ProOpter
Production dynamics analyser and **optimizer**

ProOpter **extends the functionality** of classical MES systems with **embedded intelligence**. It enables the analysis of the production dynamics using complex analytical functions and **advanced production control concepts** that are based on embedded models.

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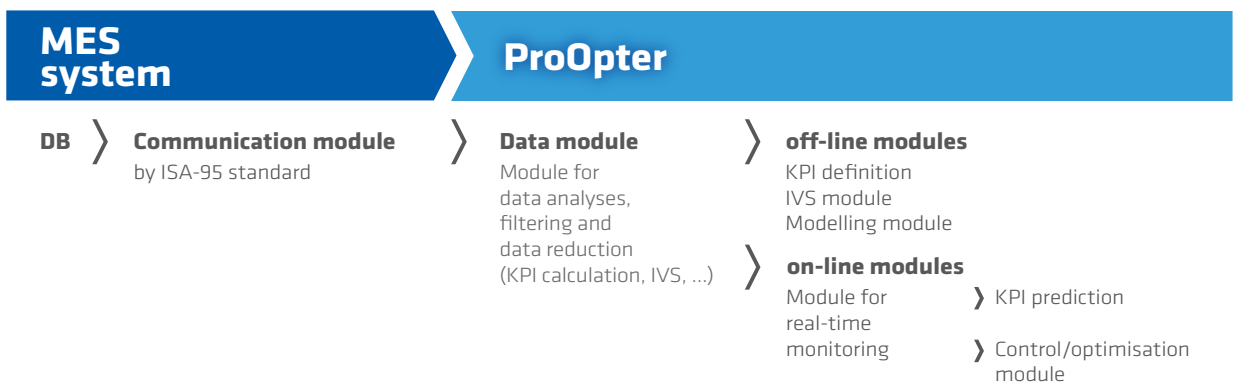
competence centre for advanced control technologies

Purpose

For a successful manufacturing it is important to use production information systems. These tools are able to collect a vast amount of data, which are the basis for the production optimization. By analysing the historical data, we can contribute to better and simpler production control. The Production dynamics analyser and optimizer represents an upgrade of classical MES systems, and thus increases the functionality and efficiency of production information systems.

Bussines planning & logistic	Production control	ProOpter	Process control
ERP	Manufacturing Operations & Control MES	ISA 95	Continuous control Discrete control Batch control

Function

ProOpter enables the analysis of the production dynamics using advanced methods like data mining, data reduction, determination of relevant manipulated variables and production performance indicators model identification. The obtained models enable the prediction of the production dynamics, which is the basis for the production optimization. ProOpter is composed of several modules, where some of them are used on-line, and others off-line. Connectivity with classical MES systems is enabled by standard IT interfaces.

MES system > **ProOpter**

DB > **Communication module**
by ISA-95 standard

> **Data module**
Module for data analyses, filtering and data reduction (KPI calculation, IVS, ...)

> **off-line modules**
KPI definition
IVS module
Modelling module

> **on-line modules**
Module for real-time monitoring

> KPI prediction

> Control/optimisation module

Innovation

Production information systems currently used in production companies, are very efficient in data collection and its presentation, but are quite limited in the support of decision making and production optimization. The Production dynamics analyser and optimizer enables effective control of various types of manufacturing processes. Its main advantage is in use of simplified KPI models that are identified from historical data.

Effects

ProOpter will unburden the production manager and help him take better decisions in order to improve the production process. With the introduction of Production dynamics analyser and optimizer we can expect savings in various segments in the production such are better product quality, increasing the efficiency, reduction of waste, production cost reduction ...

Application areas

Production control, planning and scheduling in production, inventory management, supply chain management ...

Partners

Department of systems and Control, Jožef Stefan Institute (http://dsc.ijs.si/en/), Laboratory of Modelling, Simulation and Control & Laboratory of Autonomous Mobile Systems, University of Ljubljana, Faculty of Electrical Engineering (http://msc.fe.uni-lj.si/).

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