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D8.3 - D&C PLAN SET-UP AND UPDATES

| | | | |
|------------------------------|--|----------------------|--|
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LIST OF ABBREVIATIONS

| Abbreviation | Definition |
|----------------|---|
| CA | Consortium Agreement |
| CDEB | Communication, Dissemination, Exploitation, Business Growth |
| D&C | Dissemination and Communication |
| Eu | European Commission |
| IWW | Inland Waterways |
| KER | Key Exploitable Results |
| KPI | Key Performance Indicator |
| LoLo | Lift-on/lift-off |
| PNO | CiaoTech – PNO Group |
| RoRo | Roll-on/roll-off |
| SSS | Short Sea Shipping |
| TRL | Technology Readiness Level |
| UC | Use Case |

EXECUTIVE SUMMARY

Deliverable 8.3 D&C Plan sets-up and updates will provide a detailed communication, dissemination, and networking/cross-fertilization plan to be followed within the project as well as information about the stakeholder community.

This document focuses on the developed strategy to reach stakeholders and the wide audience, activities performed from the beginning of the project up to March 2023 (M3), synergies and complementarities with existing projects and policy initiatives, as well as channels and tools that will be and have already been used to disseminate and communicate SEAMLESS early results.

This deliverable is to be considered also as a guide to support all project partners in the implementation of their D&C activities using the right material and channels, in order to:

- Raise national and international awareness of the project and its objectives and the ways in which to participate in project activities (including virtually).
- Establish mechanisms to not only transfer knowledge among the consortium partners and those external to the project, but also to exchange crucial knowledge as part of a two-way process.
- Work to deliver and monitor project impacts as related to exploitation and valorization of outputs.
- Accelerate implementation, business growth and market uptake through direct and indirect integration of the project's benefits withing the European ecosystem.

1 INTRODUCTION

Deliverable D8.3 – D&C Plan sets-up and updates deals with the dissemination and communication activities planned and released from the beginning of the project up to M3 (March 2023) with the aim of creating awareness of the SEAMLESS project, its objectives and early results.

The document provides a description of the dissemination and communication strategy, which has been developed and implemented to reach both stakeholders and a wide audience, including relevant industry actors, policymakers, and research communities. It outlines the channels and tools that will be used to disseminate and communicate about the project, including social media platforms, project website, workshops, conferences, and webinars. The report also represents a guide to support the consortium to plan and carry out the D&C activities, taking advantage of the right material, channels and knowledge to facilitate further deliverables and outcomes.

SEAMLESS consortium has conceived a unifying strategy for Communication, Dissemination, Exploitation and Business growth (CDEB) to maximize the potential of cross-fertilization between these activities, fostering the combined effects of general communication, dissemination of specific peers'-driven messages, exploitation of new knowledge and ultimately diversification and business expansion through advanced products and services (business growth).

The strategy is structured based on the following steps:

- Set the objectives,
- Identify the target groups,
- Engage channels,
- Set communication roles and responsibilities within the consortium,
- Monitor impacts,
- Link to the external EU agenda and projects
- Define market penetration/development strategy and broader potential impacts.

As show in Figure 1, communication activities are mainly meant to raise the interest of different stakeholders and to engage end users and receive feedback for the implementation. To this end, the preliminary activities will be intended to identify the key messages: concepts and goals, identify the key audiences and prepare preliminary general material. The ultimate goal of the peer-based dissemination of results consists in providing a clearly understandable outreach to all main outcomes from various viewpoints, technical or business-related or relevant from a learning perspective. Leveraging on the network effect activated with both dissemination and communication, the exploitation activities will be specifically devoted to foster the market potential of products and solutions to be offered to the end-users, while considering different applications for the developed technologies and services. Towards this goal, the exploitation plan will be finalized to getting a proper understanding of the market, identifying key products and solutions and defining IPRs and the most effective marketing strategy for each product/service. Finally, part of this strategy towards achieving a wider impact beyond the project itself, also touching aspects dealing with the broader economic impact and landscape of the applied technologies in the transport sector,

leverages on business growth, building staff and partners' capacity, and expanding and diversifying through disruptive products and services.

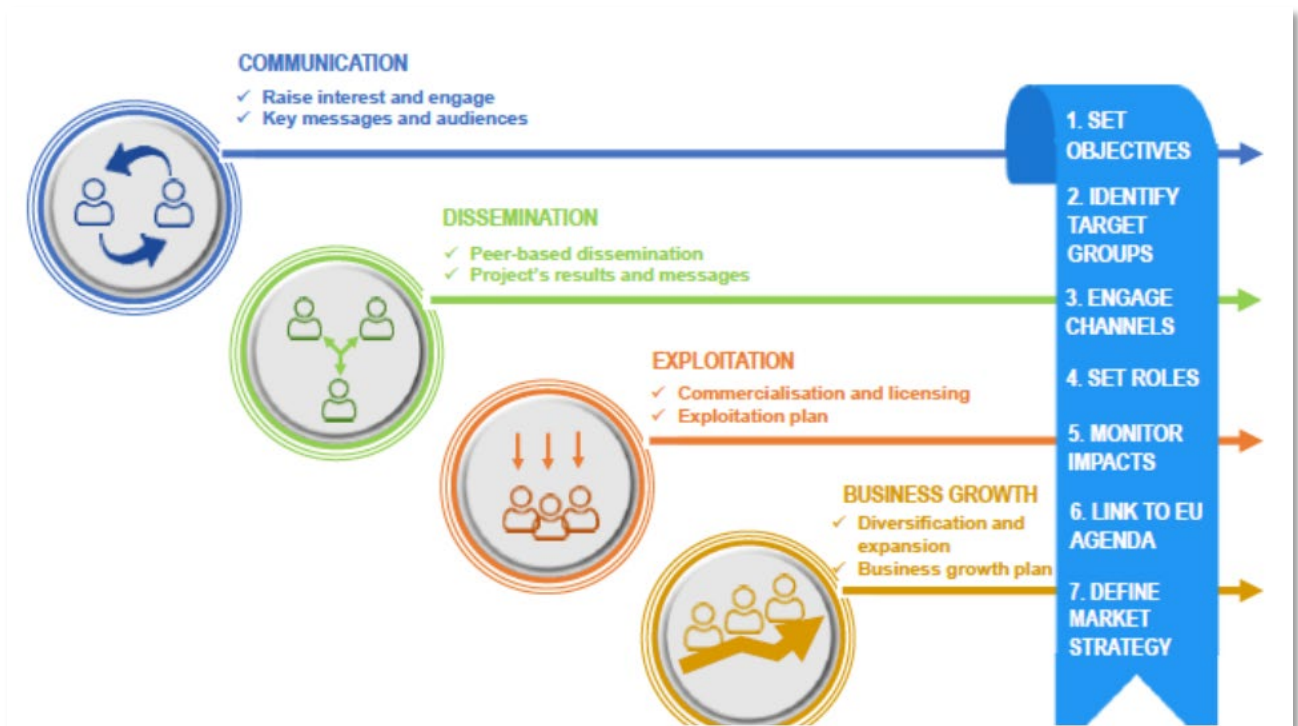


Figure 1: Overview of the overall CDEB strategy

This plan is an iterative process, and it will be regularly updated throughout the entire project lifetime and in accordance with its progresses, more specifically in M12 (D8.4 - D&C Plan updates - Rev 1), M24 (D8.5 - D&C Plan updates – Rev 2) and M42 (D8.6 - D&C Plan updates – Rev 3).

2 SEAMLESS – THE PROJECT

SEAMLESS will develop and adapt missing building blocks and enablers into a fully automated, economically viable, cost-effective, and resilient waterborne freight feeder loop service for Short Sea Shipping (SSS) and/or Inland Waterways Transport (IWT). Autonomous systems will be integrated to ensure safe, resilient, efficient, and environmentally friendly operation to shift road freight movements to hinterland waterways, while enhancing the performance of the TEN-T network. The service will be delivered 24/7 by a fleet of autonomous cargo shuttles, with humans-in-the-loop located in Remote Operation Centres (ROCs), which efficiently cooperate with automated and autonomous shore-side infrastructure and safely interact with conventional systems. The services will rely on a redesigned logistics system enabling seamless freight flows by minimising delays at intermodal nodes. A digital bird's eye view of the supply chain allows the exploitation of real-time information for planning optimisation and reconfiguration to support resilient logistics, incl. digitalised administrative procedures. The SEAMLESS building blocks will be verified and validated by conducting full-scale demonstrations in selected real-world scenarios. Transferability will be fully demonstrated in selected use cases that cover a wide range of transport applications and geographical regions throughout Europe. Based on a structured methodological framework evaluating sustainability criteria, they will act as guidance for the replication of the project results beyond the project scope and timespan. Novel business models will be thus developed and provide a framework for implementing the SEAMLESS service to minimise investment risk for first movers. Regulatory gaps and challenges related to autonomous vessel operation (e.g., social aspects) will be identified, and recommendations for policy makers to allow the smooth and safe deployment of fully automated services will be provided.

2.1 OBJECTIVES

To achieve its goal, the Technical (TO), Market (MO) and Societal (SO) Objectives of SEAMLESS are:

- TO 1: Improve cost-effectiveness and safety of highly automated and autonomous port-side infrastructure in SSS and IW ports where autonomous vessels call in.
- TO 2: Simplify the deployment requirements and reduce the investment and safety risks of fully automated waterborne transport services.
- MO 3: Develop and upscale sustainability-driven and autonomy-enabled business models for inland waterway transport and short sea shipping.
- TO 4: Provide full and seamless integration of the autonomous feeder system into the digital transport ecosystem and promote synchromodality.
- SO 5: Provide a list of recommendations and a roadmap to the legal and regulatory framework for SSS and IWT to make deployment safer and less costly and to reduce risks for early movers.

2.2 METHODOLOGY

SEAMLESS will demonstrate to the transport community that autonomous feeders can solve today's transport problems and overcome any real and perceived obstacles. SEAMLESS will achieve this by developing three missing building blocks and integrating them with already existing results

from other projects into a fundamentally new concept for fully automated waterborne freight feeder loop service for SSS and IWT (Figure 2). The SEAMLESS enablers will then be used to document the positive effects of the new systems and to provide a roadmap for technical and policy initiatives. To accommodate the integration of autonomous and automated technologies in the supply chain, SEAMLESS will redesign the logistics system to support seamless, safe, synchromodal and resilient cargo transport with improved efficiency for servicing the hinterland.

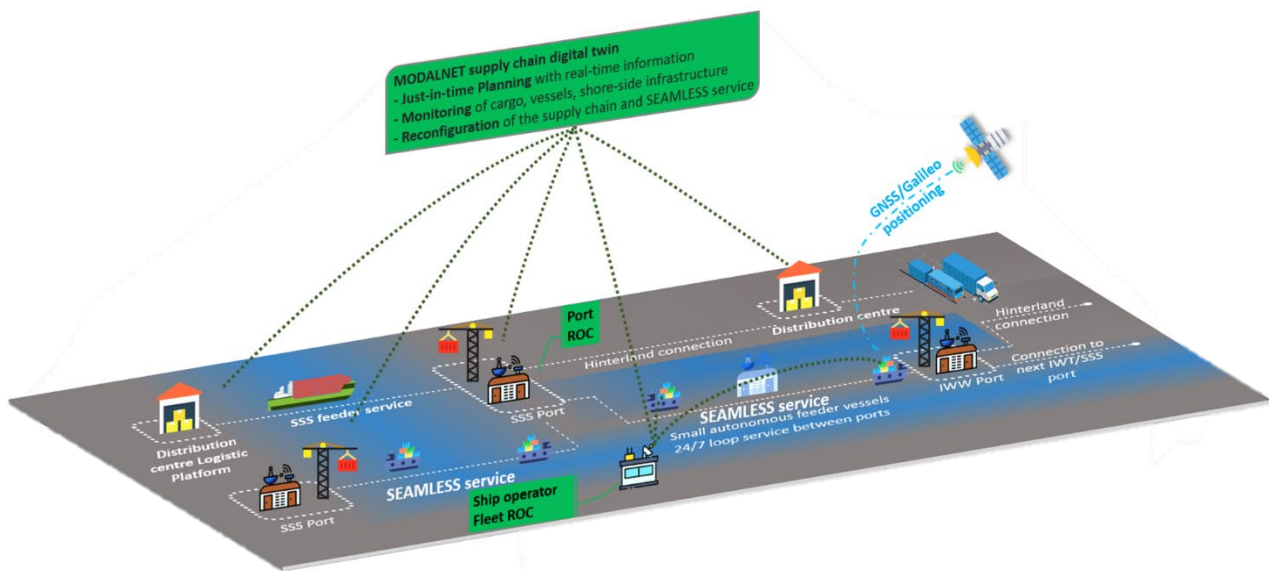


Figure 2: SEAMLESS concept and technology building blocks for seamless logistics

The scope of SEAMLESS within the supply chain includes:

- cargo handling, from ship-shore and within the port, at intermodal SSS and IWW ports with other maritime and hinterland connections (i.e., trucks and rail)
- loop transportation of various cargoes (incl. containers with RoRo and LoLo, bulk cargo) between SSS-IWW or IWW-IWW ports,
- information flow throughout the supply chain with respect to the transportation means, the cargoes, and the supporting shore-side infrastructure.

Within its scope, SEAMLESS will develop innovations towards minimizing bottlenecks and delays in the following three interconnected layers: 1) Physical Assets, 2) Logistics System, and 3) Digital Assets.

3 IWT AND DIGITALIZATION LANDSCAPE

Gen the technical, market and societal objectives above, SEAMLESS touches upon aspects that relate to digitalization, data sharing and regulatory developments in the IWT sector. This chapter sheds lighter on synchronomodal services and their enabling factors.

3.1 DIGITALIZATION AND DATA SHARING APPLICABLE TO IWT

As synchronomodality involves multiple stakeholders (shippers, LSPs, ports, terminals, authorities etc.) it is necessary to focus on how recent data sharing activities can facilitate data and information exchange via standards and protocols among multiple players. Over the past years, many initiatives have developed at EU level around data and data sharing ([EU Data Strategy](#) & [Data Act](#)). Important legislation around handling and sharing of data has been created and is (almost) implemented. A significant number of initiatives has been started to create architectures and operational processes in line with the general EU philosophy: data should be easily shared and a level playing field should be created in which all stakeholders can benefit from the added value data sharing can deliver. Furthermore, the new EU programs (CEF2, Common European Data space and Horizon Europe) put a lot of emphasis on holistic interoperability between modes and nodes. The EU has set a course to create “[Data spaces](#)” in which stakeholders in specific processes can easily exchange data. The common European Mobility Data Space will benefit from new architectural designs like [GAIA-X](#) that are all built on the principles the EU maintains: safe and secure data sharing. These pose multiple SEAMLESS synergies when addressing **1) specifications, design and reference system architectures as well as 2) standards**.

These SEAMLESS developments concerning the former, **reference logistics system architecture**, will also have a significant impact on logistics, supply chains and port processes. Some examples stemming from the Digital Transport and logistics Forum (DTLF) are the electronic Freight Transport Information regulation: [eFTI](#), and [EMSWe](#) initiatives and related projects (e.g. [FENIX](#) and [FEDERATED](#) hat have been designed to improve the exchange of data in the field of logistics. As far as the latter is concerned, **standards**, there are several industry led initiatives in different sectors to support digital standardization that concern containers, terminals etc: [Digital Container Shipping Association](#) (DCSA), [International Port Community Systems Association](#) (IPCSA), [Terminals TIC4.0](#), [Open Logistics Foundation](#), GS1, International Data Spaces Association ([IDSA](#)) and UN/CEFACT. Hence, interoperability with- and harmonization of- existing standards and processes applicable to ports and terminals will be crucial to position SEAMLESS innovative outcomes within the existing landscape. This will facilitate the interconnection of holistic logistics chains with vessel services and port operations.

3.2 CONCRETE IWT PROJECTS AND DEVELOPMENTS APPLICABLE TO SEAMLESS

As the above digital and standards’ solution-areas focus on data sharing and exchange, this section introduces an overview of specific policies, projects and initiatives that will further enhance SEAMLESS and its role in the European IWT landscape. In this regard, Figure 3 depicts synergies between SEAMLESS and existing activities that will be analysed throughout the project and beyond.

The objective is to cross-fertilize, valorise and support implementation from a more holistic logistics chain perspective.

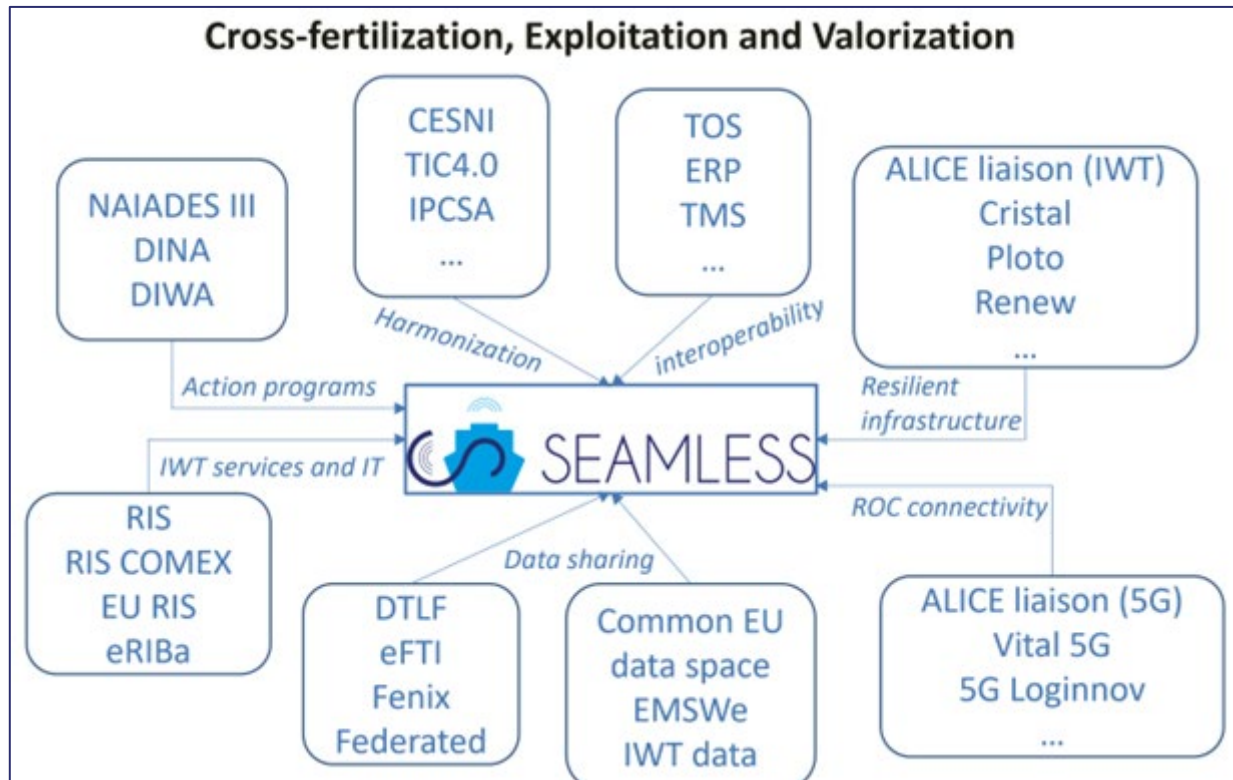


Figure 3: Synergies between SEAMLESS and existing activities applicable to the IWT sector

Some aspects such as [DTLF](#), [eFTI](#) regulation, data spaces and standards are described in the previous section; as shown in the figure, these relate to data sharing principles applicable to SEAMLESS use cases and reference system architectures to be targeting in this project. Furthermore, different standardization communities will be explored (TIC4.0, CESNI,) in order to identify harmonization possibilities of different logistics chains, processes and operations that currently tend to function in silos.

In terms of policies and action programs, SEAMLESS will contribute to [NAIADES III](#), [DINA](#) and [DIWA](#). NAIANDES III supports the European Commission with an inland waterway action program for the 2021-2027 period in areas linked to Fleet, Infrastructure, Digitalization and Crew. Within NAIANDES, DINA presents a sub-group of experts on digitalization, whereas DIWA concerns member state participation in the development of a masterplan on digitalization of Inland Waterways.

Another cluster of initiatives shown in Figure 3 starts with [River Information Services](#) (RIS). RIS and recent RIS revisions are also part of the NAIANDES action program. These cover EU rules on harmonized river information services, supporting IWT traffic and transport management. In that regard, the [RIS COMEX](#) project builds the underlying system that builds on RIS. The outcome of RIS COMEX is the EuRIS portal that is an upscaled version of the regional VisuRIS in Flanders. These developments can facilitate SEAMLESS solutions related to positioning, vessel operations, situational awareness and port processes. Another synergy that will ease SSS-IWT services and

business models within SEMLESS is eRIBa that enables digital reporting between barge operators and waterway authorities (report once instead of multiple times). Similar regional solutions established in Hungary concerning Danube for instance, prove that existing solutions have been deployed at different levels, which is why leveraging these and building further on common framework is crucial to avoid re-inventing the wheel.

The cross-fertilization, exploitation and valorisation activities of the partners involved in this deliverable will furthermore support interoperability of existing Terminal Operating Systems (TOS), Transport Managements Systems (TMS) etc. This is to leverage the above action programs and platforms applicable to the SEMLESS use cases, in combination with existing systems used in the IWT and port/terminal industry.

Lastly, the ALICE liaison framework will be utilized to combine innovations stemming from Horizon Europe Projects ([CRISTAL](#), [PLOT0](#), [RENEW](#), [IW-NET](#), [PLATINA_3](#) etc.) with regard to IWT infrastructure developments and logistics operations on them. Another program-set of ALICE activities concerns 5G connectivity projects ([Vital 5G](#), [5G Loginnov](#)...) that will be analysed to support and enhance the SEMLESS Remote Operating Centers via applications that improve latency of remote operations. The ALICE liaison framework is unique in its preservation of projects and their outcomes, and addresses the European Commission's intention to disseminate, exploit and valorize project outcomes at minimum 4 years after the project has ended. In the same manner previous and current projects will be used to enhance SEMLESS, once SEMLESS reaches its end, the ALICE framework will preserve the continuity of its outcomes and support further cross-fertilization with future projects and implementation activities. The following chapter will briefly introduce the main project demos and their transferability.

4 SEAMLESS POSITIONING AND DEMOS



Figure 4 SEAMLESS UCs

The **general objective** of the project is the development and adaption of missing building blocks and enablers into a fully automated, economically viable and cost-effective, waterborne freight feeder loop service for SSS (Short Sea Shipping) and IWT (Inland Waterways Transport). SEAMLESS will verify and validate the building blocks involved in the feeder service by **conducting full-scale demonstrations** in selected real-world scenarios, by combining physical and digital assets developed in the project with assets provided by the Consortium. SEAMLESS will also demonstrate transferability in selected use cases that cover a wide range of transport applications and geographical regions with different requirements throughout Europe.

All SEAMLESS building blocks, as well as the fully integrated version of the technological ecosystem, will be verified and validated through the SEAMLESS Use Cases (Figure 4), which are divided into:

- two full-scale demonstrations in real-world conditions for SSS and IWW, which will verify the targeted TRL for the SEAMLESS building blocks,
- five transferability use cases (see below in Chapter 4.1), which aim the replicability of the SEAMLESS business models and assess the impact of the SEAMLESS service concept throughout different regions of Europe.

Table 1 below provides a brief description of the full-scale demonstration UCs.

Table 1: Description of SEAMLESS full-scale demonstration UCs

| | UC #1: Northern Europe (SSS) | UC #2: Central Europe (IWT) |
|------------------------------|--|---|
| | | |
| Location | Bergen (Norway) -> Ågotnes (Norway) | - Antwerp to Dourges via Lille (Netherlands -> France) - Antwerp to Duisburg via Dordrecht and Nijmegen and further to Dortmund and Minden (Netherlands-> Germany) |
| Challenge/Motivation: | The Port of Bergen is Norway's second largest port in tonnage and currently located within city limits. Its main terminal to be moved from | Modal equilibrium remains an unresolved problem for Europe, the modal swift towards IWT has been unsubstantial to date. The main barriers of adopting |

| | | |
|---|--|---|
| | <p>Bergen to Ågotnes. A smaller cargo terminal will be operated in Bergen and cargo is expected to be transported through a 26km driving distance with roads and bridges, which will need to be extensively improved to handle the increase in truck traffic. To minimise cargo transport through trucks between the two ports, currently there are plans for using a manned 60 TEU feeder vessel. In 2030 it is estimated that these feeder loops will need to handle an annual volume of 23,000 TEU.</p> | <p>IWT are rooted in consignors designing supply chains without any IWT legs (partly despite its cost attractiveness), adverse contractual terms, a disadvantageous market structure with few big operators and many small ones, limited political support of the transport mode, lack of digitalization, and clearance profile restrictions at bridges, locks, and fairways. Additional barriers include the heavy burden of administration at border crossings, exacerbated by inconsistencies in the process. The routes accommodate existing container flows through conventional IWT services.</p> |
| <p>Approach</p> | <p>The UC involves a potential future system of three feeder loops serving the city of Bergen:</p> <ul style="list-style-type: none"> - a direct feeder loop between Bergen and Ågotnes (green- roundtrip, 22 nm), - northern hinterland (blue, 115 nm) - and southern hinterland (red, 88 nm). <p>The demonstration will involve ASKO’s highly automated, fully electric RoRo vessels, which are currently being built and are intended for operation in the Oslo fjord. These vessels were expected to be put in service in 2022, and sail without crew by 2025. The route that will be involved is the 11nm (1.5h) between Ågotnes and Bergen (or an equivalent route with similar conditions).</p> <p>The activities will include the following SEAMLESS building blocks: port operations; mooring, shore connection and charging, cargo (un-)loading for RoRo and Containers; the communication between ROCs; autonomous functionality in sheltered waters and heavy traffic; and verification of operational constraints such as weather-window, tide, etc., and full utilisation of the ModalNET modules</p> | <p>This UC will demonstrate that a loop service comprised of a fleet of small (e.g., with up to 80 TEU), highly automated, zero-emission vessels supervised by humans-in-the-loop in ROCs on a 24/7 basis, have the potential to reinforce modal shift towards IWT. The demonstration will use ZULU -Barge design, which is a highly automated, inland container barge carrying up to 80 TEU and offering low to zero emission through an exchangeable battery-electric energy provision system.</p> <p>The activities will include the following SEAMLESS building blocks: 1) vessel navigation and remote fleet operation through a ROC supporting high-attention level of autonomy, interaction with crewed vessels, and smooth passage of locks and bridges, 2) digital port call within the Port of Antwerp-Bruges, 3) autonomous mooring, 4) automated container (un-)loading through the quayside infrastructure, 5) utilisation of ModalNET to ensure data flows and smooth communication</p> |
| <p>Resources required</p> | <p>Three vessels for demonstration of ROC low-attention operations, autonomous mooring equipment, autonomous crane, truck trailers, ROC installation, vessel crew, ROC operators</p> | <p>One vessel (x-barge), auto-mooring equipment, rental of two multi-lift straddle carriers, installation of the Auto-Mooring equipment in Dourges, Antwerp, Nijmegen, and/or Duisburg, crane, automated gantry crane.</p> |
| <p>Transferability Potential</p> | <p>City real estate is very expensive, and ports are typically located in prime locations for residential or leisure developments. Currently, at least three similar cities in Norway are looking into moving the ports out of the city centre either into smaller nearby villages or out to the coast and closer to the main fairways. Ports with similar requirements may also be found in Sweden and Denmark (e.g., Port of London and transport on the Thames, Kristiansand, Oslo, Gothenburg, Stockholm), as well as Greece and Turkey in the Mediterranean.</p> | <p>The planning convenience and transport speed of trucks have been modal characteristics that make it difficult for IWT to compete despite its cost-efficiency and relative reliability. As a result, the Danube basin is predominantly underdeveloped and underexploited and, thus, hindering the potential capabilities of a continuous freight transport chain that will connect the North Sea with the Black Sea.</p> |

4.1 TRANSFERABILITY UCS

Through the transferability cases, **further commercially viable scenarios** apart from the two demonstrator use cases are to be examined and evaluated at a conceptual level. To achieve this, the consortium includes key partners, that operate in or have a direct link to different regions throughout the EU, including the Eastern Mediterranean, the Western Mediterranean, the Balkan region, as well as the north-western part of continental Europe; all of which can provide the necessary input regarding traffic flows, particulars of operating vessels, market attributes, etc., and validate the case selection based on real-world market demands (Figure 5). Each transferability case will be coordinated by an Ambassador who is responsible for the activities related to the respective use case (i.e., data collection, meetings, workshops, etc.). All Ambassadors are coordinated by the Alignment Manager (VPF) to establish a common reference framework for the structured evaluation of all demonstrator and transferability use cases.

| | | Transferability Cases | | | | | |
|-------------------|-----------------------|--------------------------|-----------------------------|-----------------------------|----------------------------|----------------------------------|--|
| Case Region | Western Europe | Central Europe – UK | Adriatic Sea | East Med – Black Sea | | WestMed | |
| | | | | Danube leg | Black Sea leg | | |
| Route | Rouen – Le Havre | Antwerp Port – Hull (UK) | Piraeus Port to Venice Port | Galati Port – Duisburg Port | Piraeus Port – Galati Port | Valencia Port – Sagunto – Gandia | |
| Means | IWT | SSS | SSS | IWT | SSS | SSS | |
| Type of Cargo | Bulk and Ro-Ro | Ro-Ro and Container | RoRo | Container and Ro-Ro | Container | Container and Ro-Ro | |
| Ambassadors | VNF | POA | PNO | INLS | PCT | VPF | |
| Enabling Partners | ZULU, DST, IRTSX, ISL | ZULU, DST | NTUA | NTUA, FTTE, DST | FTTE, INLS | TIC4.0 | |

Figure 5 SEAMLESS Transferability UCs description

With respect to the evaluation of these use cases and considering their specificities, different tools, such as cargo flow projections, systems dynamics, process simulation, emission modelling, multi-agent logistics simulation, etc., will be required. Regardless of the respective tool, the evaluation criteria and performance indicators from the structured evaluation framework will be collected for each use case considered and, thus, allow a comparison among SSS use cases and IWT ones, respectively. The insights from the use case evaluation will be incorporated in the development of the sustainability-driven business models.

In addition to evaluating the transferability cases, the individual SEAMLESS key technology building blocks will require functional testing at the component level. For example, the Automoorning System will be assessed based on the specifications from the structured evaluation framework, and the assessment will be conducted in the respective technical work packages. Similarly, the evaluation of the demonstrator use cases will align with the structured evaluation framework.

Finally, the Figure 6 presents the positioning of the SEAMLESS project by referring to Technology Readiness Levels (TRL) for its tools and technologies.

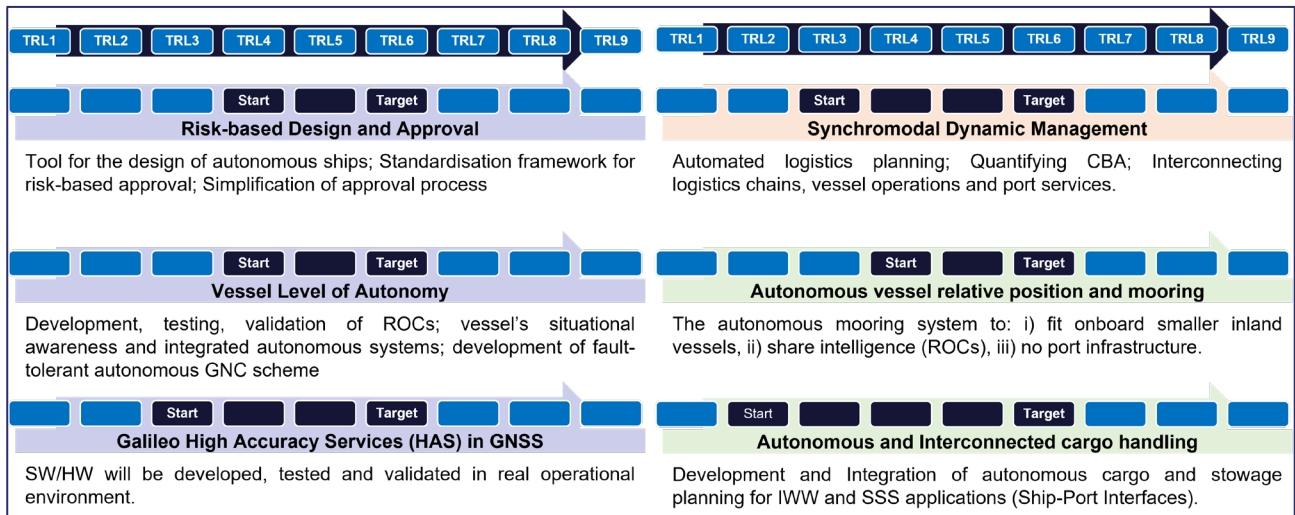


Figure 6 SEAMLESS TRL positioning

5 DISSEMINATION & COMMUNICATION

As detailed within the grant agreement (Art. 17), the *project beneficiaries must disseminate their results as soon as feasible, in a publicly available format, subject to any restrictions due to the protection of intellectual property, security rules or legitimate interests, where:*

- **Dissemination** is defined as: 'the public disclosure of the results by any appropriate means (other than resulting from protecting or exploiting the results), including by scientific publications in any medium.
- **Results** are defined as: any tangible or intangible output of the action, such as data, knowledge and information whatever their form or nature, whether they can be protected, which are generated in the action as well as any attached rights, including intellectual property rights.
- **Communication** is defined by the European Commission as - a strategically planned process that starts at the outset of the action and continues throughout its entire lifetime, aimed at promoting the action and its results. It requires strategic and targeted measures for communicating about (i) the action and (ii) its results to a multitude of audiences, including the media and the public and possibly engaging in a two-way exchange.

6 SEAMLESS D&C STRATEGY

The D&C actions of SEAMLESS have started at the beginning of the project and it will last for its entire duration. All the D&C activities are coordinated by PNO, partner responsible of Work Package

8: High-Impact Dissemination, Communication and Exploitation, with the support of the whole consortium which will contribute to keeping all the project channels alive.

Dissemination and Communication actions are relevant to:

- Establish high quality impactful systematic channels and means for communicating project objectives activity, progress, impact, and outcomes, maximizing its outreach and creating awareness to the relevant scientific and industrial community.
- Coordinate scientific outreach through the development of Open Access papers and scientific and industrial events.
- Define and upscale the project's exploitable results.
- Ensure successful implementation and viability of the project's innovations.
- Produce specific policy recommendations necessary for fully automated feeder loop services.
- Contribute, upon invitation by the CINEA, to common information and dissemination activities to increase the visibility and synergies between HE/H2020 supported actions.

To achieve this, the D&C strategy will focus on:

- Definition of target groups and stakeholders.
- Establishment of communication objectives and strategies for overall communication.
- Exploitation of the results strategy.
- Calendar of dissemination and communication activities.

6.1 STAKEHOLDER AND TARGET GROUPS

6.1.1 Value chain

The SEAMLESS project is focused on creating a fully automated and efficient waterborne freight feeder loop service for Short Sea Shipping (SSS) and Inland Waterways Transport (IWT). The goal is to develop and adapt missing building blocks and enablers to create a cost-effective and resilient service. In this context, the value chain plays a critical role in understanding the various stages and players involved in bringing new technologies and services to market. The SEAMLESS value chain tries to reflect all possible actions and actors involved in autonomous inland and short-sea navigation for freight shipping, including the automation and digitalisation of related infrastructures (ports) and the entire supply chain. By analysing the project's value chain, we can identify opportunities for innovation, sustainability, and circularity, as well as strategies for optimising the value chain to reduce costs, increase efficiency, and promote competitiveness in the market. This analysis can help us to better understand the roles of various actors involved in the service, from the transportation providers to the infrastructure providers and technology developers.

By creating this specific value chain, PNO aims to provide a clear understanding of the different stages and actors involved in the project, making it easier to identify potential areas for improvement or optimization.

To achieve this, the value chain has been divided into two distinct blocks. The first block embodies the **shore-side solutions and actors** (land-based players & adaptors, involved in procedures before

shipment by vessels). The second block represents **ship-related technologies and players**. Then, for each of the two blocks, the technology providers, integrators and users are highlighted. Furthermore, the technology providers categories are split in R&D and private, and the technology users can be divided in IWT or SSS sectors.

The identified steps of the value chain are listed and explained below, with a particular focus on the roles played by the SEAMLESS partners:

- **Technology providers:** all the developers of software and solutions aiming to digitalise and make autonomous the inland and short-sea freight transportation sectors
- **Technology integrators:** the actors of the value chain providing integration of systems and technologies before their final use in IWT and SSS sectors.
- **Technology users:** here all the final actors involved in the identified value chain belonging to the inland waterways or short-sea sectors.

Besides the main stakeholders' categories above mentioned and described, there were identified several **horizontal stakeholders** that play a transversal role along the IWT and SSS identified value chain:

- **Project Developers/Investors/Financiers:** who provides investments, funding or own equity capital for implementing IWT and SSS digitalization or project development;
- **Classification, Standardization and Risk Management Companies:** the companies providing classification and certification activities, risk analysis and management, and insurance services within the IW and SSS sectors;
- **Sector associations:** the clusters and associations representing the actors involved in inland waterways and short-sea transportation;
- **Policy Makers, Regulators and Municipalities:** the entities which regulate the sector, including regions and municipalities involved in the selected projects;
- **Other:** here, all the other organisations providing services for improving, exploiting and disseminating the solutions developed for digitalising IWT and SSS sectors, such as consultancy, LCA and other impacts analysis, etc.

Below, there is the value chain concept as described above, including one with partners logos representing the activities carried out in SEAMLESS project (Figure 7).

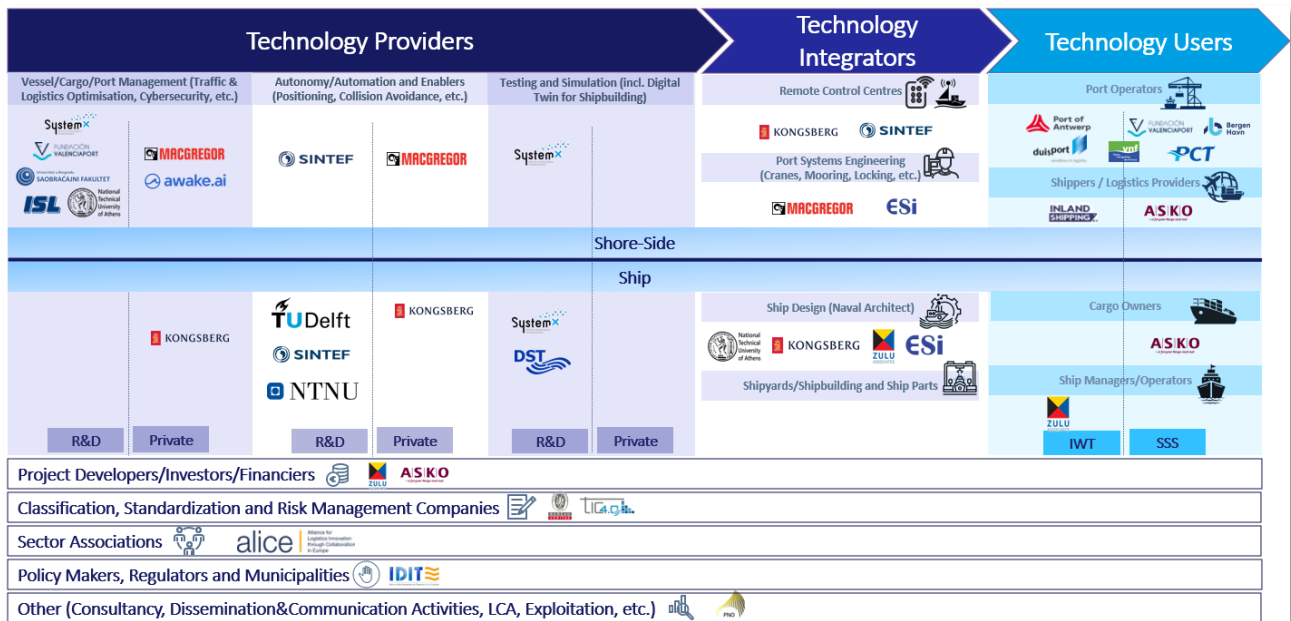


Figure 7 SEAMLESS value chain model (PNO Consultants elaboration)

6.1.2 Stakeholder analysis

The Innovation component of the stakeholder’s analysis is a form of (technological) intelligence that PNO performs intending to identify the main players in a specific market segment or value chain, their role in that value chain, and their contribution to innovations, inventions or business in a particular sector. The benefit of conducting a stakeholder analysis is that it provides a broad overview of the most active stakeholders (primarily from the industry) related to a specific market segment for the purpose of:

- Finding potential partners for business collaborations and/or funding applications.
- Identifying potentially interesting innovations to integrate in their products or innovation plans (open innovation).
- Spotting innovation trends and competitors.
- Developing market analysis and exploitation strategies.

Using the [PNO’s tool WheesBee](#) and considering the main objectives of the project, the list of total of **137 European-funded projects** (starting date from 01/01/2014) selected for building the innovation ecosystem related to SEAMLESS project was created. The selection is guided by the projects mentioned in the proposal in which SEAMLESS partners have participated.

Around 50 of the total selected projects are mapped in the Figure 8, taking into account, on the one hand, the project focus and, on the other hand, the project output.

Concerning the **Project Focus**, we identified the following four categories:

1. **Transport & Logistics in General:** this category encompasses projects that aim to promote solutions and services in the broader transport and logistics sector, however having attention for SSS and IWT.
2. **Short-Sea Shipping (SSS) and related infrastructures:** this category includes those projects that arise to promote solutions to improve and further develop the SSS sector, specifically.
3. **Inland Waterway Transport (IWT) and related infrastructures:** this category includes those projects that arise to promote solutions to improve and further develop the IWT sector, specifically.
4. **SSS + IWT:** the projects mapped within this category focus both on SSS and IWT as transport mode for moving freights.

The **Project Output** macro-category of the SEAMLESS project has been established based on its objectives, the desired technologies to be developed, and its intended connections with similar projects, where there we identified four main categories:

1. **Cargo Flow & Logistics Optimisation, Cybersecurity:** includes those projects aiming to develop solutions for optimizing logistics processes and cargo movement, including digital security.
2. **Digitalisation of Ports, Shore-side Automation:** maps those projects developing technologies for digitalising and connecting ports, including the autonomous vessels-related procedures (e.g. remote control centres, docking, etc.) and the automation of cargo handling equipment (e.g. autonomous cranes or ports vehicles) .
3. **Innovative & Autonomous Vessels:** includes projects related the development of innovative concepts (design) of new vessels and/or the development of enabling technologies for allowing a vessel to navigate autonomously.
4. **Vessels and Ports Automation + Supply Chain Optimisation:** includes those projects aiming to develop technologies related to all three categories of project output described above.

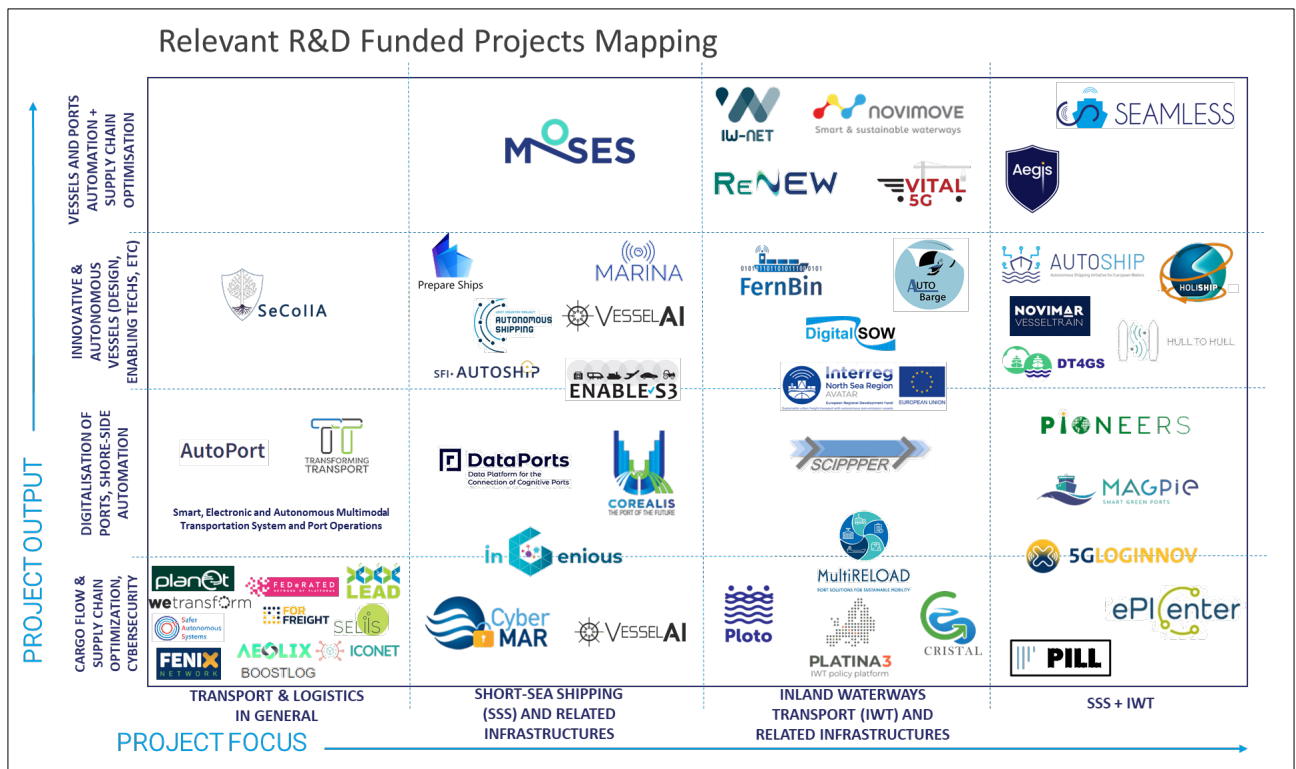


Figure 8 EU-funded projects mapping (PNO Consultants elaboration)

The subsequent stage involves analysing and describing participant organisations in the selected projects to position them in the SEAMLESS project's value chain. The objective is to identify and extract as many potential stakeholders as possible within the project's supply chain. To achieve this, the activities performed by each organisation in each project, as well as their websites, are carefully examined to gain a comprehensive understanding of their expertise. This process is crucial in identifying key stakeholders who can contribute significantly to the project's success.

A total of **1053 participants**, some of whom participated in multiple projects, were identified from the selected projects. These organisations can be positioned in the value chain as potential stakeholders of the SEAMLESS project. The most active ones (those with **at least 3 participations** in the selected projects) are also shown in the value chain Figure 9 represented below, in addition to the SEAMLESS partners. Here, with respect to the value chains developed previously, the differentiation between shore-side/ship and SSS/IWW have been set aside to give more space to the logos of the main organizations that emerged from the analysis.

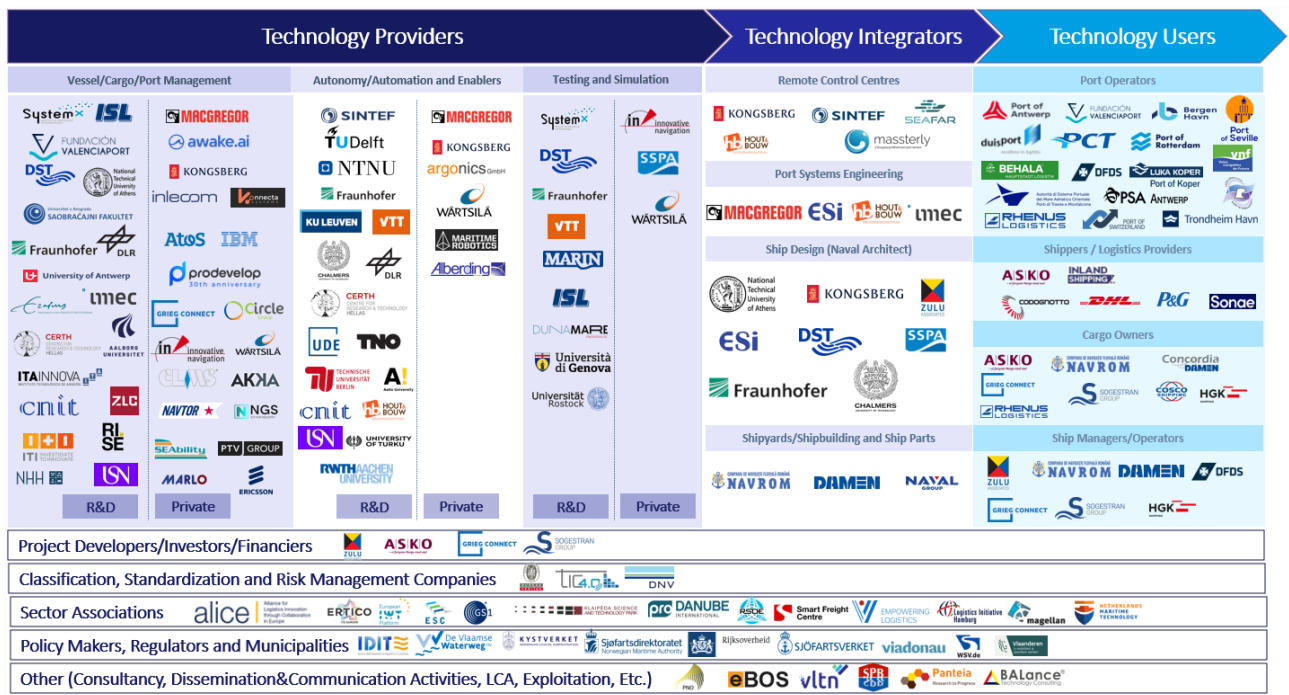


Figure 9 Positioning of the stakeholders extracted from the selected projects in the value chain (PNO Consultants elaboration)

To create the most significant **network** possible from the over 100 R&D funded projects selected (Figure 10), it was necessary to make a clear selection due to the considerable number of participants involved. First, all partners not belonging to the SEAMLESS value chain were excluded. Then, priority was given to projects with a focus on improving **digitalization and automation of logistics in ports**, with an emphasis on SSS and IWT. Additionally, projects centered on the **development of autonomous technologies for short-sea and inland navigation vessels** were also considered. Within these projects, organizations with the highest levels of participation were given priority (with the exception of a few companies that specialize in developing digital technologies for port automation and autonomous vessel operations, as well as a few shipping companies that are currently testing autonomous vessels).

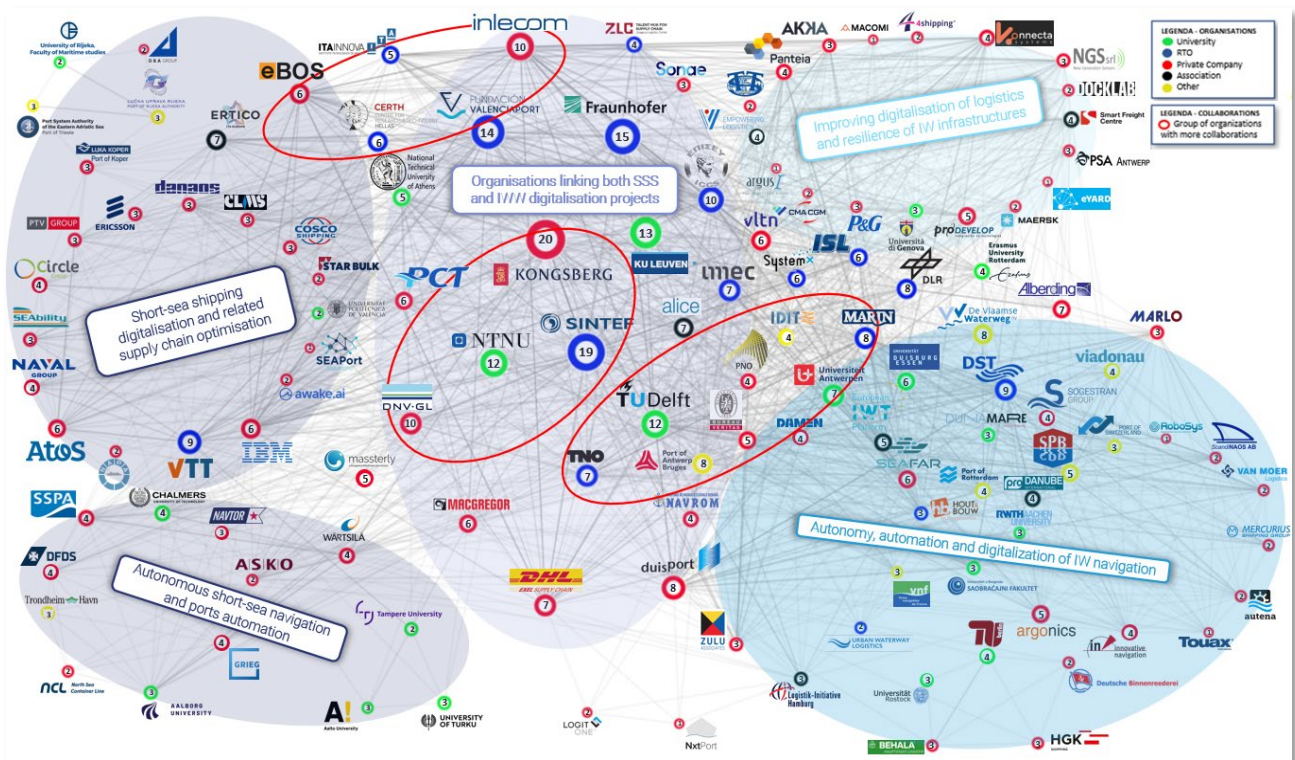


Figure 10 R&D network map showing projects and related partners and cooperations (PNO Consultants elaboration)

The network shows how there are different ecosystems with slightly different objectives:

- In the *central part* of the graph we can see the organisations participating to projects focused on both **digitalisation of short-sea shipping and inland navigation**, allowing the connection between more selected projects networks representing the most relevant actors resulted from the analysis of SEAMLESS related topics.
- In the *upper left part* we can see a group of organizations working on the **development of digital and ICT technologies** to optimize logistics processes and the entire supply chain related to **short-sea shipping**.
- The *lower left part*, instead, shows the main organisations working on the **development of autonomous and automated technologies related to short-sea navigation**.
- The *upper right part* of the figure shows a group of companies focused on the **development of ICT technologies** for improving resilience and digitalization of logistics and related **IWW infrastructures**.
- The *lower right part* of the figure, finally, shows a series of organizations mainly working on the automation and digitalization of inland navigation, with a focus on **developing autonomous vessels**.

The last thing to note within the network concerns the groups of organizations that have collaborated more times with each other in the selected projects. Those with at least four collaborations are highlighted (marked by red lines):

- [SINTEF](#), [Kongsberg Maritime AS](#), [NTNU](#), [DNV](#);

- [TU Delft](#), [MARIN](#), [TNO](#), [Universiteit Antwerpen](#) and [Port of Antwerp-Bruges](#);
- [Inlecom](#), [Ebos Technologies](#) and [CERTH](#).

To conclude this chapter, the next course of action involves classifying the identified stakeholders based on their diverse backgrounds, position in the Value Chain, and other relevant characteristics. With over 100 R&D-funded projects and a significant number of participants involved, it is crucial to describe the network carefully. This process will aid in understanding the stakeholders' roles and relationships and provide valuable insights into the overall dynamics of the project.

Having mapped out the potential stakeholders for SEAMLESS, the project also depends on the support of its 26 partners, who are relevant entities for community building. To accomplish the project's communication and dissemination objectives, as described previously, it is essential to determine the target audience for the message we aim to spread.

In the forthcoming update of this deliverable, we will expand our stakeholder analysis by incorporating their categorization based on country, expertise, project engagement, and other relevant factors. Moreover, as the project progresses, the stakeholder analysis and project mapping will be regularly reviewed and updated to include additional stakeholders and active projects to ensure a comprehensive and up-to-date depiction.

6.2 STAKEHOLDER AND MARKET MAPS

D&C activities are being planned and implemented to reach a wide range of regional, national, international and European stakeholders, as reported in the Table 2:

Table 2: SEAMLESS target groups

| | |
|----------------------|---|
| Public | Regulation bodies & Public Authorities (Governments, port authorities, European Maritime Safety Agency and equivalent agencies in other countries outside the EU) |
| | Accreditation & Certification organizations Classification Societies |
| | European Commission, CINEA, DG Move, EMSA Maritime Safety |
| Private | Risk Assessment & environmental monitoring specialized companies |
| | Autonomous Systems & Vehicles operators & manufacturers & Shipyards |
| | Sensors' manufacturers, Equipment manufacturers, s/w and h/w SMEs |
| | AI s/w providers |
| | Logistics Service Providers (LSPs) and terminal operators |
| | Shippers |
| Academia | B6 Financiers (Bank, Business Angel, VC) |
| Civil Society | Research Institutes, Universities, etc |
| | Citizens - Social organisations, national and world climate change societies, environmental protection agencies or other organisations active in Environment & Health |

6.3 DISSEMINATION & COMMUNICATION TOOLS AND MATERIAL

The SEAMLESS D&C strategy foresees the active participation from all project partners. All consortium members play an important role in the dissemination and communication of project results and outputs, and all the partners are committed to present project outcomes. A structured and dynamic approach in support of the D&C strategy is ensured by the periodic interactions between PNO and all partners. To achieve this, a set of materials has been and is currently under development.

6.3.1 Project identity

To ensure a proper dissemination and communication of the project, it is essential to build the project 'personality', which is linked to a graphically coherent and consistent representation of the SEAMLESS logo, that will be displayed in all project materials. The logo will make SEAMLESS recognizable and for this reason it will be used in every document produced within the project context, such as presentation, newsletter, deliverable, brochures etc.



Figure 11: SEAMLESS project logo

6.3.2 European Commission Guidelines for D&C

Unless otherwise agreed with the granting authority, communication activities of the beneficiaries related to the action (including media relations, conferences, seminars, information material, such as brochures, leaflets, posters, presentations, etc., in electronic form, via traditional or social media, etc.), dissemination activities and any infrastructure, equipment, vehicles, supplies or major result funded by the grant must acknowledge EU support and display the European flag (emblem) and funding statement (translated into local languages, where appropriate):



Funded by the
European Union

"Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or CINEA. Neither the European Union nor the granting authority can be held responsible for them."

The disclaimer can be translated into local languages where appropriate.

The emblem must remain distinct and separate and cannot be modified by adding other visual marks, brands or text. Apart from the emblem, no other visual identity or logo may be used to highlight the EU support. When displayed in association with other logos (e.g., of beneficiaries or sponsors), the emblem must be displayed at least as prominently and visibly as the other logos. For

the purposes of their obligations under this Article, the beneficiaries may use the emblem without first obtaining approval from the granting authority. This does not, however, give them the right to exclusive use. Moreover, they may not appropriate the emblem or any similar trademark or logo, either by registration or by any other means.

The project acknowledgement takes also into account the new guidelines for funding for the UK beneficiaries.

6.3.3 The SEAMLESS Project Website

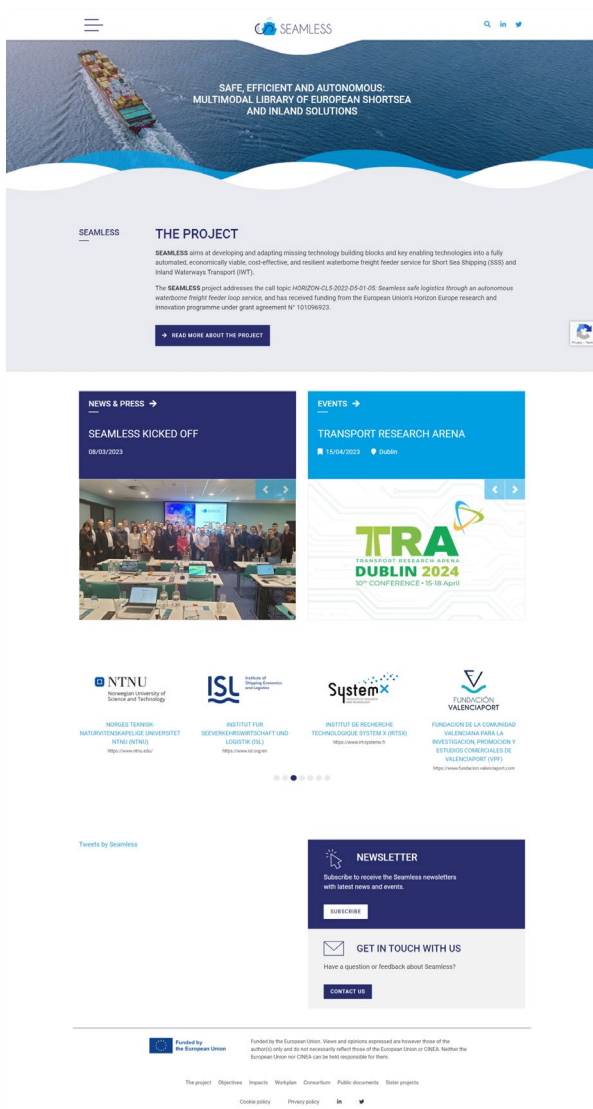


Figure 12: SEAMLESS website home page

One of the main D&C tools to be used in the frame of SEAMLESS, there’s the project website, which not only will allow the consortium to spread news, events and updates related to the initiative to inform the main stakeholders and general public, but also to archive all the public documents that will be produced in the frame of SEAMLESS (Figure 12).

The project website has been developed and released by PNO in March 2023 (M3), available in English at the following link: <http://seamless-project.eu/>.

The website menu has been structured as reported in Figure 13 and described in the following chapters.

In particular, the footer of each page of the website clearly displays the links to the “Get in Touch With Us” and the “Newsletter” pages.

In addition, the footer also shows the EU flag and the text stating the funding of SEAMLESS as Horizon Europe project appears, like below reported, with the disclaimer:

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or CINEA. Neither the European Union nor CINEA can be held responsible for them.



Figure 13: SEAMLESS website menu

6.3.3.1 'SEAMLESS' Page

The "SEAMLESS" page includes four sub-pages:

- The Project, which provides a description of SEAMLESS and its aim;
- Objectives, to describe the specific objectives of the project;
- Impacts, to define the key outcomes expected by SEAMLESS and the impacts beyond the end of the project;
- Workplan, which describes all the activities that will be performed in the frame of the project, and by which partners.

6.3.3.2 'Consortium' Page

The "Consortium" page provides a short description of all the organizations involved in SEAMLESS, and it displays their logo and link to the corporate website.

6.3.3.3 'Demo & Transferability Cases' Page

The "Demo & Transferability Cases" page offers descriptions of SEAMLESS building blocks to be developed in the frame of the project. It also provides explanations of the transferability cases to be examined and evaluated.

6.3.3.4 'News&Press' page

This section will be regularly update with news short press releases that described the project progresses.

6.3.3.5 'Events' Page

The "Events" page has been thought as a repository to the most interesting events related to the project scope that the consortium might find interesting to attend. This section will be regularly updated.

6.3.3.6 'Public Documents' Page

This section works as a repository to all the public documents that will be produced in the frame of the SEAMLESS project, including the D&C materials, newsletter, publications, public deliverables etc. All the documents upload in this page, will be downloadable free of charge.

6.3.3.7 'Related Projects' Page

In this page will be collected the information of the EU funded projects related to SEAMLESS by process or technology or aim, with which the consortium will plan to cooperate for D&C purposes, with the aim of boosting the visibility of the projects that will be reached in the frame of Task 8.4: Liaison with the logistic sector and engagement.

6.3.3.8 'Contact Us' Page

This page has been structured to allow the website visitors to ask for more details about the project directly to the consortium. A simple contact form has been included, and once completed will arrive as an email to the project coordinator.

6.3.4 D&C Materials

The SEAMLESS brochure, poster and rollup will be created and published in April 2023 (M4). The first version of the project D&C toolkit will provide a short description of the main goals and expected impacts, the partners logos and trademarks and all the useful links of the project.

Once available, the project materials will be published on the 'Public Documents' section of the project website.

6.3.5 Social media channels

Alongside the project website, the LinkedIn and Twitter accounts (Figure 14) of SEAMLESS will also represent strong tools to disseminate and communicate the project updates. Social medias have become essential for D&C purposes and for this reason they will be regularly and strategically used to promote the project outcomes.

At month 2 (February 2023) the SEAMLESS [LinkedIn](#) and [Twitter](#) accounts were launched.

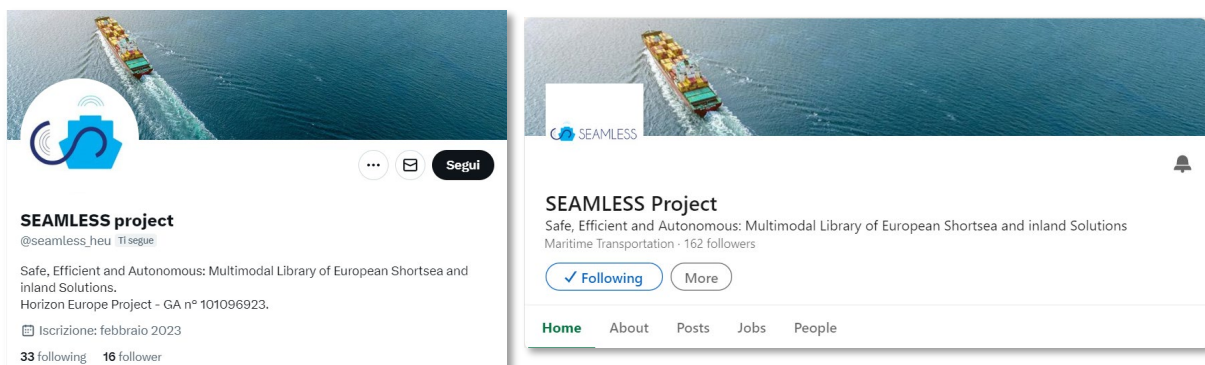











Figure 14: SEAMLESS Twitter and LinkedIn Accounts




The whole consortium will promote SEAMLESS through their networks and websites/news feeds, as reported in the following table. The partners will also take advantage of corporate magazines and press releases.

Table 3: SEAMLESS public communication channels network

| Channel | Link | N° of users |
|--|---|-------------|
|  | | |
| Website | http://seamless-project.eu/ | / |
| LinkedIn | https://www.linkedin.com/company/seamless-project/?viewAsMember=true | 162 |
| Twitter | @seamless_heu | 16 |
|   | | |
| Website | https://www.ntua.gr/en/ | / |
| LinkedIn | https://www.linkedin.com/company/maritime-risk-group-mrg/ | 983 |
| Twitter | https://twitter.com/mrg_ntua | 386 |
| Website | https://i-sense.iccs.gr/ | / |
| LinkedIn | https://www.linkedin.com/company/isensegroup/mycompany/verification/?viewAsMember=true | 2.768 |
| Twitter | https://twitter.com/ISENSE_GROUP | 1.178 |
| Facebook | https://www.facebook.com/ISENSEGroup/ | 669 |
|  | | |
| Website | https://www.tudelft.nl/ | / |
| LinkedIn | https://nl.linkedin.com/school/tudelft/ | 272.866 |
| Twitter | https://twitter.com/tudelft?ref_src=twsrc^googlelwtcamp^serpltwgr^author | 77400 |
| Website | www.safe-net.team | / |

|  | | |
|---|---|-------------------|
| LinkedIn | https://bergenhavn.no/en/ | / |
| LinkedIn | https://www.linkedin.com/company/bergen-og-omland-havnevesen/ | / |
| Facebook | https://www.facebook.com/bergenhavn | 1600 followers |
|  | | |
| Website | www.tic40.org | / |
| LinkedIn | https://www.linkedin.com/company/terminal-industry-committee-4-0/ | 1,444 subscribers |
| Twitter | @TIC_40 | 29 subscribers |
|  | | |
| Website | https://ddec1-0-en-ctp.trendmicro.com:443/wis/clicktime/v1/query?url=www.zulu%2dassociates.com&umid=292e42c9-b4fb-406e-b2a0-e99b61eacb0a&auth=56f1c321ad256f06f9739d01a231f4409b96c448-e95967afb0d6c96d06d4541f43d1c98818742c50 | / |
| LinkedIn | https://www.linkedin.com/company/14015325 | 625 |
|  | | |
| Website | https://www.sintef.no/en/ocean/ | / |

| | | |
|---|---|----------------|
| LinkedIn | https://no.linkedin.com/company/sintefocean | 8622 |
| LinkedIn | https://www.linkedin.com/company/sintef | 54789 |
| Twitter | https://twitter.com/SINTEF_Ocean | 604 |
| Blog | https://blogg.sintef.no/ | / |
|  | | |
| Website | https://www.pnoconsultants.com/it/ | TBC |
| Website | https://www.innovationplace.eu/ | > 10.000 |
| Website | https://www.ricercainnovazione.it/ | > 6.000 |
| LinkedIn | https://www.linkedin.com/company/innovation-place | 1052 |
| Twitter | @INNOVATION_PL | 512 |
| LinkedIn | https://www.linkedin.com/company/ciaotech/ | 735 |
| Twitter | @PNO_IT | 266 |
| LinkedIn | https://www.linkedin.com/company/pnoconsultantseurope | 4150 |
|  NTNU Norwegian University of Science and Technology | | |
| Website | https://www.ntnu.edu/ | |
| LinkedIn | https://www.linkedin.com/school/ntnu/ | 9693 |
| Facebook | https://www.facebook.com/kybernetikk | 1375 |
|  | | |
| Website | www.isl.org | / |
| LinkedIn | https://www.linkedin.com/company/institute-of-shipping-economics-and-logistics/ | 1358 followers |
| Website | https://hansa-online.de/ https://binnenschiffahrt-online.de/ https://www.schiffahrtundtechnik.de/ | / |

|  | | |
|--|---|-------|
| Website | https://www.irt-systemx.fr/ | 27556 |
| LinkedIn | https://www.linkedin.com/company/institut-de-recherche-technologique-systemx/mycompany/ | 5304 |
| Twitter | https://twitter.com/IRTSytemX | 3425 |
| YouTube | https://www.youtube.com/user/IRTSytemX | 567 |
|  | | |
| Website | https://www.fundacion.valenciaport.com/ | / |
| LinkedIn | https://www.linkedin.com/company/fundaci-n-valenciaport/ | 9,993 |
| Twitter | https://twitter.com/fvalenciaport/ | 3,018 |
| Facebook | https://www.facebook.com/fvalenciaport/ | 1,185 |
|  | | |
| Website | https://www.duisport.de/?lang=en | / |
| LinkedIn | https://www.linkedin.com/company/duisport/mycompany/ | 6120 |
| Twitter | https://twitter.com/duisport | 391 |
| YouTube | https://www.youtube.com/channel/UCq9d-EvKTmb8kH3KcNR00yg | 101 |

|  | | |
|--|---|--|
| Website | https://www.dst-org.de/en/ | / |
| LinkedIn | https://de.linkedin.com/company/dst-duisburg | / |
| Other | https://www.uni-due.de/zlv/en | / |
|  | | |
| Website | Voies navigables de France, opérateur national de l'ambition fluviale - VNF | 419 664 visitors ; 1,42 million of pages visited |
| LinkedIn | (6) Voies navigables de France : mon entreprise LinkedIn (6) VNF Cargo : Présentation LinkedIn (6) VNF Tourisme au fil de l'eau : Présentation LinkedIn | 17 321 subscribers 4 895 subscribers 5 683 subscribers |
| Twitter | https://twitter.com/vnf_officiel?t=ekZ0HHavHA5gdFJVTNab0Q&s=03 | 3 593 subscribers |
|  | | |
| Website | https://esi-ltd.eu/ | / |
| LinkedIn | https://www.linkedin.com/in/esi-ltd-engitec-systems-international-ltd-03786b1ab/ | / |
|  | | |
| Website | https://www.etp-logistics.eu/ | / |
| LinkedIn | https://www.linkedin.com/company/alice-logistics/ | 4 284 |
| Brokerage Platform | https://alice-brokerage-event-horizon-europe.b2match.io/ | 1322 |
| Knowledge Platform | https://www.etp-logistics.eu/knowledge-platform/ | 1300+ |

| | | |
|---|---|---------------------------------------|
| Brokerage Platform | https://us8.campaign-archive.com/home/?u=192177b0e2ffc23ab168a14e&id=7822924478 | 1100 |
|  | | |
| Website | http://tradingline.ro/ http://inlandshipping.ro/ | / |
| LinkedIn | http://www.linkedin.com/company/tradingline/ http://www.linkedin.com/company/inlandshipping-eu | 493 followers 39 followers |
| Facebook | http://www.facebook.com/tradingline.nl | 5,4 k followers |
|  | | |
| Website | www.sf.bg.ac.rs | / |
| LinkedIn | https://www.linkedin.com/company/ub-ftte | 604 |
| Twitter | https://twitter.com/SF_Beograd | 86 |
| Facebook | https://www.facebook.com/SaobracaojiniFakultet1950 | 4.100 |
|  | | |
| Website | https://www.idit.fr/ | / |
| LinkedIn | https://fr.linkedin.com/company/identitut-du-droit-international-des-transports-de-la-logistique-et-des-mobilit%C3%A9s | 386 followers |
|  | | |
| Website | www.kongsberg.com/maritime | 1,1M registered unique visits in 2022 |

| | | |
|--|---|------------------------------|
| LinkedIn | https://www.linkedin.com/company/kongsberg-maritime | 108K followers |
|  | | |
| Website | https://marine-offshore.bureauveritas.com/ | / |
| LinkedIn | https://www.linkedin.com/showcase/bureau-veritas-marine-&-offshore/ | 59934 followers |
| Twitter | https://twitter.com/BV_Marine | 1317 followers |
|  | | |
| Website | https://www.awake.ai/ | 20000-30000 viewers per year |
| LinkedIn | https://www.linkedin.com/company/awake-ai | 2700 |
|  | | |
| Facebook | https://www.facebook.com/PiraeusContainerTerminalSA | 436 |
| LinkedIn | https://www.linkedin.com/company/pct-coscoshippingports | 3271 |
| Twitter | https://twitter.com/PCT_SM_SA | 23 |
|  | | |
| Website | https://www.macgregor.com/ | / |
| LinkedIn | https://www.linkedin.com/company/macgregorglobal/ | 23700 |
| Twitter | https://twitter.com/MacGregorGlobal | 603 |
| Facebook | https://www.facebook.com/MacGregorGlobal | 1700 |

Innovation Place: is the PNO (CTECH mother company) online service supporting organizations to achieve their strategic R&D objectives through the matching and managing of R&D projects, organizations, and grants. Innovation Place is based on the Open Innovation paradigm, with the active involvement of industry leaders, multinational organizations, high-level research centres, public bodies, and innovative SMEs all around Europe. During the last years, the number of users registered in the web platform has drastically increased.

Ricerca&Innovazione: is the Italian CTECH Open Innovation platform that supports collaborative research through the successful combination of research and development projects, excellent European organizations, and the most important public funding opportunities at European, national and regional level.

6.3.6 Press releases & project updates

Short news and press releases (by single partner or jointly) describing the project updates will be periodically prepared and published. The first SEAMLESS press release, published in February 2023 (M2) dealt with the description of the project aims and objectives, and the work that the consortium will perform to achieve the initiative’s scope.



Figure 15: SEAMLESS first press release

The press release has been published on the social media channels of the project, and further disseminated via partners corporate websites, newsletter etc. as well.

6.3.7 Newsletters

To ensure that core information on project progress, achievements and next steps are shared, the consortium has foreseen a periodic newsletter to be released to inform and keep engaged the SEAMLESS stakeholders and general public as well.

Table 4: Newsletter plan

| N. | Month | Title |
|----|-------|---|
| 1 | M6 | SEAMLESS & Consortium presentation |
| 2 | M12 | Project's baseline: Use cases defined; requirements and architecture baseline |
| 3 | M18 | Innovation flame: focus on the preliminary versions and specifications of building blocks |
| 4 | M24 | Focus on the second-year project results |
| 5 | M30 | Updates on events attended and organized |
| 6 | M36 | Focus on the publications collected |
| 7 | M42 | Demonstration fire: focus on implementation of the demonstrations |
| 8 | M48 | SEAMLESS wrap-up: focus on final project results |

This plan is to be considered flexible as it will be also tuned on the specific D&C needs of the project activities to better fit to the SEAMLESS results.

All the published newsletters will be uploaded on the 'Public Documents' section of the SEAMLESS website.

6.3.8 Events participation

Aimed at disseminating the progress accomplished in SEAMLESS and influence the project stakeholder and target groups to capitalize on the project results, demonstrator outcomes and best identified practices, the consortium will actively promote the project, its objectives and results in relevant external events (conferences, fairs, expositions, etc.) through oral and poster presentations, distribution of project leaflets and exhibition stand.

Events targeted by the consortium are:

- Transport Research Arena,
- International Physical Internet Conference,
- Transport Logistics Trade Fair Munich,
- the POSIDONIA,
- EMD,
- Inland Navigation Week,
- ITS European Congress 2023.

In addition, a series of in person-events will be organized by the consortium, including:

- three open INFO days (M12, M24, M36),
- a technology showcase event in M42,
- workshops and masterclasses,
- virtual participation tools, e.g., live streaming,
- and a pan-European conference in M48 to present results of the project.

Public consultation and policy events involving policy makers and relevant working groups (identified through e.g., policy fellowship schemes) will be closely monitored and results will be presented in open national and international networking events to boost reciprocal relationships between researchers, industry and policy workers focusing on crucial issues of the maritime sector focusing on safe navigation.

6.3.9 Scientific and non-scientific publications

The beneficiaries must ensure open access to peer-reviewed scientific publications relating to their results.

This task will be one of the main contributions of the academic/research partners involved in SEAMLESS aiming to ensure the dissemination of the project findings among the research and scientific community, as well as other interested parties. All partners will contribute to diffuse information about the project and its results at additional important conferences, workshops and seminars through presentations, technical papers and posters. The SEAMLESS innovations will be exhibited in related exhibitions and fairs. Efforts will also target scientific publications in well-known peer reviewed scientific journals. The quality of the produced outcomes will be improved by using senior experts as internal reviewers. Open access to publications will be ensured for all interested persons mainly through the project website and available open access platforms.

As reported in section 8.4.2.1 of the CA, during the Project and for a period of 1 year after the end of the Project, the dissemination of own Results by one or several Parties including but not restricted to publications and presentations, shall be governed by the procedure of Article 17.4 of the Grant Agreement and its Annex 5, Section Dissemination, subject to the following provisions.

Prior notice of any planned publication shall be given to the other Parties at least 45 calendar days before the publication. Any objection to the planned publication shall be made in accordance with the Grant Agreement by written notice to the Coordinator and to the Party or Parties proposing the dissemination within 30 calendar days after receipt of the notice. If no objection is made within the time limit stated above, the publication is permitted.

The consortium will target:

- >6 publications in international referred journals and conferences.
- >2 journal special issues.
- >6 publications in international magazines.

- >12 conference presentations.

6.3.10 Project video

Awareness raising of the broad audience, using comprehensive multimedia material, are in the scope of SEAMLESS. 2 videos will be produced within the project lifetime, in particular:

- SEAMLESS 1st dissemination video at M6.
- SEAMLESS 2nd dissemination video at M42.

After an internal discussion between ALICE and PNO it has been agreed that the first project video will be realized after M12 so that the video would be also containing early results achieved in the frame of SEAMLESS. Therefore, a short description of the implementation of the video will be provided in the D8.4 (M12) and the reference about the publication of the video will be instead provided in the D8.5 (M24).

6.3.11 Liaison with the logistic sector and engagement

Engaging with the logistics sector (i.e., the companies making decisions on the transportation modes and services) is of critical importance to achieve expected impacts. Within this task, ALICE will define key benefits for the logistics sector out of the developments and innovations planned in SEAMLESS. This is to contextualize current needs of stakeholders to accelerate the decarbonization of their supply chains in view of achieving 2030 emissions reductions by 50% and climate neutrality by 2040.

At least 7 ALICE webinars and several conference sessions (IPIC, TRA) associated with the delivery of the key deliverables, project results and milestones will be organized. ALICE will carry out interviews with selected stakeholders to communicate project results, and to provide feedback to the consortium. ALICE will also liaise with relevant ongoing projects (5 to 8 EU projects) and initiatives (DTLF, eFTI, NAIADES, RIS, etc.) to identify synergies, manage potential overlaps and realize collaboration and cross-fertilization.

7 PARTNERS DISSEMINATION & COMMUNICATION REPORT

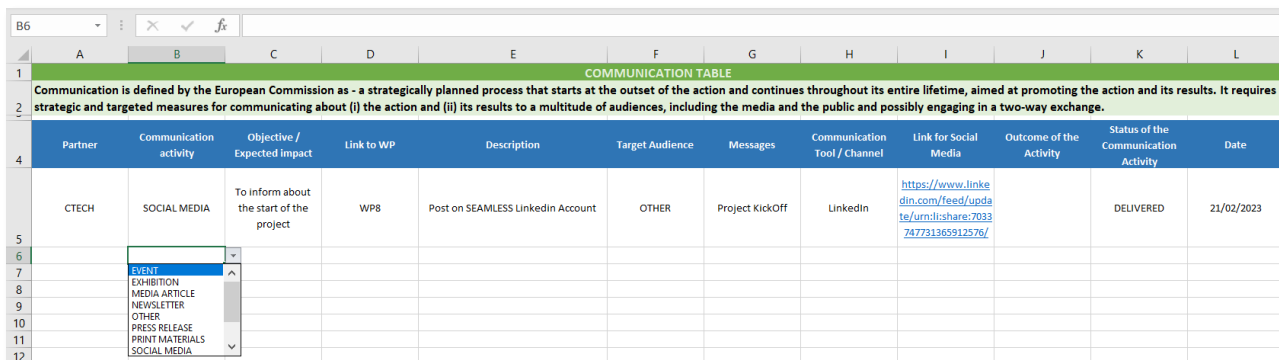
For SEAMLESS, PNO is coordinating and monitoring the D&C activities, ensuring that all the partners will maintain an active participation to the project strategy with dedicated personnel and effort. A regular and period interaction between PNO and the whole consortium will be performed, and the D&C Tables developed for SEAMLESS will be distributed every six months to collect and monitor dissemination and communication outreach. Each table will allow to gather information related to the type of actions, numbers and estimations of the people reached in deploying these activities.

A first update of the dissemination and communication actions carried out within SEAMLESS will be provided in deliverable D8.4 D&C Plan updates - Rev 1, to be submitted in M12.

7.1 COLLECTION OF THE COMMUNICATION ACTIONS

As reported in chapter 4, Communication is defined by the European Commission as - a strategically planned process that starts at the outset of the action and continues throughout its entire lifetime, aimed at promoting the action and its results. It requires strategic and targeted measures for communicating about (i) the action and (ii) its results to a multitude of audiences, including the media and the public and possibly engaging in a two-way exchange.

With the aim of collecting all the communication activities that will be carried out within the SEAMLESS project, PNO has developed the Excel file showed in Figure 16.



| Partner | Communication activity | Objective / Expected impact | Link to WP | Description | Target Audience | Messages | Communication Tool / Channel | Link for Social Media | Outcome of the Activity | Status of the Communication Activity | Date |
|---------|------------------------|--|------------|-----------------------------------|-----------------|-----------------|------------------------------|---|-------------------------|--------------------------------------|------------|
| CTECH | SOCIAL MEDIA | To inform about the start of the project | WP8 | Post on SEAMLESS LinkedIn Account | OTHER | Project KickOff | LinkedIn | https://www.linkedin.com/feed/update/urn:li:share:7032747731365912576/ | | DELIVERED | 21/02/2023 |

Figure 16: Excel file for the collection of the communication actions

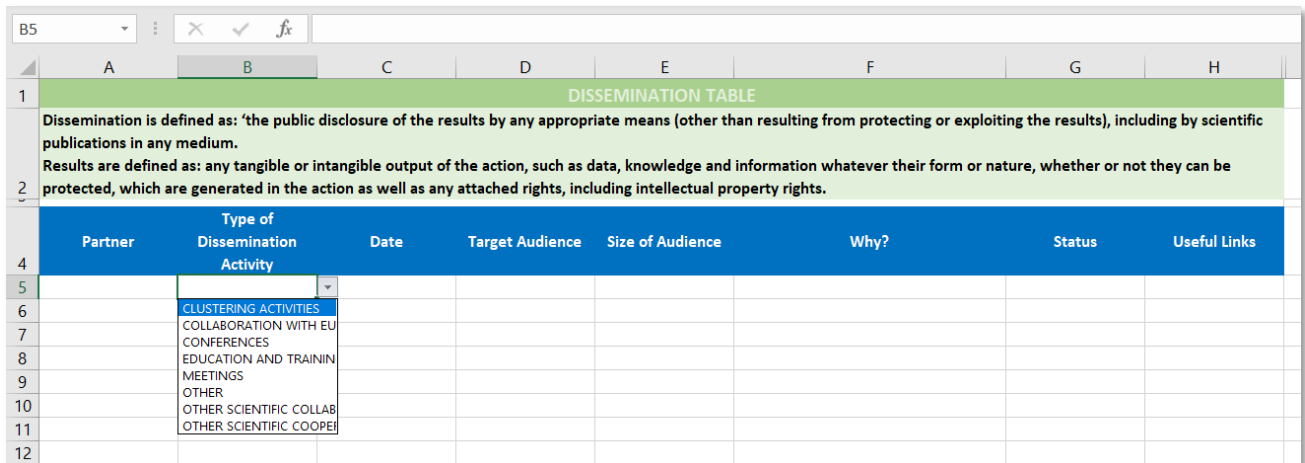
The file – structured in accordance with the EU guidelines for communication – will allow to keep track of the communication actions performed for SEAMLESS, which include:

- Event,
- Exhibition,
- Press release,
- Print materials,
- Social media,
- TV & radio campaign,
- Video,
- Website.

7.2 COLLECTION OF THE DISSEMINATION ACTIONS

As mentioned in chapter 4, Dissemination is defined as: ‘the public disclosure of the results by any appropriate means (other than resulting from protecting or exploiting the results), including by scientific publications in any medium.

To keep track of the dissemination actions implemented for SEAMLESS, an Excel file has been realized accordingly with the European Commission’s guideline for dissemination (Figure 17).



| DISSEMINATION TABLE | | | | | | | |
|---|-----------------------------------|------|-----------------|------------------|------|--------|--------------|
| Dissemination is defined as: 'the public disclosure of the results by any appropriate means (other than resulting from protecting or exploiting the results), including by scientific publications in any medium. | | | | | | | |
| Results are defined as: any tangible or intangible output of the action, such as data, knowledge and information whatever their form or nature, whether or not they can be protected, which are generated in the action as well as any attached rights, including intellectual property rights. | | | | | | | |
| Partner | Type of Dissemination Activity | Date | Target Audience | Size of Audience | Why? | Status | Useful Links |
| | CLUSTERING ACTIVITIES | | | | | | |
| | COLLABORATION WITH EU CONFERENCES | | | | | | |
| | EDUCATION AND TRAINING MEETINGS | | | | | | |
| | OTHER | | | | | | |
| | OTHER SCIENTIFIC COLLABORATION | | | | | | |
| | OTHER SCIENTIFIC COOPERATION | | | | | | |

Figure 17: Excel file for the collection of the dissemination actions

With this Excel, the actions that will be monitored and collected are:

- Clustering activities,
- Collaboration with EU funded project,
- Conference,
- Education and training,
- Meeting,
- Other,
- Other scientific collaboration,
- Other scientific cooperation.

8 CONCLUSION

This document deals with the SEAMLESS D&C strategy by defining the networking and cross-fertilization plan to be followed within the project as well as providing/sharing information about the stakeholder community.

This deliverable provided a description of the channels, activities and tools that will be and have already been used to disseminate and communicate project developments.

This plan is to be considered as a living document, and it will be regularly updated throughout the entire project lifetime and in accordance with its progresses; more specifically in M12 (D8.4 - D&C Plan updates - Rev 1), M24 (D8.5 - D&C Plan updates – Rev 2) and M42 (D8.6 - D&C Plan updates – Rev 3).