German Research Center for Artificial Intelligence

SPAICER

Smart Resilience Services in the manufacturing industry

In a globalized and interconnected industry, interruptions in production and supply chains represent the leading business risk and can result in massive monetary losses. Amplified by a significant increase in complexity in production due to Industry 4.0, resilience management becomes an indispensable success factor for industrial production.

The ability of a company to permanently adapt to internal disturbances (e.g., quality variations of materials) and external changes (e.g., heat periods, corona crisis) represents the "search for resilience".

In context of the digital Hannover Messe in April 2021, the SPAICER team will present first project results of an AI-based wear prediction for resilience optimization of production machines in the context of fineblanking and glass production.

By means of Smart Resilience Services, e.g., sensory data streams of production machines as well as quality data of tools and raw materials are analyzed. Based on this, recommendations for action can be provided for parameter optimization, planning of maintenance intervals or precautionary abortion of a production run. This enables a reduction of production errors due to machine wear as well as cost savings by avoiding production downtimes.

Under direction of Prof. Dr.-Ing. Wolfgang Maaß, the DFKI research department Smart Service Engineering coordinates the SPAICER project in cooperation with 12 partners. Partners are Machine Tool Laboratory (WZL) at RWTH Aachen University, University of Freiburg, Technical University of Darmstadt, Institute for Technology and Innovation Management at RWTH Aachen University, Otto Beisheim School of Management (WHU), deZem, Feintool, SAP, SCHOTT, SEITEC and SENSEERING.

In addition, more than 40 associated partners from leading industrial and research sectors are involved in the project and support the consortium with their expertise. With a total volume of €10 million, SPAICER project is funded by the German Federal Ministry for Economic Affairs and Energy from 01.04.2020 - 31.03.2023 as part of the KI-Innovationswettbewerb.

SPAICER project aims to develop a data-driven ecosystem based on lifelong, collaborative and low-threshold Smart Resilience Services (SRS) by leveraging leading AI technologies and Industry 4.0 standards. This should enable to foresee disruptions (anticipation) and to adjust production plans (response).

In compliance with: GAIA-X daten-infrastruktur.de

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Gefördert durch: Bundesministerium für Wirtschaft und Energie aufgrund eines Beschlusses des Deutschen Bundestages

DLR Projektträger

Contact:

DFKI GmbH
Research Department
Smart Service Engineering

Dr.-Ing. Sabine Janzen

+49 681 85775 5269

www.spaicer.de

Stuhlsatzenhausweg 3
D-66123 Saarbrücken

pm-spaicer@dfki.de