IoT-NGIN

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EU H2020

Next Generation IoT as part of Next Generation Internet

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About IoT-NGIN

IoT-NGIN is an H2020 project, which goal is **to introduce key digital technologies** such as: blockchain, 5G powered Machine to Machine (M2M) and Machine Cloud Machine (MCM) communications, Artificial Intelligence (AI) and cybersecurity, privacy and trust at "things" level, so that it will be **able to integrate, support and interact with existing and future IoT ecosystems** securely, continuously and coherently in the **Next-Generation IoT era**.

2nd Open Call

IoT-NGIN's 2nd Open Call invited SMEs active in IoT applications development to implement innovative IoT applications and offer new services using IoT-NGIN components, thus enhancing its exploitation and sustainability potential. Amongst many proposals from across Europe, 10 were selected for the first, DESIGN phase of the process, from which 6 have successfuly made its way to the second – EXPERIMENT phase.

New IoT-NGIN partners and their projects:

Combating fake reviews of physical locations and venues via decentralized proof-of-location (BeenThere) - Bulgaria

The project aims to build trust in User Generated Content (i.e., reviews for physical establishments, venues and services). The main objective is to provide additional verification that the content producer (reviewer) has actually set foot into the physical establishment. The project aims to be implemented as a standalone mobile application that acts as the appropriate middleware for enhancing proof of location.

Trusted Uncrewed Aviation Systems Command and Control Based on the Internet of Things (IoT UAS C2) – Israel

The project will explore the application of the IoT-NGIN environment to support Unmanned Aircraft Systems (UAS) advanced operations, including urban flights and beyond-visual-line-of-sight flights. It will also include multiple test flights as part of experimental activities. A data measurement campaign will be conducted providing valueable data on the cellular signal behaviour above the ground. Within the project, mechanisms will be explored, that are required to ensure aviation-grade connectivity performance, guaranteed characteristics and proper security.

Improved support for Decentralized Identifiers and Verifiable Credentials (Imperial) – Greece

IMPERIAL aims to extend the IoT-NGIN authorization component to include fine-grained access control policies and improve IoT-NGIN's identity management component by integrating the latest specifications of the DID:self-DID method, which leverages group communication and support for flexible trust relationships, e.g., delegation.

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IoT-Enabled Demand-Response Analytics for Energy Communities (IoT-DRACO) – Slovenia

The project aims to design, implement, enhance, and evaluate novel human-centric methodologies and services focusing on real-time active monitoring and control for data-driven energy communities via next-generation IoT enablers. IoT-DRACO aspires to increase local and system energy efficiency, stability and security while minimizing the impact on comfortability. To achieve this, IoT-DRACO will compile a next generation IoT DR-enabled energy community specification and architecture, including a generic digital twin to be used with NGSI-LD dataspaces Open API. The solution will implement observability and analysis of the local grid, energy sources and IoT context; Semi-autonomous real-time actuation and control; Optimization and activation; Security, data integrity, privacy and sharing.

Machine-Learning Edge Enabled Autonomous tree inFection detection (LEEAF) – Ireland

LEEAF uses state-of-the-art technologies including Computer Vision, Machine Learning, Artificial Intelligence, and Unmanned Aircraft Systems to facilitate the process of inspecting olive groves regardless of their size or location. LEEAF helps olive farmers detect leaf infections and target treatments, leading to higher crop yields and increased profitability. LEEAF operates without the need for expensive hardware, like mutlispectral cameras or on-site sensors, so that olive farmers can direct phytosanitary treatments and precisely apply pesticides on the infected trees.

Open-Source Private 5G Network solution for Industry4.0 applications (Private5G) – Portugal

Combining Private 5G Networks with AI-enabled Edge computing creates tremendous opportunities for advanced Industrial IoT applications. Allbesmart aims to leverage its OpenAirInterface (OAI) deep expertise to build and offer a 5G base station (gNB), integrated with a 5G core network (5GCN), as a plug-and-play and easy-to-use commercial solution running in a single x86 computer platform. In order to achieve this,

Augmented Reality application over a Private 5G Network

Private5G will develop a Private 5G Network Management Platform working as an abstraction layer to monitor and control the 5G Radio Access Network (RAN) and the 5GCN, as well as experiment and validate the Private 5G Network prototype in the IoT-NGIN Smart Industry Living Lab.