AIToC

Using AI to improve manufacturing engineering

25 years ITEA4 1998–2023

Project summary

By utilising artificial intelligence methods, the ITEA project AIToC are developing an integrated toolchain to support manufacturing engineering. The project is focusing on supporting process planning, data-driven creation of digital twin models as well as layout optimisation.

Consortium

Sweden: ABB, AVIX, Innovation by Experience, Chalmers University of Technology, Algoryx, Univrses, Fraunhofer Chalmers, Volvo Group

Finland: 3D Talo, Dark Amber Softworks, Mevea Simulation Solutions, Raute, Tactotek, LUT University

Germany: Daimler, DFKI Deutsches Forschungszentrum für Künstliche Intelligenz GmbH, EKS InTec GmbH, isb, ifak, Raumtänzer Be Expert, Software AG, TWT GmbH Science & Innovation

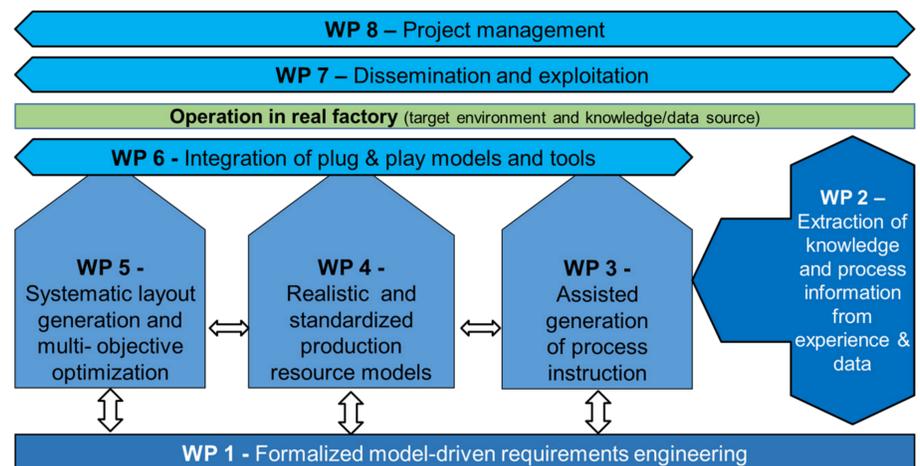**Türkiye:** Ardgrup, Eryaz Software, Ford Otosan, Tofaş, UNIT
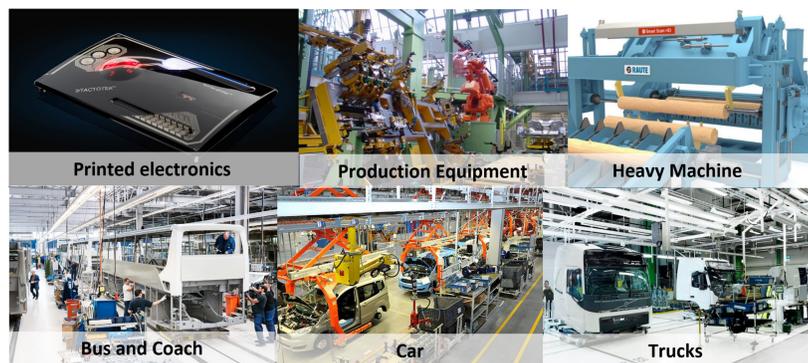
Project duration

October 2020 - February 2024

Expected key results / Unique advantages

> AI-based assistance in generation of process plans and instructions

> AI-generated models and support for co-simulation of humans and machines

> AI-based planning and optimization of factory layout

Addressed Manufacturnig Markets

Printed electronics • Production Equipment • Heavy Machine • Bus and Coach • Car • Trucks

AIToC workpackage overview

WP 8 – Project management

WP 7 – Dissemination and exploitation

Operation in real factory (target environment and knowledge/data source)

WP 6 - Integration of plug & play models and tools

WP 5 - Systematic layout generation and multi- objective optimization

WP 4 - Realistic and standardized production resource models

WP 3 - Assisted generation of process instruction

WP 2 – Extraction of knowledge and process information from experience & data

WP 1 - Formalized model-driven requirements engineering

Contact

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