CoPro: Model Management Platform

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

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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:

Cement

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Ceramics

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Chemicals

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Engineering

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Minerals

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Non-ferrous metails

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Steel

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Water

Summary:

The Problem

- Model-based real-time applications will increasingly be developed
  – for different kind of applications and projects
  – by different people
  – with different model development tools
  – in different versions.
- To handle the increasing number of models, companywide model management and maintenance is necessary.
- The potential for synergies when using models should be exploited better.

The Solution

- LeiKon's Model Management Platform.
- Versioning and deployment of model master data, model algorithms and model parameter sets for models that were developed by different tools.

- Automatic import of model description data from model development tools.
- Successful installation at an industrial site managing more than 100 surrogate models.

Theme:
Plant-wide monitoring - SPIRE02-2016
Keywords:
Model Management, Model life cycle support, Model Versioning, Deployment of model-based solutions
Type:
Software

Resources

Link:
Technology Short Description: Model Management Platform
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