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5G-SOLUTIONS Project Status

5G-SOLUTIONS is the ICT-19 flagship project supporting the EC 5G policy by implementing the last phase of the 5G cPPP roadmap. The project is part of both scientific (e.g. it contributes to standard bodies as well as 5G-PPP EU frameworks and other H2020 projects) and citizens' society, for whom the project must be a reference for a 5G that facilitates life. Considering research as an isolated Castalia (referring "Glass Bead Game" by H. Hesse), causes fake-news, so that 5G appears as harbinger of inconvenience, unnecessary costs and even illness.

In the first half of the project's life, the actions that were planned were completed. The KPIs for each use case were defined with great precision. This allowed us to ascertain (and demonstrate) what we already suspected from the proposal, i.e. 5G becomes a fundamental technology for most use cases. However, even for use cases where the performance of 5G would not be strictly necessary in the test phase, it would become so in a massive diffusion of the service, when the requirement of scalability and cost-effectiveness is also added.

The use cases leverage on ICT-17 5GVINNI and 5GEVE infrastructures. The integration with ICT-17 facilities is through APIs with Nokia orchestration system (CDSO). The importance of orchestration, a mapping the different components of the UC and identify the integration points and the flow of the experiment and lay out a detailed flow for the integration have been considered fundamental. A special role is played by artificial Intelligence, providing zero-touch automation mechanisms for 5G service lifecycle.

Furthermore KPI Visualisation System is used within the scope of the project to validate the KPIs measured in each use case. This System design has been completed, the underlying infrastructure comprising of several VMs has been setup, and a first version of the platform is already deployed whilst the integration with 8 UC applications is complete. Progress has also been made in the integration with the 5G facilities.

The project initiated the first tests on the majority of UCs, belonging to 5 main living labs:

The Factory of the Future LL address in-process monitoring and real-time product quality assessment, new sensor provisioning directly to the production plant, Augmented Reality aided maintenance, and machinery and robot remote controlling through 5G

The Smart Energy LL validates 5G technologies in advanced industrial verticals domain as Demand Side Management in new electricity value chain. Three use cases of technological and business interest, covering from utility applications to electro mobility scenarios, are ongoing.

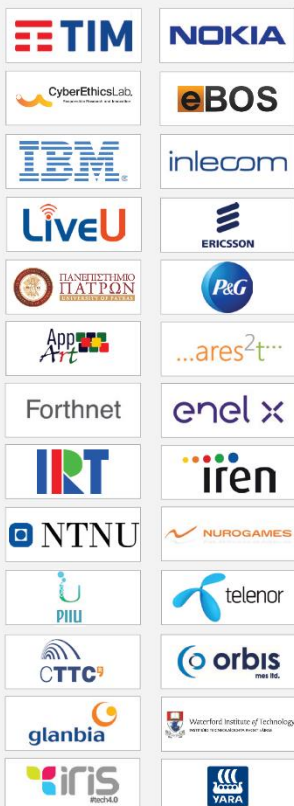
The Smart Cities & Ports LL covers the aspects of smart public lighting, urban parking, smart city, smart buildings and campuses, as well as smarter and safer ports.

The Media and Entertainment segment is looking in anticipation to the introduction of 5G. The M&E LL is testing various sub-scenarios of: high-fidelity video viewing, multi-CDN viewing, immersive experiences in AR/VR and gaming, professional video production and remote multi-cam

The multi-living lab is testing and validating the business and technological performance of multiple vertical UCs concurrently. The objective is to quantify the potential performance degradation of running concurrent UCs.

To complement the use cases, we created a framework for coordinating and examining the commercialization exploitation options providing a macro-level view of the global opportunities emerging complemented with a plan for co-operation and clustering across the 5G industry and verticals.

Consortium



5G-SOLUTIONS Publications

- **Conferences**

1. Trantzas K., Tranoris C., Denazis S, “**Defining a management function based architecture for 5G network slicing**”, 2021 4th International Workshop on Advances in Slicing for Softwarized Infrastructures, IEEE Netsoft June 2021
2. Giannopoulos D., Papaioannou P, Tranoris C., Denazis S., “**Monitoring as a Service over a 5G Network Slice**”, 2021 Joint European Conference on Networks and Communications & 6G Summit (EuCNC/6G Summit): Network Softwarisation (NET)

- **Journals**

1. B. Ojaghi, F. Adelantado, A. Antonopoulos and C. Verikoukis, "**SlicedRAN: Service-Aware Network Slicing Framework for 5G Radio Access Networks,**" in IEEE Systems Journal, March 2021

5G-SOLUTIONS Conference organization

1. EBOS sponsorship and participation in **11th ICT Conference & Exhibition – Tech Revolution**, June 2021, Nicosia, Cyprus.

5G-SOLUTIONS Workshop organization

1. "**5G SOLUTIONS, your business on 5G**" participated by ARES2T - Speakers: Yuri Chianese, Andrea di Giglio, Elena Vitelaru, Giovanni Coppola, Antonino Biondi, Maurizio Cecchi, IOTHINGS WEEK, May 2021, Milan, Italy, online
2. “**Defining a management function-based architecture for 5G network slicing**” participated by UOP, Trantzas K., Tranoris C., Denazis S, 4th International Workshop on Advances in Slicing for Softwarized Infrastructures, IEEE Netsoft, June 2021, Tokyo, Japan, online.
3. “**Monitoring as a Service over a 5G Network Slice**” participated by UOP, Giannopoulos D., Papaioannou P, Tranoris C., Denazis S., Joint European Conference on Networks and Communications & 6G Summit (EuCNC/6G Summit): Network Softwarisation (NET), June 2021, online.
4. “**New generation networks: how will 5G change networks, our life, and our bank account?**” 25th International Conference on Optical Network Design and Modelling (ONDM), Sweden, June 2021.

5G-SOLUTIONS White Papers

1. FNET, WIT, APPART, Service performance measurement methods over 5G experimental networks, 5G-PPP TMV
 - https://5g-ppp.eu/wp-content/uploads/2021/06/Service-performance-measurement-methods-over-5G-experimental-networks_08052021-Final.pdf

5G-SOLUTIONS Deliverables submitted during this period

Title	Leader	Date
D2.2C Specifications and design of CDSO plugins	NOKIA	26 Jan 2021
D3.2B KPI Visualisation System and Interfaces Implementation and Deployment	APPART	28 Jan 2021
D10.1A Activity report	TIM	28 Jan 2021

5G-SOLUTIONS Social Media



Twitter: [@5g_solutions](https://twitter.com/5g_solutions)



LinkedIn: [5gsolutions-project](https://www.linkedin.com/company/5gsolutions-project)



Web: <https://www.5gsolutionsproject.eu/>

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