

AI-BAME

AI-Methods in Batch Metal Production

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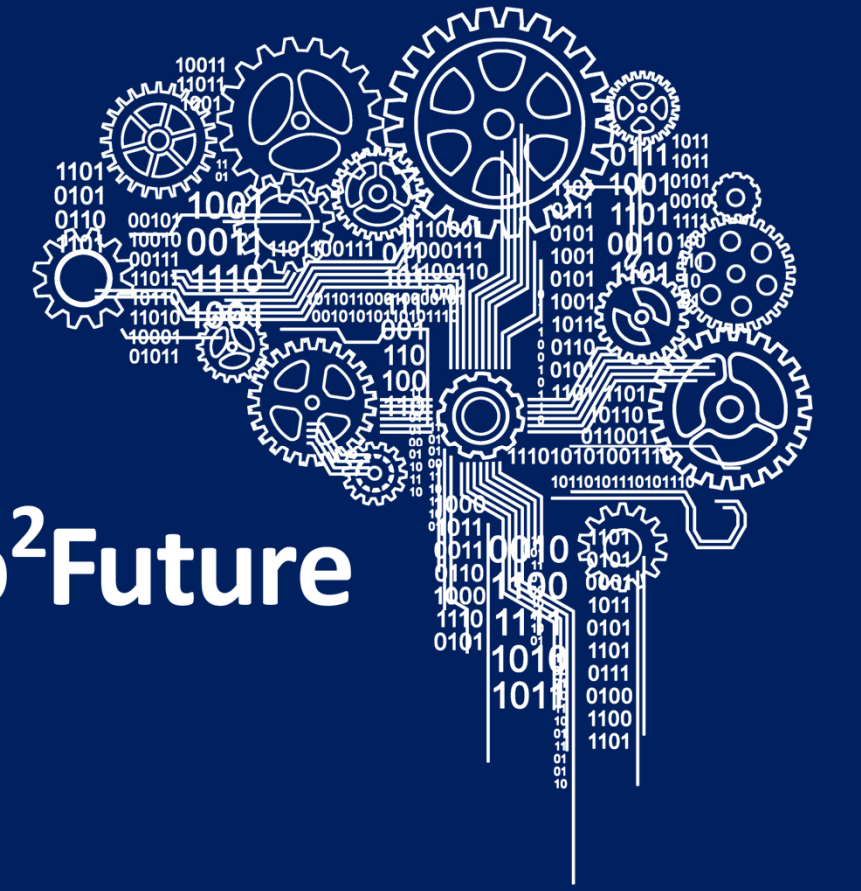
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MOTIVATION & GOALS

- **AI for smart manufacturing** – Applying AI-based modeling, simulation, optimization, and testing to enhance flexibility from enterprise to workstation level
- **Multi-level demonstration** – Real-world validation with industry partners in metal batch production at enterprise, shopfloor, workunit, and workstation scales
- **Holistic impact** – Assessing ecological, economic, and social benefits alongside technical advancements

Project FactBox

Project Name AI-BAME
Project ID MFP Syst.1
Duration 48 Months

Area 4.2
Cognitive Production Systems

Project Lead
Dr. Markus Brillinger

APPROACH

- **Flexibility matrices & methods** – Development of product–production flexibility matrices and supporting methodologies
- **Organizational design** – Creation of flexibility-oriented organizational structures
- **AI support tools** – Design of AI-based assistance tools for all organizational levels
- **Demonstration** – Practical implementation through demonstrators

CONTRIBUTION

Scientific contribution

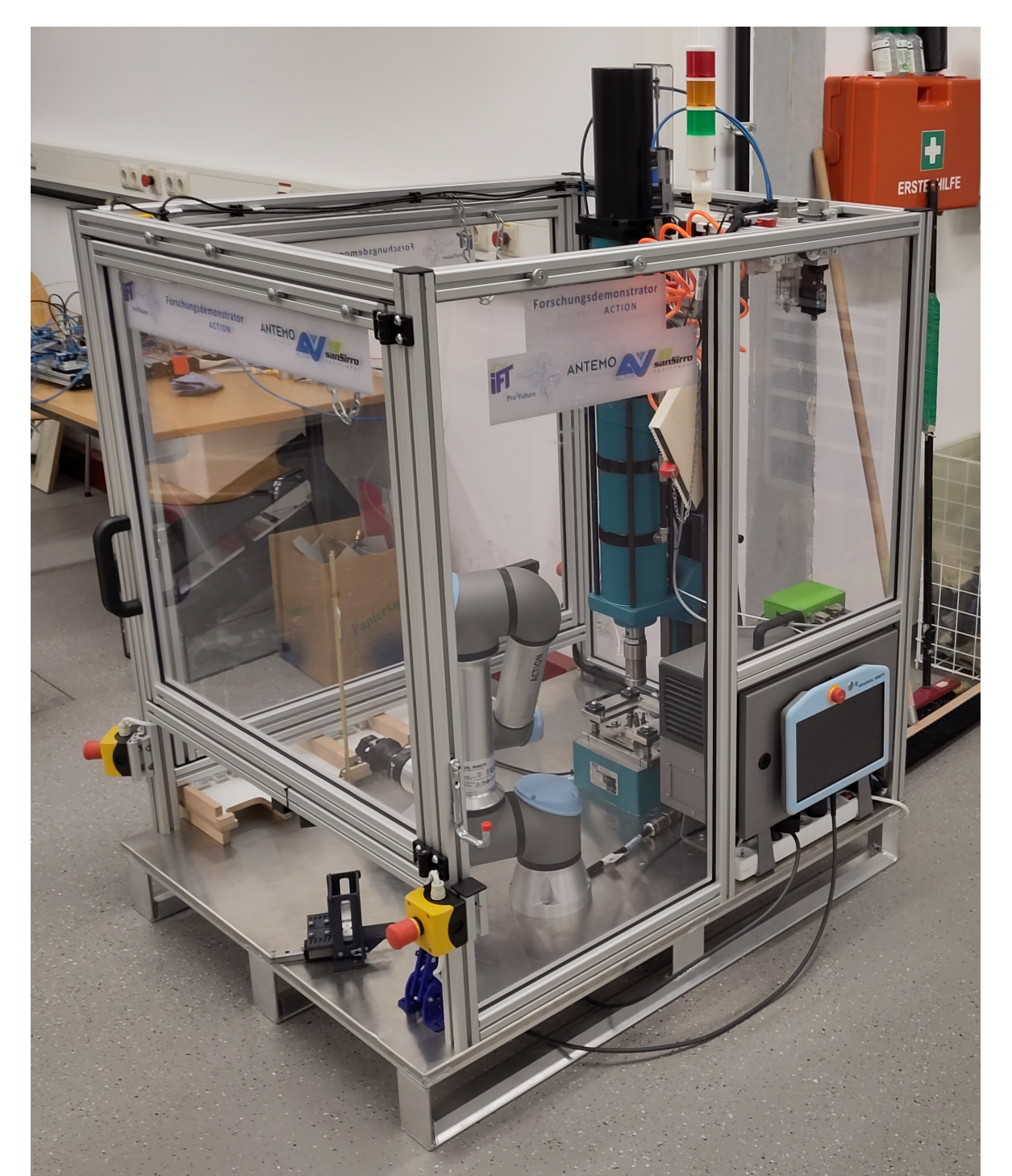
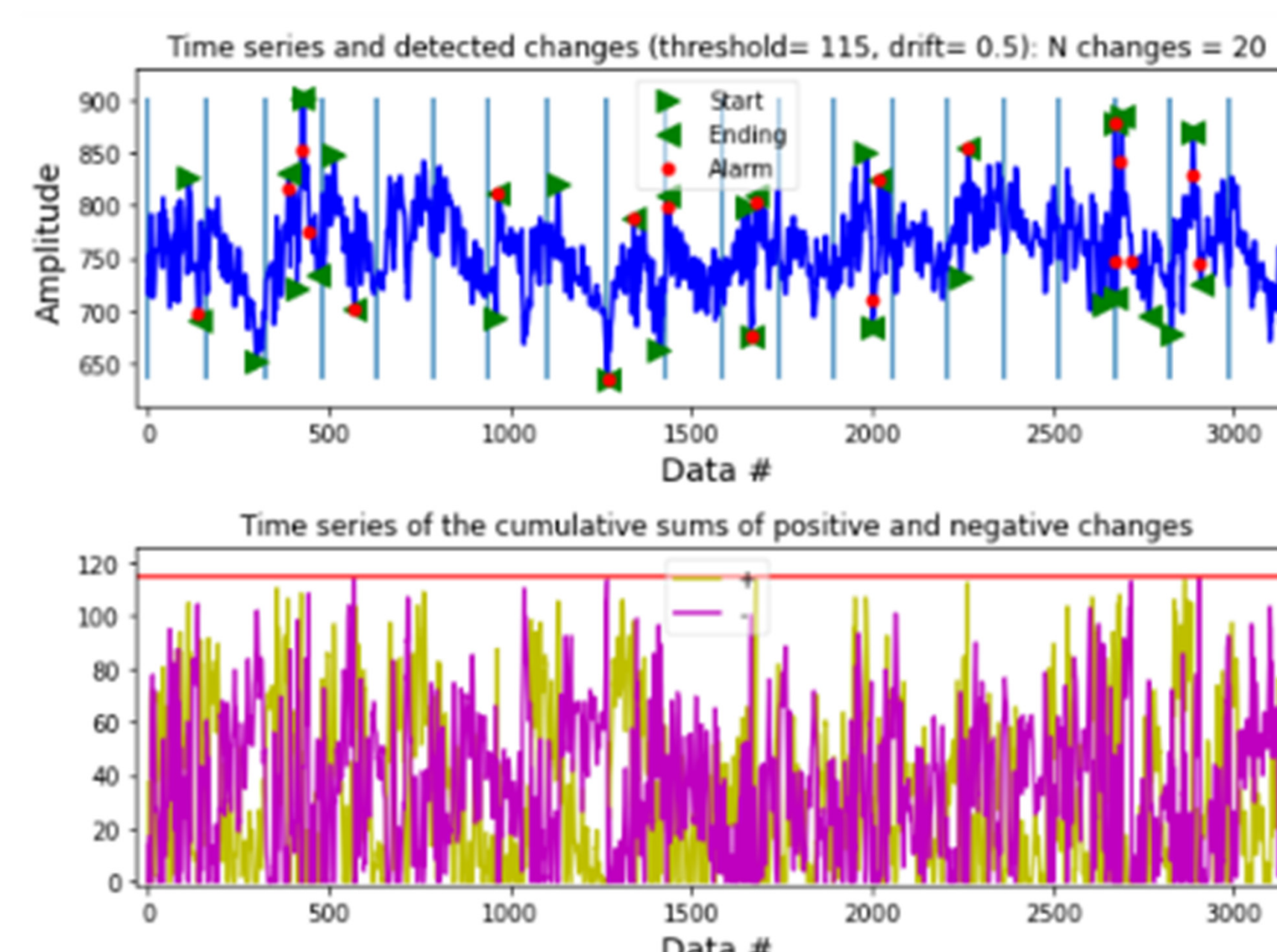
- Development of integrated software and hardware demonstrators enabling real-time data acquisition.

Economic contribution

- Practical demonstration of AI-supported data collection and analysis enhancing efficiency and flexibility.

DEMONSTRATOR

- **Software demonstrator** – Inline data acquisition for machines, products, and employee information.
- **Hardware demonstrator** – Showcasing use cases from
 - aerospace
 - automotive
 - metal production, and
 - metal processing industries



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