



AISSI

Autonomous Integrated Scheduling for Semiconductor Industry

Motivation The core motivation of the project lies in the development of a trend-setting artificial intelligence (AI)-based system for production and maintenance planning in semiconductor production. The concept is based on a new level of interaction between expertise (human expert knowledge) and AI methods (which identify individual advantages based on human expert judgment).

This new level of interaction is realized as a semantically and physically inspired system of holistic information that supports a new level of real-time capability and information consistency, thereby enabling a highly efficient "plug-in capability" for new AI methods

Goal By developing, integrating and applying new AI approaches based on European automotive quality thinking, the scheduling of the semiconductor industry will be optimized. For this purpose, real production systems are first mapped to a digital twin. Based on this digital twin, the future behavior of the production system can be simulated and a deep reinforcement learning agent for scheduling manufacturing and maintenance jobs can be trained and used.

Intended outcomes By applying reinforcement learning in the context of autonomous and continuous improvement of integrated production and maintenance planning, European semiconductor manufacturers are gaining a competitive advantage in terms of cost efficiency, output volumes and reliability.

Expected Impact The AISSI project is designed to help strengthen the position of the European semiconductor industry in the global market.

Tags AI, production, production planning, maintenance, maintenance planning, digital twin, semiconductor technology

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3 YEARS
DURATION



June 2021 – May 2024

6 PARTNERS



Singaporean: D-SimLab Technologies

German: Robert Bosch GmbH (project coordination); Bosch Sortotec GmbH; Nexperia Germany GmbH; Systema GmbH; Karlsruhe Institute of Technology

€ 1.6 MILLION
FUNDING



The total project costs amount to € 3.3 Million, of which € 1.6 Million will be funded.

Σ eureka Clusters AI Call

Gefördert durch:



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