54th CIRP Conference on Manufacturing Systems

Method for the generation of use case related views for Digital Twins

Stefan Kugler[a],*, Alexander Kern[a], Reiner Anderl[a]

Technische Universität Darmstadt, Otto-Berndt-Str. 2, Darmstadt 64287, Germany

* Corresponding author. Tel.: +49-6151-1621842; fax: +49-6151-1621793. *E-mail address: kugler@dik.tu-darmstadt.de*

Abstract

As a result of the ongoing digitization, the amount of data generated in companies is continuously increasing. At the same time, IT infrastructures are becoming more sophisticated as the number of software systems used increases and additional databases have to be integrated. In-depth IT knowledge is required to use the acquired data and administer the systems, but is often not available to the extent necessary. This can reduce the readiness for digitization topics in the company. As a result, collected data is not used and does not benefit companies as dark data. A current and promising topic in this context is the Digital Twin. The Digital Twin is a complex information technology concept that utilizes data to realistically represent the behaviour of a physical product for specific use cases. Consequently, it gains value by feeding it relevant data. However, defining the correct use cases for Digital Twins may pose a significant challenge. Therefore, this concept paper presents a method for use case related views of Digital Twins. It supports the definition of use cases that are integrated into the Digital Twin as use case related views. In addition, data required to generate an instance-specific use case related view is automatically retrieved and visualized by the existing Digital Twin.

Keywords: Digital Twin; View; Industry 4.0; Digitalization