

IMMINENCE

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Project ID: CE-2020-2-2
 Start Date: 1 June 2021
 Closure date: 29 February 2024

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Project Websites

www.celticnext.eu/project-imminence

www.imminence.eu

Intelligent Management of next generation Mobile Networks and services

The aim of the project has been to develop intelligent network management and control functions techniques for future mobile networks autonomous management and intelligent business analytics functionalities. For this purpose, the project conceives 5G based use cases and scenarios, which are exploited by the IMMINENCE ecosystem.

Main focus

The next generation networks allow the development of new use cases for the vertical sectors, such as Industry 4.0, Automotive, Utilities, Entertainment, etc. The implementation of these use cases rely on the underlying technology: New mechanisms for future mobile networks and Intelligent network management solutions. The use cases must also be exploited in an analytical way from business and network perspective, so an Intelligent Business Analytics Platform is required.

The main focus of IMMINENCE has been to develop intelligent network management and control functions techniques:

- ◆ Intelligent business analytics capabilities: Development of a business intelli-

gence analytics platform for exploiting 5G Use Cases

- ◆ Intelligent network management: Implementation of management and monitoring capabilities to manage 5G Use Cases
- ◆ New mechanics for future mobile networks: Related to the enhanced network technology to support innovative 5G Use Cases

Besides, we have implemented a series of cases grouped by scenarios, as depicted in the following figure.

Approach

Nowadays, the industry requires solutions to the current and future analytical needs that are distinctive of the digital age. The data analytics use cases that are being promoted revolve around customer knowledge, paying attention to the relationship with the user and their experience, with a tendency to offer hyper-personalisation, minimising churn, or the use of AI for business development.

On the other hand, Intelligent Analytics can be designed as an accelerator of busi-

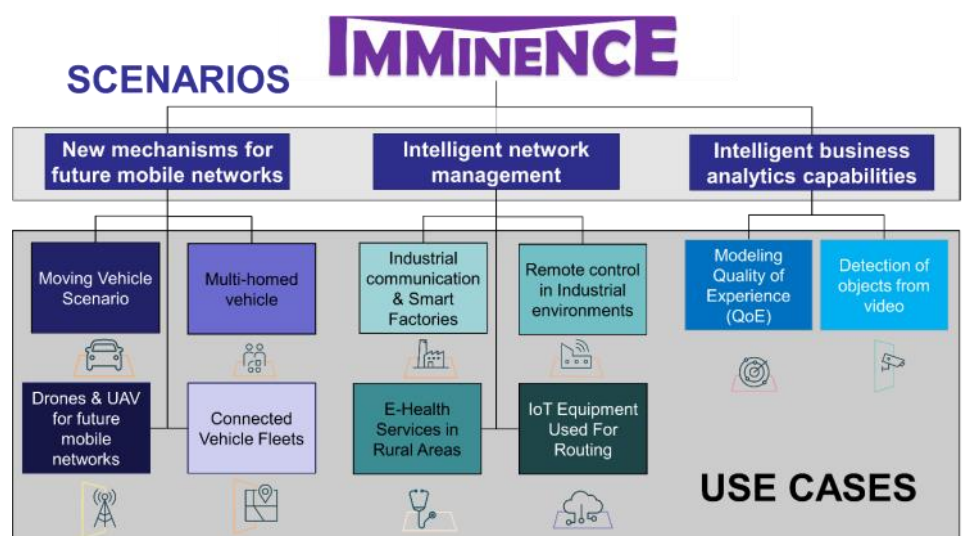


Figure: IMMINENCE 5G Use Cases

ness use cases to act on key indicators of the next generation network management. In this way, advanced analytical solutions capable of streamlining decision-making and optimising business management are needed to define a vision around the data capable of generating tangible impact on the industry strategy in the short/medium term.

The IMMENCE ecosystem addresses these challenges with a series of techniques and tools that comprise Intelligent business analytics capabilities; Intelligent network management, including control functions techniques, such as self-configuration networks and application aware networks; and AI mechanisms for autonomous and adaptive management of the future mobile networks.

Achieved results

In this project, the different partners have successfully contributed to the aforementioned technological areas based on their research activities and expertise in terms of a series of functionalities that have been developed in specific elements under the IMMENCE Ecosystem. The technological transfer from technology level to business level has been carried out by means of specific IMMENCE commercial modules of the ecosystem, which works together to complete all the functionalities taking as basis the architecture that developed in this project. During the final review of this project, we show how the different prototypes of the modules work together under an integrated pro-

totype. The common exploitation plan, which is based on the IMMENCE commercial modules, is adaptable to the target markets and customers: the architecture defined in this project will allow the interoperability among modules to fulfil the specific requirements of one potential customer, that will decide -based on our advisory- which modules of the architecture will serve to their purpose. In addition, the results of IMMENCE have been brought to the standardization arena (VQEG/ITU, CEN - European Committee for Standardization- and O-RAN) and have been published in 20 journals and 30 international conferences.

Impact

The different technologies developed in project (Intelligent business analytics capabilities, Intelligent network management and new mechanisms for future mobile networks) as well as the industrial and economic development that will emerge around them, can enable Europe to lead the technological leadership in these areas. In addition, there is a very strong focus on the vertical industries (manufacturing, utilities, transport, etc.) in IMMENCE, since they are the real beneficiaries of the use cases that have been implemented thanks to the technology developed in this project. The impact of IMMENCE comprises different new and improved products as well as 67 dissemination activities have been carried out: 50 papers in scientific journals and conferences, three contributions to standards, eight Master theses, one PhD theses; and five other

exhibitions, dissemination events and activities.

Public Authorities

This project has been co-funded by the Centro para el Desarrollo Tecnológico Industrial (Centre for the Development of Industrial Technology) in Spain, by Vinnova in Sweden, by Portugal 2020 in Portugal, by Narodowe Centrum Badań i Rozwoju in Poland and by Tübitak in Turkey.



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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