




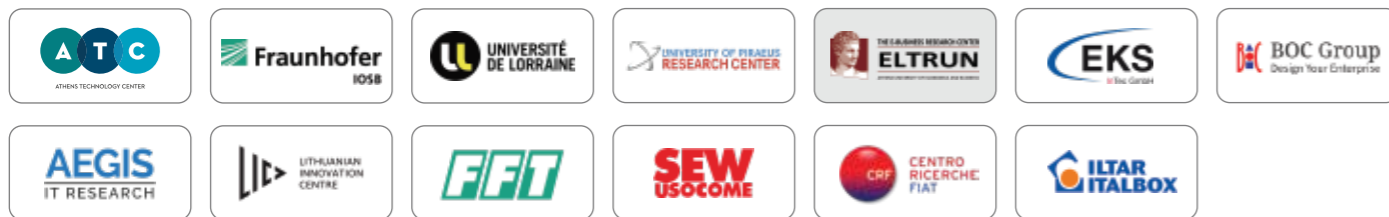


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The Partners



MO  APTO

Unlocking Modular Manufacturing Transformation with **Digital Twins**



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The Future of Manufacturing with MODAPTO

MODAPTO aims to integrate standardised Digital Twins via Asset Administration Shell (AAS) and the six principles of Reconfigurable Manufacturing Systems (RMS) in three industrial pilots involving four manufacturers and line builders at three distinct levels, showcasing its versatility and applicability.

Pilot 1

Enhanced capabilities for robotic systems

FFT, a global provider of turnkey solutions mostly for automotive and aerospace

Key Features: Within MODAPTO, the focus is on four types of robot design setups, each based on different joining technologies. Employees, using Digital Twins standardised via AAS, will be able to select different robot sizes equipped with various technologies based on additional sustainability criteria. Additionally, they can optimise and test robot performance.

MODAPTO's Impact:

- **Enhanced robotic systems with sustainability analytics and movement optimisation.**
- **Reduced energy consumption and carbon emissions.**



Pilot 2

Transition towards a Modular, Reconfigurable Manufacturing System

SEW, a leader in drive and automation solutions.

Key Features: Through MODAPTO and the Digital Twins standardised via AAS, the bottlenecks in production line will be identified and resolved. SEW also aims to integrate self-awareness and predictive maintenance capabilities, ensuring smooth order completion and line balancing through optimised production scheduling and routing. The optimisation algorithm suggests the best schedule to process orders, whilst machine reconfiguration further enhances efficiency. At the same time the self-awareness module generates alerts for equipment end-of-life, so that predictive maintenance is scheduled, preventing machine damage and production delays.

MODAPTO's Impact:

- **Improved production line efficiency through self-awareness, predictive maintenance, optimisation and simulation analytics.**

Pilot 3

Collaboration in an Automotive Supply Chain

CRF, a champion in the automotive sector, collaborating with **Iltar-Italbox**, a specialist in the design and production of moulded components in expanded polymers.

Key Features: Through MODAPTO, Iltar-Italbox has developed innovative kit holders for CRF, equipped with sensors and electronics to enable geolocation tracking and detect potential damage. Upon arrival at CRF, robots select and load semi-finished products into the kit holders according to specific schedules. MODAPTO accelerates the filling process, ensuring efficiency. Each production module is accompanied by its Digital Twin standardised via AAS.

MODAPTO's Impact:

- **Enhanced supply chain with self-awareness, optimisation and predictive maintenance services.**
- **25% faster filling process.**