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Chapter IV

Organisation Models and Information Systems for Production-Integrated Environmental Protection (OPUS)

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Abstract

Environmental protection in companies gains higher importance as the demand for information on environmental performance is rewarded by society, market and policy makers. Additive environmental technologies encounter increasing ecological and economical borders. Production-integrated measures for environmental protection are much more efficient and sustainable. Such measures extend over inner enterprise and enterprise spanning order processing and value chains. They open up numerous possibilities for product and process innovation by combining ecological and economical potentials. The research project OPUS provides solutions

for the organization of product-development and production-processes in and between companies under environmental aspects. Parts of those solutions are information technologies and information systems that support the processes within a company and over the entire logistical network. The development of methods, models and prototypes within the project is based on the processes of construction, process planning, production planning and control, production scheduling, balancing and controlling and intercompany environmental management. Results were applied, evaluated and optimised in different companies out of the branches of machine building, aircraft building, chemical industry, electronic industry and software development for industrial fields of application.

General Structure of the Project

The purpose of the OPUS project is to develop concepts of IT and information management with the objective of integrating environmental protection into the business processes of enterprises. The business processes cover the whole range of the company-related order processing (Figure 1).

The examined topics were supplemented by intercompany aspects of integrated environmental protection external to the enterprise, in particular with regard to the management of material flows.

The research work was carried out in close collaboration of the following institutes:

- Institute for Technology Management (IAT), University of Stuttgart (project coordination),
- Fraunhofer Institute for Industrial Engineering (IAO), Stuttgart,
- Research Institute for Rationalisation (FIR) at the RWTH Aachen,
- Fraunhofer Institute for Production Technology (IPT), Aachen,
- Department of Production Management, University of Bremen,
- Laboratory for Machine Tools and Production Engineering (WZL) at the RWTH Aachen.

The integrated approach to support environmental protection needs to address aspects of organization and information. Due to this, a parallel examination of the fields of organization and information was chosen as a central approach of the project work.

Autobiography as a Source of Ecological Sustainability With Reference to Literature

Deepanjali Mishra (2022). *International Journal of Social Ecology and Sustainable Development (pp. 1-9).*
www.irma-international.org/article/autobiography-as-a-source-of-ecological-sustainability-with-reference-to-literature/287125