

Architecture for Scalable, Self-*, human-centric, Intelligent, Secure, and Tactile NGIoT

Architecture

ASSIST-IoT aims at designing, implementing and validating an open, decentralised <mark>reference</mark> architecture, associated enablers, services and tools, to assist human-centric applications in multiple verticals ICT-56-2020 Next Generation Internet of Things (NGIoT) Research and Innovation Action Total Budget: 7,905,146.25€ Duration: Nov 2020-Oct 2023 (36 months)



Multi-plane reference architecture based on decentralised P2P topology

and the states

ASSIST-IoT will design, implement and validate, in a realistic, measurable, and replicable way, a unified innovative multi-plane (semi-)autonomous decentralized edge-cloud reference architecture,

- Horizontal technological components to support Next Generation IoT (NGIoT) paradigm, Tactile Internet and human-centric applications.
- Cross-plane enablers to provide different capabilities that improve modularity and adaptability in environments with heterogeneous data sources.

Instances of the architecture will be supported by key enablers.

Edge/fog computing, (semi-)autonomy, distributed AI, smart devices, interoperability, Distributed Ledger Technology (DLT) will work over a smart network infrastructure, with low latency capabilities, allowing execution of context-aware applications with new interaction interfaces (e.g. AR/VR/MR).

The proposed solution will integrate AI-based functions transferring intelligence closer to the edge (data sources), including devices.

((y))

AI/ML

SDN/NFV

AR/VR



|0|

IoT

DLT

The research conducted under ASSIST-IoT project has received funding from the European Union's Horizon 2020 research and innovation program under grant agreement N° 957258

5G

assist-iot

PILOTS



Port Automation Pilot

Evolve from the traditional centralized platform-based IoT deployment to a decentralised edge approach.

Congestion or collapse result in negative effects in port business operations. Data explotation and latency are far from optimal.

1- Optimisation of safety and health plan with AR support

2- Smart actuation of intelligent IoT devices for individual needs

3- Identification of suspicious and undesirable behaviours



4

**

ecentralized

edge architect 1- Automated alignment of container handling equipment

2- Yard fleet assets location

3- Augmented Reality and Tactile Internet HMIs for fleet yard drivers

4-Remote control of container handling equipment



Increase health and safety at the dynamic environment of a busy construction site.

Smart safety of workers Pilot

Deficient control of machines, tools or handling equipments result in fatal accidents. High latency and limited reliability are pending areas for improvement.



Cohesive vehicle monitoring and diagnostics Pilot

Y

Λ

Accelerate the development process and increase monitoring capabilities.

There is no application or deployment that integrates information in a interactive friendly environment to improve diagnostic tools.



1- Advanced powertrain monitoring and diagnostics

2- Vehicle condition monitoring



The ASSIST-IoT Consortium combines **expertise of every area** required to create, evaluate and promote innovative, transferable and sustainable results, needed to ensure quality of envisioned solution with an adequate level of manageability.

ASSIST-IoT brings together **15 partners from 7 European countries** and forms a well-balanced mixture of stakeholders.

For more information, visit <u>assist-iot.eu</u>

NEWAYS

Follow us on:

🕂 /assistiot

in /assist-iot-project

🕨 ASSIST-IoT H2020 Project 🧡 /assistiot

🗿 /assistiot