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Coordination of models and activities for rapid factory layout development

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Abstract

The vehicle industry faces a great challenge when changing towards environmentally safe vehicles and production while keeping its competitiveness. The necessary changes has to be realized rapidly and with secured quality and lead time, a challenge which this paper addresses. Changing the design of a factory involves the design of a number of parallel and interdependent systems such as the machining resources and robot cells, the supply systems for electricity, water, air, heat and cooling, pneumatics and hydraulics, the systems for chip and waste handling, process fluid, communication networks, sprinkler systems, as well as the building construction. Thus the coordination of information and models, as well as of the design work activities, is a key to achieve a fast and flexible development process. This paper will present the results from a research project focusing on computer aided work processes and the communication of models between various stake holders in layout design. The primary objective was that of providing methods for a coordinated factory development process with a facilitated information exchange and reuse of knowledge and models. Results concerning required layout and PLM functionalities, as well as modelling and communication principles, tested in an industrial case, will be presented. harness the energy transferred to the airfoil to be used as a wind conversion energy system. For the case of a rigid airfoil, our goal is to determine the consequence of the laminar separation bubble on instantaneous forces on the airfoil to improve the design of UAVs and wind turbines blades.

Biography

Lars Lindberg is research engineer at the department Computer systems for design and manufacturing. He has previously worked at ABB, Intergraph, and in his own consultancy company in various roles. His main focus area is product lifecycle management (PLM). Further, he has recently developed a new Masters course in PLM.