



## KYKLOS 4.0

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

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### Deliverable D12.3

### Dissemination Activities Report

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<b>Abstract:</b>	The deliverable outlines the communication and dissemination activities taken place so far in the frame of KYKLOS 4.0, while assessing results of the dissemination plan and identifies ad hoc contingency measures.
<b>Keyword List:</b>	Dissemination, communication, KPIs, public, articles, publications, events, conferences, stakeholders, collaborations, networks, social media, impact assessment

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## Document Description

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## Terms and abbreviations

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AI	Artificial Intelligence
BDVA	Big Data Value Association
CEN	European Committee for Standardization
DIHs	Digital Innovation Hubs
DIN	German Institute for Standardization
EC	European Commission
EFFRA	European Factories of the Future Research Association
ETPs	European Technology Platforms
EU	European Union
FoF	Factories of the Future
IIoT	Industrial Internet of Things
IMS	Institute of Management Services
KPIs	Key Performance Indicators
MEPs	Members of the European Parliament
MES	Manufacturing Execution Systems
MX	Month X, X=1, 2, ... 48
NCPs	National Contact Points
PHM	Prognostic and Health Monitoring
SMEs	Small and Medium-sized Enterprises
SoC	System on Chip
WP	Work Package

## Executive Summary

Deliverable 12.3 – Dissemination Activities Report (WP12) presents the communication and dissemination activities taken place during the 1<sup>st</sup> year of the project (January – December 2020) based on the strategy drawn up in deliverable D12.2 (according to the dissemination level defined and in compliance with applicable EU and national laws on data protection), towards achieving the overall vision and goals of the project. The report includes an assessment of the dissemination results and identifies areas that the consortium should pay attention during the next period of the project so as not to turn into weaknesses mainly caused by the Coronavirus pandemic.

Each partner, according to its own competences, promoted the project in its specific area. Moreover, the whole consortium promoted the project objectives and developments as a competitive solution to address the windows of opportunity open in the IoT market by software, security, and predictive asset maintenance markets, as well as embedded systems and machinery condition monitoring systems market and the creative/smart industries landscape.

The partners participated in key conferences, workshops, and exhibitions (mostly online due to COVID-19 pandemic) to promote project's technologies and solutions, and exchange knowledge with the research community and stakeholders. The communication and dissemination strategy utilized the project website and several social media platforms. Furthermore, the project established liaisons with associated European clusters that address similar challenges to extend the reach of the project to interested user groups and stakeholders and ensure the exchange of knowledge and better implementation of the project.

Key user groups and stakeholders related to agile and sustainable manufacturing suite services and IIoT technology landscape were targeted to get involved in the project developments. Furthermore, the consortium attracted the scientific community, facilitators, and the general public to raise their awareness in project objectives and developments.

The project's communication and dissemination plan was monitored through KPIs assessment to ensure that the key messages are received by stakeholders, end users and the general public. No additional/corrective actions are needed for now.

## 1 Introduction

The KYKLOS 4.0 project communication and dissemination plan, as presented in deliverable D12.3, includes a variety of activities directed to ensuring the highest project impact. The focus of the KYKLOS 4.0 plan is to ensure that the project activities and outcomes will be widely and promptly communicated to the target communities via appropriate methods.

In this light, during the 1<sup>st</sup> year of the project (January – December 2020) effort was put on raising awareness and encouraging partners and stakeholders to actively participate in a systematic and regular basis in KYKLOS dissemination activities. The KYKLOS 4.0 communication and dissemination strategy started opening channels for the exploitation of the project results, by enabling the efficient publicity and the wide exposure of the project activities and/or results to targeted stakeholders and media, and by facilitating the use of these results beyond the project lifetime to increase its impact.

Partners processed personal data (private and professional information) in compliance with applicable EU and national laws on data protection. The foreground capable of dissemination was protected considering legitimate interests and prior notice of dissemination was given to other participants.

This is the first of a three deliverables that will report on the dissemination activities carried out within KYKLOS 4.0, the latter two to be delivered at M30 (June 2022) and M48 (December 2023).



This deliverable is structured into the following sections:

1. Introduction, the present section.
2. Deliverables and intra-project relations.
3. Communication and dissemination strategy.
4. Communication and dissemination activities and assessment – Year 1.
5. Impact assessment – Year 1.
6. Overview of communication and dissemination activities – Years 2-4.
7. Conclusions.

## 2 Deliverables and intra-project relations

All KYKLOS 4.0 partners are directly involved in the communication and dissemination of tasks, maximising opportunities related to their profile and action field. The KYKLOS 4.0 consortium is balanced and composed of partners representing academia and industry, including specialists in machine learning and big data analysis, manufacturing engineering, IoT hardware platforms, industrial monitoring systems, wireless solutions, embedded SoC technologies, manufacturing resource planning, enterprise asset and maintenance management, development and service provision, as well as leading manufacturers of high-speed milling machines and process equipment, and specialists on business and production processes.

All the partners were encouraged to contribute with its expertise and knowledge in different areas, therefore maximising the impact of dissemination of results and related work. Through the partners' specific features and their geographical location, each member of the consortium provides an indispensable and complementary contribution to the dissemination of the results.

In addition to the present deliverable D12.3, the following deliverables related to the communication and dissemination of project results were/will be delivered:

- Deliverable “D12.1 KYKLOS 4.0 Project Website” was delivered at M3 (outlining the structure and contents of the project website, which was updated during the year with relevant contents as addressed in section 4.2).
- Deliverable “D12.2 Dissemination Plan” was delivered at M4 (outlining the dissemination strategy and main activities centred around dissemination and communication of KYKLOS 4.0 outcomes).
- Updated versions of D12.3 will be delivered at M30 and M48 (Deliverables D12.8 and D12.12, respectively) (assessing results of the dissemination plan and identifies ad hoc contingency measures if needed).

## 3 Communication and dissemination strategy

The high visibility of the project and the promotion of active interaction with key stakeholders will enable the industry and public to understand the importance of investing capital and effort to support this innovation action. In other words, it is highly important that the consortium through its dissemination strategy delivers the highest possible impact to stakeholders outside the project partnership and ensure the following:

- The project outputs will be fully exploited and used in the most effective manner, for example through scaling-up of the demonstrated solutions.
- The knowledge gained and information generated and shared through the project will be available to all interested organizations and key stakeholders in Europe.

- The excellence produced by the project will be utilized by other entities, triggering further developments in the field and beyond. This aspect will be boosted by organizing two “Open Calls”.
- The project will reach decision-makers to contribute to improving future policies.
- The benefits of the project in services, employment, and the economy will be efficiently brought to society.

During the 1<sup>st</sup> year of the project, the following project critical information were communicated to the relevant audience:

- **Vision:** The objectives, strategic relevance, and key facts followed the evolution of the project and were reviewed periodically during the project.
- **News:** The consortium disseminated the achievements and results with a focus on KYKLOS 4.0 advantages.
- **Events:** Promotion of the project and its results.

The consortium kept track of the communication and dissemination plan throughout the 1<sup>st</sup> year of the project period. Partners from the KYKLOS 4.0 consortium used their industrial partnerships, standardization activities and long-standing experience in EU funded projects to contribute to the communication and dissemination activities. Furthermore, dissemination targeted highlighting the compatibility and interoperability of project solutions with what already exists in the market through standards. This paves the way for using the standardization system as a tool for the dissemination of the project results and the interaction with the market stakeholders.

### 3.1 Targeted groups

The dissemination of KYKLOS 4.0 results creates awareness and transfers knowledge from the project team to the project stakeholders and other interested parties throughout Europe and internationally, thus reaching a diversified and large audience and preparing for and contributing to the successful exploitation of results. The consortium prioritised stakeholder engagement in the project to more structured forms of interactions to efficiently manage their contribution in project achievements. During year 1 the consortium tried to reach out all kinds of audiences (scientific community, technology providers, manufacturers, standardization bodies, public authorities, etc.) and raise the awareness across all groups of stakeholders and interested parties aiming at establishing a concrete foundation for implementing the next steps of the dissemination and exploitation strategy. In this light, the various parties that KYKLOS 4.0 was targeted during the 1<sup>st</sup> year of the project were grouped into the categories presented in the following **Table 1**:

**Table 1** Targeted stakeholders.

<b>Technology providers</b> <ul style="list-style-type: none"> <li>• Leading software industries specializing in manufacturing intelligence, including MES, a suite of analytics solutions for operational excellence and fault detection</li> <li>• SMEs providing technologies or technological services, SMEs developing software</li> <li>• IIoT hardware vendors</li> <li>• Embedded software and systems providers</li> <li>• Scientific community (focused mainly on machine learning, PHM for industrial applications and machine modelling, middleware design, data privacy methodologies, security, virtualization technologies and SoC hardware technologies)</li> </ul>
<b>End-users</b> <ul style="list-style-type: none"> <li>• Industrial equipment and machine manufacturers / providers</li> <li>• Manufacturing companies (including SMEs) / production plants</li> </ul>
<b>Facilitators</b> <ul style="list-style-type: none"> <li>• EU Institutions (European Commission, European science foundation, MEPS)</li> <li>• National public authorities (industrial committees, ministry, and regional councils)</li> <li>• Standardization bodies (such as CEN, DIN)</li> <li>• European manufacturers associations</li> <li>• Business associations, especially SME business associations (such as SBS)</li> <li>• Related EU-funded projects</li> <li>• Organizations (such as the IMS organization, EFFRA, BDVA)</li> <li>• ETPs (such as the Manufacture Technology Platform), and clusters</li> </ul>

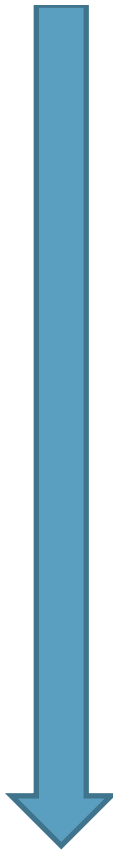
### 3.2 Communication and dissemination phases

The KYKLOS 4.0 communication and dissemination strategy was structured in 3 main phases according to **Table 2**. The 1<sup>st</sup> year activities focused on creating awareness in the KYKLOS 4.0-related markets in line with the plan for the 1-2 year period.

**Table 2** Communication and dissemination phases towards exploitation.

Phase	Year	Aims	
Preliminary project promotion	1-2	<ul style="list-style-type: none"> <li>• Agreeing upon the communication strategy and future activities</li> <li>• Creating initial awareness in the markets related with the project objectives and scope</li> </ul>	Project evolution

<b>Project commercialization</b>	2-3	<ul style="list-style-type: none"> <li>• Create more “targeted awareness” regarding KYKLOS 4.0 technologies with key players and potential users</li> <li>• Inform the target market about the technological benefits of KYKLOS 4.0</li> </ul>
<b>Business strategy</b>	3-4	<ul style="list-style-type: none"> <li>• Maximize target market and industry awareness regarding the KYKLOS 4.0 ecosystem</li> <li>• Ensure compatibility and interoperability with what already exists in the market through standards</li> <li>• Contribute to ensure the project sustainability and full exploitation</li> </ul>
<b>Exploitation</b>		



#### 4 Communication and dissemination activities and assessment – Year 1

During the 1<sup>st</sup> year of project running and despite the implications due to the coronavirus pandemic breakout, the communication and dissemination activities were successfully carried out according to the plan.

As an overview, the website was created in February 2020 and kept updated throughout the year. The templates and KYKLOS 4.0 presentation were created, and the project logo was finalized. KYKLOS 4.0 was present in social media by sharing posts with project news and developments. It is worth mentioning that, during the year, KYKLOS 4.0 significantly expanded its audience through its social media pages. Furthermore, 2 newsletters were released, and 2 publications (papers) were submitted/published. Several blog entries were posted, and 2 press releases were generated. Finally, 16 events and 6 meeting were hosted and/or attended (mainly online), and clusters with 3 relevant projects and/or initiatives were established.

## 4.1 Overview

The following **Table 3** shows an overview of the 1<sup>st</sup> communication and dissemination activities and assessment. As depicted below, all actions taken according to the 1<sup>st</sup> year plan were successfully completed and no contingency plans were necessary to be considered.

**Table 3** 1<sup>st</sup> year communication and dissemination plan, activities, and contingency plans.

Communication and dissemination objective	Plan	Actions taken	1 <sup>st</sup> year objective completed	Contingency plan
Create project website	Take project website live, including the information about vision, objectives, consortium members, imminent Open Calls, etc. – Post of developments and news	The website was created in February 2020 and kept updated throughout the year. Posts for developments and news were uploaded	😊	Not necessary
Create project identity and branding	Create project branding and identity. Finalize logo and color scheme	Templates and presentation were created, logo was finalized	😊	
Implement effective social media strategy	Presence on Facebook, Twitter, LinkedIn, and YouTube	Presence on social media by uploading posts with project news and developments	😊	
Generate positive media coverage and release project publications	2 newsletters	2 newsletters were released	😊	
	2-5 project publications (articles and/or papers/proceedings and/or presentations)	2 publications (papers/proceedings) were submitted/published	😊	
	Blog entries, press releases, etc.	Several blog entries and 2 press releases were generated	😊	
Attend and/or host conferences, networking events, and/or workshops	Attend and/or host up to 1-3 relevant conferences, networking events, and/or workshops addressing the target stakeholders, and users	16 events were hosted and/or attended mostly virtually, and 6 meetings	😊	
Cluster with relevant projects and/or initiatives	Cluster with 1 relevant project or global initiative, including other FoF projects	Clusters with 3 relevant projects and/or initiatives	😊	

The following **Table 4** and **Table 5** enlist the activities linked with the project and the audience reached in the context of these activities:

**Table 4** Type and number of the communication and dissemination activities during year 1.

Type of activity	Number of activities
Organization of a Conference	1
Organization of a workshop	2
Press release	2
Exhibition	1
Flyers	1
Social media	26
Website	5
Participation to a conference	8
Participation to a workshop	2
Video/film (slideshow)	1
Brokerage event	1
Pitch event	1
Other (blog entries, meetings/mentoring)	24

**Table 5** The type and the estimated number of audiences reached during the communication and dissemination activities of year 1.

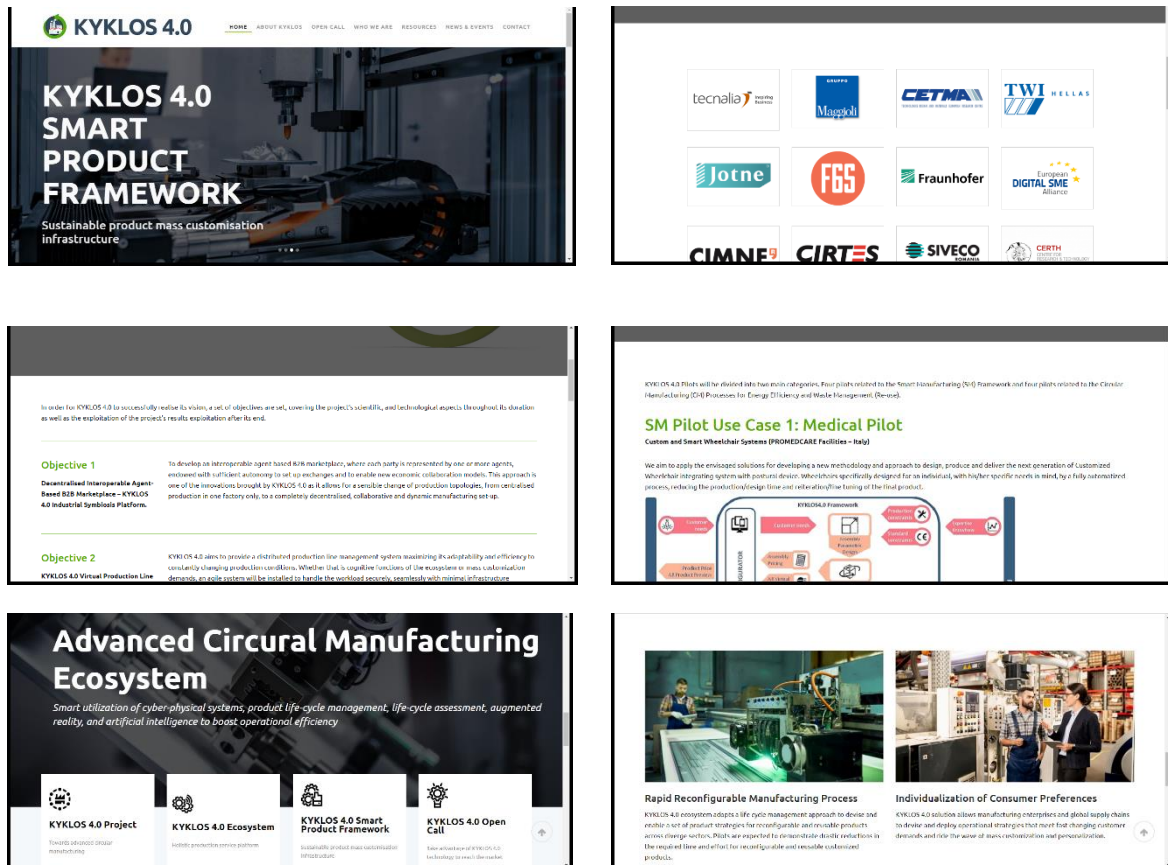
Audience reached		Estimated number of persons reached
Organization of a Conference		50
Organization of a workshop		70
Press release		50
Exhibition		50
Flyers		-
Social media <sup>1</sup>	Twitter	2000
	LinkedIn	800
	Facebook	1000
	YouTube	-
Website		400
Participation to a conference		400
Participation to a workshop		60
Video/film (slideshow)		-
Brokerage event		20
Pitch event		20
Other (blog entries, meetings/mentoring)		300

## 4.2 Project website

The website of the KYKLOS 4.0 project (snapshots of KYKLOS 4.0 website sections are shown in **Figure 1**) was created in February 2020 and is accessible online at <https://kyklos40project.eu/>. The website, which was kept updated during 2020 with KYKLOS 4.0 news and developments, was designed to ensure

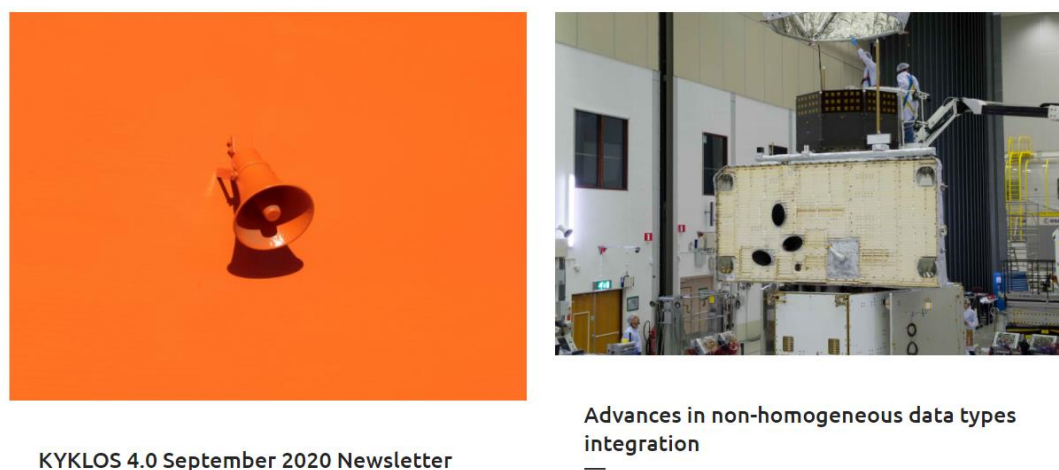
<sup>1</sup> Some part of the persons reached should be common to all social media platforms used.

that all interested parties will easily reach the information of all KYKLOS 4.0 aspects (**Figure 2**). As part of the general dissemination and exploitation strategy, it will be available, updated, and maintained for at least 4 years after the project's completion. The partner responsible for the website management is EfB (WP12 "Raising Awareness & Exploitation Roadmap" leader) with the collaboration of the dissemination manager and the coordinator. More information about the website were provided in D12.1 "KYKLOS 4.0 Project Website" (M3) and D12.2 "Dissemination Plan" (M4).



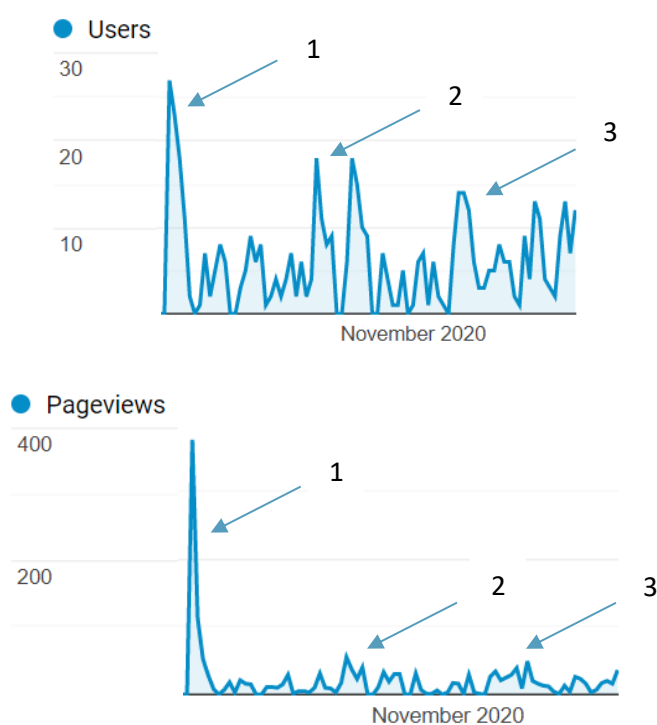
**Figure 1** Snapshots of KYKLOS 4.0 project website sections (<https://kyklos40project.eu/>).





**Figure 2** KYKLOS 4.0 website “News” section with updates and developments.

According to preliminary statistics (Google Analytics) shown in **Figure 3** below, the increase of KYKLOS 4.0 website users and pageviews on the dates in which posts were shared (1: 15/09, 2: 13/10, 3: 10/11) indicates the importance of a regular presence on social media, where links to the posts are shared and thereby help redirect users to the website. In this view, the sharing of the first newsletter via social media attracted most of the users and pageviews, which suggests the interest of users and stakeholders to get insights on KYKLOS 4.0 news and developments.



**Figure 3** KYKLOS 4.0 website users and pageviews (09-11/2020, Google Analytics).



During the period 09-12/2020<sup>2</sup>, 687 sessions were recorded (465 users) with an average session duration of 3min. The total number of pageviews was 1934. Most of users are coming from Europe (Greece, Norway, Spain, Italy, etc.), however 9% comes from the US.

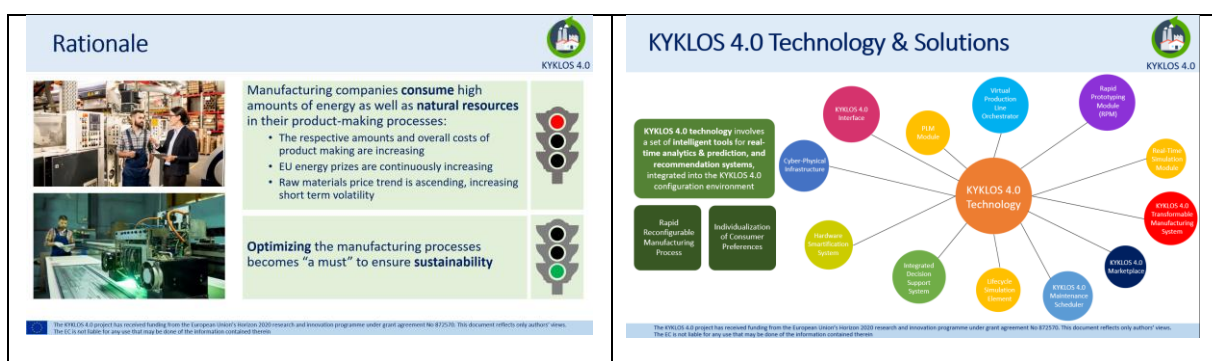
### 4.3 Project branding

The project logo shown in **Figure 4** was used in all communication activities and channels (project website, public deliverables, articles, presentations, flyers, press releases, etc.). Templates for deliverables, project presentations, meeting agendas, minutes, etc. were created based on the project branding and identity and are available to all consortium partners through KYKLOS 4.0 Alfresco platform using their credentials.



**Figure 4** KYKLOS 4.0 logo.

A presentation of KYKLOS 4.0 was created and shared to partners to provide an overview of project objectives, technologies, and solutions to the interested parties. **Figure 5** shows the KYKLOS 4.0 slides presented during the Standard for Digital Manufacturing Webinar.



<sup>2</sup> Date of extracting data: 18/12/2020.

### KYKLOS 4.0 Pilots

KYKLOS 4.0 will demonstrate 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.


**Large-scale piloting** in 7 pilots to demonstrate the technical, environmental and economic viability of KYKLOS 4.0 Ecosystem

Pilots will be divided into two main categories: Pilots related to **Smart Manufacturing**, and to **Circular Manufacturing** (energy efficiency and waste management) framework

Smart Manufacturing Pilots		Circular Manufacturing Pilots	
01	Industrial Pallet Assembly Line (Vestel - Turkey)	01	Advanced Pallet Assembly Line (Vestel - Turkey)
02	Industrial Pallet Assembly Line (Vestel - Turkey)	02	Advanced Pallet Assembly Line (Vestel - Turkey)
03	Industrial Pallet Assembly Line (Vestel - Turkey)	03	Advanced Pallet Assembly Line (Vestel - Turkey)
04	Industrial Pallet Assembly Line (Vestel - Turkey)		

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### 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

**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

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

A total of **€3M** has been budgeted for the KYKLOS 4.0 Open Calls. In principle, €1M for the 1<sup>st</sup> and €2M for the 2<sup>nd</sup> Open Call. **Awarded projects may receive up to €150,000**, with each third party receiving a maximum of €60,000

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Figure 5 KYKLOS 4.0 presentation.

Furthermore, a flyer and posters were designed, uploaded on the [website](https://kyklos40project.eu), and shared through social media to outline the key aspects of the project to interested parties and stakeholders (**Figure 6** and **Figure 7**). Due to the COVID-19 circumstances and the cancellation of face-to-face events, it was not needed to print flyers. Therefore, the flyers were specifically designed to be disseminated online and readable on screens.



KYKLOS 4.0 will facilitate the acceptance and utilization of the developed solutions by the market with:

- Efficient communication and dissemination strategy
- Ensuring compatibility and interoperability with what already exists in the market through standards
- Using the standardization system as a tool for dissemination of the project results and interaction with the market stakeholders

**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

Funding will be provided to projects led by small consortia (third parties) and targeting innovative concepts adhering to the larger objectives and vision of the KYKLOS 4.0 project

### Who we are

The KYKLOS 4.0 Consortium is a well-balanced group of European organizations including research institutes, universities, SMEs, and large enterprises, with complementary expertise. The partners bring together a unique combination of technical-business skills and expertise necessary to form an effective and compact consortium



**End users**



**KYKLOS 4.0**  
www.kyklos40project.eu



THIS PROJECT HAS RECEIVED FUNDING FROM THE EUROPEAN UNION'S HORIZON 2020 RESEARCH AND INNOVATION PROGRAMME UNDER GRANT AGREEMENT NO 872570



## KYKLOS 4.0

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

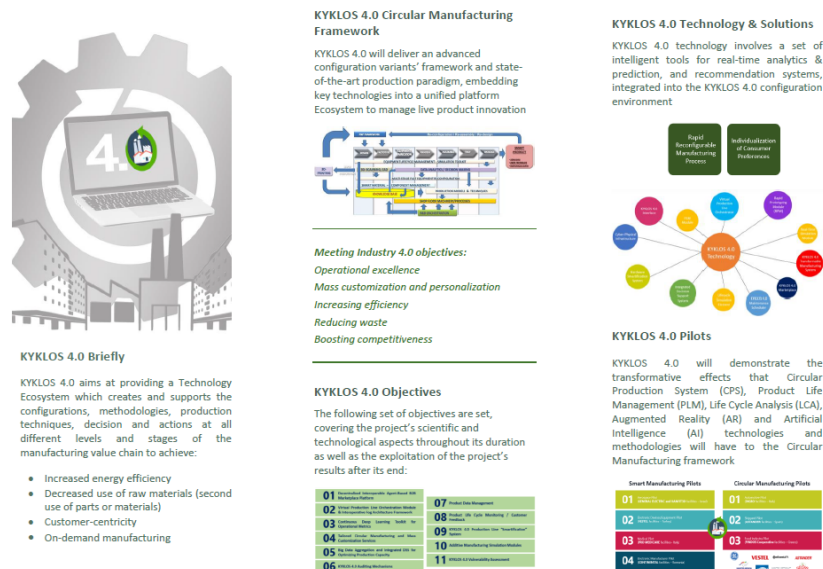


Figure 6 The KYKLOS 4.0 flyer.



Figure 7 The KYKLOS 4.0 posters.



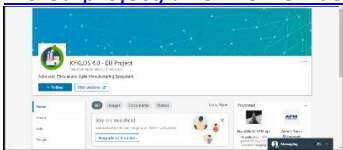

#### 4.4 Social networks

KYKLOS 4.0 accounts/pages were created on several social media platforms (**Table 6**) to communicate and disseminate project activities, results, and achievements. Each platform has its own characteristics and advantages. Regardless of the platform used, the advantage of sharing the news, results, and developments on social media is that this information spreads easily. When using the platforms correctly, it is possible to gain opportunities that other channels cannot provide. In the following

**Table 6** an overview of impressions, followers and likes is provided.

Based on the results provided, during 2020, KYKLOS 4.0 successfully expanded its audience and impressions using social media by sharing its news and developments. As the pandemic did not allow the physical meetings during the events, extra effort was put on the online presence of KYKLOS 4.0. The target is to further raise the awareness on KYKLOS 4.0 topics and developments, and in this light enhance the engagement of the audience and the stakeholders by increasing the number of interactions, clicks, and new followers.

**Table 6** Social media platforms used by KYKLOS 4.0.

KYKLOS 4.0 social media platform	Aim	Impressions	Likes/Shares	Followers
<b>Facebook</b> <a href="https://www.facebook.com/Kyklos40Project">https://www.facebook.com/Kyklos40Project</a> 	Facebook is set up mainly to share information with the general public by posting mainly photos from meetings, events, and outreach activities. Facebook groups will be utilized to share KYKLOS 4.0 information with more recipients	1030	14/3	26
<b>Twitter</b> <a href="https://twitter.com/Kyklos40Project">https://twitter.com/Kyklos40Project</a> 	Twitter will be used mainly to communicate with stakeholders by posting short news and announcements related to KYKLOS 4.0 activities, as well as achievements	4592	32/17	42
<b>LinkedIn</b> <a href="https://www.linkedin.com/company/kyklos-4-0-eu-project/?viewAsMember=true">https://www.linkedin.com/company/kyklos-4-0-eu-project/?viewAsMember=true</a> 	LinkedIn will be used mainly to communicate with stakeholders by posting short news and announcements related to KYKLOS 4.0 activities, as well as achievements	956	51/21	51
<b>YouTube</b> <a href="https://www.youtube.com/channel/UCjExattPrmLOetNPI4OxD0g">https://www.youtube.com/channel/UCjExattPrmLOetNPI4OxD0g</a> 	YouTube channel will be used to communicate with both stakeholders and the general public through videos from project pilot demonstrations and technology achievements, as well as events, and other activities	-	-	14



## 4.5 Newsletters

The 1<sup>st</sup> KYKLOS 4.0 newsletter was released in September and the second one was delivered in December 2020 (**Figure 8**). The 1<sup>st</sup> newsletter focused on introducing KYKLOS 4.0 to stakeholders, scientific and general audience including information about KYKLOS 4.0 technology and solutions, pilots, and their expected impact. Also, separate sections were dedicated to the Open Calls and the collaboration of KYKLOS 4.0 with the European Factories of the Future Research Association ([EFFRA](#)). The 2<sup>nd</sup> newsletter aimed at informing the audience, users, and stakeholders about all current KYKLOS 4.0 news, advances, and developments.



**Figure 8** KYKLOS 4.0 1<sup>st</sup> newsletter.

## 4.6 Scientific publications

Scientific publications make up an effective way to disseminate high-level technology information, attract the interest of the scientific community and stakeholders and pave the way for the efficient exploitation of the results. In **Table 7** the scientific publications submitted for publication/published during year 1 are listed.

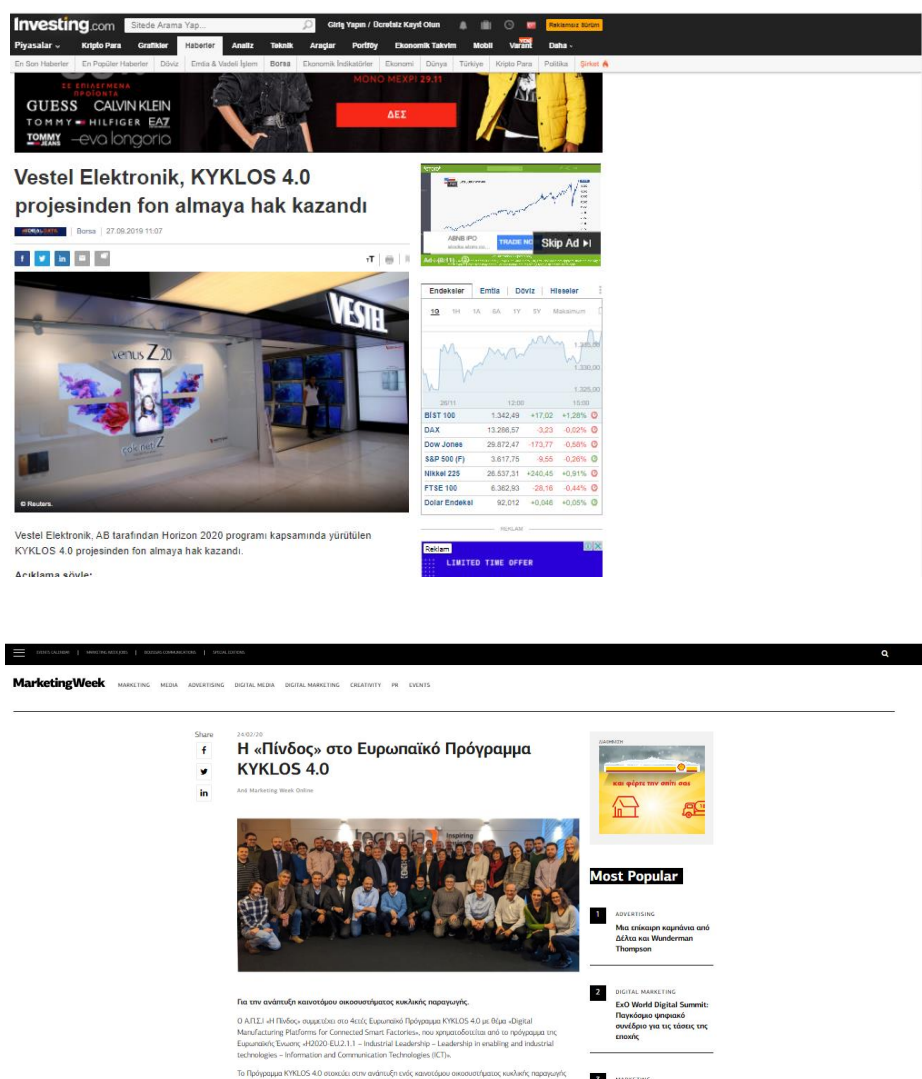
**Table 7** Scientific publications during year 1.

No	Type of scientific publication	Title of the scientific publication	DOI	ISSN or eSSN	Authors	Title of the journal or equivalent	Number, date	Publisher	Place of publication	Year of publication	Relevant pages	Public & private publication	Peer-review	Is/Will open access provided to this publication
1	Article in journal	Numerical and experimental analysis of the structural performance of AM components fabricated by Fused Filament Fabrication technique	<a href="https://doi.org/10.1007/s10999-020-09524-8">https://doi.org/10.1007/s10999-020-09524-8</a>	N/A	N. Dialami, M. Chiumenti, M. Cervera, R. Rossi, U. Chasco and M. Domingo	International Journal of Mechanics and Materials in Design	15/10/2020	Springer Nature B.V.	N/A	2020	N/A	N/A	yes	N/A
2	Article in journal	Printing pattern based material characterization and enhanced performance analysis of FFF components: Experimental and computational validation	N/A	N/A	N. Dialami, M. Chiumenti, M. Cervera, U. Chasco, G. Reyes-Pozo and M. A. Pérez	International Journal of Mechanics and Materials in Design	Submitted	N/A	N/A	N/A	N/A	N/A	N/A	N/A



## 4.7 Media Coverage / Press Release / Blog and Website Entries

The KYKLOS 4.0 consortium shared 2 press releases during 2020. The first one was related to the project kick-off and shared through several digital media and websites (indicatively shown in **Figure 9**), whereas the second one was spread through start-ups and business stakeholders (Accelerator Webinar) emphasizing the Open Calls and the funding opportunities to projects led by small consortia (third parties), targeting innovative concepts. During the webinar, KYKLOS 4.0 and Open Calls were presented to participants. Also, a start-up mentoring focus group took place with Environ Governance during which KYKLOS 4.0 technologies and elements for possible functional components were presented to participants. Furthermore, the overview of KYKLOS 4.0 was entered on blogs and partners & collaborators websites to spread the objectives as well as the technological aspects and solutions of the project (**Figure 10**). **Table 8** collects the respective activities.



**Figure 9** KYKLOS 4.0 Kick-off press release shared through the digital media.

The figure displays two screenshots related to the KYKLOS 4.0 project. The top screenshot shows the ResearchGate project page for 'H2020 (2020) An Advanced Circular and Agile Manufacturing Ecosystem based on rapid reconfigurable manufacturing process and individualized consumer preferences (KYKLOS 4.0)'. The project is led by Miguel Cervera and Michele Chiumenti. The description outlines the goal of demonstrating a realistic, measurable, and replicable way to transform manufacturing effects through the Circular Manufacturing (CM) Framework. The bottom screenshot shows the KYKLOS 4.0 website, which is part of the European Digital SME Alliance. The website features a navigation menu with 'ABOUT', 'MEMBERS & WGS', 'NEWS & PUBLICATIONS', and 'PRIORITIES'. The main content area highlights the project's duration of 48 months and its progress as of Month 10. Below this, there are sections for 'ABOUT THE PROJECT', 'DIGITAL SME'S ROLE', 'PARTNERS', and 'LATEST NEWS'. The bottom part of the screenshot shows a blog entry titled 'The KYKLOS 4.0 Digital Platform for the Federated Value Chains in the Circular Economy' dated 1 December 2020, categorized under 'Industry'.

Figure 10 KYKLOS 4.0 blog and website entries.

**Table 8** Press release / blog and website entries of KYKLOS 4.0 during year 1.

No	Type of the activity	Title of the activity (conference, event, etc.)	Title of the work/presentation/event/release	Date(s) of the activity	Place of activity	Type 1 of audience reached	Website
1	Press release	Accelerator Webinar	N/A	28/04/2020	Online	Industry, Investors	N/A
2	Press release	KYKLOS 4.0 Kick-off	N/A	01-02/2020	N/A	Medias, Customers, General Public, Industry	<a href="https://tr.investing.com/news/stock-market-news/vestel-elektronik-kyklos-40-projesinden-fon-almaya-hak-kazand-1910070">https://tr.investing.com/news/stock-market-news/vestel-elektronik-kyklos-40-projesinden-fon-almaya-hak-kazand-1910070</a> <a href="https://marketingweek.gr/i-pindos-sto-evropaiko-programma-kyklos-4-0/">https://marketingweek.gr/i-pindos-sto-evropaiko-programma-kyklos-4-0/</a> <a href="https://www.fpress.gr/epixeiriseis/story/62757/sto-evropaiko-programma-kyklos-4-0-h-pindos">https://www.fpress.gr/epixeiriseis/story/62757/sto-evropaiko-programma-kyklos-4-0-h-pindos</a> <a href="https://www.athensvoice.gr/advertorial/market/623132_o-apsi-i-pindos-symmetehei-sto-evropaiko-programma-kyklos-40">https://www.athensvoice.gr/advertorial/market/623132_o-apsi-i-pindos-symmetehei-sto-evropaiko-programma-kyklos-40</a> <a href="https://www.platform.gr/life-2/market/74510-o-apsi-i-pindos-symmetexei-sto-evropaiko-programma-kyklos-4-0-gia-tin-anaptyksi-kainotomou-oikosystematos-kyklos-paragogeis">https://www.platform.gr/life-2/market/74510-o-apsi-i-pindos-symmetexei-sto-evropaiko-programma-kyklos-4-0-gia-tin-anaptyksi-kainotomou-oikosystematos-kyklos-paragogeis</a> <a href="https://www.efsyn.gr/oikonomia/ta-nea-tis-agoras/231926_o-apsi-i-pindos-symmetehei-sto-evropaiko-programma-kyklos-40">https://www.efsyn.gr/oikonomia/ta-nea-tis-agoras/231926_o-apsi-i-pindos-symmetehei-sto-evropaiko-programma-kyklos-40</a> <a href="https://analitis.gr/sto-evropaiko-programma-kyklos-40-h-pindos/">https://analitis.gr/sto-evropaiko-programma-kyklos-40-h-pindos/</a> <a href="https://www.agon.gr/oikonomia/29813/pilotos-gia-ti-viomichania-trofimon-stin-eyropi-o/">https://www.agon.gr/oikonomia/29813/pilotos-gia-ti-viomichania-trofimon-stin-eyropi-o/</a> <a href="https://www.newsbeast.gr/greece/arthro/6033271/o-apsi-i-pindos-symmetechei-sto-evropaiko-programma-kyklos-4-0-gia-tin-anaptyxi-kainotomoy-oikosystematos-kyklos-paragogeis">https://www.newsbeast.gr/greece/arthro/6033271/o-apsi-i-pindos-symmetechei-sto-evropaiko-programma-kyklos-4-0-gia-tin-anaptyxi-kainotomoy-oikosystematos-kyklos-paragogeis</a> <a href="https://www.inewsgr.com/369/o-apsi-i-pindos-sto-evropaiko-programma-kyklos-40-gia-anaptyxi-oikosystematos-kyklos-paragogeis.htm">https://www.inewsgr.com/369/o-apsi-i-pindos-sto-evropaiko-programma-kyklos-40-gia-anaptyxi-oikosystematos-kyklos-paragogeis.htm</a>
3	Other	KYKLOS 4.0 blog entries	N/A	N/A	N/A	Customers, General Public, Industry	<a href="https://innov-acts.com/2020/12/01/the-kyklos-4-0-digital-platform-for-the-federated-value-chains-in-the-circular-economy/">https://innov-acts.com/2020/12/01/the-kyklos-4-0-digital-platform-for-the-federated-value-chains-in-the-circular-economy/</a> <a href="https://www.researchgate.net/project/H2020-2020-An-Advanced-Circular-and-Agile-Manufacturing-Ecosystem-based-on-rapid-reconfigurable-manufacturing-process-and-individualized-consumer-preferences-KYKLOS-40">https://www.researchgate.net/project/H2020-2020-An-Advanced-Circular-and-Agile-Manufacturing-Ecosystem-based-on-rapid-reconfigurable-manufacturing-process-and-individualized-consumer-preferences-KYKLOS-40</a> <a href="https://www.twi-hellas.com/projects/kyklos-4-0">https://www.twi-hellas.com/projects/kyklos-4-0</a> <a href="https://cordis.europa.eu/project/id/872570">https://cordis.europa.eu/project/id/872570</a> <a href="https://www.konnektable.net/kyklos-40-h2020.html">https://www.konnektable.net/kyklos-40-h2020.html</a> <a href="https://efb.gr/portfolio/kyklos/">https://efb.gr/portfolio/kyklos/</a> <a href="https://www.digitalsme.eu/projects/kyklos40/">https://www.digitalsme.eu/projects/kyklos40/</a> <a href="https://www.maggioli.com/kyklos4-0/">https://www.maggioli.com/kyklos4-0/</a> <a href="https://www.connectedfactories.eu/video/kyklos-40">https://www.connectedfactories.eu/video/kyklos-40</a> <a href="https://www.cyberssbytechnalia.com/node/371">https://www.cyberssbytechnalia.com/node/371</a> <a href="https://www.cimne.com/sgp/rtd/Project.aspx?id=855">https://www.cimne.com/sgp/rtd/Project.aspx?id=855</a> <a href="https://www.arrowheadtools.eu/arrowheadtools/news/arrowhead-tools-and-kyklos-40-the-collaboration-on-industry-40-continues-to-expand/">https://www.arrowheadtools.eu/arrowheadtools/news/arrowhead-tools-and-kyklos-40-the-collaboration-on-industry-40-continues-to-expand/</a> <a href="https://www.cisuc.uc.pt/en/projects/h2020-kyklos-40-an-advanced-circular-and-agile-manufacturing-ecosystem-based-on-rapid-reconfigurable-manufacturing-process-and-individualized-consumer-preferences">https://www.cisuc.uc.pt/en/projects/h2020-kyklos-40-an-advanced-circular-and-agile-manufacturing-ecosystem-based-on-rapid-reconfigurable-manufacturing-process-and-individualized-consumer-preferences</a> <a href="https://www.pdmfc.com/research-development.html">https://www.pdmfc.com/research-development.html</a>
4	Other	Startup mentoring activities with Environ Governance	Additive manufacturing, technologies, and materials	11/11/2020	Online	Industry, Customers	N/A

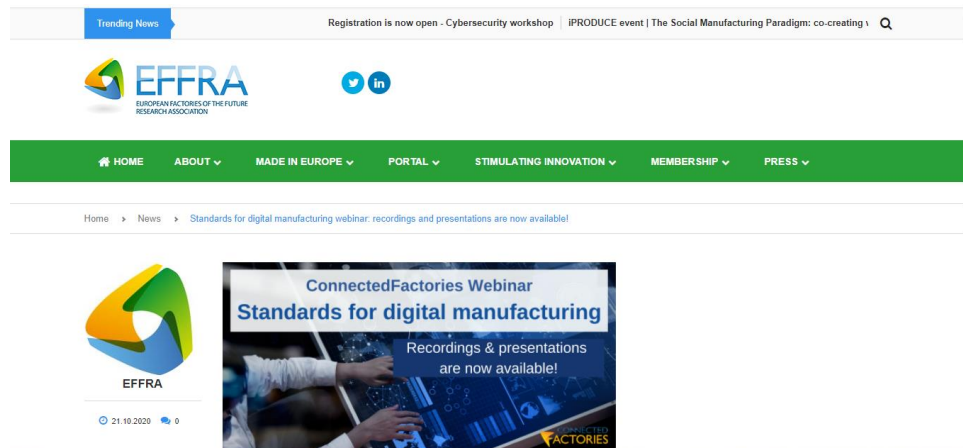
## 4.8 Conferences, Events, and Meetings

The KYKLOS 4.0 consortium partners participated in major forums and exhibition shows during 2020, offered mainly online due to COVID-19 implications, in the fields of manufacturing, industrial automation, and related technologies. Furthermore, online meetings/teleconferences were organized to foster collaboration with external industrial partners and stakeholders. During the meetings, KYKLOS 4.0 partners presented the project's planned and ongoing technical activities and discussed about possible cooperation on topics such as design, customization, process optimization and components development.

Considering the conferences and events, partners provided the interested parties with information about the objectives and technology of KYKLOS 4.0 and discussed potential collaborations in research and/or industrial level. Indicatively, during the Virtual Brokerage Event on the European Green Deal Call, partners disseminated the overall scope of KYKLOS 4.0 and informed participants about technical aspects of the project. In addition, during the DIGITAL SME General Assembly 2020, the KYKLOS 4.0 project was introduced to all the members of DIGITAL SME alliance including 30 national and regional SME associations throughout Europe. In the framework of the EOSC DIH Funding for Innovation Webinar (**Figure 11**), organized by partner F6S, the presentation and discussions were mainly focused on the KYKLOS 4.0 Open Calls. The Open Calls were also presented on the pitch event Accelerator and Tech Parks Webinar (mainly to a Serbian audience). Furthermore, during the Standards for Digital Manufacturing Webinar (**Figure 12**), KYKLOS 4.0 partner participated in the organization of the webinar and presented KYKLOS 4.0 to participants with emphasis on the standardization tasks of the project.



**Figure 11** EOSC DIH Funding for Innovation Webinar.



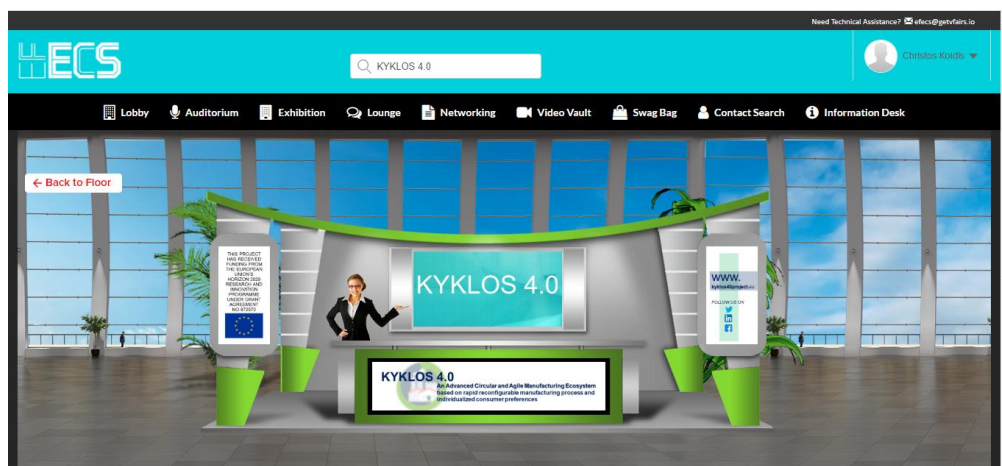
**Figure 12** Standards for Digital Manufacturing Webinar.

In addition to the DIGITAL SME General Assembly 2020 and Funding for Innovation Webinar, a Joint Focus Group on Artificial Intelligence (AI) meeting was organized by the KYKLOS 4.0 partner DIGITAL SME together with the European Commission's Joint Research Centre (JRC), during which the current and future state of adoption and use of AI was addressed and linked with KYKLOS 4.0 AI aspects (**Figure 13**).

KYKLOS 4.0 also participated in the European Forum for Electronic Components and Systems (EFECS) 2020. The project participated with a virtual booth where participants had the chance to visit the booth, interact with KYKLOS 4.0 representatives, and get insights on KYKLOS 4.0 technologies and solutions (**Figure 14**).



**Figure 13** Joint Focus Group on Artificial Intelligence.



**Figure 14** KYKLOS 4.0 booth at EFECS 2020.

**Table 9** collects all conferences, events, etc. that KYKLOS 4.0 partners organized/participated in, disseminating KYKLOS 4.0 objectives and developments.



**Table 9** List of the conferences, events, and meetings during year 1.

No	Type of the activity	Title of the activity (conference, event, etc.)	Title of the work/presentation/event/release	Date(s) of the activity	Place of activity	Type 1 of audience reached	Website
1	Brokerage event	Virtual Brokerage Event on the European Green Deal Call	N/A	23-24/09/2020	Online	Scientific Community (higher education, Research), Industry, Policy makers	<a href="https://green-deal-matchmaking-session.b2match.io/">https://green-deal-matchmaking-session.b2match.io/</a>
2	Exhibition	European Forum for Electronic Components and Systems (EF ECS) 2020	KYKLOS 4.0 booth	25-26/11/2020	Online	Industry, Scientific Community (higher education, Research), Customers, Policy makers	<a href="https://efecs.vfairs.com/">https://efecs.vfairs.com/</a>
3	Organisation of a workshop	DIGITAL SME Alliance General Assembly 2020	N/A	14/05/2020	Online	Industry, Scientific Community (higher education, Research), Policy makers	<a href="https://www.digitalsme.eu/general-assembly-2020/">https://www.digitalsme.eu/general-assembly-2020/</a>
4	Organisation of a workshop	Funding for Innovation Webinar	N/A	11/11/2020	Online	Industry, Scientific Community (higher education, Research)	<a href="https://eosc-dih.eu/funding-for-innovation-webinar/">https://eosc-dih.eu/funding-for-innovation-webinar/</a>
5	Organisation of a workshop	Joint Focus Group on AI	EU-funded initiatives for SMEs	10/11/2020	Online	Industry, Policy makers, Scientific Community (higher education, Research)	<a href="https://www.digitalsme.eu/european-focus-group-on-artificial-intelligence/">https://www.digitalsme.eu/european-focus-group-on-artificial-intelligence/</a>
6	Participation to a conference	Data Sharing Days 2020	N/A	27-28/01/2020	The Hague, The Netherlands	Industry, Investors, Policy makers, Scientific Community (higher education, Research)	<a href="https://datasharingdays.com/">https://datasharingdays.com/</a>
7	Participation to a conference	12th European Innovation Summit	N/A	07-12/12/2020	Brussels, Belgium (online)	Policy makers, Industry, Scientific Community (higher education, Research), Civil Society, Investors	<a href="https://www.knowledge4innovation.eu/k4i-events/12th-european-innovation-summit/">https://www.knowledge4innovation.eu/k4i-events/12th-european-innovation-summit/</a>
8	Participation to a conference	Industry 4.0 Congress	N/A	03-05/03/2020	Barcelona, Spain	Industry, Investors, Scientific Community (higher education, Research), General Public	<a href="https://www.advancedfactories.com/en/congress/call-speakers-advancedfactories/">https://www.advancedfactories.com/en/congress/call-speakers-advancedfactories/</a>
9	Participation to a conference	EU Sustainable Energy Week	N/A	22-26/06/2020	Online	Policy makers, General Public, Industry, Civil Society	<a href="https://eusew.eu/">https://eusew.eu/</a>
10	Participation to a conference	European Research and Innovation Days	N/A	22-24/09/2020	Online	Policy makers, Industry, Scientific Community (higher education, Research)	<a href="https://research-innovation-days.ec.europa.eu/about">https://research-innovation-days.ec.europa.eu/about</a>
11	Participation to a conference	Digitalization of Manufacturing: Building the ecosystem for a smart and sustainable future	N/A	12/11/2020	Online	Industry, Scientific Community (higher education, Research), Policy makers	<a href="https://worldmanufacturing.org/activities/week-2020/digitalization-of-manufacturing-building-the-ecosystem/">https://worldmanufacturing.org/activities/week-2020/digitalization-of-manufacturing-building-the-ecosystem/</a>
12	Participation to a conference	AMMA - Additive Manufacturing for Military Applications	N/A	14/10/2020	Lillestrøm, Norway	Industry, Scientific Community (higher education, Research), Customers, Policy makers	<a href="https://www.ffi.no/en/our-service/amma">https://www.ffi.no/en/our-service/amma</a>

13	Participation to a conference	36th International CAE Conference and Exhibition	N/A	30/11/2020-04/12/2020	N/A	Scientific Community (higher education, Research), Industry, Investors, Customers	<a href="https://www.caeconference.com/">https://www.caeconference.com/</a>
14	Participation to a workshop	Standard for Digital Manufacturing Webinar	ISO 10303 in EU projects (KYKLOS 4.0)	20/10/2020	Online	Industry, Policy makers, Scientific Community (higher education, Research)	<a href="https://www.effra.eu/news/standards-digital-manufacturing-webinar-recordings-and-presentations-are-now-available">https://www.effra.eu/news/standards-digital-manufacturing-webinar-recordings-and-presentations-are-now-available</a>
15	Participation to a workshop	Digitalization and Digital Platform Live Webinar	KYKLOS 4.0	11/03/2020	Online	Industry, Policy makers, Scientific Community (higher education, Research), Investors, Customers	<a href="https://www.effra.eu/events/digitalisation-and-digital-platform-webinar">https://www.effra.eu/events/digitalisation-and-digital-platform-webinar</a>
16	Pitch event	Accelerator and Tech Parks Webinar	N/A	28/04/2020	Online	Industry, Investors	N/A
17	Other	Meeting with Environ Governance	Custom design through parametric design	01/03/2020	Online	Industry, Customers	N/A
18	Other	Meeting with Terotecna	Additive manufacturing, technologies and materials	28/04/2020	Online	Industry, Customers	N/A
19	Other	Meeting with Biometrica	Flexible manufacturing and Cobot	16/06/2020	Online	Industry, Customers, General Public	N/A
20	Other	Contact with potential Industrial partner (Ottobock, Germany)	N/A	16/10/2020	Telco	Industry	N/A
21	Other	Contact with potential Industrial partner (Sunrise Medical, Germany)	N/A	19/10/2020	Telco	Industry	N/A
22	Other	Contact with potential Industrial partner (Meyra Wheelchairs, Germany)	N/A	15/10/2020	Telco	Industry	N/A



## 4.9 Cluster with projects and/or initiatives

As part of our project dissemination and exploitation strategy, liaisons and/or clusters with associated European projects and/or alliances that address similar challenges were made. The objective was to extend the reach of the project to interested user groups and stakeholders, ensuring the exchange of knowledge to better implement project tasks.

### **European Factories of the Future Research Association (EFFRA):**

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 to launch 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, the KYKLOS 4.0 consortium announced its 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 page inside the EFFRA Innovation Portal (<https://www.effra.eu/effra-innovation-portal>) as it is shown in **Figure 15**. 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. Furthermore, the KYKLOS 4.0 twitter account was integrated on the portal feeding it with the project's news and developments to gain more visibility and boost its dissemination impact.

The screenshot displays the KYKLOS 4.0 project page within the EFFRA Innovation Portal. The page is structured as follows:

- Header:** Includes the EFFRA logo, a navigation menu (Home, Dashboard, Structured Wiki, Pathways, Projects, Project ideas, People & organisations, Results, demos etc., Products/Services, Programmes, Profile), and contact information (portal@effra.eu, Visit the EFFRA website).
- Project Title:** "Project / KYKLOS 4.0" with the subtitle "An Advanced Circular and Agile Manufacturing Ecosystem based on rapid reconfigurable manufacturing process and individualized consumer preferences".
- Summary:** A detailed description of the project's goals and objectives, including a list of key activities and outcomes.
  - KYKLOS 4.0 aims to develop an innovative Circular Manufacturing ecosystem based on novel CPS and AI based technologies, enhanced with novel production mechanisms and algorithms, targeting on personalised products with extended life cycle and promoting energy efficient and low material consumption intra-factory production processes, resulting reduced greenhouse gas emissions and air pollutants. KYKLOS 4.0 will demonstrate, in a realistic, measurable, and replicable way the transformative effects that CPS (Circular Production System), PLM (Product Life Management), LCA (Life Cycle Analysis), AR (Augmented Reality) and AI (Artificial Intelligence) technologies and methodologies will have to the Circular Manufacturing 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 material, part and components reuse) for the whole manufacturing sectors;
    - ensure scalability for future scale of novel CM (Circular Manufacturing) 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.
- More information:** A table providing key project details:
 

Web resources:	<a href="https://cordis.europa.eu/project/id/872570">https://cordis.europa.eu/project/id/872570</a> <a href="https://kyklos40project.eu/">https://kyklos40project.eu/</a>
Start date:	01-01-2020
End date:	31-12-2023
Total budget - Public funding:	19 227 110,00 Euro - 15 984 875,00 Euro
Call topic:	Digital Manufacturing Platforms for Connected Smart Factories_2 (D1-ICT-07-2019)
Twitter:	@KyKlos40Project
- Right Sidebar:**
  - KYKLOS 4.0:** Project logo and title.
  - Contacts:** Add / edit person button.
  - Latest news:** No news messages yet. Go to project forum button.
  - Social feed:** A tweet from @KyKlos40Project dated 10/11/2020, mentioning the 2nd Online Plenary Meeting and various hashtags (#KYKLOS40, #Industry40, #H2020, #EFFRA, #smartfactory, #IIoT).
  - Results:** Add result button.

Figure 15 The KYKLOS 4.0 page inside EFFRA Innovation Portal.

### Big Data Value Association (BDVA):

The Big Data Value Association (BDVA) is an industry-driven international not-for-profit organization. It brings together more than 200 members all over Europe, with a well-balanced composition of large, small, and medium-sized industries as well as research and user organizations. BDVA and the Big Data Value PPP pursue a common shared vision of positioning Europe as the world leader in creating Big Data Value. KYKLOS 4.0 created a strong connection with BDVA to participate in the development of an innovation ecosystem that will enable the data and Artificial Intelligence-driven digital transformation in Europe. Several members of the consortium are or have been involved in previous and current linked innovation projects (EFFRA, Connected Factories Project, <http://www.effra.eu/connectedfactories>), Product Service Platform H2020 innovation projects (<http://www.icp4life.eu/>, <http://www.h2020-proregio.eu/>, <http://www.psymbiosys.eu/about/consortium/>, etc.).

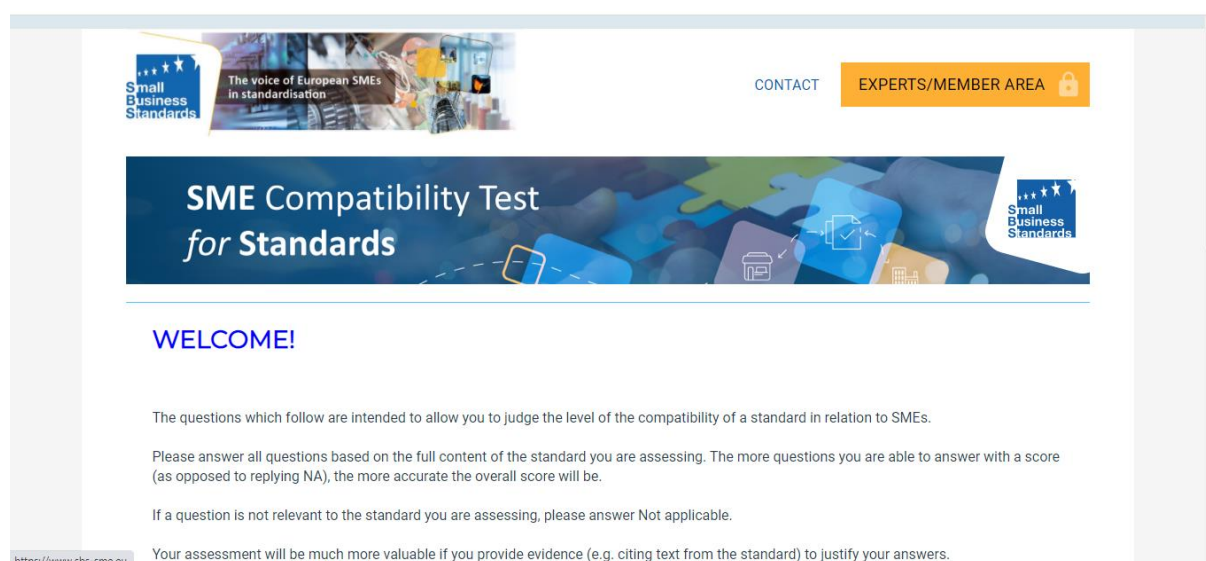
Through this connection, KYKLOS 4.0 aims at strengthening its networking and exploitation potential by promoting its competitive technological advantages and solutions to an industrial leadership of providers and end users of big data value technology-based systems and services.

### Small Business Standards (SBS):

The KYKLOS 4.0 standardization procedures will enable the facilitation of acceptance and utilization by the market of the developed solutions, ensuring compatibility and interoperability with what already exists in the market through standards. Furthermore, the standardization system will be used as a tool for dissemination of the project results and interaction with the market stakeholders. One of the main considerations to fulfil these objectives is to collaborate with the relevant standardization groups, technical committees, and associations, to be in line with and/or participate in current developments and ensure the efficient dissemination and use of the KYKLOS 4.0 standardization system by the market stakeholders. In this light, KYKLOS 4.0 collaborates with Small Business Standards (SBS).

SBS was established on 2013 as an international non-profit association (representing the interests of 12 million SMEs through 21 SME member organizations) and its objectives are derived from Regulation (EU) No 1025/2012 which sets out a long-term vision for the European Standardization System. The focus of this regulation is on improvements that will ensure better support for European policies fostering growth and competitiveness. Furthermore, SBS aims at raising the awareness of SMEs about standardization and facilitating their uptake of standards. SBS is one of the four “Annex III” organizations mandated by the European Commission to represent SMEs in the context of standardization.

This collaboration will enable also the utilization and further development by KYKLOS 4.0 of the “SME compatibility test for standards”, a web-form platform (<https://sbs-sme.symantra.eu/src1/index.html>) which provides an overall perception of the SME compatibility of any given standard and can stand as a starting point for possible standards improvements (Figure 16).



**Figure 16** The SME Compatibility Test for Standards tool.

**Table 10** summarizes the clusters of KYKLOS 4.0 with projects and/or initiatives that were established during the 1<sup>st</sup> year of the project.

**Table 10** Clusters/collaborations established with initiatives during year 1.

No	Type of the activity	Title of the activity (conference, event, etc.)	Title of the work/presentation/event/release	Date(s) of the activity	Place of activity	Type 1 of audience reached	Website
1	Cluster with relevant projects or initiatives	European Factories of the Future Research Association (EFFRA)	N/A	06/2020	N/A	Industry, Policy makers, Scientific Community (higher education, Research), Investors, Customers	<a href="https://www.effra.eu/">https://www.effra.eu/</a>
2	Cluster with relevant projects or initiatives	Big Data Value Association (BDVA)	N/A	N/A	N/A	Industry, Investors, Customers, Policy makers, Scientific Community (higher education, Research)	<a href="https://www.bdva.eu/">https://www.bdva.eu/</a>
3	Cluster with relevant projects or initiatives	Small Business Standards (SBS)	N/A	N/A	N/A	Industry, Investors, Customers, Policy makers, Scientific Community (higher education, Research)	<a href="https://www.sbs-sme.eu/">https://www.sbs-sme.eu/</a>

## 4.10 Actions in support to 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 requires 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 channelling potential applicants to the platform. Following the events described already in paragraph 4.8 (i.e. participation in the Funding for Innovation Webinar, organized by partner F6S in the framework of the EOSC DIH of the EOSC-hub project, and participation in the Accelerator and Tech Parks Webinar) in which details about the KYKLOS 4.0 Open Calls were provided to participants, several other 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 across 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 the 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 will be allocated to the 1<sup>st</sup> and €2M to the 2<sup>nd</sup> Open Call. Awarded projects may receive up to €150,000, with each third party receiving a maximum of €60,000. All relevant information is available on the KYKLOS 4.0 website.

It is worth to mention that the Open Calls page in KYKLOS 4.0 website is one of the top viewed pages by the users. This indicates the attention that the audience/stakeholders give to initiatives and best practices like this, and that the dissemination of the Open Calls can contribute to reach more SMEs, innovators, and industrial partners with the KYKLOS 4.0 technologies and solutions.

## 5 Impact assessment – Year 1

To continually measure the impact of the dissemination activities carried out, KYKLOS 4.0 performed monitoring activities according to the communication and dissemination plan. The measures applied, monitored the events and activities (number of publications, press releases, presentations at conferences, workshops, and/or scientific sessions, number of posts and likes on social media, etc.) undertaken to ensure KYKLOS 4.0's visibility. Statistics were gathered over the 1<sup>st</sup> year of the project to examine the impact of dissemination activities. In this light, the consortium monitored the KPIs as measurable values to demonstrate how effectively the results were disseminated and the objectives were achieved. The KPIs were tracked using Google analytics for the website, statistics from social media platforms, etc., on a regular basis.

In **Table 11**, the KYKLOS 4.0 communication and dissemination KPIs and success criteria for year 1 is shown. No weak areas were identified based on the plan. However, regarding scientific publications, the number to achieve for the first year was 2-5 (4 on average per year according to the KPI). Despite the minimum objective having been achieved, the KPI score indicates that more attention should be paid to scientific publications on year 2. It is considered that the structure and timeline of the project

will increase the activities that can generate publications, and therefore more opportunities will emerge for scientific publications to be submitted/published in year 2 onwards, and the total number of scientific publications will be achieved by the end of the project.

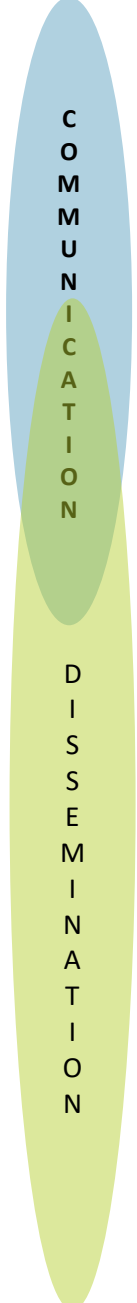
**Table 11** The KYKLOS 4.0 communication and dissemination KPIs and success criteria for year 1.

Channel	KPI	Success criteria	Year 1
Project website	Number of visits	≥ 1000 after year 2 ≥ 5000 after year 4	687
	Presence in related websites	≥ 10 after year 4	2
Project identity and branding	Number of leaflets	≥ 1 after year 1 (+ updates)	1
	Number of posters	≥ 1 after year 1 (+ updates)	2
	Number of ppt presentations	≥ 1 after kick-off (+ updates)	1
Marketing	Number of newsletters	≥ 1 per semester	2
	Number of press releases	≥ 3 after year 1	2
	Number of posters	≥ 1 per semester	2
Social media	Number of Facebook likes	≥ 50 after year 2 ≥ 100 after year 3	14
	Number of Facebook posts	≥ 3 per semester for the 1 <sup>st</sup> year ≥ 6 per semester for years 2-4	6
	Number of Twitter followers	≥ 50 after year 2	42
	Number of Twitter posts	≥ 3 per semester for the 1 <sup>st</sup> year ≥ 6 per semester for years 2-4	6
	Number of LinkedIn likes	≥ 100 after year 2 ≥ 200 after year 3	51
	Number of LinkedIn posts	≥ 3 per semester for the 1 <sup>st</sup> year ≥ 6 per semester for years 2-4	7
Publications	Number of papers and/or proceedings and/or presentations	≥ 4 per year (on average)	2
	Number of open access repository uploads	≥ 1 per year	1
	Number of project videos and/or podcasts, and/or slideshows	≥ 5 after year 4	1
	Number of total views (YouTube views included)	≥ 1000 views	-
	Website entries	≥ 100 after year 4	23
	Best practices & lessons-learned handbook	=1 after year 4	-
Events	Number of external events (conferences, networking events, and/or workshops)	≥ 10 per year (on average), after year 1 ≥ 5 per year relevant networking events and/or workshops, addressing the target stakeholders and users, after year 1	16
	Number of demonstration and/or training sessions	≥ 3 after year 1	-
Open Calls	Number of presentation, feedback sessions, and/or hackathons/meetups	≥ 3 after year 1	-
	Number of page visits	≥ 500 after year 2	183
	Number of webinars	≥ 2 after year 1	-

## 6 Overview of communication and dissemination activities – Years 2-4

In the following **Table 12**, the communication and dissemination plan for years 2-4 is shown. In parallel to the development of KYKLOS 4.0 technologies and pilots, the communication and dissemination activities will be intensified to enhance the impact of the project to interested parties and stakeholders. Furthermore, attention will be paid to the Open Calls to efficiently inform all interested parties about the application submission details and the opportunities of participating in and expanding KYKLOS 4.0 technology platform with their ideas and proposals. It is expected that with the Open Calls, a significant amount of interest regarding the project will be generated.

**Table 12** The communication and dissemination plan for years 2-4.

	Communication and dissemination objective	Year 2-3	Year 3-4
	Create project website	Keep the website updated with project results and news; focus on project technology and Open Calls	Keep the website updated with project results and news; focus on exploitation potential and Open Calls
	Create project identity and branding	Revise/update branding and identity (if necessary), according to developments	Revise/update branding and identity (if necessary), according to developments
	Implement effective social media strategy	Increase number of posts, likes, shares and views with news, updates, and achievements	Promotion of project results and achievements; focus on exploitation potential and Open Calls
	Generate positive media coverage and release project publications	4 newsletters 6-12 project publications (articles and/or papers/proceedings and/or presentations) Blog entries, press releases, etc. – Focus on project technology and Open Calls	5 newsletters 8-15 project publications (articles, papers/proceedings and/or presentations) Blog entries, press releases, etc. Press and TV for professional media coverage Create a short project film (3-5 minutes long) Release a best practices & lessons-learned handbook – Focus on exploitation potential and Open Calls
	Attend and/or host conferences, networking events, and/or workshops	Attend and/or host up to 15 relevant conferences, networking events, and/or workshops addressing the target stakeholders, and users, including: At least 1 Open Call webinar At least 1 hackathon/meet-up based on KYKLOS 4.0 pilots and solutions	Attend and/or host up to 20 relevant conferences, networking events, and/or workshops addressing the target stakeholders, and users including: At least 1 Open Call webinar Demonstration and training sessions based on KYKLOS 4.0 pilots and solutions A closing event open to the public at the European Parliament
	Cluster with relevant projects and/or initiatives	Cluster with up to 4 relevant projects and/or global initiatives	Cluster with up to 6 relevant projects and/or global initiatives



Among the communication and dissemination activities planned for year 2-4, a series of demonstration and training sessions related to KYKLOS 4.0 pilots and solutions will be held in cooperation with key stakeholder groups, to enable new users to experiment and provide their feedback. Up to 20-30 delegates including representatives from the KYKLOS 4.0 end-users are expected to attend each session. The sessions will be performed in the facilities designated by responsible partners, to enable new user's experimentation and access to exploitable innovations. The training sessions will be held towards the end of the project to start-up the phase of product development and introduction to the market. Furthermore, several publishable data (models, algorithms, architectures, etc.) generated in the demonstrators will be available through the open access online repository on the KYKLOS 4.0 website.

Demonstration and training sessions will be prepared for the scaling-up of the project solutions, allow the market to get ready for their use, and favor the utilization of KYKLOS 4.0 technology by other companies, groups, or entities for the development of new products. These activities can significantly enhance the confidence of stakeholders and the market in the validity and reliability of the project results, therefore they are considered as a critical step prior to the commercial exploitation of the generated technology.

## 7 Final Considerations

Deliverable 12.3 – Dissemination Activities Report (WP12) presents the communication and dissemination activities carried out during year 1 (January – December 2020) based on the defined plan and towards achieving the overall vision and goals of the project. The consortium participated in and/or organized numerous activities for the dissemination of the results. Via these activities, key user groups and stakeholders related to agile and sustainable manufacturing suite services, IIoT technology landscape, standardization systems, etc. were targeted to be involved in the project's development.

The project consortium partners participated in key conferences, workshops, and exhibitions (mostly online due to COVID-19 pandemic) to promote its technologies and solutions, and exchange knowledge with the research community and stakeholders. The communication and dissemination strategy utilized the project website and several social media platforms to convey its messages. Furthermore, the project established liaisons with associated European clusters that address similar challenges to extend the reach of the project to interested user groups and stakeholders and to ensure the exchange of knowledge as well as the better implementation of the project.

The project's communication and dissemination plan was monitored through KPIs assessment to ensure that the key messages are received by stakeholders, end users and the general public. No additional/corrective actions are needed for now.

Following the pilot designs and processes definition, demonstration and training activities will take place to prepare for the scaling-up of the project solutions, getting the market ready for their use, and favour the utilization of KYKLOS 4.0 technology by other companies, groups, or entities for the development of new products. In this light, special attention will be paid to the dissemination of Open Calls, which will further mobilise external entities into the project.