Celtic-Plus
Smart Connected World

Project Information

FU5ION

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Partners:

Adtran GmbH, Germany

BT, United Kingdom

Comsis, France

Lund University, Sweden

Maven Wireless, Sweden

Maxlinear Hispania (Maxlinear), Spain

MIC Nordic AB, Sweden

Nokia Bell NV (Nokia), Belgium

Orange, France

Sckipio Technologies (Sckipio), Israel

Sensative, Sweden

Telenor Sverige AB (Telenor), Sweden

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Project Website

www.celticplus.eu/project-fu5ion

Future 5G service capable access and in-home networks

The aim of FU5ION is to develop a combined access and in-home network architecture that supports fifth generation services. FU5ION focuses on customer service requirements through specification of cost efficient architecture and protocols to support the widespread roll-out of services backhauled over the fixed network.

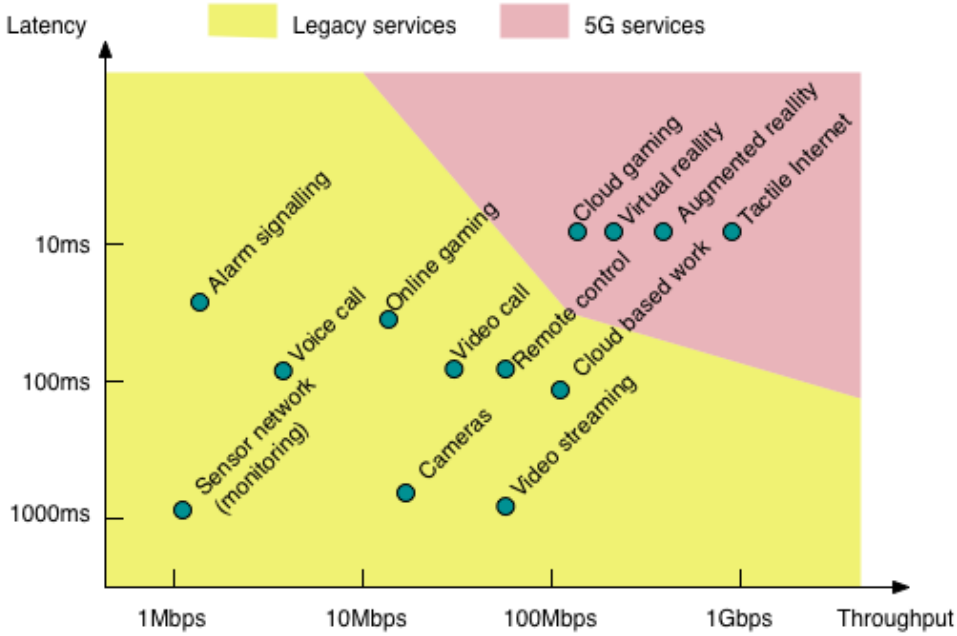
Main focus

In order to prepare the in-home and small enterprise networks for the next generation services, the aim of FU5ION is to develop cost efficient solutions for delivering fifth generation services to user equipment throughout the home, supporting domestic and SOHO (Small Office or Home Office) environments. The services identified for the emerging 5G era will imply new requirements on the networks in terms of connectivity, availability and usability.

The project scope includes exploiting significantly lower cost alternatives to pure FttH which meet the high capacity demands of 5G services and evolving fixed network services, as well as in-door transport and network data management systems to enable full 5G coverage.

Approach

The next generation services will require full connectivity everywhere at all times. A prototype example is provisioning E-health in rural areas; a core activity of one project partner. The project strives for an architecture evolution based on the new user demands and traffic patterns. The overall project goal is to facilitate the required data rates and latency requirements for the next generation service delivery, such as the 5G services. In state-of-the-art networks, both in-home and access, the connectivity is often too poor with unsatisfac-



Estimations of latency and throughput requirements for some important services in a fifth generation home network.

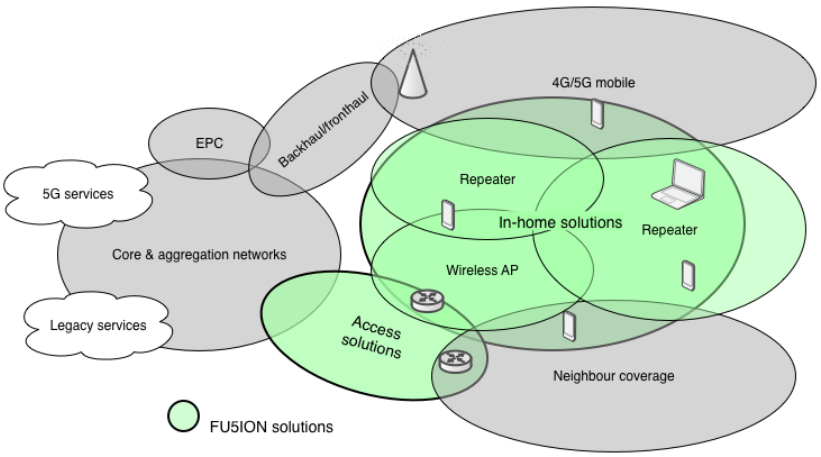
tory coverage, low rates and high latency. This project will converge the access and in-home networks on a service level, making the next generation services accessible in the in-home and SOHO (Small Office Home Office) networks.

Main results

The project aims to create mature protocols and systems that enable the European ecosystem to successfully address the anticipated market for high-speed access and indoor network management. To offer cost effective delivery of 5G services to user equipment throughout the home, a new active infrastructure is required that must be based on standardized technologies in order to be fully accepted by the service provider´s community. In this sense, the project will focus on translating the technical developments of the project into contributions to standardisation bodies with the aim to standardize the developed network scenarios, architectures, and physical media technologies. Important technologies here are e.g. G.mgfast (a new standard: Multi-Gigabit Fast Access to Subscriber Terminals), Wi-Fi and G.hn (a networking technology, operating over all types of in-home wiring (phone line, power line, coaxial cable, and Cat-5 cable)).

Impact

Broadband access, in-home communication and Wi-Fi are three separate technologies that must be brought under the management of the operator so that the users' services can work flawlessly. This new system should be capable of carrying 5G-services. Standardization is required and parts of that have started. The aim of the FU5ION project is to drive these processes.



Visualization of the parts addressed in the project (in green).

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 intergovernmental 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.

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