An ITEA / Penta-Euripides Smart industry project

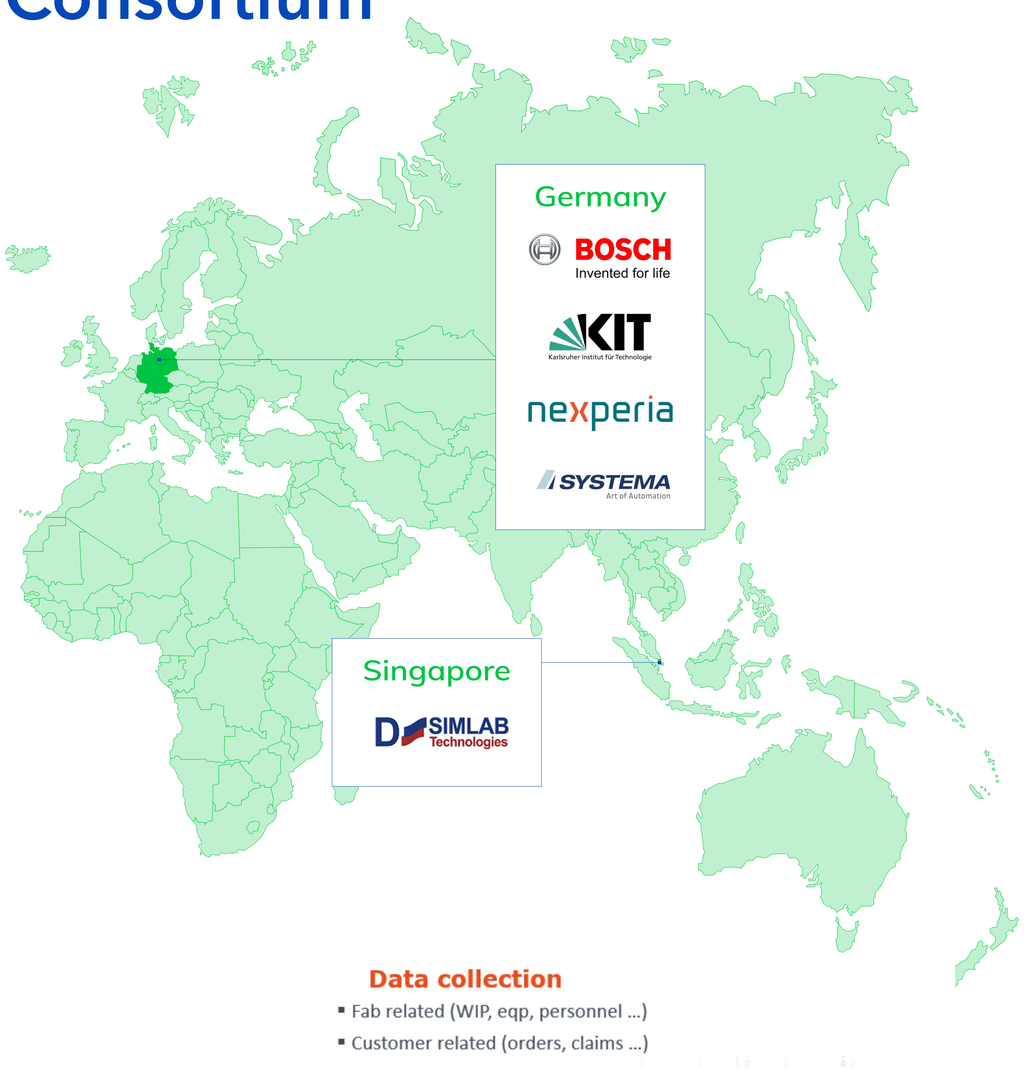
AISSI

Autonomous, integrated scheduling for semiconductor manufacturing

Project summary

Digitalisation increases demand for microchips, shorter product lifecycles and a wider variety of customer-specific devices. Therefore, AISSI (Autonomous Integrated Scheduling in Semiconductor Industry) will develop AI-based approaches to autonomous production and maintenance scheduling to improve semiconductor quality, efficiency and cost-effectiveness.

Consortium



Project duration

June 2021 - May 2024

AISSI project website

https://aissi-project.com/

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Key results

- **Enhanced Chip Throughput, Quality and On-Time Delivery:** AISSI successfully developed novel AI models and digital twins for analysis, forecasting and steering the semiconductor manufacturing.
- **Revolutionary Scheduling System:** The project introduced an algorithm for cycle time prediction in a supply chain and a Deep Reinforcement Learning Agent for real-time factory scheduling and optimization. Additionally, digital twins were implemented to enable AI-based scheduling.
- **Standardized Interfaces of Advanced Technologies:** The AISSI Platform Interface Specification proposes a new standard for communication between AI and Digital Twin modules, fostering research and accelerating the productive use of AI solutions.

Contact

Andrej Gisbrecht
Robert Bosch GmbH - Germany
E: Andrej.Gisbrecht@de.bosch.com

This project is supported by:

Federal Ministry of Education and Research

Enterprise Singapore