure European routing.

> Further information

- › EUREKA Global Innovation Summit – <http://egis2019.org>
- › CELTIC project SIGMONA – <https://www.celticnext.eu/project-sigmona/>
- › CELTIC flagship project SASER – <https://www.celticnext.eu/project-saser/>

Innovate UK funding scheme for CELTIC projects



Jean-François Fava-Verde
Innovate UK
jf.favaverde@innovateuk.ukri.org

This article explains how Innovate UK is funding collaborative R&D projects in the context of the CELTIC-NEXT programme.

Innovate UK, the UK's innovation agency

Innovate UK, part of UK Research & Innovation (UKRI), is the UK's innovation agency. Our aim is to drive productivity and economic growth by funding business and research collaborations to accelerate innovation and drive business investment into R&D. Innovate UK helps companies of all sizes in all sectors, from spin-outs and start-ups to companies with the ambition to scale and grow through global markets, access the research, partners, investors and markets they need to innovate and grow. Innovate UK has invested £2.7 billion through 11,000 projects since 2007.

Innovate UK and EUREKA's CELTIC-NEXT Cluster

Innovate UK has allocated £2 million to fund CELTIC-NEXT's collaborative R&D projects in 2019 in order to stimulate the development of 5G and encourage international collaborative environment by helping UK organisations take part in the CELTIC-NEXT programme. To this end, Innovate UK is organising two competitions aligned with CELTIC's spring and autumn calls. These competitions follow a two-stage process: applicants must first submit a CELTIC proposal, before applying to Innovate UK's competition.

How to apply for funding?

All the Innovate UK competitions are published on the gov.uk website (see link at the end of the article). Applying to the Innovate UK's competition is an online application process via our digital Innovation Funding Service (IFS). Ten questions must be answered, and the CELTIC proposal must be appended. The first question, for example, is about the need or the challenge, the second question asks about the approach and the innovation, etc. UK applications are assessed independently from the CELTIC evaluation process. There is at least one briefing event for each competition and attendance is highly recommended. A recorded webcast of these events is also made available.

A consortium within a consortium

We expect collaboration at both UK and EUREKA levels. In other words, there must be a UK consortium, which must be business-led, within a EUREKA consortium. The partner(s) in the UK consortium may be any UK organisation, including businesses, research organisations, public sector organisations or charities. There must also be at least one UK-based micro, small or medium-sized enterprise (SME) in the UK consortium.

Type of projects

The proposed collaborative R&D projects may last up to 24 months and be classified as either industrial research or experimental development, that is, nearer to market. Businesses within the UK consortium may, depending upon the type of project and size of the company, receive a grant of up to 70% of their eligible project costs. Research organisations in the consortium can share up to 30% of the total eligible project costs, funded

Innovate UK

at 80% of full economic costs. All project work from the UK consortium must be carried out in the UK and the results exploited from or in the UK. The competitions are designed to provide state aid funding under article 25, 'Aid for research and development projects', of the General Block Exemption Regulation (GBER). It is the responsibility of the partners to make sure that the organisations are eligible to receive state aid.

Scope of the competition

To be eligible for funding, projects need to align with the scope of the published competition. It should be noted that the scope may vary from competition to competition. For the spring competition, for instance, we are looking for proposals to develop innovative 5G infrastructure technologies that make use of artificial intelligence (AI) in network operation or multi-access edge computing (MEC), and applications and services that use 5G networks to offer new or improved user experiences. We are also looking for 5G applications and services, which can be about the Internet of Things (IoT), the tactile internet, mission critical applications, infotainment mobile services or immersive technologies. The scope is deliberately broad to ensure industry-wide interest and we are looking to fund a portfolio of projects, across a variety of technologies, markets, technological maturities and research categories.

Any question? Email the author or support@innovateuk.ukri.org

> Further information

Innovate UK competitions – <https://apply-for-innovation-funding.service.gov.uk/competition/search> (enter the keyword 'CELTIC' to find CELTIC-NEXT-related competitions)

Better access to telemedicine for the elderly

E3-project-based start-up Smart Health TV Solution provides innovative multimedia platform



Raul Herrero
CEO Smart Health TV Solution s.l.
rherrero@shtvsolution.com



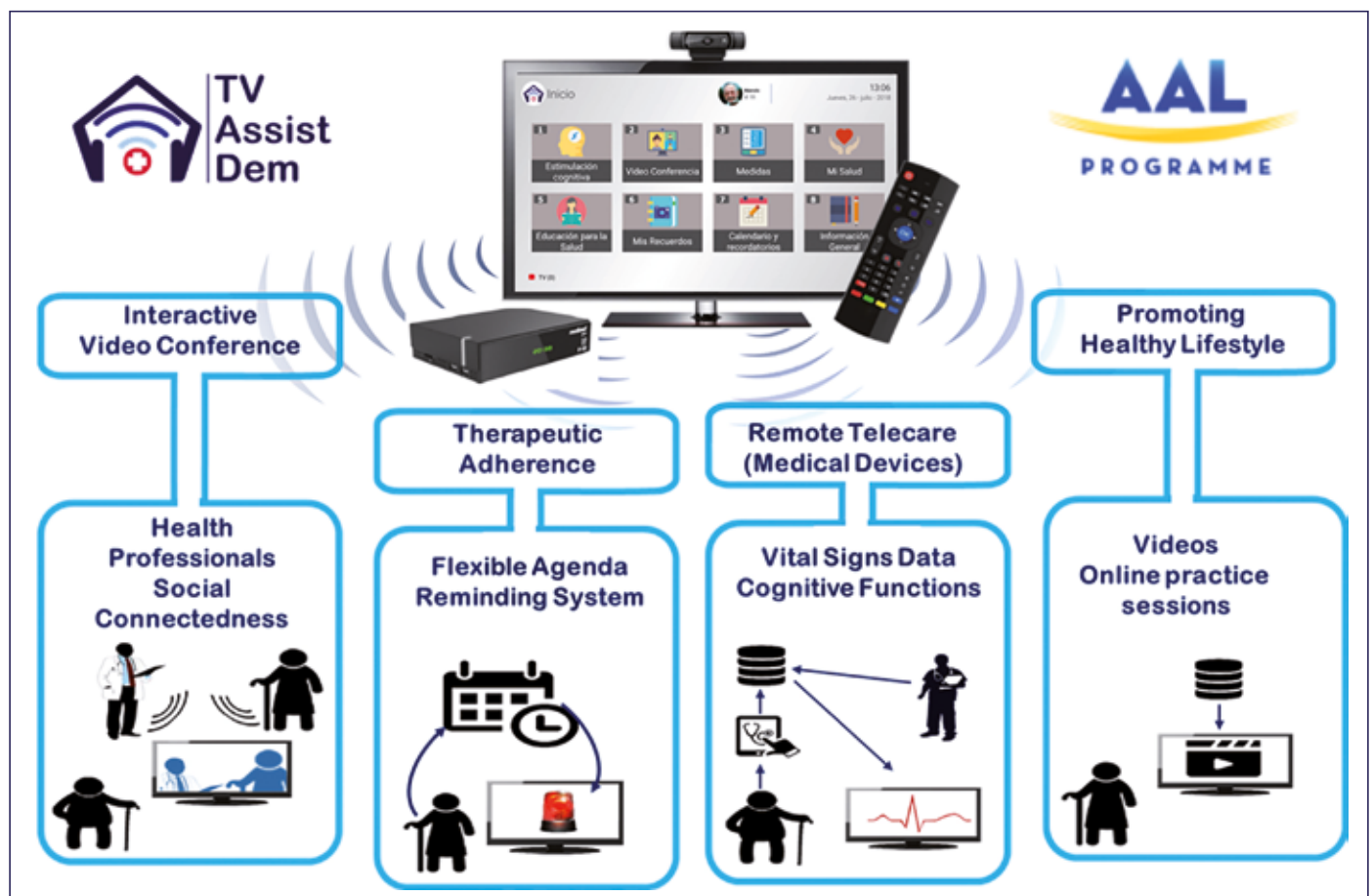
Smart Health TV Solution s.l. is a start-up based in Málaga, Spain which was fostered by Celtic-Plus project E3, 'E-health services Everywhere and for Everybody'. The mission of Smart Health TV is to enable elderly people access telemedicine and telecare services at home using their TV set.

The E3 project ran from 2014 to 2019. It designed and implemented an end-to-end plat-

form which aimed to enable anybody to access e-health services anywhere. As part of the SME-focused cross-domain, international collaboration promoted by the Celtic-Plus project, Smart Health TV designed and developed a solution to eliminate the barriers that keep older people and people with physical, cognitive or intellectual disabilities from accessing modern telecare and telemedicine applications and services. Removing these barriers and giving this segment of the population access to telemedicine and telecare allows social and healthcare institutions or services to improve the quality of life of these people and at the same time that generate significant cost savings for the healthcare sys-

tem. Our platform supports the sustainability of social and healthcare services to the elderly, one of the most important challenges our society is facing in the next decade.

How we do it? We use the home's TV set, a device very familiar and easy to use for our potential users through a simple remote control. The Smart Health TV device, once installed at the end-user's home, transforms the home TV into a Smart TV system designed specifically for telemedicine and telecare services. The Smart Health device is easy to install in the end-user patient home. It is based on Android O.S. and is compatible with different digital TV formats, such as terrestrial, cable, IP, or satellite.





The platform is mainly based on the following applications:

- › Interactive Video Conference: a video communication system between patients and health professionals to foster their communication
- › Therapeutic Adherence Reminders: reminders and alerts to help patients to adhere to their treatment and their medical appointments
- › Remote Telecare: remote transmission of vital signs data (e.g. blood pressure) and stimulation of cognitive functions (e.g. cognitive exercises)
- › Promoting Healthy Lifestyle: video promoting a healthy lifestyle, best practices and health tip videos. Furthermore, the platform promotes a healthy lifestyle of people living with dementia at home through counselling, video-based training, and online practice sessions.

Smart Health TV is working currently in the TV Assistdem project under the Active Assisted Living (AAL) programme. The consortium includes SMEs and institutions from the public healthcare and elderly care sector in Italy, Romania, Spain, and Switzerland.

The aim of the TV-AssistDem project is twofold: to build a TV-based home-care solution for supporting patients with mild cognitive impairment and their carers; and to

carry on a clinical trial for validating both the effectiveness of the solution on the quality of life of patients and their carers and the ability of the system to increase adherence to the treatment. The project is based on three key assumptions:

- › Accessibility: the system can be adapted in such a way that patients with MCI can use it confidently and comfortably. The key to this adaptation is user-centred design, where the patients, their carers and healthcare professionals drive the looks and functionality of the MCI-compatible application.
- › Efficacy: the system improves the quality of life of both patients and their carers. Patients will benefit from improved adherence to their treatment, which will slow down their physical or mental deterioration. Carers will benefit from the system's support in coping with the caregiving burden.
- › Cost effectiveness: the system reduces the costs to the healthcare system associated with care for MCI patients. The main cost savings will be based on reduced complications in mental or physical health (both for patients and carers), which reduces the need for hospitalization, emergency doctors' appointments or short-term formal care (to cover for exhausted informal carers).

Aim of TV-AssistDem is to develop a Digital TV-based platform to facilitate remote support to patients affected by mild cognitive impairment by means of a set of TV-based services.

Conclusion

The project will finish the clinical trial in 2020 and will allow Smart Health TV to complete the Minimal Viable Product developed in E3. Smart Health TV is currently funding its expansion from Spain to both the European and Latin American markets in Q1/2020. Our participation in the E3 project helped us to focus our R&D efforts on the real market and to validate our results with the E3 project partners.

› Further information

- › E3 project www.celticnext.eu/project-e3/
- › Smart Health TV Solution <http://www.shtvsolution.com/>
- › TV Assistdem project <http://www.tvassistdem-aal.eu>
- › AAL programme project <http://www.aa-europe.eu>



About CELTIC-NEXT

CELTIC-NEXT 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 next-generation telecommunications for the digital society. CELTIC-NEXT is a EUREKA ICT cluster and belongs to the inter-governmental EUREKA network. CELTIC-NEXT is open to any type of company covering the CELTIC-NEXT 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-NEXT project under certain conditions.

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