

# Health5G

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## Partners:

### Germany:

Technical University Berlin  
Charité Universitätsmedizin Berlin  
Fraunhofer Institut für Integrierte Schaltungen,  
highstreet technologies  
Inova DE GmbH

### Ireland:

RedZinc

### Korea:

Hankuk University of Foreign Studies  
Insung Information  
Kookmin University  
LifeSemantics Corp

### Spain:

Experis IT  
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### Sweden:

Accellrate Mobile Infrastructure AB  
Alkit Communications AB  
Alten Sverige AB  
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CCR-V  
Mälardalen University  
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## Project Websites:

[www.celticnext.eu/project-health5g](http://www.celticnext.eu/project-health5g)  
<http://health5g.eu>

## Future eHealth powered by 5G

The main goal of Health5G is to devise and demonstrate health related use cases that bank on the benefits proposed by 5G.

### Main focus

Health5G aims to translate some of the unique 5G features such as eMBB (Enhanced Mobile Broadband), URLLC (Ultra Reliable Low Latency Communications) or mMTC (Massive Machine Type Communications) to concrete benefits in health applications.

Through a holistic approach spanning the steps of "Research → Innovate → Validate", we target applications in three specific types of environment, namely ①Hospital, ②Home & ③Emergency.

### Approach

While the traditional approach is based on treating an inpatient or an outpatient at a hospital, societal & medical & technologi-

cal drivers are causing a shift towards extended home care for the patients. Technological developments and ageing populations are enabling the elderly and the vulnerable to be taken care of not at specific locations only, but also at the comfort of their homes. In Health5G, we try to address this set of scenarios under what we call the 'Home' scenario.

Advancements in sensing, connectivity and AI also lead to improvements in existing hospital-based patient treatments, resulting in more accurate, personalised and trackable treatments for patients. Here, Health5G is working on a number of interesting 'Hospital' use case scenarios.

Furthermore, the ubiquitous connectivity and improved sensing & AI technologies are used in emergency scenarios to improve impacts of first aid and reduce fatality. The results are studied in Health5G under a number of 'Emergency' use case scenarios.

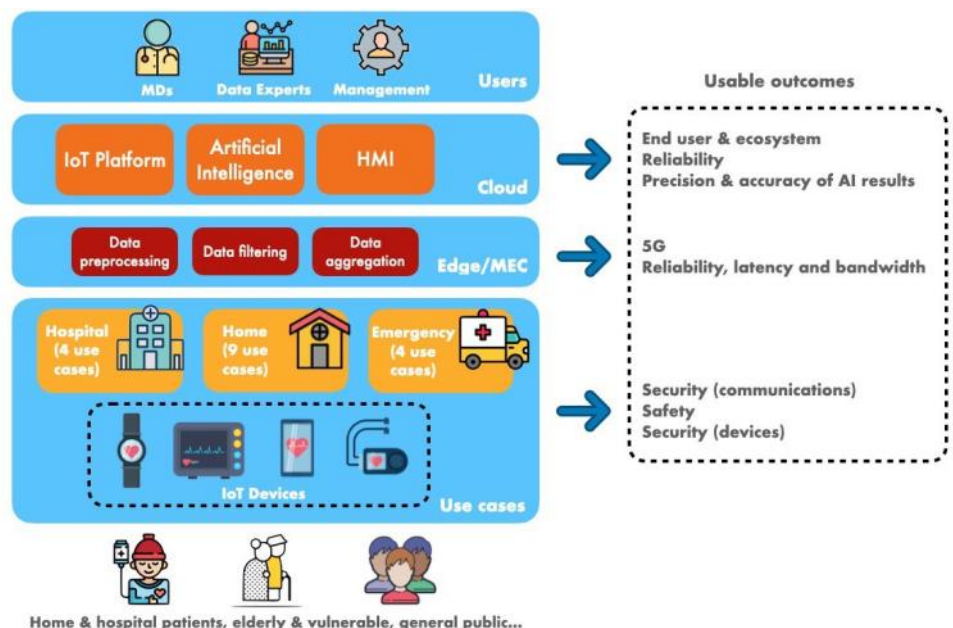


Illustration of the Health5G Conceptual Architecture

## Main results

The above-mentioned use case scenarios are studied, and developments are carried out in both the health and the connectivity domains, enabling new possibilities thanks to the 5G technology, such as:

- ◆ Remote assistance, treatment and monitoring with 5G
- ◆ Better monitoring and improved treatment with AI
- ◆ Increased personal wellbeing and safety
- ◆ Reduced strain on hospital infrastructure

The results are tested, validated and demonstrated in operational pilots that come under Hospital, Home or Emergency Scenarios.

There are key elements that characterise the three scenario groups as follows:

**(1) Hospital:** Hospital management system integration flexibility, indoor 5G capacity planning and 5G network slicing are of higher importance at hospital setups.

**(2) Home:** data privacy & security, simplicity for end user, battery life and 5G network slicing are prominent features in home scenarios.

**(3) Emergency:** location and context awareness, reliable 5G connectivity are the key factors that drive this group.

## Impact

The consortium brings together the competences in 5G network technologies, healthcare providers and professionals, health product and solution providers, ML & AI solution providers, security solution providers; hence, efficiently filling in the gap from technology to end users' needs.

The consortium contains large enterprises, SMEs and academic partners in a balanced fashion, which guarantees the transfer of technical background and theoretical expertise, together with a strong business impact, in a flexible and fast manner into innovative products and services related to 5G enabled health services.

## 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.

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