



EVOLVED-5G

NEWSLETTER #1

(January-March 2021)



evolved-5g.eu

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ISSUE HIGHLIGHTS

The first issue of EVOLVED-5G Newsletter presents the project activities during the first period January-March 2021. This specific issue focuses on the initial communication and dissemination activities, the project deliverables, and the virtual kick-off meeting, while it also provides an overview of the project along with its pilots, NetApps and Consortium members.

In numbers, the EVOLVED-5G activities are:

- 1 Presentation
- 1 Interview
- 1 Article
- 2 Press Releases
- 3 5G-PPP Activities
- 2 Period Deliverables
- 1 Upcoming Deliverable



Project Overview

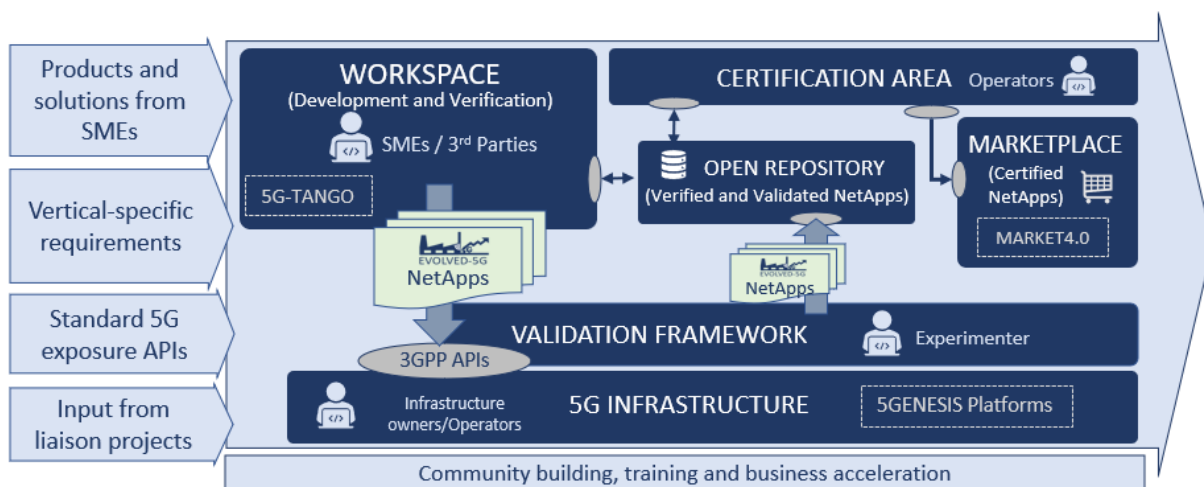
The intense research work on 5G experimentation in Europe has reached the point where the evolved 5G capabilities, provided through the Service-Based Architecture (SBA), are to be exploited by third party innovators. Key enabler for this openness is the realization of network programmability through 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 NetApps, i.e., to compose services by consuming 3GPP APIs as well as other telco assets. For example, a NetApp 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 NetApp ecosystem under a twofold scope:

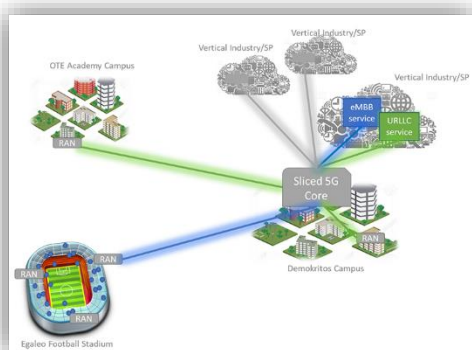
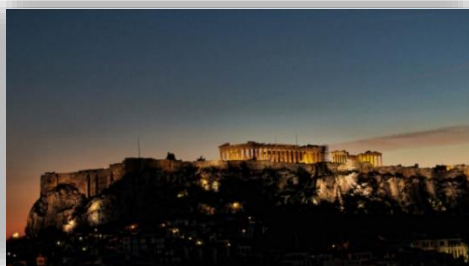
- Build an open experimentation facility for NetApp creation, validation, and certification, and
- Provide the means and the tools for long-term evolution of 5G-enabled vertical industries.

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



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, Wi-Fi, fiber, etc.) with great automation capabilities to execute experiments both unattended and with real users.



NetApps & Factory of Future Apps



Mixed Reality (MR) assisted manufacturing

Via Mixed Reality headset, an engineer will be able to connect themselves and share his 3D view in real time with remote experts to get their helps while keeping his hands free.



Intent-driven Chatbots for precise maintenance

Chatbots, with data gained from sensors, will act as assistants to engineers and technicians during daily workflows and interactions.



Haptic-driven console for industrial surface repairing (hot bonding)

ANITA EZ consoles are portable, light, handy for field applications and their optimized operations are extremely easy to use by shop technicians.



IoT/M2M-based remote monitoring platform

This system features a distributed architecture and comprises a cloud-based management system for remote gateway and sensors control, an IoT/M2M gateway family with various communication modules (WiFi, 2G/3G/4G/5G, Eth).



AI based video analyzer for industrial & robotics safety

Via computer vision it can be detected whether or on Personal Protective Equipment is being used by the employees and a warning signal is sent directly to the control room.



ML-driven anomaly detection system for Industrial Processes

Network anomalies the influence industrial performance, contribute to information leakage, and potentially breach multitenant isolation can be detected and classified.



L7-aware Whitebox Switch with Dynamic SFC & TSN Support

L7-aware White Box Switch enables an intelligent traffic steering mechanism, able to optimize the number and sequence (chain) of service functions. Dynamic SFC can now be based on higher layer inspection (Layer 7), i.e., traffic identification and classification at the application layer.



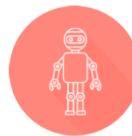
SIEM (Security information and event management) system

SIEM solution aggregates data from multiple heterogeneous systems and analyses of data to catch anomaly behavior or cyberattacks.



IQBT: Blockchain Data Brokerage Engine

Blockchain Data Brokerage Engine is a Hyperledger Fabric blockchain prototype used to enable trust and privacy in data brokerage and sharing, applicable in data marketplaces and for internal knowledge sharing and collaboration needs within and across an organization.



AI-driven Humanoid robot

Mobile Robot TIAGo humanoid elements, numerous sensors and computers that altogether enable the robot to safely interact with the environment and undertake any task that requires perception, mobility, and manipulation skills.

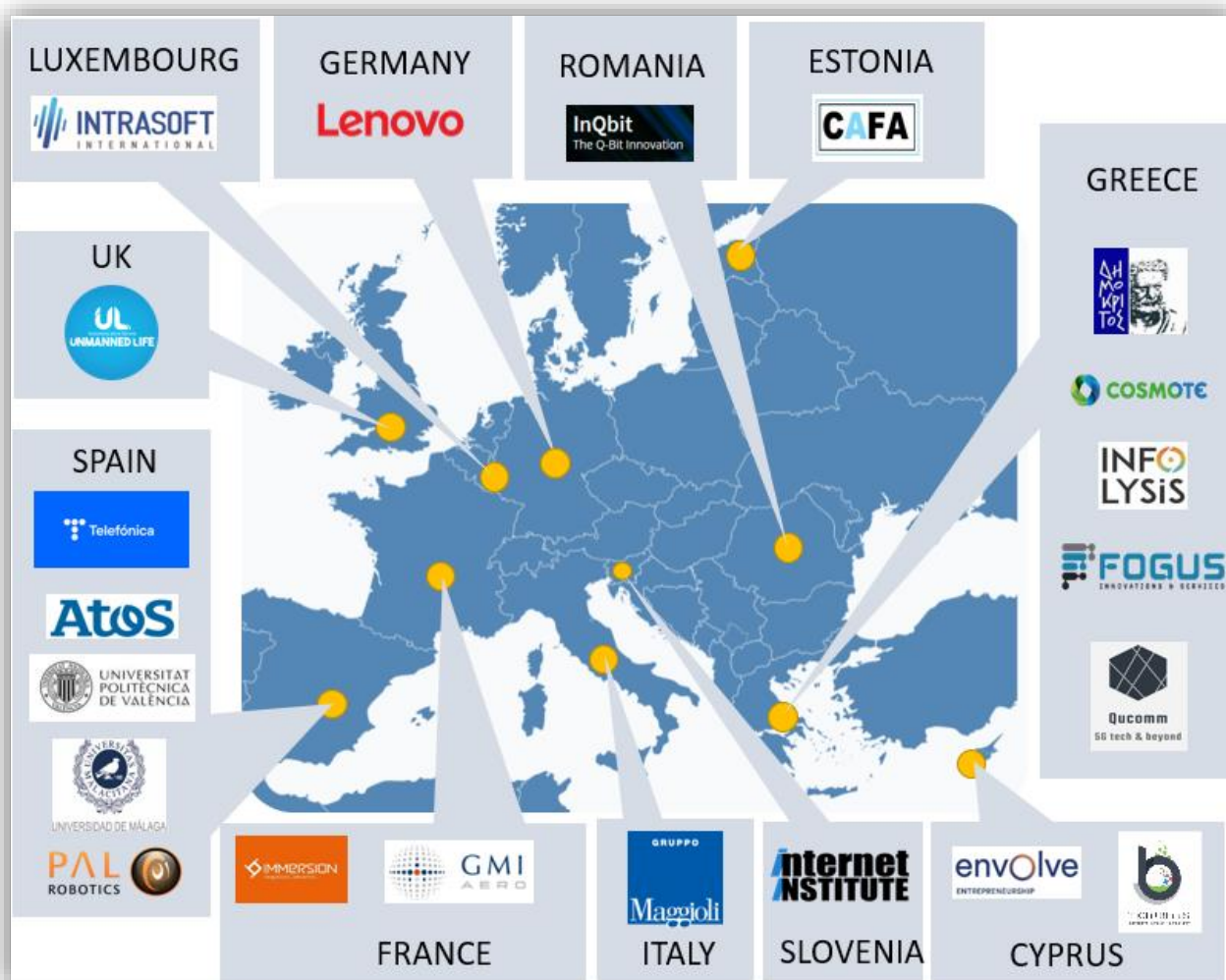


AI-driven logistics robotic fleets

Due to its open platform approach, Unmanned Life's solution fits well to the FoF environment and allows the extension of the robot functionality with additional sensors hence bringing together the robotic ecosystem.

EVOLVED-5G Consortium

The comprehensiveness of **EVOLVED-5G** motivation and scope forms a consortium which **brings together 21 partners**, i.e., **3 research and academic institutions, 11 SMEs, 6 industrial partners, and 1 entrepreneurship accelerator**, from **11 countries**, while **Telefonica I+D is the project's leader**. As the EVOLVED-5G consortium is well balanced from a geographical point of view, it captures the diverse requirements that emerge from various markets and cultures across the world. This diversity, in terms of both organization type and geographic location, ensures that project's goals will reach into different communities and countries. The EVOLVED-5G consortium is built around the following principle: ***"Bringing together heterogeneous players, with the required expertise and background in 5G technologies and a set of SMEs related to a targeted vertical industry"***. Thus, EVOLVED-5G consortium is composed of market-leading companies (INTRA, LNV, MAG, ATOS, COS, TID), innovative and highly specialized SMEs, renowned research/academic institutes (NCSRD, UMA, UPV) as well as a business and startup accelerator (IEA).



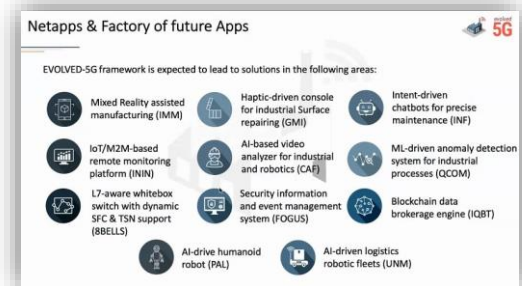
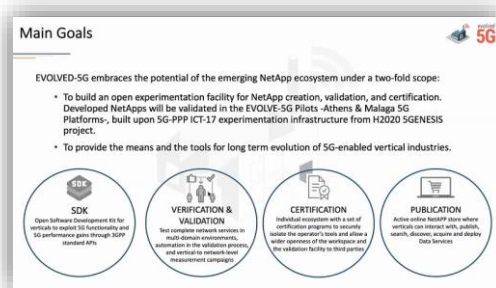
Communication and Dissemination Activities

During the first months of the project, EVOLVED-5G partners mainly focused on placing the pillars and planning the project's route. However, planned activities could not miss from those first months.

Have a look at the performed activities and stay tuned for any future developments.

Presentation

David Artuñedo from Telefónica participated and presented in the **5GPPP Webinar: "5G Innovations for Verticals"**. This webinar introduced to the 5GPPP community the EVOLVED-5G project. The presentation showcased to the 5GPPP community the main pilots, the objectives, and the goals of our project.



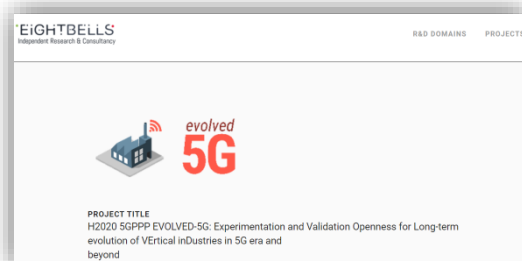
Interview

Dr. Harilaos Koumaras (NCSR "Demokritos"), EVOLVED-5G technical manager, provided an interview at **Starter Magazine** (in Greek) providing insights about NCSR "Demokritos" pioneering activities in 5G research and EU 5G-PPP projects. Special mention is made to EVOLVED-5G project and its 5G activities.



Press Release

The EVOLVED-5G Project was announced at 8Bells Website [here](#).



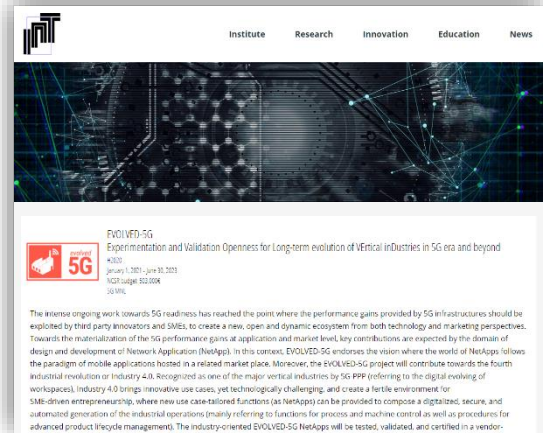
➤ **Press Release**

NCSR "Demokritos" EVOLVED-5G, technical manager, **Dr. Harilaos Koumaras**, published an **article** presenting details about EVOLVED-5G project. You may access and read the article in the following [link](#).



➤ **Press Release**

GMI AERO, EVOLVED-5G partner, released a press release sharing details about EVOLVED-5G project. More information can be found in the following [link](#).



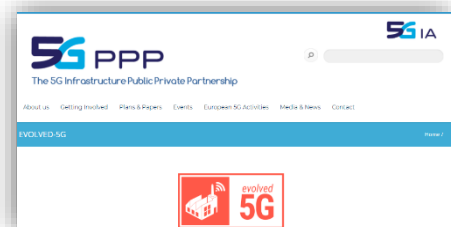
➤ **Press Release**

The EVOLVED-5G Project was announced at GMI AERO Website in the following [link](#).



➤ **Press Release**

The EVOLVED-5G Project was also announced at 5G-PPP Website [here](#).



More information about the EVOLVED-5G related news can also be found in the dedicated dissemination page at: <https://evolved-5g.eu/dissemination/>

5G-PPP Activities

➤ **5G-PPP Newsletter Issue 23**

The latest Newsletter issue (January 2021) of 5g-ppp is available online at the 5G-PPP website:
<https://5g-ppp.eu/newsletter-23-january-2021/>

➤ **5G-PPP Newsflash issues**

The latest newsflash issues of 5g-ppp are available online and can be found at the 5G-PPP website from the following links:

- Newsflash Issue 56 (January 2021):
<https://5g-ppp.eu/newsflash-january-2021/>
- Newsflash Issue 57 (February 2021):
<https://5g-ppp.eu/newsflash-february-2021/>



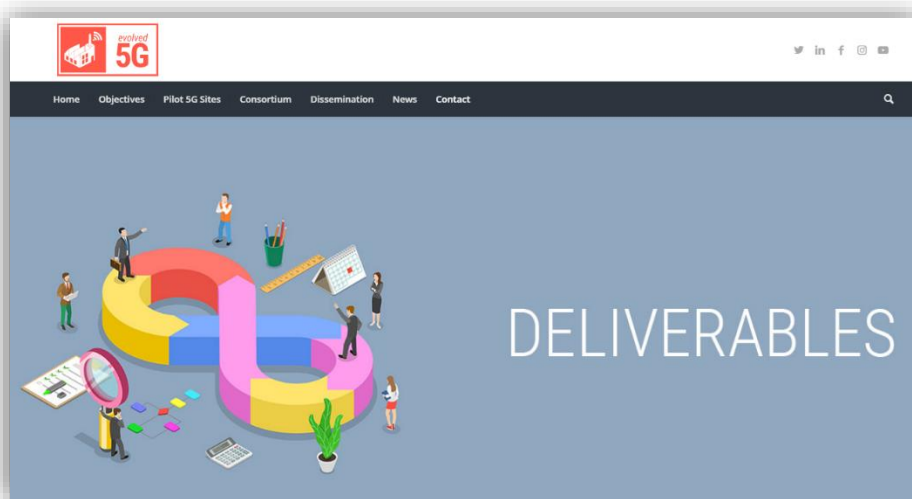
Period Deliverables

D1.1 Project Management handbook [M3] (Confidential): This deliverable is led by TID partner and is to subscribe the management procedure and communication tools to be followed within the EVOLVED-5G Project.

D1.2 Ethics, Legal Aspects and Data Management Plan [M3] (Confidential): This deliverable is led by IQBIT partner and aims to detail the ethics, legal aspects and data management plan for the collection and processing of data throughout the EVOLVED-5G activities.

Upcoming Deliverables

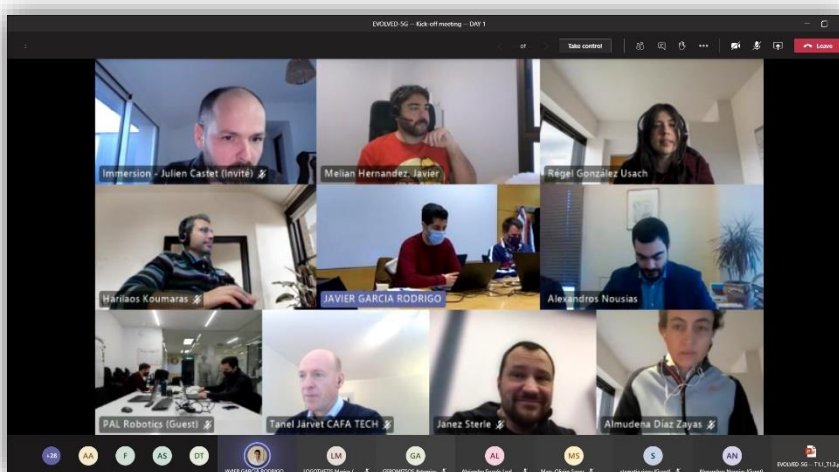
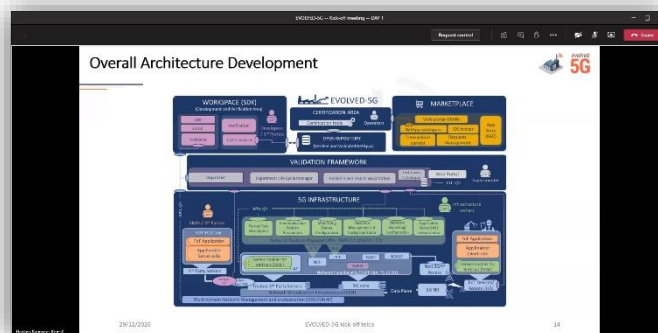
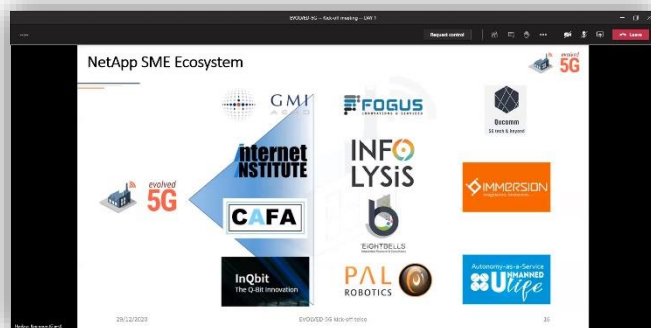
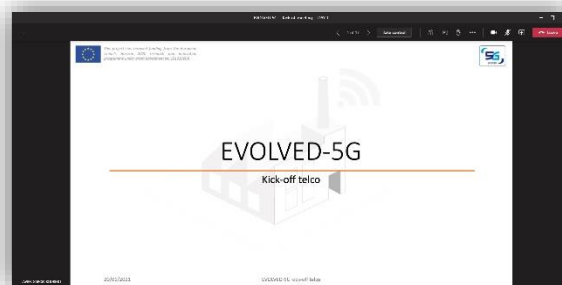
D7.1 Dissemination, Communication and 5GPPP Engagement Plan [M6]: This deliverable is led by INF partner and describes the initial plans on the dissemination, communication and 5GPPP engagement activities.



All the public EVOLVED-5G deliverables are available for downloading at the EVOLVED-5G website in the deliverables page: <https://evolved-5g.eu/dissemination/deliverables/>.

Virtual Kick-off Meeting

Due to the COVID-19 impact and for safety reasons, the EVOLVED-5G KickOff Meeting took place remotely in a virtual way using MS Teams platform. It ran for 2 days (20-21 January 2021) and all project's partners had the chance to meet virtually each other and set the guidelines/plans for the first period of the project. They discussed in detail about the Work Packages and Tasks that already started their activities, as well as the course of action about the initial technical requirements, use cases, impact initiatives and upcoming deliverables.



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 Start Date: 1 January 2021

