KYKLOS 4.0 newsletter

KYKLOS 4.0 – https://kyklos40project.eu

Newsletter #1 – September 2020

An Advanced Circular and Agile Manufacturing Ecosystem based on rapid reconfigurable manufacturing process and individualized consumer preferences

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KYKLOS 4.0 briefly

KYKLOS 4.0 aims at providing an ecosystem which creates and supports the configurations, methodologies, production techniques, decisions and actions at all different levels and stages of the manufacturing value chain. The ecosystem aims to achieve the goals of i) increased energy efficiency, ii) decreased use of raw materials through the second use of parts or materials (including waste from the manufacturing process), iii) customer-centricity, iv) on-demand manufacturing that best meets the **Industry 4.0** objectives of operational excellence, where mass customization and personalization have become the norm, while increasing efficiency, reducing waste, boosting competitiveness and lowering costs for European manufacturers, particularly for the Small and Medium-sized Enterprises (SMEs).

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, via building and shipping "configuration to specification", through the seamless adaptation on new customer requirements.

KYKLOS 4.0 consortium consists of 29 partners from 14 countries around Europe. The project kicked-off in January 2020 and runs for 4 years.

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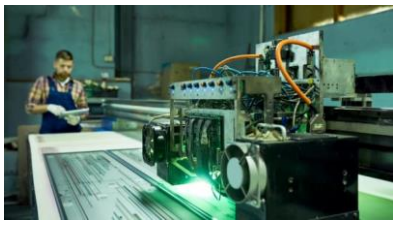
KYKLOS 4.0 Consortium



"KYKLOS 4.0 Ecosystem enables a set of product strategies for reconfigurable and reusable products across diverge sectors and allows the deployment of operational strategies that meet fast changing customer demands and ride the wave of mass customization and personalization."

KYKLOS 4.0 technology & solutions

KYKLOS 4.0 technology involves a set of intelligent tools for real-time analytics & prediction, and recommendation systems, further integrated into the KYKLOS 4.0 configuration environment. The KYKLOS 4.0 "Customized Open Production" system framework includes a set of production – service simulation models considering the a) product specifications, b) product design & materials, the suppliers, the manufacturing strategy (produce to order or make to stock), c) the product usage (profiles of customers), d) the product servitization (a type of maintenance services proposed), and eventually, e) product recycling/reuse.

Rapid Reconfigurable Manufacturing Process: The KYKLOS 4.0 Ecosystem adopts a life cycle management approach to devise and enable a set of product strategies for reconfigurable and reusable products across diverge sectors. Pilots are expected to demonstrate drastic reductions in the required time and effort for reconfigurable and reusable customized products.

Individualization of Consumer Preferences: The KYKLOS 4.0 solution allows manufacturing enterprises and global supply chains to devise and deploy operational strategies that meet fast changing customer demands and ride the wave of mass customization and personalization.

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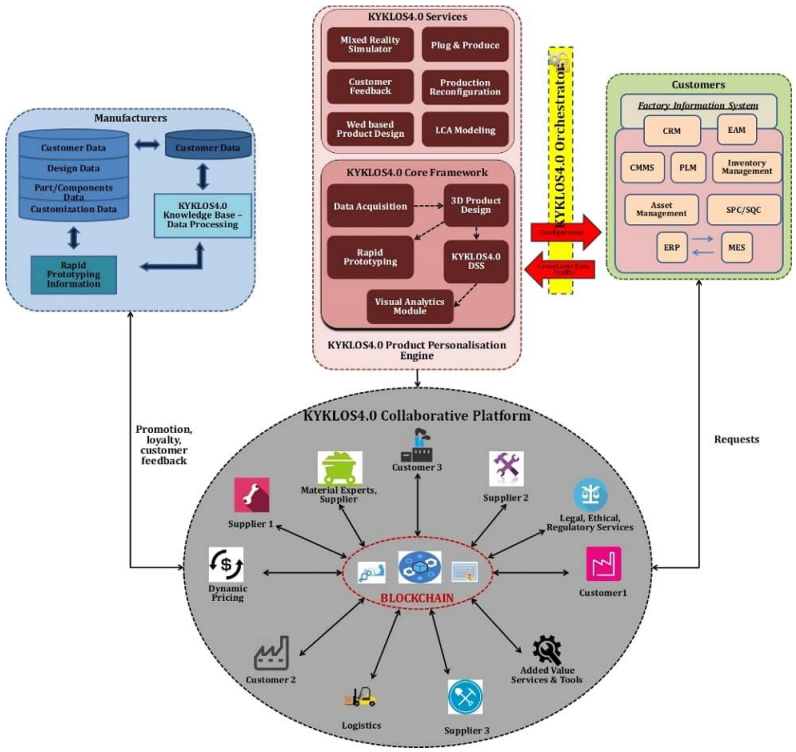

KYKLOS 4.0 Ecosystem

KYKLOS 4.0 pilots and impact

"The key objective is to promote pre-competitive research on production technologies within the European Research Area."

KYKLOS 4.0 will demonstrate, in a realistic, measurable, and replicable way 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 (CM)** framework. To this end, KYKLOS 4.0 will:

- perform **large-scale piloting in 7 pilots to demonstrate the technical, environmental and economic viability of KYKLOS 4.0 Ecosystem** to reshape intra-factory processes and services;
- show KYKLOS 4.0 value in terms of operational efficiency improvements by at least 15%;
- deliver resources reusable solutions (second use of materials, parts and components reuse) for the whole manufacturing sectors;
- ensure scalability for future scale of novel CM technologies and services at least at the level of year 2024;
- engage over 100 key European industry actors, (through Open Calls and workshops);
- transfer knowledge and technology to increase use of KYKLOS 4.0 Ecosystem to at least 50%;
- strengthen the position of EU CM technologies providers and sector, fostering a market share of up to 12%;
- pursue a strong plan for sustainability by incubating at least 3 post-project replication sites;
- mobilize additional sector investments of at least 6 times the EC contribution.

KYKLOS 4.0 Pilots will be divided into two main categories. Four pilots will be related to the **Smart Manufacturing (SM)** framework and three pilots to the **CM** processes for energy efficiency and waste management (re-use).

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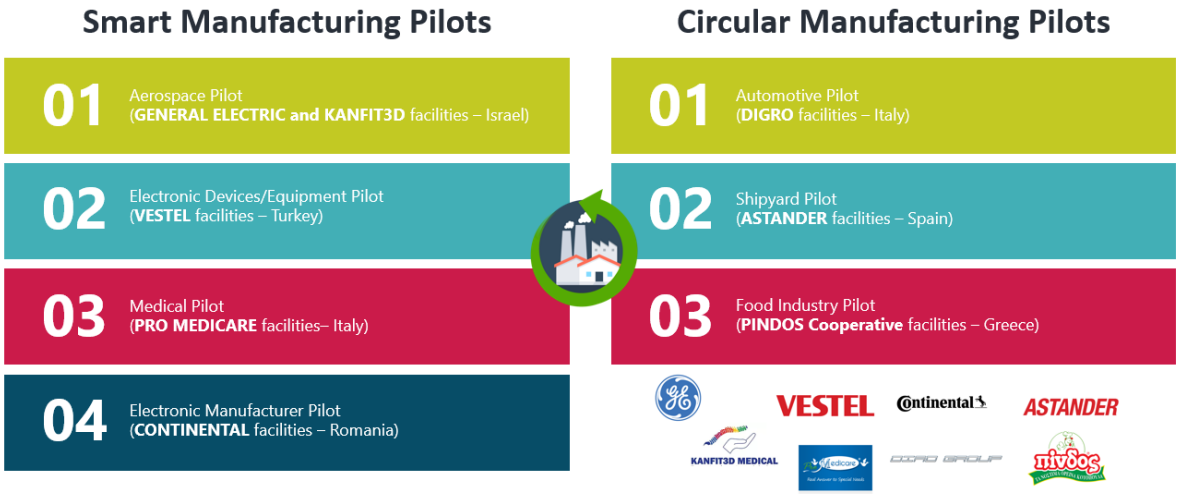
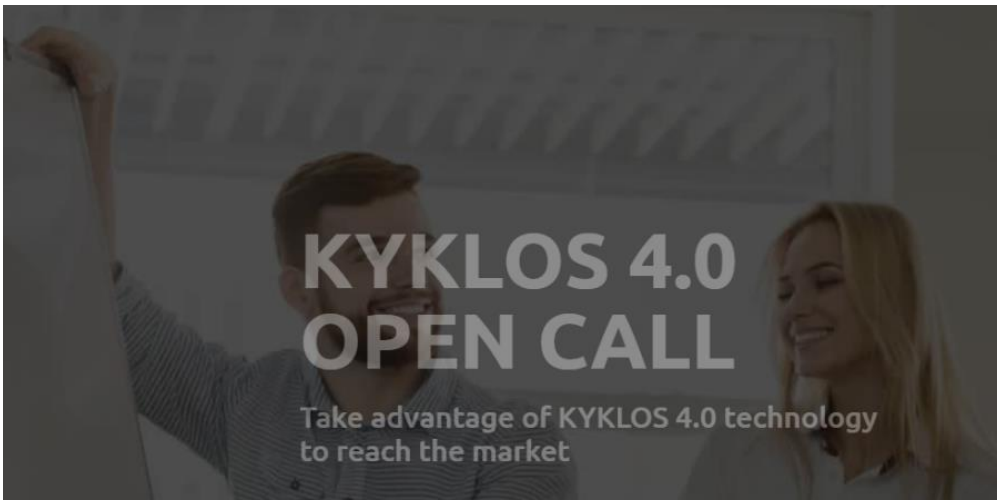


KYKLOS 4.0 Pilots

KYKLOS 4.0 Open Calls



"A total of €3M has been budgeted for the KYKLOS 4.0 Open Calls."

KYKLOS 4.0 will organize **two Open Calls** during the project with the objective of **engaging European SMEs in the design and implementation of highly innovative experiments/ prototypes** using research infrastructure available within the framework of the project.

The engagement and mobilization of industry actors in the two Open Calls require an intensive and extended period of awareness raising activities.

The Open Calls will be published and run from the F6S platform (**https://www.f6s.com/kyklos4.0**), with communication and promotion activities focused on channeling potential applicants to the platform.

Several **events**, including **online webinars** and local face-to-face events across Europe are expected to be implemented within the framework of the two Open Calls, at least two months before the launch of the Open Calls. The listed locations are based on the distribution of project partners and target the following regions: (1) Norway, to attract the interest of SMEs from Northern Europe, (2) Belgium, to attract the interest of SMEs from all of Europe, (3) Romania, to attract the interest of SMEs from Central and Eastern Europe, (4) Spain, to attract the interest of SMEs from Western Europe, and (5) Greece, to attract the interest of SMEs from the Southern Europe and Balkans.

Funding will be provided to projects led by small consortia (third parties) and targeting innovative concepts. Each project is expected to define their own project objectives while adhering to the larger objectives and vision of the KYKLOS4.0 project.

KYKLOS 4.0 will support the third parties' activities along the project duration, including those related to project management, product/service development, tests and demonstrators, business development/ internationalization activities.

A total of €3M has been budgeted for the KYKLOS 4.0 Open Calls. In principle, €1M for the 1st and €2M for the 2nd Open Call.

Awarded projects may receive up to €150,000, with each third party receiving a maximum of €60,000.

More information about the 1st Open Call can be found on KYKLOS 4.0 **WEBSITE**.

KYKLOS 4.0 collaborates with EFFRA association

The European Factories of the Future Research Association (EFFRA, **https://www.effra.eu/**) is a non-for-profit, industry-driven association promoting the development of new and innovative production technologies.

The key objective of EFFRA is to promote pre-competitive research on production technologies within the European Research Area by engaging in a public-private partnership with the European Union called **"Factories of the Future"**.

The partnership aims to bring together private and public resources to create an industry-led programme in research and innovation with the aim of launching hundreds of market-oriented cross-border projects throughout the European Union. Such projects will produce demonstrators and models to be applied in a wide range of manufacturing sectors.

As part of its dissemination and exploitation strategy KYKLOS 4.0 announces the collaboration with EFFRA aiming at extending interested user groups and stakeholders and ensuring the exchange of knowledge and better implementation of the project.

As a first step KYKLOS 4.0 created its own website inside **EFFRA Innovation Portal** (**https://www.effra.eu/effra-innovation-portal**). The main goal of the Innovation Portal is to provide an online resource for sharing information about research and innovation projects and associated project results and demonstrators in manufacturing. The EFFRA Innovation Portal features all Factories of the Future PPP projects, but also includes other projects.

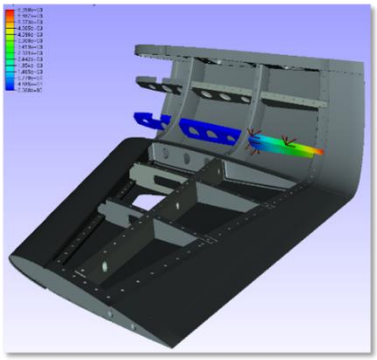
As part of KYKLOS 4.0 collaboration with EFFRA association, our partner Jotne participates in the organization of the "ConnectedFactories Webinar - Standards and digital manufacturing" (more information below).

"The key objective is to promote pre-competitive research on production technologies within the European Research Area."

ConnectedFactories Webinar - Standards for digital manufacturing

EFFRA in association with the ConnectedFactories Coordination and Support Action organizes a webinar on Standards for digital manufacturing on **Tuesday 20 October 2020 from 9:30 to 12:30 CEST**. The webinar will focus on use cases and best practices that illustrate how standards are used in research & innovation on digital manufacturing. Special attention will be dedicated to the added value as well as gaps and needs.

Advances in non-homogeneous data types integration – DEFINE project



Jotne IT, KYKLOS 4.0 partner, a leader in product data exchange and sharing Enterprise Performance Management (EPM) technology data products, has undertaken a significant and game-changing project in deploying a standardized format for digital models and simulation data.

The DEFINE project for European Space Agency (ESA), will utilize ISO 10303 (STEP) and more specifically its application protocol AP 209:Application protocol: Multidisciplinary analysis and design. This will improve the efficiency of assembly, integration and test procedures.

Laying groundwork for KYKLOS 4.0 technological modules, Jotne IT is active in the field of data manipulation, access and integration.

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"DEFINE project lays groundwork for KYKLOS 4.0 technological modules.".

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