



COORDINATED PRODUCTION
FOR BETTER RESOURCE EFFICIENCY

Press release

EU Project CoPro: 2nd Meeting with the Industrial Stakeholder Panel

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2nd meeting of the CoPro Consortium with the cross-sectorial Industrial Stakeholder Panel

The CoPro consortium met with the CoPro Cross-sectorial Industrial Stakeholder Panel (ISP) for the second time on May 28, 2019 at the P&G Brussels Innovation Center. The consortium presented the R&D results of CoPro and first implementations at plants of the industrial partners to experts from several industrial domains: chemicals, steel, metals, health care and crop protection. The ISP members in unison appreciated the developments of CoPro as relevant and useful for the whole process industry.



Photo: The CoPro Project Team, members of the CoPro ISP and the Project Monitor at P&G Brussels

The goal of CoPro is to improve the resource efficiency of industrial plants and industrial parks by improved process monitoring and optimal dynamic planning, scheduling and control of interconnected units and plants.

CoPro develops and demonstrates advanced plant-wide and site-wide coordination and control technologies in 5 industrial use cases that cover several sectors of the process industries:

- Integrated petrochemical production (INEOS in Köln, Germany)
- Base chemicals and polymer production (Covestro, Germany)
- Cellulose production (Lenzing AG, Austria)
- Consumer product formulation and packaging (P&G Europe, Belgium and France)
- Unfreezing, packing and sterilisation of fish (Frinsa del Norte, Spain).

CoPro pays special attention to the human aspect in plant operations and aims at finding the right balance between human understanding and responsibility, automation, optimisation, visualisation and heuristic decision making. As the effort required for the development and maintenance of accurate plant models often is the bottleneck for the development and long-term operation of advanced control and scheduling solutions, CoPro develops methods for efficient modelling and for model quality monitoring and model adaptation. For the implementation of advanced tools as developed by CoPro, an integration platform is under development that facilitates the integration of advanced optimization and visualization tools into the existing IT and OT landscape.

Some highlights of the presentations at the ISP meeting were:

- *Computation and visualisation of the best demonstrated plant efficiency* from historic plant data in order to support the operators in running the plants as efficiently as possible
- *Integrated optimization of a complete petrochemical production network* including storage and logistics and adaptation to the price of electric power
- Coordination of the *production and procurement of technical gases*
- *Real-time optimization of the load allocation* in a large industrial evaporator network using data-based models and mixed-integer optimization
- *Minimisation of changeover times* in a formulation and packaging plant for consumer products
- *Production planning and scheduling for a food processing plant* with a high variety of products, including optimal utilization of a set of sterilizers
- Prototype tool for the *integration of data-based models with rigorous plant models* within the gPROMS product suite
- *Integration platform* for advanced optimisation and visualisation.

More details and publications can be found on the CoPro web-site www.copro-project.eu

The experiences of the CoPro consortium with the application of data analytics and machine learning were discussed vividly. There was agreement that a brute-force application of these techniques to unfiltered and ununderstood data sets is not likely to be successful. Rather, a combination of fundamental insight and structured models with data-based modelling was advocated.

Some statements from ISP members after the meeting:

“It was great to see so many applications and implementations already working well and showing results. I could clearly see that the cooperation between universities, research institutes, service providers and modelling companies achieved results and implementations that would not be possible in the same way by one company alone. The industrial cases show productivity improvements and resource savings in line with the expected impact of the project. I especially also liked that it was openly shown that a lot of data cleaning is needed before data-based methods provide useful results.”

**Prof. Dr. Stefan Krämer |
Head of Process Performance Improvement | Bayer AG**

„CoPro aims at the solution of real-world industrial problems. The collaboration of industry, SMEs and research institutes leads to holistic solutions and innovative decision support systems. The CoPro solutions are broadly applicable in the process industries, including the metals industry.

**Dr. Bianca Springub |
Modeling & Advanced Analytics Research, Development & Innovation | Aurubis AG**

“CoPro is bridging the fundamental gap between algorithmic developments and their application to industry. CoPro combines research efforts on optimization and data processing with process expertise and an understanding of the challenges in industrial production. This leads to innovative solutions for a higher efficiency of the production processes. CoPro makes a big contribution to the transformation digitalisation concepts into productive industrial practice.”

**Dr. Bernhard König |
Area manager of the metallurgical competence centre | K1-MET**

“The baseline of the work on the use cases is that process knowledge (e.g. models of heat transfer) is combined with modern means of digitalization like machine learning and optimization to provide process insight and to better coordinate production in real time. The partnering universities are developing innovative strategies for solving complex scheduling problems and address the problem of preprocessing and modeling of “dirty” data that is usually obtained from industrial processes. The technology providing SMEs develop solutions for the problem of orchestrating data from different sources and building hybrid, partly rigorous and partly purely data driven models. The excellent presentations at the 2nd ISP meeting showed that significant progress has already been achieved and that the CoPro project leads to results of high industrial relevance.”

**Dr. Markus Bauer |
Head of Process Systems Engineering | Wacker Chemie AG**