

IMMINENCE

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Partners:

Alkit Communications, Sweden
Amper Sistemas SA, Spain
Ericsson AB, Sweden
Epiroc AB, Sweden
Instituto de Telecomunicações, Portugal
Indra Soluciones Tecnologías de la Información, S.L., Spain
Karel Elektronik San. ve Tic. A.S., Turkey
Lund University, Sweden
NETAS Telecommunications A.S., Turkey
Nokia Bell Labs, Spain
Orange Polska, Poland
RISE Research Institutes of Sweden AB, Sweden
Systemics-PAB, Poland
Telia Sverige AB, Sweden
Turkcell Teknoloji, Turkey
University of Cantabria, Spain
University of La Laguna, Spain
Volvo CE AB, Sweden
Warsaw University of Technology, Poland
Wavcom, Portugal

Co-ordinator:

Antonio Cuadra

Minsait—An Indra Company

E-Mail: acuadra@minsait.com

Project Website

www.celticnext.eu/project-imminence

Intelligent Management of next generation Mobile Networks and services

The aim of the project is to develop intelligent network management and control functions techniques, such as Artificial Intelligence (AI) mechanisms for future mobile networks autonomous management and intelligent business analytics functionalities. For this purpose, IMMINENCE conceives 5G based use cases and scenarios, which are exploited by the corresponding ecosystem.

Main focus

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

- ◆ New mechanisms for future mobile networks: Application Aware Networks, Self-configuration Networks
- ◆ Intelligent network management: Adaptive Management, Autonomous Management
- ◆ Intelligent business analytics capabilities: Advanced Business Intelligence, Data Analytics open platform

In addition, we propose specific use cases to be implemented in IMMINENCE:

- ◆ Autonomous Mobile Network Management and Moving Vehicle Scenario

- ◆ Drones & UAV for future mobile networks in Emergency situations
- ◆ Factory 4.0: Industrial Communications and Smart Factories and Remote control in Industrial environments
- ◆ E-Health Services in Rural Areas
- ◆ Network Management, Alarm and Monitoring based on business analytics in new scenarios. Modelling Quality of Experience (QoE) and detection of objects from video

The below figure summarises the ecosystem that we are developing in IMMINENCE in order to manage the intelligent network management and control functions.

Approach

Nowadays, the industry requires solutions to the current and future analytical needs that are distinctive of the digital age. The AI 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

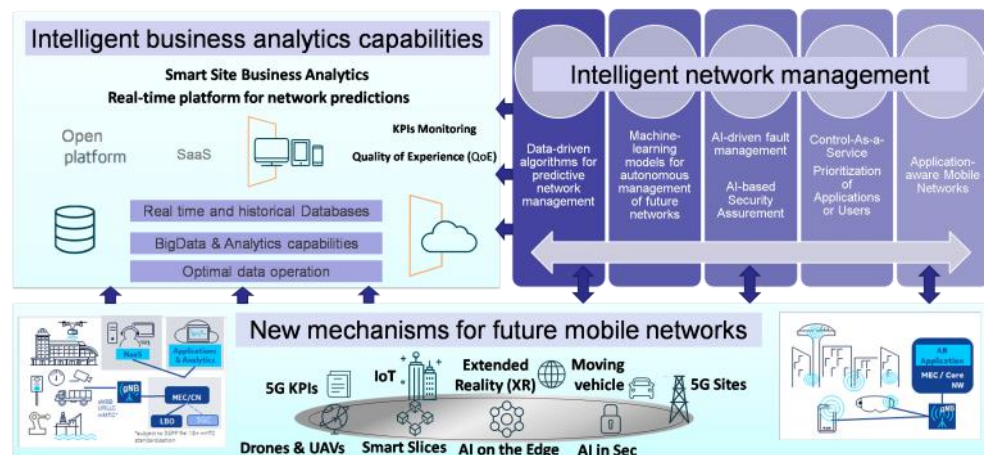


Figure 1: IMMINENCE ecosystem

can be designed as an accelerator of business 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 IMMINENCE 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.

Main results

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

prototype. The common exploitation plan, which is based on the IMMINENCE 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, which will decide -based on our advisory- which modules of the architecture will serve to their purpose.

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 IMMINENCE, since they are the real beneficiaries of the use cases that will be implemented thanks to the technology developed in this project.

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.



TÜBİTAK

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.

CELTIC Office

c/o Eurescom, Wieblinger Weg 19/4
69123 Heidelberg, Germany
Phone: +49 6221 989 0
E-mail: office@celticnext.eu
www.celticnext.eu

