Turkish-German University

Department of Mechatronics Engineering / Istanbul, Türkiye

HORIZON EUROPE 2027

Human-AI collaboration in advanced manufacturing

Academic R&D partner for explainable operator support and validation

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What TAÜ can contribute

Explainable decision support	Develop operator-facing recommendations that show the evidence, flag uncertainty and allow operators to override suggestions.
Test design and acceptance criteria	Define test cases for routine tasks, ambiguous faults and incomplete sensor data. Set measurable pass criteria with the pilot partner.
Simulation and pilot validation	Use simulation to test rare or unsafe situations, then evaluate the workflow with operators and production data at a partner site.

Illustrative use case

Troubleshooting a production-line fault

Fault signal
A machine alert flags an abnormal condition.

→

AI recommends a check
The AI explains the evidence and adapts its guidance to operator experience.

→

Operator decides
The operator reviews, approves or overrides the recommendation.

Evaluation measures include recommendation accuracy, resolution time and unsafe suggestions.

Who we would like to meet

Consortium coordinators preparing a proposal for this topic, manufacturers with a defined shop-floor use case and access to operational data or a pilot site, and teams working on adaptive interfaces or human factors.

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Selected research on learning-based systems