Project Information

AICOM4HEALTH
AI-powered communication for Health

Acronym

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Closure date: 31 May 2025

Partners:

Bewell Technology Industry & Trade Inc. , Turkey
ETIYA, Turkey
Luda Partners S.A., Spain
NETAS Telecommunications A.S., Turkey
NETCHECK S.A., Spain
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Project Website

www.celticnext.eu/project-aicom4health

AI-Powered Communication for Health Crisis Management

The project aims to provide much better healthcare access, through enhanced remote monitoring, by using an AI based platform, integrated with 5G and beyond technologies. As a result, AICom4Health will improve the public daily life by having healthier citizens in smart cities.

Main focus

We are shifting rapidly from a traditional healthcare infrastructure to digitized health market. AICom4Health will solve the problem of the lack of a complete and comprehensive, AI based health monitoring solution that relies also on fast and reliable communication.

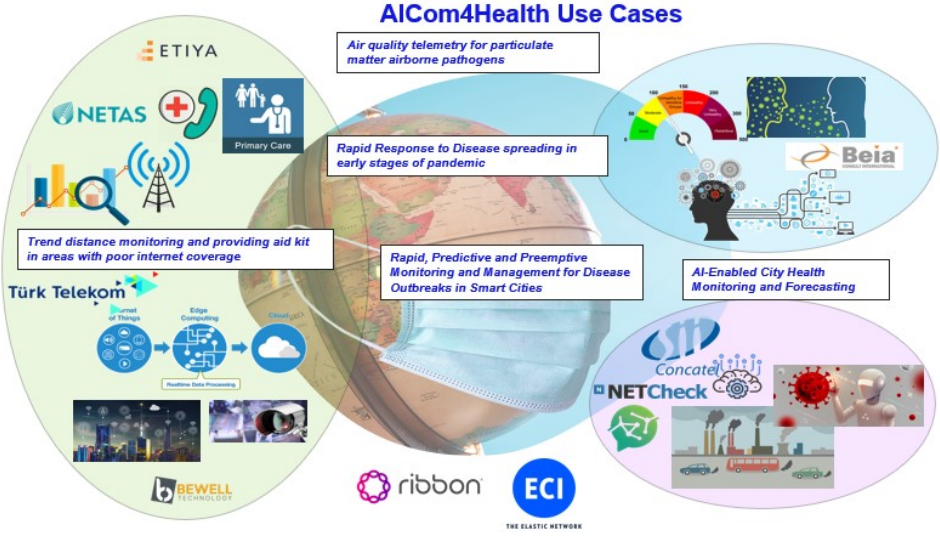
The AICom4Health project will provide a sophisticated infrastructure for advanced services and applications for healthier citizens in smart cities with highly promising secure and private connectivity.

AICom4Health project will provide continuous monitoring of individuals and crowds through multivariate analysis, fast response, and action to health deterioration of individuals or health threats within a crowd. It will also deal with big data collection from multiple measurements from surveillance cameras, together with air quality monitoring capabilities. This will require real-time, fast and intelligent data processing techniques, while providing highly reliable communication through network slicing with the support of the European Data Protection (GDPR).

Approach

The AICom4Health project will combine expertise from various industry disciplines (IoT, Communications, AI and Data analysis), all collaborating to provide a breakthrough solution to address the health crisis use cases, based on:

- A new approach for enhanced GDPR compliant, privacy-friendly AI, decentralized AI and federated learning.
- Providing new AI models through machine learning, deep learning and NLP techniques for smart healthy cities, while processing secured, highly accurate, almost real-time data from different domains.
- Using new tools and interfaces for all the key actors (citizens, regulators, health experts, companies), with the latest advances in XAI (explainable AI) and knowledge graphs, targeting an AI-based Collective Intelligence framework.



- Providing application based dynamic slicing manager and orchestrator, as no uniform definition exists now, neither APIs definition that covers all aspects of network slicing.
- Researching solutions for advanced 5G and beyond 5G use cases that require multiple slicing. This will be done by using the latest cloud native architecture with abstract data modelling to become an optimal way to meet the slice characteristics.
- Integration of data communication protocols with data processing techniques to enhance end-to-end network performance. The AICom4Health platform will enable real-time data processing and data analytics within the standard IoT and 5G protocols, to enhance real-time data communication and network reliability. Using Edge computing as a technology enabler that provides architectural capacity to design and develop such services. It is a key element in future critical applications that require real-time communication while collecting massive amounts of information.

Main results

- Services Managing Health Crisis, based on capabilities that are needed, but cannot be achieved without the novel characteristics of 5G and beyond.
- Privacy-friendly Collective Intelligence Framework for AI-Enabled City Health Monitoring and Forecasting.
- New business opportunities for companies, who will be able to utilize the technologies mentioned above to offer their clients new products and services.
- Effective utilization of 5G and beyond generations' capabilities.
- Scientific contributions, by publishing and sharing the gained knowledge about the use of those technologies for Health Crisis management.
- Evaluations through simulations and real-world experiments.

Impact

The convergence between fast and reliable wireless communication technologies, AI techniques and healthcare devices is creating new thriving business opportunities in a growing market. AICOM-4HEALTH will redesign the delivery of care, based on AI technologies, new secure, privacy-protecting data retrieval and processing techniques, and relying on new 5G -and beyond- capabilities for indoor and outdoor monitoring of patients and elderly people. It will offer predictions and information of high added value to all stakeholders: patients, citizens, healthcare professionals, managers... It will boost the efficiency of public healthcare services, and will provide a key reference for the design and implementation of systems focused on the eHealth sector, combining R&D results relying on AI, IoT, privacy, security and communication technologies beyond the state of the art.

About CELTIC-NEXT

CELTIC-NEXT is the EUREKA Cluster for next-generation communications enabling the digital society. CELTIC-NEXT stimulates and orchestrates international collaborative projects in the Information and Communications Technology (ICT) domain.

The CELTIC-NEXT programme includes a wide scope of ICT topics based on new high-performance communications networks supporting data-rich applications and advanced services, both in the ICT sector and across all vertical sectors.

CELTIC-NEXT is an industry-driven initiative, involving all the major ICT industry players as well as many SMEs, service providers, and research institutions. The CELTIC-NEXT activities are open to all organisations that share the CELTIC-NEXT vision of an inclusive digital society and are willing to collaborate to their own benefit, aligned with their national priorities, to advance the development and uptake of advanced ICT solutions.

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