

Paving the way for next-generation edge computing

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## KEY FACTS

- PROJECT NAME:**  
**PLEDGER:** Performance optimization and edge computing orchestration for enhanced experience and Quality of Service
- GRANT AGREEMENT NO**  
871536
- TOPIC**  
ICT-15-2019-2020
- CALL**  
H2020-ICT-2018-20
- FUNDING SCHEM:**  
Research & Innovation Action (RIA)
- FUNDED UNDER**  
H2020 Framework
- DURATION**  
36 months

## WELCOME TO THE FIRST ISSUE OF THE PLEDGER PROJECT!

### ABOUT PLEDGER

**PLEDGER is a new project coordinated by ATOS Spain. It is funded by the European Union's Horizon 2020 research and innovation programme.**

The project aims to deliver a new architectural paradigm that will pave the way for next-generation edge computing infrastructures, tackling the modern challenges and coupling the benefits of low latencies on the Edge with the robustness and resilience of cloud infrastructures. It will also allow edge computing users to understand the nature of their applications, research understandable quality of service metrics and optimise the competitiveness of their infrastructures.

Enjoy reading all about the PLEDGER project!

### CHALLENGE AND SOLUTION

**One of the main drawbacks and hindering factors in the process envisioned by Pledger is the lack of cross-layer knowledge and the inability to exchange it that are enforced upon the involved roles:**

**THE IAAS PROVIDERS** that require improved awareness on the types of applications executed by their customers,

**THE ADOPTERS/CONSUMERS** (e.g. SaaS providers) of infrastructure services, that require improved awareness on the types of physical nodes their applications will be executed on.

PLEDGER introduces necessary improvements across this value chain by following a black box approach in all the involved layers, in order to adapt to the specifics of the ecosystems in question and the corresponding lack of knowledge. The proposed approach does not assume any kind of Adopter-Provider interaction, but all the necessary information is extracted via non-intrusive methods abiding to this role separation imposed by the Cloud business model.

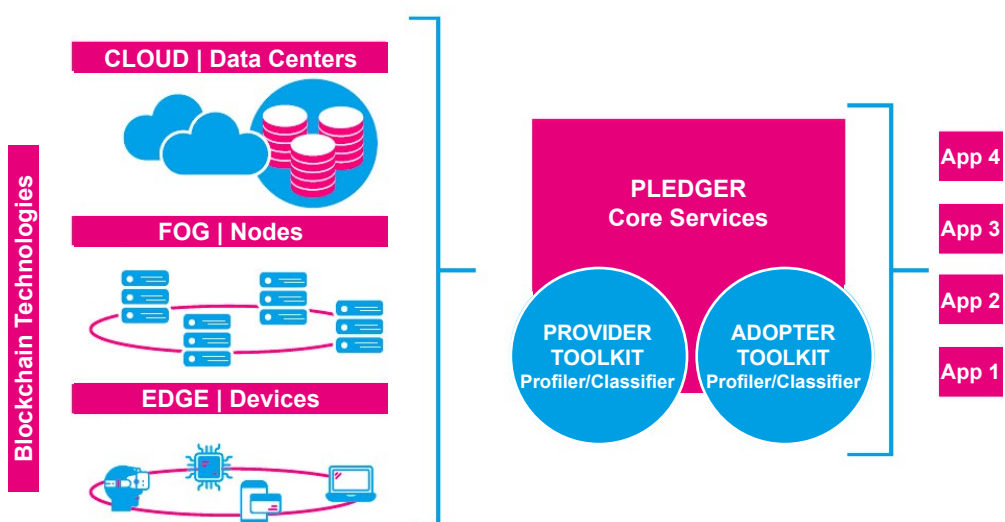
### USE CASES

**The project will validate its results through three use cases which are very relevant for the innovative Edge/Cloud computing concepts it plans to introduce:**

**MANUFACTURING:** PLEDGER will explore, implement and test possible data and computation transfers to the cloud.

**MIXED REALITY:** PLEDGER will enable remote rendering by outsourcing the demanding processes like calculations, application logic, or content rendering to other fog nodes or the cloud.

**SMART CITIES:** PLEDGER will evaluate how different types of sensors and radio technologies supported by the city infrastructure can be used to enable edge computing-assisted risk detection and mitigation for Vulnerable Road Users (VRUs) in an everyday scenario in the city of Barcelona.



### BENEFITS AND IMPACT

**Rich data sets for better Machine Learning:** Consolidating data in the cloud for sophisticated Machine Learning applications.

**High-Performance Computing:** Leverage the Edge for computationally intensive analysis or machine learning.

**Security:** Trusted and secured end-to-end communications

**Blockchain:** Bringing Smart Contracts to the Edge.

### THE TEAM

The project brings together 9 leading European research/academic institutions, a city, industrial stakeholders and SMEs from 7 different countries, with high expertise in the areas of Cloud computing, Edge computing, IoT, Blockchains and Big data.

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