



capri

Press Release

Athens, October 2021

CAPRI Reference Architecture finalisation

The CAPRI Consortium is very pleased to announce the finalisation of the “CAPRI Reference Architecture” (CAPRI RA), intended to support innovative cognitive technologies and solutions inside the Process Industry, with the final CAP Reference Implementation (RI).

The CAPRI RA, as shown in Figure 1, includes a description of the main components of the so called CAPRI Cognitive Automation Platform (CAP), where all the Cognitive Solutions developed within the project will be integrated in a holistic solution, designed and implemented following the characteristics of three main industrial domains (namely Asphalt, Steel and Pharma), but able to be eventually extended and generalized for its wider adoption in other sectors or scenario of the Process Industry.

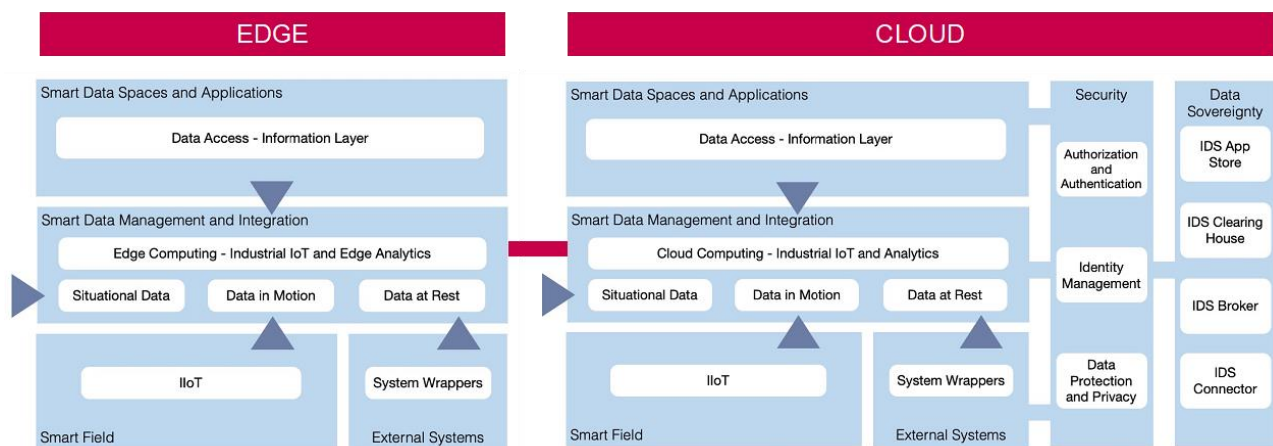


Figure 1 CAP Edge-Cloud Reference Architecture

The CAP Reference Architecture aims to cover several industrial scenarios, spanning from the edge to the cloud processing needs, and exploiting several Big Data analytics approaches. The



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 870062.

RA is able to support the analysis of streaming and batch data, acquired from heterogeneous external sources, with the support of machine learning technologies.

Furthermore, the CAPRI RA accommodates several technologies intended to support the Digital Transformation of the Process Industry with the adoption of cognition and other smart solutions, distributed over four main cognitive layers in Process Industry: Smart Industrial IoT connection, Smart Event Processing, Smart Knowledge and Semantic Data Models, Smart Decision Support.

The final CAPRI, as shown in Figure 2, aims to provide a series of interoperable Open Source tools, based on widely supported FIWARE and Apache frameworks, to simplify the development and deployment phases, and offering many options for extensions and integration, designed to accommodate an easy and seamless empowerment of the very fragmented IT infrastructures nowadays in use in the Process Industry.

ENGINEERING plays a key role in such a context, providing both deep knowledge and OSS solutions for adopting the FIWARE IDAS agents, and especially the IoT agent based on OPC UA that connect industrial assets to both gather data and interact with them, as required in the CAPRI Project Use Cases.

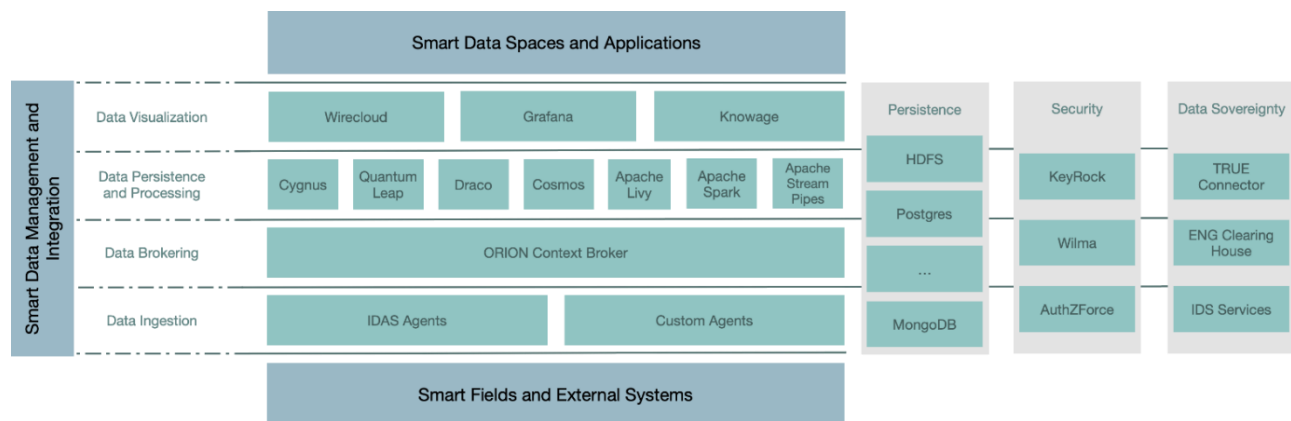


Figure 2 CAP Reference Implementation

The integration with the software stack offered by the Apache Foundation extends the capabilities of the CAPRI RA with **Spark**, which enables to run largescale data analytics applications across clustered computers. At the same time, **StreamPipes** is suggested, as a toolbox that enables non-technical users to connect, analyse, and explore IoT data streams with advanced AI algorithms. Its runtime is based on standalone microservices that can run anywhere - centrally on your server, in a large-scale cluster or close at the edge.

The CAPRI RI will be validated in the coming months in several pilots and further achievements will be described in following press releases.



About the project

Project Full Name: Cognitive Automation Platform for European PRocess Industry digital transformation

Project ID: 870062

Start Date: 01/04/2020

CAPRI (www.capri-project.com) is a 42-month H2020 project that brings cognitive solutions to the Process Industry by developing, testing, and experimenting an innovative Cognitive Automation Platform (CAP) towards the Digital Transformation. To achieve that, CAPRI enables cognitive tools that provide existing process industries flexibility of operation, improving the performance across different indicators (KPIs) and state of the art quality control of its products and intermediate flows.

Three main technical objectives enabled by the development, testing and experimentation of an innovative Cognitive Automation Platform (CAP) for three use cases from process industry (asphalt, pharmaceutical tablets and steel billets and bars manufacturing), are being pursued:

- **Process Industry Digital Transformation & Automation** through digital technologies like data collection, storage, and knowledge extraction to provide detailed insights into process control and resource availability.
- **Improved performance and flexibility in the process industry** via digitalisation of process industries to dramatically accelerate change in resource management, improve their performance and flexibility and in the design and the deployment of disruptive new business models.
- **Next generation process industry plans** for their autonomous operation of plants based on embedded cognitive reasoning, while relying on high-level supervisory control as well as providing support for optimised human-driven decision-making.

Follow us



For additional information please contact

Project Coordinator: CARTIF
Cristina Vega Martínez criveq@cartif.es

Dissemination & Exploitation Manager: Core-Innovation
Nikos Kyriakoulis nkyriakoulis@core-innovation.com

