AMBITIOUS
Digital solutions for the 5G era

DATA-DRIVEN APPLICATIONS EMPLOYING A.I. MECHANISMS

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- Provision of a **fundamental technological infrastructure**, which will offer:
  - *advanced data aggregation and clean-up,*
  - *analytics,*
  - *AI-enabled forecasting and*
  - *secure information exchange mechanisms,*
- **via a transparent computing continuum infrastructure,**
- **to be integrated with existing, mature services (of at least TRL6) of the relevant stakeholders (SMEs),**

  unleashing for them yet unforeseen functionalities and

  opening up new pathways of commercial exploitation.

- The envisaged fundamental infrastructure will be provided via the deployment of technological pillars, *which will interact with existing services towards supporting the envisioned functionalities.*

- The purpose of a "pillar" is to provide the same generic functionalities to diverse services (demonstrated by a diverse set of specific use-cases) as a concrete processing chain, *aiming at avoiding unnecessary redundancy of resources and budget.*

- **New participants (third parties) can easily join** *via the open calls the project will organize.*

INTRODUCTION

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- *AMBITIOUS project aims to "address" a number of the challenges that are important to European companies to be competitive on the world market.*

- *By advancing their expertise in areas such as data analytics, AI, 5G, computing continuum and IoT, the European SMEs can "address" challenges both within Europe but also grow and become more competitive in the global market sector.*

- **AMBITIOUS is focused on:**
  - **safety** (surveillance & monitoring)
  - **smart water management**
  - **precise agriculture** and
  - **innovative digital health** and **well-being services**,
- *while, simultaneously, **it aims at improving competence and attractiveness in European SMEs.***

GOALS

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- The core of the project is focused on scaling-up
  - digital innovations *(currently at minimum TRL 6)*,
  - demonstrators of state-of-the-art technologies *such as data analytics, AI-enabled prediction mechanisms, 5G, computing continuum and IoT sensing capabilities*,
  - plus contributions to the overall of the digital value chain,
- *by supporting collaboration between different EU member states, SMEs and the academia and, in particular, via facilitating market uptake and scaling-up of innovative R&D results.*

- At the core of the AMBITIOUS project are activities and tasks to stimulate:
  - inter-region collaboration,
  - technology transfer, and
  - development of novel digital solutions.

VISION

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- ***AMBITIOUS involves 4 different countries & several regions across Europe.***

- **AMBITIOUS will:**

create links between public authorities (regions, authorities), industry stakeholders (SMEs, larger enterprises), academic institutions and citizens, and;

promote both the interregional exchange of technological know-how and the deployment of novel business models, not only for the participating SMEs, but also for third-party SMEs that will be attracted by related calls and project's success stories.

- **By providing several test beds in Sweden, Finland, Italy and Greece, *the participating SMEs will have first class access to multiple sites to:***

perform early technology tests and, *most importantly*,

complete trials of digital products/services they intend to offer in the market.

CROSS-BORDER APPROACH

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What?

- Real-time monitoring & surveillance application
- Gather measurements, clean-up noise, visualize analytics
- Allow human to make decisions to improve utilization

Who?

- Computing-continuum technologies (resources & functionalities)
- Sophisticated data analytics engine
- AI-enabled event forecasting module (part of Decision Support System - DSS)

How?

- 1. "Social capital" (pre-trained data) @ cloud, disseminated to several edge devices, providing advanced classification or forecasting tasks
- 2. AI-enabled forecasting services @ cloud which will feed all interested applications with real-time streams of predictions and emergency alerts

AIDA PILLAR: AI-ENABLED DATA ANALYTICS & FORECASTING

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- AI-enabled Data analytics & forecAsting
  - AIDA.UC1: Surveillance/Monitoring of controlled areas
  - AIDA.UC2: Smart Water Management
  - AIDA.UC3: Precision Agriculture
  - AIDA.UC4: Intelligent Living as-a-Service
  - AIDA.UC5: Innovative Digital Technologies for Real-Time Monitoring

AIDA USE CASES

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- Provide a comfortable environment enabling data sharing (export, import) to generate more value from the collaboration.

  Data will be made available in a controlled way for the benefit of the cooperating applications and also for developing new services.

  Data economy management.

- ***Telemedicine Platform for Continuous Remote Monitoring and Patient Support***

- ***Function dedicated to authentication authorization and accounting for managing not only the controlled access to the data but also being capable of accounting for the use of data and other resources from an economical point of view.***

- ***Access to functionalities provided by the platform instead of developing them in each application.***

AGORA PILLAR: COOPERATION AND DATA SECURITY IN HEALTH AND WELLBEING APPLICATIONS

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AGORA USE CASES

- **Cooperation and Data Security in Health and Wellbeing Applications**
  - AGORA UC1: Telemedicine Platform for Continuous Remote Monitoring and Patient Support
  - AGORA UC2: Pediatric Cardiac Arrest Support Management

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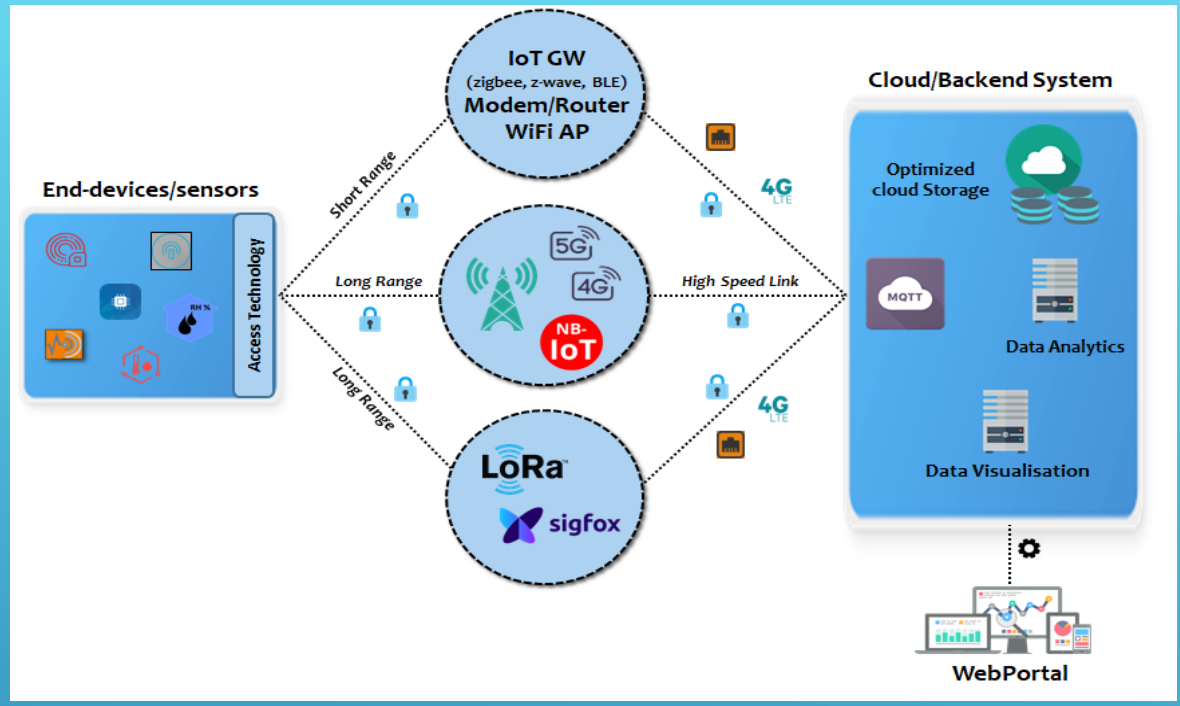
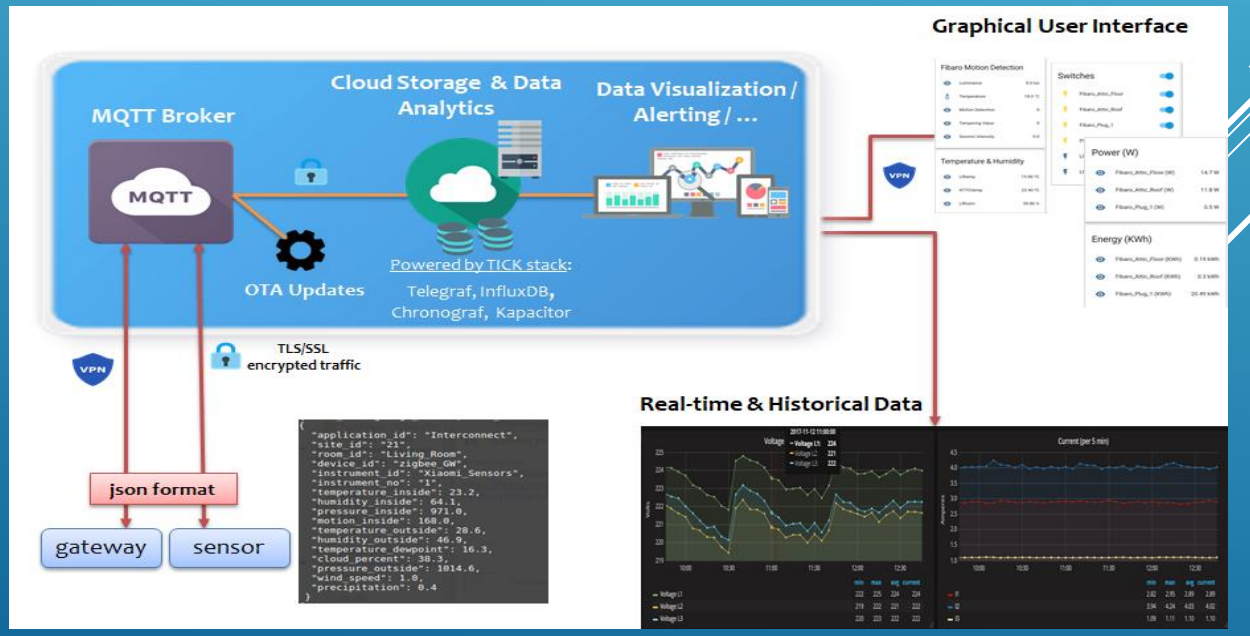
HW/SW

- Custom and commercial end-devices/sensors (relays, power meters, smart plugs, etc.)
- IoT hubs/gateways supporting multiple HAN/BAN/LAN/WAN technologies/interfaces; over 150 technologies/protocols are currently supported incl. Ethernet, WiFi, z-wave, zigbee, BLE, LoRaWAN, 2G/3G/4G/4G+/5G, NB-IoT
- Common backend for data storage, processing and visualization (MQTT, InfluxDB, Grafana, Kapacitor)
- Docker deployments and remote configuration device management.

OTE'S GROUP LEONARDO TESTBED





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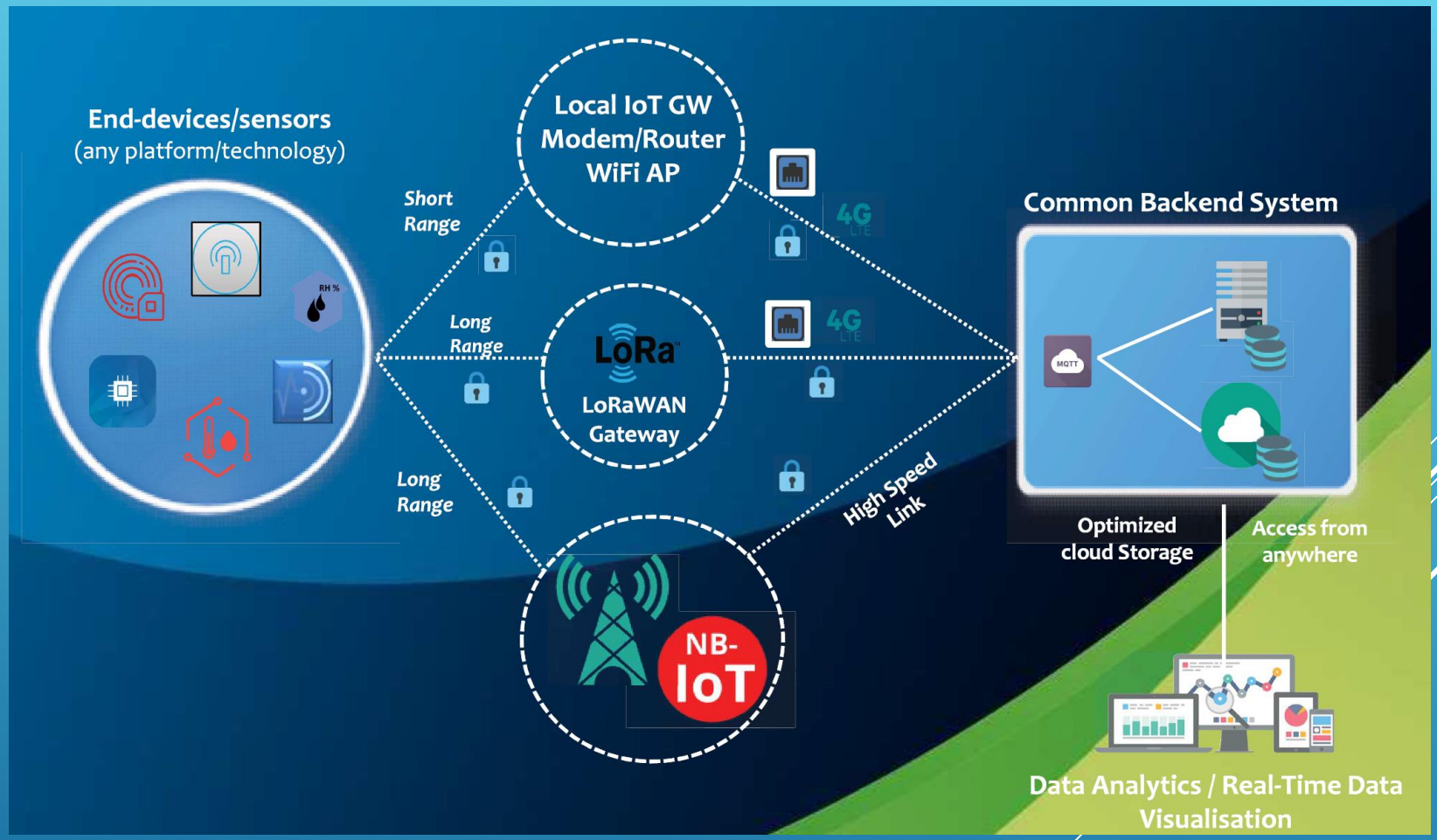
- Security -> VPN
- Remote Access -> VPN
- Always-on connectivity -> scripts
- (local) Commands execution
- Measurements Upload Control -> scripts
- Local WebGUI (configuration, visualization, manual control, automations/ rules definition, etc.)

ARCHITECTURE



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SENSORS & DEVICES

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DATA VISUALIZATION

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Thank You!!!

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