Next Perception

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The Project

- H2020-ECSEL-2019-2-RIA (Research and Innovation Actions) - www.ecsel.eu/calls/calls-2019. Project proposal n. 876487

- "Next generation smart perception sensors and distributed intelligence for proactive human monitoring in health, wellbeing, and automotive systems"

- A few keywords:
  - Next generation smart perception sensors
  - Distributed intelligence → Artificial Intelligence
 - Proactive human monitoring: 1) health, 2) wellbeing, and 3) automotive

Objectives

- Overall objective: develop new smart perception sensing technologies for *networked sensing*, in combination with methodologies to support the design and management of *distributed intelligence solutions*
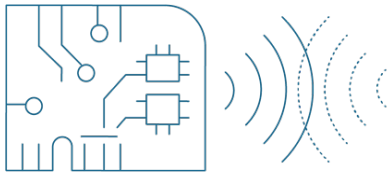
O1: Accurate and unobtrusive sensing of human behaviour and physiological parameters by means of innovative perception and complementary sensors
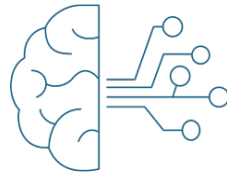
O2: Support proactive decision making ensuring Health, Wellbeing, and Traffic Safety by means of predictive analytics and explainable AI
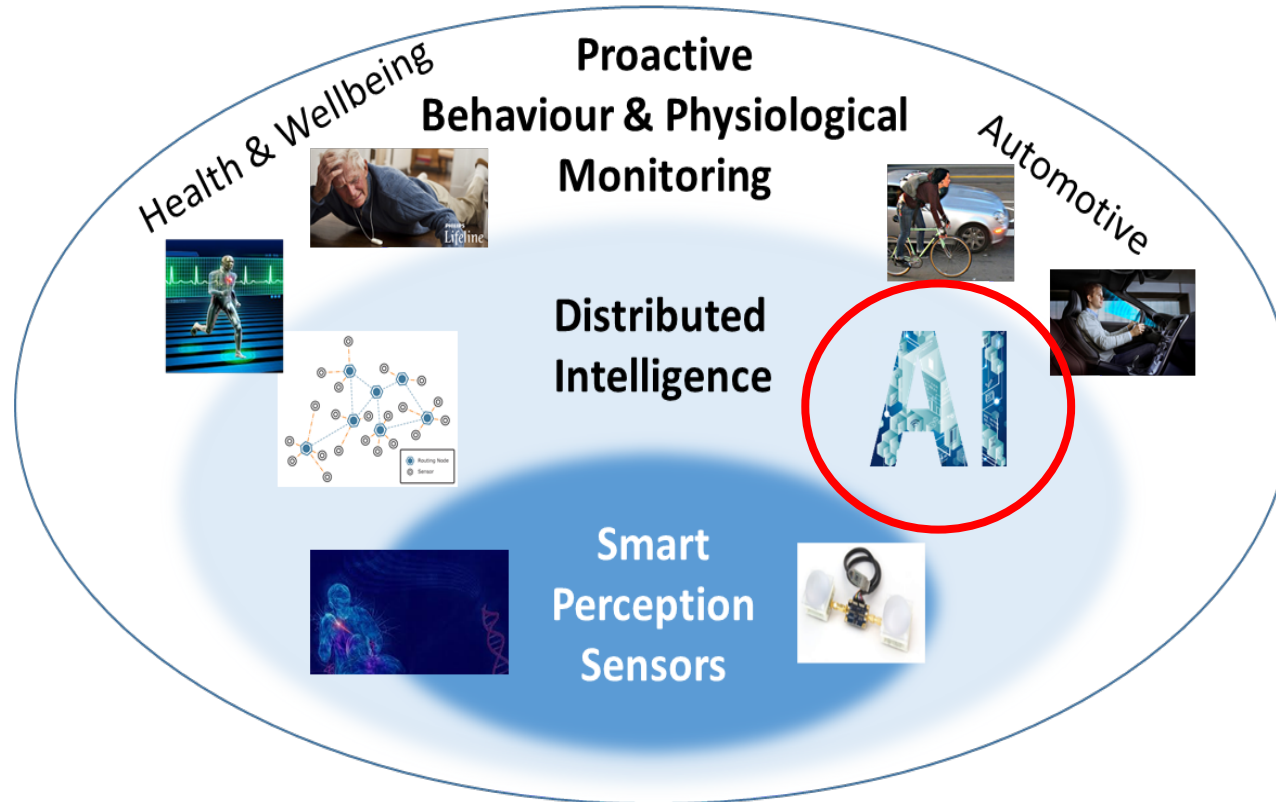
O3: Provide a reference platform to support the design, implementation and management of distributed sensing and intelligence solutions
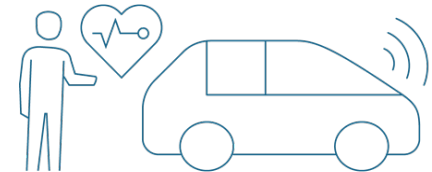
O4: Demonstration and validation of proactive monitoring solutions in Health and Wellbeing and Automotive domains, including cross-sector applications
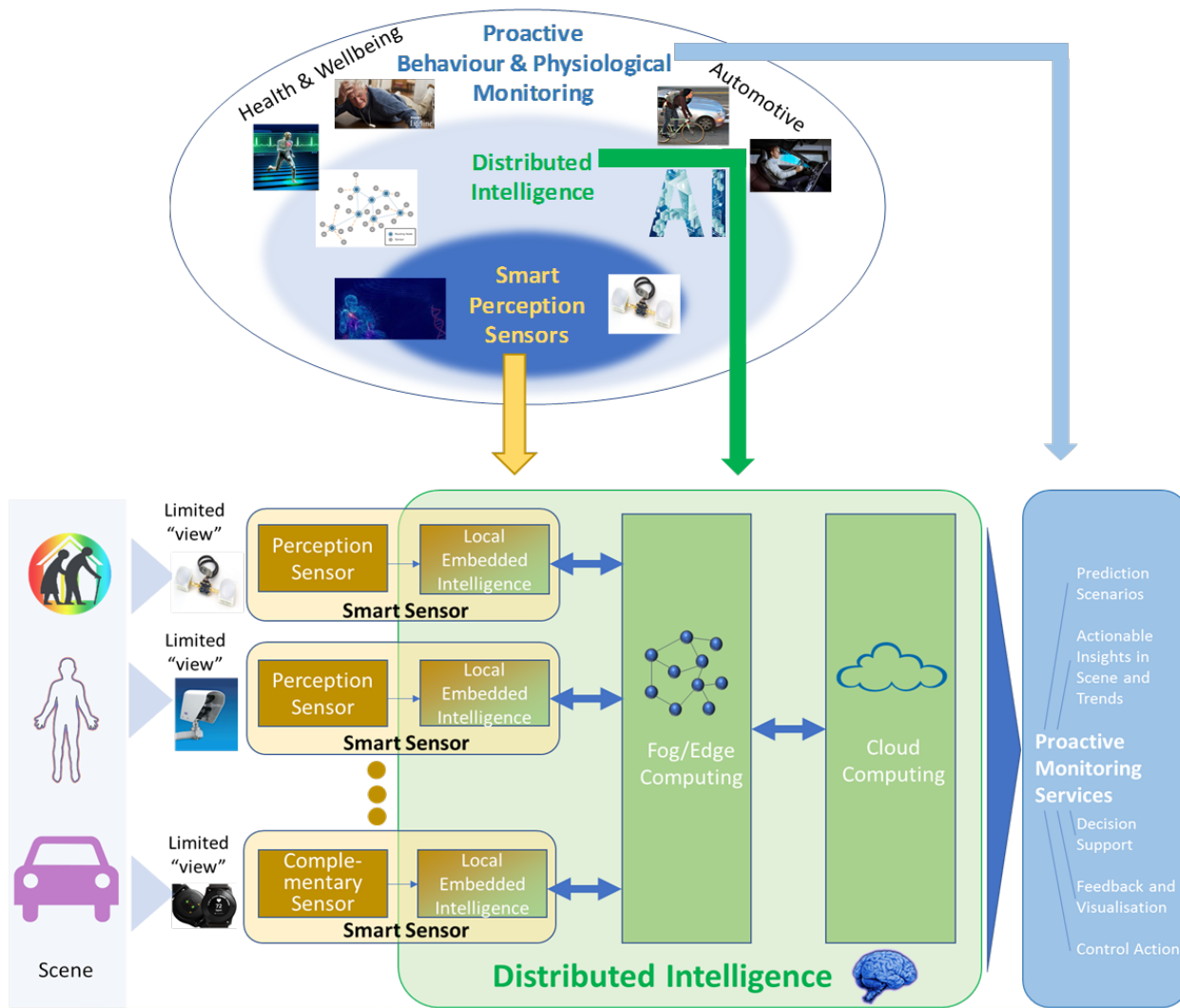
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Three Conceptual Levels

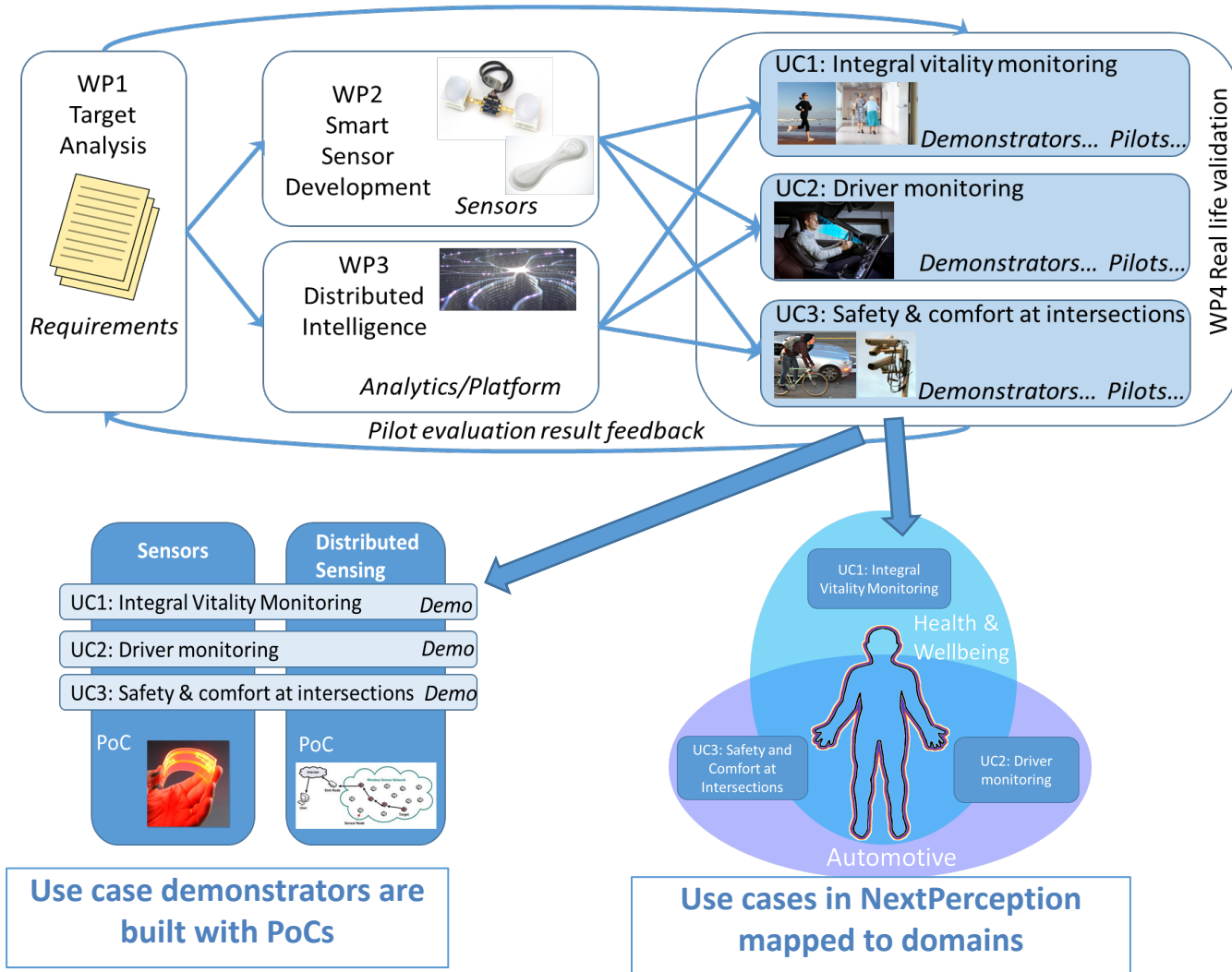- Each outer circle builds on and enhances the technologies in the inner circle

The Reference Architecture

Overall Approach

Use case demonstrators are built with PoCs

Use cases in NextPerception mapped to domains
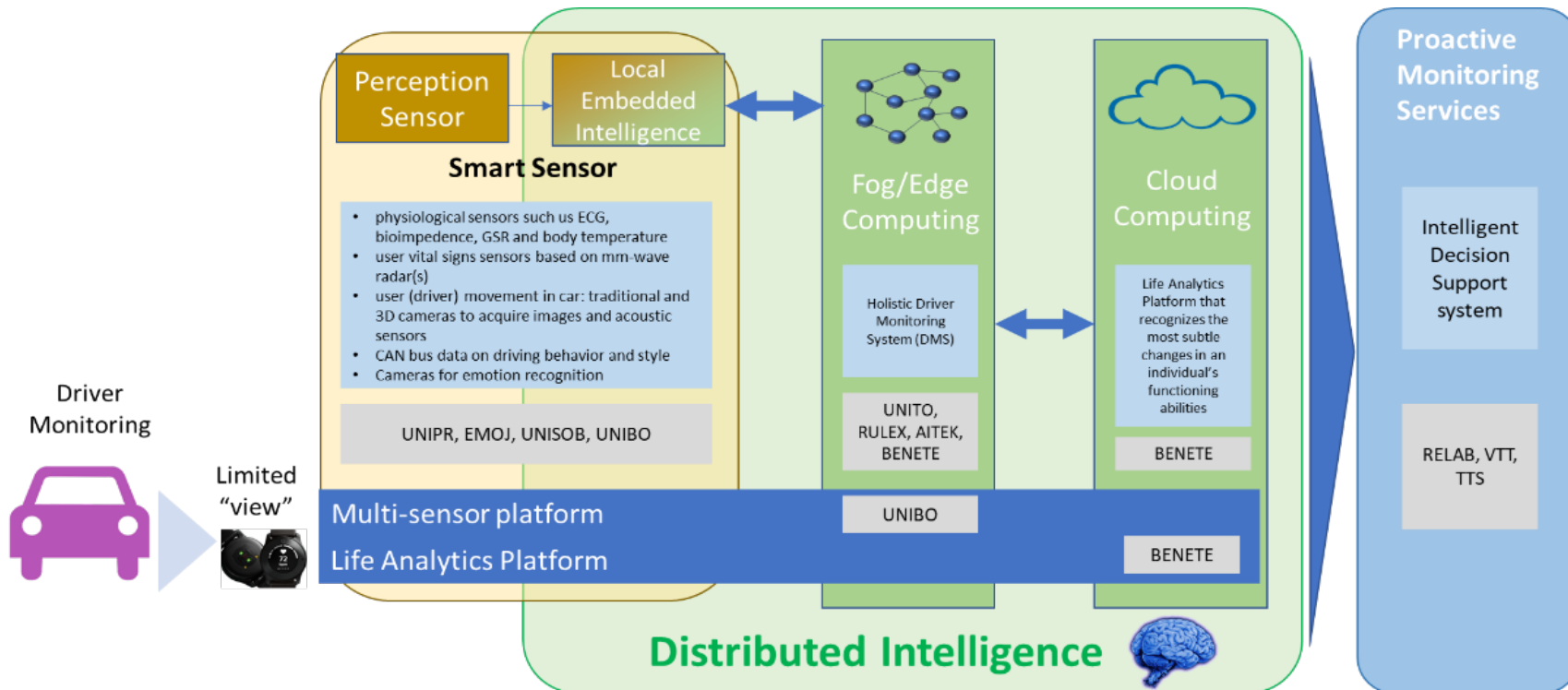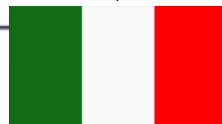
Use Case 2: Driver Monitoring

- Main goal: develop a Driver Monitoring System (DMS), which can classify both the **driver's cognitive states** and the **driver's emotional states**, as well as **the activities and positions of occupants** (including driver) **inside the vehicle cockpit**
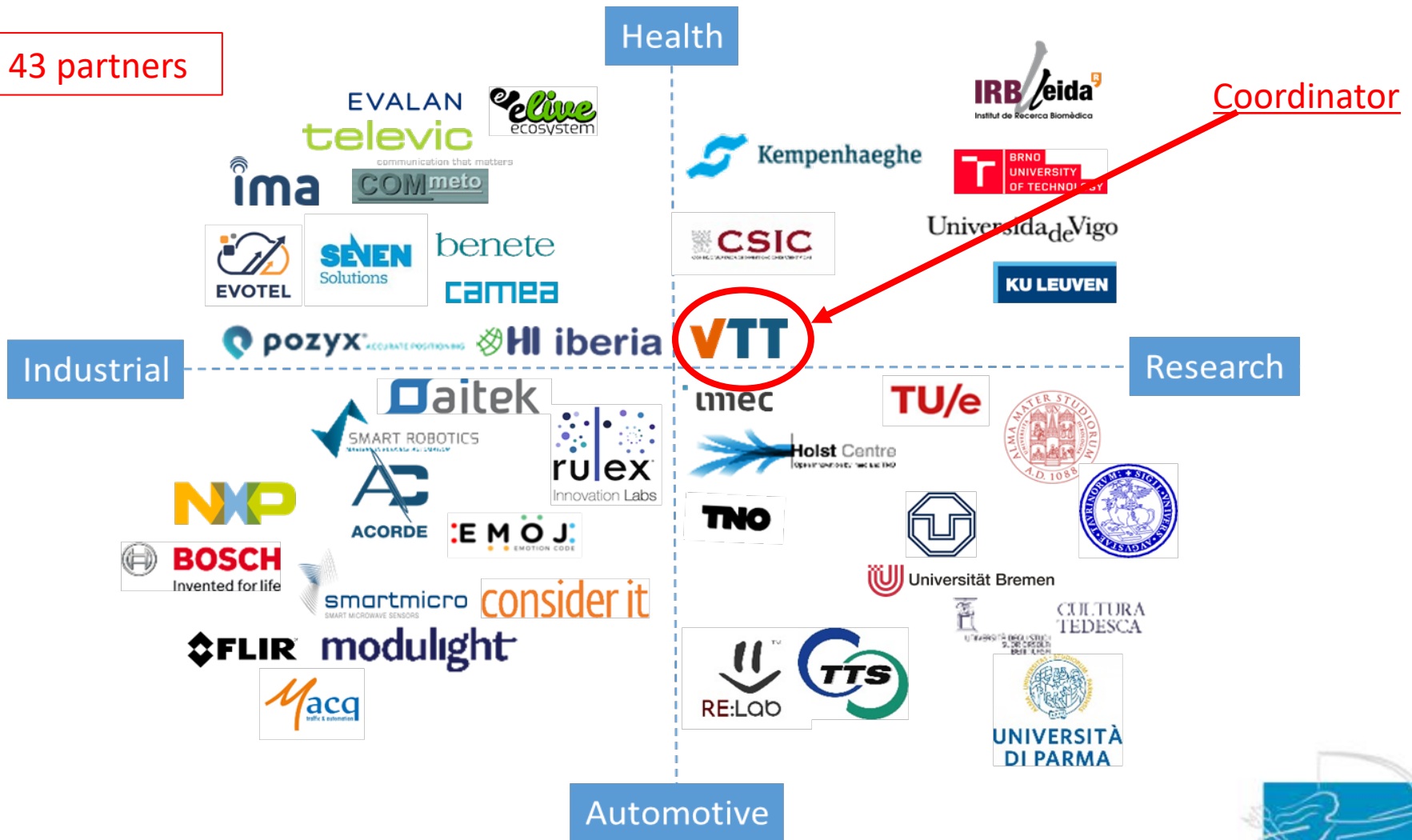

| Involved partners | UNIPR, UNIBO, UNISOB, UNITO, AITEK, RELAB, RULEX, EMOJ, VTT, TTS, BENETE |

Consortium as a Whole
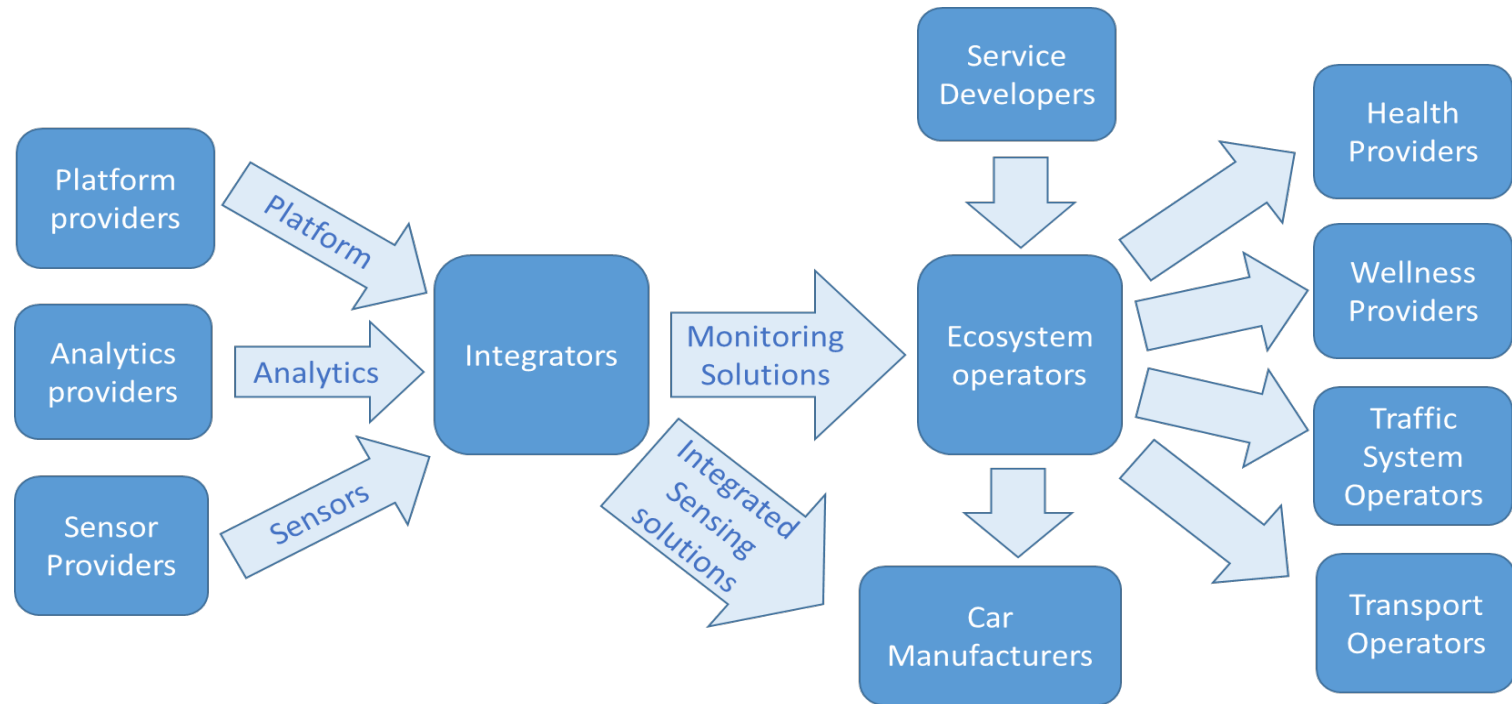
Project Value Chain

Building on AI(oT)

Aggregate Farming in the Cloud
(2018-2021)

afarcloud

N E X T
PERCE
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(2020-2023)

IoT Lab

InSecTT
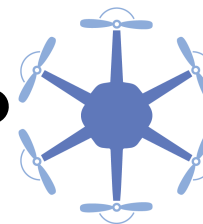
Intelligent Secure Trustable Things
(2020-2023)

ADACORSA

Airborne data collection on resilient
system architectures
(2020-2023)

things**2**i

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IoT Lab - http://iotlab.unipr.it