PARTNERS

EVOLVED-5G consortium brings together 21 partners, i.e., 3 research and academic institutions, 11 SMEs, 6 industrial partners, and 1 entrepreneurship accelerator, from 11 countries. The project is leaded by Telefónica I+D

INFORMATION AND CONTACT

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Call: H2020-ICT-2018-2020
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evolved 5G

Experimentation and Validation Openness for Long-term evolution of Vertical industries in 5G era and beyond
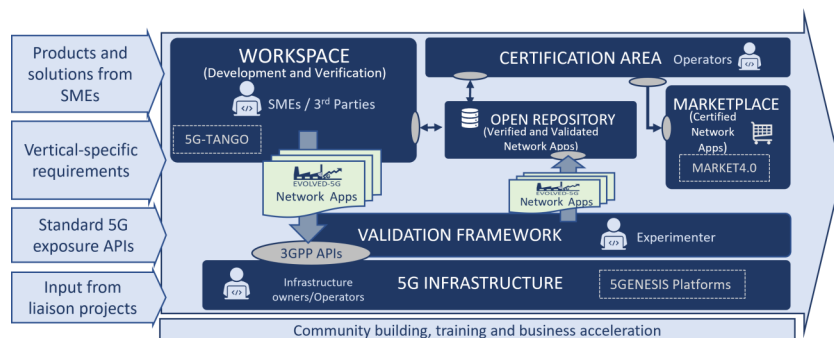
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MOTIVATION

The intense research work on 5G experimentation in Europe has reached the point where the evolved 5G capabilities, provided through the Service-Based Architecture (SBA), are to be exploited by third party innovators. Key enabler for this openness is the realization of network programmability through standard APIs. An endeavor that is expected to shape a new and dynamic ecosystem in mobile networks from both the technology and marketing perspectives. Indeed, SBA allows the exposure of network services and capabilities through the Network Exposure Function, a border function of the 5G core network. Already, 3GPP has specified the procedures and the information flows for a common API framework to address applicability, duplication and inconsistency aspects of the 5G northbound service APIs.

In this context, vertical industries will be able to develop Network Applications (Network Apps), i.e., to compose services by consuming 3GPP APIs as well as other telco assets. For example, a Network App could consume APIs that provide monitoring events and network slice configuration analysis to compose a service that guarantees quality of experience for latency-sensitive applications.

EVOLVED-5G embraces the potential of the emerging Network App ecosystem under a twofold scope:

- Build an open experimentation facility for Network App creation, validation, and certification, and

- Provide the means and the tools for long-term evolution of 5G-enabled vertical industries.

EVOLVED-5G will focus on Factory of the Future (FoF) applications, validated in 5G pilot sites to showcase the developed Network Apps. The project shall also release a portable set up for on-site (real factories) demonstrations.

Abstract representation of the EVOLVED-5G approach

PILOT 5G SITES

EVOLVED-5G proposal is built on top of two 5G-PPP ICT-17 experimentation infrastructures in **Athens** and **Malaga**, which have been developed in the framework of 5GENESIS Project. Both facilities are composed of distributed components and are equipped with 3GPP-R15 5G-NR infrastructure in bundle with a set of automation tools to support the experimentation by vertical users across multiple domains.

- **The Athens platform** will be implemented on the Athens.5Glink (www.athens5glink.eu) testbed. The testbed is going to be extended to offer the telecommunication ecosystem an E2E experimental 5G platform, showcasing features of next generation networks, with particular focus on software network technologies (NFV/SDN) and edge computing for small cell infrastructures.

- **The Malaga platform** aims the validation of selected 5G KPIs in indoor and outdoor 5G scenarios. The platform integrates 5G with other access technologies (4G, WiFi, fiber, etc.) with great automation capabilities to execute experiments both unattended and with real users.

NETWORK APPS & FACTORY OF FUTURE APPS

EVOLVED-5G framework is expected to lead to solutions in the following areas:

Mixed Reality assisted manufacturing	Intent-driven chatbots for precise maintenance
Haptic-driven console for industrial Surface repairing	IoT/M2M-based remote monitoring platform
AI-based video analyzer for industrial and robotics	ML-driven anomaly detection system for industrial processes
Blockchain data brokerage engine	Security information and event management system
AI-drive humanoid robot	L7-aware whitebox switch with dynamic SFC & TSN
AI-driven logistics robotic fleets	Smart irrigation system