Project title	Safe, Efficient and Autonomous: Multimodal Library of European Shortsea and inland Solutions		
Project acronym	SEAMLESS		
Project number	101096923		
Project start date	01/01/2023	**Duration**	48 months

D8.2 - PUBLIC PROJECT WEBSITE

Due date	31/03/2023	**Delivery date**	31/03/2023
Work package	WP8		
Responsible Author(s)	Manuela Guiducci (PNO)		
Contributor(s)	Anastasia Azarko (PNO)		
Reviewer(s)	Alexandros Rammos (NTUA)		
Version	1.0		
Dissemination level	Public		

VERSION AND AMENDMENTS HISTORY

Version	Date (MM/DD/YYYY)	Created/Amended by	Changes
0.1	27/03/2023	Manuela Guiducci (PNO)	Set up of document and content
1.0	31/3/2023	Alexandros Rammos (NTUA)	Document review and finalisation

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List of Abbreviations

Abbreviation	Definition
D&C	Dissemination and Communication
CMS	Content Management System

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1 INTRODUCTION

Deliverable D8.2 Public Project Website deals with the SEAMLESS website created at the beginning of the project and conceived as the main D&C tool to make available to visitors, namely the general public, project results and the latest developments, as well as creating a place for project partners to share information and news and archive all the public documents that will be produced in the frame of SEAMLESS.

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2 PROJECT PUBLIC WEBSITE

The website has been developed and launched by PNO in March 2023 (M3), using WordPress as CMS.

The SEAMLESS website - available in English at the link http://seamless-project.eu/ - will play an essential role in the overall dissemination strategy of the project, as it will allow to make available to visitors project results and the latest developments.

By making project results and developments easily accessible to the public, the website will help increase awareness and understanding of the project's goals and achievements. Additionally, by providing a platform for project partners to share information and news, the website can foster collaboration and communication among the project team, which can ultimately lead to more successful outcomes.

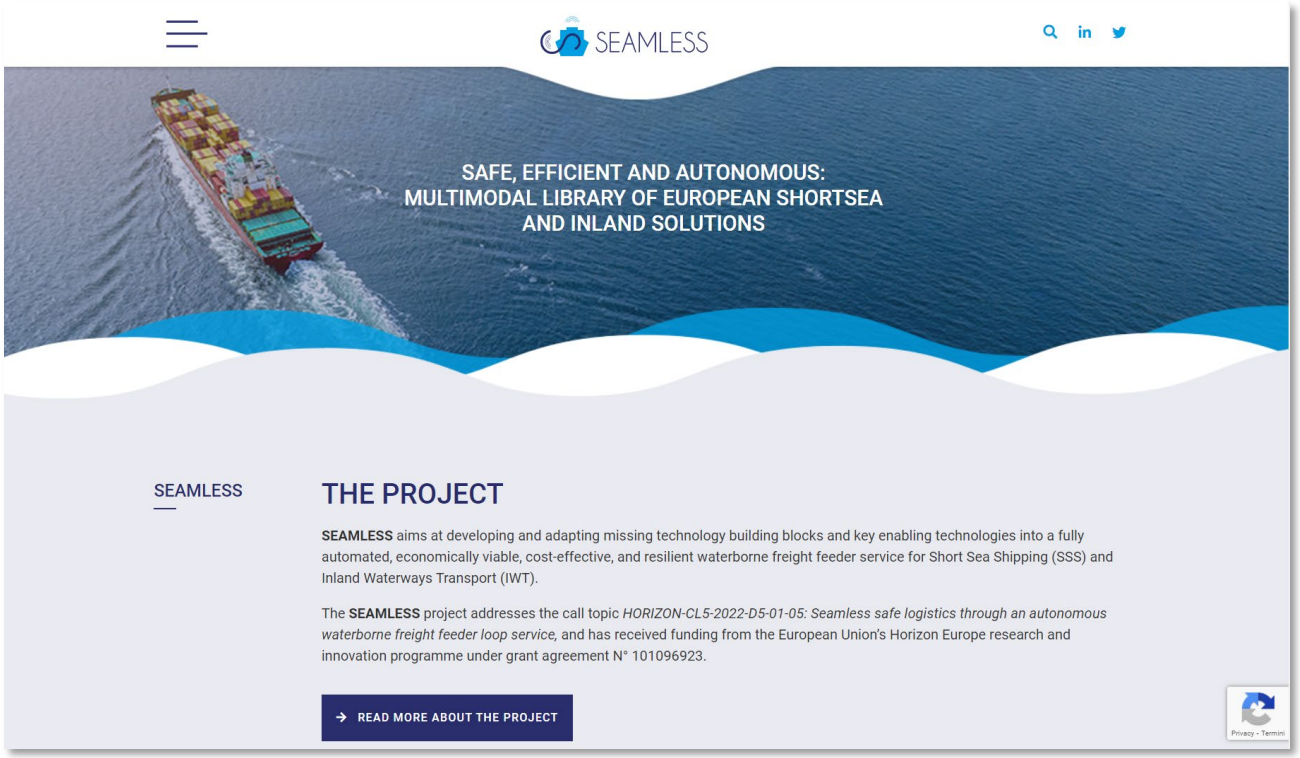

Figure 1: SEAMLESS website header

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:

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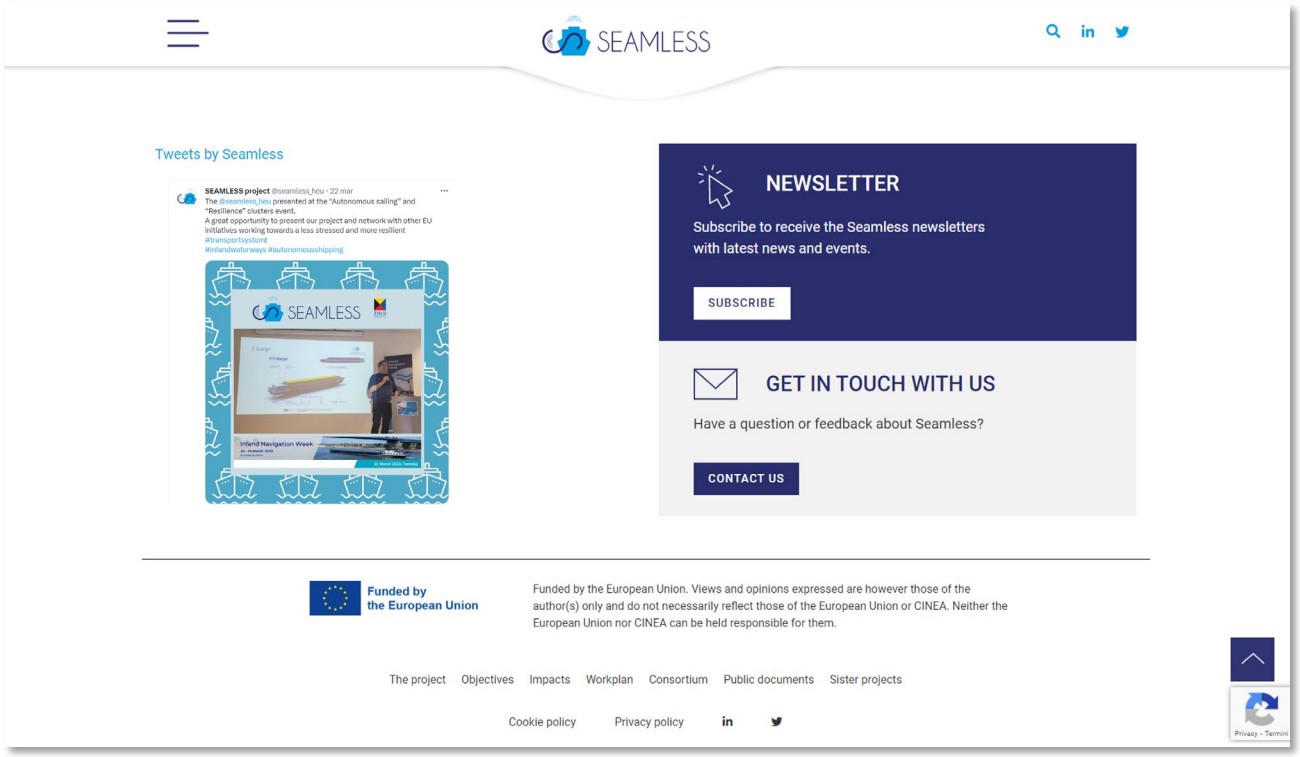

Figure 2: SEAMLESS website footer

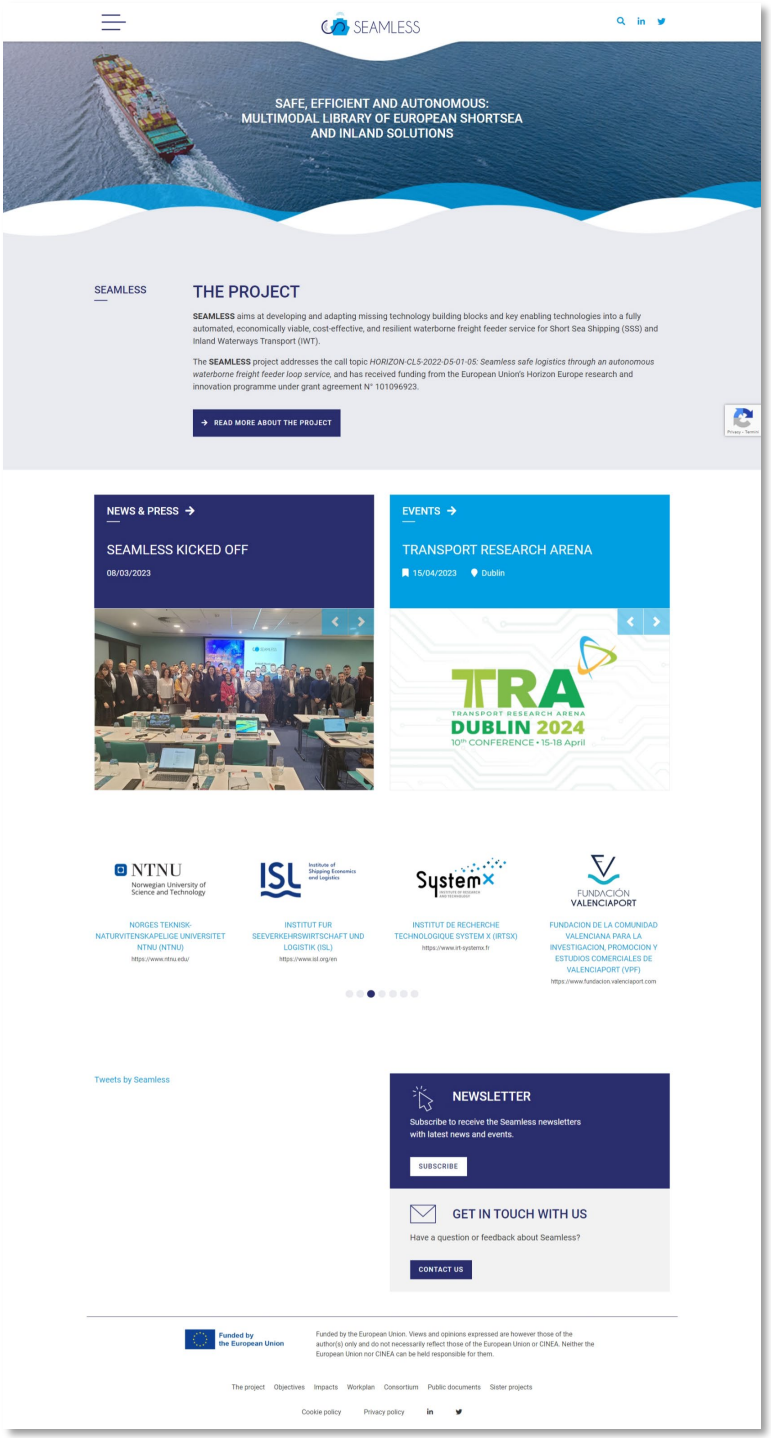

Figure 3: SEAMLESS website homepage

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3 SEAMLESS WEBSITE MENU

The website menu has been structured in the following sections:

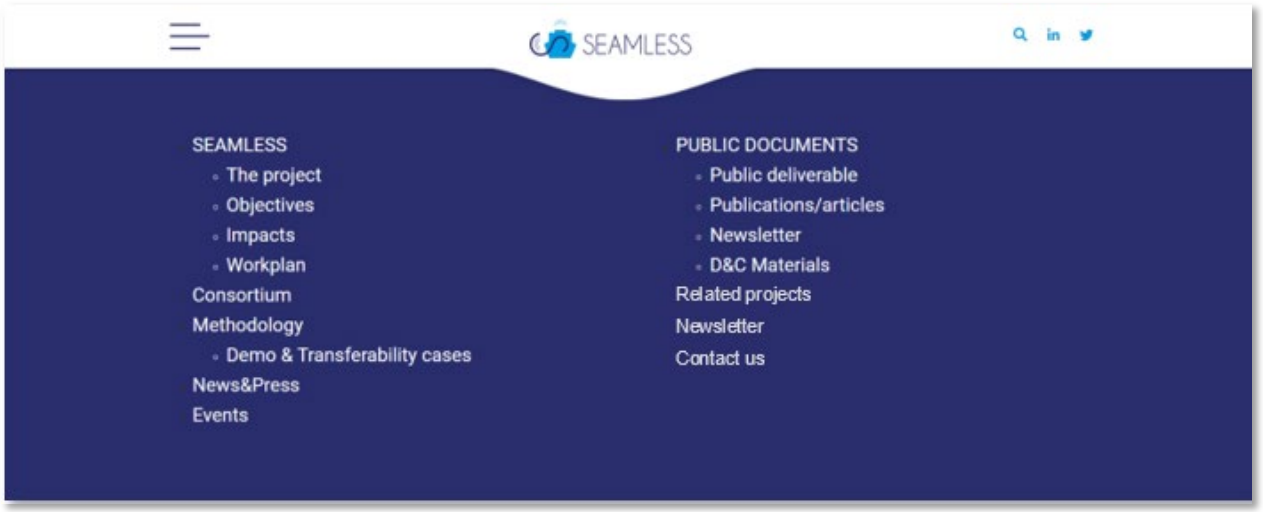

Figure 4: SEAMLESS website menu

3.1 'SEAMLESS'

The "SEAMLESS" page includes four sub-pages:

- **The Project**, which provides a description of SEAMLESS and its aim.
- **Objectives**, to describe the specific project objectives of the project.
- **Impacts**, to define the key outcomes expected by SEAMLESS and the impacts beyond the end of the project.
- **Workplan**, which offers an overview on the activities that will be carried out in the frame of SEAMLESS, and by which partners.

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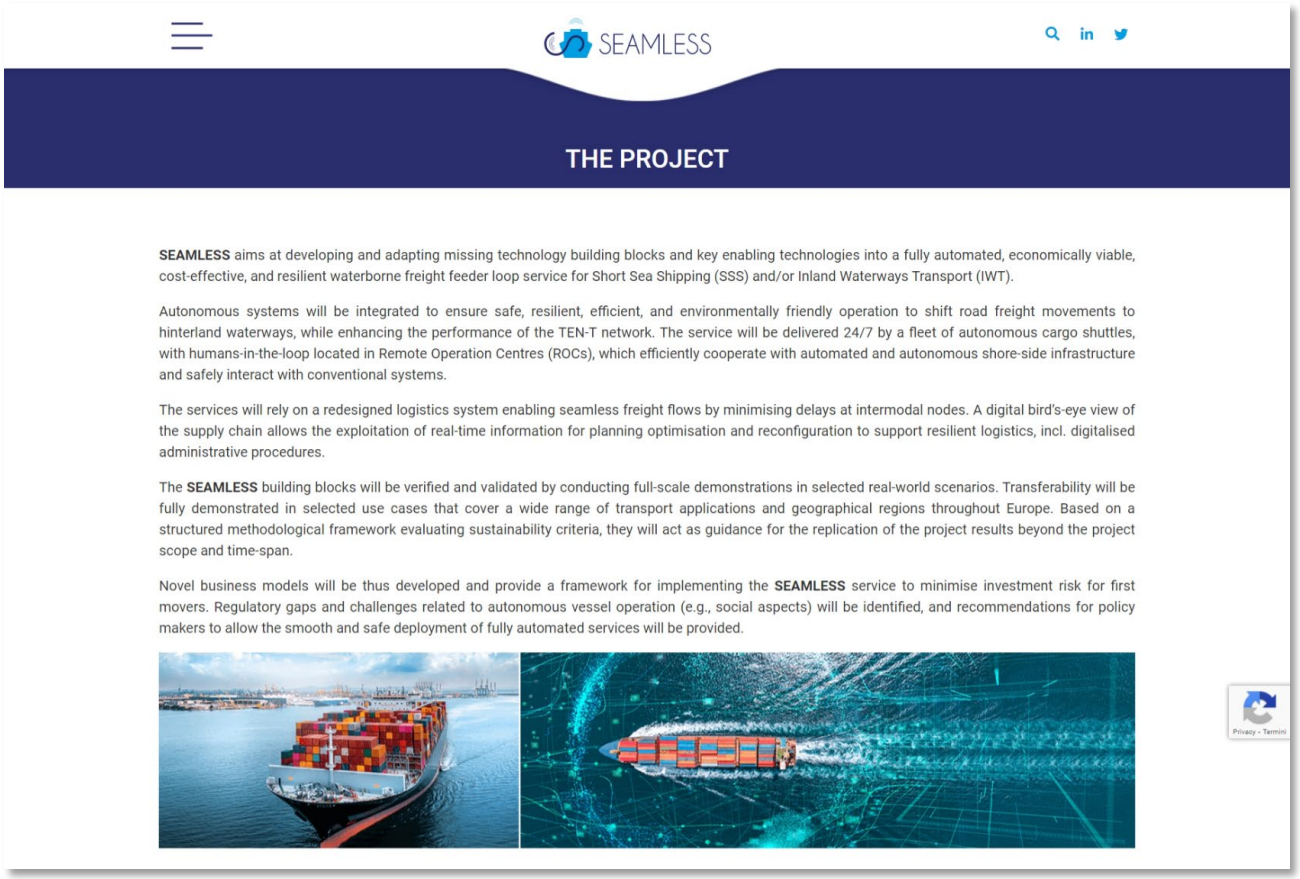

Figure 5: The project page

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Figure 6: Objectives page

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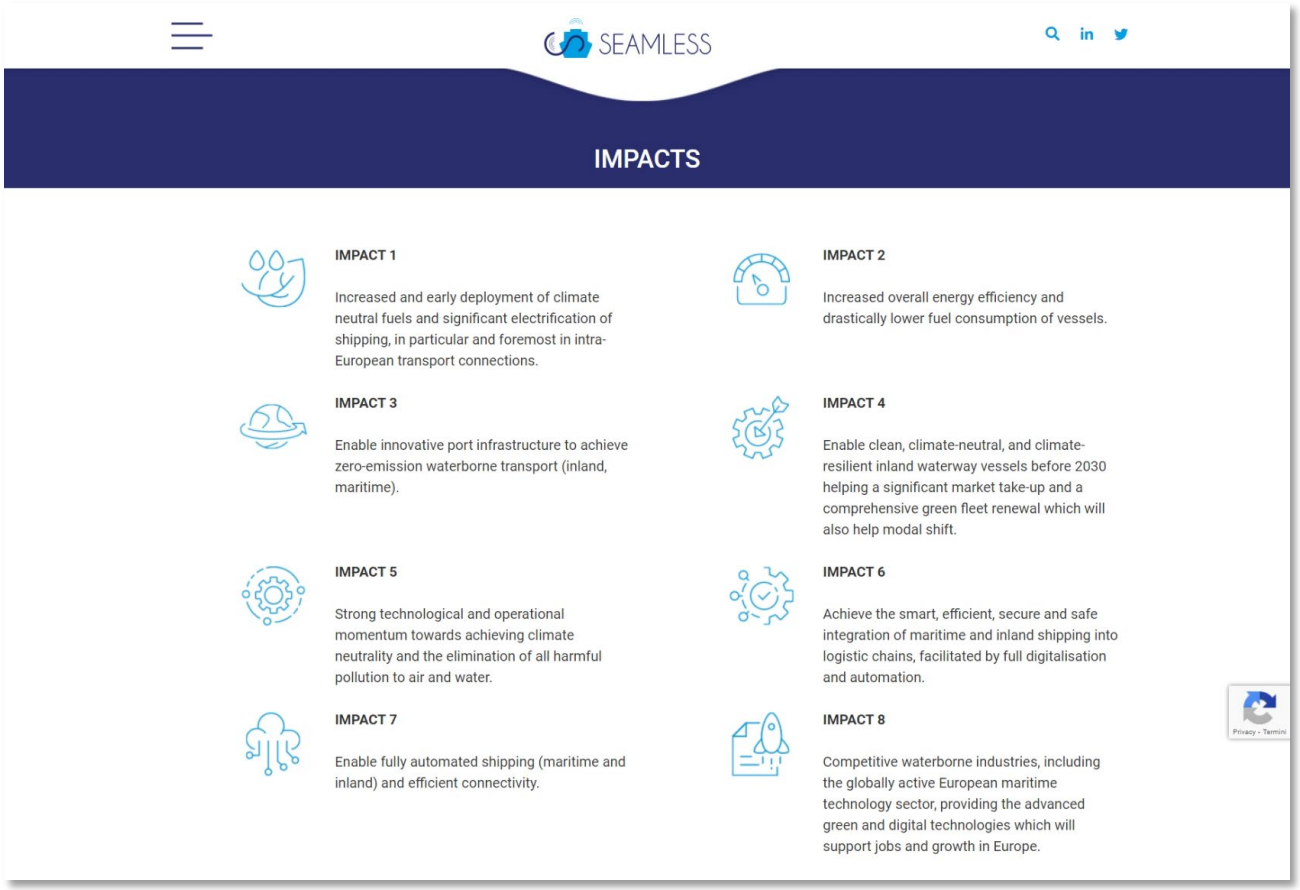

Figure 7: Impacts page

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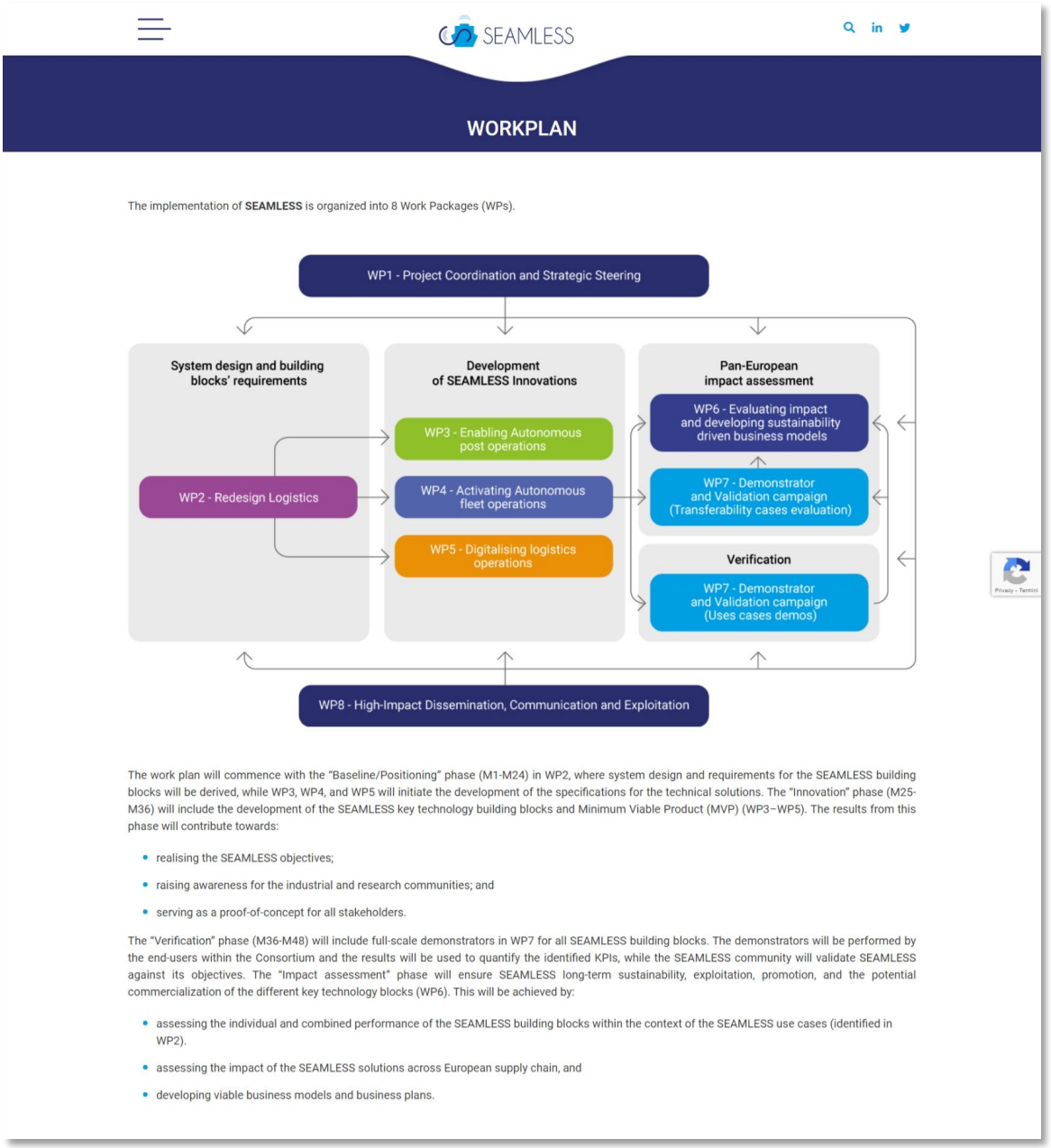

Figure 8: Workplan page

3.2 'CONSORTIUM' PAGE

The "Consortium" page offers a description of all the organizations involved in SEAMLESS and the role they play within the project, and it displays their corporate logo and link to the corporate website.

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Figure 9: Consortium page

3.3 METHODOLOGY

This page provides details on the methodology used to redesign the logistics system to support seamless, safe, synchromodal, resilient cargo transport with improved efficiency for servicing the hinterland.

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Figure 10: Methodology page

3.4 'DEMO & TRANSFERABILITY CASES' PAGE

The 'Demo & Transferability Cases" page provides 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.

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SEAMLESS

DEMO & TRANSFERABILITY CASES

Demonstration UCs

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, which are divided into:

1. two full-scale demonstrations in real-world conditions for SSS and IWW, which aim to verify the target TRL for the SEAMLESS building blocks, and
2. five transferability use cases, which aim for the replicability of the SEAMLESS business models and assess the impact of the SEAMLESS service concept throughout different regions of Europe.

	UC #1: Northern Europe (SSS)	UC #2: Central Europe (IWT)
Location	• *Bergen > 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, which is Norway's second largest port in tonnage and currently located within city limits, is expected to be moved in 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.	Modal equilibrium remains an unresolved problem for Europe. Even though the EU has been trying to address this predicament since 2001, the modal swift towards IWT has been unsubstantial to date. The main barriers of adopting 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.
Approach	The UC involves a potential future system of three feeder loops serving the city of Bergen: • a direct feeder loop between Bergen and Ågotnes (green- roundtrip, 22 nm), • northern hinterland (blue, 115 nm) • and southern hinterland (red, 88 nm). 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 are expected to be put in service in 2022 (Q3), 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). 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	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 swift 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. 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
Enabling Partners	*SO – leader of the UC* *KMNO – design and implementation of the ROC and development of the necessary SW/HW* *MCGFI – validate the autonomous triple joint container handling crane that will utilise the automated stowage plan SW.* BERGEN – provide producers for the demonstration area (including reportion points, requirements, berthing protocols) *ASKO – provide vessels, crew for manning vessel, operators for the ROC, agree on port services*	ZULU – leader of the UC, provide vessel DST – provide its Port Research Lab for the live coordination and control of the Use Case and lead the scientific analysis from economic/logistics, nautical, and ecological viewpoints POA and PODU – provide port infrastructure MCG – provide the autonomous mooring system. AWAKE.AI – develop and demonstrate the AVSPM Sandbox. ISL – provide the necessary logistics operations, legal and regulatory provisions, and RIS technology. VNF and IDIT – provide legal and regulatory support and support the RIS development.
Resources required	Three vessels for demonstration of ROC low-attention operations, autonomous mooring equipment, autonomous crane, truck trailers, ROC installation, vessel crew, ROC operators	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.
Transferability Potential	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.	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 unexploited and, thus, hindering the potential capabilities of a continuous freight transport chain that will connect the North Sea with the Black Sea.

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. 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.

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.

Apart from the system perspective on evaluation, the individual SEAMLESS key technology building blocks require functional testing on component level. An indicative example of this implementation would be the assessment of individual systems components, such as the Automooring System, which will follow the specifications from the structured evaluation framework and be conducted in the respective technical work packages. Similarly, the evaluation of the demonstrator use cases will align with structured evaluation framework.

Figure 11: demo & transferability cases page

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3.5 'NEWS & PRESS' PAGE

This section will be regularly updated with news and short press releases that described the project achievements.

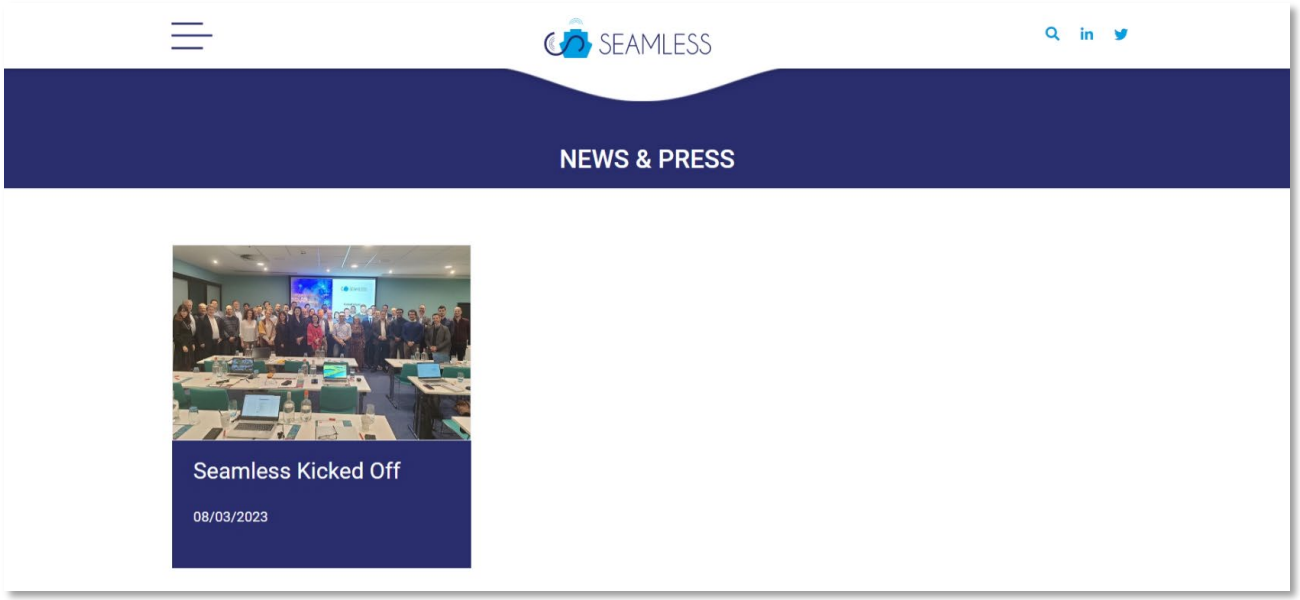

Figure 12: News & Press page

3.6 'EVENTS' PAGE

The "Events" page has been conceived as an archive of the most interesting events related to the project scope that the consortium might find interesting to attend.

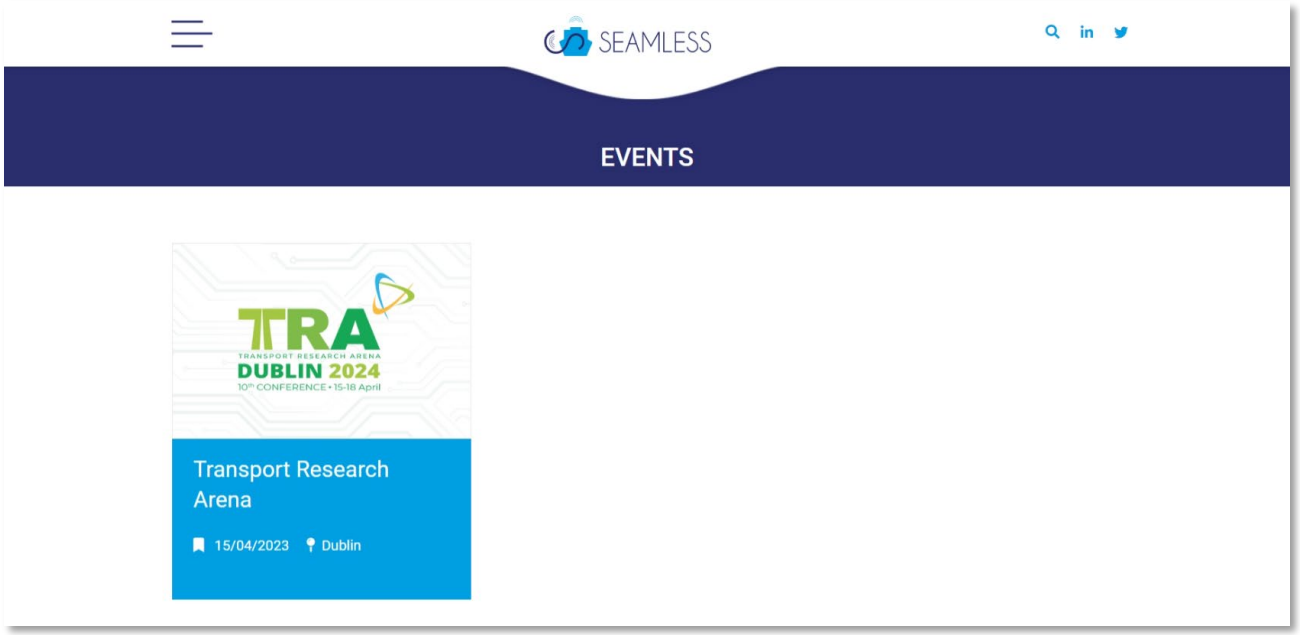

Figure 13: Events page

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3.7 '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, such as

- Public deliverable,
- Publications/Articles,
- Newsletters,
- D&C Materials.

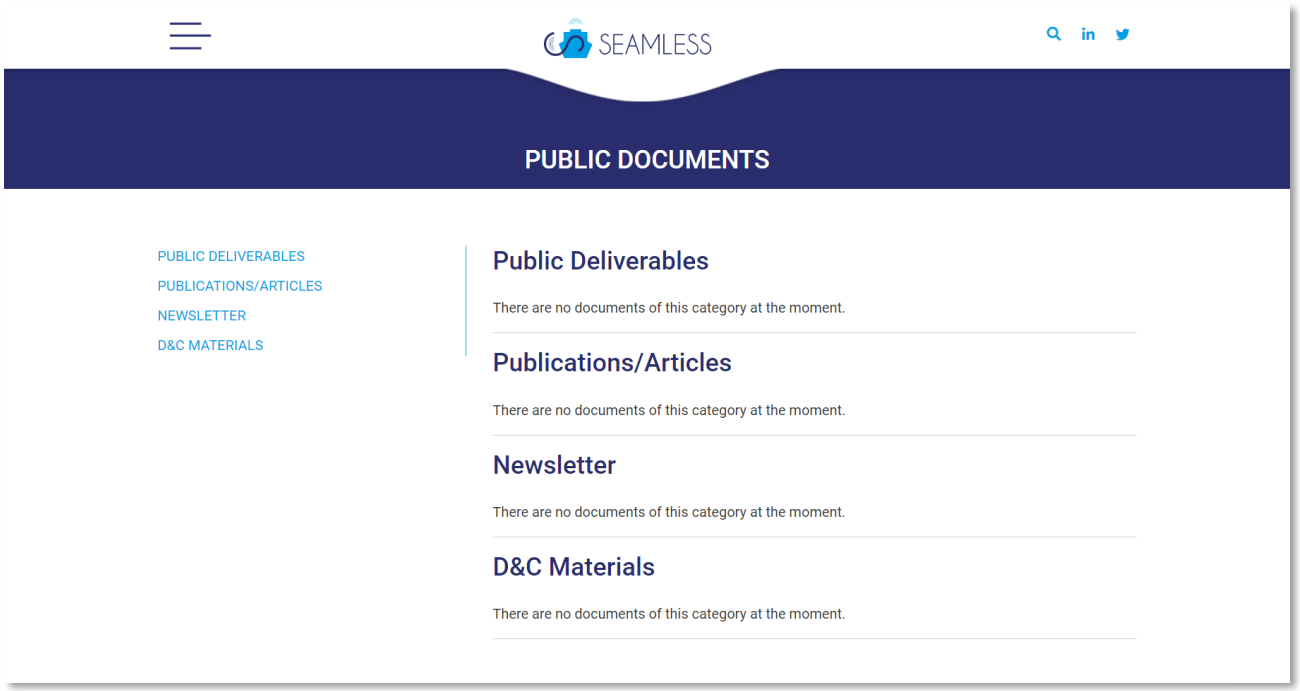

Figure 14: Public documents page

3.8 'RELATED PROJECTS' PAGE

This section of the website will display the information related to EU funded projects similar 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.

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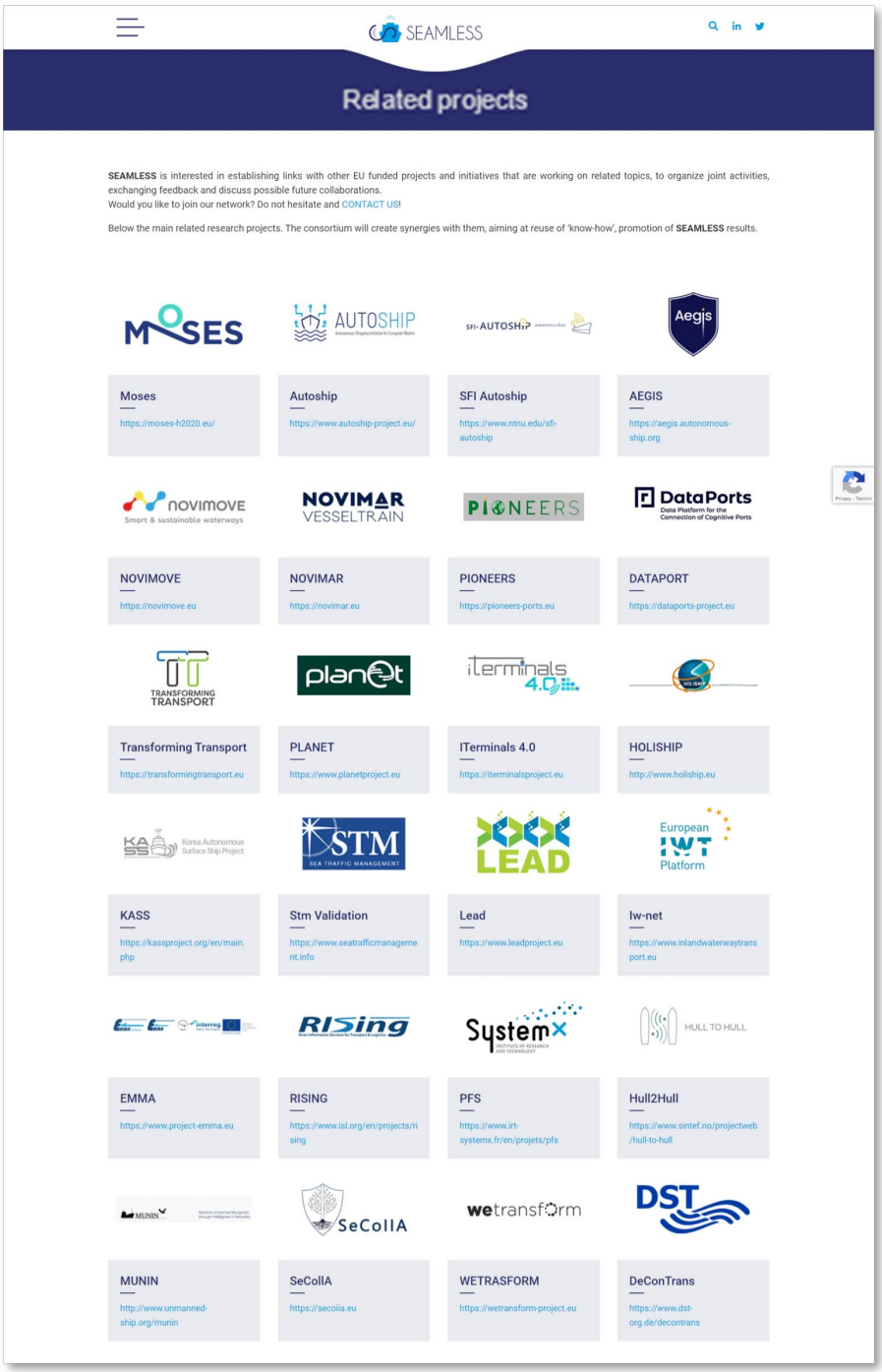

Figure 15: Related projects page

In order to make this page catchier, PNO – in accordance with NTUA, the project coordinator, will rearrange the contents to create a dynamic map of the sectors and projects taken into consideration for this activity.

The update version of this page will be described in deliverable D8.4 D&C Plan updates - Rev 1, to be submitted in M12.

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3.9 'CONTACT US' PAGE

The 'Contact Us' page has been structured to allow the website visitors to get in contact with the SEAMLESS coordinator to ask for more information. A simple contact form has been included, and once completed will arrive as an email to the project coordinator.

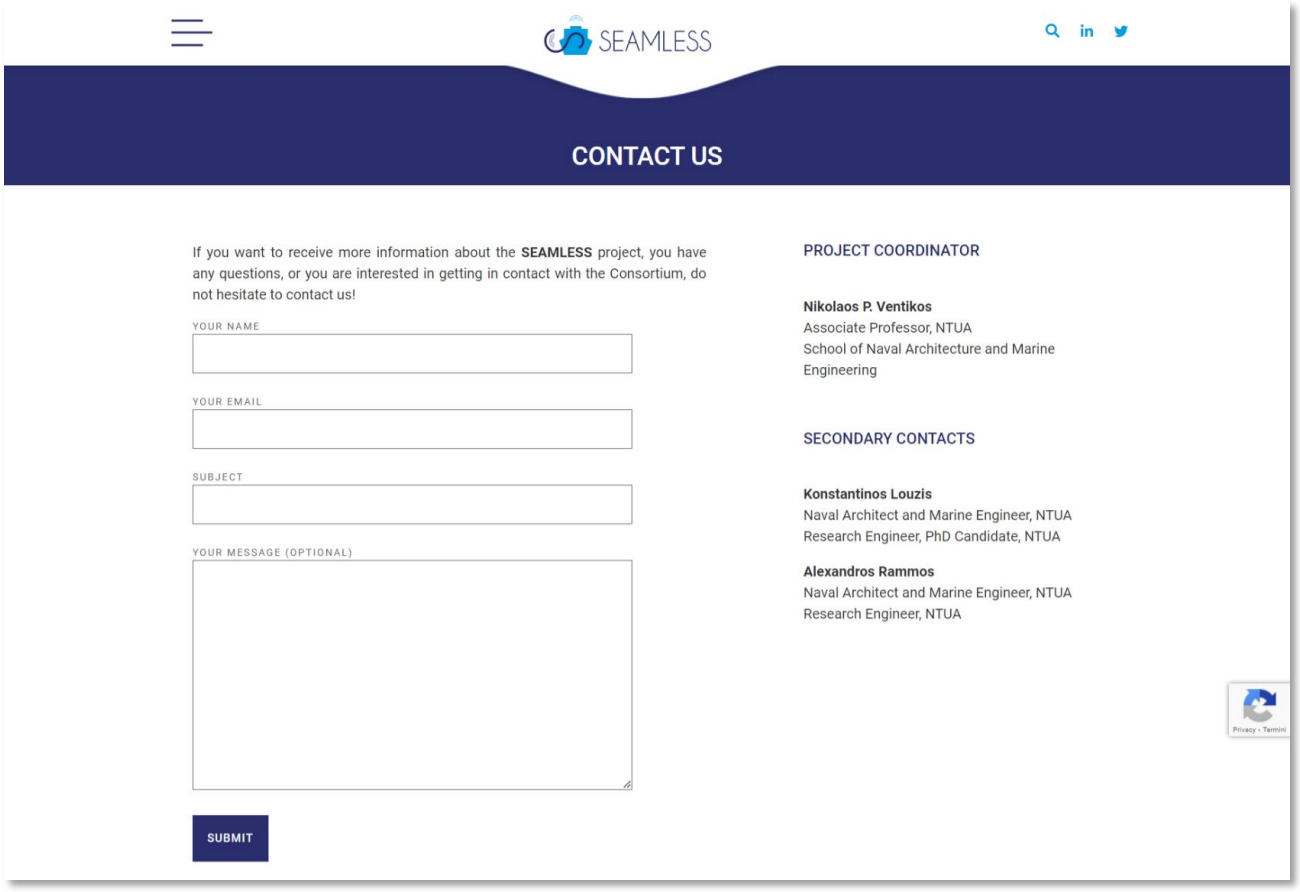

Figure 16: Contact us page

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4 CONCLUSIONS

SEAMLESS's website represents a key tool to strengthen the project's image and multiply the dissemination effort's reach to diversified audiences - including relevant industry actors, policymakers, research communities, and general public as well, not only by providing relevant project information and knowledge, but also by assisting as a powerful communication tool, enabling interested readers to know the project's accomplishments, to download all project public deliverables, to discover opportunities to see SEAMLESS's presentations or papers, to learn more about the partners involved and to get in contact with the project's coordinator.

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