



Open Source blueprint for large
scale self-organizing cloud
environments for IoT applications



EU OpenIoT Project

FP7 ICT-2011 1.3: Internet-connected Objects

OpenIoT: The Open Souce Internet of Things

Delivered by: AcrossLimits Ltd.

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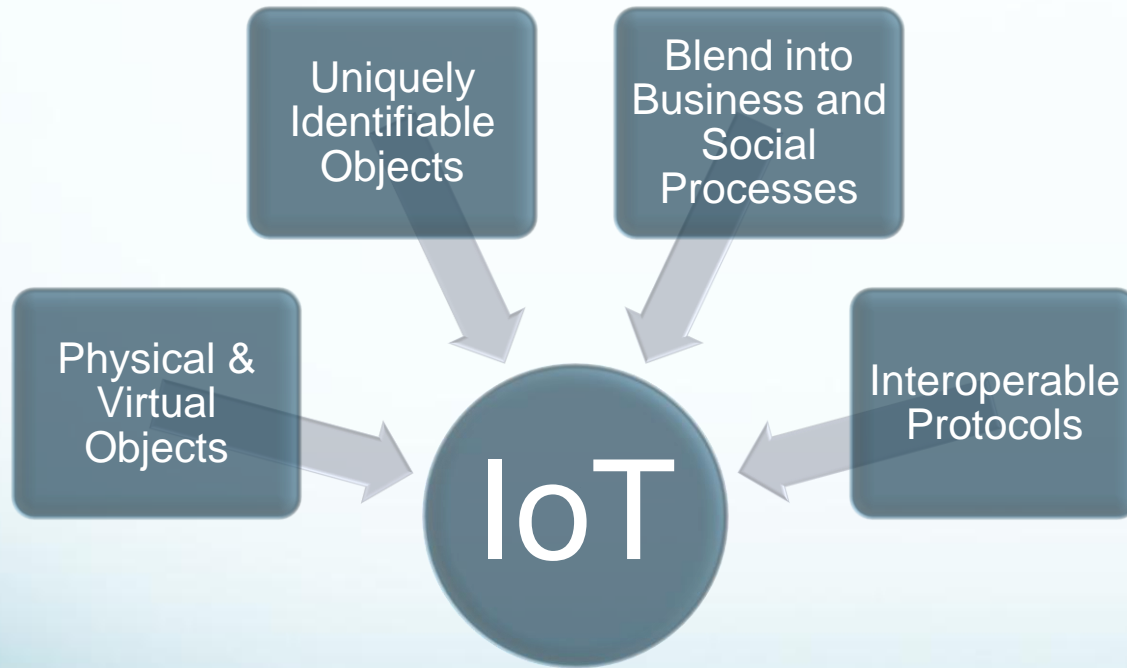
General Overview of the Project

- December 2011- November 2014
- Open source middleware enabling cloud-based infrastructures for IoT services.
- **Main Technology Advances:**
 - Semantic interoperability for Internet-Connected Objects
 - Linked Sensor Data
 - Pay-as-you-go IoT services
 - Utility-driven security and privacy
 - Complex queries without programming

The Consortium

- **Coordinator:** National University of Galway- DERI (**Ireland**)
- Research and Education Laboratory in Information Technologies- AIT (**Greece**)
- École Polytechnique Fédérale de Lausanne- EPFL (**Switzerland**)
- Fraunhofer Group for Information and Communication- IOSB (**Germany**)
- Electronic Systems and Software Applications S.A- SENSAP SA (**Greece**)
- AcrossLimits Ltd. – AL (**Malta**)
- Commonwealth Scientific and Industrial Research Organisation- CSIRO (**Australia**)
- University of Zagreb, Faculty of Electronic Engineering and Computing- UNIZG-FER (**Croatia**)

The Internet of Things



Smarter Campus Guide

- Demonstrates aspects of a smart city.
- Applications were developed to support the collaborative environment of the Karlsruhe Institute of Technology (KIT) in Germany.
- The OpenIoT framework will enable situation awareness, supporting communication between people, and allowing interactions with, and via, their environment.



Smarter Industries

- Traceability



- OpenIoT integrated a *Material Flow Traceability System* for the packaging industry.
- In this environment, several sensors were used to facilitate production line automation and quality control, such as laser sensors, high-speed 1D/2D barcode verification cameras, weight, contrast/colour and ultrasonic sensors.
- OpenIoT cloud based middleware enables the dynamic on-demand formulation, calculation and visualisation of Key Performance Indicators (KPI).

Urban Crowdsensing



- The Urban Crowdsensing application will enable citizens to collect and share urban environment-related data while in motion.
- Volunteers equipped with wearable air quality sensors and smartphones will continuously contribute sensed data to the OpenIoT cloud while moving through the city.
- Other data sources, such as fixed environmental monitoring stations and "humans-as-sensors" will be integrated through the OpenIoT cloud.

Smarter Industries

- Phenonet



- Australian grain breeders plant up to 1 million 10m squared plots to find the best yielding varieties of wheat and barley.
- Phenonet application sensor network technology to gather environmental data for crop variety trials at higher resolution than conventional methods.
- It provides a real-time online data analysis platform that allows scientists and farmers to visualise, process and extract, real time, and long-term crop performance information.

Smarter Cities - Silver Angel

- The purpose of Silver Angel is to help ageing citizens live independently in their own homes.
- It facilitates meeting more often with friends and relatives.
- There are three main Silver Angel services: **Smart Meeting, Issue Reporting and Alarms.**



The Silver Angel Application – An Overview

[Silver Angel](#)

Thank you for your attention

Any questions?