Coordinating Optimisation of Complex Industrial Processes

12 partners from 6 European countries (Finland, Sweden, Denmark, Germany, The Netherlands and Spain) covering several sectors of the industry: **steel**, **nutritional** and **materials products**, **automation technology providers**, **consultancy** and **software.**

The vision:

Complex process industry plants
will be optimally run by the operators with the
guidance of a coordinating, real-time optimisation system

General details

Project Start Date: 1st October 2016
Project End Date: 31th March 2020
Project duration: 42 months
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Web page: www.cocop-spire.eu
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Need

Process industry faces a strong need to increase **product quality** and reduce **operating costs** & **environmental footprint**. A complex plant comprises continuous and/or batch unit processes. The plant's complexity stems from its dynamic properties, so a **plant-wide monitoring** and **control** is a requirement for achieving economically and environmentally efficient operation.

Objective

To achieve plant-wide monitoring and control by **using the model-based, predictive, coordinating optimisation concept** in integration with local control systems.

Beneficiaries

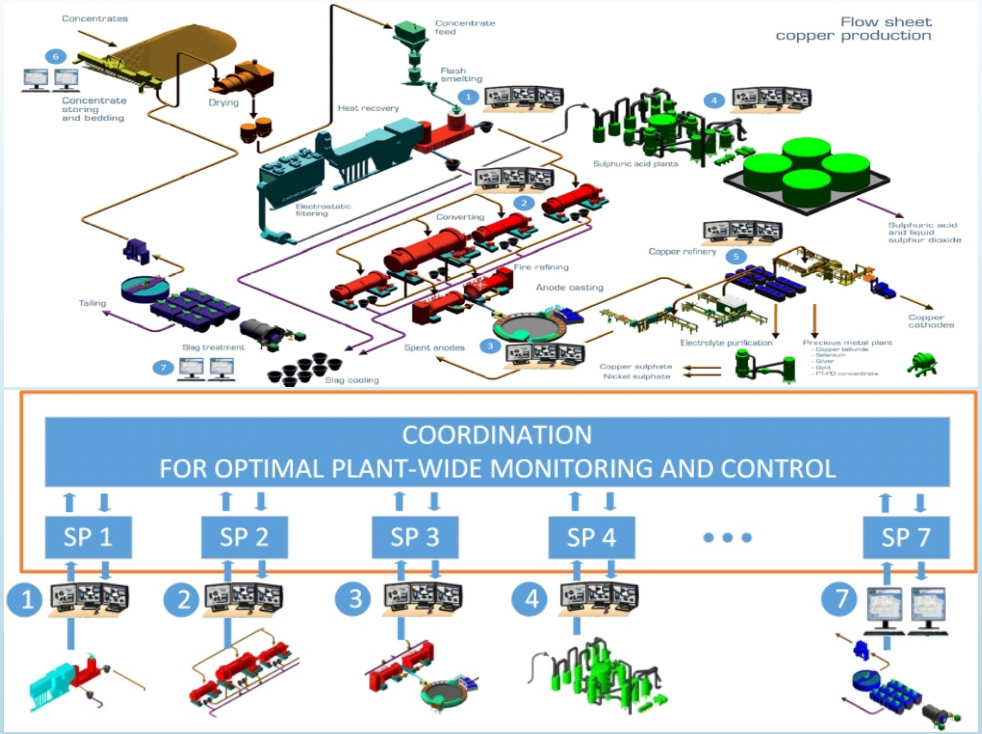
The companies who can benefit from the COCOP´s results are:

- **Process Industry:** Iron & Steel, Copper, Chemical, Water treatment, Cement, Glass, ...
- **Automation solution suppliers**

Benefits

- **Reduced** operation **costs**
- Increased **sustainability** (**reduced energy and resource consumption** and decreased **greenhouse gas emissions**)
- **Improved working conditions** of plant operators by the new process control tools which support the operating work.
- **Increased competitiveness** of the European process and automation industry.

COCOP is based on the **decomposition-coordination optimisation of the plant operations**: the overall problem is decomposed into unit-level sub-problems, so then the solutions of sub-problems are coordinated to plant-wide optimal schedule using high-level coordination. This will enable operators to understand the functioning of the plant as a whole, including the areas traditionally beyond their control, and take better decisions within their part of the process.



COCOP will combine the technological development with a **social innovation process** of co-creation and co-development for improving effectiveness and impact of the innovations and operator acceptance.

Pilot cases:

- **On-site application and validationat two plants**: copper and steel manufacturing process.
- **Transferability analysis** to other two sectors: **chemical** & **water treatment processing.**