

# Hyperconnected Architecture for High Cognitive Production Plants



2019 - 2023



## Objective

The main objective of HyperCOG is to demonstrate the innovation potential of the Cyber-Physical Systems and Data Analytics to transform the process industry and business models. A Cyber-physical System (CPS) architecture is proposed for achieving the goals of cognitive manufacturing.

## Innovative Aspects & Technologies

- Development of a platform that converts manufacturing industries into more flexible environments
- Implementation of advanced data analytics for extracting knowledge from production databases
- Development of a Decision Support System (DSS) to make the best possible decision in a specific situation
- Leverage on cybersecurity concerns for

Cyber Physical Ssystems (CPS) and Internet of Things (IoT) devices as business enabler

- Development of strategies for training and reskilling human resources

## Impacts

- Demonstration of industrial symbiosis by the CPS architecture implementation and validation for 3 pilots of 3 different manufacturing sectors (steel, cement, and chemical plants).
- Improved capabilities for valid, reliable and real-time control logics of the properties, efficiency and quality of process streams and final products for existing and for more flexible process operation concepts
- Increased production performance, energy and resource consumption, or waste or by-products production will be significantly improved by more than 20%



## Ekodenge's Role

### Partner

- A positive environmental impact with project outcomes, reducing CO2 emissions compared to the state of the art and in the scale relevant for the different applications

- Effective dissemination of major innovation outcomes to the current next generation of employees of the SPIRE sectors

- Easily replicable in any process industry with the help of HyperCOG solution

- Development of a monitor based user interface to display object state and user state monitoring for 3 industrial use cases

- Development of a service to access data and to share data of the CIMSA use case to related partners

- Participation in Cement case on-line validation

- Identifying the needs and requirements of CIMSA end-users to participate in preparing training packages for end-users

- Development of a dynamic approach for environmental assessment

## Partners



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