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IoT-NGIN

EU H2020

Next Generation IoT as part of
Next Generation Internet



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About IoT-NGin

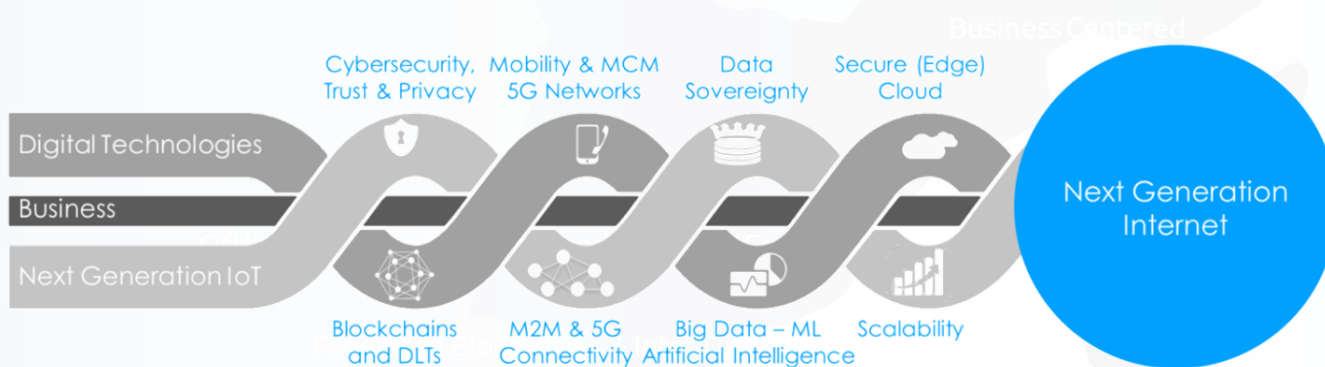
The IoT-NGIN project is a European Union funded collaborative project aiming at acting as the “IoT Engine” which will unleash the power of Next Generation IoT as an essential dimension of the Next Generation Internet (NGI).

IoT-NGIN uncovers a patterns based meta-architecture that encompasses evolving, legacy, and future IoT architectures. The project also optimizes IoT/M2M and 5G/MCM communications, including using secure-by-design micro-services to extend the edge cloud paradigm. Moreover, it enables user and self-aware, autonomous IoT systems through privacy-preserving federated ML and ambient intelligence, with Augmented Reality (AR) support for humans. The project will also conduct 7 trials at different locations to validate the project results across diverse application domains.

H2020 IoT-NGin: Project At A Glance

Title:	Next Generation IoT as part of Next Generation Internet		
Type of Action:	Research & Innovation Action		
Topic:	H2020-ICT-56-2020: NEXT GENERATION INTERNET OF THINGS (RIA)		
Grant Number:	957246		
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EC Contribution:	7.9 M Euros	Duration:	36 Months
Start Date:	October 2020	Project Coordinator	Capgemini

Next Generation IoT in the path towards Next Generation Internet



Living Lab Trials (LLTs)

LLT1 (IoT-NGIN Integration Infrastructure Technology Lab) The focus of the first trial is on comprehensive integration and evaluation throughout the development of the IoT-NGIN technologies. The trial will ensure that the IoT-NGIN components achieve the expected Technology Readiness Level (TRL). The OneLab facility of the Sorbonne University will be used for this trial.

LLT2 (Human-Centred Twin Smart Cities Living Lab) The ambition of this trial is to adopt an innovative cross-border-by-default twin city context with the city of Helsinki in Finland and the city of Tallinn in Estonia. The use case will be built on top of Finest Twin Cities platform, which facilitates collaboration and open innovation via cities’ common data models for AI data capturing and processing on urban level. Geographically, it will be hosted at the Jätkäsaari Mobility Living Lab.

LLT3 (Smart Agriculture IoT Living Lab) This use case is expected to demonstrate significant benefits arising from exploitation of IoT, AI, edge computing, digital twins and DLTs’ technologies in enhancing the efficiency of irrigation, spraying and harvesting processes. The crop diseases prediction and sensor aided crop harvesting use cases will be hosted at a commercial orchard in the region of Peloponnese, Greece.

LLT4 (Industry 4.0 Use Cases & Living Lab #1) The first Industry 4.0 Living lab will validate the IoT-NGIN framework against ensuring safe operation of Automated Guided Vehicles towards worker safety in a self-aware indoor factory environment. Moreover, Augmented Reality assisted guidance in the assembly and subassembly processes will be experimented in this trial. These use cases will be implemented at BOSCH’s facilities in Barcelona.

LLT5 (Industry 4.0 Living Lab #2) The second Industry 4.0 Living lab aims to monitor sub-assembly location and movement, and to optimize production workflow. Also, the trial will test and validate the use of AR technology to support employees’ training in the assembly process. The trial will be implemented in ABB facilities in Pitäjänmäki, Helsinki.

LLT6 (Smart Energy Grid Active Monitoring/Control Living Lab) This use case is expected to implement a smart energy pilot implemented by ASM, the Terni municipal electricity and gas distribution network operator, and EMOT in Terni (Italy). The trial will demonstrate a) the capability of smart grid asset performance management and b) creating human-centred smart micro-contracts and micro-payments in a fully distributed energy marketplace.

LLT7 (IoT-NGIN Technology and Living Labs Federation) IoT-NGIN pilots will be federated to enable cross-IoT-NGIN services deployment. This federation will be further extended via new partners joining IoT-NGIN via Open Calls. Several technologies developed by IoT-NGIN will be the enablers for the federation.