Universität Regensburg

Secure Industrial Semantic Sensor Cloud

The SISSeC (Secure Industrial Semantic Sensor Cloud) project is part of the SeDiPeT (Secure Digital Performance Twin) network, which focuses on developing novel industry 4.0 solutions. The project started on 01.10.2019, is funded within the scope of the Central Innovation Programme for SMEs (ZIM) of the Federal Ministry of Economics (BMWi) and has a planned project duration of three years – until 2022.

As machines are generating immensely large log files that are not sufficiently processed today, this research project aims at the efficient use of data in an industrial context. Especially SMEs are not prepared for current standards in IT and state-of-the-art production processes. Within this project, the collection, processing, and analysis of data from drills for printed circuit boards in a cloud environment are targeted. As a result, the novel insights are expected to lead to more efficient and effective production of printed circuit boards.

Within this project, the Department of Information Systems at the University of Regensburg, under the lead of Prof. Dr. Günther Pernul, is involved in the following areas:
1. conceptual development of the buffer persistence and analytics system
2. design of the virtual representation of a machine (digital twin)
3. implementation of the persistence system
4. implementation of a management strategy of incorporating data streams
5. implementation of the data processing system (analysis)
6. security analyses on the incoming data stream
7. a prototypical implementation of the machine's physical representation (digital twin)

Project partners of the SISSeC project:
- Hofmann Leiterplatten GmbH
- Schindler & Schill GmbH
- Segusoft GmbH
- ProtectEM GmbH
- Technische Hochschule Deggendorf
- Universität Regensburg