

Application of Semantic Technologies in Rapid Reconfiguration of Factory Systems

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Abstract : Digital factory based on visual design and simulation has emerged as a mainstream to reduce digital development life cycle. Some basic industrial systems are being integrated via semantic modelling, and products (P) matching process (P)-resource (R) requirements are designed to fulfill current customer demands. Nevertheless, product design is still limited to fixed product models and known knowledge of product engineers. Therefore, this paper presents a rapid reconfiguration method based on semantic technologies with PPR ontologies to reuse known and unknown knowledge. In order to avoid the influence of big data, our system uses a cloud manufactory and distributed database to improve the efficiency of querying meeting PPR requirements.

Keywords : semantic technologies, factory system, digital factory, cloud manufactory

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