MoProLog – Modular Production Logistics in the Process Industry – Requirements and Systematizations

Kai Gryczycha\textsuperscript{a}, Michelle Blumenstein\textsuperscript{b}, Stefan Lier\textsuperscript{a}, Alexander Fay\textsuperscript{b}, Oliver Weigel\textsuperscript{c}, Oczan Judel\textsuperscript{c}, Niklas Austermann\textsuperscript{d}

\textit{a: FH Südwestfalen, Meschede, Germany; b: Helmut-Schmitt-Universität, Hamburg, Germany; c: BASF, Ludwigshafen, Germany; d: BEUMER, Beckum, Germany}

Trends towards product differentiation, rapidly changing markets and shorter product lifecycles pose major challenges for the process industry. Modular production and logistics systems can offer a solution to overcome these challenges. They promise to provide the currently required system capacities in the sense of Plug & Play within a short period of time, demand-oriented and thus energy-efficiently. Even in conventional production environments and grown structures, there is an increasing need for flexibility and fast commissioning of the process-related supply and disposal systems. The ENPRO project “MoProLog - Modular Production Logistics” takes one step in this direction by investigating, standardizing and demonstrating energy-efficient, flexible modular supply and packaging modules for modular production plants. In addition to material and energy interfaces, the project focuses in particular on information technology interfaces and the integration of various logistic modules into an overall modular system.

In this contribution, the scope and challenges of modular logistics plants will be addressed initially. Then, the first results of the research project are presented. These results mainly include requirements for logistic modules, which will be illustrated by means of application scenarios and a generic process model, which shows the possible functionalities of a modular production logistics system. On the basis of this process picture, an outlook towards a service-oriented approach for modular production logistics systems is shown. In the continuation of the project this approach will be used to define appropriate information technology interfaces for the logistics modules of a modular production plant.

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