User-driven applications and tools for Climate-Informed Maritime Spatial Planning and integrated seascape management, towards a resilient & inclusive Blue Economy

D6.7–Report on Standards and Liaison Activities with Relevant Organizations (Version 1)

WP6 – Communication, Dissemination, and Exploitation of project results

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1 Executive Summary

The OCEANIDS project enhances coastal resilience through climate-informed maritime spatial planning (MSP) and integrated seascape management, supporting a sustainable and inclusive Blue Economy. This deliverable, D6.7 – Report on Standards and Liaison Activities (version 1), outlines strategies and progress in fostering collaborations with stakeholders, EU initiatives, and global networks to address climate adaptation challenges. This deliverable is connected to Task 6.2 "Liaising with other EU projects, initiatives, and lessons learned: Defining the role of OCEANIDS in the EU Mission" led by EARSC, of Work Package (WP) 6 "Communication, Dissemination, and Exploitation of project results", led by METIS.

Key achievements in the first year include initiating connections with the Copernicus program, the EU Missions on Climate Adaptation and Oceans, and organizations like the European Maritime Safety Agency and EUMETSAT. Stakeholder engagement efforts have connected policymakers, researchers, local communities, and industry leaders, ensuring the project's solutions are impactful and scalable.

Future actions will focus on expanding the stakeholder network, promoting knowledge exchange, and aligning outputs with European climate objectives. Through its collaborative framework and innovative tools, OCEANIDS aims to deliver long-term impact, driving progress toward resilient coastal ecosystems and a sustainable Blue Economy.

This deliverable also addresses standards considerations of the project, concerning developed OCEANIDS tools. This initial version of the document identifies potentially relevant standardization bodies, technical committees and networks relevant to the project, and key EU legislation and policy frameworks, as well as outlines the plan for standardization monitoring for the whole duration of the project.

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Table 1. List of Acronyms/Abbreviations

Acronym Abbreviation	Explanation
AIRC	AIR Center
CAP	Climate Adaptation Planning
CC	Climate Change
CoP	Community of Practice
D	Deliverable
EARSC	European Association of Remote Sensing Companies
EC	European Commission
ECMWF	European Centre for Medium-Range Weather Forecasts
EUMETSAT	European Organisation for the Exploitation of Meteorological Satellites
EO	Earth Observation
EU	European Union
GA	Grant Agreement
GSH	Geosystems Hellas
ISMS	Information Security Management System
ISO	International Organization for Standardization
IPR	Intellectual Property Right(s)
KERs	Key Exploitable Results
KPI	Key Performance Indicator
M	Month
MSP	Maritime Spatial Planning
METIS	MetisBaltic
RS	Remote Sensing
SDGs	United Nations Sustainable Development Goals
WP	Work Package

2 Introduction

The OCEANIDS project aims to enhance the resilience of coastal areas by providing tools and knowledge to support informed decision-making and empower communities to address the impacts of Climate Change (CC). As coastal regions are among the most vulnerable to CC, the project's objectives extend beyond the participating consortium, emphasizing a commitment to the broader global coastal community. Establishing and strengthening connections with other networks and initiatives is a central strategy to ensure widespread impact and knowledge exchange.

Work Package 6 (WP6), "Communication, Dissemination, and Exploitation of Project Results," plays a pivotal role in achieving these goals. WP6 focuses on effectively communicating the project's progress, achievements, and results through diverse channels; developing and updating dissemination and exploitation strategies; and creating a business model, business plan, and marketing plan to ensure long-term impact and sustainability. WP6 is structured around three tasks:

- Task 6.1. Dissemination, Communication, and High-Impact Collateral [M1–M32]
- **Task 6.2. Liaising with Other EU Projects, Initiatives, and Lessons Learned: Defining the Role of OCEANIDS in the EU Mission [M1–M32]**
- Task 6.3. Exploitation Plans, IPR Management, Business Models, and Post-Project Sustainability [M1–M32]

This deliverable focuses on Task 6.2, detailing the planned activities for fostering collaboration with EU projects and initiatives, integrating lessons learned, and defining OCEANIDS' role in the EU Mission. The document also identifies potential standards which can be followed by the project's tools, and outlines the methodology for standard compliance monitoring throughout the project lifetime. As it is delivered within the project's first year, the document emphasizes the methodology for both activities and the identification of key stakeholders for liaison, while Deliverable D6.8, due in M32, will provide a comprehensive report on the achievements, synergies established, and standards met.

2.1 Scope and Objective of the deliverable

The primary scope of this deliverable is to outline the methodology for liaison activities, identify key stakeholders, projects, and initiatives for collaboration, and to comment upon project's connections with EU Missions, as well as to draft the methodology for standard compliance monitoring and identify preliminary potential standards which can be followed. This foundational work will support the alignment of OCEANIDS with relevant networks, fostering synergies and promoting the project's objectives. The deliverable also lays the groundwork for building strategic relationships and ensuring that OCEANIDS is well-positioned to contribute effectively to the broader goals of climate resilience and innovation.

2.2 Structure of the Deliverable

This document consists of the following chapters:

- **Chapter 2** includes the Introduction, main scope and structure of the deliverable
- **Chapter 3** provides information regarding the liaison strategy
- **Chapter 4** presents the Standardization activities
- **Chapter 5** highlights the contribution to EU standardisation policy and consultations
- **Chapter 6** summarises the conclusions and next steps of this deliverable
- **ANNEX 1** includes the identification questionnaire regarding the standards

2.3 Relation to other Work Packages and tasks

Figure 1 illustrates the overall workflow of the OCEANIDS Work Packages (WPs) and their interconnections. WP6 plays a central role, directly linking to all other WPs, as it is responsible for the dissemination, communication, and exploitation of the project's results. Notably, the connection between WP2 and Task 6.2 should be emphasized, as T6.2 builds on the outcomes of T2.1, leveraging networks and connections established by all connections consortium partners while also enhancing community engagement through liaison activities. Additionally, to allow for standard compliance monitoring, within Task 6.2 a close collaboration with WP3 will be established.

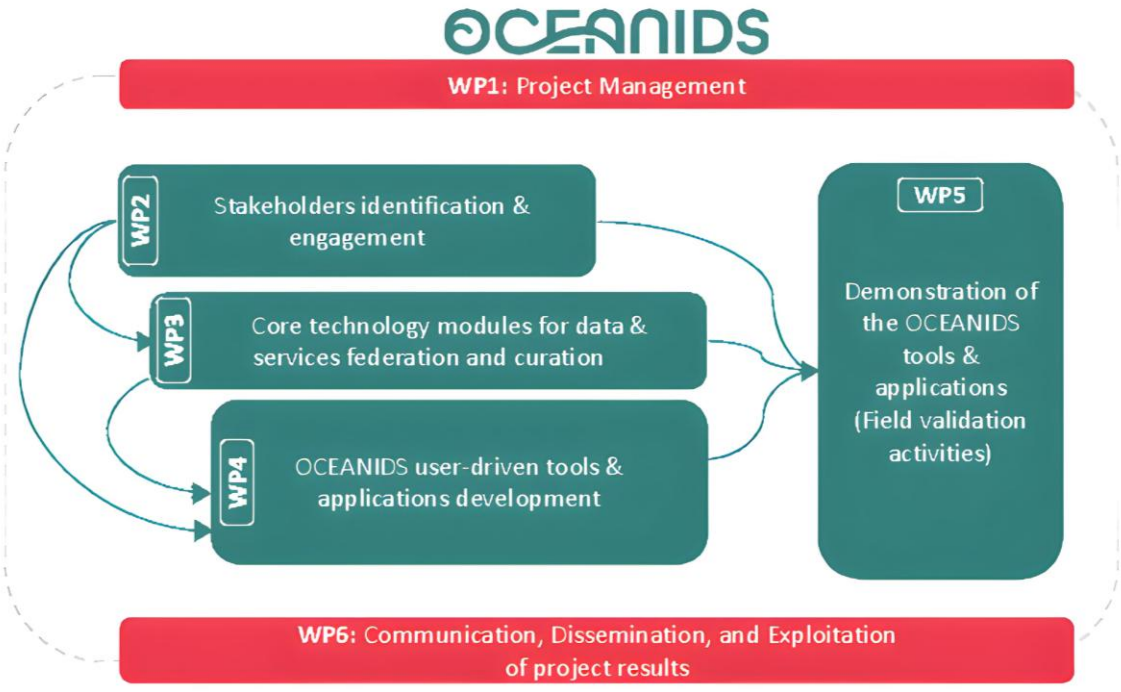

Figure 1. OCEANIDS WPs structure workflow

3 Liaison Strategy

3.1 Goals of the project's liaison activities

The overarching objective of the liaison activities in the OCEANIDS project is to enhance knowledge sharing and collaboration, thereby maximizing the project's impact on building resilient coastal areas in the context of CC. These efforts aim to contribute to a competitive and sustainable Blue Economy through effective Maritime Spatial Planning (MSP) and Climate Adaptation Planning (CAP). The specific goals of the liaison strategy are outlined as follows:

1. **Enhancing Synergies Across Initiatives**
Establish and strengthen connections with relevant EU projects, initiatives, and networks to integrate a wide range of expertise and resources. This will help address the complex challenges of coastal resilience and ensure that the solutions developed are holistic and scalable.

2. **Stakeholder Engagement and Inclusion**
Identify and engage key stakeholders, including policymakers, coastal communities, researchers, and industry leaders. By fostering a participatory approach, the project will ensure that the perspectives and needs of all relevant parties are considered, making the outcomes more relevant and impactful (to be implemented within WP2, T2.1 and WP6, T6.2).

3. **Aligning with European and Global Climate Missions**
Support the EU's climate adaptation goals by aligning liaison activities with the EU Mission on Adaptation to Climate Change. This alignment will ensure the project contributes meaningfully to both European and global climate efforts, including the United Nations Sustainable Development Goals (SDGs)[1] related to climate action and sustainable communities.

4. **Facilitating Knowledge Transfer and Sharing**
Act as a bridge for knowledge exchange between the project consortium and external stakeholders. This will involve disseminating best practices, lessons learned, and innovative solutions, thereby maximizing the impact of OCEANIDS and promoting the replicability of its results (connecting efforts with T6.1, T2.1, and T2.2).

5. **Promoting Long-Term Collaboration**
Lay the foundation for sustainable partnerships by fostering ongoing collaboration among stakeholders. These relationships will help ensure the long-term success of the project and the continued sharing of knowledge and resources even after the project's conclusion.

[1] https://sdgs.un.org/goals

Through these goals, the liaison strategy will ensure that OCEANIDS not only achieves its objectives but also strengthens the global effort to adapt coastal areas to the challenges of CC, ultimately contributing to a more resilient and sustainable Blue Economy.

3.2 Methodology

The liaison methodology for OCEANIDS has been carefully designed to **establish and maintain** strong, collaborative relationships with key stakeholders, ensuring effective communication and alignment with project goals. This approach is structured around a series of systematic steps, each aimed at fostering productive interactions and promoting shared understanding. These steps provide a clear framework for engagement, enabling the project to build a solid network of support and facilitating the exchange of knowledge and expertise across partners.

The methodology also prioritizes **adaptability**, ensuring that the process remains responsive to stakeholder needs and dynamic project requirements.

1. Goal and Scope Definition including:
    a. goal setting
    b. scope of liaison activities
2. Stakeholder Mapping and Analysis including:
    a. identification of stakeholders
    b. stakeholder grouping
    c. needs and interests assessment
3. Engagement Plan and Communication Channels
    a. develop an engagement plan
    b. establish and choose appropriate communication channels
4. Strategy implementation and activity types
    a. activity types
    b. role assignment
5. Synergy and collaboration building
    a. cross-project collaboration
    b. network expansion
6. Monitoring and evaluation
    a. set metrics for success
    b. feedback mechanisms
    c. reporting and documentation
7. Sustainability and long-term impact
    a. sustain relationship-building
    b. policy and practice integration

As illustrated in **Figure 2**, during the first year of the project, the initial steps of the liaison methodology were comprehensively implemented.

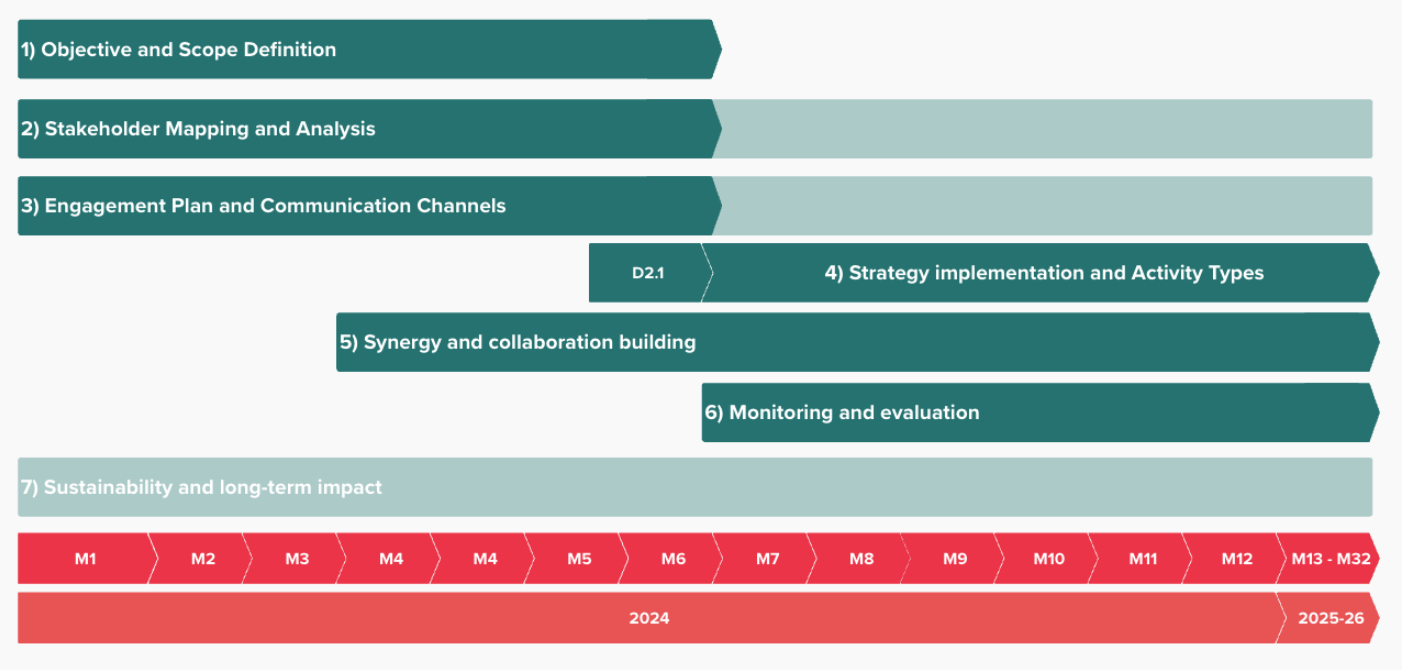

Figure 2. Liaison activities timeline

Step 1. Goals and Scope Definition
First, as detailed in Section 3.1, a clear goal for liaison activities was established, encompassing a broad outline of the intended scope.

Step 2. Stakeholder Mapping and Analysis
Step 2 was implemented through activities in T2.1, led by CDP. All consortium partners contributed to the exercise of mapping and categorizing relevant stakeholders and networks for the project. Deliverable D2.1 "Stakeholder Engagement Plan and Existing Applications/Services Report" outlines all identified groups and responsible partners.

Step 3. Engagement Plan and Communication Channels
Building on the stakeholder mapping and analysis exercise, CDP developed a comprehensive Engagement Plan as outlined in Step 3 of the liaison methodology. This plan, further detailed in Deliverable D2.1, provides a structured framework for ongoing liaison activities and targeted stakeholder engagement. Serving as a foundational document, the Engagement Plan guides the strategic direction of liaison efforts under T6.2 and facilitates stakeholder interactions within T2.1 "OCEANIDS stakeholders Community: Exchange of best practices, capacity building and networking between" groups, ensuring alignment with project objectives and promoting consistent communication across all relevant groups.

As part of the stakeholder mapping exercise and the development of the Engagement Plan, the project team identified appropriate activities and established tailored communication channels to support effective stakeholder interaction. These channels are strategically aligned with the needs of diverse stakeholder groups, ensuring clear and accessible pathways for information exchange. Additionally, public communication channels for the project are being developed and utilized within

T6.1, Dissemination, Communication, and High-Impact Collateral, where they serve as essential tools for promoting project visibility, engaging external audiences, and maximizing the project's outreach and impact.

Step 4. Strategy implementation and activity types

Step 4 including activity types and roles assignment was also covered through the mapping exercise with the consortium and the engagement plan. Within the engagement plan, 5 activity types were identified:

- Activity Type 1: Exchange of Best Practices & Capacity Building
- Activity Type 2: Networking Between Groups and Liaison Activities
- Activity Type 3: Local Stakeholder Engagement
- Activity Type 4: Data Disclosure and Sharing
- Activity Type 5: Social Media and Communication

EARSC and the Atlantic International Research Center (AIRC) are responsible for Activity Type 2: Networking Between Groups & Liaison Activities, which is key for the implementation of Liaison Strategy. This activity will engage various stakeholder groups, as outlined in the engagement plan and detailed in D2.1:

- **Group 1: Coastal Municipalities and Regions**
- **Group 3: EO/Remote Sensing (RS) Solution Providers and Resilience Consultancies**
- **Group 4: Research Institutes, Think Tanks, Academia, and Professional Networks**
- **Group 5: Networks of Municipalities, Regions, and Ports**
- **Group 6: Other EU-funded Projects in Maritime and Coastal Resilience and Adaptation**
- **Group 8: Private Sector**

The liaison strategy will be customized for each stakeholder group to maximize both effectiveness and relevance. Nonetheless, the overarching objective of these synergies and interactions remains consistent: to promote networking that fosters collaboration, information exchange, and the development of a supportive community dedicated to biodiversity conservation and climate change mitigation. This approach leverages the connections and relationships that OCEANIDS participants maintain with relevant authorities, agencies, and stakeholders.

Step 5. Synergy and collaboration building

The next and final step initiated in the first year of the project is Step 5, which focuses on synergy and collaboration building, including cross-project collaboration and network expansion. Following the outlining of the plan in spring 2024, several activities were promptly launched to foster these collaborations. The initial phase involved identifying and reaching out to relevant projects, facilitating connections that align with our objectives. This proactive approach aims to create a robust network of partnerships, enhancing knowledge sharing and resource mobilization. By establishing collaborative frameworks, OCEANIDS seeks to leverage synergies that will not only enrich the project outcomes but also contribute to the broader goals of the European project landscape.

Step 6. Monitoring and evaluation
The monitoring and evaluation of synergies created, as well as prospects for future collaborations, will be an ongoing process throughout the project's duration. Although no specific Key Performance Indicators (KPIs) have been established for liaison activities, OCEANIDS will set internal targets to be achieved. The monitoring of these activities will involve periodic reporting from all consortium partners, enabling the tracking and documentation of newly established connections. For the project's second plenary meeting, an initial online form was implemented, allowing partners to report on their progress in stakeholder engagement. This approach ensures a structured and consistent assessment of the project's liaison efforts.

Step 7. Sustainability and long-term impact
The creation of synergies between projects and initiatives extends beyond one-time collaborations, such as workshops or events. To maximize the impact of these connections, synergies must be sustained over time, delivering long-term value to all parties involved. Therefore, Step 7 will be a crucial activity to ensure that connected initiatives remain informed about the project's progress and continue to benefit from mutual collaboration. By fostering ongoing engagement, the synergies can evolve into lasting partnerships that drive further innovation and success.

3.3 Mapping of relevant stakeholders

As outlined in the previous section, during the initial stages of the project, relevant stakeholders for OCEANIDS were systematically mapped and categorized based on the specific types of engagement required for each group. Moving forward, additional stakeholders who were not previously identified will be contacted to broaden the user base for remote sensing solutions, particularly in the domains of maritime spatial planning and climate adaptation planning. This section highlights **key stakeholders** relevant to the implementation of Task 6.2, providing a roadmap for future liaison and engagement activities.

It is important to note that the initial list of stakeholders is organized by the type of organization. However, in the second version of this deliverable (due in Month 32), the list will be restructured to classify stakeholders based on their role in the project, such as data/service providers, end users, or collaborators. For the purposes of this document, stakeholders have been grouped into the following categories:

- **European Organizations and Agencies:**

This category includes key European bodies involved in policy development, monitoring, and enforcement. Notable organizations are:

  - European Maritime Safety Agency (EMSA): Supporting maritime safety and environmental protection
  - Directorate-General for Maritime Affairs and Fisheries (DG MARE): Driving maritime spatial planning and the sustainable blue economy
  - EUMETSAT: Providing satellite-based climate and ocean monitoring data
  - European Union Agency for the Space Programme (EUSPA): Operationalizing EU satellite systems for societal and environmental benefits

- European Space Agency (ESA): Delivering critical data and technologies to enhance maritime spatial planning

- **International Initiatives and Organizations:**

Global initiatives promoting international collaboration and data sharing include:

- Group on Earth Observations (GEO) and GEO Blue Planet: Facilitating integrated Earth observation systems for ocean monitoring
- United Nations Ocean Decade (UN Ocean): Supporting sustainable ocean science and governance
- United Nations Environment Programme (UNEP): Collaborating on global environmental and climate-related issues
- Food and Agriculture Organization (FAO): Addressing sustainable fisheries and aquaculture management

- **European Projects and Initiatives**

EU-funded initiatives fostering synergies and knowledge exchange include:

- EMODnet (European Marine Observation and Data Network): Providing open-access data for marine and coastal environments
- JPI Oceans: Supporting transnational research and innovation for sustainable use of marine resources
- EU Mission on Climate Adaptation: Focused on supporting the EU's adaptation to climate change through innovative solutions and policies
- EU Mission on Oceans: Working towards the protection and restoration of the marine environment, promoting sustainable ocean governance and services
- Horizon Europe projects addressing remote sensing, climate adaptation, and maritime governance, **Table 2** present the key projects for liaison activities

Table 2. EU Projects of Relevance to OCEANIDS

Project Name	Project Description	Coordinator
Blue-Cloud 2026 (A federated European Fair and Open Research Ecosystem for oceans, seas, coastal and inland waters)	Creates a federated European ecosystem that provides FAIR and open marine data and analytical services, supporting ocean research, the EU Green Deal, and the UN SDGs, while developing new virtual labs and datasets from various data sources over 42 months.	CONSIGLIO NAZIONALE DELLE RICERCHE, Italy
MARCO-BOLO (Marine Coastal Biodiversity Long-term Observations)	Enhances European coastal and marine biodiversity observation through new autonomous technologies and data integration from sources like remote sensing and eDNA, aligning with global initiatives to support biodiversity restoration and improve governance through	EUROPEAN MARINE BIOLOGICAL RESOURCE CENTRE EUROPEAN RESEARCH INFRASTRUCTURE CONSORTIUM, France

	optimized data flows and operational monitoring frameworks.	
MISSION ATLANTIC (Towards the Sustainable Development of the Atlantic Ocean: Mapping and Assessing the present and future status of Atlantic marine ecosystems under the influence of climate change and exploitation)	Uses Atlantic Integrated Ecosystem Assessments to map, model, and assess the resilience of Atlantic Ocean ecosystems, identifying risks from climate, acidification, and human activities, while fostering collaboration and knowledge exchange across multiple continents to support sustainable ocean management.	DANMARKS TEKNISKE UNIVERSITET, Denmark
RISKADAPT (Asset Level Modelling of RISKs In the Face of Climate Induced Extreme Events and Adaptation)	Develops a free, customizable online platform to support climate change adaptation by providing comprehensive, risk-informed data on climate hazards, social vulnerabilities, and resilience for assets across Europe, enabling informed adaptation decisions for infrastructure exposed to multiple climate risks.	RISA SICHERHEITSANALYSEN GMBH, Germany
MSP4BIO (Improved Science-Based Maritime Spatial Planning to Safeguard and Restore Biodiversity in a coherent European MPA network)	Develops a science-based, socio-ecological management system for marine spatial planning, aiming to protect and restore coastal, offshore, and deep-sea ecosystems while supporting EU biodiversity goals and policy decisions through six test sites across European sea basins.	S.PRO - SUSTAINABLE PROJECTS GMBH, Germany
CoCliCo (Periodic Reporting for period 2 - CoCliCo (COASTAL CLIMATE CORE SERVICES))	Utilizes Earth observation technologies for integrated maritime planning and management, focusing on ecosystem sustainability and resource allocation.	BUREAU DE RECHERCHES GEOLOGIQUES ET MINIERES, France
HARMONIA (Development of a Support System for Improved Resilience and Sustainable Urban areas to cope with Climate Change and Extreme Events based	Develops interoperable, AI-powered tools and governance solutions to make city-level environmental data accessible and actionable, supporting European Green Deal goals with validated pilots across four countries.	POLITECNICO DI MILANO

on GEOSS and Advanced Modelling Tools)		
VALORADA (Validated Local Risk Actionable Data for Adaptation)	Develops customizable, FAIR-compliant data tools to support 150 European regions in becoming sustainable and climate-resilient by 2030, enabling local actors to integrate and analyze climate and socioeconomic data to assess climate risks and improve data interoperability.	HELMHOLTZ-ZENTRUM HEREON GMBH
NAUTILOS (New Approach to Underwater Technologies for Innovative, Low-cost Ocean Observation)	Develops autonomous underwater systems for ocean monitoring to inform marine policy and promote sustainable practices.	Consiglio Nazionale delle Ricerche (CNR), Italy
IIIAD (INTEGRATED DigitaL Framework FOR Comprehensive MARITIME DATA AND INFORMATION SERVICES)	Creates a data-intensive, interoperable Digital Twin of the Ocean, leveraging diverse data sources and advanced computing to simulate ocean scenarios for climate adaptation and sustainability, and providing a marketplace for data, apps, and value-added services to support the EU Green Deal and UN Sustainable Development Goals.	NETCOMPANY - INTRASOFT
Sustainable Blue Economy Partnership	Partnership represents an unprecedent effort of 74 Partner institutions from 29 countries and the European Commission to pool research and innovation investments and align national programmes at pan-European scale. As a Horizon Europe co-funded partnership, its strategy takes into consideration the R&I agendas of the sea basins (Mediterranean, Black Sea, Baltic and North Sea) and the Atlantic Ocean and builds on lessons learned from previous initiatives.	Ministry of Universities and Research (Italy)

- **Private Sector:**

A range of companies providing cutting-edge technologies and solutions play a pivotal role in piloting and scaling innovations. These starts with EARSC network and its 140 members, and the expanded community engaged throughout the project.

- **Research and Academia:**

Academic institutions, scientific networks, and specialized centers driving innovation in marine science and operational tools include:

  - Mercator Ocean International: Delivering operational oceanography data and services
  - GERICS (Climate Service Center Germany): Supporting decision-making with climate-related research and services
  - Instituto Hidrográfico: A key player in hydrography and oceanography research
  - EuroGOOS (European Global Ocean Observing System): Coordinating European efforts in operational oceanography and contributing to integrated ocean observation systems

- **Other**:

This category encompasses non-governmental organizations, community groups, and industry associations that play a role in implementing maritime spatial planning and climate adaptation measures. Relevant entities include:

  - European Sea Ports Organization: Facilitating sustainable port operations and development
  - The Blue Team: Advocating for collaborative efforts to address marine sustainability challenges

By engaging with this extensive network of stakeholders, OCEANIDS ensures alignment with policy priorities, leverages existing resources, and fosters innovation to address critical challenges in maritime spatial planning and climate adaptation.

3.4 Launched synergies

In the following subsections outline the engagement efforts and interactions achieved during the first year of the project. These activities have laid the groundwork for robust collaborations, with a focus on establishing relationships with diverse stakeholders across sectors and geographical areas.

3.4.1 European Organizations and Agencies

Alignment with European organizations and agencies has been a critical component of the OCEANIDS project to ensure meaningful contributions to policy monitoring and consultations while building on existing assets rather than duplicating efforts. As part of this strategy, OCEANIDS aims at establishing strong connections with the **Copernicus programme**, focusing particularly on its services and recently launched hubs. The Copernicus Marine Service, delivered by Mercator Ocean International, and the Coastal Hub, introduced in 2023, were identified as key resources. EARSC is closely connected to the Copernicus ecosystem, which allowed for contacting relevant teams at

Mercator Ocean. Initial discussions have been highly positive, and further consultations between the OCEANIDS technical team and Mercator Ocean representatives are ongoing. This collaboration aims to integrate existing services and datasets into the OCEANIDS platform while identifying gaps and emerging trends that the project could address, ensuring our solutions complement and enhance the current landscape.

Other Copernicus service providers were also contacted, including the Copernicus Climate Change Service (C3S), delivered by European Centre for Medium-Range Weather Forecasts (ECMWF), and European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT), a pivotal stakeholder in ocean and climate monitoring. These launched interactions will allow for exploring existing use cases, identify gaps in current applications, and outline opportunities to contribute to the advancement of these services.

In addition to Copernicus, a productive dialogue with the **European Maritime Safety Agency (EMSA)** was initiated, particularly relevant given the recent updates to its mandate. During events such as Space for Arctic in Tromsø and Marine User Days in Lisbon, OCEANIDS team identified key representatives of the agency to be contacted to explore together maritime safety and environmental monitoring. These initial discussions have laid the groundwork for closer collaboration on service alignment and joint efforts to address mutual challenges.

Through these strategic interactions, OCEANIDS has successfully built a network of partnerships with leading European organizations and agencies, ensuring our efforts are aligned with existing policies and initiatives while addressing gaps and fostering innovation in maritime spatial planning and climate adaptation.

3.4.2 European Projects and Initiatives

So far, OCEANIDS has made valuable contributions to the EU Mission on Climate and the EU Mission on Oceans, actively participating in meetings and discussions, as explained in the following subsections. The project is also collaborating closely with other EU projects such as HARMONIA and VALORADA to promote knowledge sharing and accelerate progress toward shared sustainability and capacity-building goals. Regular project meetings will provide opportunities for knowledge exchange, networking, and advancing mutual objectives. Forums, workshops, and meetings will be utilized to present findings, share insights, and establish connections that will support the long-term implementation of the projects and contribute to the achievement of broader goals.

Additionally, OCEANIDS organized a workshop with EO4Ports as part of the 2nd plenary meeting of the project in Brussels in November 2024. This workshop brought together key stakeholders from the **EO4Port ESA project** (ESA Contract No. 4000143660/24/I-DT), which focuses on satellite-based services for ports, to foster collaboration and share best practices.

Figure 3. Invitation Card for the collaborative Workshop between OCEANIDS and EO4Port

"EO4The port of the future" exploit EO assets to produce EO-based products aiming to enhance Port Operations through the usage of EO cutting-edge technologies and finally integrate them through automated processes in a cloud-based platform. The project shall deliver a successful methodological framework and implement at least three EO products within the cloud-based Green Transition Information Factories Platform. Establishing a comprehensive understanding of current geoinformation needs and best practices through the usage of EO-based products and services within the sector of Port Operations, "EO4The port of the future", will set the base for developing an integrated analysis, which will be enhanced and specified by the relevant stakeholders. By conducting targeted with key stakeholders, the gathered information will be used to set the requirements for developing the applications, being fully aligned with current needs. The consortium was actively engaged in developing a comprehensive roadmap in close collaboration with the industry sector, aimed at establishing EO industry guidelines. These guidelines will serve as a foundation for promoting the widespread adoption of EO-based products within companies operating in the Port sector.
Further details on upcoming collaborative activities can be found in Section 3.5: Future Action Plan.

3.4.2.1 EU MISSION Adaptation to Climate Change

The **EU Mission on Adaptation to Climate Change** empowers European regions and local authorities to achieve climate resilience, aiming to guide at least 150 communities through understanding climate risks, developing pathways for preparation, and implementing innovative solutions by 2030.

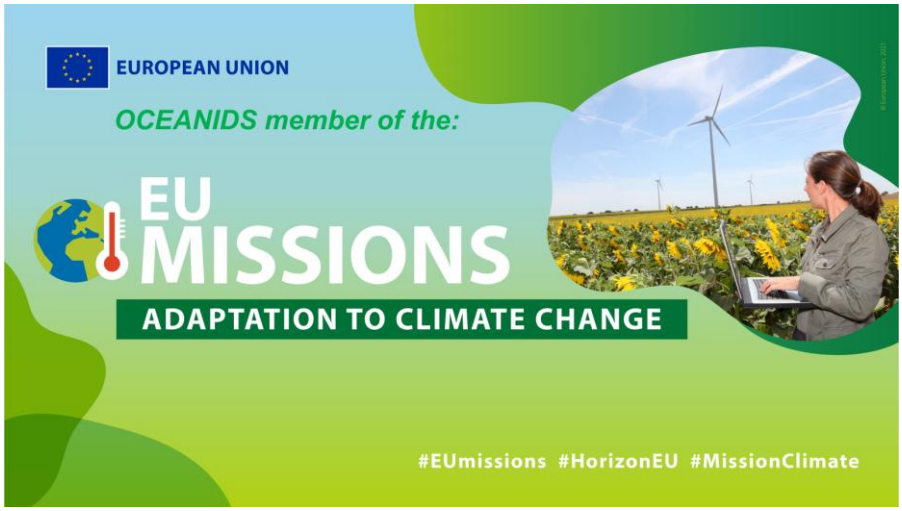

Figure 4. EU MISSIONS - Adaptation to Climate Change – visual

GSH as the coordinator of OCEANIDS is responsible to introduce and engage the project participating in the Mission's Community of Practice as OCEANIDS is funded by the Mission Adaptation call of proposals. The main details regarding the project were distributed in January of 2024 in order to help build the shared Mission projects database. As part of the Engagement Plan developed under WP2 and especially Task 2.1 as also described in D2.1, GSH is contributing in the Activity Type 2 "Networking Between Groups & Liaison Activities" through, but not limited to, the participation in the Mission Adaptation Community in two Thematic Working Groups (TWG).

By participating in two TWGs, **Climate Services** and **Stakeholder Engagement**, OCEANIDS can benefit from participation in events, sharing practices, and opportunities to link research with policy and practice. The Community of Practice (CoP) facilitates the exchange of knowledge and experiences, strengthening coordination and collaboration among its members. Its membership comprises regional and local authorities that are Charter Signatories, EU-funded projects working on climate change adaptation, regions or local authorities participating in their implementation, the EC and other relevant European institutions, national authorities (identified via national adaptation contact points), and Friends of the Mission. The Mission's Community of Practice offers a space for EU-funded projects to be part of and shape a vibrant space for different actors to connect and collaborate.

Specifically, the Community **provides the opportunity** for projects like OCEANIDS to:

- ✓ Connect with the European Commission and MIP4Adapt to gain first-hand information on opportunities
- ✓ Network and collaborate with other projects working on climate change adaptation to jointly address research and implementation challenges, identify remaining needs and opportunities to be tackled through Mission activities, build alliances and partnerships between projects on specific areas of shared interest, etc
- ✓ Connect with regional and local authorities to help replicate and upscale approaches, tools and/or solutions, and strengthen impact on practice and policy

✓ Build project capacities and receive training in topics of interest, e.g., dissemination, communication, and exploitation

✓ Develop a space that projects can use to further their activities, outreach and delivery of outputs and impacts, for instance by developing joint activities between projects and with MIP4Adapt

✓ Increase impact, gain recognition and visibility of projects' results as "*Mission Projects*"

I. Citizen and Stakeholder Engagement TWG

Within the **Citizen and Stakeholder Engagement** breakout room, the value of creating a catalogue of tools and good practices was recognised, as well as seeking examples from other catalogues, scheduling additional sessions, maintaining engagement on the online community site, and mapping more Mission-funded and Mission-related projects which would aid Citizen and Stakeholder Engagement.

II. Climate Services TWG

Within the **Climate Services** breakout room, it was agreed to develop a **survey** regarding climate services and legacy, assess further actions and topics of interest with a broader group of projects, reach out to projects unable to attend the event to involve them in subsequent sessions. VALORADA and Climateurope2, sister projects of OCEANIDS, as more mature projects at that time embraced their roles as champions.

3.4.2.2 EU MISSION RESTORE OUR OCEAN & WATERS

With a 2030 target, the **EU Mission "Restore our Ocean and Waters"** aims to protect and restore the health of our ocean and waters through research and innovation, citizen engagement and blue investments. The Mission's new, systemic approach will address the ocean and waters as one and play a key role in achieving climate neutrality and restoring nature.

The Mission supports regional engagement and cooperation through so-called area-based "lighthouses". Mission lighthouses will be research and innovation project portfolios, hubs for the development, demonstration and deployment of new solutions in major sea/river basins. In the first phase, there will be four Mission lighthouses at basin scale in the Atlantic-Arctic, the Mediterranean Sea, the Baltic and North Sea, and the Danube River basin. EU Missions are a novelty of the Horizon Europe research and innovation programme. They are a new way to bring concrete solutions to some of our greatest challenges. [2]

[2] https://maritime-forum.ec.europa.eu/theme/research/mission-ocean-and-waters_en

Figure 5. EU MISSIONS - Restore our Ocean & Waters - visual

Within this context GSH submitted their interest in contributing in the initiatives of this EU MISSION, adding the project successfully as a collaborator under the "Mission Restore our Ocean and Waters" Charter. This recognition highlights the pivotal role of this action in advancing one or more key Mission Ocean and Waters objectives:

1. Protecting and restoring marine and freshwater ecosystems and biodiversity, aligning with the EU Biodiversity Strategy 2030
2. Preventing and eliminating pollution in oceans, seas, and waters, in accordance with the EU Action Plan Towards Zero Pollution for Air, Water, and Soil
3. Fostering a carbon-neutral and circular blue economy, consistent with the European Climate Law and the vision in the Sustainable Blue Economy Strategy

In line with these objectives, OCEANIDS is committed to:

- Supporting the EU Ocean knowledge system and adhering to the FAIR principle for knowledge and data
- Involving citizens in decision-making processes
- Encouraging investments from both public and private sectors
- Sharing knowledge, experience, and collaborating with other Mission stakeholders
- Contributing to monitoring collective progress, adjusting strategies, and steering Mission actions

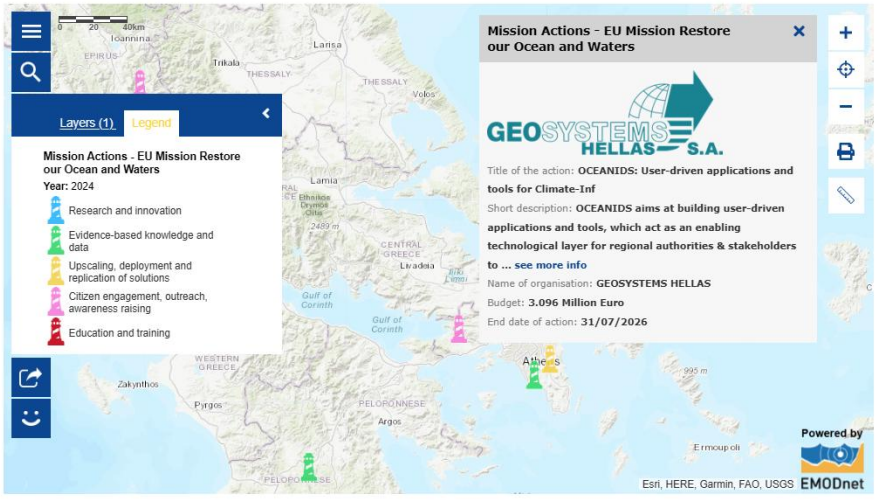

Figure 6. OCEANIDS and Geosystems Hellas - supporting Mission Restore our Ocean & Waters

3.4.3 Private Sector

The engagement with the private sector focuses on collaborating with service providers and industry stakeholders connected to ports. EARSC launched a call for contributions from its members to compile a booklet of services, aiming to identify those available on the market that align with the scope of OCEANIDS. Through desk research conducted in Task T2.2 and active participation in events, the consortium is continuously identifying and attracting additional stakeholders from a broader network to contribute to the development and enhancement of OCEANIDS services, among other including: Deimos, Amphitrite, Thales Alenia Space, blueOASIS, Wavec, The Blue Team, Airbus, who have already expressed their interest in the project. OCEANIDS was also featured at relevant events gathering representatives of EO private sector, such as Space Sector Forum (Warsaw, Poland) and EXPANDEO (Brussels, Belgium), sparking the service providers' interest in the project.
Benefiting from the involvement of the EARSC network, OCEANIDS collaborates with the Assocaition's Biodiversity and Nature Restoration Working Group, which is assessing EO industry's capacity to support the EU Nature Restoration Law, including marine restoration plans, which are relevant for the project. Findings on EO solutions will inform discussions with entities like the European Commission and be shared with the OCEANIDS consortium to support marine spatial planning and climate adaptation.

3.4.4 Research and Academia

OCEANIDS initiated interactions with Mercator Ocean as part of its liaison activities within the Copernicus Programme. Additionally, through connections with other EU projects and participation in various events, the team established links with GERICS (Climate Service Center Germany), which has an excellent use case of international collaboration in the North Sea, supporting coastal communities and facilitating their resilience efforts. Furthermore, OCEANIDS engaged with the Instituto Hidrográfico during the Marine Days event in Lisbon, strengthening ties with key stakeholders in the maritime and coastal sectors.

Due to the project's initial stage, only a select number of mapped stakeholders have been contacted to initiate synergies and liaison activities. The project will continue to build upon these established connections and leverage them in the coming months. The next section outlines the planned activities moving forward.

3.5 Future action plan

The Future Action Plan for OCEANIDS is centred on several strategic objectives: educating EO data users about available services, expanding the user base, sharing lessons learned and enhancing synergies across initiatives. promoting long-term collaboration. As previously stated, the aim is to enhance synergies across initiatives, increase stakeholder engagement and inclusion, align with European and Global Climate Missions, Facilitating Knowledge transfer and sharing and promoting long-term collaboration.

1. Enhancing Synergies Across Initiatives

One of the key aspects of liaison activities is to identify and benefit from the synergies and similarities in projects' and intiatives' goals and actions. Through discussions with multiple European projects, the consortium will make sure to align their effort and guarantee coherence in achieving shared objectives. This approach fosters collaboration, minimizes duplication of efforts, and maximizes the impact of collective actions. By leveraging complementary strengths and exchanging best practices, the consortium aims to enhance the overall effectiveness and sustainability of the outcomes, ultimately contributing to the broader goals of European initiatives.

As an example, the activities of the EARSC Working Group focus on advancing technical guidance to assist policymakers in implementing the Nature Restoration Law and associated national restoration plans. By assessing the feasibility of EO technologies, the group will ensure that restoration initiatives, including those in marine areas, are supported by robust data and services. This process will help align commercial EO solutions with the specific requirements of policymakers and stakeholders, which will contribute to the project's goals.

2. Stakeholder Engagement and Inclusion

Engaging stakeholders remains a critical priority for OCEANIDS. Consortium members will participate in key events and forums to present project developments, connect with relevant stakeholders, and seize opportunities for collaboration. Upcoming events include:

1. NEREUS Workshop (11 March 2025): organized within the scope of the project, the event will allow for discussions on EU environmental policies, with a focus on promoting the use of COPERNICUS services for local authorities, attracting numerous stakeholders interested in the project's outcomes.
2. EOcafe Sessions (fortnightly): These moderated discussions, hosted by EARSC, will feature OCEANIDS outputs and explore their application in solving marine spatial planning challenges.
3. The Networking Friday (22 November 2024): hosted by AIR Centre, meeting with international community focused on showcasing the OCEANIDS project's innovative approaches to leveraging Earth Observation technologies for sustainable marine spatial planning and climate adaptation, fostering collaboration among stakeholders.
4. EXPANDEO (11-12 June 2025): This is EARSC's annual flagship event, providing a platform for European Earth Observation companies, institutional actors and various other stakeholders to interact and network, learn about current policies and their impact on the industry, as well as reflect on challenges and explore new horizons. OCEANIDS will be showcased at this event, highlighting its achievements while leveraging the opportunity to refine and expand existing solutions in collaboration with stakeholders.

Through these activities, and many more events, OCEANIDS will strengthen partnerships, promote awareness, and ensure its outputs are effectively integrated into broader policy and industry frameworks.

3. Aligning with European and Global Climate Missions

OCEANIDS is actively supporting the EU Mission Adaptation to Climate Change and the EU Mission Restore Our Oceans and Waters through targeted initiatives and contributions.

A significant step forward is the consortium's bid to participate in the Mission's Call for Technical Assistance, which aims to support ports, islands, and fisheries communities in developing projects that align with the Mission Ocean and Waters objectives. By contributing to these efforts, OCEANIDS seeks to bridge the gap between policy goals and actionable solutions.
OCEANIDS continues to engage with the EU joint survey for upscaling climate services, an initiative designed to identify and expand tools and methodologies that enhance resilience to climate impacts. Furthermore, the project emphasises raising awareness about these EU Missions by incorporating them into discussions at workshops and events, as well as highlighting them in project publications. These efforts aim to align OCEANIDS outputs with broader European objectives, ensuring the effective application of EO technologies in addressing climate and marine challenges.

4. Facilitating Knowledge Transfer and Sharing

OCEANIDS will prioritise knowledge dissemination to maximise its impact. Social media platforms, particularly LinkedIn, will remain a vital channel for engaging with audiences and sharing project progress. The project website will continue to serve as a hub for publications, news updates and contact details offering insights into best practices for marine spatial planning and climate adaptation planning. Workshops and public events will also ensure the continuous exchange of knowledge, allowing diverse stakeholders to benefit from the project's findings. Thanks to close collaboration with multiple projects, good practices, guidelines, and methodologies will be exchanged to benefit a broader ecosystem of stakeholders.

5. Promoting Long-Term Collaboration

The ongoing development of the OCEANIDS platform represents a cornerstone of the project's long-term collaboration strategy. This platform will provide access to solutions and services developed during the project while offering a comprehensive database of alternative EO tools to address user needs beyond OCEANIDS' specific scope. Future actions will focus on expanding the platform's user base, engaging with new stakeholders, and fostering sustained collaboration among policymakers, industry leaders, and academic institutions.

In conclusion, the Future Action Plan outlines a roadmap for OCEANIDS to maximise its contributions through enhanced collaboration, stakeholder engagement, and knowledge sharing. These efforts will ensure the project continues to support the EU's vision for sustainability and resilience in marine ecosystems, driving progress toward a competitive and sustainable blue economy.

4 Standards

This chapter provides an overview of the key standards relevant to the project and outlines the framework within which all technical developments and outputs will be aligned. Ensuring compliance with established European and international standards is essential for guaranteeing interoperability, data quality, and system reliability. It also facilitates integration with existing infrastructures and supports broader adoption among stakeholder communities. The following sections present the specific standards that guide the project's methodologies, data models, interfaces, and operational procedures, forming a solid foundation for delivering robust, future-proof, and widely compatible solutions.

According to **ISO**, "a standard is a document, established by consensus and approved by a recognized body, that provides, for common and repeated use, rules, guidelines or characteristics for activities or their results, aimed at the achievement of the optimum degree of order in a given context.[3]" In line with this definition, OCEANIDS began its exploration of key standards through the following steps:

- Identifying relevant standardisation bodies
- Identifying technical committees and networks directly relevant to the project
- Mapping EU legislation and policy frameworks impacting the project
- Compiling a list of concrete standards to be mapped to the project's components

This deliverable outlines the methodology for ensuring standard compliance and serves as a basis for further activities throughout the project. Following the completion of this document, the questionnaire included in Annex X will be shared with technical partners to identify the specific standards they comply with. The collected information will be incorporated into Deliverable 6.8, due in Month 32.

4.1 Identification of relevant standardization bodies

European/International

- CEN – European Committee for Standardization/CENELEC – European Committee for Electrotechnical Standardization
- ETSI – European Telecommunications Standards Institute
- ISO – International Organization for Standardization
- IEC – International Electrotechnical Commission

[3] ISO/IEC Guide 2:2004, *Standardization and related activities — General vocabulary*, International Organization for Standardization, Geneva, 2004.

National bodies

National standardisation bodies relevant to OCEANIDS are those of the 11 consortium countries: ELOT (Greece), NBN (Belgium), DIN (Germany), SFS (Finland), PKN (Poland), ASRO (Romania), LST (Lithuania), SNV (Switzerland), AFNOR (France), IPQ (Portugal), and AENOR (Spain).

- *ELOT – Hellenic Organisation for Standardisation (Greece)
- NBN – Bureau voor Normalisatie / Bureau de Normalisation (Belgium)
- AFNOR – French National Organization for Standardization (France)
- DIN – German Institute for Standardization (Germany)
- PKN – Polish Committee for Standardization (Poland)
- AENOR – Spanish Association for Standardization and Certification (Spain)
- IPQ – Instituto Português da Qualidade (Portugal)
- SFS – Finnish Standards Association (Finland)
- LST – Lithuanian Standards Board (Lithuania)
- SNV – Swiss Association for Standardization (Switzerland)
- ASRO – Romanian Standards Association (Asociaţia de Standardizare din România)

***ELOT**, the Hellenic Organisation for Standardisation, was established in 1976 as a non-profit legal entity governed by private law, subsidized by the state, and supervised by the Minister of Industry. In 1997, ELOT became a public limited company under the supervision of the Minister of Development, with the distinctive title ELOT S.A. Since 2013, ELOT has been an independent operational unit of NQIS "National Quality Infrastructure System", a legal entity governed by private law, with the main mission of developing and establishing standards. The first organisation in which GSH achieved to participate as a national representative is under ISO standards. ISO, the International Organisation for Standardisation, brings together experts from around the globe to determine optimal methods for tasks ranging from product development to process management. Established in 1946, ISO is one of the oldest international non-governmental organisations, promoting global trade and collaboration. The International Standards created by ISO aim to enhance safety, efficiency, and quality of life. Specifically, the working group in which the members of GSH participate is: Betty Charalampopoulou, CEO of Geosystems Hellas, was accepted as a "National Expert" for the Working Group ISO/TC 20/SC 14/WG 8 «Space systems and operations» for the period 07/08/2023 – 07/08/2024 (National organisation: ELOT). Specifically, for WG8, standardisation activities concern manned and unmanned space vehicles including the management of space programs, design, test, production, launch, maintenance, operation, and disposal of space vehicles, as well as the environment in which the space programs operate.

Table 3. National standardisation bodies related to OCEANIDS consortium

Country *(Limited to participants within the consortium)*	National Standards Body	Acronym	Role/Relevance for OCEANIDS
Greece	Hellenic Organisation for Standardisation	ELOT	National mirror of CEN/CENELEC and ISO in Greece; potential liaison channel via Greek partners.
Belgium	Bureau voor Normalisatie / Bureau de Normalisation	NBN	National mirror of CEN/CENELEC/ISO; relevant for Belgian partners and for EU-wide standard adoption discussions.
Germany	Deutsches Institut für Normung	DIN	Key body for geo-information, ICT and environmental standards; liaison via German partners for future standardisation.
Finland	Finnish Standards Association	SFS	Supports adoption of European and international standards; contact point for Finnish partners in OCEANIDS.
Poland	Polish Committee for Standardization	PKN	National adoption of EN/ISO standards relevant to coastal monitoring, ports and ICT; liaison via Polish partners.
Romania	Romanian Standards Association	ASRO	Contact point for standardisation activities involving Romanian pilots or technical partners.
Lithuania	Lithuanian Standards Board	LST	National mirror of CEN/CENELEC/ISO; relevant for Lithuanian partners and Baltic coastal use cases.
Switzerland	Swiss Association for Standardization	SNV	Coordinates adoption of international standards in Switzerland; channel for Swiss partners involved in EO/ICT tasks.
France	Association Française de Normalisation	AFNOR	Strong involvement in environmental and climate-related standards; liaison through French partners and networks.
Portugal	Instituto Português da Qualidade	IPQ	National body for standards and conformity; relevant for Portuguese coastal/port stakeholders using OCEANIDS results.
Spain	Asociación Española de Normalización y Certificación	AENOR	Important for port/coastal standards in Spain; liaison for Spanish end-users and authorities engaged in OCEANIDS pilots.

4.2 Identification of Technical Committees and Networks directly relevant to the project

Table 4. Technical committees and networks

Technical Committee/ Network	Parent body/Type	Main scope/ focus	Relevance for OCEANIDS	Possible OCEANIDS link
CEN/TC 287 – Geographic Information	CEN – Technical Committee	Standards for geographic information and related services in Europe	Core for harmonised geospatial data models and metadata used in the EO & Spatial Data Platform and O-DSP.	Adoption of EN GI standards for coastal layers, hazard and risk maps.
ISO/TC 211 – Geographic information/ Geomatics	ISO – Technical Committee	International standards for geographic information (ISO 191xx family)	Ensures interoperability of spatial datasets and services across pilots and external data providers.	Use of ISO 19115, 19119, 19139, 19111, etc. in data modelling and metadata.
OGC Technical Committee (incl. WMS/WFS/WCS/WPS, APIs)	OGC – Global standardisation consortium	Open standards for geospatial data formats and web services	Core for the EO & Spatial Data Platform and O-DSP services (map visualisation, data download, analysis services, interoperability with third-party tools).	Implement OGC services for platform access; highlight OGC compliance in exploitation.
INSPIRE Maintenance & Implementation Group (MIG)	European Commission / Expert group	Implementation of INSPIRE Directive and technical guidelines	Relevant for harmonised coastal/port datasets and services that OCEANIDS wants to plug into national and European spatial data infrastructures.	Follow INSPIRE guidance; map key layers (coastline, flooding, risks) to INSPIRE themes.

ISO/TC 323 – Circular Economy	ISO – Technical Committee	Standards for circular economy frameworks and performance	Positions OCEANIDS results within circular and sustainable port/coastal operations and blue economy approaches.	Mapping of OCEANIDS indicators to circular economy metrics where relevant.
GWP Technical Committee (TEC)	Global Water Partnership – Expert body	Policy and technical guidance on integrated water resources management (IWRM)	High-level reference for integrated coastal and catchment water management in OCEANIDS pilot areas.	Knowledge exchange / clustering on water governance and adaptation practices.
European Technical & Scientific Committee (ETSC)	European Water Association – Committee	Technical and scientific issues on water and wastewater in Europe	Relevant for sharing OCEANIDS findings on coastal water, floods and infrastructure with the European water community.	Potential clustering, workshops, or joint briefs on coastal/water resilience.

4.3 Mapping of EU legislation and policy frameworks impacting the project

Table 5. EU legislations and policy frameworks

Initiative/ Framework	Type	Main focus	Specific relevance for OCEANIDS
EU Oceans Pact	Policy initiative	Umbrella initiative announced in 2025 to strengthen protection of oceans and coasts, boost the sustainable blue economy and enhance maritime security.	Provides the overarching political context for OCEANIDS: EO-based tools for coastal risk assessment, protection of ocean and coastal health, and support to coastal communities are directly in line with the Pact's objectives.
EU Ports Strategy	Policy/strategy	Comprehensive strategy for European ports, addressing competitiveness, sustainability, security,	OCEANIDS delivers climate-informed risk assessments, decision support tools and adaptation pathways that can underpin the Ports Strategy's pillars on resilience, climate

		circular economy and energy transition.	adaptation, blue economy and security for port infrastructures.
European Ports Alliance	Policy initiative	Alliance focused on combating drug trafficking and organised crime via port security, surveillance and better information sharing.	OCEANIDS EO and monitoring capabilities (coastal conditions, port perimeters) can complement Ports Alliance efforts, especially where multi-use security, safety and environmental monitoring needs intersect.
EU Mission "Adaptation to Climate Change"	EU mission	Accelerating climate resilience through regional and local adaptation actions across Europe.	OCEANIDS is explicitly aligned with this Mission: its port-specific climate risk analyses, adaptation scenarios and stakeholder co-development are concrete examples of Mission implementation in the coastal and ports domain.
Vision for the Space Economy	Policy/strategic vision	Promotes integration of space-based data and services (incl. EO) into all economic sectors.	OCEANIDS showcases how the EO downstream sector supports ports and coastal stakeholders with operational climate risk, planning and emergency response services, directly implementing the Vision's goals in the ports sector.
Water Framework Directive (2000/60/EC)	Directive	Achieving good ecological status of inland and coastal waters through river basin management plans.	OCEANIDS coastal pilots, water quality indicators and ecosystem-based risk assessments support WFD objectives in port-adjacent water bodies.
Marine Strategy Framework Directive (2008/56/EC)	Directive	Achieving Good Environmental Status (GES) of EU marine waters.	OCEANIDS contributes by assessing pressures and risks on marine and coastal ecosystems around ports (erosion, flooding, pollution), feeding into MSFD descriptors and monitoring.
Floods Directive (2007/60/EC)	Directive	Assessment and management of flood risks, including coastal floods and storm surges.	Multi-hazard coastal flood and storm surge components of OCEANIDS directly support preparation and revision of flood risk maps and management plans for port areas.
INSPIRE Directive (2007/2/EC)	Directive	Establishing an EU spatial data infrastructure for environmental policies and activities.	OCEANIDS EO & Spatial Data Platform adopts INSPIRE principles for metadata, data harmonisation and web services, ensuring that

			port/coastal datasets can be integrated into national and European SDIs.
Maritime Spatial Planning Directive (2014/89/EU)	Directive	Framework for maritime spatial planning to promote sustainable use of marine space.	OCEANIDS "Climate-Informed Maritime Spatial Planning" tools directly underpin MSP processes, providing climate and hazard-aware layers for port development and coastal zone planning.
EU Strategy on Adaptation to Climate Change (2021)	Strategy	Building a climate-resilient EU through improved risk assessment, adaptation planning and implementation.	OCEANIDS contributes methods and tools for climate risk assessment, cost–loss analysis and prioritisation of adaptation measures for ports and coastal municipalities.
European Green Deal Sustainable Blue Economy	Policy framework	Climate neutrality, green transition, sustainable blue economy and resilient infrastructure.	OCEANIDS positions ports as hubs of sustainable blue economy, using EO to support low-carbon, climate-resilient port operations and coastal protection strategies.
General Data Protection Regulation (GDPR) – Regulation (EU) 2016/679	Regulation	Protection of personal data and privacy rights.	Provides the legal basis for handling any personal data within OCEANIDS platforms (user accounts, stakeholder data), guiding data governance and ethics.

4.4 Compiling a list of concrete standards to be mapped to the project's components

Table 6. Standards mapped to project's components

OCEANIDS component / output	Relevant standard(s)	Main purpose of the standard	How it is applied in OCEANIDS
EO & Spatial Data Platform (data ingestion, catalog, visualisation, APIs)	OGC WMS / WFS / WCS / WPS / OGC API; ISO 19115 / 19119 / 19139 / 19111; INSPIRE Implementing Rules	Open geospatial services, harmonised metadata and service descriptions	All coastal, port, hazard, exposure and risk layers are stored, described and served using INSPIRE/ISO-compliant metadata and OGC web services, so they can be discovered, viewed and reused by external users and SDIs.
Decision Support Platform (O-DSP) – software & web services	ISO/IEC 25010:2011; ISO/IEC 12119 *(optional)*	Software/system quality models; quality requirements and testing	Provides the quality framework (reliability, usability, performance, security) for the O-DSP: used to define non-functional requirements and acceptance criteria, and to structure internal testing of decision-support modules.
Multi-hazard risk methodology & workflows	ISO 31000:2018 – Risk management – Guidelines	Generic risk management principles and process	Used as the conceptual backbone for OCEANIDS risk methodology: identification, analysis, evaluation and treatment of coastal and port-related risks, and reflected in methodological deliverables and O-DSP logic.
Information security for EO Platform and O-DSP	ISO/IEC 27001 – Information Security Management Systems; ISO/IEC 27002 – Code of practice for information security controls; ISO/IEC 27017 – Information security controls for cloud services	Establishing an ISMS, selecting and implementing controls, cloud-specific controls	Guides the security management of OCEANIDS digital infrastructure (access control, logging, configuration management, incident response), especially in cloud deployments of the EO Platform and O-DSP. Partners already aligned with 27001/27002 can extend their controls to OCEANIDS services.
OCEANIDS website	ISO/IEC 27001 – Information Security Management Systems	Certifies that Hetzner Online GmbH and Hetzner Finland Oy have established and	The server that the OCEANIDS website is hosted on, is a Cloud VM powered by Hetzner.

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		implemented an appropriate ISMS	
Privacy & protection of PII (users, stakeholders data)	ISO/IEC 29100 – Privacy framework; ISO/IEC 29151:2017 – Code of practice for PII protection; GDPR (Regulation (EU) 2016/679)	Privacy terminology and roles; PII protection controls; legal data protection obligations	Forms the reference framework for privacy-by-design in OCEANIDS: mapping PII flows, defining roles (controllers/processors), and implementing additional technical/organisational controls for PII protection on top of GDPR compliance in the platforms and pilots.
Quality management for EO services & tools	ISO 9001:2015 – Quality management systems	Organisation-level quality management	Used by technical partners as overarching QMS for design, development, validation and delivery of EO processing chains and O-DSP services, ensuring consistent quality and continuous improvement of OCEANIDS outputs.
Service management & operation of OCEANIDS digital services	ISO/IEC 20000-1:2018 – Service management system requirements	Service management for IT services over their lifecycle	Provides a reference for how OCEANIDS platform services are planned, delivered, monitored and improved (SLAs, incident management, change management), especially if any partner operates OCEANIDS services in production beyond the project.
Business continuity & disaster recovery for platforms	ISO 22301:2019 – Business continuity management systems; ISO/IEC 24762 – Guidelines for ICT disaster recovery services	Organisational BCMS; ICT disaster-recovery services	Basis for continuity planning for the EO Platform and O-DSP (backups, alternative hosting, recovery time objectives), ensuring that critical services (e.g., warning dashboards) remain available or can be restored after disruptions.
Data exchange, interoperability and long-term preservation	ISO 20614:2017 – Data exchange protocol for interoperability and preservation	Protocol for exchanging and preserving information objects	Reference when designing export formats, archives and hand-over of OCEANIDS data products (hazard maps, indicators, scenarios) to external repositories and institutional SDIs.
Testing & calibration of in-situ sensors and laboratories *(where applicable)*	ISO/IEC 17025:2017 – Competence of testing and calibration laboratories	Requirements for competent, impartial lab operation	Relevant for any partner operating labs that test or calibrate sensors or instruments used in coastal pilots, ensuring traceable, reliable measurements feeding OCEANIDS analyses.

Security evaluation of critical software components ***(optional)***	ISO/IEC 15408 – Common Criteria for IT Security Evaluation	Framework and assurance levels for IT security evaluation	Optional reference if any critical OCEANIDS software module (e.g., security-sensitive components) is ever submitted to formal evaluation; can be mentioned as a possible path for future hardening of operational deployments.
Accessibility of the OCEANIDS web interfaces	W3C Web Content Accessibility Guidelines (WCAG) 2.1; EN 301 549 – Accessibility requirements for ICT products and services	Accessibility requirements for ICT, including web and software	Provides concrete accessibility requirements (aligned with the Web Accessibility Directive) for OCEANIDS public-facing portals and dashboards, ensuring that key functions are usable by persons with disabilities.
Data centre facilities and infrastructure ***(if hosted in own DC)***	EN 50600 – Data centre facilities and infrastructures	KPIs and requirements for efficient, reliable data centres	Relevant where OCEANIDS services are hosted in partner-owned data centres, providing guidance on infrastructure reliability and energy performance (e.g., energy reuse factor ERF).
OCEANIDS website	ISO 20078-2:2021 – HTTPS protocol for security	Hypertext Transfer Protocol Secure (HTTPS)	Defines how to access resources on a web-services interface of an offering party using the Hypertext Transfer Protocol Secure (HTTPS).

5 Contribution to EU standardisation policy and consultations

As part of Task T6.2, OCEANIDS is not only mapping relevant standards **but also engaging with ongoing EU policy processes on standardisation**. In 2025, EARSC, as leader of T6.2 and a registered entity in the EU Transparency Register, identified the public consultation on the revision of the Standardisation Regulation as a relevant opportunity to channel the project's experience and needs.

In agreement with GSH, EARSC is preparing a coordinated contribution to this consultation. Technical experts from GSH (e.g., with experience in EO, ports and climate services standardisation) were invited to provide input on selected questions related to the speed and responsiveness of standardisation, inclusiveness of the standardisation system, access to standards, and the EU's role in global standard-setting. EARSC will consolidate these inputs and submit the response on behalf of OCEANIDS, explicitly acknowledging the contribution of OCEANIDS partners and reflecting the project's perspective on the needs for systemic standards supporting EU resilience and the green and digital (twin) transition.

This activity illustrates how OCEANIDS uses its standardisation work not only to align project outputs with existing standards, but also to inform future EU standardisation policy and regulation, and will be documented as part of Deliverable D6.8.

6 Conclusions & Next steps

This document outlines strategies for two key activities of the project:

- OCEANIDS **Liaison activities**
- OCEANIDS **Standard compliance**

The OCEANIDS liaison strategy has been systematically designed to achieve five key goals: **(i)** enhancing synergies across initiatives, **(ii)** fostering stakeholder engagement, **(iii)** aligning with European and global climate missions, **(iv)** facilitating knowledge transfer, and **(v)** promoting long-term collaboration. Together, these goals strengthen the project's capacity to deliver impactful and sustainable solutions for building resilient coastal areas.

By leveraging diverse synergies, ranging from partnerships with EU-funded projects and international networks to collaborations with policymakers, industry stakeholders, and local communities, OCEANIDS has established a robust framework for knowledge and resource sharing. These synergies have not only amplified the project's outreach but have also supported critical policy developments, including contributions to the EU Mission on Adaptation to Climate Change and the EU Mission Restore our Ocean and Waters.

Through the implementation of a comprehensive methodology, the project has successfully built a dynamic network of collaborators, tailored engagement strategies to diverse stakeholder needs, and laid the foundation for sustained partnerships beyond its duration. This liaison strategy will continue to drive meaningful interactions and reinforce OCEANIDS' commitment to addressing climate adaptation challenges, thereby contributing to a competitive, sustainable, and resilient Blue Economy.

At the same time, the strategy for standard compliance outlines the methodology guiding activities throughout the project and gathers the foundational information necessary to perform them. Following this deliverable, technical partners involved in WP3 and WP4 who are responsible for developing OCEANIDS tools, as well as partners from WP6 (standards related to the OCEANIDS website), will complete the questionnaire provided in **Annex 1**, identifying the standards they comply with. Based on the collected information, the final assessment of standard compliance will be presented in Deliverable 6.8.

7 Annex 1

1st Questionnaire for partners contribution towards OCEANIDS standardization

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Work Package 6

Task 6.2-Standardisation Activities

1st Questionnaire for partners contribution towards OCEANIDS standardization

Task 6.2 aims to ensure that the project activities comply with existing standards, regulations and guidelines, to contribute to any ongoing standardization process of relevant standards and to establish new methodologies and practices throughout the course of the project. The relevant standards, regulations, and guidelines are presented in the following tables.

Standards

In this section we present all relevant standards (International and European) we have collected so far in the following two tables.

EUROPEAN STANDARDS

Every partner to fill the table accordingly:

1. *Complete the Tasks that are related with the specific Standards.*
2. *Verify whether the following Standards have been followed, used, or are intended to be used in the project.*
3. *Add any Standards that may fit in the OCEANIDS project.*
4. *Provide any general comments or questions.*

No	Code/Name	Task	Yes/No	Description/Scope
1	EN ISO 14001:2015 – Environmental management systems			Framework for environmental management systems (EMS). Widely used by European ports to structure environmental performance and compliance; relevant for port authorities or operators participating in OCEANIDS pilots.
2	EMAS – Eco-Management and Audit Scheme (Reg. (EC) 1221/2009)			Voluntary EU EMS scheme used by public and private organisations to evaluate, report and improve environmental performance; complementary or alternative to ISO 14001 and relevant for ports aiming at high environmental standards.
3	PERS – Port Environmental Review System (EcoPorts / ESPO)			The only port-sector-specific environmental management standard**,** developed by EcoPorts/ESPO. Used by many EU ports as a stepping stone or complement to ISO 14001/EMAS; highly relevant as a reference for environmental performance in OCEANIDS ports.
4	ISO 14090:2019 – Adaptation to climate change – Principles, requirements and guidelines			Part of ISO 14000 family; provides a structured approach to climate change adaptation planning. Can underpin OCEANIDS' climate-risk and adaptation workflows for ports and coastal authorities.

5	EN ISO 14064-1:2019 – Greenhouse gases – Part 1			Specifies principles and requirements for quantifying and reporting GHG emissions and removals at organisation level; supports carbon accounting for ports and operators using OCEANIDS services.
6	ISO 14006:2020 – Environmental management systems – Guidelines for incorporating ecodesign			Helps organisations integrate ecodesign into their EMS. Relevant if OCEANIDS results are used to design or retrofit port infrastructure and coastal defences with lower environmental impact.
7	EN 301 549 – Accessibility requirements for ICT products and services			Defines accessibility requirements for websites, software and ICT services (aligned with the EU Web Accessibility Directive); relevant for OCEANIDS public portals and dashboards so they are usable by persons with disabilities.
8	EN 50600 – Data centre facilities and infrastructures			Provides requirements and KPIs for the availability, security and energy efficiency of data centres; relevant if OCEANIDS services are hosted in partner-owned data centres.
9	EN 62368-1 – Audio/video, information and communication technology equipment – Safety requirements			Safety standard for IT/communication equipment; relevant where partners deploy servers, communication equipment or in-situ devices in pilot areas.
10	EN 61000 series – Electromagnetic compatibility (EMC)			Family of standards on EMC emissions and immunity for electrical/electronic equipment; relevant for any sensors or communication devices deployed in OCEANIDS coastal pilots.
11	CEN/TC 287 – Geographic information (Technical Committee)			European technical committee responsible for geographic information standards (data models, metadata); underpins harmonised handling of spatial data in the EO & Spatial Data Platform and O-DSP.
12	CEN/TC 165 – Wastewater engineering (Technical Committee)			Standards for design and operation of wastewater systems and infrastructure; relevant where OCEANIDS scenarios consider

				combined flooding and wastewater overflows in port/coastal cities.
13	CEN/SS S27 – Waste – Characterisation, treatment and streams (Sectoral Committee)			Standards related to waste, sludge and environmental aspects; relevant when assessing port waste streams and their impact on coastal and marine environments.
XXX	XXX	XXX	XXX	XXXX

INTERNATIONAL STANDARDS

Every partner to fill the table accordingly:

1. *Complete the Tasks that are related with the specific Standards.*
2. *Verify whether the following Standards have been followed, used, or are intended to be used in the project.*
3. *Add any Standards that may fit in the OCEANIDS project.*
4. *Provide any general comments or questions.*

No	Code/Name	Task	Yes/No	Description/Scope
1	ISO/IEC 27001 – Information Security Management Systems (ISMS)			Specifies requirements for establishing, implementing, maintaining and continually improving an ISMS; relevant for securing the EO Platform and O-DSP.
2	ISO/IEC 27002 – Code of practice for information security controls			Provides a catalogue of information security controls (policies, technical and organisational measures); supports the implementation of ISO/IEC 27001 in OCEANIDS digital services.
3	ISO/IEC 27017:2015 – Code of practice for information security controls for cloud services			Gives additional guidance and controls for cloud-specific risks; relevant if OCEANIDS platforms are deployed in cloud environments.
4	ISO/IEC 25010:2011 – Systems and software quality models			Defines quality characteristics for software and systems (reliability, usability, performance, security, etc.); used as reference for non-functional requirements and testing of the O-DSP.
5	ISO 31000:2018 – Risk management – Guidelines			Provides principles and a generic process for risk management; used as conceptual basis for the multi-hazard risk assessment methodology in OCEANIDS.
6	ISO/IEC 29100:2024 – Privacy framework			Establishes a high-level privacy framework with concepts, roles and principles; complements GDPR for designing privacy-by-design data flows in OCEANIDS.
7	ISO/IEC 29151:2017 – Code of practice for personally identifiable information (PII) protection			Translates privacy principles into concrete controls to protect PII; relevant if OCEANIDS processes user, stakeholder personal data.
8	ISO 9001:2015 – Quality management systems			QMS standard for organisations; can be used by partners to structure

				quality assurance around EO processing chains and O-DSP service development/delivery.
9	ISO/IEC 20000-1:2018 – Service management system requirements			Specifies requirements for an IT service management system; relevant for partners planning to operate OCEANIDS services as ongoing services after the project.
10	ISO/IEC 17025:2017 – General requirements for the competence of testing and calibration laboratories			Sets competence and quality requirements for labs; relevant where partners calibrate or validate sensors/instruments feeding OCEANIDS.
11	ISO 20614:2017 – Information and documentation — Data exchange protocol for interoperability and preservation			Defines a protocol for exchanging and preserving information objects; relevant for long-term preservation and exchange of OCEANIDS data products with external repositories.
12	ISO/IEC 24762 – Security techniques — Guidelines for ICT disaster recovery services			Provides guidelines for planning and implementing ICT disaster recovery services; relevant for backup and recovery planning of the EO Platform and O-DSP.
13	ISO/IEC 15408 – Common Criteria for Information Technology Security Evaluation			Framework for evaluating and certifying security properties of IT products; could be considered for future high-assurance deployments of critical OCEANIDS components.
14	ISO/TC 211 – Geographic information / Geomatics (Technical Committee)			International technical committee responsible for the ISO 191xx family (metadata, data models, coordinate reference systems); ensures interoperability of spatial data used in OCEANIDS.
15	OGC WMS 1.3.0 – Web Map Service			Standard interface for serving georeferenced map images; used for visualisation of OCEANIDS hazard, exposure and risk layers.
16	OGC WFS / WCS / WPS / OGC API – Features			Standards for serving and accessing geospatial features, coverages and processing services; support interoperable access to OCEANIDS datasets and processing functions.
XXX	XXX	XXX	XXX	XXXX

Please write here your comments-questions-observations.

Regulations/Directives/Policies

In this section we present European Regulations and Directives relevant to OCEANIDS project.

Every partner to fill the table accordingly:

1. *Complete the Tasks that are related with the specific Regulations/Directives.*
2. *Verify whether the following Standards have been followed, used, or are intended to be used in the project.*
3. *Add any Regulations/Directives that may fit in the OCEANIDS project.*
4. *Provide any general comments or questions.*

No	Code/Name	Task	Yes/No	Description/Scope
1	Regulation (EU) 2016/679 – General Data Protection Regulation (GDPR)			EU regulation on the protection of personal data and privacy; applies to any processing of personal data within OCEANIDS platforms and pilots.
2	Directive 2000/60/EC – Water Framework Directive (WFD)			Establishes a framework for the protection and good ecological status of inland and coastal waters; relevant for OCEANIDS coastal/estuarine pilots.
3	Directive 2008/56/EC – Marine Strategy Framework Directive (MSFD)			Aims to achieve Good Environmental Status of EU marine waters; relevant where OCEANIDS assesses pressures and risks from port/coastal hazards on marine ecosystems.
4	Directive 2007/60/EC – Floods Directive			Concerns the assessment and management of flood risks, including coastal floods and storm surges; directly relevant to OCEANIDS multi-hazard flood components.
5	Directive 2007/2/EC – INSPIRE Directive			Establishes an EU spatial data infrastructure for environmental policies; underpins how OCEANIDS publishes and shares geospatial data and services.
6	Directive 2014/89/EU – Maritime Spatial Planning Directive (MSP)			Provides a framework for maritime spatial planning to promote sustainable use of marine space; OCEANIDS climate-informed MSP layers support its implementation.
7	EU Strategy on Adaptation to Climate Change (2021)			EU strategy for building climate resilience; OCEANIDS contributes tools and methodologies for port and coastal adaptation planning.

8	EU Oceans Pact (policy initiative)			Political umbrella initiative to strengthen protection of oceans and coasts and promote a sustainable blue economy; contextual framework for OCEANIDS activities.
9	EU Ports Strategy (in preparation)			Upcoming strategy for competitive, green, resilient and secure European ports; OCEANIDS outputs can support its resilience and climate-adaptation pillars.
10	Regulation (EU) 2022/868 – Data Governance Act (DGA)			Establishes a framework for data sharing and data intermediaries in the EU to boost data-intensive markets. Relevant for OCEANIDS as an EO/climate data service, particularly for data-sharing models between public authorities, ports and private operators.
11	Regulation (EU) 2023/2854 – Data Act			Sets harmonised rules on **fair access to and use of data**, clarifying rights and obligations between data holders, users and public authorities. Important for any OCEANIDS exploitation model involving access to port, sensor or platform data and interoperability obligations.
12	Directive (EU) 2019/1024 – Open Data and re-use of public sector information			Recast PSI / Open Data Directive; promotes re-use of public sector and certain public-undertaking data, with "open by default" as a principle. Directly relevant to OCEANIDS publication of public EO/coastal datasets and APIs.
13	INSPIRE Implementing Rules – Metadata, Data Specifications, Network Services			Technical implementing rules of the INSPIRE Directive; guide harmonisation and publication of environmental geospatial data and services used in OCEANIDS.
XXX	XXX	XXX	XXX	XXXX

Families of National Policies				
No	**Code/Name**	**Task**	**Yes/No**	**Description/Scope**
1	National Adaptation Strategies (NAS) and National Adaptation Plans (NAPs)			Each EU Member State has a national adaptation strategy/plan under the EU Adaptation Strategy and Climate Law. These define climate-risk priorities for sectors such as coasts, ports, transport and civil protection; OCEANIDS tools can directly support their implementation.
2	National Energy and Climate Plans (NECPs) 2021–2030			NECPs set national contributions to EU climate and energy targets. OCEANIDS port resilience services can be linked to NECP measures on coastal/maritime infrastructure.
3	National Maritime Spatial Plans (MSPs)			Transpose Directive 2014/89/EU into national law; define spatial allocation of uses (shipping, ports, offshore energy, Natura 2000, etc.) in marine waters. OCEANIDS "climate-informed MSP" layers can be mapped against each country's MSP.
4	Port Authority Environmental / Sustainability Programmes (ISO 14001, EMAS, PERS)			Many national port authorities (e.g., Greek, Spanish, Dutch ports) have ISO 14001, EMAS or PERS-based environmental management systems. OCEANIDS environmental indicators and risk maps can be integrated into these existing port EMS structures.

Please write here your comments-questions-observations.

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