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Retrieving properties of manufacturing systems from traceability data for performance evaluation and material flow simulation

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Abstract

The operation of manufacturing systems is increasingly accompanied by data-driven continuous improvement processes and product traceability is required. Commonly, radio-frequency identification (RFID) technology is applied to track the flow of a uniquely-identifiable workpiece along various stations or waypoints within a factory. Based on an automotive use case, this paper describes how to analyze the resulting traceability data in order to identify several properties of a manufacturing system. The acquired knowledge can support performance evaluation and facilitate model building for material flow simulation as a foundation for digital twins and cyber-physical production systems.

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