THE TEAM

MODAPTO project is a collaboration between **13 partners** in **6 different countries:**

4 manufacturers

FFT | SEW USOCOME | CRF CENTRO RICERCHE FIAT | ILTAR ITALBOX Industrie riunite S.p.A.

4 research organizations

Fraunhofer IOSB | UNIVERSITÉ DE LORRAINE | UNIVERSITY OF PIRAEUS RESEARCH CENTER | THE E-BUSINESS RESEARCH CENTER ELTRUN ATHENS UNIVERSITY OF ECONOMICS AND BUSINESS

5 innovation companies/organizations

ATC ATHENS TECHNOLOGY CENTER | EKS InTec GmbH | BOC Group Design Your Enterprise | AEGIS IT RESEARCH

LITHUANIAN INNOVATION CENTRE

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MODAPTO

Modular Manufacturing and Distributed Control via Interoperable Digital Twins

OVERVIEW

MODAPTO envisions flexible industrial systems composed of production modules and further enhanced by distributed intelligence via interoperable **Digital Twins (DTs).** MODAPTO materializes the benefits of **global production view** by enabling **collective intelligence** within **modular production schemes** for **effective module** and **production line design, reconfiguration and decision support.**

USE CASES

MODAPTO is motivated by **three Use Cases involving four different pilots/manufacturers** facing complementary challenges with respect to modular design and reconfiguration at three different levels, i.e., at machine level, at process step level and at production process level. These Use Cases offer a wide range of testbeds highlighting that **the MODAPTO approach** can be adapted to handle a plethora of different modular manufacturing aspects, leading to substantial improvements of KPIs related to efficiency, cost, quality, decision making, energy and environmental aspects.
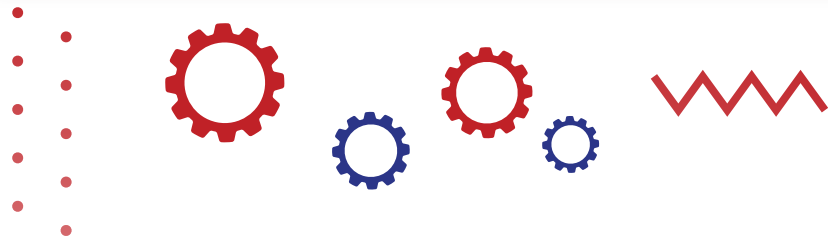
PROJECT OBJECTIVES

MODAPTO will offer a framework for modular manufacturing that is adaptable to the **custom** needs of any production module, process and manufacturer, both supporting **high level design,** reconfiguration and optimization decisions as well as enabling **distributed intelligence** and control over modules via interoperable DTs.

The project objectives are to:

- Develop a toolkit for optimal modular production and reconfiguration

- Facilitate seamless module integration by advancing DT standards & interoperability

- Support decisions for sustainable modular production through collective and distributed intelligence

- Develop novel sustainability capabilities for new production modules

- Offer proof-of-value for sustainable modular manufacturing

- Support the adoption of sustainable modular manufacturing

- Devise novel business models and strategies for the modular manufacturing domain