# COCOP: Open-source software for information exchange and systems integration

Project:
Coordinating Optimisation of Complex Industrial Processes

Project website: *www.cocop-spire.eu*

A complex industrial plant comprises continuous and/or batch unit processes where the complexity stems from its dynamic properties. In order to achieve an economically and environmentally efficient operation of a plant, the objective of the COCOP project was to **enable plant-wide monitoring and control by using the model-based, predictive, coordinating optimisation concept in integration with local control systems.**

The project also combined technological and **social innovation within a common co-creation process** in order to improve effectiveness and impact of the innovations, their implementation process and user's acceptance.

The implemented solutions were tested in **two industrial scale tests**: in a **steel** and in a **copper plant**. The test cases validated the requirements and the developed solutions. The quantitative results provided good evidence that these approaches can enable to achieve the objectives and **provide considerable economic benefits** when the solutions have been developed to the TRL 9 level.

The COCOP general concept can be applied to any large industrial production site because it relies on general methods such as modelling of dynamics, data analysis and optimization. Thus, the project also analysed the transferability to other three sectors: Wastewater Treatment, Chemical and Glass Manufacturing sectors.

COCOP was a collaborative 42-months SPIRE project (October 2016-March 2020) and the consortium consisted of 12 partners (5 research organisations and 7 companies), from 6 European countries**.** This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 723661.

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Sector:

## Chemicals

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## Engineering

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## Non-ferrous metails

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## Steel

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## Water

Summary:

The COCOP toolkit for information exchange and systems integration enables scalable, decoupled communication in industrial software systems. It comprises a message-bus-based communication stack as well as supportive tools. These are available as open source (please find the link in “resources”).

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Theme:
Plant-wide monitoring - SPIRE02-2016
Keywords:
systems integration, communication protocols, inormation model, architecture, plant-wide, process control
Type:
**Software**
**Document**

### Resources

Link:
COCOP toolkit to integrate industrial systems in a decoupled yet well-scalable fashion
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