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Virtual Factory Framework for Supporting Production Planning and Control

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Abstract: Developing optimal production plans for smart manufacturing systems is challenging because shop floor events change dynamically. A virtual factory incorporating engineering tools, simulation, and optimization generates and communicates performance data to guide wise decision making for different control levels. This paper describes such a platform specifically for production planning. We also discuss verification and validation of the constituent models. A case study of a machine shop is used to demonstrate data generation for production planning in a virtual factory.

Keywords: Virtual factory, Simulation, Production Planning and Control