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Work Package 8

Communication, dissemination and exploitation

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Executive Summary

Mari4_YARD is a European funded project that makes use of user-centric solutions for flexible and modular manufacturing in small and medium-sized shipyards (SME), that need to remain competitive to avoid the drawback in their own market segments. The project started in December 2020 and will last until the end of 2024. The communication of the progress of the project, and the dissemination of its results and findings are key activities of Mari4_YARD. WP8 is entirely dedicated to dissemination, communication and networking (besides exploitation that is not addressed in this document). It spans the whole duration of the project (48 months) and consists of a variety of actions strategically distributed throughout the four years of the project. This document represents the final updated Plan for Dissemination and Communication (M48) which outlines the achievements in the project dissemination and communication activities.

Table of Contents

1	Introduction.....	5
1.1	Scope of the document	5
1.2	Structure of the document	5
2	THE MARI4_YARD PLAN FOR DISSEMINATION, COMMUNICATION AND COMMUNITY BUILDING: OVERVIEW	5
3	Dissemination, Communication & Community Building	7
3.1	<i>What?</i> The Communication and Dissemination goals and Milestones	7
3.2	<i>Who?</i> The Target Audience	8
3.3	<i>How?</i> The Communication Approach	13
3.3.1	The Mari4_YARD Visual Identity	13
3.3.2	Channels & Means	14
3.3.2.1	Mari4_YARD Website	14
3.3.2.2	Social Media	14
3.3.2.3	Other web channels	15
3.3.2.4	Videos, demos and interactive webinars	15
3.3.2.5	Mari4_YARD matchmaking	16
	Mari4_YARD Workshops	16
3.3.2.6	Mari4_YARD Dissemination Events	18
3.3.2.7	Scientific dissemination	20
3.3.3	Products	21
3.3.4	Strategic Lines & Targeted Approach	23
3.3.4.1	Strategic lines	23
3.3.4.2	The MARI4_YARD Targeted Approach	23
3.4	Dissemination Actions: Plan	24
3.5	Monitoring the Impact	25
4	Main deviations from the initial Dissemination & Communication Plan	27

LIST of ACRONYMS

Table 1. Acronyms.

ACRONYM	DEFINITION
C&D	Communication and Dissemination
CORDIS	Community Research and Development Information Service
CSA	Coordination and Support Action
DIH	Digital Innovation Hub
DoA	Description of Action
DoW	Description of Work
EC	European Commission
EU	European Union
R&I	Research & Innovation
RTO	Research Technology Organisation
SME	Small and Medium-sized shipyards
TRIMIS	Transport Research and Innovation Monitoring and Information System
WP	Work Package

1. INTRODUCTION

1.1 Scope of the document

This document contains the final update of the Mari4_YARD Plan for Dissemination and Communication (D8.10). This is the fourth and last release (M48) which represents the refined, adjusted and completed version of the plan on the basis of the project evolution, the feedback received by the target audience and the changes in the project communication and dissemination needs.

1.2 Structure of the document

This document is structured as follows:

- » Section 1 is the introduction
- » Section 2 provides an overview on the overall Plan for Dissemination, Communication and Community Building;
- » Section 3 focuses on the dissemination, communication and community building strategy, defining goals, target audience and communication approach. It also provides a preliminary dissemination programme and a set of measures to monitor the impact of dissemination actions.
- » Section 4 summarises the main deviations from the initial Dissemination and Communication Plan.

2. THE MARI4_YARD PLAN FOR DISSEMINATION, COMMUNICATION AND COMMUNITY BUILDING: OVERVIEW

Mari4_YARD is a European funded project that makes use of user-centric solutions for a flexible and modular manufacturing in small and medium-sized shipyards (SME), that need to remain competitive to avoid the drawback in their own market segments. The project started in December 2020 and will last until the end of 2024.

European shipbuilding leading edge relies on the complexity, quality, high level of customization, delivery time and lifecycle services of the vessels manufactured. But the process of technology globalisation has advanced the technological capability of competitors that, sometimes, also benefit from lower labour costs.

In order to avoid a worsening of the already started competitive drawback, the SME-shipyards need to enhance their performance and competitive capability (cost, lead-time, quality), taking advantage of the latest developments within digital production: advanced robotics and co-bots, machine vision, internet of things, flexible production systems, 3D printing, supply chain integration across multiple sites, skills development and deployment strategies.

Therefore, novel holistic approaches capable of improving production performance of EU shipyards to remain competitive are needed. In this regard, the Mari4_YARD project provides an EU-wide solution for addressing competitiveness of EU shipbuilding in a holistic perspective. Mari4_YARD gives European shipbuilding companies the opportunity to keep the awareness of new technologies and practically test them. Smart, flexible, eco-friendly and robust solutions for new developments will be adapted to the requirements of SME shipyards and in order to implement a novel connected shipyard. Furthermore, an improved working environment with

innovative technology and a greener image will increase the attractiveness of the maritime sector for the young generation and will contribute to reducing the gender gap.

The communication of the progress of the project, and the dissemination of its results and findings are key activities of Mari4_YARD. WP8 is entirely dedicated to dissemination, communication and networking (besides exploitation that is not addressed in this document). It spans the whole duration of the project (48 months) and consists of a variety of actions strategically distributed throughout the four years of the project. This document represents the updated Plan for Dissemination and Communication which outlines the strategy for the entire project dissemination and communication activities.

Mari4_YARD communication, dissemination and community building strategy is built upon four cornerstones:

- » Dissemination goals: it identifies and defines the expected impact and the ways to achieve it (see Section 3.1).
- » Target audience: it identifies the key-stakeholders of Mari4_YARD, as well as their needs and interests towards the project (see Section 3.2).
- » Communication Approach: it defines ad-hoc communication products and selects the appropriate channels and means for each category of stakeholders in order to put in place “customer-oriented” communication actions, maximise their impact, and ensure the achievement of the goals set out (see Sections 3.3 and 3.4).
- » Monitoring the impact: it identifies a set of indicators to monitor the progress of the various dissemination actions and measure their impact (see Section 3.5).

3. DISSEMINATION, COMMUNICATION & COMMUNITY BUILDING

This section describes the communication, dissemination and community building strategy, defining goals, target audience and communication approach. It also provides a preliminary dissemination programme and a set of indicators to monitor the progress of dissemination actions and measure their impact.

1.3 *What?* The Communication and Dissemination goals and Milestones

A clear identification and definition of the dissemination goals is the first key element for the production of an effective and successful communication strategy.

The overall communication and dissemination of Mari4_YARD concerns a) the development of intuitive human-robot collaborative solutions, handheld and portable AR/MR tools for assisting shipyard workers and AI-assisted exoskeletons for reducing fatigue and physical stress, b) the implementation of a portfolio of worker-centric tools assisting in the execution of the labour intensive tasks by preserving industry-specific workers' knowledge and skills and c) the demonstration of the Mari4_YARD approach at real-scale targeting both shipbuilding and retrofitting in SME-shipyards.

Mari4_YARD aims to implement an effective **communication and dissemination strategy** through a clear identification of its primary stakeholders, targeted dissemination actions, the set-up and efficient use of its communication channels, and the adoption of a structured dissemination programme. Moreover, Mari4_YARD aims to develop a **community building strategy** supported by the involvement of supportive partners in all the project events and activities.

Overall, Mari4_YARD aims to achieve four high-level communication and dissemination objectives:

1. **Inform**, by promoting the project and its events and sharing relevant information on what's going on in the shipbuilding research community.
2. **Raise awareness**, by informing relevant stakeholders about the project activities, its progresses, findings and results.
3. **Engage**, by promoting the use of the project results within the community, as well as involve them in order to receive feedback. Indeed, Mari4_YARD will build a network of stakeholders among key EU industrial associations and clusters, with special attention to DIHs in the area of large structure efficient manufacturing. Among these stakeholders, potential supportive partners will be selected and engaged. To this end a specific space will be created in the Mari4_YARD online community.
4. **Ensure impact**, in terms of guiding research policy and activities and thus ensuring the long-term impact of the MARI4_YARD research. This is the most ambitious dissemination goal, aiming at ensuring the take-up by key decision-makers (e.g. EC, Certification and standardisation bodies, etc.) of the MARI4_YARD findings and results.

The four goals stated above represent progressive steps and refer to a wide target audience. Each category of audience is linked to one or more goals and will be approached and engaged with targeted actions and appropriate sets of communication means.

Going more into detail, Mari4_YARD aims to:

- involve young minds into the development of advanced, flexible and smart manufacturing technologies and, specifically, related to digital and worker-centric solutions & tools, and their importance and impact onto the economy and society;

- help promoting gender equality and integrating the gender dimension in research and innovation activities as well as promoting new gender-neutral career opportunities derived from project results;
- attract qualified workforce and women to the sector;
- achieve societal endorsement linked to research on digitisation due to their potential for contributing to overcome main societal challenges;
- involve key industry sectors and players, potentially open to the adoption of Mari4_YARD solutions and achieve their support to the project and to future initiatives linked with developing and improving worker-centric approaches. These interested stakeholders will be part of the Mari4_Alliance;
- contribute to the mobilisation of the European Research Area (ERA) for the adoption of Mari4_YARD-generated knowledge and the development of new applications, enabling the full potential of the Mari4_YARD approach;
- raise awareness among EC/public authorities/policy makers fostering cooperation in the Mari4_YARD long-term sustainability (funding opportunities), spreading the benefits of digital and smart manufacturing in shipbuilding and contributing to easing the regulatory process.

1.4 Who? The Target Audience

The second key element for an effective and successful strategy is a structured and clear identification of the target audience, their characteristics, needs and main interests in the Mari4_YARD activities. This is fundamental to be able to tailor the communication and ensure the achievement of the dissemination goals.

In the very initial phase of the project, dissemination is focused on presenting the project to raise awareness among stakeholders (all target audiences). Following the generation of research outputs, it will be more focused to the scientific community, standardisation organisations and key industry representatives. As the project progresses, dissemination will focus on presenting results related to Mari4_YARD solutions (the whole solution and each of the subsystems and tools) through specific outreach activities to all audiences. By the end of the project, the focus will also be oriented towards industrial demonstration and the technology replication potential.

The Mari4_YARD stakeholder base is particularly vast, and it will increase during the project implementation. Indeed, one of the main goals of the project will be to build a community of interested stakeholders, that is the Mari4_Alliance. The main target audiences of Mari4_YARD Dissemination and Communication are:

1) Institutional bodies and policy makers:

- a) EU and EC: DG-INEA, DG-MOVE, JRC, DG-HOME, DG-Connect
- b) Certification and standardisation organisations: ISO, CEN, IEC, OPC, etc...
- c) National and regional bodies: National Ministries of Transport, Industry and Economic Development, National Agencies, Regional Governments

2) Specialised audience:

- a) Scientific Community
 - i) R&I institutes
 - ii) Universities
 - iii) Private research companies
 - iv) Industry field labs

- b) ERA, the European Research Area and EEN, Europe Enterprise Network
 - c) European Industry
 - i) Technology providers
 - ii) SME-shipyards (newbuilding and repair yards)
 - iii) Manufacturing services providers
 - iv) Industrial associations and EU initiatives/platforms: WATERBORNE, SEA Europe, EFFRA, I4MS, euRobotics, national shipbuilding associations throughout Europe, etc.
 - d) Other EU-funded initiatives
 - e) Industries and institutions outside Europe
- 3) **Supportive partners:** Mari4_YARD is building a network of stakeholders (to be potentially selected as supportive partners) among key EU industrial associations and clusters, with special attention to DIHs, in the area of large structures and efficient manufacturing. This activity will be dealt with a dedicated task, T8.3.
- 4) **General stakeholders:**
- a) Young minds
 - b) Women
 - c) Qualified workforce
 - d) General public

Each primary stakeholder has different characteristics, specific needs and interest in the project. Therefore, Mari4_YARD attempts to approach each of them with the most suitable communication means and contents in order to maximise the impact of its dissemination actions.

The following table shows Mari4_YARD main targets and the related key messages and main communication actions.

Table 2. Mari4_YARD target audience.

AUDIENCE	KEY MESSAGE	ACTIVITIES
Young Minds	Impact on youth daily life	Visits, media & didactic materials
General Public	Impact on jobs, energy, environment & life quality	Press releases, articles, radio & TV, web, social media
Women	Career opportunities in smart manufacturing	Participation in the EU Platform of Women in Science, in STEM, etc.
Stakeholders	Project impact in manufacturing industry	Industry events
ERA	Mari4_YARD methodology	Project info in CORDIS & Open Access
EC, Authorities & Policy Makers	Impacts on industry & citizens & existing barriers	Presentation, briefings & fact sheets, and participation in relevant events

Moreover, the following table shows a preliminary list of dissemination actions that were and will be carried out together with the related target audience and key message.

Table 3. Dissemination and Communication activities

ACTIVITIES	TYPE	AUDIENCE	KEY MESSAGE	STATUS
Project website	Online presence	Institutional bodies and policy makers Specialised audience Supportive partners General stakeholders	Objectives, activities, partners, videos	Online and continuously updated
Project press releases & media appearance		Institutional bodies and policy makers Specialised audience Supportive partners General stakeholders	Objectives, activities	2 Press release done
Project in partners' web and/or social media		Industry	Objectives, news, etc.	Continuous interactions
Project Social Media		Institutional bodies and policy makers Specialised audience Supportive partners General stakeholders	Activities, news, partners, etc.	Social Media up and running Activities ongoing
Project brochure/leaflet/newsletters	Project documentation	Institutional bodies and policy makers Specialised audience Supportive partners General stakeholders	Project objectives, activities, partners, public docs.	2 Project brochures available on the website for download, 6 newsletters released
Online/offline/in-house training & materials on Mari4_YARD technologies and topics: <i>IoT, Machine Learning, advanced manufacturing applications, robot programming, AR/MR, mobile robots, maritime technology, etc.</i>	Event	Industry High-level education	Technology, knowledge and fundamentals, skills.	Started at M24, Videos of the Mari4_YARD technologies published on YouTube and a catalogue of the technologies published on the website
Mari4_YARD workshops & Final event		Industry General stakeholders Standardisation organisations	Results & key features	1st Workshop carried out at M15 2 nd Workshop carried out at M23

				3 rd Workshop carried out at M36 4 th Workshop carried out at M48 Final dissemination event at M46
Scientific & technical articles: <i>Robotics & Automation Magazine, Schiff & Hafen Magazine, Manufacturing Technology CIRP, Journal of Manufact. Science and Tech., JIDeM, etc.</i>	Project publication	Industry High-level education Scientific community	Results, knowledge and fundamentals	11 scientific papers published
Presentations/lectures/posters in conferences: <i>TRA 2022, TRA 2024, MESIC, EMS Summit, Industry 4.0 Summit, euRobotics Forum, FAIM, ECM, IROS, ICRA, BIOROB</i>	Project documentation	Scientific community High-level education Industry	Project contents, developments and results.	12 scientific conferences attended
Participation in industrial events and fairs: <i>Hannover Messe, Advanced Factories, AUTOMATICA, SPS, BIEMH, GlobalRobotExpo, Robomatica, SMM Hamburg, Europort, Seawork, Navalia, Euromaritime, Schiff&Hafen Conference</i>	Event	Industry General stakeholders	Mari4_YARD (results, services, network). Booths	5 events attended (Waterborne Days 2022 and 2023, SMM 2022, SMM 2024, IMHFS 2024, planned Waterborne Days 2024)
Organisation of parallel project events: <i>Hannover Messe, AUTOMATICA, SMM, etc.</i>		Scientific community Industry	Contents, benefits & opportunities	SMM 2022, SMM 2024
Networking/Clustering w/EU projects from FoF, ICT, MG and EU digit., manufact. & shipbuilding initiatives: <i>AI4EU, IAMS, SAE, VANGUARD, etc.</i>		Scientific community Industry General stakeholders Standardization organisations	Contents, results and opportunities	1 Joint Dissemination Event with FIBRE4YARDS and RESURGAM

				<p>Sinergy with MATES</p> <p>Other 29 projects contacted</p> <p>Didactic factories network (6 organisations engaged)</p>
Open Access Repository	Project publication	Scientific community High-level education	Public datasets, results & information	Project website Zenodo community
Liaison and collaboration with standardization organisations: <i>ISO/CEN/IEC/OPC Foundation</i>	Project document	Standardization organisations	Info sharing and workshop	<p>EFWF is a liaison member to CEN and ISO with involvement in standardization activities at the European and International level (e.g. CEN/TC 438 - Additive Manufacturing, etc)</p>
<p>Presentations at EU Initiatives/platforms events: <i>WATERBORNE</i>(https://www.waterborne.eu/projects/ship-design-and-production/mari4-yard), <i>EFFRA</i>(https://www.effra.eu/promote-your-projects-results-and-demonstrators-effra-innovation-portal), <i>euRobotics</i>, <i>I4MS</i> https://spaces.fundingbox.com/c/i4ms), etc.</p>	Event	Industry General stakeholders	Project contents and results.	<p>Booth at Waterborne Days 2023</p> <p>Presentation of the project at the EWF GA 2023</p>
Add the results on Horizon Results Platform	Project publication	Decision makers, industry, investors	Results/opportunities	We became part of the STAND4EU initiative.

				information about the Mari4_YARD project is in their platform
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1.5 How? The Communication Approach

The identification of the most suitable approach is a key step for successful and effective communication, dissemination and community building strategy. To ensure the intended impact on the different categories of stakeholders, it is fundamental to create strong links between the dissemination goals and the target audience, and thus to select the type of information and contents to communicate together with the appropriate channels, means, products and formats.

1.5.1 The Mari4_YARD Visual Identity

Visual identity is the first key aspect for a clear, attractive, coherent and effective communication structure. The Mari4_YARD visual identity was initially developed during the proposal drafting; once funded it was renewed to reinforce the concepts of construction, shipyard, connection, technology, Internet of things. Based on this concept, a new identity proposal was developed, with two colour palettes. The two proposals (the one developed during the proposal drafting and the new one with the two different colours) are shown in Figure 1-Figure 2. Version 2 of Proposal 2 (see Figure 2) was by far the most voted within the Mari4_YARD Consortium.

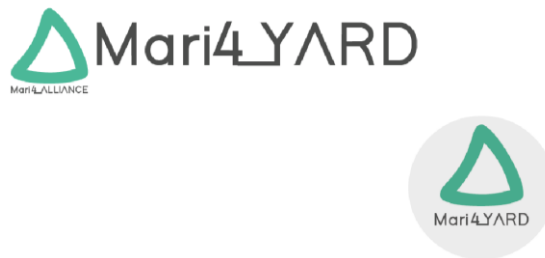


Figure 1. Proposal 1 – visual identity developed during the proposal drafting





Figure 2. Proposal 2 – new visual identity (two colour palettes)

From a visual design perspective, the chosen proposal offers the possibility of developing a dynamic visual identity system with a number of recognizable variations of the logo, suitable for a variety of uses.

1.5.2 Channels & Means

Based on the identification of the relevant stakeholders and their needs, various dissemination channels and means have been selected for the project dissemination. During the project, different mixes of means and channels are used for different types of communication and for building the community of interested stakeholders and supportive partners. Each dissemination means is expected to have a different impact on the target audience which is used appropriately to achieve the dissemination goals.

1. Mari4_YARD Website

The Mari4_YARD website is the main means of communication of the project, highlighting its objectives, vision, missions, activities and results. This is the channel where the Mari4_YARD events are advertised, the main news is published, and the projects' public deliverables and reports are uploaded.

The Mari4_YARD website uses WordPress as a Content Management System (CMS). This technical platform eases the management of contents and sections of the website. Furthermore, special attention is given to the usability of the website, aiming to ensure user-friendliness and efficiency.

The website is intended for all categories of stakeholders. It will be updated on a regular basis with information on the progress of the project, its findings, results and events, and any other relevant news. The website is connected to the social networks (Twitter, LinkedIn and YouTube).

The website usage and access are monitored with Google Analytics which allows to record various information, such as visitors, traffic sources, most viewed contents, etc. This is a helpful means to identify opportunities for improvement, increase communication efficiency and evaluate the website impact and effectiveness.

2. Social Media

Mari4_YARD uses social media in order to create a community of interested stakeholders and supportive partners and ensure a broader dissemination of its findings and results, as well as exploitation of the developed solutions. In fact, social media applications allow to easily reach a wide range of people and ease the creation of a proper community, grouping persons interested in receiving and exchanging information on the topics addressed by the project.

Mari4_YARD has selected mainly three social channels: Twitter, LinkedIn and YouTube. The reason for this choice is that they allow people to get directly in touch with people, groups and other projects, without waiting for them to connect to the project (as it would be in Facebook).

LinkedIn is mostly intended for specialised audiences and institutional bodies. Instead, Twitter aims to speak to a specialised audience and general public. YouTube is used to upload video materials developed during the project.

Twitter and LinkedIn are used to disseminate articles and news published on the Mari4_YARD website, to promote events, disseminate project findings and results, and to ensure constant connection with the related projects.

3. Other web channels

Mari4_YARD aims to maximise the resonance of its findings and results. To do so, the Mari4_YARD project uses any relevant existing channel. A selection of European portals was made and three channels were selected. These are used from time to time for specific news and/or topics.

- » [CORDIS](#) (Community Research and Development Information Service): it is the European Commission's primary public repository and portal aimed at disseminating information on EU-funded research projects and their results. The website includes editorial content to support communication and exploitation (news, events, success stories, magazines, multilingual "results in brief" for the broader public). The area of potential for the Mari4_YARD dissemination activities are:
 - The CORDIS News and Events: it allows to browse and find the latest news from EU-funded research projects and forthcoming events;
 - CORDIS Wire: it allows the research community to publish their own news and events (access to Wire requires a CORDIS account). Mari4_YARD aims to make use of this channel to promote its events.
- » [TRIMIS](#) (Transport Research and Innovation Monitoring and Information System): it supports the implementation and monitoring of the Strategic Transport Research and Innovation Agenda (STRIA) outlining future transport R&I priorities to decarbonise the European transport sector. TRIMIS has both Twitter and LinkedIn profiles. Mari4_YARD will connect to these social channels in order to exploit their networks.
- » The [Research and Innovation area in the European Commission website](#): it contains information about upcoming events. Mari4_YARD plans to make use of it in order to advertise and promote its events.

The use of these channels is coordinated with the European Commission, asking for support – if needed – to reach and interact with the channel “owners”.

- » The project results are to be published on the portal: [Horizon Results Platform](#) in order to grab the attention of relevant stakeholders, such as policy-makers, investors, researchers, and the general public.

4. Videos, demos and interactive webinars

Several hands-on activities have been carried out during the Mari4_YARD project. The main targets were:

1. **Students:** in the initial phases of the project, since visits to universities and high-level education institutions were not allowed due to COVID-19 pandemic, RTOs, as well as DIHs were used to create a contact with universities. This channel has been held open throughout the project in order to increase the reach. Specific material has been produced to disseminate the project results within the universities. At the same time, interactive virtual demo sessions have been carried out in order to attract students to the sector.
2. **Potential qualified workforce/Industrial partners and potential customers:** small interactive sessions in the form of webinars have been organised for these categories of interested stakeholders. In particular,

demos were made available to small groups (maximum 4-5 individuals/companies at a time). The idea was to have a registration phase and then have participants in the webinar divided into several small breakout rooms where they could interact with experts (ask questions, etc...) and view the online demo. Also in this case, the aim was to increase the audience. The webinars have been co-organized in parallel with physical workshops.

In order to guarantee the quality of the events, input was asked before (in order to collect needs and requests and tailor the event to the demand of the customer, finetune the contents of the webinar and to direct the consortium effort) and after the event (in order to modify and improve the following events). Feedback was requested in the form of online questionnaires and surveys.

5. Mari4_YARD matchmaking

Mari4_YARD built a community of interested stakeholders, Mari4_YARD Alliance, with the final aim to create a strong connection between technology providers (universities and research centres) and technology prosumers that were members of the regional clusters. The community built on the supportive partners (around 11 maritime clusters and associations confirmed at this stage) that already gave their support to the project in the proposal preparation phase (Aclunaga, Associacao das Industrias Navais, Pole EMCs, Oceano, Rina, Swedish Maritime Technology Forum, Stena Rederi, Offshore Vast, GISBIR, Ulstein Naeringsforum, VSM). The above-mentioned connection was established through a series of activities such as workshops, showrooms, didactic factories, as well as through Mari4_YARD communication channels (social media and website). A matchmaking approach was defined and implemented according to the needs of the regional clusters and how Mari4_YARD portfolio answered to these. In addition, it must be stressed that Balance was developing an online matchmaking platform that could be used also for the Mari4_YARD eventually, if it proved to be successful.

Mari4_YARD matchmaking approach was twofold:

- i) Support collaboration, linking information to project objectives and improving the flow of information as well as promoting the Mari4 Didactic Factories Network;
- ii) Gather all relevant stakeholders (Mari4 partners, clusters, technology providers, SME-shipyards, Academia, policy-makers, authorities, certification and standardisation bodies, etc.), update them about project evolution and act as a pivotal point for matchmaking and fostering cooperation (exchange of ideas, offer-demand publications, sharing success stories...), helping to collaborate with other networks and initiatives, leveraging synergies and boosting impact (while guaranteeing the best value for money).

Mari4_YARD Workshops

The collaboration of relevant stakeholders is a critical success factor for Mari4_YARD. In fact, the workshops, besides being a powerful dissemination channel, consist of significant moments where the top-down process is accomplished. At least four workshops, focused on 4 relevant “themes”, will be organised within the project duration that will have the main goal to:

- a. disseminate the technologies studied within the project and the related developed solutions and/or
- b. demonstrate such technologies and solutions.

Where possible (for example when the event takes place in a location where a pilot is running) the workshop will cover both goals otherwise it will be more focused on one or the other.

The first workshop was organised remotely in M15 by AIMEN and DBL. The main goals were to present Mari4_YARD ambitions and collect feedback from its relevant stakeholders in order to provide user-centred solutions.

The second workshop (M23) was organised in presence by EWF, INESC TEC and DBL and held in Porto at INESC TEC. The Mari4_YARD experts presented the innovative technologies developed for a safer and more effective shipbuilding, showing the advantages of working with the support of exoskeletons, mobile manipulators for logistic operations, collaborative robots, and 3D-scanning drones as well as how to benefit from augmented reality.

The third workshop (M36) was organised by CMT and TUHH, in collaboration with DBL and AIMEN, and held in the TUHH premises in Hamburg, right after the release of the Catalogue of the Mari4_YARD solutions. The workshop focused on four technological blocks: 3D modelling and digitalisation, robotics, augmented reality, and exoskeletons, with the aim to demonstrate the Mari4_YARD approach to a public audience coming from shipyards, the shipbuilding industry in general, and research.

The last workshop was organised in collaboration with supportive partners (European maritime clusters and industry associations) in Spain on 14th November 2024. DBL coordinated and supported the structuring of the events, as well as the event implementation itself. This dissemination channel was essential in helping to extend the promotion of Mari4_YARD project and to perform a European-wide reach. Whenever possible, specific activities such as showrooming demo cases (for trial and assessment of the training material) and technology sharing at regional Clusters (for demonstration and boys & girls' days) were carried out. The workshops were usually organised in a way that supports the bi-directional exchange of information between the project, the clusters and the entire reference community. Furthermore, they were supported with different technological tools (broadcasting tools, webinars, recording) to increase the impact of each event and multiply its effects in terms of communication and dissemination and to allow all the clusters to take part even if the workshop is not organised in their territory. In order to guarantee their success and effectiveness, workshops were organised around a central hot theme, with a structured agenda, involving high-level speakers to attract a wide audience.

Each workshop was accompanied by ad-hoc dissemination materials and involved a targeted mix of stakeholders, defined in advance according to the workshop topic and objective.

For the 4th workshop, Mari4_YARD, as it was already done for the first workshop:

- » Produced a standard visual format to make them easily recognisable
- » Developed and adopted an engaging format for the promotion of the event, aimed to create curiosity, attract people's attention and thus raise the number of registrations as much as possible. Ideally, after announcing the date, place, topic and objective of the workshop, the details on the contents of the workshop were gradually released. If applicable to the chosen format, the speakers and the focus of their speech were announced one at a time on the social networks, with catchy posts and tags of the speakers. This strategy was also intended to raise the visibility of the event and attract new targeted contacts
- » Developed and adopted an innovative format for the event, using live applications and platforms as well as introducing interactive demos, videos, etc..
- » In order to guarantee the quality of the events, feedback was asked before (in order to collect needs and requests and tailor the event to the demand of the customer, finetune the contents of the workshops and to direct the consortium effort) during and after the event.

6. **Mari4_YARD Dissemination Events**

The project dissemination events are another powerful channel, where the Mari4_YARD work, findings and results will be presented. Mari4_YARD planned to organise two dissemination events, to be held in the second (2022) and the fourth (2024) year of the project.

To maximise the impact of dissemination events, Mari4_YARD aims to raise their attractiveness and level of attendance by:

- » Selecting high-level speakers and planning speeches covering key-points and questions emerged during the Mari4_YARD work;
- » Planning brief interactive sessions, where questions on hot-topics will be launched to the public and attendees will express their opinion and discuss;
- » Involving a good mix of stakeholders, in order to gather many different points of view in the same room, and thus ensure rich and interesting discussions;
- » Exploring opportunities for joint-dissemination events with other EU-funded projects, or other large events;
- » Developing ad-hoc catchy dissemination materials, for both the promotion phase and the event itself.

The first dissemination event was postponed in May 2023 due to the pandemic situation and jointly organised with two sister projects: Fibre4yards and RESURGAM. It was held in Rotterdam and hosted by the Mari4_YARD partner NMTF. A webpage of the Joint dissemination event with keynote speakers and full agenda is available at the following link: <https://subscribepage.io/Z4MrR7>.

The final dissemination event was organised during the SMM 2024 in Hamburg in order to benefit from the SMM audience that is highly relevant for Mari4_YARD and from the presence of two Mari4_YARD partners (CMT and TUHH) in the city and two Mari4_YARD partners (NMTF and Balance) close by. A webpage of the Joint dissemination event with keynote speakers and full agenda is available at the following link: https://www.mari4yard.eu/safer-smarter-stronger-mari4_yard-human-centric-shipbuilding/.

For promoting the final event and the project, we produced a video teaser of Mari4_YARD. Published both on the project website and on YouTube at the following link: <https://youtu.be/PLj540EaDI4?si=3XZuLdnSIRDV1eWl>.

Events

The figure displays ten event posters for Mari4_YARD, arranged in a grid. Each poster includes the event title, date, location, and a brief description of the event's focus and significance.

- Mari4_YARD 4th workshop**: 14 November 2024 at AIMEN (O Porrino, Pontevedra, Spain). Focus: Transform the shipbuilding with Mari4_YARD, the 4th workshop is coming.
- Safer, Smarter, Stronger: Mari4_YARD human-centric shipbuilding**: 5 September 2024 at SMM event Hamburg, Germany. Focus: Safer, Smarter, Stronger: Mari4_YARD human-centric shipbuilding.
- Mari4_YARD at The Shipbuilding & Lifecycle Technology 4.0 online event**: 19 January - 9 February. Focus: User-centric solutions for a flexible and modular manufacturing in small and medium-sized shipyards.
- User-centric robotic solutions for shipbuilding Mari4_YARD 3rd workshop**: 9 November 2023 Hamburg University of Technology TUMH Hamburg, Germany. Focus: User-centric robotic solutions for shipbuilding.
- SAVE THE DATE! 3rd Workshop**: 9th November 2023 Hamburg, Germany. Focus: The 3rd Workshop organised by Mari4_YARD.
- NOVEL TECHNOLOGIES TO BOOST THE SHIPYARD INDUSTRY**: May 30-31, 2023 Rotterdam The Netherlands. Focus: Opening new routes for ship construction and repair.
- Mari4_YARD 3rd Workshop results**: Mari4_YARD project organised its 3rd Workshop in Hamburg, Germany. On 9th November, in the afternoon, Hamburg University of Technology, partner.
- Mari4_YARD holds its 3rd Workshop**: Mari4_YARD project is organised its 3rd Workshop in Hamburg, Germany. On 9th November, in the afternoon.
- Mari4Yard, Fibre4yards and Resurgam: their joint dissemination event in Rotterdam**: May 30-31, 2023 Rotterdam The Netherlands. Focus: The H2020 project fellowship formed by Fibre4Yards, Mari4Yard, and RESURGAM are organising a joint event to present their results and [...].
- The 1st Edition of Waterborne Days 2023**: 26 and 27 September Brussels. Focus: SAVE THE DATE! 26 and 27 September Brussels.
- Mari4_YARD at the 1st Edition of the Waterborne Days 2023 in Brussels**: Mari4_YARD is ready to embark on a transformative journey at the Waterborne Days 2023. Plenary sessions with keynote speakers from [...].
- Moving together - reimagining mobility worldwide**: 14-17 November Lisbon, Portugal. Focus: Visit Mari4_YARD at the Waterborne stand!
- Additive Manufacturing Conference**: 19 - 20 October 2022 Lisbon, Portugal. Focus: SAVE THE DATE! 19 - 20 October 2022 Lisbon, Portugal.

Figure 3. Screenshots of the Mari4_YARD website, event page.

7. Scientific dissemination

The participation at targeted external events is another relevant channel for both disseminating the Mari4_YARD Project, its activities and results, and promoting its internal events.

A preliminary list of external events (conferences and Industrial events and fairs) that has been considered for the Mari4_YARD dissemination includes:

1. Conferences:

- » The European Transport Research Arena (TRA), MARTEC, MESIC, EMS Summit, Industry 4.0 Summit, euRobotics Forum, FAIM, ECMMM, IROS, ICRA, BIOROB, HFES (Human Factors and Ergonomics Society) Europe Chapter, events organised by the MARI4_YARD Related Projects

Mari4_YARD took part in the conference Industry Tech 4.0 in February 2022. AIMEN presented the project ambition and the four core technologies of the Mari4_YARD project. Moreover, Mari4_YARD took part in the Waterborne Days 2023.

2. Industrial events and fairs:

- » Hannover Messe, Advanced Factories, AUTOMATICA, SPS, BIEMH, GlobalRobotExpo, Robomatica, SMM Hamburg, Europort, Seawork, Navalia, Euromaritime, Schiff&Hafen Conference.

CMT and Balance take part in SMM Hamburg every two years.

Finally, the publication of papers will be another relevant channel to disseminate the project results within the scientific community. The papers will be published in international peer-reviewed journals such as Robotics & Automation Magazine, Schiff & Hafen Magazine, Manufacturing Technology CIRP, Journal of Manufact. Science and Tech., IJIDeM, etc...

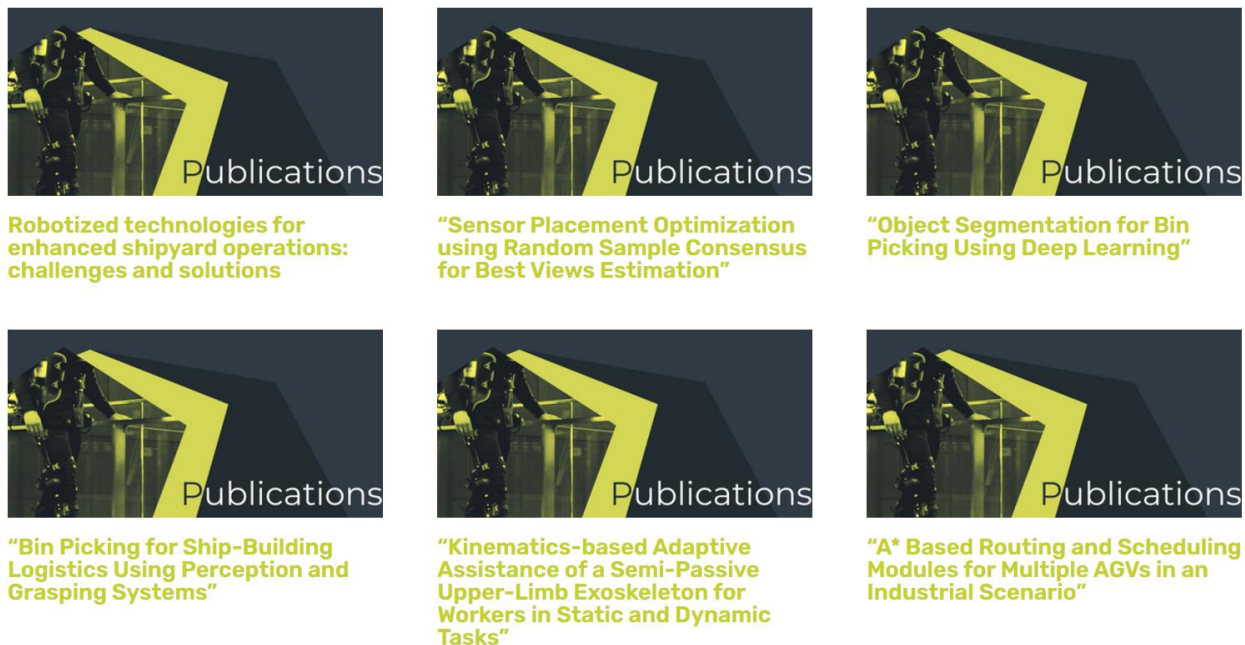


Figure 3. Screenshots of the Scientific Publication repository in the Mari4_YARD website

1.5.3 Products

A variety of dissemination products, summarised in Table 4, is being and will be produced by Mari4_YARD. The Mari4_YARD visual identity represented the starting point for the production of each product, which was and will then be customised for the specific aim and audience targeted.

Table 4. Mari4_YARD dissemination and communication products.

Product	Description	Main objective	Target
Website	The website is Mari4_YARD's main means of communication	Inform Raise awareness	Institutional bodies and policy makers Specialised audience Other EU funded projects Supportive partners Interested stakeholders (including young minds, potential qualified workforce and women especially)
Open access repository	Mari4_YARD open access repository aims to support the access to public datasets, as well as to the consolidated project results	Engage Ensure impact	Specialised audience Supportive partners
Brochures/leaflets	These are one of the main means to promote both project workshops and dissemination events, as well as the project itself. They will be short documents (1-2 pages) with a strong visual identity, stating topic and key-questions of the event and showing its programme. Mainly digital versions will be produced	Inform	Institutional bodies and policy makers Specialised audience Other EU funded projects Supportive partners Interested stakeholders
Scientific and technical papers	Articles on peer-reviewed scientific journals	Inform Ensure impact	Specialised audience Supportive partners Other EU funded projects Interested stakeholders
Social media	LinkedIn, Twitter and Youtube social media profiles to promote Mari4_YARD results as well as its events and products	Inform Raise awareness Engage Ensure impact	LinkedIn: Institutional bodies and policy makers Specialised audience Other EU funded projects Supportive partners Twitter:

			Institutional bodies and policy makers Specialised audience Other EU funded projects Supportive partners General stakeholders Youtube: Specialised audience General stakeholders
Public deliverables	Once approved, all the public deliverables will be made available on the project website.	Raise awareness	Specialised audience Supportive partners Other EU funded projects
Videos/demos/webinars	Videos represent a powerful and effective way to communicate and promote the project, its vision, mission, main goals, as well as its methodology and main findings. The production of videos will be mostly considered in proximity to the Mari4_YARD events. Videos will be made available on the project website and disseminated via any available channel such as the social networks where the sharing of videos is very likely to raise the visibility of the projects and attract new followers. Moreover, demos will be developed to allow the test of the Mari4_YARD solutions by interested stakeholders. They will be displayed during webinars organised for small groups of interested stakeholders	Inform Raise awareness Ensure impact	Specialised audience Supportive partners Other EU funded projects Interested stakeholders
Newsletter	Newsletters are a powerful instrument to maintain and progressively reinforce the relationship with stakeholders. Mari4_YARD will produce periodic newsletters aimed to show the progress of the projects, highlight recent findings and giving some clues on what will come next. Stakeholders can subscribe to the newsletter through the website	Inform Raise awareness Engage	Institutional bodies and policy makers Specialised audience Other EU funded projects Supportive partners Interested stakeholders
Press releases	Press releases will be published by the consortium throughout the project duration in order to raise awareness about the project and its findings and results	Raise awareness	Institutional bodies and policy makers Interested stakeholders
Mari4_YARD matchmaking approach	The matchmaking approach will aim at gathering all relevant stakeholders (Mari4_YARD partners, clusters, technology providers, SME-shipyards, Academia, policy-makers, authorities, certification and standardisation bodies, etc.), update them about project evolution and act as a pivotal point for matchmaking and fostering cooperation	Inform Engage Ensure impact	Supportive partners

Mari4_YARD events	Mari4_YARD dissemination events and workshops, as well as didactic factories, webinars and short interactive sessions for specific audiences	Inform Raise awareness Engage Ensure impact	Institutional bodies and policy makers Specialised audience Other EU funded projects General stakeholders
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1.5.4 Strategic Lines & Targeted Approach

Building and maintaining a prosperous community of diverse and supportive stakeholders is a big challenge for Mari4_YARD. To succeed, clear strategic lines and a targeted approach are needed.

8. Strategic lines

Mari4_YARD has identified three preliminary strategic lines, the effectiveness of which will be monitored and evaluated during the first part of the project and, if necessary, adjusted or replaced by more effective solutions.

- » **Keep stakeholders in the loop:** Mari4_YARD keeps its stakeholders in the loop of its work, by gradually sharing its results on the social networks and allowing them to test them. This strategic line has a multiple purpose: raise the visibility of the project and its results; involve the relevant stakeholders in the design and development phase; enlarge the Mari4_YARD network and build the Mari4_Alliance by collecting interest and commitment from supportive partners.
- » **Practical and hands-on communication:** the Mari4_YARD communication uses demos and test sessions to allow the relevant stakeholders to have real contact with the developed solutions and to give feedback and contribute to the further improvement of the solutions themselves.
- » **Topic-centred communication:** the Mari4_YARD communication always focuses on a specific topic which periodically changes. The leading topic is defined on the basis of the Mari4_YARD events, findings and results, as well as on the trending and hot themes in the field. The chosen topic is then launched via website and afterwards through social media. This allows them to mostly attract and engage the type of stakeholders of major interest for Mari4_YARD in each specific phase of the project.

9. The MARI4_YARD Targeted Approach

When a project speaks to such a wide and diverse audience, the adoption of a targeted approach is a key-factor for a successful communication strategy. Indeed, the MARI4_YARD communication and dissemination goals, products and channels illustrated above have been chosen starting from the various needs of the different (primary) stakeholders targeted.

MARI4_YARD aims to serve **institutional bodies and policy makers** by providing guidelines on the use and deployment of advanced tools in shipbuilding. The continuous surveillance on standards and regulations will allow an early detection of potential conflicts.

The **specialised audience** includes the research community, the ERA, the European industry and EEN, as well as industries and institutions outside Europe. Mari4_YARD aims to promote the use of its results and collect feedback from all these three sub-categories. In particular, Mari4_YARD provides:

- » The research community with:
 - Open Pilot Lines to test new technologies and processes
- » The European industry, EEN and the industries outside Europe with:

- A higher quality of the offered service
- Better quality of work and thus higher possibility to attract qualified workforce
- Time saving in the shipyards for example for repairing, higher reliability and higher predictability

5) The **other EU funded projects** benefit from the Mari4_YARD project by sharing knowledge and exchanging best practices.

Mari4_YARD **supportive partners** were actively involved in the project implementation and in the creation of a Mari4_Alliance. They were invited to promote attendance at webinars, workshops and matchmaking events with their members, as well as to disseminate the public results of the project through their own channels. The knowledge developed in the project benefits the members of these supportive partners, especially the industry associations. Accessing the didactic factories network, they directly benefit from the knowledge and skills of other supporting partners and enhance the awareness of the skills required for the use of the innovative technologies developed in Mari4YARD.

Lastly, Mari4_YARD aims to inform any other interested stakeholders by providing an overview on innovations in the SME-shipyards. Besides the general public, young minds, qualified workforce and women are among the general stakeholders of the Mari4_YARD project. As already mentioned, the aim is to attract them to the possible jobs in the sector.

1.6 Dissemination Actions: Plan

The plan for the Mari4_YARD dissemination actions is provided in Table 5. This is an updated version, the effectiveness of which was monitored and evaluated during the first part of the project and adjusted as necessary.

Table 5. Dissemination Actions - Plan.

Means	Actions	Frequency	Update
WORKSHOPS	Organisation and delivery	Every year	4 workshop organized, one per year
DISSEMINATION EVENTS	Organisation and delivery	Every 2 years	1st diss event held in May 2023 in Rotterdam Final dissemination event in September 2024 within SMM Hamburg
PRESENTATION AT EXTERNAL EVENTS	Presentation of the project, its findings, results	On occasion	1 Life Tech 4.0 2022 1 in-presence presentation at IROS 2022 1 in-presence presentation at ROBOT 2022 1 oral presentation, exhibit stand, live demo at Live Worx2023 1 oral presentation at IIW 2023 1 oral presentation at IEEE ICARSC 2023 1 oral presentation at TRA 2024 1 oral presentation at EFFRA 2024

WEBSITE	Publication of news	About 1 every two months	21 published
	Promotion and publication of information on upcoming events	When necessary	6 published
	Publication of MARI4_YARD Products	When produced	1 Catalogue of technological solutions 9 videos of the technologies on the Mari4_YARD YouTube channel
SOCIAL MEDIA	Post/Tweet on MARI4_YARD related events, relevant articles	1 every two weeks (starting from M6)	No update
	Post/Tweet on MARI4_YARD activities: on-going activities, assessed projects, findings and results	1 per week (starting from M6)	No update
	Post/Tweet on Mari4_YARD news and events	When available	No update
NEWSLETTER		Every 6 months, (starting from M6)	Every 6 months starting from M12, 6 published

1.7 Monitoring the Impact

Constant monitoring of the results of dissemination actions is fundamental. This allows to pinpoint actual strengths and weaknesses of the strategy pursued, to identify and implement corrective actions, to measure the effectiveness, and to report results.

MARI4_YARD aims to progressively improve, year after year, the effectiveness of its dissemination actions. A reviewed set of indicators, listed in Table 6, is identified to keep track of the progress of the dissemination. At the end of year 4, the results were measured (see column on the right), and served as a reference to assess the success and the performance in the C&D activities.

Table 6. Updated indicators to monitor progress and impact of dissemination.

Audience	Updated Performance Indicators	Final Results
Young minds	+200 students participated in Mari4_YARD events	About 50 students attended
General public	+1500 people informed about the Mari4_YARD project	Reached (~5000 single users reached through the website and ~474 through social media channels)
Women	Involvement of specific associations/networks such as wista and elles bougent in at least 3 activities	2 associations contacted and invited to take part in the next external training and dissemination events
Stakeholders	+4 presentations +25 partners engaged	8 Presentation at scientific conferences

		260 stakeholders involved in the three workshops and the dissemination event
EC, authorities and policy makers	+ 4 presentations and/or events	Waterborne Days 2023 Waterborne Days 2024
Activity	Performance Indicators	Preliminary Results
Website	+2000 visits	5070 visits
Project press releases and media appearance	+6	2 press releases 6 times shared on journals/web pages
Project in partners' websites and/or social media	+3000 visits	5000 visits 632 interactions
Project social media	500 reaches LinkedIn: +100 posts +200 contacts Twitter: +100 posts +200 followers	5000 reaches LinkedIn: 300 posts 414 Contacts Twitter: 173 posts 60 Followers (after migration of Twitter into X, followers and interactions decreased significantly)
Mari4_YARD workshops and dissemination events	Average 50 participants per event/workshop	1st Workshop M15 (56 participants) 2nd workshop M23 (28 participants) 3 rd Workshop (M36) (33 participants) 4 th Workshop (M48) (about 40 participants) 1 st Joint Dissemination event M30 (60 participants) Final Dissemination Event (M46) (42 participants) 2 workshops at AIMEN within Didactic Factories
Scientific and technical articles	+4 articles +1000 readers	11 published + 1000 downloads
Presentations and posters in conferences	+8 conferences	1 Life Tech 4.0 2022 1 in-presence presentation at IROS 2022 1 in-presence presentation at ROBOT 2022 1 oral presentation, exhibit stand, live demo at Live Worx2023 1 oral presentation at IIW 2023 1 oral presentation at IEEE ICARSC 2023 1 Life Tech 4.0 2024 1 oral presentation at TRA 2024

		1 oral presentation at EFFRA 2024
Participation in industrial events and fairs	+5 industry events and fairs	SMM 2022 TRA2022 LIVEWORKS 2023 Waterborne Days 2023 International Maritime Human Factors Symposium 2024 TRA2024 SMM 2024 GITEX 2024
Open access repository	+3 open access publications +40 downloads	20 publications open access +100 downloads
Networking with other EU projects	+2 activities +5 projects contacted	Join Dissemination Event Didactic Factories training 29 Projects contacted
Liaison and collaboration with standardisation organisations	+2 relevant liaison activities	EWF is a liaison organisation of: - ISO TC 261 - Additive Manufacturing - ISO TC 44 - Welding and allied processes - ISO/IEC JTC 1/SC 42 - AM and AI

4. MAIN DEVIATIONS FROM THE INITIAL DISSEMINATION & COMMUNICATION PLAN

As already mentioned, this document is the final update of the Dissemination and Communication Plan of the Mari4_YARD project based on the results of the activities carried out within the 4 years of the projects. There are no major deviations from the previous update of the Dissemination and Communication Plan.

The pandemic emergency officially ended in May 2023 but the possibility to travel to Europe under certain conditions was granted already in autumn 2022. Mari4_YARD therefore organized its first in-person workshop in October 2022 and postponed the first dissemination event in May 2023.

The number of followers and interactions in X decreased significantly after the migration from Twitter to X and the statistics are currently difficult to monitor.

Even though this document is not a report of dissemination and communication activities, Table 6 shows Mari4_YARD the WP8 results. Based on the results reported in the previous update, we focused our effort on further building and growing the community of stakeholders (currently the Mary4_YARD community counts about 300 people) and the start of activities such as the Didactic Factories and the external training carried out in WP7 have certainly fostered such growth.