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D1. 1 - PROJECT ADMINISTRATIVE AND FINANCIAL MANAGEMENT PLAN

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LIST OF ABBREVIATIONS

Abbreviation	Meaning
AB	Advisory Board
DoA	Description of Action
EB	Executive Board
EC	European Commission
PC	Project Coordinator
PMs	Person Months
GDPR	General Data Protection Regulation
WP	Work Package

EXECUTIVE SUMMARY

This document describes the project administrative and financial management procedures that apply to SEAMLESS. The project management plan is a joint responsibility of all project partners until the complete discharge of all obligations under the EC Grant Agreement in order to guarantee transparency and commitment from all engaged partners and thus facilitate a successful delivery of project results and maximise the impact of SEAMLESS. It assures that the project will meet its entire objectives on time, on budget, and with outstanding quality results. The plan presented hereafter consists of planned and systematic processes and steps, schedule per task, responsible partner related subtasks, related deliverables, dependencies, Gantt chart and work breakdown structure, project bodies, communication and reporting. Moreover, it is going to be used to monitor the corrective actions employed to verify that agreed procedures are in place and are being adequately implemented.

1 INTRODUCTION

1.1 BACKGROUND

Deliverable D1.1 Project Administrative and Financial Management Plan is part of Work Package 1 “Project Coordination and Strategic Steering”.

1.2 PURPOSE AND SCOPE

The purpose of this document is the description of the project management plan that will apply along the project implementation stages. The plan aims to promote the active involvement of consortium members, exploiting partners’ expertise to the maximum, reducing the decision-making time, which is crucial for achieving the SEAMLESS objectives.

In more detail, the Project Management Plan objectives are:

- Define responsibilities and processes for the smooth execution of the action
- Ensuring effective monitoring of progress
- Discovering deviations from project planning in an early stage
- Initiating remedial actions (if necessary) as soon as possible

The Project Coordinator serves as the point of contact for all SEAMLESS partners and the SEAMLESS management boards.

Project Management tasks are divided into phase-specific and non-phase specific tasks. Phase-specific tasks are related to the life cycle phase of the project while non-phase-specific tasks (e.g., T1.1, T8.1) are remaining the same throughout the project regardless of the specific phase as presented in the following list:

- Project Organization Structure
- Project time plan and interdependencies
- Project Monitoring
- Collaboration among partners and internal communication
- Decision and conflict resolution process

1.3 STRUCTURE OF THE DOCUMENT

The structure of the document is as follows:

- Section 2 presents the overall project structure of the project, together with the project bodies, the main roles and the responsible persons.
- Section 3 describes the collaboration among partners, including the decision making and conflict resolution process and the communication among partners
- Section 4 includes the work breakdown, schedule and time management, including deliverables, milestones and Gantt Chart.

2 PROJECT ORGANIZATION

2.1 PROJECT MANAGEMENT STRUCTURE

Project management in SEAMLESS is based on three major principles:

- **Principle of exploratory innovation:** Create a flexible project structure that will foster innovation and the efficient iterations between the different project stages to ensure excellence in value delivery.
- **Principle of leading-edge Project Management Instruments:** Apply international operated and state of the art management and project risk management instruments (e.g., communication tools) and establish strong research commitment of entire team.
- **Principle of binding decision provisions and agreements upon all partners:** Arrange spots of decision-making close to responsible level of execution and elevate if necessary. Provide reliable and trusted agreements to protect intellectual properties of all partners.

The organisational structure of the Consortium comprises the following Consortium Bodies (Figure 1):

- **Executive Board:** is the supervisory body for the execution of the Project, which shall report to and be accountable to the General Assembly.
- **General Assembly:** is the ultimate decision-making body of the consortium.
- **Project Coordinator:** is the legal entity acting as the intermediary between the partners and Granting Authority.
- **Technical Committee:** is responsible for supervising and controlling the technical implementation of the project. It consists of WP leaders.
- **Advisory Board:** takes the role of consultant and will advise on strategic directions of the project and provide an external view. The Advisory Board will also include organisations who have expressed interest in participating to the project developments, including the Reference Group (i.e., organisations that have provided Letter of Support during the Project's proposal stage and possibly later during the project's implementation).
- **Transferability Forum:** responsible for supporting the execution of transferability use cases and transferability assessment, by providing data and network contacts relevant to each use case.

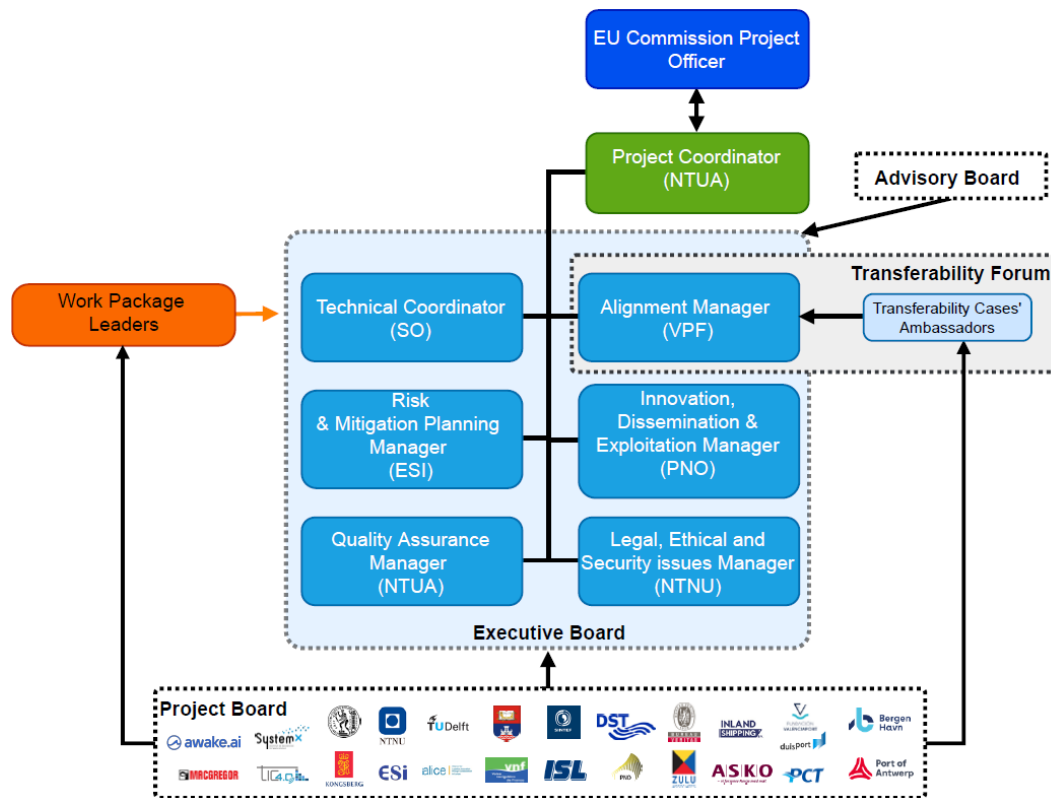


Figure 1 Organizational Structure

2.2 PROJECT BODIES AND MAIN ROLES

2.2.1 Executive Board

The Executive Board (EB) is responsible for the planning, execution and controlling of the project. More specifically the EB operates under the supervision of the Project Coordinator and encompasses the following activities: a) Administration and scientific coordination activities, b) Implementation of all action plans, c) Establishing a budget and schedule controlling system, d) Implementation of a 360° quality assurance system, e) Providing clear guidance on Intellectual Property issues, f) Developing and maintaining a communication and reporting attitude, g) Creation of efficient team structures to minimize the number of meetings while being flexible.

The Executive Board consists of:

- Project Coordinator (NTUA):** The Project Coordinator (PC) is responsible for the overall management, communication, and coordination of the project and will chair the two main project bodies, the Project Coordination Team and the General Assembly. The Project Coordinator is the only official channel that interacts with the European Commission, especially with regards to the submission of deliverables, aspects related to third parties and the SEAMLESS Consortium. The project manager is supporting the Project Coordinator in the day-to-day project management activities.

- **Technical Coordinator (SO):** This role will ensure that the scientific and technological objectives of the project are met.
- **Risk and Mitigation Planning Manager (ESI):** The Risk and Mitigation Planning Manager is responsible for the identification and assessment of emerging risks (risk register) and for developing strategies to manage those risks (mitigation strategy plan) during each phase of the project. The risk register and mitigation strategy plan will be updated at regular time intervals, for example during Executive Board meetings or at any important milestones when the Risk and Mitigation Planning Manager considers risk planning needs an amendment or status update.
- **Quality Assurance Manager (NTUA):** The Quality Assurance Manager is responsible for the implementation of the quality procedures determined in the Quality Plan and the verification of the project results.
- **Alignment Manager (VPF):** The Alignment Manager is responsible for supervising the Transferability Forum, by harmonising the actions of the Ambassadors.
- **Ambassadors (VNF, POA, PNO, PCT, INLS, VPF):** Ambassadors are responsible for collecting input data relevant to the transferability assessment and engaging local stakeholders within the project's activities.
- **Innovation, Dissemination and Exploitation Manager (PNO):** The Innovation Manager is responsible for managing the knowledge produced during the project lifecycle, the execution of the overall exploitation plan of the project and support the partners in setting up their individual business plans, in order to exploit the results of SEAMLESS. The role of the Dissemination and Exploitation Manager encompasses all dissemination and communication actions of the project, including contact with stakeholders and synergies with other projects and initiatives. All partners that perform any dissemination activities should report them.
- **Legal, Ethical and Security issues Manager (NTNU):** The Legal, Ethical and Security issues Manager is responsible to monitor the compliance of the project activities in respect to ethics, legal, privacy and data protection norms (including GDPR).

Table 1 Project Coordination team

Project Role	Partner	Person
Project Coordinator	NTUA	Nikolaos P. Ventikos
Project Manager	NTUA	Alexandros Rammos
Technical Coordinator	SO	Odd Erik Mørkrid
Risk and Mitigation Planning Manager	ESI	Elias Chatzidouros
Quality Assurance Manager	NTUA	Konstantinos Louzis
Alignment Manager	VPF	Jorge Lara López
Innovation, Dissemination and Exploitation Manager	PNO	Marco Molica Colella
Legal, Ethical and Security issues Manager	NTNU	Børge Rokseth

2.2.2 Technical Committee

The Technical Committee is led by the Project Coordinator and consists of the coordination team (Table 1) and the Work Package (WP) Leaders (Table 3). Technical Committee Members are permanent for the project duration, except if they wish to leave the Technical Committee themselves or because of EU intervention. The Technical Committee will oversee the project progress and decide upon all relevant technical and administrative issues, such as: redirection of work in a WP, major transfer of resources across WPs or Partners (over 20%), technological choices, changes in time plans, substitution or exclusion of an existing Partner, or resolution of conflict between different WPs. All Technical Committee Members will have a single vote. In case of equal votes, the vote of the Project Coordinator will be the decisive one. This consortium body will meet (remotely or physically) at least every three months with the participation of all WP Leaders.

2.2.3 General Assembly

The General Assembly consists of the representatives of all Partners, each having one vote, as presented in Table 2. It is led by the Project Coordinator, who has the decisive vote in case of equal votes. The board will meet once per year (i.e., plenary meeting) to review and plan project work. Any partner may raise issues. General Assembly is the ultimate decision-making body of the Consortium.

Table 2 General Assembly

Partner Organization	Person
NTUA	Nikolaos P. Ventikos
TUD	Rudy Negenborn Vasso Reppa
BERGEN	Even Husby
TIC4.0	José Andrés Giménez Maldonado
ZULU	Antoon Van Coillie
SO	Odd Erik Mørkrid Håvard Nordahl
PNO	Marco Molica Colella
NTNU	Børge Rokseth
MCGFI	Janne Suominen
MCGNO	Hugo Rosano
ISL	Patrick Specht
IRTSX	Lionel Scremin
VPF	Jorge Lara López
PODU	Jan Maas
DST	Cyril Alias
VNF	Fionn Halleman
ESI	Elias Chatzidouros
ASKO	Kai Just Olsen
ALICE	Tomas Ambra

Partner Organization	Person
INLS	Paul Ivanov
POAB	Bob Spanoghe
FTTE	Vladislav Maras
KMNO	Ketil Paulsen Morten Ingebretsen
BV	Jerome Faivre
AWAKE.AI	Karno Tenovuo
PCT	Michael Kotras

2.2.4 Advisory Board

In order to maximise user influence on project developments at all levels, an Advisory Board (AB) will be set up during the first 12 months of the project. Participation in the SEAMLESS AB will be mainly by practitioners and experts from the maritime industry and the market. The establishment of the advisory board is part of Task 1.5. A template for inviting project advisory members has been created that is used for officially invite people/organisations to join the advisory board (Annex I). The board will meet annually under the responsibility of Project Coordinator.

2.2.5 Other Project Roles

Work Package Leaders: Work Package Leaders are responsible for managing their WP as a self-contained entity. The scope of their responsibilities includes amongst other things coordinating, monitoring, and assessing the progress of the WP to ensure that output performance, costs, and timelines are met. In cooperation with the Task Leaders and other related Work Package Leaders of the same subproject or other subprojects, they are responsible for the integration of their results into succeeding work packages or tasks.

The project's partners that undertake the roles of the WP leaders and Task Leaders are as follows:

Table 3 WP Leaders

WP No	WP Title	Lead Partner
1	Project Coordination and Strategic Steering	NTUA
2	Redesigning Logistics	ISL
3	Enabling Autonomous port operations	MCGFI
4	Activating Autonomous fleet operations	KMNO
5	Digitalising logistics operations	VPF
6	Evaluating impact and developing sustainability-driven business models	NTUA
7	Demonstrator and Validation Campaign	SO
8	High-Impact Dissemination, Communication and Exploitation	PNO

Table 4 Task Leaders

Task No	WP Title	Lead Partner
1.1	Project administrative and financial coordination	NTUA
1.2	Project technical steering	SO
1.3	Quality control and risk management	NTUA
1.4	Data and Ethics Management	NTNU
1.5	Advisory Board and Reference Group	NTUA
2.1	SEAMLESS Use Cases	ISL
2.2	Challenges and Gaps in the Legal and Regulatory Framework	VNF
2.3	Reference logistics system architecture and standards	DST
2.4	Simplification of complex administrative procedures	ISL
2.5	Concept of Operations and requirements for SEAMLESS Building Blocks	SO
3.1	SEAMLESS autonomous cargo handling system	MCGFI
3.2	SEAMLESS autonomous mooring system	MCGNO
3.3	SEAMLESS Automated cargo voyage planning and stowage execution platform	CTOFj
3.4	Concepts for automated port interfaces and intermodal cargo forwarding to the hinterland	VPF
3.5	Operational safety and security assessment	NTUA
3.6	Autonomous Vessels Smart Port Manager	AWAKE.AI
4.1	Development of green concept designs for Autonomous Vessels	ESI
4.2	Development of Autonomous vessels GNC scheme	TUD
4.3	Simplification of risk-based approval procedures	NTNU
4.4	Design and Develop Physical Remote Operation Centre (ROC) Infrastructure and System (Planning, Management and Control)	KMNO
4.5	Vessel Autonomous Control Systems	KMNO
4.6	Communication and Edge IOT	KMNO
5.1	Specifications, systems architecture, and design	VPF
5.2	Definition of the architecture for cyber-secure communication	IRTSX
5.3	Computational engine for resilient logistics	NTUA
5.4	Implementation of the ModalNET platform	VPF
6.1	Identification and development of the Key Performance Indicators (KPIs)	NTUA
6.2	Financial and economic analysis	PNO
6.3	Societal and Environmental impact assessment	NTUA
6.4	Development of the SEAMLESS business models	VPF
6.5	Identification of new skills, competences, and acceptability analysis	VNF
6.6	Evaluation of the SEAMLESS Transferability Cases	DST
7.1	Demonstration and Transferability Scenarios and validation plan development	SO
7.2	Subsystems experimentation and integration tests	SO
7.3	Northern European Demo Case: Planning, Integration Activities, and Implementation	SO
7.4	Central European Demo Case: Planning, Integration Activities and Implementation	ZULU

Task No	WP Title	Lead Partner
7.5	TRL/SRL Validation, Demo Evaluation, lessons learnt, best-practises and Standardisation	NTUA
8.1	High impact Communication strategy and activities	PNO
8.2	Scientific dissemination	TUD
8.3	Exploitation of Results and Innovation Management	PNO
8.4	Liaison with the logistic sector and engagement	ALICE
8.5	Policy recommendations for a fully automated, seamless feeder loop service	VNF

3 COLLABORATION AMONG PARTNERS

3.1 DECISION MAKING AND CONFLICT RESOLUTION

Decisions will normally be taken by the responsible team members and organisation bodies based on the description of work to be performed, as stated in the Contract, the Consortium Agreement, the Description of Action (DoA) and the Deliverable D1.2- Project Quality and Risk Management, as communicated regularly, and the individual Work Package or Task plans. In case there is a dispute between two or more team members, an escalation procedure must be followed as presented in this section. In the course of the project the consortium will have to agree on and develop technical, scientific and commercial ideas and specifications. Agreement will be reached first by informal contact, followed by official confirmation via electronic mail, letter or agreed as presented in Conflict Resolution section. For important issues, the agreement may take the form of a short report that needs to be signed by those responsible for decision-making. Non-technical factors such as resource allocation and contractual terms will also need to be agreed and documented. Technical issues/conflicts within given contractual commitments that do not involve a change of contract, a change of budget and/or a change of resources will be solved on the WP level first. If the decision being taken is unacceptable to partners found in the minority positions, the resolution of the conflict will be escalated according to the path as specified in Figure 2.

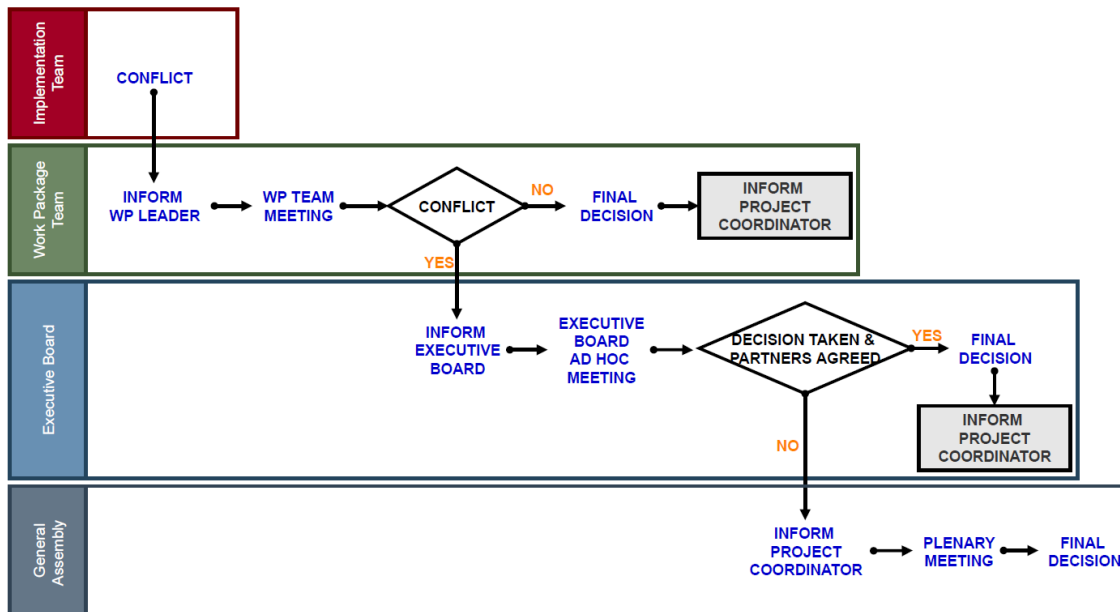


Figure 2 Conflict Resolution Process

3.2 COMMUNICATION AMONG PARTNERS

3.2.1 Information Flow

Information flow within the Project is ensured by:

- A. The exchange of emails as well as technical and business documents
- B. Notification of relevant new publications in the literature, or by the standard bodies
- C. Reports from meetings, participation at events and external meetings.

All technical documentation generated by the Project are exchangeable in electronic format, according to a set of guidelines to be agreed upon and will be described in the Project Quality and Risk Management that will be submitted in Deliverable D1.2 (guidelines for deliverable naming & classification). The Quality Assurance Manager will enforce adherence to these guidelines.

Exchange of information occurs by e-mail, file transfer over Internet and shared on-line documents. The basis of the project communication lays upon the adoption of mailing lists mainly one for technical and business development matters and a closed one for administration and evaluation purposes.

Sub lists will also be incorporated in the communication procedure to enhance WP operation and to address specific project related issues (Table 5). Ordinary mail will be used for strictly formal correspondence, i.e., when executive signatures are required. Adherence to the agreed communications standards will be enforced by the Project Coordinator and the Quality Assurance Manager.

Table 5 SEAMLESS Mailing Lists

Mailing List	Description
SEAMLESS.ALL@lists.ntua.gr	For subjects concerning entire consortium: admin, financial, legal, announcements, plenary meetings etc.
SEAMLESS.Technical@lists.ntua.gr	For subjects concerning the Work Package Management & Work Package Leaders
SEAMLESS.Project.WP1@lists.ntua.gr	For subjects concerning WP1
SEAMLESS.Project.WP2@lists.ntua.gr	For subjects concerning WP2
SEAMLESS.Project.WP3@lists.ntua.gr	For subjects concerning WP3
SEAMLESS.Project.WP4@lists.ntua.gr	For subjects concerning WP4
SEAMLESS.Project.WP5@lists.ntua.gr	For subjects concerning WP5
SEAMLESS.Project.WP6@lists.ntua.gr	For subjects concerning WP6
SEAMLESS.Project.WP7@lists.ntua.gr	For subjects concerning WP7
SEAMLESS.Project.WP8@lists.ntua.gr	For subjects concerning WP8

The following guidelines should be respected by the partners in all internal email correspondence:

- Messages should be kept concise and relevant to the subject, but should include enough information to convey the intended meaning unambiguously.
- Different points should be elaborated upon in different paragraphs. When multiple issues are brought up, they should be clearly distinguished, numbered and organised in sections. Consecutive responses should refer to the structure/numbering of the original message.
- The recipients of each email message should be selected based on the relevance to the subject and the role of each contact point in the project. The mailing lists can facilitate this process.
- When forwarding or re-posting information communicated by another party, the original content needs to be preserved verbatim and the source needs to be clearly referenced, while explicit permission needs to be obtained in advance from the involved party.

All E-mail subject headings must start with the text “SEAMLESS”. Additional tags can be added to specify relevant work packages, tasks, and deliverables where appropriate, and if deemed useful.

The project will use the Microsoft Teams platform online management and collaboration software, which provides a document repository system and platform of project management tools.

The following figures (Figure 3 and Figure 4) illustrate dedicated channels, indicative folders and the data management structure of the project management and document repository tool (via Microsoft Teams), which are accessible only by consortium members.

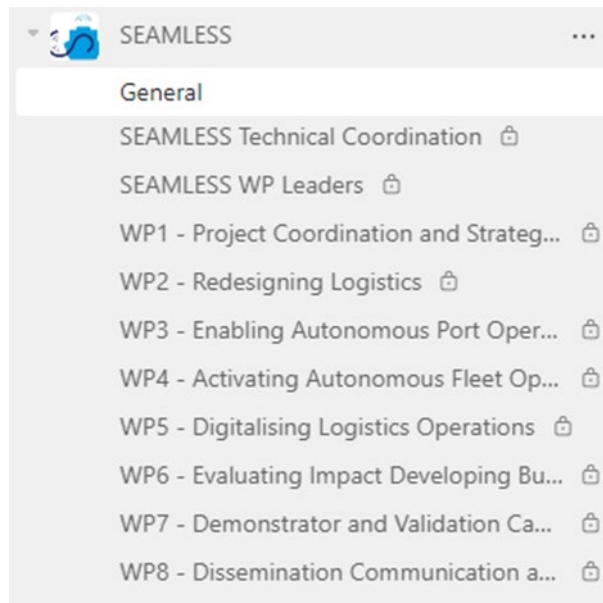


Figure 3 Channels dedicated to SEAMLESS

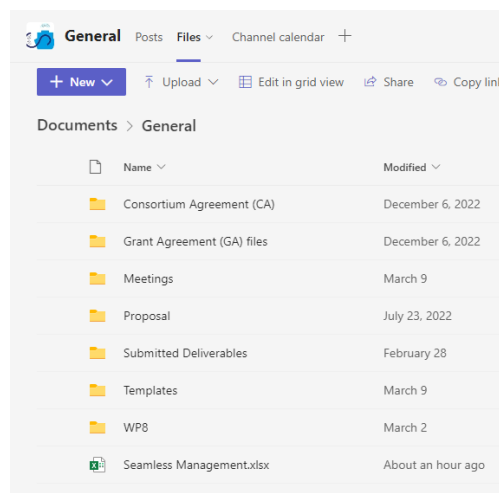


Figure 4 SEAMLESS Document Repository Structure of General Channel

3.2.2 Meetings

The Executive Board will convene every four months to discuss project progress. General Assembly meetings will take place at least once a year (target: every six (6) months). WP technical meetings will take place whenever required and certainly twice per year in conjunction with the plenary meetings. All meeting arrangements will be communicated to the partners in due time, while timing and location, conference call will be chosen efficiently to minimise travel costs. Other meetings such as WP meetings with expected duration of two days will be co-located with plenary meetings for reasons of economy. In addition, e-mail, web-conferencing and telephone will be used as the key means for internal communication and documentation exchange. The Microsoft Teams and Webex platforms can be used for online meetings.

The following table summarizes an indicative timetable of the various project meetings:

Table 6 Meetings

Project Body	Participants	Possible Meeting Objectives	Meeting Frequency
Technical Committee Meetings	-Project Coordinator -Project Manager -Technical Coordinator -Risk and Mitigation Planning Manager -Quality Assurance Manager -Alignment Manager -Innovation Manager, Dissemination and Exploitation Manager -Legal, Ethical and Security issues Manager -WP Leaders	Supervision of the project progress and time plans Deciding upon all relevant technical and administrative issues Conflict Resolution Inclusion of a new Partner, substitution or exclusion of an existing Partner	At least every three months
General Assembly Meetings	-Project Coordinator -Representatives from all the partners	Review and plan project work	At least once a year
Executive Board Meetings	Executive Board & other parties in certain occasions	Review and plan project work Conflict Resolution issues	Every four months
WP Technical Meetings	-WP Leader -Representatives from the partners technical teams	Monitoring WP progress Specific technical scopes and transfer of knowledge	Whenever required

3.3 CONSORTIUM REPORTING TO CHECK PROGRESS

Apart from the deliverables and formal financial statements, internal periodic activity reports will be compiled every six months. Each partner will report progress to the PC on a six-month basis, covering technical progress, results, deliverables, dissemination, exploitation and quality aspects, as well as compliance with the work plan. Progress will be reported in terms of approximate man-hours spent, work performed, deviations from agreed time scales and corrective actions. These reports will be informal and only for internal project use, providing an indication of the project progress. The PC will summarise overall project progress, updating planning charts and manpower records and deliver the reports to the partners. These reports may then be delivered to the EB for approval and to the EC for monitoring (when the formal Interim and Final Management Reports to the EC are not due).

The guidelines for collecting and filling in the internal reports are as follows:

- Each Work Package Leader is responsible to collect and fill in the required fields in the report excel file.
- Each Task Leader should provide the relevant information to the WP leader.
- It is up to the WP leader how to collect the required data (e.g. by organizing telco, request by email, use the spreadsheet file etc.).
- The report should be short and precise on what has been implemented for the Past 6-Month and what is planned to be implemented for the Next 6-Month.
- At WP level, the report should include general information about actions related to the WP management.
- At Task Level, it should include information about task related actions.
- WP leader collects and validates provided information; ensures that any critical information/outcome is not missing and finally copies the content in the respective WP/Task description cells. Important information about order placement, acquisition of required equipment etc. and other important information related to the action should be included.
- Dissemination activities (conference participations, publications etc.) will be collected by the Dissemination manager and will be reported.
- The Project Coordinator will send a reminder by email on the last working week of each 6-month period to the WP leaders, so as to start collecting the required information.
- Inactive WPs and tasks do not need to add any description.
- Filling in the report starts at the month the WP/task begins.
- Delays in deliverables submission, as well as not meeting milestones should be justified.
- WP Leaders should collect, consolidate and upload the excel file by the end of the 1st week of each month in the respective WP folder in Microsoft Teams.

The following information should be included in the monthly control report:

- Deliverables: Deliverable status in Past 6-Month period (Name of Deliverable: Dx.x, Lead Beneficiary, Status: ToC, D: Draft, R: Under Review Process, S: Submitted)
- Deliverables Planned for Next 6-Month period (Name of Deliverable: Dx.x, Lead Beneficiary, Status: ToC, D: Draft, R: Under Review Process, S: Submitted)
- Milestones: Milestones met Past 6-Month period, Milestones to be met Next 6-Month period
- Meetings/Telcos: Indicate date and Title of the Meetings/Telcos in Past 6-Month period and to be realized in Next 6-Month period. Only WP/task-related meetings/Telcos should be mentioned here.
- General Assembly meetings, WPL meetings etc. will be reported by NTUA.

Interim control reports (internal) will be submitted by each partner to the Project Coordinator by the 1st week after the end of each six-month period. Partners should list all contributions, publications and meeting attendance details, which can help in understanding the provided effort and cost figures.

3.4 TECHNICAL AND FINANCIAL REPORTING TO THE EC

Annual periodic progress reports will be the main reporting tool to the EC based on Horizon Europe guidelines.

There are three reporting periods:

- Reporting Period 1: covering month 1 to month 18
- Reporting Period 2: covering month 19 to month 36
- Reporting Period 3: covering month 37 to month 48

The periodic technical report will include the work carried out per WP, overview of progress, explanation of deviations, exploitation and dissemination, summary, questionnaire on impact, detailed PMs and resources spent per WP and beneficiary.

The Periodic financial report will include: the financial statements and explanation of use of resources by each beneficiary and linked third party.

In more detail, the Final Financial Report consists of:

- Explanation of the use of resources and the information on subcontracting and in-kind contributions provided by third parties from each beneficiary for the reporting period concerned.
- A “final summary financial statement”, created automatically by the electronic exchange system, consolidating the individual financial statements and the information on the use of resources, including the request for payment of the balance.
- A “certificate on the financial statements” (drawn up in accordance with Annex 5 of the GA) for each beneficiary, if it requests a total contribution of EUR 430 000 or more, as reimbursement of actual costs and unit costs calculated on the basis of its usual cost accounting practices (see Article 5.2 and Article 6.2 of the GA).

The Technical Report consists of two parts:

- Part A contains the cover page, a summary that can be published and the answers to the questionnaire, covering issues related to the project implementation and the economic and social impact, notably in the context of the Horizon Europe key performance indicators and the Horizon Europe monitoring requirements. Part A is generated by the IT system. It is based on the information entered through the continuous reporting modules of the electronic exchange system in the Participant Portal. The Project Coordinator can update the information in the continuous reporting module at any time during the project lifecycle.
- Part B is the narrative part that includes explanation of the work carried out by the beneficiaries during the reporting period. Part B needs to be uploaded as a PDF document, following the template of Part B Periodic Technical report.

4 WORK BREAKDOWN, SCHEDULE AND TIME MANAGEMENT

4.1 WORK PACKAGE MANAGEMENT

The project has a duration of 48 months and is organized in 8 WPs with specific objectives that are described below.

WP1 - Project Coordination and Strategic Steering: This WP will guarantee successful administration and control, project risk management, problem handling and quality assurance on management levels. This WP ensures that the project runs in budget and on time and the expected results are achieved.

WP2 - Redesigning Logistics: The goal is to provide a set of comprehensive as well as widely accepted user requirements that will guide the design of the SEAMLESS Building Blocks solutions. These outcomes will be translated into system requirements and functional and non-functional specifications. The overall architecture of the SEAMLESS feeder loop service will be developed, defining the interconnections among various technologies and sub-systems, identifying the necessary data-flows and interfaces to be developed in order to simplify the complexity of freight transport through supply chains.

WP3 - Enabling Autonomous port operations: WP3 will determine the specifications and development of the autonomous technologies and sub-systems related to the port infrastructure that will be required for implementing the first SEAMLESS Building Block; automated port interfaces (DockNLoad).

WP4 - Activating Autonomous fleet operations: This WP involves the specifications for the second SEAMLESS building block, modular vessel and operations concepts.

WP5 - Digitalising logistics operations. WP5 involves the design and development of the third SEAMLESS building block; the integrated supply chain support system (ModalNET). The activities of this WP introduce the digital collaborative communication framework among port operators, road operators, vessel operators and logistics companies (ModalNET platform) that will facilitate synchromodal dynamic management of the supply chain.

WP6 - Evaluating impact and developing sustainability-driven business models: WP6 will develop technical, economic, environmental, and social KPIs to set a basis for quantifying the impact of the SEAMLESS building blocks within the context of the Use Cases. In this aspect, WP6 will include a comprehensive cost-benefit analysis and evaluation of the environmental as well as societal impact deriving from the operation of the SEAMLESS technologies. The WP6 activities will result in the evaluation of the pan-European impact and transferability potential of the fully automated SEAMLESS freight feeder loop service.

WP7 – Demonstrator and Validation Campaign: This WP will ensure that the demonstrations of SEAMLESS technologies and subsystems are performed successfully and that the results will be

evaluated in a consistent manner. The major outcome is the validation of the developed technologies and subsystems that will be exploited in WP8.

WP8 - High-Impact Dissemination, Communication and Exploitation: This WP includes the development of SEAMLESS Communication Strategy and ensures the results of the project are disseminated to a wide audience, including the scientific and industrial communities, and activities that aim to effectively exploit the results after the project has finished. In addition, the WP will outline policy recommendations for necessary for fully automated feeder loop services.

Figure 5 illustrates the PERT diagram of the work packages along with the different phases of SEAMLESS timeline.

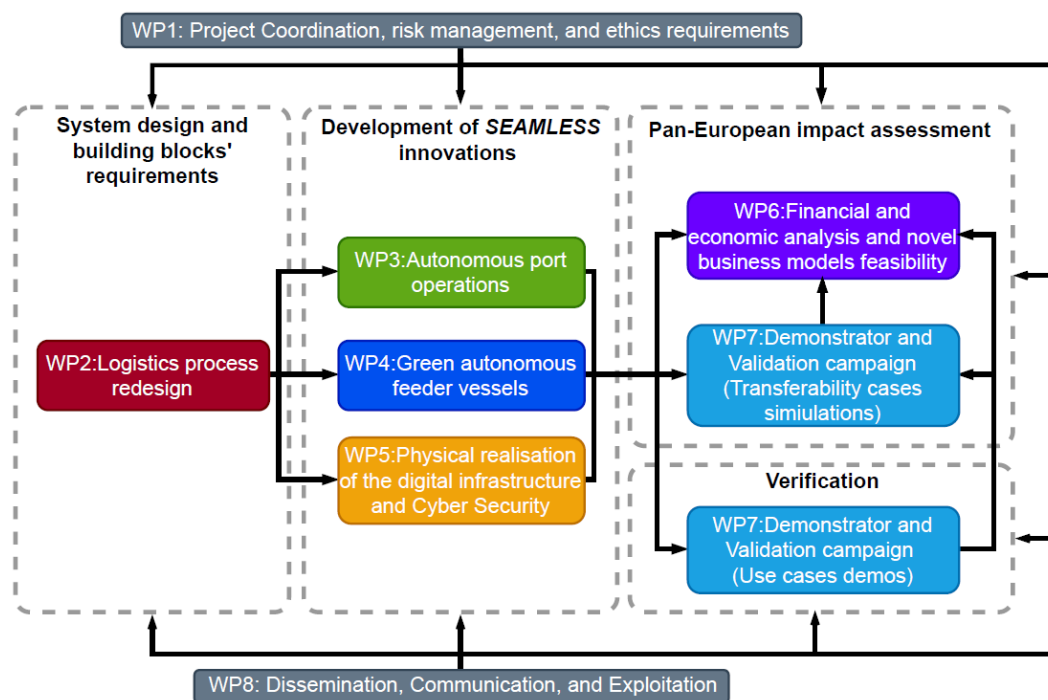


Figure 5 PERT diagram

4.2 DELIVERABLES AND MILESTONES SCHEDULE

4.2.1 Deliverables

Project Deliverables are the means by which the project progress is articulated. The efficient development of the project will largely depend on the timely submission of such deliverables. It is therefore crucial that the delivery dates outlined are strictly adhered to. Table 7 provides the list of SEAMLESS deliverables as given in the Grant Agreement (GA).

Table 7 Deliverables

Deliverable No.	Deliverable Name	WP No.	Lead Beneficiary	Type ¹	Dissemination Level ²	Due Date Month	Due Date Actual
D1.1	Project Administrative and Financial Management Plan	1	NTUA	R	PU	3	Mar-23
D1.2	Project Quality and Risk Management	1	NTUA	R	PU	3	Mar-23
D1.3	Data Management Plan	1	NTNU	DMP	PU	6	Jun-23
D1.4	Data Management Plan - Rev 1	1	NTNU	DMP	PU	18	Jun-24
D1.5	Data Management Plan - Rev 2	1	NTNU	DMP	PU	36	Dec-25
D1.6	Data Management Plan - Rev 3	1	NTNU	DMP	PU	48	Dec-26
D1.7	Knowledge and IPR management Plan	1	NTUA	R	SEN	6	Jun-23
D2.1	State-of-the-art and baseline for the SEAMLESS Use Cases	2	ISL	R	PU	8	Aug-23
D2.2	SEAMLESS reference logistics architecture, standards, and simplified administrative procedures	2	DST	R	PU	20	Aug-24
D2.3	Concept of Operations and requirements for SEAMLESS Building Blocks	2	SO	R	PU	20	Aug-24
D2.4	Comparative law analysis of existing legal frameworks and roadmap of recommendations	2	VNF	R	PU	36	Dec-25
D3.1	Specifications and design of SEAMLESS Building Block #1: Autonomous mooring and cargo handling (DockNLoad)	3	MCGFI	R	PU	40	Apr-26
D3.2	SEAMLESS Automated stowage planning system	3	MCGFI	DEM	PU	30	Jun-25

¹ DEC-Websites, patent filings, videos, etc/ DEM-Demonstrator, pilot, prototype/ DMP-Data Management Plan/ R-Document, report

² PU-Public/ SEN- Sensitive

Deliverable No.	Deliverable Name	WP No.	Lead Beneficiary	Type ¹	Dissemination Level ²	Due Date Month	Due Date Actual
D3.3	Concepts for improved port cargo handling through automated port interfaces	3	VPF	R	PU	40	Apr-26
D3.4	Safe and secure autonomous mooring and autonomous port cargo handling	3	NTUA	R	PU	40	Apr-26
D3.5	Autonomous Vessels Smart Port Manager	3	AWAKE.AI	DEM	PU	20	Aug-24
D4.1	Preliminary Assessment of Zero-Emission power plant configurations	4	ESI	R	PU	18	Jun-24
D4.2	Autonomous GNC Scheme development and monitoring agent prototype	4	TUD	R	PU	36	Dec-25
D4.3	Vessel Prototype concepts & Framework for risk-based approval	4	SO	R	PU	36	Dec-25
D4.4	Interfaces towards SEAMLESS logistics and port services and HAI for ROC fleet operation- design & prototype	4	KMNO	R	PU	36	Dec-25
D4.5	“Low attention” autonomous vessel operation by improved equipment operation incl. GNSS- GAP analysis & design	4	KMNO	R	PU	36	Dec-25
D5.1	ModalNET Specifications, systems architecture, and design of cyber-secure communication	5	VPF	R	PU	14	Feb-24
D5.2	Framework and methods for the ModalNET computational engine	5	NTUA	R	PU	24	Dec-24
D5.3	ModalNET logistics network digital twin	5	VPF	DEM	PU	38	Feb-26
D6.1	Outlook on Key Performance	6	NTUA	R	PU	12	Dec-23

Deliverable No.	Deliverable Name	WP No.	Lead Beneficiary	Type ¹	Dissemination Level ²	Due Date Month	Due Date Actual
	Indicators for use cases						
D6.2	Financial and economic analysis for SEAMLESS building blocks	6	PNO	R	PU	44	Aug-26
D6.3	Societal and environmental impact for SEAMLESS building blocks	6	NTUA	R	PU	28	Apr-25
D6.4	Business models guidelines for autonomous freight feeder loop services	6	VPF	R	PU	48	Dec-26
D6.5	Skills and competences for autonomous waterborne freight feeder loop services	6	VNF	R	PU	40	Apr-26
D6.6	Pan-European impact of the fully automated SEAMLESS feeder loop service	6	DST	R	PU	44	Aug-26
D7.1	SEAMLESS validation plan	7	SO	R	PU	26	Feb-25
D7.2	SEAMLESS overall integration plan	7	SO	R	PU	30	Jun-25
D7.3	Evaluation Report of Northern & Central European Case	7	SO	R	PU	40	Apr-26
D7.4	Component and system evaluation and future recommendations	7	NTUA	R	PU	48	Dec-26
D8.1	Project logo and set of public document templates	8	PNO	DEC	PU	2	Feb-23
D8.2	Public project website	8	PNO	DEC	PU	3	Mar-23
D8.3	D&C Plan set-up and updates	8	ALICE	R	PU	3	Mar-23
D8.4	D&C Plan updates – Rev 1	8	ALICE	R	PU	12	Dec-23
D8.5	D&C Plan updates – Rev 2	8	ALICE	R	PU	24	Dec-24

Deliverable No.	Deliverable Name	WP No.	Lead Beneficiary	Type ¹	Dissemination Level ²	Due Date Month	Due Date Actual
D8.6	D&C Plan updates – Rev 3	8	ALICE	R	PU	42	Jun-26
D8.7	SEAMLESS dissemination video	8	PNO	DEC	PU	6	Jun-23
D8.8	SEAMLESS Exploitation and IP strategy – first report	8	PNO	R	PU	24	Dec-24
D8.9	SEAMLESS Exploitation and IP strategy – final report	8	PNO	R	PU	45	Sep-26
D8.10	SEAMLESS dissemination video - Final	8	PNO	DEC	PU	42	Jun-26

The deliverables preparation, reviewing and submission process will be described in the Project Quality and Risk Management (D1.2).

4.2.2 Milestones

The Project Coordinator and the WPLs will be monitoring their progress throughout the duration of the Project. In case of potential delays, the Project Coordinator will work with the WPLs to develop a contingency plan. Acute delays will be brought to the attention of the Project Officer. Progress on the milestones' achievement will be described in the Project Reports. The milestones are listed in Table 8.

Table 8 Milestones

Milestone No.	Milestone Name	Related WP(s)	Lead Beneficiary	Means of Verification	Due Date Month	Due Date Actual
1	Project's baseline	WP2	ISL	Use cases defined; requirements and architecture baseline	8	Aug-23
2	Innovation Flame	WP3, WP4, WP5	SO	Preliminary versions and specifications of building blocks	16	Apr-24
3	Innovation Fire	WP3, WP4, WP5, WP6	SO	CONOPS defined for all Building Blocks; Reference System Architecture	20	Aug-24
4	Demonstration Flame	WP7	SO	Subsystems tested; Full system integration achieved	32	Aug-25
5	Demonstration Fire	WP7	SO	Implementation of the demonstrations	40	Apr-26

Milestone No.	Milestone Name	Related WP(s)	Lead Beneficiary	Means of Verification	Due Date Month	Due Date Actual
6	Pathways towards the final solution	WP7, WP8	NTUA	Evaluation reports and compliance results; Validation of transferability; Innovation pathway delivered	48	Dec-26

4.2.3 Gantt Chart

The below Gantt Chart illustrates the time plan of all work packages, tasks and respective Milestones (Figure 6).

D1.1 – Project Administrative and Financial Management Plan

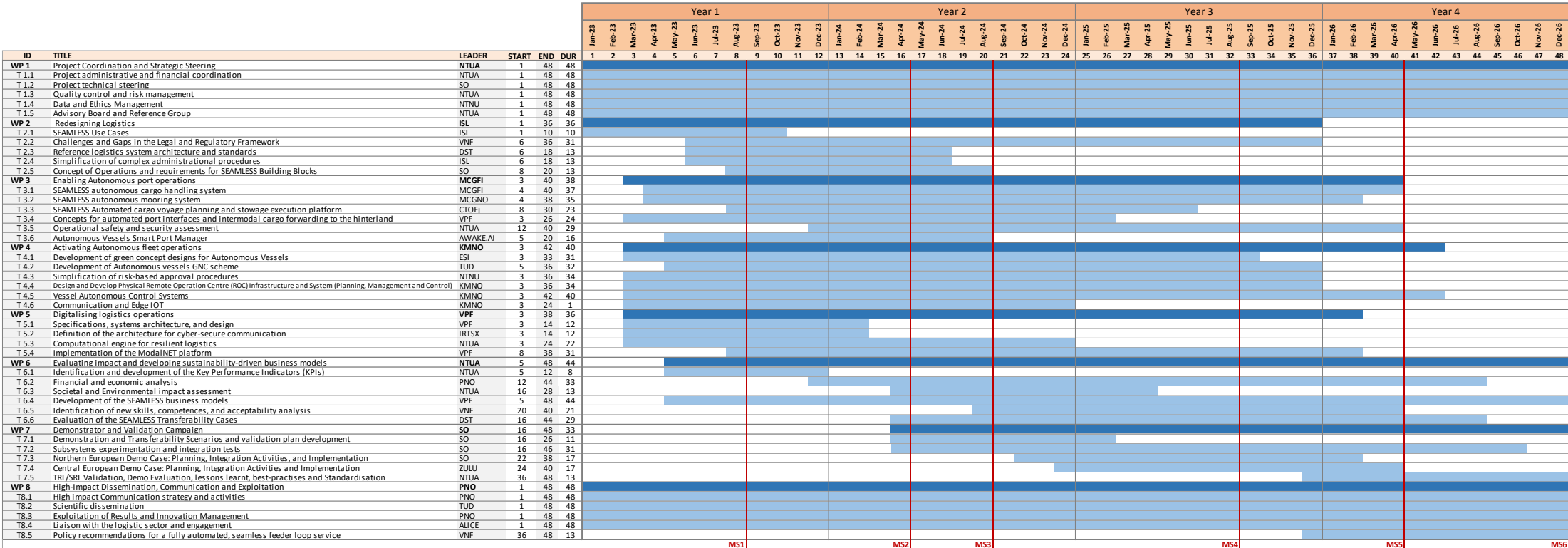


Figure 6 SEAMLESS Gantt Chart

ANNEX I – INVITATION TO ADVISORY BOARD

Dear [NAME HERE],

We are contacting you in order to invite you to join the Advisory Board of the EU-funded “SEAMLESS” project.

SEAMLESS aims at developing and adapting 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. Within the Sea of Experience project, we are establishing an Advisory Board (AB) whose role is to provide constructive feedback on the quality of the project’s outputs and decisions, during its implementation (over the period 2019-2022). It is important to note that the AB will not be involved in the daily affairs of the project in order to ensure unbiased feedback. However, the members of the Board -composed of distinguished experts (from the public and private sector) in the fields of activities of the project- will be regularly updated on the project’s progress by the project coordinator (the National Technical University of Athens), while they will be also invited to participate in the project’s meetings. In addition, the AB will contribute to raising awareness of the project through relevant dissemination activities that will be implemented by the project. Kindly note that membership in the AB is voluntary and it is not remunerated.

Given your experience and expertise, we strongly believe that your participation in the AB will be invaluable to the project. In case you are interested in joining the Advisory Board, you are kindly requested to reply to this e-mail preferably by [DATE HERE] and send us a short CV description of yours (300 words).

We would like to thank you for your attention, and we look forward to receiving your reply.

Kind regards,
On behalf of the National Technical University of Athens,
[NAME HERE]