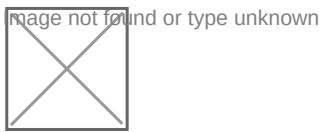


CoPro: Cross-company site-wide optimisation without sharing of sensitive data

Project:

Improved energy and resource efficiency by better coordination of production in the process industries



The goal of the CoPro project was to develop and to demonstrate methods and tools for process monitoring and optimal dynamic planning, scheduling and control of plants, industrial sites and clusters under dynamic market conditions, to provide decision support to operators and managers and to progress to automated closed-loop solutions to achieve an optimally energy and resource efficient production.

CoPro brought together 17 partners from 8 EU countries, including 5 industrial end users and 6 technology providing SMEs. The project developed solutions for the **plant-wide optimisation of large plants, for balancing production and consumption in industrial parks for industrial symbiosis**, and addressed **power plant scheduling** and **demand-side response**. It further developed online data analytics for **anomaly detection**, and **decision support** for plant operators and managers. The solutions can be integrated into the IT infrastructure of the plants via an **integration platform** that supports the connection to different IT systems. CoPro developed **model libraries** for the efficient development of advanced optimisation-based solutions and techniques and software for **hybrid modelling** and **model management**.

The developments of CoPro were motivated by and applied to challenging use cases from different sectors of the process industries:

- (Petro-)chemical production;
- Cellulose fiber production;
- Production, formulation and packaging of consumer goods;
- Sterilisation and packaging of food.

CoPro demonstrated that significant savings of energy and resources are possible by using advanced technologies for monitoring, decision support, optimisation, and planning and scheduling.

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Sector:

Chemicals

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Non-ferrous metals

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Steel

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Water

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Summary:

The Problem

- Large chemical sites consist of several independently managed production plants.
- There is a high degree of integration and coupling via streams of energy and material.
- Site-wide optimisation is difficult due to the problem size and confidentiality reasons.
- There is a large unexploited economic and ecologic potential.

The Solution

- Coordination by a neutral coordinator to improve the efficiency of the site.
- Consumption and production of shared resources is charged at certain prices.
- The coordinator adapts the transfer prices according to the current situation.
- The coordinated plants only transmit their consumption and production amounts for certain prices to the coordinator.

Theme:

[Plant-wide monitoring - SPIRE02-2016](#)

Keywords:

Cross company optimization, Coordination, Process industry, Confidentiality, Industrial Symbiosis, Circular economy

Type:

[Case study](#)

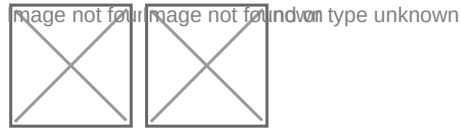
[Software](#)

[Poster](#)

Resources

Link:

[Cross-company site-wide optimisation without sharing of sensitive data](#)



Complementary Material:

[Poster: Cross-company site-wide optimisation without sharing of sensitive data](#)

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