



KYKLOS 4.0

Circular Manufacturing Framework

www.kyklos40project.eu

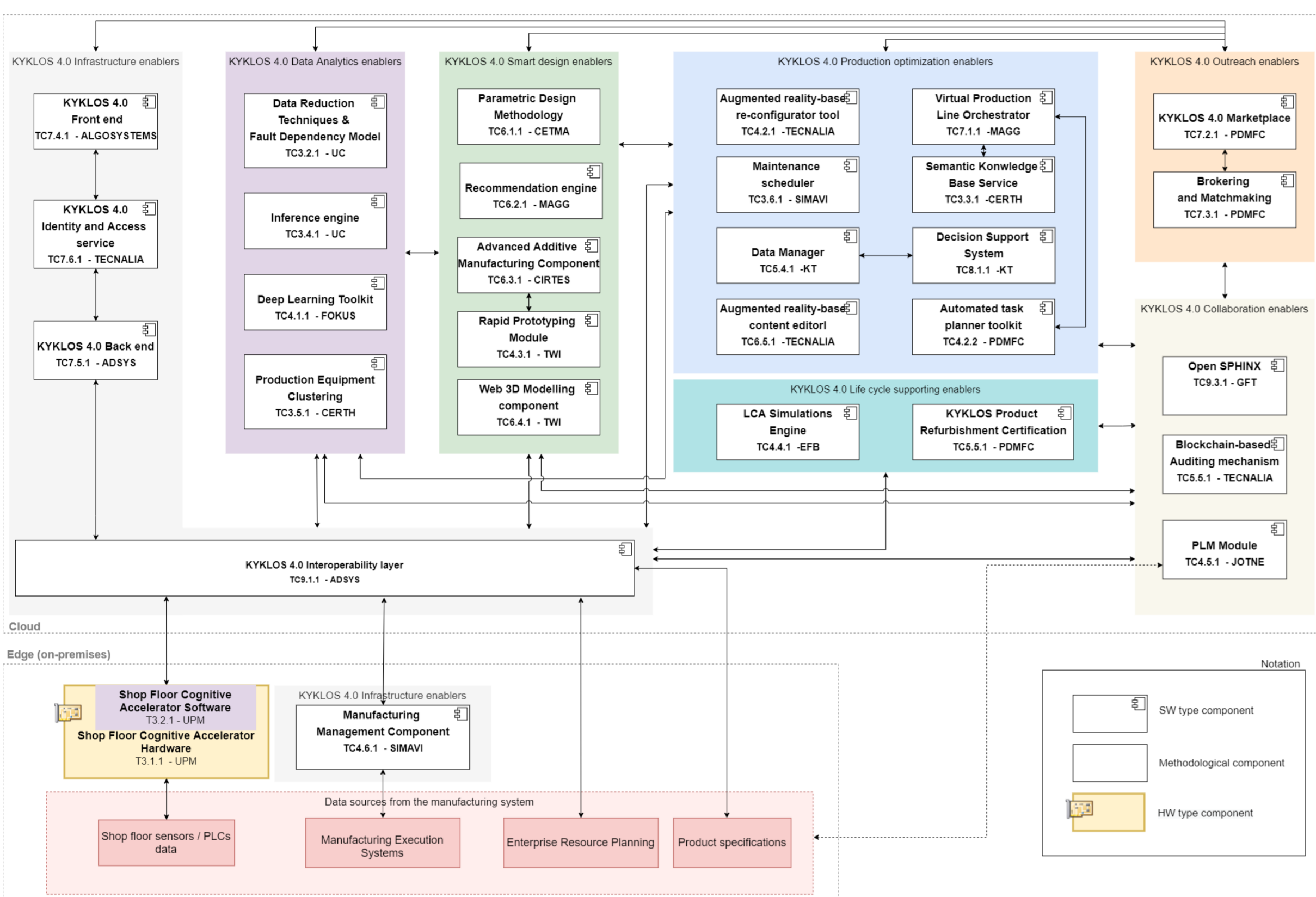
KYKLOS 4.0 Briefly

KYKLOS 4.0 aims at providing a Technology Ecosystem which creates and supports the configurations, methodologies, production techniques, decisions and actions at all different levels and stages of the manufacturing value chain to achieve:

- Increased energy efficiency
- Decreased use of raw materials (second use of parts or materials)
- Customer-centricity
- On-demand manufacture

KYKLOS 4.0 Circular Manufacturing Framework

KYKLOS 4.0 will deliver an advanced configuration variants' framework and state-of-the-art production paradigm, embedding key technologies into a unified platform Ecosystem to manage live product innovation:



KYKLOS 4.0 Objectives

The following set of objectives are set, covering the project's scientific and technological aspects throughout its duration as well as the exploitation of the project's results after its end:

- | | |
|---|--|
| 01 Decentralized Interoperable Agent-Based B2B Marketplace Platform | 07 Product Data Management |
| 02 Virtual Production Line Orchestration Module & Interoperable Fog Architecture Framework | 08 Product Life Cycle Monitoring / Customer Feedback |
| 03 Continuous Deep Learning Toolkit for Operational Metrics | 09 KYKLOS 4.0 Production Line "Smartification" System |
| 04 Tailored Circular Manufacturing and Mass Customization Services | 10 Additive Manufacturing Simulation Modules |
| 05 Big Data Aggregation and Integrated DSS for Optimizing Production Capacity | 11 KYKLOS 4.0 Automated Refurbishment Certification |
| 06 KYKLOS 4.0 Auditing Mechanisms | |

Meeting Industry 4.0 objectives:

- Operational excellence
- Mass customization and personalization
- Increasing efficiency
- Reducing waste
- Boosting competitiveness

Project Partners



End Users

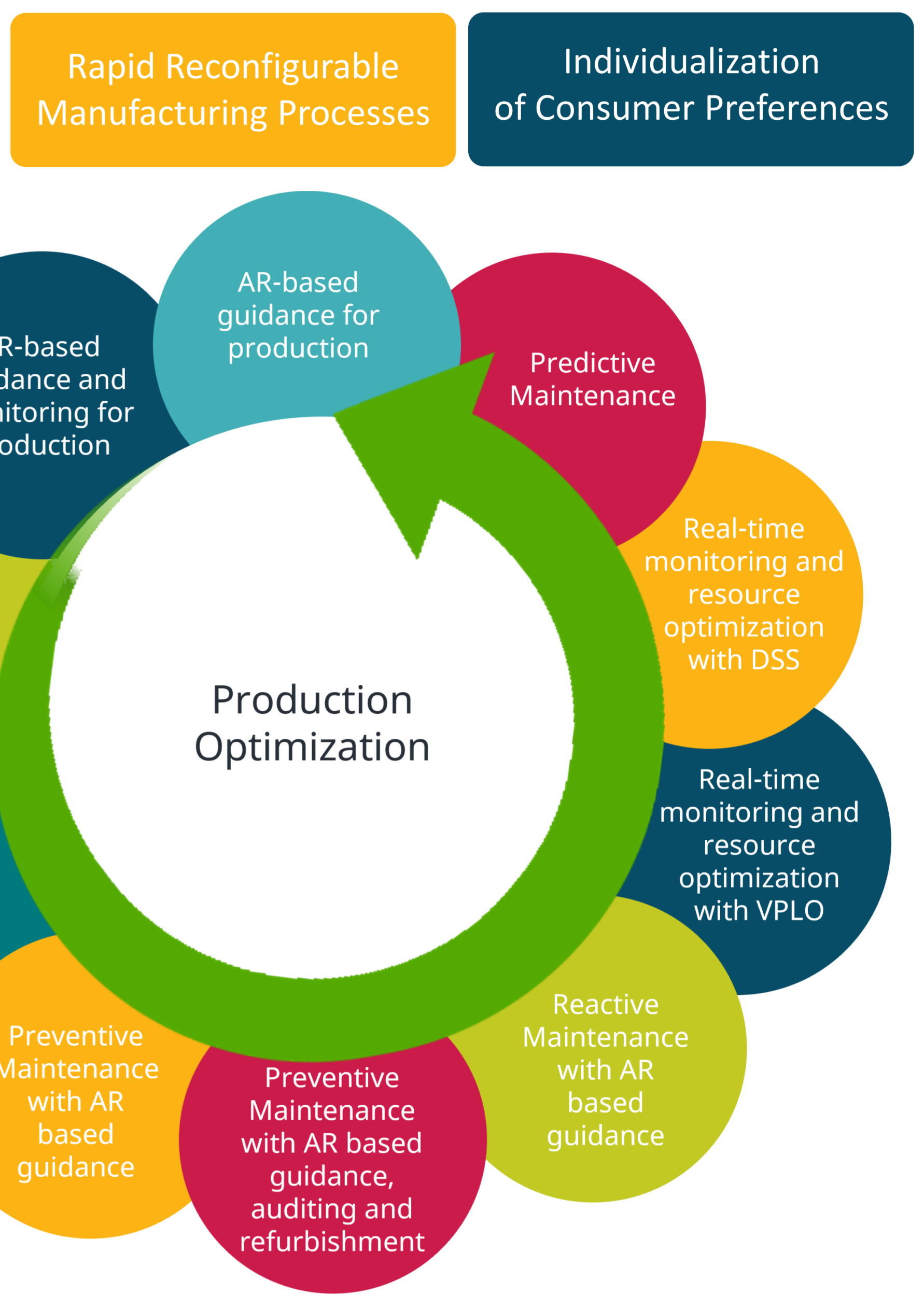


Contact:

Jason Mansell Rementeria, Tecnalia
jason.mansell@tecnalia.com

KYKLOS 4.0 Technology & Solutions

KYKLOS 4.0 technology involves a set of intelligent tools for real-time analytics, prediction, and recommendation systems, integrated into the KYKLOS 4.0 platform.



KYKLOS 4.0 Pilots

KYKLOS 4.0 demonstrates the transformative effects that Circular Production System (CPS), Product Life Management (PLM), Life Cycle Analysis (LCA), Augmented Reality (AR) and Artificial Intelligence (AI) technologies and methodologies will have to the Circular Manufacturing framework.

- | KYKLOS 4.0 Smart and Circular Manufacturing Pilots | |
|--|--|
| 01 Medical Pilot
PRO MEDICARE facilities - Italy | 05 Electronic Equipment Pilot
CONTINENTAL facilities - Romania |
| 02 Aerospace Pilot
KANFIT3D facilities - Israel | 06 Shipyard Pilot
ASTANDER facilities - Spain |
| 03 Aerospace Pilot
GRC facilities - Israel | 07 Food Industry Pilot
PINDOS Cooperative facilities - Greece |
| 04 Electronic Devices/Equipment Pilot
VESTEL facilities - Turkey | 08 Automotive Pilot
DIGRO facilities - Italy |

KYKLOS 4.0 Benefits

- **Promote** low-cost and easy-to-use tools and data platforms, so that SMEs could adopt Circular Economy principles with limited investments from an ICT platform and Data Space point of view
- **Incorporate** a set of components that support the production, post-production and assembly phases, by modernizing the functionalities of shop floors in the adoption of Circular Manufacturing principles
- **Identify** processes not performing optimally and recommend further improvement
- **Address** several business-related and technical challenges towards building a Circular Economy
- **Accelerate** businesses' digital transition to boost their advancement and recovery
- **Continuous monitoring** of the Circular Manufacturing implementation within the organizations in order to early react and improve the Circular Economy related metrics

KYKLOS 4.0 Open Calls

KYKLOS 4.0 will organize two Open Calls to engage European SMEs in the design and implementation of highly innovative experiments/prototypes. Several events across Europe are expected to be implemented within the framework of the two Open Calls.

The KYKLOS 4.0 – Open Call #1 was published and launched on 1 April 2021 and closed on 30 June 2021. In total, 47 proposals involving 117 entities were submitted to the open call. The first round of experiments funded under the KYKLOS 4.0 project will run for six months until 30 April 2022. The KYKLOS 4.0 – Open Call #2 is expected to be published on June/July 2022.

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