Rainbow Project

RAINBOW Project - H2020

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RAINBOW at a glance

RAINBOWH2020

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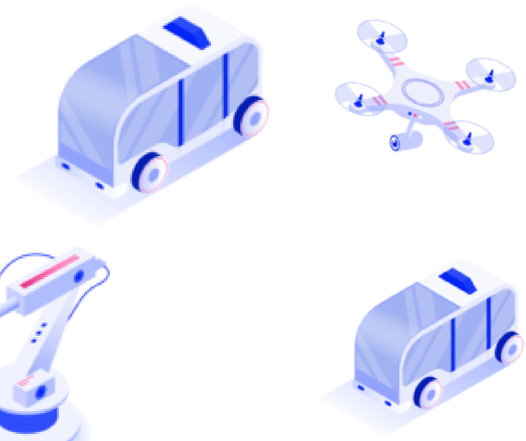
rainbow.2020.eu

RAINBOW aims at extending the Cloud towards IoT to achieve significantly improved Quality of Service and empowered latency-sensitive and bandwidth-hungry next-generation cross-cloud applications. RAINBOW responds to the actual needs of both the industrial domain and the public sector enabling their digital transformation towards an era that IoT devices are not considered just complementary equipment for collecting added-value data but have penetrated the core of business activities as irreplaceable tools for achieving efficiency, effectiveness and quality.



Innovations introduced by RAINBOW

- **Verification mechanisms to protect the remote attestation and edge services from unauthorized access with the implementation of efficient remote attestation for a multitude of potentially heterogeneous edge devices and services through a secure and trusted mesh overlay network**
- **Orchestration mechanisms that enable real-time and scalable management of geo-distributed and cross-cloud infrastructure and network resources for trusted deployed fog services**
- **Interoperable data management services for the "intelligent edge" to provide fog-tailored scalable and low-latency data storage and sharing, efficient location- and energy-aware data analysis and fog service analytics over rich query model abstractions**
- **Emulation framework to quickly model fog deployments and perform large-scale, reproducible experimentation of data-intensive IoT applications**

MARKET POTENTIAL OF RAINBOW

With RAINBOW IoT service operators can focus on their service's business logic and leave to RAINBOW the burden of how and where services must be placed in the fog continuum. RAINBOW has the potential to disrupt the cross-cloud apps market by its ability to:

- **Restrain the use of cloud resources and instead exploit underused nearby devices**
- **Simplify the deployment process**
- **Increase operation efficiency**
- **Optimize resource management & reduce latency**
- **Save time and costs for the provider, the developer and the end-user**

RAINBOW USE CASES

Human-Robot Collaboration in Industrial Ecosystems:
RAINBOW deploys indoor positioning services to physical fog nodes with the task of processing safety-critical sensing data to prevent collisions and fatal accidents.

Digital Transformation of Urban Mobility:
RAINBOW creates a real-time georeferenced notification system for vehicles in urban areas about critical situations for the road network and adopts bilateral exchange mechanisms and real-time service availability on the move

Power Line Surveillance via Swarm of Drones:
RAINBOW facilitates the adaptive onboarding of data processing tasks on a swarm of drones that scan power-line infrastructure leading to improved energy autonomy and monitoring capability

RAINBOW CONSORTIUM

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