1. Identification

Call	Date of submission
C1	25/04/2022

1.1. Full name of the project

Wrecks and Underwater Munition Management

41 / 250 characters

1.2. Short name of the project

WRUMM

5 / 20 characters

1.3. Programme priority

2. Water-smart societies

1.4. Programme objective

2.1 Sustainable waters

1.6. Project duration

Contracting start	22/09/2022	**Contracting end**	31/12/2022
Implementation start	01/01/2023	**Implementation end**	31/12/2025
		Duration of implementation phase (months)	36
Closure start	01/01/2026	**Closure end**	31/03/2026

1.7. Project summary

Historical contamination of the Baltic Sea remains a potential risk to the marine ecosystem and a hindrance to the maritime economy. This includes underwater munitions, as well as military and civilian wrecks. Management of these remains to be a complex issue: the maritime economy aspect is handled by respective national authorities and agencies such as maritime administration and offshore companies, while environmental protection agencies and international organizations such as HELCOM deal with the environmental aspect.
Management decisions regarding monitoring, cleanup, or exclusion of anthropogenic activities in such areas are extremely slow since expert decisions need to be backed by expensive studies, this leaves a vast number of areas containing munitions or wrecks without a proper management strategy.
The main difficulties include the decision support systems (DSS), the lack of specialized research tools, and the complex legal regulations, which can be contradictory at a transnational level and make any action lengthy and complicated.
The WRUMM project proposes to develop new specialized tools for the examination and monitoring of wrecks and underwater munitions, the results of which could be directly linked to a unified DSS. This will be based on tools developed within the preceding CHEMSEA and DAIMON projects, expanding the role of wrecks to a full-scale assessment and harmonizing examination tools, to be used for both kinds of environmental threats.

1,493 / 1,500 characters

1.8. Summary of the partnership

Necessary solutions require knowledge and skills present only in research institutes, bringing together a multidisciplinary team already proven and experienced in previous projects related to underwater munitions and wreck studies. This includes the following:
Poland: Institute of Oceanology Polish Academy of Sciences (IOPAS), Military University of Technology (WAT), Federation of Military Universities (FMU), Jagiellonian University (UJ), University of Gdańsk (UG);
Lithuania: Klaipeda University (KU);
Estonia: Tallinn University of Technology (TalTech), University of Tartu (UT);
Germany: University Medical School Schleswig-Holstein (UKSH), Alfred Wegener Institute Helmholtz Centre for Polar and Marine Research (AWI); Geomar Helmholtz Centre for Ocean Research Kiel (GEOMAR);
Finland: Finnish Environmental Institute (SYKE), University of Helsinki (UH-VERIFIN);
Norway: Norwegian Defense Research Establishment (FFI);
Sweden: Chalmers University of Technology (CUT).

The industry part of the consortium includes manufacturers of specialized marine sensors for the detection of substances related to the issue, offshore, and software companies dealing with risk assessment in the marine environment.
Germany: north.io, KUM Environmental and Marine Technology Kiel (KUM);
Finland: NeutronGate Oy.

The involvement of NGOs is limited to International Centre of Chemical Safety and Security (ICCSS) from Poland, who will bring in their expertise in crisis management and policy studies.

The involvement of authorities includes the German Environment Agency (UBA), who will provide its expertise in monitoring and environmental impact assessment, as well as legal aspects. The Council of the Baltic Sea States (CBSS), as an international governmental organisation, will provide consultation on monitoring and evaluation schemes developed within the project.

Associated Organizations include the Danish Environmental Protection Agency (DEPA), Aarhus University - Danish Center for Environment and Energy (AU/DCE), Polish Ministry of Infrastructure (MI), Estonian Navy (EN), Lithuanian Environmental Protection Agency (LEPA), Polish Maritime Administration represented by Maritime Office in Gdynia (MO), RWE Renewables Poland (RWE), Pomorskie Voivodeship (PV) in Poland, General Directorate for Environmental Protection Poland (GDEP), Norwegian Directorate for Cultural Heritage (NDCH), and Finnish Border Guard (RAJA). They will be included in the development phase, adjusting risk assessment procedures, early warning system usage, and examination methods to their needs and providing logistic support in the preparation of pilot studies. Their main role will be in transferring the solutions provided by the project into their day to day practice, by adopting the risk assessment reports coming from the pilot phase into their databases as well as running the project decision support tools on the data available to them.

2,948 / 3,000 characters

1.11. Project Budget Summary

Financial resources [in EUR]		Preparation costs	Planned project budget
ERDF	ERDF co-financing	0.00	3,776,533.52
	Own contribution ERDF	0.00	944,133.38
	ERDF budget	0.00	4,720,666.90
NO	NO co-financing	0.00	100,000.00
	Own contribution NO	0.00	100,000.00
	NO budget	0.00	200,000.00
NDICI	NDICI co-financing	0.00	0.00
	Own contribution NDICI	0.00	0.00
	NDICI budget	0.00	0.00
RU	RU co-financing	0.00	0.00
	Own contribution RU	0.00	0.00
	RU budget	0.00	0.00
TOTAL	**Total Programme co-financing**	0.00	3,876,533.52
	Total own contribution	0.00	1,044,133.38
	Total budget	0.00	4,920,666.90

2. Partnership

2.1. Overview: Project Partnership

2.1.1 Project Partners

No.	LP/PP	Organisation (English)	Organisation (Original)	Country	Type of partner	Legal status	Partner budget in the project	Active/inactive	
								Status	from
1	LP	Institute of Oceanology Polish Academy of Sciences (IOPAS)	Instytut Oceanologii Polskiej Akademii Nauk	PL	Higher education and research institution	a)	808,794.10 €	Active	22/09/2022
2	PP	north.io	north.io GmbH	DE	Small and medium enterprise	b)	319,500.00 €	Active	22/09/2022
3	PP	Military University Of Technology (WAT)	Wojskowa Akademia Techniczna	PL	Higher education and research institution	a)	249,900.00 €	Active	22/09/2022
4	PP	Klaipeda University (KU)	Klaipėdos Universitetas	LT	Higher education and research institution	a)	202,000.00 €	Active	22/09/2022
5	PP	Tallinn University of Technology (TalTech)	Tallinna Tehnikaülikool	EE	Higher education and research institution	a)	128,724.00 €	Active	22/09/2022
6	PP	Norwegian Defence Research Establishment (FFI)	Forsvarets forskningsinstitutt	NO	Sectoral agency	a)	200,000.00 €	Active	22/09/2022
7	PP	Federation of Military Universities (FMU)	Federacja Akademii Wojskowych	PL	Higher education and research institution	a)	200,000.00 €	Active	22/09/2022
8	PP	University Medical School Schleswig-Holstein (UKSH)	Universitätsklinikum Schleswig-Holstein	DE	Higher education and research institution	a)	199,999.80 €	Active	22/09/2022
9	PP	Finnish Environment Institute (SYKE)	Suomen ympäristökeskus	FI	Higher education and research institution	a)	273,300.00 €	Active	22/09/2022
10	PP	German Environment Agency (UBA)	Umweltbundesamt	DE	National public authority	a)	250,432.00 €	Active	22/09/2022
11	PP	University of Helsinki (UH-VERIFIN)	Helsingin yliopisto	FI	Higher education and research institution	a)	300,000.00 €	Active	22/09/2022
12	PP	Jagiellonian University (UJ)	Uniwersytet Jagielloński	PL	Higher education and research institution	a)	230,800.00 €	Active	22/09/2022
13	PP	Alfred Wegner Institute Helmholtz Centre for Polar and Marine Research (AWI)	Alfred-Wegener-Institut Helmholtz-Zentrum für Polar- und Meeresforschung	DE	Higher education and research institution	a)	363,997.70 €	Active	22/09/2022
14	PP	International Centre for Chemical Safety and Security (ICCSS)	Międzynarodowe Centrum Bezpieczeństwa Chemicznego	PL	NGO	b)	179,950.00 €	Active	22/09/2022
15	PP	NeutronGate	NeutronGate Oy	FI	Small and medium enterprise	b)	128,200.00 €	Active	22/09/2022
16	PP	University of Tartu (UTartu)	Tartu Ülikool	EE	Higher education and research institution	a)	135,200.00 €	Active	22/09/2022
17	PP	University of Gdansk (UG)	Uniwersytet Gdański	PL	Higher education and research institution	a)	180,000.30 €	Active	22/09/2022
18	PP	KUM Enviromental- and Marine Technology Kiel (KUM)	KUM Umwelt- und Meerestechnik Kiel	DE	Small and medium enterprise	b)	174,876.00 €	Active	22/09/2022
19	PP	Geomar Helmholtz Centre for Ocean Research Kiel (GEOMAR)	Geomar Helmholtz Zentrum für Ozeanforschung Kiel	DE	Higher education and research institution	a)	174,993.00 €	Active	22/09/2022

No.	LP/PP	Organisation (English)	Organisation (Original)	Country	Type of partner	Legal status	Partner budget in the project	Active/inactive	
								Status	from
20	PP	Chalmers University of Technology (CUT)	Chalmers tekniska högskola	SE	Higher education and research institution	a)	150,000.00 €	Active	22/09/2022
21	PP	Council of the Baltic Sea States (CBSS)	Council of the Baltic Sea States	SE	International governmental organisation	a)	70,000.00 €	Active	22/09/2022

2.1.2 Associated Organisations

No.	Organisation (English)	Organisation (Original)	Country	Type of Partner
AO 1	Danish Environmental Protection Agency (DEPA)	Miljøstyrelsen	DK	Sectoral agency
AO 2	Aarhus University - Danish Center for Environment and Energy (AU/DCE)	Aarhus Universitet - Nationalt Center for Miljø og Energi	DK	Higher education and research institution
AO 3	Polish Ministry of Infrastructure (MI)	Ministerstwo Infrastruktury	PL	National public authority
AO 4	Estonian Navy (EN)	Eesti Merevägi	EE	Infrastructure and public service provider
AO 5	Environmental Protection Agency (LEPA)	Aplinkos apsaugos agentūra	LT	National public authority
AO 6	Maritime Office in Gdynia (MO)	Urząd Morski w Gdyni	PL	Regional public authority
AO 7	RWE Renewables Poland (RWE)	RWE Renewables Poland	PL	Small and medium enterprise
AO 8	Pomorskie Voivodship (PV)	Województwo Pomorskie	PL	Regional public authority
AO 9	General Directorate for Environmental Protection (GDEP)	Generalna Dyrekcja Ochrony Środowiska	PL	National public authority
AO 10	Norwegian Directorate for Cultural Heritage (NDCH)	Riksantikvaren	NO	National public authority
AO 11	Finnish Border Guard (RAJA)	Rajavartiolaitos	FI	National public authority

2.2 Project Partner Details - Partner 1

LP/PP Lead Partner

Partner Status Active

Active from 22/09/2022 **Inactive from**

Partner name:

Organisation in original language Instytut Oceanologii Polskiej Akademii Nauk

43 / 250 characters

Organisation in English Institute of Oceanology Polish Academy of Sciences (IOPAS)

58 / 250 characters

Department in original language Zakład Chemii i Biochemii Morza

31 / 250 characters

Department in English Marine Chemistry and Biochemistry

33 / 250 characters

Partner location and website:

Address ul. Powstańców Warszawy 55

26 / 250 characters

Country Poland

Postal Code	81-712 (6 / 250 characters)	**NUTS1 code**	Makroregion północny
Town	Sopot (5 / 250 characters)	**NUTS2 code**	Pomorskie
Website	www.iopan.pl (12 / 100 characters)	**NUTS3 code**	Gdański

Partner ID:

Organisation ID type	Tax identification number (NIP)
Organisation ID	5851004839
VAT Number Format	PL + 10 digits
VAT Number	N/A ☐ PL5851004839 (12 / 50 characters)
PIC	999488971 (9 / 9 characters)

Partner type:

Legal status	a) Public	
Type of partner	Higher education and research instituti	University faculty, college, research institution, RTD facility, research cluster, etc.
Sector (NACE)	72.19 - Other research and experimental development on natural sciences and engineering	

Partner financial data:

Is your organisation entitled to recover VAT related to the EU funded project activities? No

Financial data	**Reference period**	01/01/2021 –	31/12/2021
	Staff headcount [in annual work units (AWU)]		189.4
	Employees [in AWU]		185.4
	Persons working for the organisation being subordinated to it and considered to be employees under national law [in AWU]		3.0
	Owner-managers [in AWU]		1.0
	Partners engaged in a regular activity in the organisation and benefiting from financial advantages from the organisation [in AWU]		0.0
	Annual turnover [in EUR]		10,587,444.41
	Annual balance sheet total [in EUR]		10,587,444.41
	Operating profit [in EUR]		-423,018.02

Role of the partner organisation in this project:

IOPAS will coordinate the project. It will be included in the development of the early warning system and examination of wrecks and munition sites using geophysical, chemical, and biological methods. In the risk assessment part, IOPAS will be responsible for the modeling of contaminants transport, as well as building a risk matrix for different toxicants. IOPAS will be active in the analysis of heavy metals released from munitions and oil-related pollution from wrecks. IOPAS will also cooperate with environmental agencies from PL and partners from the offshore industry. It will actively participate in all pilot activities at sea, using its Oceania research vessel and underwater robots.

694 / 1,000 characters

Has this organisation ever been a partner in the project(s) implemented in the Interreg Baltic Sea Region Programme?

○ Yes ○ No

State aid relevance

For the partner type selected, the Programme sees a medium to high risk for implementing State aid relevant activities. If the partner is of the opinion that its activities are not State aid relevant, it can ask the MA/JS for a plausibility check on the State aid relevance. Does the partner want to do this?

○ Yes ○ No

2.2 Project Partner Details - Partner 2

LP/PP	Project Partner		
Partner Status	Active		
Active from	22/09/2022	**Inactive from**	

Partner name:

Organisation in original language	north.io GmbH (13 / 250 characters)
Organisation in English	north.io (8 / 250 characters)
Department in original language	N/A (3 / 250 characters)
Department in English	N/A (3 / 250 characters)

Partner location and website:

Address	Einsteinstrasse 1 (17 / 250 characters)	**Country**	Germany
Postal Code	D-24118 (7 / 250 characters)	**NUTS1 code**	Schleswig-Holstein
Town	Kiel (4 / 250 characters)	**NUTS2 code**	Schleswig-Holstein
Website	www.north.io (12 / 100 characters)	**NUTS3 code**	Kiel, Kreisfreie Stadt

Partner ID:

Organisation ID type	Tax (identification) number (Steuer(identifikations)nummer)
Organisation ID	DE277816248 (11 / 50 characters)
VAT Number Format	DE + 9 digits
VAT Number	N/A ☐ DE277816248 (11 / 50 characters)
PIC	903488071 (9 / 9 characters)

Partner type:

Legal status	b) Private	
Type of partner	Small and medium enterprise	Micro, small, medium enterprises < 250 employees, ≤ EUR 50 million turnover or ≤ EUR 43 million balance sheet total
Sector (NACE)	63.11 - Data processing, hosting and related activities	

Partner financial data:

Is your organisation entitled to recover VAT related to the EU funded project activities? Yes

Financial data	**Reference period**	01/01/2020	–	31/12/2020
	Staff headcount [in annual work units (AWU)]			24.0
	Employees [in AWU]			24.0
	Persons working for the organisation being subordinated to it and considered to be employees under national law [in AWU]			0.0
	Owner-managers [in AWU]			0.0
	Partners engaged in a regular activity in the organisation and benefiting from financial advantages from the organisation [in AWU]			0.0
	Annual turnover [in EUR]			995,746.00
	Annual balance sheet total [in EUR]			739,427.00
	Operating profit [in EUR]			57,144.00

Role of the partner organisation in this project:

North.io will act as a software developer, responsible for the transition of scientific methods, policy recommendations, and project deliverables, as well as storage, management, and analysis of scientific data into a web-based environment. Web-based applications offer widespread accessibility and interdisciplinary access to project partners, stakeholders, and potential government and industrial users, allowing for a scaling of the project outcome and applicability.

471 / 1,000 characters

Has this organisation ever been a partner in the project(s) implemented in the Interreg Baltic Sea Region Programme?

○ Yes ○ No

2.2 Project Partner Details - Partner 3

LP/PP Project Partner

Partner Status Active

Active from 22/09/2022 **Inactive from**

Partner name:

Organisation in original language Wojskowa Akademia Techniczna

29 / 250 characters

Organisation in English Military University Of Technology (WAT)

39 / 250 characters

Department in original language Wydział Nowych Technologii i Chemii

35 / 250 characters

Department in English Faculty of Advanced Technologies and Chemistry

46 / 250 characters

Partner location and website:

Address Gen. S. Kaliskiego 2

20 / 250 characters

Country Poland

Postal Code	00-908 (6 / 250 characters)	**NUTS1 code**	Makroregion województwo mazowieckie
Town	Warszawa (8 / 250 characters)	**NUTS2 code**	Warszawski stołeczny
Website	www.wojsko-polskie.pl/wat/ (26 / 100 characters)	**NUTS3 code**	Miasto Warszawa

Partner ID:

Organisation ID type	Tax identification number (NIP)
Organisation ID	5270206300
VAT Number Format	PL + 10 digits
VAT Number	N/A ☐ PL5270206300 (12 / 50 characters)
PIC	999887835 (9 / 9 characters)

Partner type:

Legal status	a) Public	
Type of partner	Higher education and research instituti	University faculty, college, research institution, RTD facility, research cluster, etc.
Sector (NACE)	85.42 - Tertiary education	

Partner financial data:

Is your organisation entitled to recover VAT related to the EU funded project activities? No

Role of the partner organisation in this project:

WAT is a military university under the supervision of the PL Ministry of National Defense, an expert in the area of development of chemical warfare agents (CWAs) decontamination methods and their chemical analyses. WAT will conduct analysis of a very broad spectrum of CWAs, explosives, and oil and help in risk assessment. WAT will also conduct a laboratory study on the identification of degradation products that occur during the time after the leakage of CWA and oil from wrecks. These data will allow, i.e. an estimation of how old the leakage is. WAT will be responsible for selecting and calibrating passive samplers under laboratory conditions and will then analyze samples collected with samplers. In addition, it will analyze collected samples delivered to determine the presence of target chemicals. WAT Scientists will perform also corrosion studies and develop a corrosion algorithm

895 / 1,000 characters

Has this organisation ever been a partner in the project(s) implemented in the Interreg Baltic Sea Region Programme?

○ Yes ○ No

State aid relevance

For the partner type selected, the Programme sees a medium to high risk for implementing State aid relevant activities. If the partner is of the opinion that its activities are not State aid relevant, it can ask the MA/JS for a plausibility check on the State aid relevance. Does the partner want to do this?

○ Yes ○ No

2.2 Project Partner Details - Partner 4

LP/PP	Project Partner		
Partner Status	Active		
Active from	22/09/2022	**Inactive from**	

Partner name:

Organisation in original language	Klaipėdos Universitetas (23 / 250 characters)
Organisation in English	Klaipeda University (KU) (24 / 250 characters)
Department in original language	Jūros tyrimų institutas (23 / 250 characters)
Department in English	Marine Research Institute (25 / 250 characters)

Partner location and website:

Address	H. Manto str. 84 (16 / 250 characters)	**Country**	Lithuania
Postal Code	LT-92294 (8 / 250 characters)	**NUTS1 code**	Lietuva
Town	Klaipeda (8 / 250 characters)	**NUTS2 code**	Vidurio ir vakarų Lietuvos regionas
Website	www.apc.ku.lt/en (16 / 100 characters)	**NUTS3 code**	Klaipėdos apskritis

Partner ID:

Organisation ID type	Legal person's code (Juridinio asmens kodas)
Organisation ID	211951150
VAT Number Format	LT + 9 digits
VAT Number	**N/A** ☐ LT119511515 (11 / 50 characters)
PIC	999904422 (9 / 9 characters)

Partner type:

Legal status	a) Public	
Type of partner	Higher education and research instituti	University faculty, college, research institution, RTD facility, research cluster, etc.
Sector (NACE)	85.42 - Tertiary education	

Partner financial data:

Is your organisation entitled to recover VAT related to the EU funded project activities?	No

Role of the partner organisation in this project:

KU is a leading academic institution in LT that focuses on applied marine research and development activities. KU has been involved in a number of international initiatives that address marine pollution. KU communicates closely with the LT Navy, responsible for national marine safety and the elimination of dangerous objects from the entire EEZ. KU will facilitate the participation of experts from the Environmental Protection Agency, responsible for the implementation of MSFD in all project activities. KU staff will contribute to the review of methods for the assessment of wrecks and munition sites; comparison of available methods with proposed ones; update the policy work package regarding LT policies and laws regarding munitions and wrecks; cooperation regarding harmonization of policies over Baltic; making a comprehensive study on former chemical burials in the LT waters and sharing available data on known wrecks and munitions; running new DSS over known munitions and wrecks.

993 / 1,000 characters

Has this organisation ever been a partner in the project(s) implemented in the Interreg Baltic Sea Region Programme?

○ Yes ○ No

State aid relevance

For the partner type selected, the Programme sees a medium to high risk for implementing State aid relevant activities. If the partner is of the opinion that its activities are not State aid relevant, it can ask the MA/JS for a plausibility check on the State aid relevance. Does the partner want to do this?

○ Yes ○ No

2.2 Project Partner Details - Partner 5

LP/PP	Project Partner		
Partner Status	Active		
Active from	22/09/2022	**Inactive from**	

Partner name:

Organisation in original language	Tallinna Tehnikaülikool (27 / 250 characters)
Organisation in English	Tallinn University of Technology (TalTech) (42 / 250 characters)
Department in original language	Meresüsteemide instituut (24 / 250 characters)
Department in English	Department of Marine Systems (29 / 250 characters)

Partner location and website:

Address	Ehitajate tee 5 (17 / 250 characters)	**Country**	Estonia
Postal Code	19086 (7 / 250 characters)	**NUTS1 code**	Eesti
Town	Tallin (6 / 250 characters)	**NUTS2 code**	Eesti
Website	www.taltech.ee/en (17 / 100 characters)	**NUTS3 code**	Kesk-Eesti

Partner ID:

Organisation ID type	Registration code (Registrikood)
Organisation ID	74000323
VAT Number Format	EE + 9 digits
VAT Number	N/A ☐ EE100224841 (11 / 50 characters)
PIC	999842536 (9 / 9 characters)

Partner type:

Legal status	a) Public	
Type of partner	Higher education and research instituti	University faculty, college, research institution, RTD facility, research cluster, etc.
Sector (NACE)	85.42 - Tertiary education	

Partner financial data:

Is your organisation entitled to recover VAT related to the EU funded project activities? No

Role of the partner organisation in this project:

TalTech has access to a research vessel and will provide its experience in marine ecology and oceanography to develop methods for impact assessment of munitions and wrecks on biota and habitats. In cooperation with EN and SYKE, TalTech will define potentially hazardous wrecks in the Estonian marine area (GoF and GoR), which will be investigated in the pilot phase. TalTech will design pilot studies to use unified methods for both munition and wreck risk assessment for wrecks with and without fuel. The implementation of the pilot study will include the examination of impacts with specialized tools and modeling the transport of contaminants; implementation of early warning systems (biota impact). TalTech will work in close cooperation with end-users. It will improve existing studies performed by the maritime administration, environmental protection agencies, and the national heritage board in their respective areas of responsibility.

947 / 1,000 characters

Has this organisation ever been a partner in the project(s) implemented in the Interreg Baltic Sea Region Programme?

○ Yes ○ No

State aid relevance

For the partner type selected, the Programme sees a medium to high risk for implementing State aid relevant activities. If the partner is of the opinion that its activities are not State aid relevant, it can ask the MA/JS for a plausibility check on the State aid relevance. Does the partner want to do this?

○ Yes ○ No

2.2 Project Partner Details - Partner 6

LP/PP	Project Partner		
Partner Status	Active		
	Active from 22/09/2022	**Inactive from**	

Partner name:

Organisation in original language	Forsvarets forskningsinstitutt (31 / 250 characters)
Organisation in English	Norwegian Defence Research Establishment (FFI) (46 / 250 characters)

Department in original language	Totalforsvar (13 / 250 characters)
Department in English	Total Defence (13 / 250 characters)

Partner location and website:

Address	Instituttveien 20 (17 / 250 characters)	**Country**	Norway
Postal Code	2007 (4 / 250 characters)	**NUTS1 code**	Norge
Town	Kjeller (7 / 250 characters)	**NUTS2 code**	Oslo og Viken
Website	www.ffi.no (10 / 100 characters)	**NUTS3 code**	Oslo

Partner ID:

Organisation ID type	Organisation number (Organisasjonsnummer)
Organisation ID	970963340
VAT Number Format	NO + 9 digits + MVA
VAT Number	**N/A** ☐ NO970963340MVA (14 / 50 characters)
PIC	999789574 (9 / 9 characters)

Partner type:

Legal status	a) Public	
Type of partner	Sectoral agency	Local or regional development agency, environmental agency, energy agency, employment agency, etc.
Sector (NACE)	72.19 - Other research and experimental development on natural sciences and engineering	

Partner financial data:

Is your organisation entitled to recover VAT related to the EU funded project activities? No

Role of the partner organisation in this project:

FFI will participate in the development of the early warning system, deployment of biota cages, and development of guidelines for impact and risk assessment regarding wrecks in Norwegian waters. This will include the placement of an in situ modular monitoring platform at a wreck site in Norwegian waters, collecting data from environmental sensors, in situ measurements, and passive samplers. FFI will perform some of the chemical analysis of explosives in biota and environmental samples. FFI will also participate in the review of risk assessment approaches and the compilation of management strategies for the region.

623 / 1,000 characters

Has this organisation ever been a partner in the project(s) implemented in the Interreg Baltic Sea Region Programme?

○ Yes ○ No

State aid relevance

For the partner type selected, the Programme sees a medium to high risk for implementing State aid relevant activities. If the partner is of the opinion that its activities are not State aid relevant, it can ask the MA/JS for a plausibility check on the State aid relevance. Does the partner want to do this?

○ Yes ○ No

2.2 Project Partner Details - Partner 7

LP/PP	Project Partner
Partner Status	Active
Active from	22/09/2022
Inactive from	

Partner name:

Organisation in original language	Federacja Akademii Wojskowych (29 / 250 characters)
Organisation in English	Federation of Military Universities (FMU) (41 / 250 characters)
Department in original language	Wydział Dowodzenia i Operacji Morskich (38 / 250 characters)
Department in English	Command and Naval Operation Department (38 / 250 characters)

Partner location and website:

Address	Śmidowicza 69 (13 / 250 characters)	**Country**	Poland
Postal Code	81-127 (6 / 250 characters)	**NUTS1 code**	Makroregion północny
Town	Gdynia (6 / 250 characters)	**NUTS2 code**	Pomorskie
Website	www.amw.gdynia.pl (17 / 100 characters)	**NUTS3 code**	Trójmiejski

Partner ID:

Organisation ID type	Tax identification number (NIP)
Organisation ID	5860104693
VAT Number Format	PL + 10 digits
VAT Number	N/A ☐ PL5860104693 (12 / 50 characters)
PIC	946189605 (9 / 9 characters)

Partner type:

Legal status	a) Public	
Type of partner	Higher education and research instituti	University faculty, college, research institution, RTD facility, research cluster, etc.
Sector (NACE)	85.42 - Tertiary education	

Partner financial data:

Is your organisation entitled to recover VAT related to the EU funded project activities? No

Role of the partner organisation in this project:

FMU will be active in the legal studies and creation of guidelines for improving the legal and policy framework and crisis management procedures regarding munition and wreck management. FMU will also support pilot activities by providing security measures onboard research vessels.

284 / 1,000 characters

Has this organisation ever been a partner in the project(s) implemented in the Interreg Baltic Sea Region Programme?

○ Yes ○ No

State aid relevance

For the partner type selected, the Programme sees a medium to high risk for implementing State aid relevant activities. If the partner is of the opinion that its activities are not State aid relevant, it can ask the MA/JS for a plausibility check on the State aid relevance. Does the partner want to do this?

○ Yes ○ No

2.2 Project Partner Details - Partner 8

LP/PP Project Partner

Partner Status Active

Active from 22/09/2022 **Inactive from**

Partner name:

Organisation in original language Universitätsklinikum Schleswig-Holstein

40 / 250 characters

Organisation in English University Medical School Schleswig-Holstein (UKSH)

51 / 250 characters

Department in original language Institut für Toxikologie und Pharmakologie für Naturwissenschaftler

67 / 250 characters

Department in English Institute of Toxicology and Pharmacology for Natural Scientists

63 / 250 characters

Partner location and website:

Address Brunswiker Str. 10

18 / 250 characters

Postal Code 24105

5 / 250 characters

Town Kiel

4 / 250 characters

Website www.uni-kiel.de/toxikologie

27 / 100 characters

Country Germany

NUTS1 code Schleswig-Holstein

NUTS2 code Schleswig-Holstein

NUTS3 code Kiel, Kreisfreie Stadt

Partner ID:

Organisation ID type	Tax (identification) number (Steuer(identifikations)nummer)
Organisation ID	DE814167313 (11 / 50 characters)
VAT Number Format	DE + 9 digits
VAT Number	N/A ☐ DE814167313 (11 / 50 characters)
PIC	999845349 (9 / 9 characters)

Partner type:

Legal status	a) Public	
Type of partner	Higher education and research instituti	University faculty, college, research institution, RTD facility, research cluster, etc.
Sector (NACE)	85.42 - Tertiary education	

Partner financial data:

Is your organisation entitled to recover VAT related to the EU funded project activities? No

Role of the partner organisation in this project:

UKSH will conduct research to develop a novel remediation method for dumped munitions based on bacterial systems. This involves the identification of bacteria capable of completely mineralize munition chemicals (MCs), including the selection of appropriate bacteria strains to provide severance of aromatic rings and further metabolism to nontoxic molecules. UKSH will also perform high-level analysis of MCs with LC- and GC-MS/MS technology in water, sediment and all kinds of biota. This will be followed by the in situ microbiological degradation of the carcinogenic degradation products of MCs. UKSH will also identify new genetic biomarkers as early warning systems. Starting with in vitro molecular approaches, the developed early warning systems and environmental technologies will be tested at sea using research vessels at the actual munition dumpsites. Finally, UKSH will perform a toxicological risk assessment to conclude the impact of MCs on both the marine environment and human health.

1,002 / 1,000 characters

Has this organisation ever been a partner in the project(s) implemented in the Interreg Baltic Sea Region Programme?

○ Yes ○ No

State aid relevance

For the partner type selected, the Programme sees a medium to high risk for implementing State aid relevant activities. If the partner is of the opinion that its activities are not State aid relevant, it can ask the MA/JS for a plausibility check on the State aid relevance. Does the partner want to do this?

○ Yes ○ No

2.2 Project Partner Details - Partner 9

LP/PP	Project Partner		
Partner Status	Active		
Active from	22/09/2022	**Inactive from**	

Partner name:

Organisation in original language	Suomen ympäristökeskus (22 / 250 characters)
Organisation in English	Finnish Environment Institute (SYKE) (37 / 250 characters)

Department in original language	Merikeskus (10 / 250 characters)
Department in English	Marine Research Centre (22 / 250 characters)

Partner location and website:

Address	Latokartanonkaari 11 (20 / 250 characters)	**Country**	Finland
Postal Code	00790 (5 / 250 characters)	**NUTS1 code**	Manner-Suomi
Town	Helsinki (8 / 250 characters)	**NUTS2 code**	Helsinki-Uusimaa
Website	www.syke.fi (11 / 100 characters)	**NUTS3 code**	Helsinki-Uusimaa

Partner ID:

Organisation ID type	Business Identity Code (Y-tunnus)
Organisation ID	0996189-5
VAT Number Format	FI + 8 digits
VAT Number	**N/A** ☐ FI09961895 (10 / 50 characters)
PIC	999478010 (9 / 9 characters)

Partner type:

Legal status	a) Public	
Type of partner	Higher education and research instituti	University faculty, college, research institution, RTD facility, research cluster, etc.
Sector (NACE)	72.19 - Other research and experimental development on natural sciences and engineering	

Partner financial data:

Is your organisation entitled to recover VAT related to the EU funded project activities? No

Role of the partner organisation in this project:

SYKE is among the largest and leading environmental institutes in the Baltic Sea region and will provide its wide expertise and experience in marine research. SYKE will lead the preparation execution of the pilot phase study of wrecks in the Gulf of Finland pilot area of the project. SYKE owns the recently renovated r/v Aranda, which is equipped with its state-of-the-art hydroacoustics equipment is an ideal platform for these kinds of operations. SYKE is highly experienced in the ecotoxicological detection and assessment of the biological effects of contaminants by using biomarkers. SYKE has also strong expertise in microbiology related to pollution by oil and CWA in the marine environment and will contribute to the tasks related to the monitored natural attenuation and enhanced natural recovery.

807 / 1,000 characters

Has this organisation ever been a partner in the project(s) implemented in the Interreg Baltic Sea Region Programme?

○ Yes ○ No

State aid relevance

For the partner type selected, the Programme sees a medium to high risk for implementing State aid relevant activities. If the partner is of the opinion that its activities are not State aid relevant, it can ask the MA/JS for a plausibility check on the State aid relevance. Does the partner want to do this?

○ Yes ○ No

2.2 Project Partner Details - Partner 10

LP/PP	Project Partner
Partner Status	Active
Active from	22/09/2022
Inactive from	

Partner name:

Organisation in original language	Umweltbundesamt (15 / 250 characters)
Organisation in English	German Environment Agency (UBA) (31 / 250 characters)
Department in original language	Wasser und Boden (17 / 250 characters)
Department in English	Water and Soil Department (25 / 250 characters)

Partner location and website:

Address	Wörlitzer Platz 1 (17 / 250 characters)	**Country**	Germany
Postal Code	06844 (5 / 250 characters)	**NUTS1 code**	Sachsen-Anhalt
Town	Dessau-Roßlau (13 / 250 characters)	**NUTS2 code**	Sachsen-Anhalt
Website	www.umweltbundesamt.de (22 / 100 characters)	**NUTS3 code**	Dessau-Roßlau, Kreisfreie Stadt

Partner ID:

Organisation ID type	Tax (identification) number (Steuer(identifikations)nummer)
Organisation ID	DE811317238 (11 / 50 characters)
VAT Number Format	DE + 9 digits
VAT Number	N/A ☐ DE811317238 (11 / 50 characters)
PIC	998575910 (9 / 9 characters)

Partner type:

Legal status	a) Public	
Type of partner	National public authority	Ministry, etc.
Sector (NACE)	84.12 - Regulation of the activities of providing health care, education, cultural services and other social services, excluding social security	

Partner financial data:

Is your organisation entitled to recover VAT related to the EU funded project activities? Yes

Role of the partner organisation in this project:

UBA will develop an overview of legal policies and administrative guidelines on wrecks and munitions, building on HELCOM and other networks. UBA will compile documents on guidelines for munition and wrecks at the national and international level, analyze them for similarities and differences, gaps, and harmonization needs, and develop a proposal from a harmonized legal and administrative guideline. This work includes networking at various levels and with stakeholders, translation needs, and cooperation with other partners in the project. In collaboration with UKSH, UBA will develop environmental quality standards for hazardous substances based on chemical and ecotoxicological databases. UBA will compile and evaluate existing guidance on the detection of munitions and wrecks containing hazardous substances, the handling of the various types of munitions, their collection, salvage, and options for destruction as well as salvage of hazardous substances, including the costs for each step.

999 / 1,000 characters

Has this organisation ever been a partner in the project(s) implemented in the Interreg Baltic Sea Region Programme?

○ Yes ○ No

2.2 Project Partner Details - Partner 11

LP/PP Project Partner

Partner Status Active

Active from 22/09/2022 **Inactive from**

Partner name:

Organisation in original language Helsingin yliopisto

19 / 250 characters

Organisation in English University of Helsinki (UH-VERIFIN)

35 / 250 characters

Department in original language Kemiallisen aseen kieltosopimuksen instituutti

46 / 250 characters

Department in English Finnish Institute for Verification of the Chemical Weapons

58 / 250 characters

Partner location and website:

Address A.I. Virtasen Aukio 1

21 / 250 characters

Postal Code 00014

6 / 250 characters

Town Helsinki

8 / 250 characters

Website www.helsinki.fi/verifin

24 / 100 characters

Country Finland

NUTS1 code Manner-Suomi

NUTS2 code Helsinki-Uusimaa

NUTS3 code Helsinki-Uusimaa

Partner ID:

Organisation ID type	Business Identity Code (Y-tunnus)
Organisation ID	1020950-7
VAT Number Format	FI + 8 digits
VAT Number	N/A ☐ FI03134717 (10 / 50 characters)
PIC	999994535 (9 / 9 characters)

Partner type:

Legal status	a) Public	
Type of partner	Higher education and research instituti	University faculty, college, research institution, RTD facility, research cluster, etc.
Sector (NACE)	85.42 - Tertiary education	

Partner financial data:

Is your organisation entitled to recover VAT related to the EU funded project activities? No

Role of the partner organisation in this project:

UH-VERIFIN will perform chemical analysis of CWAs, explosives, and screening of oil, and contribute to risk assessment. Newly identified phenylarsenic CWAs will be added to target chemicals to further evaluate the total burden of sea-dumped CWAs. The degradation products resulting from aging CWA munitions will be studied and identified in the vicinity of wrecks and dumping sites. Biotransformation of CWAs leaking in the sediment will be studied. UH-VERIFIN will participate in selecting and calibrating passive samplers under laboratory conditions and will analyze samples collected with those samplers. In its recent research, UH-VERIFIN has developed methods for the analysis of marine biota samples. Further studies of the biotransformation of CWAs are essential for risk assessment for consumers of fish. ROPs will be prepared for CWAs, explosives, and oil analysis in sediment and pore water samples as well as for marine biota samples.

945 / 1,000 characters

Has this organisation ever been a partner in the project(s) implemented in the Interreg Baltic Sea Region Programme?

○ Yes ○ No

State aid relevance

For the partner type selected, the Programme sees a medium to high risk for implementing State aid relevant activities. If the partner is of the opinion that its activities are not State aid relevant, it can ask the MA/JS for a plausibility check on the State aid relevance. Does the partner want to do this?

○ Yes ○ No

2.2 Project Partner Details - Partner 12

LP/PP	Project Partner		
Partner Status	Active		
Active from	22/09/2022	**Inactive from**	

Partner name:

Organisation in original language	Uniwersytet Jagielloński (24 / 250 characters)
Organisation in English	Jagiellonian University (UJ) (28 / 250 characters)

Department in original language	Wydział Fizyki, Astronomii i Informatyki Stosowanej (51 / 250 characters)
Department in English	Faculty of Physics, Astronomy and Computer Science (50 / 250 characters)

Partner location and website:

Address	Gołębia 24 (10 / 250 characters)	**Country**	Poland
Postal Code	31-007 (6 / 250 characters)	**NUTS1 code**	Makroregion południowy
Town	Kraków (6 / 250 characters)	**NUTS2 code**	Małopolskie
Website	www.uj.edu.pl/en (16 / 100 characters)	**NUTS3 code**	Miasto Kraków

Partner ID:

Organisation ID type	Tax identification number (NIP)
Organisation ID	6750002236
VAT Number Format	PL + 10 digits
VAT Number	**N/A** ☐ PL6750002236 (12 / 50 characters)
PIC	999642716 (9 / 9 characters)

Partner type:

Legal status	a) Public	
Type of partner	Higher education and research instituti	University faculty, college, research institution, RTD facility, research cluster, etc.
Sector (NACE)	85.42 - Tertiary education	

Partner financial data:

Is your organisation entitled to recover VAT related to the EU funded project activities? Yes

Role of the partner organisation in this project:

UJ will be involved in the development and tests of a novel sensor of heavy fuel and sunken munition. The activities include taking part in the laboratory test of the sensor, its integration with an underwater ROV, and performing measurements in the real conditions in the Baltic Sea.

285 / 1,000 characters

Has this organisation ever been a partner in the project(s) implemented in the Interreg Baltic Sea Region Programme?

○ Yes ○ No

State aid relevance

For the partner type selected, the Programme sees a medium to high risk for implementing State aid relevant activities. If the partner is of the opinion that its activities are not State aid relevant, it can ask the MA/JS for a plausibility check on the State aid relevance. Does the partner want to do this?

○ Yes ○ No

2.2 Project Partner Details - Partner 13

LP/PP	Project Partner
Partner Status	Active
Active from	22/09/2022
Inactive from	

Partner name:

Organisation in original language	Alfred-Wegener-Institut Helmholtz-Zentrum für Polar- und Meeresforschung (73 / 250 characters)
Organisation in English	Alfred Wegner Institute Helmholtz Centre for Polar and Marine Research (AWI) (76 / 250 characters)
Department in original language	Bio Wissenschaften – Sektion Ökologische Chemie (47 / 250 characters)
Department in English	Bio Sciences – Department of Ecological Chemistry (49 / 250 characters)

Partner location and website:

Address	Am Handelshafen 12 (18 / 250 characters)	**Country**	Germany
Postal Code	27570 (5 / 250 characters)	**NUTS1 code**	Bremen
Town	Bremerhaven (11 / 250 characters)	**NUTS2 code**	Bremen
Website	www.awi.de (10 / 100 characters)	**NUTS3 code**	Bremen, Kreisfreie Stadt

Partner ID:

Organisation ID type	Tax (identification) number (Steuer(identifikations)nummer)
Organisation ID	DE 114707273 (12 / 50 characters)
VAT Number Format	DE + 9 digits
VAT Number	N/A ☐ DE114707273 (11 / 50 characters)
PIC	999497507 (9 / 9 characters)

Partner type:

Legal status	a) Public	
Type of partner	Higher education and research instituti	University faculty, college, research institution, RTD facility, research cluster, etc.
Sector (NACE)	72.19 - Other research and experimental development on natural sciences and engineering	

Partner financial data:

Is your organisation entitled to recover VAT related to the EU funded project activities?	Yes

Role of the partner organisation in this project:

AWI is one of 19 Helmholtz Centers in Germany and pursues long-term research goals of the federal government on its own responsibility. Today, the AWI is one of the world's recognized centers of polar and marine research since its foundation in 1980. The AWI hosts and operates a state-of-the-art deep sea lander, tested and ready to be used as the basis for the modular early warning platforms. Further, since 2011 the AWI has been involved in several national and international projects dealing with dumped munition at sea. Within the projects, AWI researchers are focusing on the biological effects of marine organisms being exposed to dissolved compounds of both conventional and chemical- munition, in the field and under laboratory conditions. In addition, AWI has strong expertise in the identification and screening of molecules and substances from complex mixtures (tissue or water samples) using state-of-the-art NMR techniques.

938 / 1,000 characters

Has this organisation ever been a partner in the project(s) implemented in the Interreg Baltic Sea Region Programme?

○ Yes ○ No

State aid relevance

For the partner type selected, the Programme sees a medium to high risk for implementing State aid relevant activities. If the partner is of the opinion that its activities are not State aid relevant, it can ask the MA/JS for a plausibility check on the State aid relevance. Does the partner want to do this?

○ Yes ○ No

2.2 Project Partner Details - Partner 14

LP/PP	Project Partner		
Partner Status	Active		
Active from	22/09/2022	**Inactive from**	

Partner name:

Organisation in original language: Międzynarodowe Centrum Bezpieczeństwa Chemicznego
49 / 250 characters

Organisation in English: International Centre for Chemical Safety and Security (ICCSS)
61 / 250 characters

Department in original language: N/A
3 / 250 characters

Department in English: N/A
3 / 250 characters

Partner location and website:

Address: Leszno 8/1
10 / 250 characters

Postal Code: 01-192
6 / 250 characters

Town: Warszawa
8 / 250 characters

Website: www.iccss.eu
12 / 100 characters

Country: Poland

NUTS1 code: Makroregion województwo mazowieckie

NUTS2 code: Warszawski stołeczny

NUTS3 code: Miasto Warszawa

Partner ID:

Organisation ID type	Tax identification number (NIP)
Organisation ID	8733250346
VAT Number Format	PL + 10 digits
VAT Number	N/A ☐ PL8733250346 (12 / 50 characters)
PIC	930325740 (9 / 9 characters)

Partner type:

Legal status	b) Private	
Type of partner	NGO	Non-governmental organisations, such as Greenpeace, WWF, etc.
Sector (NACE)	74.90 - Other professional, scientific and technical activities n.e.c.	

Partner financial data:

Is your organisation entitled to recover VAT related to the EU funded project activities? No

Financial data	**Reference period**	01/01/2021 –	31/12/2021
	Staff headcount [in annual work units (AWU)]		4.0
	Employees [in AWU]		2.0
	Persons working for the organisation being subordinated to it and considered to be employees under national law [in AWU]		0.0
	Owner-managers [in AWU]		2.0
	Partners engaged in a regular activity in the organisation and benefiting from financial advantages from the organisation [in AWU]		0.0
	Annual turnover [in EUR]		448,828.10
	Annual balance sheet total [in EUR]		898,973.50
	Operating profit [in EUR]		210,773.50

Role of the partner organisation in this project:

ICCSS will provide policy and legal guidance including review and updates on the questions regarding ownership, responsibility, and management of sea-dumped munitions. Legal and policy regulations and guidelines in the Baltic region will be collected. Then legal solutions, based on SWAT analysis, aiming for environmentally-friendly management will be proposed. Recommendations will be offered through information sharing and best practices exchanges and capacity building among those stakeholders, who are primary actors in preparedness, prevention, and response to spills linked to sea-dumped chemical weapons, munitions, and wreckages. These will assist to coordinate international and national policies and to develop legal and administrative regulatory framework on these issues. This may also include recommendations for a new EU agency or other international body responsible for such issues. This will aim to improve national and international coordination of legal and policy efforts.

994 / 1,000 characters

Has this organisation ever been a partner in the project(s) implemented in the Interreg Baltic Sea Region Programme?

○ Yes ○ No

2.2 Project Partner Details - Partner 15

LP/PP	Project Partner		
Partner Status	Active		
	Active from	22/09/2022	**Inactive from**	

Partner name:

Organisation in original language	NeutronGate Oy (14 / 250 characters)
Organisation in English	NeutronGate (11 / 250 characters)
Department in original language	N/A (3 / 250 characters)
Department in English	N/A (3 / 250 characters)

Partner location and website:

Address	Sepanakatu 5H (13 / 250 characters)	**Country**	Finland
Postal Code	11710 (5 / 250 characters)	**NUTS1 code**	Manner-Suomi
Town	Riihimaki (9 / 250 characters)	**NUTS2 code**	Etelä-Suomi
Website	www.neutrongate.com (19 / 100 characters)	**NUTS3 code**	Kanta-Häme

Partner ID:

Organisation ID type	Business Identity Code (Y-tunnus)
Organisation ID	2650479-2
VAT Number Format	FI + 8 digits
VAT Number	**N/A** ☐ FI26504792 (10 / 50 characters)
PIC	902727106 (9 / 9 characters)

Partner type:

Legal status	b) Private	
Type of partner	Small and medium enterprise	Micro, small, medium enterprises < 250 employees, ≤ EUR 50 million turnover or ≤ EUR 43 million balance sheet total
Sector (NACE)	71.20 - Technical testing and analysis	

Partner financial data:

Is your organisation entitled to recover VAT related to the EU funded project activities?	No

Financial data	**Reference period**	01/01/2021	–	31/12/2021
	Staff headcount [in annual work units (AWU)]			8.0
	Employees [in AWU]			3.0
	Persons working for the organisation being subordinated to it and considered to be employees under national law [in AWU]			0.0
	Owner-managers [in AWU]			1.0
	Partners engaged in a regular activity in the organisation and benefiting from financial advantages from the organisation [in AWU]			4.0
	Annual turnover [in EUR]			23,267.90
	Annual balance sheet total [in EUR]			849,303.41
	Operating profit [in EUR]			-50,579.23

Role of the partner organisation in this project:

NeutronGate specializes in developing industrial applications taking advantage of Neutron Activation Analysis (NAA) and Neutron Imaging (NI). NeutronGate has laboratory facilities where elemental analysis is performed routinely and NeutronGate provides neutron sources and an array of detector systems for use in the project. Technology developed at NeutronGate has been applied in the detection and measurement of munitions and payloads in earlier projects. NeutronGate's role in the project is to design, model, and test optimal system configuration using D-Li fusion-based neutron generator in laboratory conditions and water tank. NeutronGate will also be involved in developing data standards and preliminary data libraries for identifying several types of munitions and fuel containers. The results of these efforts will be used to establish requirements for commercial operating systems.

894 / 1,000 characters

Has this organisation ever been a partner in the project(s) implemented in the Interreg Baltic Sea Region Programme?

○ Yes ○ No

2.2 Project Partner Details - Partner 16

LP/PP	Project Partner		
Partner Status	Active		
Active from	22/09/2022	**Inactive from**	

Partner name:

Organisation in original language	Tartu Ülikool (14 / 250 characters)
Organisation in English	University of Tartu (UTartu) (29 / 250 characters)
Department in original language	Molekulaar ja rakubioloogia instituut (38 / 250 characters)
Department in English	Institute of Molecular and Cell Biology (39 / 250 characters)

Partner location and website:

Address	Riia 23 (7 / 250 characters)	**Country**	Estonia
Postal Code	51010 (5 / 250 characters)	**NUTS1 code**	Eesti
Town	Tartu (5 / 250 characters)	**NUTS2 code**	Eesti
Website	www.tymri.ut.ee/en (18 / 100 characters)	**NUTS3 code**	Lõuna-Eesti

Partner ID:

Organisation ID type	Registration code (Registrikood)
Organisation ID	10003041
VAT Number Format	EE + 9 digits
VAT Number	N/A ☐ EE100030417 (11 / 50 characters)
PIC	999895013 (9 / 9 characters)

Partner type:

Legal status	a) Public	
Type of partner	Higher education and research instituti	University faculty, college, research institution, RTD facility, research cluster, etc.
Sector (NACE)	85.42 - Tertiary education	

Partner financial data:

Is your organisation entitled to recover VAT related to the EU funded project activities? Yes

Role of the partner organisation in this project:

UTartu has strong competence in the field of remediation technologies for polluted marine environments (i.e., biodegradation and bioremediation of oil products and explosives, monitored natural attenuation and enhanced natural recovery, and innovative water and sediment treatment technologies). UTartu will contribute to the application of enhanced natural recovery and environmental biotechnology-based solutions for the remediation of explosives and CWA in seawater and sediments.

484 / 1,000 characters

Has this organisation ever been a partner in the project(s) implemented in the Interreg Baltic Sea Region Programme?

○ Yes ○ No

State aid relevance

For the partner type selected, the Programme sees a medium to high risk for implementing State aid relevant activities. If the partner is of the opinion that its activities are not State aid relevant, it can ask the MA/JS for a plausibility check on the State aid relevance. Does the partner want to do this?

○ Yes ○ No

2.2 Project Partner Details - Partner 17

LP/PP	Project Partner		
Partner Status	Active		
Active from	22/09/2022	**Inactive from**	

Partner name:

Organisation in original language	Uniwersytet Gdański (19 / 250 characters)
Organisation in English	University of Gdansk (UG) (25 / 250 characters)
Department in original language	Instytut Oceanografii (21 / 250 characters)

Department in English	Institute of Oceanolography (27 / 250 characters)

Partner location and website:

Address	Jana Bażyńskiego 8 (18 / 250 characters)	**Country**	Poland
Postal Code	80-309 (6 / 250 characters)	**NUTS1 code**	Makroregion północny
Town	Gdańsk (6 / 250 characters)	**NUTS2 code**	Pomorskie
Website	www.ug.edu.pl (13 / 100 characters)	**NUTS3 code**	Trójmiejski

Partner ID:

Organisation ID type	Tax identification number (NIP)
Organisation ID	5840203239
VAT Number Format	PL + 10 digits
VAT Number	N/A ☐ PL5840203239 (12 / 50 characters)
PIC	N/A (3 / 9 characters)

Partner type:

Legal status	a) Public	
Type of partner	Higher education and research instituti	University faculty, college, research institution, RTD facility, research cluster, etc.
Sector (NACE)	85.42 - Tertiary education	

Partner financial data:

Is your organisation entitled to recover VAT related to the EU funded project activities?	Yes

Role of the partner organisation in this project:

UG will use their research vessel Oceanograf for tests of examination systems and photogrammetry in the development phase and in the pilot phase for both examination of impact and early warning system deployment. It will also be active in the analysis of pollution from wrecks and underwater munitions in the sediments and suspended matter.

340 / 1,000 characters

Has this organisation ever been a partner in the project(s) implemented in the Interreg Baltic Sea Region Programme?

○ Yes ○ No

State aid relevance

For the partner type selected, the Programme sees a medium to high risk for implementing State aid relevant activities. If the partner is of the opinion that its activities are not State aid relevant, it can ask the MA/JS for a plausibility check on the State aid relevance. Does the partner want to do this?

○ Yes ○ No

2.2 Project Partner Details - Partner 18

LP/PP	Project Partner
Partner Status	Active
Active from	22/09/2022
Inactive from	

Partner name:

Organisation in original language	KUM Umwelt- und Meerestechnik Kiel (34 / 250 characters)
Organisation in English	KUM Enviromental- and Marine Technology Kiel (KUM) (50 / 250 characters)
Department in original language	N/A (3 / 250 characters)
Department in English	N/A (3 / 250 characters)

Partner location and website:

Address	Wischhofstr. 1–3, bldg 15/16 (28 / 250 characters)	**Country**	Germany
Postal Code	24148 (5 / 250 characters)	**NUTS1 code**	Schleswig-Holstein
Town	Kiel (4 / 250 characters)	**NUTS2 code**	Schleswig-Holstein
Website	www.kum-kiel.de (15 / 100 characters)	**NUTS3 code**	Kiel, Kreisfreie Stadt

Partner ID:

Organisation ID type	Tax (identification) number (Steuer(identifikations)nummer)
Organisation ID	DE 812362272 (13 / 50 characters)
VAT Number Format	DE + 9 digits
VAT Number	N/A ☐ DE812362272 (11 / 50 characters)
PIC	N/A (3 / 9 characters)

Partner type:

Legal status	b) Private	
Type of partner	Small and medium enterprise	Micro, small, medium enterprises < 250 employees, ≤ EUR 50 million turnover or ≤ EUR 43 million balance sheet total
Sector (NACE)	72.19 - Other research and experimental development on natural sciences and engineering	

Partner financial data:

Is your organisation entitled to recover VAT related to the EU funded project activities?	Yes

Financial data	**Reference period**	01/10/2018	–	30/09/2019
	Staff headcount [in annual work units (AWU)]			18.2
	Employees [in AWU]			18.2
	Persons working for the organisation being subordinated to it and considered to be employees under national law [in AWU]			0.0
	Owner-managers [in AWU]			0.0
	Partners engaged in a regular activity in the organisation and benefiting from financial advantages from the organisation [in AWU]			0.0
	Annual turnover [in EUR]			4,025,000.00
	Annual balance sheet total [in EUR]			189,000.00
	Operating profit [in EUR]			127,000.00

Role of the partner organisation in this project:

KUM will assess technical requirements for the implementation of Xplotector or XploTaker on a floating or submerged early-warning platform and assist with field measurements during pilots.

188 / 1,000 characters

Has this organisation ever been a partner in the project(s) implemented in the Interreg Baltic Sea Region Programme?

○ Yes ○ No

2.2 Project Partner Details - Partner 19

LP/PP	Project Partner		
Partner Status	Active		
Active from	22/09/2022	**Inactive from**	

Partner name:

Organisation in original language	Geomar Helmholtz Zentrum für Ozeanforschung Kiel
	48 / 250 characters
Organisation in English	Geomar Helmholtz Centre for Ocean Research Kiel (GEOMAR)
	56 / 250 characters
Department in original language	Marine Biogeochemie
	19 / 250 characters
Department in English	Marine Biogeochemistry
	23 / 250 characters

Partner location and website:

Address	Wischhofstrasse 1-3	**Country**	Germany
	19 / 250 characters		
Postal Code	24148	**NUTS1 code**	Schleswig-Holstein
	5 / 250 characters		
Town	Kiel	**NUTS2 code**	Schleswig-Holstein
	4 / 250 characters		
Website	www.geomar.de	**NUTS3 code**	Kiel, Kreisfreie Stadt
	13 / 100 characters		

Partner ID:

Organisation ID type	Tax (identification) number (Steuer(identifikations)nummer)
Organisation ID	281295378 (10 / 50 characters)
VAT Number Format	DE + 9 digits
VAT Number	N/A ☐ DE281295378 (11 / 50 characters)
PIC	986090458 (9 / 9 characters)

Partner type:

Legal status	a) Public	
Type of partner	Higher education and research instituti	University faculty, college, research institution, RTD facility, research cluster, etc.
Sector (NACE)	72.19 - Other research and experimental development on natural sciences and engineering	

Partner financial data:

Is your organisation entitled to recover VAT related to the EU funded project activities? Yes

Role of the partner organisation in this project:

GEOMAR has recently developed new analytical methods for ultra-trace detection of dissolved explosive compounds in seawater, including shipboard, automated sample preparation, and an analysis system dubbed the Xplotector. The Xplotector is capable of detecting ng/L levels of the conventional munition compounds TNT, RDX, ADNT, DNB (MCs) in near real-time. Within WRUMM, GEOMAR will use the Xplotector during pilot sampling events to measure the chemical target compounds in and around the pilot sites. The XploTaker, a system for in situ sample collection, will be used to collect additional samples for subsequent shipboard analysis with the Xplotector. The XploTaker will be deployed from the ship, and potentially mounted on the in situ platform, depending on technical capacity (e.g., power supply, remote control, data transfer).

835 / 1,000 characters

Has this organisation ever been a partner in the project(s) implemented in the Interreg Baltic Sea Region Programme?

○ Yes ○ No

State aid relevance

For the partner type selected, the Programme sees a medium to high risk for implementing State aid relevant activities. If the partner is of the opinion that its activities are not State aid relevant, it can ask the MA/JS for a plausibility check on the State aid relevance. Does the partner want to do this?

○ Yes ○ No

2.2 Project Partner Details - Partner 20

LP/PP	Project Partner		
Partner Status	Active		
Active from	22/09/2022	**Inactive from**	

Partner name:

Organisation in original language	Chalmers tekniska högskola (26 / 250 characters)
Organisation in English	Chalmers University of Technology (CUT) (39 / 250 characters)
Department in original language	Arkitektur och samhällsbyggnadsteknik (37 / 250 characters)

Department in English Architecture and Civil Engineering

35 / 250 characters

Partner location and website:

Address Chalmersplatsen 4

17 / 250 characters

Postal Code 412 96

6 / 250 characters

Town Göteborg

8 / 250 characters

Website www.chalmers.se

15 / 100 characters

Country Sweden

NUTS1 code Södra Sverige

NUTS2 code Västsverige

NUTS3 code Västra Götalands län

Partner ID:

Organisation ID type Organisation number (Organisationsnummer)

Organisation ID 556479-5598

VAT Number Format SE + 12 digits

VAT Number N/A ☐ SE556479559801

14 / 50 characters

PIC 999980373

9 / 9 characters

Partner type:

Legal status a) Public

Type of partner Higher education and research instituti — University faculty, college, research institution, RTD facility, research cluster, etc.

Sector (NACE) 72.19 - Other research and experimental development on natural sciences and engineering

Partner financial data:

Is your organisation entitled to recover VAT related to the EU funded project activities? Yes

Role of the partner organisation in this project:

CUT will contribute to the risk assessment part of the project by Furter developing the existing risk assessment model VRAKA and integrating it into the DSS. VRAKA is a model for calculating the probability of release of oil from shipwrecks or chemicals from dumped munitions. The model development will be focused on enabling a comprehensive assessment of sites including shipwrecks as well as munitions of different types, assessment of mitigation measures, and simulations of scenarios illustrating how the probability of release changes over time.

551 / 1,000 characters

Has this organisation ever been a partner in the project(s) implemented in the Interreg Baltic Sea Region Programme?

○ Yes ○ No

State aid relevance

For the partner type selected, the Programme sees a medium to high risk for implementing State aid relevant activities. If the partner is of the opinion that its activities are not State aid relevant, it can ask the MA/JS for a plausibility check on the State aid relevance. Does the partner want to do this?

○ Yes ○ No

2.2 Project Partner Details - Partner 21

LP/PP	Project Partner
Partner Status	Active
Active from	22/09/2022
Inactive from	

Partner name:

Organisation in original language	Council of the Baltic Sea States (32 / 250 characters)
Organisation in English	Council of the Baltic Sea States (CBSS) (39 / 250 characters)
Department in original language	N/A (3 / 250 characters)
Department in English	N/A (3 / 250 characters)

Partner location and website:

Address	Wollmar Yxkullsgatan 23 (23 / 250 characters)	**Country**	Sweden
Postal Code	118 50 (6 / 250 characters)	**NUTS1 code**	Östra Sverige
Town	Stockholm (9 / 250 characters)	**NUTS2 code**	Stockholm
Website	www.cbss.org (12 / 100 characters)	**NUTS3 code**	Stockholms län

Partner ID:

Organisation ID type	Organisation number (Organisationsnummer)
Organisation ID	502052-4616
VAT Number Format	SE + 12 digits
VAT Number	N/A ☑ (0 / 50 characters)
PIC	952232511 (9 / 9 characters)

Partner type:

Legal status	a) Public	
Type of partner	International governmental organisatio	HELCOM, BSSSC, CBSS, VASAB, etc.
Sector (NACE)	99.00 - Activities of extraterritorial organisations and bodies	

Partner financial data:

Is your organisation entitled to recover VAT related to the EU funded project activities?	Partly

VAT explanation

The CBSS has the same VAT-status as a Diplomatic Mission, which means that CBSS may claim a refund of VAT paid on certain goods and services, provided that the goods have been purchased in Sweden.

196 / 1,000 characters

Role of the partner organisation in this project:

CBSS will provide consultation regarding monitoring and evaluation schemes developed within the project as well as the opinion on the suitability of these tools during their development in the first year of the project, and later, possibly cooperate in communicating them to particular Baltic Countries. Help in creating the list of appropriate regulations in different countries regarding legal regulations concerning wrecks and underwater munitions. CBSS will offer an insight into the preparation of a proposal for their harmonization across the Baltic. When final harmonization suggestions are prepared, CBSS presents a proposal of changes in legislation, that could simplify and harmonize management approaches to wrecks and underwater munitions to Baltic countries as an international intergovernmental organization.

822 / 1,000 characters

Has this organisation ever been a partner in the project(s) implemented in the Interreg Baltic Sea Region Programme?

(•) Yes ( ) No

2.3 Associated Organisation Details - AO 1

Associated organisation name and type:

Organisation in original language: Miljøstyrelsen (14 / 250 characters)

Organisation in English: Danish Environmental Protection Agency (DEPA) (45 / 250 characters)

Department in original language: Hav- og Vandmiljø (17 / 250 characters)

Department in English: Marine and Aquatic Environment (30 / 250 characters)

Legal status: a) Public

Type of associated organisation: Sectoral agency

Local or regional development agency, environmental agency, energy agency, employment agency, etc.

Associated organisation location and website:

Address: Tolderlundsvej 5 (16 / 250 characters)

Country: Denmark

Postal Code: 5000 (4 / 250 characters)

Town: Odense C (8 / 250 characters)

Website: www.eng.mst.dk/ (18 / 100 characters)

Role of the associated organisation in this project:

DEPA will cooperate in formulating and defining critical parameters for risk assessment regarding wrecks and munition; participate in pilot studies within their respective economic zones, by either logistic support or direct involvement; assist in preparation of guidance for harmonization of legal policies regarding wreck and munition management in entire Baltic Area from a Danish perspective; help in referring to relevant Danish regulations regarding wreck and munition sites management; help in transferring project outcomes to the Danish maritime and marine administration; be involved in transferring results into potential environmental protection procedures and/or to HELCOM.

686 / 1,000 characters

2.3 Associated Organisation Details - AO 2

Associated organisation name and type:

Organisation in original language
Aarhus Universitet - Nationalt Center for Miljø og Energi
57 / 250 characters

Organisation in English
Aarhus University - Danish Center for Environment and Energy (AU/DCE)
69 / 250 characters

Department in original language
Miljøvidenskab
14 / 250 characters

Department in English
Environmental Science
21 / 250 characters

Legal status
a) Public

Type of associated organisation
Higher education and research instituti
University faculty, college, research institution, RTD facility, research cluster, etc.

Associated organisation location and website:

Address
399 Frederiksborgvej
20 / 250 characters

Country
Denmark

Postal Code
4000
4 / 250 characters

Town
Roskilde
8 / 250 characters

Website
www.international.au.dk/
24 / 100 characters

Role of the associated organisation in this project:

AU/DCE will support the DEPA in their role primarily in the area of environmental risk assessment. AU/DCE will participate as an associated partner (advisory board member) with no financial obligations. AU/DCE will support the DEPA in the cooperation focusing on the environmental risk assessments regarding munition residues and in supporting the DEPA in transferring results into potential environmental protection procedures and/or to HELCOM.
445 / 1,000 characters

2.3 Associated Organisation Details - AO 3

Associated organisation name and type:

Organisation in original language: Ministerstwo Infrastruktury
27 / 250 characters

Organisation in English: Polish Ministry of Infrastructure (MI)
39 / 250 characters

Department in original language: Departament Gospodarki Morskiej
31 / 250 characters

Department in English: Maritime Economy Department
27 / 250 characters

Legal status: a) Public

Type of associated organisation: National public authority — Ministry, etc.

Associated organisation location and website:

Address: Tytusa Chałubińskiego 4/6
25 / 250 characters

Country: Poland

Postal Code: 00-928
6 / 250 characters

Town: Warszawa
8 / 250 characters

Website: www.gov.pl/web/infrastruktura
29 / 100 characters

Role of the associated organisation in this project:

MI will consult on the list of national legislation on dumped munition and wrecks, consult on the selection of testing and monitoring methods and areas developed by the program to be investigated in the pilot projects and to participate in tests and workshops on DSS.
267 / 1,000 characters

2.3 Associated Organisation Details - AO 4

Associated organisation name and type:

Organisation in original language: Eesti Merevägi
14 / 250 characters

Organisation in English: Estonian Navy (EN)
18 / 250 characters

Department in original language: N/A
3 / 250 characters

Department in English: N/A
3 / 250 characters

Legal status: a) Public

Type of associated organisation: Infrastructure and public service provi — Public transport, utility company (water supply, electricity supply, sewage, gas, waste collection, airport, port, railway, etc.)

Associated organisation location and website:

Address: Miinisadama 4
13 / 250 characters

Country: Estonia

Postal Code: 10416
5 / 250 characters

Town: Tallinn
7 / 250 characters

Website: www.mil.ee/en/navy/
19 / 100 characters

Role of the associated organisation in this project:

EN will participate as an associated partner (as advisory board member) with no financial obligations. Along with TalTech and other partners cooperate in the preparation and defining critical parameters for wreck risk assessment including wrecks with and without fuel; participate in pilot studies within Estonian marine areas, by either logistic support or direct involvement.

377 / 1,000 characters

2.3 Associated Organisation Details - AO 5

Associated organisation name and type:

Organisation in original language: Aplinkos apsaugos agentūra
26 / 250 characters

Organisation in English: Environmental Protection Agency (LEPA)
38 / 250 characters

Department in original language: N/A
3 / 250 characters

Department in English: N/A
3 / 250 characters

Legal status: a) Public

Type of associated organisation: National public authority | Ministry, etc.

Associated organisation location and website:

Address: A. Juozapavičiaus g. 9
22 / 250 characters

Country: Lithuania

Postal Code: 09311
5 / 250 characters

Town: Vilnius
7 / 250 characters

Website: www.aaa.lrv.lt
14 / 100 characters

Role of the associated organisation in this project:

LEPA will participate as an associated partner (advisory board member) with no financial obligations. Along with KU will contribute to the review of methods for the assessment of munition sites; to the evaluation of available monitoring methods of munitions; contribute to the work package regarding LT policies and laws regarding munitions and wrecks; contribute to the pilot study of chemical munitions dumpsite in the LT waters; contribute in the testing of new DSS.

469 / 1,000 characters

2.3 Associated Organisation Details - AO 6

Associated organisation name and type:

Organisation in original language
Urząd Morski w Gdyni
20 / 250 characters

Organisation in English
Maritime Office in Gdynia (MO)
30 / 250 characters

Department in original language
N/A
3 / 250 characters

Department in English
N/A
3 / 250 characters

Legal status
a) Public

Type of associated organisation
Regional public authority
Regional council, etc.

Associated organisation location and website:

Address
Bernarda Chrzanowskiego 10
26 / 250 characters

Country
Poland

Postal Code
81-338
6 / 250 characters

Town
Gdynia
6 / 250 characters

Website
www.umgdy.gov.pl/
17 / 100 characters

Role of the associated organisation in this project:

MO will support activities in the field of legal and administrative regulations and may establish order regulations containing prohibitions or orders to behave in a specific manner. The data on hazardous objects in the Baltic, held by the MO, will be a significant supplement to the already existing database included in the DSS. The tasks performed by the maritime administration in the field of international cooperation, especially the navigation safety, the use of sea routes, ports and harbors, as well as environmental protection, are also important for the project. MO in cooperation with other authorities, such as local governments, the Navy and Border Guard, the Ministry of Interior and Administration, and the Maritime Search and Rescue Service, will take an active part in consultations on policy, legal and administrative regulations. MO is also interested in the practical results of the project due to its competence in the field of environmental protection and maritime safety.

994 / 1,000 characters

2.3 Associated Organisation Details - AO 7

Associated organisation name and type:

Organisation in original language: RWE Renewables Poland (21 / 250 characters)

Organisation in English: RWE Renewables Poland (RWE) (27 / 250 characters)

Department in original language: N/A (3 / 250 characters)

Department in English: N/A (3 / 250 characters)

Legal status: b) Private

Type of associated organisation: Small and medium enterprise

Micro, small, medium enterprises < 250 employees, ≤ EUR 50 million turnover or ≤ EUR 43 million balance sheet total

Associated organisation location and website:

Address: Prosta 32 (9 / 250 characters)

Country: Poland

Postal Code: 00-838 (6 / 250 characters)

Town: Warszawa (8 / 250 characters)

Website: www.rwe.com (11 / 100 characters)

Role of the associated organisation in this project:

RWE will provide help and consultation on offshore and energy-related issues and synergies with the windfarms survey program, as well as assist in project logistics.

165 / 1,000 characters

2.3 Associated Organisation Details - AO 8

Associated organisation name and type:

Organisation in original language: Województwo Pomorskie (21 / 250 characters)

Organisation in English: Pomorskie Voivodship (PV) (25 / 250 characters)

Department in original language: N/A (3 / 250 characters)

Department in English: N/A (3 / 250 characters)

Legal status: a) Public

Type of associated organisation: Regional public authority — Regional council, etc.

Associated organisation location and website:

Address: Okopowa 21/27 (13 / 250 characters)

Country: Poland

Postal Code: 80-810 (6 / 250 characters)

Town: Gdańsk (6 / 250 characters)

Website: www.pomorskie.eu (16 / 100 characters)

Role of the associated organisation in this project:

The contribution of the PV as an associated partner in the project will consist of the presentation of the elements of the Pomeranian Voivodeship Development Strategy in line with the European Union Strategy for the Baltic Sea Region, identifying strategic activities of the PV in the field of risks caused by the hazardous substances in the Baltic Sea, participation in important conferences/meetings organized within the project. PV will also contribute to the promotion of the project's results through its own information channels, especially within Pomorskie municipalities, local communities, also located at the seaside, but also to the Board of the Pomorskie Region. PV will also contact municipalities in the Pomorskie Region in order to increase awareness of the problems raised by the project and present potential ways to tackle them in the future.

860 / 1,000 characters

2.3 Associated Organisation Details - AO 9

Associated organisation name and type:

Organisation in original language: Generalna Dyrekcja Ochrony Środowiska (37 / 250 characters)

Organisation in English: General Directorate for Environmental Protection (GDEP) (55 / 250 characters)

Department in original language: N/A (3 / 250 characters)

Department in English: N/A (3 / 250 characters)

Legal status: a) Public

Type of associated organisation: National public authority — Ministry, etc.

Associated organisation location and website:

Address: Wawelska 52/54 (14 / 250 characters)

Country: Poland

Postal Code: 00-922 (6 / 250 characters)

Town: Warszawa (8 / 250 characters)

Website: www.gov.pl/web/gdos (19 / 100 characters)

Role of the associated organisation in this project:

GDEP is the central body competent for environmental impact assessment in Poland. GDEP declares its willingness to cooperate with the project partners, in particular with the IOPAS, encouraging the Baltic countries to take action to effectively solve the problems related to wrecks and dumped ammunition occurring in their Exclusive Economic Zones, also in the context of environmental impact assessment. When issuing opinions on the tools for assessing the environmental risk related to wrecks and dumped munitions developed in the WRUMM project, GDEP will present its opinion on the suitability and practical use of these tools in the context of environmental impact assessment. Possible difficulties related to the interpretation of the results obtained with the use of the described tools will also be reported. GDEP is also interested in participating in training on the use of tools developed under the Wrecks & Underwater Munitions Management project.

959 / 1,000 characters

2.3 Associated Organisation Details - AO 10

Associated organisation name and type:

Organisation in original language: Riksantikvaren
14 / 250 characters

Organisation in English: Norwegian Directorate for Cultural Heritage (NDCH)
50 / 250 characters

Department in original language: N/A
3 / 250 characters

Department in English: N/A
3 / 250 characters

Legal status: a) Public

Type of associated organisation: National public authority — Ministry, etc.

Associated organisation location and website:

Address: Dronningensgate 13, Pb. 8196 Dep.
33 / 250 characters

Country: Norway

Postal Code: 0034
5 / 250 characters

Town: Oslo
4 / 250 characters

Website: www.riksantikvaren.no
21 / 100 characters

Role of the associated organisation in this project:

The NDCH will support and advise the FFI in cases where the research and monitoring of shipwrecks with dangerous cargo are under the Norwegian heritage act. Monitoring shipwrecks in Norwegian territorial waters is an important task for the directorate and we look forward to working with FFI in this arena when they need our advice.
333 / 1,000 characters

2.3 Associated Organisation Details - AO 11

Associated organisation name and type:

Organisation in original language: Rajavartiolaitos
16 / 250 characters

Organisation in English: Finnish Border Guard (RAJA)
27 / 250 characters

Department in original language: N/A
3 / 250 characters

Department in English: N/A
3 / 250 characters

Legal status: a) Public

Type of associated organisation: National public authority | Ministry, etc.

Associated organisation location and website:

Address: P.O. Box 3
10 / 250 characters

Country: Finland

Postal Code: 00131
5 / 250 characters

Town: Helsinki
8 / 250 characters

Website: www.raja.fi
11 / 100 characters

Role of the associated organisation in this project:

In the WRUMM project, RAJA will support the planning, forecasting, decision making, training, competency, and operational activities. RAJA manages and participates in several RDI projects using funding from outside the Finnish state budget for projects that meet its operational and research needs and its strategic goals. The goals are derived from the Strategy of RAJA, which governs the selection of the RDI projects. The emphasis in development projects is placed on opportunities to use new innovations and technologies in RAJA assignments on land, at sea, and in the air. These include robotics, artificial intelligence, unmanned and autonomic sensor platforms as well as new techniques and methods for combating environmental accidents at sea. The focal points of research done by RAJA are border security, the maritime operational environment, and performance capacity.

878 / 1,000 characters

3. Relevance

3.1 Context and challenge

The so called 'legacy contamination' of the Baltic Sea remains a potential risk to the marine ecosystem and a hindrance to the maritime economy. This includes underwater munitions, e.g., discarded military munitions (DMM) and unexploded ordnance (UXO), as well as oil-containing wrecks of both military and civilian vessels. Previous projects on dumped munitions have resulted in a novel battery of monitoring and risk assessment methods, which have been collated in an online DSS. There are tools to estimate the environmental impact of oil-containing wrecks, but they have not yet been integrated into the DSS tool. Risk assessments are still performed case by case, lacking a comprehensive approach, with the judgment often being biased by the background of expert(s) involved. Thus, there is a need to improve the current DSS with the use of neural networks, which are taught by expert assessments, i.e., any use and evaluation of the responses by an expert will translate into a better accuracy of the tool. In addition to the DSS, there is still a need to further develop early warning systems and monitoring technologies to detect contamination and to prevent pollution by wrecks and munitions. Remediation technologies related to these are currently in need of urgent updating and their environmental impacts need to be assessed. Legal issues related to wrecks and munitions are complicated and sometimes even contradictory. They differ for territorial waters and the EEZ. It is necessary to specify the minimum changes necessary to achieve the maximum desired effect in order to find places where one can recommend a compromise or some simple solution.
To summarize, we need more effective and comprehensive risk assessment methodologies, risk-specific methods of early warning of the threats, comprehensive legal analyses and recommendations leading to the improvement of the threat response system, and selection of remediation methods best suited for specific environmental settings.

1,996 / 2,000 characters

3.2 Transnational value of the project

Since the underwater munition dumpsites and wrecks are scattered around the entire Baltic Sea, there is a need to study site-specific conditions in which they occur, including different environmental and economic drivers. Since any management activities are likely to have a transnational impact, there is a need to include multiple actors from each country. In the Baltic Sea, Exclusive Economic Zones (EEZ) and territorial waters border each other, so both offshore economy and any remediation actions in a particular zone will affect the others and will have a transnational impact.
The countries selected for the partnership face similar problems, associated with wrecks and dumped underwater munition on the seafloor. Lithuania, Sweden, Denmark, and Norway have chemical munition dumpsites within their EEZs, Finland, and Estonia faces the problem of sunken seamines deriving from the massive marine minefields in the Gulf of Finland during WW II as well as numerous oil-containing wrecks (often containing UXOs) in their waters, while Germany and Poland have to deal with the dumpsites for conventional munitions, wrecks and scattered munitions in areas that are subject to various offshore developments. Another strong argument for including these countries in the current proposal is the existence of an expert network experienced in studying historical sources of contamination in the Baltic Sea built within the frame of previous projects (CHEMSEA, DAIMON, North Sea Wrecks).
To enable target groups to use these tools, a group of laboratories will be established for long time cooperation in a transnational network able to analyze threats associated with munitions and wrecks, equipped with novel state of the art tools and methods, ready to serve with expert advice and services.

1,795 / 2,000 characters

3.3 Target groups

Target group	Sector and geographical coverage	Its role and needs
International governmental organisation	Intergovernmental organizations, e.g. HELCOM, responsible for the coordination of monitoring and assessment of the environmental status of the Baltic Sea; political forums for regional cooperation, e.g., Council of the Baltic Sea States, responsible for the development, economy, and environment protection; international expert groups, e.g. HELCOM SUBMERGED, advising Baltic governments on risk assessment and actions to be taken regarding submerged hazardous objects, such as munitions and wrecks. 500 / 500 characters	These organizations can help in the adoption of a harmonized policy, the modification of monitoring strategies and spatial planning, as well as application of DSS to categorization of wrecks and underwater munitions, and prioritizing them for remediation. HELCOM can also help obtain relevant data from the partner countries, to be used in the pilot phase to perform risk assessments. To fulfil these goals, HELCOM needs an updated DSS that is able to cover both wrecks and munitions, and CBSS needs harmonization guidelines and legal analysis. 545 / 1,000 characters
National public authority	Environment protection agencies from Denmark, Lithuania, Poland and Germany will be included, their geographical coverage covering respective EEZs. They are responsible for working towards environmentally sound and safe management of national marine areas with underwater munition and work towards the achievement of good environmental status under the MSFD. 358 / 500 characters	Some of the agencies included are responsible for the evaluation of environmental impact assessment for offshore investments, in areas where munitions and wrecks are present or are consulted during the permitting procedures. They also make recommendations regarding remediation activities, monitoring strategy and spatial planning. To this end, they need a tool to categorize the risk, a plan to monitor the actions and to possess better tools for the examination of contaminated sites as well as their ongoing monitoring. 523 / 1,000 characters

Target group	Sector and geographical coverage	Its role and needs
Sectoral agency	Maritime administrations of PL, NO and SE, responsible for navigation hazards, safety of waterways and spatial planning in their respective EEZs. 147 / 500 characters	Maritime administrations are responsible for handling maritime hazards, including dangerous wrecks and underwater munitions on which they can provide data regarding their location and any supporting information. They may take part of in the development of the DSS and the early warning methods, these being directly transferrable to their day-to-day activity. The availability of easy-to-deploy methods of examination of wrecks and underwater munitions, including the novel NAA system, has potential to reduce operational costs and enables more cost-efficient achieving of the obligations of the authorities. 608 / 1,000 characters
Large enterprise	Energy providers and offshore windfarms developers in Poland are responsible for offshore windfarm construction, underwater mining as well as cable laying in the Polish EEZ. 174 / 500 characters	Offshore windfarm construction includes environmental impact assessment studies in the investment area as well as possible remediation of wrecks and underwater munitions that collide economically with the investment. LEs can potentially help in the pilot phase of the project by sharing the data obtained during their surveys, or even combining them with the pilot phase, significantly reducing the ship time needed. LEs also need a comprehensive interpretation of their survey data as well as development of novel examination tools, which is adoptable to their daily routine work. Some LEs are running awareness campaigns, which can be used to help in disseminating the project results. 688 / 1,000 characters

3.4 Project objective

Your project objective should contribute to:

Sustainable waters

The WRUMM project aims at creating advanced DSS - one toolbox that consists of several tools: (i) a tool for examining the locations of wrecks and ammunition, (ii) a tool for assessing the impact of the above-mentioned on the marine environment, (iii) a tool for data integration and visualization at present and for prediction, (iv) an early warning tool, (v) a tool for risk assessment and proposing solutions for risk management. WRUMM will evaluate the environmental and monetary cost of different suggested prevention actions regarding the handling of dumped weapons and wrecks, as well as identify possible legal obstacles/hindrances. The latter will be accompanied by a harmonization proposal, which will suggest possible changes to be introduced to national and international legislation to enable or accelerate procedures associated with the management strategies. These project outcomes will help maritime administration authorities in the preparation of spatial plans and in dealing with maritime hazards on a scientific basis. They will assist national authorities responsible for environmental protection with decisions related to issuing investment permits and the structuring of monitoring networks. For the offshore industry, the tools created by the project create an opportunity to process survey data during the preparation of investments and assist efforts in planning the specific offshore activity to maximize the safety of both personnel and the environment.

1,482 / 2,000 characters

3.5 Project's contribution to the EU Strategy for the Baltic Sea Region

Please indicate whether your project contributes to the implementation of the Action Plan of the EU Strategy for the Baltic Sea Region (EUSBSR).

(•) Yes ( ) No

Please select which Policy Area of the EUSBSR your project contributes to most.

PA Hazards

Please list the action of this Policy Area that your project contributes to and explain how.

The WRUMM project addresses the priority "Rich and healthy wildlife" of the EUSBSR by studying remediation possibilities of dumped ammunitions and wrecks causing significant environmental threats for the Baltic Sea. This will be done by creating a categorized threat assessment of the different munition objects and wrecks, harmonizing the methodology for investigating their impacts on marine biota by assessing the exposure, toxicity, bioavailability of the leaking substances, and the spatial ranges of contamination. It will also create an early warning system for monitoring the situation next to the underwater targets. In addition, the environmental risk associated with the different remediation scenarios will also be assessed.
WRUMM also addresses problems related to the reproduction and resilience of commercial fish stocks, both in response to the toxic constituents of munitions and their degradation products, oil leaking from the wrecks, as well as mixture toxicity in the presence of other contaminants. The assessment of bioaccumulation of contaminants in fish originating from the dumped munitions and wrecks addresses the PA Hazards aim "All fish safe to eat".
If given Flagship status in the PA Hazards, a communication plan will be developed for the project jointly by the project leader and PAC, including guidelines for cooperation.

1,360 / 1,500 characters

If applicable, please describe which other Policy Areas of the EUSBSR your project contributes to and how.

Indirectly, the project also addresses the "Innovation" issue of the EUSBSR, namely the area of the underwater and marine technology mentioned in the SUBMARINER flagship project and scientific capacity building mentioned in the „Baltic Science Link" flagship project. Novel underwater detection methods and onboard detection and measurement of explosives in fish and benthic animals tissue as well as their biological effects, will be explored, and the developed methods will be tested and elaborated to provide a state-of-the-art analytical tool.
The multinational approach and multidisciplinary scope of work fulfils also the "Better cooperation" issue mentioned in the EUSBRSR.

682 / 1,500 characters

3.6 Other political and strategic background of the project

Strategic documents	

HELCOM Baltic Sea Action Plan:
The WRUMM goals are in line with the goals of HELCOM Baltic Sea Action Plan (BSAP, updated 2021) and the BSAP actions S34 related to risk assessment and management of dumped munitions and wrecks and S35 related to gathering data on wrecks and underwater munitions. The piloting of the early warning system serves the BSAP Action HL13 related to the monitoring of marine ecosystems

414 / 500 characters

European Marine Strategy Framework Directive (MSFD):
WRUMM is in line with the goal to achieve good environmental status (GES) of all EU marine waters by 2020 in order to protect the resource base upon which marine-related economic and social activities depend. In particular, WRUMM will answer to the MSFD Descriptor 8 "Concentrations of contaminants are at levels not giving rise to pollution effects".

406 / 500 characters

"Marine Knowledge 2020 roadmap" of the EC:
WRUMM will contribute to all three essential components which provide legal certainty and security in the Blue Economy section of the roadmap"
- marine knowledge to improve access to information about the sea;
- maritime spatial planning to ensure efficient and sustainable management of activities at sea;
- integrated maritime surveillance to give authorities a better picture of what is happening at sea.

460 / 500 characters

3.7 Seed money support

Please indicate whether your project is based on a seed money project implemented in the Interreg Baltic Sea Region Programme 2014-2020.

( ) Yes (•) No

3.8 Other projects: use of results and planned cooperation

Full name of the project	Funding Source	Use of the project outcomes and/or planned cooperation	

Full name of the project	Funding Source	Use of the project outcomes and/or planned cooperation
Chemical Munitions Search & Assessment (CHEMSEA) 48 / 200 characters	INTERREG Baltic Sea Region Project 35 / 200 characters	Results and procedures developed within CHEMSEA are a basis for procedures used later within the DAIMON project. Project partners will base their activities on the outcomes of CHEMSEA, enhancing it with newer knowledge and aspects regarding Wrecks management. Data gathered by CHEMSEA will be re-evaluated in regard to their significance to wreck-related environmental impact. 376 / 1,000 characters
Decision Aid for Marine Munitions (DAIMON) 42 / 200 characters	INTERREG Baltic Sea Region Project 35 / 200 characters	EcoTox Toolbox set of methods to examine munition sites from DAIMON will be used as a basis for the enhanced toolbox applicable for versatile munition and wreck examination. Artificial intelligence-based DSS developed in DAIMON will be a base for a new system that addresses both munitions and wrecks and provides new functions related to monitoring and management. 365 / 1,000 characters
Concepts for conventional Marine Munition Remediation in the German North and Baltic Sea (CONMAR) 97 / 200 characters	German Federal Ministry for Education and Science (BMBF) 56 / 200 characters	The national German CONMAR Project in which AWI, UKSH, and UBA participate, investigates the toxicity and fate of conventional ammunition compounds to the marine environment, analyses the potential transfer of explosives through the food web, and will draft monitoring and remediation concepts for German dumpsites. The results of the project will contribute to the update of the DSS in WRUMM. 393 / 1,000 characters
North Sea Wrecks (NSW) 22 / 200 characters	INTERREG North Sea Programme 28 / 200 characters	The NSW consortium developed a harmonized concept to assess wrecks loaded with munition by the time of the sinking, regarding the gathering of historical information, monitoring the status of the wrecks, and analyzing potential leakage of explosives and their environmental effects. The experience of risk assessment regarding wrecks will be used to prepare an appropriate module in DSS. North Sea Wrecks risk assessment procedures were developed on an identical platform as DAIMON DSS, which makes it possible to transfer the procedures directly 546 / 1,000 characters

Full name of the project	Funding Source	Use of the project outcomes and/or planned cooperation
North Sea Risks Monitoring and Remediation/ Mitigation/Intervention/ Decommissioning (REMARCO) 94 / 200 characters	INTERREG North Sea Progr	Partners from the NSW consortium are currently developing the REMARCO proposal to be submitted at the EU North Sea Interreg Programme. The REMARCO project will partly continue the work and partnership with North Sea Wrecks. NSW identified for North Sea-specific environmental risks stemming from undetonated war munitions (UXO) on WW wrecks. REMARCO will target food safety legislation and intensify the cooperation with OSPAR regarding the environmental risk of dissolved explosives. Further, the project will move from analysis to remediation options by studying and prototyping a pilot monitoring and remediation at hotspot sites (wrecks, single munition items, and/or dumping sites). Partners involved in exchange of experiences, information, data and results to

3.10 Horizontal principles

Horizontal principles	Projects's direct impact
Sustainable development	positive
Non-discrimination/Accessibility	positive
Equality between men and women	positive

4. Management

Allocated budget 15%

4.1 Project management

☑ **Please confirm that the lead partner and all project partners will comply with the rules for the project management as described in the Programme Manual.**

If relevant, please indicate any other important aspects of the project management, e.g. external entity supporting the lead partner in the management of the project, advisory board, steering committee, any other relevant working groups, etc.

The coordination (administrative, financial, promotional and operational) is assured by the LP. A partnership agreement will be signed which spells out the PPs obligations (activities, timeframe, reporting, etc.) and financial commitments. Project will be supervised by the steering group (PSG), consisting of one representative of each PPs and AOs. Moreover, the Advisory Board will be constitued from representatives of the BSR organizations responsible for the management of offshore areas.

497 / 500 characters

4.2 Project financial management

☑ **Please confirm that the lead partner and all project partners will comply with the rules for the financial management and control as described in the Programme Manual.**

If relevant, please indicate any other important aspects of the financial management, e.g. external entity supporting the lead partner, positions planned for financial management, involvement of special financial experts (e.g. for public procurement), etc.

Every PP will be responsible for keeping separate accounts of transactions related to WRUMM and for obtaining certifications from their respective FLC. Based on the input from all PPs, a dedicated personnel of LP will do the project's overall accounting, draw up the financial reports to the JS, manage and verify appropriate spending and produce - in cooperation with PPS - all documents required by the Interreg Baltic Programme.

433 / 500 characters

4.3 Input to Programme communication

☑ **Please confirm that you are aware of the obligatory inputs to Programme communication that must be submitted along the pre-defined progress reports, as described in the Programme Manual.**

If relevant, please describe other important aspects of project communication that you plan to introduce, e.g. a communication plan, opening and closing events, social media channel(s) etc.

A project communication plan including all PPs and AOs will be formulated during the kickoff meeting.
The project will be cooperating with the action "Baltic for Generations" supervised by PP CBSS dissemination activities, as well as AO PV awareness-raising activities. It will use joint communication channels, such as webpages, social media channels and shared events. Opening and closing conferences, as well as Open Days accompanying project meetings are planned to include target users.

494 / 500 characters

4.4 Cooperation criteria

Please select the cooperation criteria that apply to your project. In your project you need to apply at least three cooperation criteria. Joint development and joint implementation are the obligatory ones you need to fulfill in your project.

Cooperation criteria	
Joint Development	☑
Joint Implementation	☑
Joint Staffing	☐
Joint Financing	☑

5. Work Plan

Number	Work Package Name
1	Preparing solutions

Number	Group of Activity Name
1.1	Development of the Early Warning System
1.2	Wrecks and munition identification and state assessment
1.3	Guidelines for Impact Assessment
1.4	Risk assessment procedures
1.5	Regulatory background

Number	Work Package Name
2	Piloting and evaluating solutions

Number	Group of Activity Name
2.1	Early Warning System testing
2.2	Examination and Impact assessment testing
2.3	Risk assessment procedure implementation and testing
2.4	Policy consultations: prioritizing legal and administration issues
2.5	Remediation options testing

Number	Work Package Name
3	WP3 Transferring solutions

Number	Group of Activity Name
3.1	Examination and risk assessment strategy
3.2	Management strategies
3.3	Harmonization of legal procedures
3.4	Durability plan

Work plan overview

Period:	1	2	3	4	5	6	Leader
WP.1: Preparing solutions							**PP1**
A.1.1: Development of the Early Warning System							PP13
D.1.1: Modular Platform Concept			D				
A.1.2: Wrecks and munition identification and state assessment							PP1
D.1.2: A toolbox for wrecks and munition identification and scene recognition			D				
A.1.3: Guidelines for Impact Assessment							PP9
D.1.3: Protocols for chemical and biological assessment			D				
A.1.4: Risk assessment procedures							PP2
D.1.4: Concept Risk Assessment Procedure				D			
A.1.5: Regulatory background							PP10
D.1.5: Overview and comparison of international and national legal regulations in Baltic Sea region			D				
WP.2: Piloting and evaluating solutions							**PP1**
A.2.1: Early Warning System testing							PP13
D.2.1: Refinement of Early Warning methodology				D			
A.2.2: Examination and Impact assessment testing							PP17
D.2.2: Revised examination and impact assessment testing procedures				D			
A.2.3: Risk assessment procedure implementation and testing							PP2
D.2.3: Risk assessment procedure integrated into the early warning system				D			
A.2.4: Policy consultations: prioritizing legal and administration issues							PP10
D.2.4: Conclusions and recommendations from the consultations					D		
A.2.5: Remediation options testing							PP1
D.2.5: Best practices for remediation actions				D			
WP.3: WP3 Transferring solutions							**PP1**
A.3.1: Examination and risk assessment strategy							PP2
O.3.1: Advanced DSS						O	
A.3.2: Management strategies							PP8
D.3.2: Guidelines regarding the removal, salvage and destruction of conventional munition will be published						D	
A.3.3: Harmonization of legal procedures							PP14
O.3.3: Recommendations and changes in legal regulations						O	
A.3.4: Durability plan							PP2
D.3.4: Durability Concept						D	

Outputs and deliverables overview

Code	Title	Description	Contribution to the output	Output/ deliverable contains an investment
D 1.1	Modular Platform Concept	A compact cost-effective modular platforms for in situ monitoring of objects that can become a future threat to the marine ecosystem will be developed and tested. It will be able to host all functionalities from GoA 1.1 producing the modular early warning platforms for the monitoring of dangerous wrecks and munition dumpsites. EBM together with chemical analysis, passive samplers, and in situ measurements of chemicals will be combined with the environmental sensor data. The in situ detection system developed in the Explotect project will be adjusted for continuous measurements of munition constituents on the platform deployed at the munitions dumping site, and the ability to study new compounds will be assessed. Technical development and testing of the modular system, cages (i.e., transplantation units) for in situ exposure experiments with suitable bioindicator species (bivalves, crustaceans, depending on the area) will be designed. Data combination algorithms, methodology of measurements, and modeling of boundary layer conditions and suspended matter transport will be described. The platforms will monitor not only at a given moment but in a time-integrated manner, thus allowing for the identification of temporal trends and the evaluation of future risks. Importantly, most of the components of platforms will be used in the pilot studies. An improved, very low-cost method for recording of near bottom currents and sediment transport along the major pathways from the Baltic Sea dumping sites and wrecks will be developed.	O 3.1: Advanced DSS	

D 1.2	A toolbox for wrecks and munition identification and scene recognition	A set of tools, algorithms and procedures needed to obtain 3D visualizations of bottom scenes and objects of interest on them will be developed. In addition, techniques for data processing and synthesis will be presented in order to obtain 3D models of seabed and objects on it. Modern techniques of parameterization of recorded hydroacoustic signals (e.g. 2D FFT, wavelet analysis, fractal dimension) together with fuzzy logic, neural networks and Object Base Image Analysis will be applied for detection and classification of objects and potential bottom contaminants. The SOP for identification and verification of dumped munition objects and wrecks will be developed for the description of utilizing ROV platforms in the investigation of dangerous objects on the sea bottom. A prototype of the equipment for non-invasive detection of the oil in wrecks and munition payloads will be developed based on Applying NAA technique and the ROV platform. Set of methods compiled in the toolbox will be adjusted to the needs of target users and ready for demonstration during the pilot phase. It will deliver the information regarding scene description – including identification of munitions and wrecks, their 3D reconstruction and estimation of their contents in terms of fuel, explosives and chemical warfare agents. It will also include current state of hull corrosion, together with an algorithm for predicting future degradation of investigated objects. Scene recognition tools will be able to provide information regarding habitat damage and existence of other objects in vicinity.	O 3.1: Advanced DSS	
D 1.3	Protocols for chemical and biological assessment	A set of chemical and biological methods will be selected for testing in the pilot phase. The methods will provide an estimation of the negative impact of wrecks and munitions on the marine environment. They will be focused on simplicity, cost-effectiveness and versatility, which would enable their utilization for both wrecks and ammunition. Data handling procedures for each method will be included in the protocols, which would enable the inclusion of results directly into DSS system.	O 3.1: Advanced DSS	
D 1.4	Concept Risk Assessment Procedure	This deliverable will create a concept of risk assessment to be implemented into DSS. It will include an overview of all relevant hazardous compounds regarding Explosive chemicals, Chemical warfare agents and hazardous substances in hydrocarbons. This overview will summarize all available standards for both Environmental Quality Standards that are readily available from existing regulatory guidelines (Water framework directive EU, OSPAR, HELCOM). A collection of literature data and field studies is compiled that form the basis for the risk calculations for the marine ecosphere and human seafood consumption. In addition, a fully coupled ice-ocean modeling system with an embedded high-resolution dispersion model will be developed to simulate the spreading of dissolved hazardous substances in the water column to assess the risk that EQS and human safety thresholds are exceeded. This will be available for both ad-hoc releases as well as probabilities of exceeding critical concentrations of the identified harmful substances. The VRAKA model will be used to calculate the probability of release of oil from shipwrecks and chemicals from dumped munitions. This will allow for a more comprehensive assessment and comparison of different sites as well as the effect of possible mitigation measures. The final step of the risk assessment will be the transfer of information obtained by the early warning platform and field studies to the DSS as manual inputs or automated data transfer depending on the technologies used (GoA 1.1,1.2,1.3) In addition, defined EQS and human safety thresholds will make it possible to assess if critical concentrations are exceeded. In conjunction with available model results, the DSS will be able to communicate the risks to the user. A concept will be defined assessing what information will be ultimately available and how this is communicated to the user. From here technical requirements are specified for the software development of the DSS.	O 3.1: Advanced DSS	
D 1.5	Overview and comparison of international and national legal regulations in Baltic Sea region	In the current legal status of the Baltic Sea region (BSR) there is a clear division of responsibility between individual ministries regarding tasks such as marine resources management, environmental management and monitoring, counteracting threats, etc. Such compartmentalization makes the decisions on counteracting threats resulting from hazardous objects lying on the seabed highly difficult. This deliverable provides an overview of the relevant international regulations which apply to the problem of dumped chemical, conventional munitions and wrecks containing hazardous substances. The compiled regulations will be analysed in terms of whether they adequately regulate the responses to the potential contamination threat caused by munitions and wrecks, and to their removal and destruction. A list of regulations and guidelines in force in the BSR with regard to conventional and chemical ammunition and wrecks in the marine environment will be compiled. The paper will contain a comparison of the domestic legal regulations in BSR regarding territorial waters and the EEZ and a gap analysis on missing regulations at the national and international levels. The compilation of existing national and international legal and administrative procedures will be included into the DSS. It will include the information on distribution of responsibilities amongst various institutions regarding dealing with munition and wrecks, and on their role in the overall system. Best examples of legal regulation in the countries that already removed dumped munition and wrecks from their waters, i.e. United States of America, Canada, Italy, Japan, will be collected. Based on comparison and gap analysis, limitations will be defined in the aspect of managing hazardous objects, e.g., retrieving and destruction of dumped chemical and conventional weapons in terms of the Convention on the Prohibition of Chemical Weapons and the Convention on the Protection of the Marine Environment of the Baltic Sea Area.	O 3.3: Recommendations and changes in legal regulations	

D 2.1	Refinement of Early Warning methodology	The refinement of the early warning methodology and its combination with multiple sensors, samplers and measurements applied and tested in GoA 2.1. will bring completely new dimensions to its applicability and links it more closely to the characterization and dynamics of exposure, including temporal variability. Suitability of different sensors to an assessment of particular problem (wrecks, conventional or chemical munitions), and their performance in given environmental settings will be evaluated. Most versatile variants of the investigated sensors and methods will be selected for the final design of the early warning platform. Also data flows will be carefully examined. These will be compiled into a manual on how to successfully deploy these modular platforms, and how to calibrate and deploy the different sensors and import the data into the DSS to provide risk estimations.	O 3.1: Advanced DSS	
D 2.2	Revised examination and impact assessment testing procedures	The results of the pilot study from all investigated areas will be compiled into a database. The database will include raw and processed geophysical data, as well as photogrammetric materials and 3D models compiled with 2D multibeam sonar records. Also, results of detection of oil or munition payload in examined objects based on sensor and NAA will be attached. Database of adverse effects in the state of the environment in the vicinity of selected submerged objects of anthropogenic origin will be built, followed by a report on habitat damage around selected submerged objects. The database created in the framework of pilot studies will be fed to DSS. This will be used to evaluate all methods used for the site examination and impact assessment. As a result, A universal set of SOPs and ROPs for both wreck and munition site assessment will be compiled. This will include a detailed application guide, containing parameters or variants of selected methods, their resolution and precision requirements related to different environmental conditions and different problems to solve. A detailed guide how to apply the procedures for three tested scenarios (problem wrecks, explosives, chemical munition) will be developed.	O 3.1: Advanced DSS	
D 2.3	Risk assessment procedure integrated into the early warning system	Based on the data obtained in activities 2.1 and 2.2, An updated risk assessment procedure will be developed. It will include: Completion of Environmental Quality Standards (UBA) Of the identified hazardous compounds addressed in WP 1, it is known that available EQS are incomplete. Missing substances EQS will be derived based on database research on ecotoxicological norms and data that is available, following the technical guidance document 27 (EU) on EQS. Risk Calculations and recommendations for the marine ecosphere and human seafood consumers (UKSH). Following the output from related activities of working package 1, calculations will be done to assess the risk for marine species and human seafood consumers. In addition, recommendations and a statement will be formulated on impacts and safety for marine species and human seafood consumers. Dispersion model scenarios (IOPAN) The prepared dispersion model as yielded from working package 1 will be applied to a series of scenarios at a selected number of sites to verify its results with available field observations. DSS Integration (north.io) The DSS will be updated with the changes conceptualized in working package 1 and will be able to visualize the received data and verifications with provided thresholds and model simulations and management options.	O 3.1: Advanced DSS	
D 2.4	Conclusions and recommendations from the consultations	The consultations will collect and compile remarks and conclusions on the following items, which have been prepared by the project partners based on the review of existing legal and guidance documents: 1. establishment of a permanent sea area monitoring system and database for dumped hazardous objects; 2. principles of controlling and supervising the proper securing or extracting and destroying "selected" hazardous materials dumped in the sea areas for both territorial waters and EEZ; 3. liability for any damage caused by the above-mentioned activities; 4. investors' responsibility for carrying out a seabed survey for the planned installation and its possible remediation of any residual hazardous materials before starting the assembly of the structure; 5. defining the method of implementing and financing the intervention neutralization of dumped hazardous materials 6. introducing the necessary changes in the applicable legal acts.	O 3.3: Recommendations and changes in legal regulations	
D 2.5	Best practices for remediation actions	The main goal is therefore to determine which environmental factors play a major role in natural neutralization of recognized threats originating from sunken objects in the Baltic Sea. For instance, it will be determined if and later which microbial taxa have a capacity to neutralize munition related agents and compounds by their degradation to nontoxic or low-energetic compounds in sediments, porewater and water-column. Simultaneously, we will investigate environmental factors influencing their presence and activity. Activity will aim in combining and adapting experiences, including known metabolic pathways from waste-water treatment, oil-remediation and munition destruction from terrestrial systems into marine environment.	O 3.1: Advanced DSS	
O 3.1	Advanced DSS	The concept as defined in WP 1 and implemented in WP 2 will provide an updated decision support system capable of managing characteristics of munition objects and ship wrecks, monitoring data, risk assessments, dealing with project findings regarding monitoring and environmental standards. This will be accompanied by set of guidelines regarding the selection of most versatile methods for munition and wreck examination and impact assessment, as well as a design for early warning platform and SOPs to be used in its operation. An advanced DSS is one toolbox that consists of several tools: (i) a tool for examining the locations of wrecks and ammunition, (ii) a tool for assessing the impact of the above-mentioned on the marine environment, (iii) a tool for data integration and visualization at present and for prediction, (iv) an early warning tool, (v) a tool for risk assessment and proposing solutions for risk management. It will include the environmental and monetary cost of different suggested prevention actions regarding the handling of dumped weapons and wrecks, as well as identify possible legal obstacles/hindrances.		Yes

D 3.2	Guidelines regarding the removal, salvage and destruction of conventional munition will be published	Recommendations for implementation of monitored natural recovery and enhanced monitored natural recovery for polluted sediment will be provided. Lines of evidence will be translated into best practices enhancing the effectiveness of natural remediation. Based on the information from pilot studies and WP2.5, site-specific conditions guidelines regarding i.e. the monitoring, removal, salvage and destruction of conventional munition will be created and published. Similar approach will be applied for EMNR or MNR of chemical munitions and wrecks, however it has to be emphasized that existing state of knowledge, even if improved by new data produced in pilot studies, may be insufficient for establishing clear lines of evidence for sources of mix-type pollution.	O 3.1: Advanced DSS	
O 3.3	Recommendations and changes in legal regulations	The output of the compilation, analysis and harmonization of legal and administrative procedures on hazardous materials from dumped chemical and conventional munition as well as wrecks will be a set of recommendations for improvements in legal and administrative regulations and procedures. These will be brought to the attention of the relevant national, regional and international bodies. This will be done on various levels: - These recommendations will be prepared for submission to HELCOM and the Council of the Baltic Sea States, CBSS. - A final symposium (online or hybrid) towards the end of the project will present results to a wide audience. - The groups of stakeholders at national and international level will be informed via workshops. - The European Commission, which will coordinate activities and response procedures as well as develop the best methods of ammunition clearance as a consequence of adopting by the European Parliament the resolution on chemical residues in the Baltic Sea. The creation of appropriate legal tools related to the management of dumped chemical and conventional ammunition and wrecks will create an opportunity to develop effective methods of removing dumped hazardous objects from the seabed in accordance with the applicable letter of the law. Thanks to the regularizing of the legal regulations, the problems faced by maritime investors concerning dealing with hazardous objects in the areas of their offshore investments will also be resolved.		
D 3.4	Durability Concept	The durability report will be in written from describing: - Financial resources needed for DSS running costs and maintenance subdivided in corrective, adaptive, preventive and perfective maintenance (classification from minor changes to development of new functionalities). - Data needs and updates required after a project termination. - Listing of functionalities of the AmuCad.org platform and embedding of the decision support system. - Intellectual property rights and listing of dependencies from project partners.	O 3.1: Advanced DSS	

Work package 1

5.1 Preparing solutions

5.2 Aim of the work package

The aim of this work package is to prepare solutions to help address the identified challenge. You can either develop entirely new solutions or adapt existing solutions to the needs of your target groups. Prepare your solutions in a way that you can pilot them in Work Package 2. Consider how you involve your target groups in preparation of the solutions.
Organise your activities in up to five groups of activities to present the actions you plan to implement. Describe the deliverables and outputs as well as present the timeline.

5.3 Work package leader

Work package leader 1 PP 1 - Institute of Oceanology Polish Academy of Sciences (IOPAS)

Work package leader 2 Please select

5.4 Work package budget

Work package budget 20%

5.5 Target groups

	Target group	How do you plan to reach out to and engage the target group?
1	International governmental organisation Intergovernmental organizations, e.g. HELCOM, responsible for the coordination of monitoring and assessment of the environmental status of the Baltic Sea; political forums for regional cooperation, e.g., Council of the Baltic Sea States, responsible for the development, economy, and environment protection; international expert groups, e.g. HELCOM SUBMERGED, advising Baltic governments on risk assessment and actions to be taken regarding submerged hazardous objects, such as munitions and wrecks. 500 / 500 characters	International target groups like HELCOM and the OPCW are utilized to engage in a back-and-forth discussion with a WP1 team to prepare solutions for continuous monitoring, remediation, etc. HELCOM will be consulted, to identify knowledge gaps and needs, as well as compliancy with BSAP. The OPCW will be invited to follow-up the project. Representative will also be asked for the Advisory Board to utilize high expertise of the OPCW related to chemical warfare agents as well as their expertise in land-dumped munitions destruction in China. CBSS will play an active role regarding legal-related activities. Also: - participation in the Submerged working group, - presentation of the project results during group working meetings, - inviting HELCOM and BSAP representatives to join the expert network, - inviting HELCOM and BSAP representatives to the project partners meetings, - consultation. 894 / 1,000 characters
2	National public authority Environment protection agencies from Denmark, Lithuania, Poland and Germany will be included, their geographical coverage covering respective EEZs. They are responsible for working towards environmentally sound and safe management of national marine areas with underwater munition and work towards the achievement of good environmental status under the MSFD. 358 / 500 characters	Newspaper articles, grey literature, broadcast on selected topics. As part of the DAIMON 2 project, training for environmental protection agencies representatives was conducted on the DSS tool. This group is currently interested in implementing this tool, and therefore will actively participate in improving its functionality and finally implementing it as a routine threat assessment tool. During the project, training will be resumed, and a series of workshops will be conducted to test new functionalities and possibilities. After the end of the project, interested institutions will have access to the new version of the DSS. 630 / 1,000 characters
3	Sectoral agency Maritime administrations of PL, NO and SE, responsible for navigation hazards, safety of waterways and spatial planning in their respective EEZs. 147 / 500 characters	As part of the DAIMON 2 project, training was carried out for representatives of maritime administrations on the DSS tool. This group is currently interested in implementing this tool; therefore it will actively participate in improving its functionality and finally implementing it as a routine threat assessment tool. During the project, training will be resumed, and a series of workshops will be conducted to test new functionalities and possibilities. After the end of the project, interested institutions will have access to the new version of the DSS. 558 / 1,000 characters
4	Large enterprise Energy providers and offshore windfarms developers in Poland are responsible for offshore windfarm construction, underwater mining as well as cable laying in the Polish EEZ. 174 / 500 characters	Targeted info packages, workshops for those in the field (names of companies could be got e.g. from Munitions clearance week. Workshops should focus on collection of info/needs from enterprises. It is planned to invite company/enterprises representatives to the expert network, as well representatives of enterprises to the project partners working meetings. 358 / 1,000 characters

5.6 Activities, deliverables, outputs and timeline

No.	Name
1.1	**Development of the Early Warning System**
1.2	**Wrecks and munition identification and state assessment**
1.3	**Guidelines for Impact Assessment**
1.4	**Risk assessment procedures**
1.5	**Regulatory background**

WP 1 Group of activities 1.1

5.6.1 Group of activities leader

Group of activities leader PP 13 - Alfred Wegner Institute Helmholtz Centre for Polar and Marine Research (AWI)

A 1.1

5.6.2 Title of the group of activities

Development of the Early Warning System

39 / 100 characters

5.6.3 Description of the group of activities

Underwater munitions and dangerous wrecks pose a hazard of unknown magnitude to the marine environment, and due to corrosion of the materials, the hazard increases exponentially as time goes on. In order to manage the risks, it is prudent to examine and evaluate time trends in contamination from the objects in the target areas. For that, compact cost-effective early warning systems need to be developed for deployment in these areas. Such systems may be based either on monitoring the changes in situ (uptake, accumulation, and biological effects of the specific contaminants in local biota) indicating impacts on the marine environment or on moored platforms that can be deployed immediately next to the dangerous wrecks or munitions dumpsites. A complete system consists of a set of physical tools, analytical methods, and standard operation procedures (SOPs) that enable the detection of toxic agents and the release of harmful chemicals from the target objects as well as direct measures of their environmental impacts via the inclusion of effect-based methods (EBM) such as biomarkers.
The solutions developed in this GoA, including tools like EBM, passive samplers, sensors, current meters, suspended matter trap system as well as a set of oceanographic equipment will be assembled to work on platforms (remote operating lander) or in its immediate vicinity. Such a platform will be also equipped with in situ analyzer for munition constituents based on tools developed within the EU funded Explotect project. The platforms are used both at the munition dumpsites and close to the selected wrecks. The data obtained by the platform will be compiled to the format that could be processed by the DSS. Procedures for the establishment of criteria where the platform should be optimally positioned will be developed, and data absorption procedures for the DSS databases will be established.
The local target groups connected to the specific pilot study areas (maritime administration and offshore industry) will be consulted regarding the optimal performance of the platforms, their size, and deployment procedures to enable them to use them as a standard approach in the future. They will also help in designating the optimal pilot sites. Target groups dealing with environmental protection will be consulted to maintain compatibility with the existing monitoring schemes so that the data obtained can be readily adsorbed to the long-term programs and to ensure that the datasets coming from the existing monitoring programs can support the early warning system outputs.
The planned activities will all focus on creating the GoA 1 output, a holistic early warning system design with an operation manual. This activity will unite partners and AOs from each consortium country to tackle challenges typical to the different areas of the Baltic Sea and interoperability in local conditions, resulting in a universal, transferrable system.

2,944 / 3,000 characters

5.6.4 This group of activities leads to the development of a deliverable ✔

D 1.1

Title of the deliverable

Modular Platform Concept

24 / 100 characters

Description of the deliverable

A compact cost-effective modular platforms for in situ monitoring of objects that can become a future threat to the marine ecosystem will be developed and tested. It will be able to host all functionalities from GoA 1.1 producing the modular early warning platforms for the monitoring of dangerous wrecks and munition dumpsites. EBM together with chemical analysis, passive samplers, and in situ measurements of chemicals will be combined with the environmental sensor data. The in situ detection system developed in the Explotect project will be adjusted for continuous measurements of munition constituents on the platform deployed at the munitions dumping site, and the ability to study new compounds will be assessed. Technical development and testing of the modular system, cages (i.e., transplantation units) for in situ exposure experiments with suitable bioindicator species (bivalves, crustaceans, depending on the area) will be designed. Data combination algorithms, methodology of measurements, and modeling of boundary layer conditions and suspended matter transport will be described. The platforms will monitor not only at a given moment but in a time-integrated manner, thus allowing for the identification of temporal trends and the evaluation of future risks. Importantly, most of the components of platforms will be used in the pilot studies. An improved, very low-cost method for recording of near bottom currents and sediment transport along the major pathways from the Baltic Sea dumping sites and wrecks will be developed.

1,546 / 2,000 characters

Which output does this deliverable contribute to?

O 3.1: Advanced DSS

19 / 100 characters

5.6.6 Timeline

Period:	1	2	3	4	5	6
WP.1: Preparing solutions						
A.1.1: Development of the Early Warning System						
D.1.1: Modular Platform Concept						

5.6.7 This deliverable/output contains productive or infrastructure investment ☐

WP 1 Group of activities 1.2

5.6.1 Group of activities leader

Group of activities leader PP 1 - Institute of Oceanology Polish Academy of Sciences (IOPAS)

A 1.2

5.6.2 Title of the group of activities

Wrecks and munition identification and state assessment

57 / 100 characters

5.6.3 Description of the group of activities

The technical capabilities that are now emerging, combined with the consortium's experience, provide an ideal base for cross-cutting research and innovation development and open the door for advanced marine remote sensing and a holistic understanding of the seabed and its contamination by wrecks and munitions. Using a variety of remote techniques, the geometry of the objects of interest and any potential threats occurring near them, presence of toxic substances inside the objects, habitat damage estimation and corrosion algorithm will be examined.
NAA will be calibrated on test compounds in the lab by PP 12 and PP 15, and converted into in situ underwater method. Algorithms will be created to process and compile geophysical data, corrosion estimation algorithms will be prepared, and data gaps will be identified to improve the algorithms during the pilot studies.
Offshore economy target groups and AO (AO7) will be consulted regarding the existing methods used in their EIA surveys. Authorities dealing with wrecks will be consulted regarding wrecks potentially containing oil (AO4, AO6), and value of scene recognition in maritime spatial planning will be discussed with respective authorities (AO3, AO6). Environmental authorities (AO1, AO5, AO10) will be consulted regarding usability of habitat damage estimation. The focus is on oil-containing wrecks and their status assessment, as well as munition dumpsites. Wreck investigations take advantage of the national ongoing projects in Finland and Estonia, where listings and prioritization of wrecks threatening the environment have been made and oil recovery operations have been carried out. The above-mentioned detailed hydroacoustic surveys and other investigations will be carried out to select the wrecks to be included in the current project as the targets of the pilot phase. The surveys will be carried out collaboratively by PP5 and PP9, and supported by national AOs (AO4 and AO11). Methods development for munition sites will be supported by German project CONMAR, and tests will be performed by partners LP1 and PP 17.
Activities will create a set of methods ready to be deployed in pilot, together with algorithms converting collected data into a direct feed into DSS system. Transnational cooperation of multiple teams will make the deliverable able to be applied in an entire Baltic Sea Area, taking into account different environmental settings and a variety of wrecks and underwater munitions that could be encountered there.

2,508 / 3,000 characters

5.6.4 This group of activities leads to the development of a deliverable ✔

D 1.2

Title of the deliverable

A toolbox for wrecks and munition identification and scene recognition

71 / 100 characters

Description of the deliverable

A set of tools, algorithms and procedures needed to obtain 3D visualizations of bottom scenes and objects of interest on them will be developed. In addition, techniques for data processing and synthesis will be presented in order to obtain 3D models of seabed and objects on it. Modern techniques of parameterization of recorded hydroacoustic signals (e.g. 2D FFT, wavelet analysis, fractal dimension) together with fuzzy logic, neural networks and Object Base Image Analysis will be applied for detection and classification of objects and potential bottom contaminants. The SOP for identification and verification of dumped munition objects and wrecks will be developed for the description of utilizing ROV platforms in the investigation of dangerous objects on the sea bottom. A prototype of the equipment for non-invasive detection of the oil in wrecks and munition payloads will be developed based on Applying NAA technique and the ROV platform. Set of methods compiled in the toolbox will be adjusted to the needs of target users and ready for demonstration during the pilot phase. It will deliver the information regarding scene description – including identification of munitions and wrecks, their 3D reconstruction and estimation of their contents in terms of fuel, explosives and chemical warfare agents. It will also include current state of hull corrosion, together with an algorithm for predicting future degradation of investigated objects. Scene recognition tools will be able to provide information regarding habitat damage and existence of other objects in vicinity.

1,583 / 2,000 characters

Which output does this deliverable contribute to?

O 3.1: Advanced DSS

19 / 100 characters

5.6.6 Timeline

Period:	1	2	3	4	5	6
WP.1: Preparing solutions						
A.1.2: Wrecks and munition identification and state assessment						
D.1.2: A toolbox for wrecks and munition identification and scene recognition						

5.6.7 This deliverable/output contains productive or infrastructure investment ☐

WP 1 Group of activities 1.3

5.6.1 Group of activities leader

Group of activities leader PP 9 - Finnish Environment Institute (SYKE)

A 1.3

5.6.2 Title of the group of activities

Guidelines for Impact Assessment

32 / 100 characters

5.6.3 Description of the group of activities

The GoA 1.3 prepares the protocols for the chemical and biological assessment carried out during the pilot phase at the the selected study sites, and consists of guidance of sampling and analytical work. General guidelines will be formulated from these and modified if needed basing on the results and experiences obtained during the pilot phase. The concentration of toxic substances originating from wrecks, and chemical and conventional munitions will be assessed in water, sediments and exposed biota. Furthermore, water and biota samples will be screened for unknown substances, metabolites and degradation products of dissolved explosives and CWAs. Based on that, the range of substances observed close to the wrecks and dumpsites will be catalogued, and the analytical parameters for their identification will be stored in an online database for future reference and easier identification. The impact of the leaking substances on the local ecosystem will be evaluated by modelling their spreading range and field exposures using caged organisms. The stability and degradation studies of CWA and oil-derived substances will be conducted, and methods for concentration measurements of primary explosives in sediment samples will be improved.
National environmental authorities will be consulted regarding the most needed parameters to be measured and critical habitats to protect. Offshore economy representatives will be consulted regarding possible inclusion of postulated methods in their EIA studies, with focus of cost effectiveness and ability to provide unambiguous results.
Protocol development will include interdisciplinary team, uniting ecology (PP 9, PP13), chemistry (PP 3, 6, 11) and oceanography (PP 1, 4, 17). Test cruises will be performed jointly by LP1 and PP 17.

1,789 / 3,000 characters

5.6.4 This group of activities leads to the development of a deliverable ✔

D 1.3

Title of the deliverable

Protocols for chemical and biological assessment

48 / 100 characters

Description of the deliverable

A set of chemical and biological methods will be selected for testing in the pilot phase. The methods will provide an estimation of the negative impact of wrecks and munitions on the marine environment. They will be focused on simplicity, cost-effectiveness and versatility, which would enable their utilization for both wrecks and ammunition. Data handling procedures for each method will be included in the protocols, which would enable the inclusion of results directly into DSS system.

489 / 2,000 characters

Which output does this deliverable contribute to?

O 3.1: Advanced DSS

19 / 100 characters

5.6.6 Timeline

Period:	1	2	3	4	5	6
WP.1: Preparing solutions						
A.1.3: Guidelines for Impact Assessment						
D.1.3: Protocols for chemical and biological assessment						

5.6.7 This deliverable/output contains productive or infrastructure investment ☐

WP 1 Group of activities 1.4

5.6.1 Group of activities leader

Group of activities leader PP 2 - north.io

A 1.4

5.6.2 Title of the group of activities

Risk assessment procedures

26 / 100 characters

5.6.3 Description of the group of activities

To integrate the risk assessment procedure into the DSS, a concept needs to be defined. This concept addresses the data flows from the early warning system and the way risk assessments with respect to environmental impacts and human seafood consumption are triggered, conducted and communicated to the DSS user.
In collaboration with the other activities in this WP, a collection of data sources, methods, environmental standards EQS) and human safety thresholds are defined addressing the critical thresholds of Explosive chemicals, Chemical warfare agents and hazardous substances in hydrocarbons (e.g. PAH's) for the environment and risks to human seafood consumption.
A high-resolution numerical dispersion model will be developed, capable of simulating ad-hoc as well as statistical outputs to identify where, and how likely it is that critical thresholds are exceeded.
Acquisition of data, calculations, visualization, communication designs and technical requirements will be listed and used for the development of the decision support system.

1,050 / 3,000 characters

5.6.4 This group of activities leads to the development of a deliverable ☑

D 1.4

Title of the deliverable

Concept Risk Assessment Procedure

33 / 100 characters

Description of the deliverable

This deliverable will create a concept of risk assessment to be implemented into DSS. It will include an overview of all relevant hazardous compounds regarding Explosive chemicals, Chemical warfare agents and hazardous substances in hydrocarbons. This overview will summarize all available standards for both Environmental Quality Standards that are readily available from existing regulatory guidelines (Water framework directive EU, OSPAR, HELCOM).
A collection of literature data and field studies is compiled that form the basis for the risk calculations for the marine ecosphere and human seafood consumption. In addition, a fully coupled ice-ocean modeling system with an embedded high-resolution dispersion model will be developed to simulate the spreading of dissolved hazardous substances in the water column to assess the risk that EQS and human safety thresholds are exceeded. This will be available for both ad-hoc releases as well as probabilities of exceeding critical concentrations of the identified harmful substances.
The VRAKA model will be used to calculate the probability of release of oil from shipwrecks and chemicals from dumped munitions. This will allow for a more comprehensive assessment and comparison of different sites as well as the effect of possible mitigation measures.
The final step of the risk assessment will be the transfer of information obtained by the early warning platform and field studies to the DSS as manual inputs or automated data transfer depending on the technologies used (GoA 1.1,1.2,1.3) In addition, defined EQS and human safety thresholds will make it possible to assess if critical concentrations are exceeded. In conjunction with available model results, the DSS will be able to communicate the risks to the user. A concept will be defined assessing what information will be ultimately available and how this is communicated to the user. From here technical requirements are specified for the software development of the DSS.

1,989 / 2,000 characters

Which output does this deliverable contribute to?

O 3.1: Advanced DSS

19 / 100 characters

5.6.6 Timeline

Period:	1	2	3	4	5	6
WP.1: Preparing solutions						
A.1.4: Risk assessment procedures						
D.1.4: Concept Risk Assessment Procedure						

5.6.7 This deliverable/output contains productive or infrastructure investment ☐

WP 1 Group of activities 1.5

5.6.1 Group of activities leader

Group of activities leader PP 10 - German Environment Agency (UBA)

A 1.5

5.6.2 Title of the group of activities

Regulatory background

22 / 100 characters

5.6.3 Description of the group of activities

Currently, there is no coherent legal basis enabling the efficient and safe retrieving and destruction of munitions and wrecks dumped at sea. In most of the Baltic Sea states, there is also a lack of a single entity responsible for carrying out activities consisting of the planned retrieving and destruction or securing hazardous materials dumped on the seabed.
This GoA aims to compile, compare and analyze existing regulations, policy guidelines and legal instruments at the national and international level regarding environmental and security problems of dumped chemical and conventional munition and wrecks focusing on all aspects related to recovery, salvage and destruction of objects containing hazardous substances. It will consider their relation to the international and national security and environmental legislation.
The regulatory context will be consulted with experts in GoA 2.4 and recommendations to fill gaps and a broader regulatory background will be developed in GoA 3.3.

1,000 / 3,000 characters

5.6.4 This group of activities leads to the development of a deliverable ✔

D 1.5

Title of the deliverable

Overview and comparison of international and national legal regulations in Baltic Sea region

93 / 100 characters

Description of the deliverable

In the current legal status of the Baltic Sea region (BSR) there is a clear division of responsibility between individual ministries regarding tasks such as marine resources management, environmental management and monitoring, counteracting threats, etc. Such compartmentalization makes the decisions on counteracting threats resulting from hazardous objects lying on the seabed highly difficult. This deliverable provides an overview of the relevant international regulations which apply to the problem of dumped chemical, conventional munitions and wrecks containing hazardous substances. The compiled regulations will be analysed in terms of whether they adequately regulate the responses to the potential contamination threat caused by munitions and wrecks, and to their removal and destruction. A list of regulations and guidelines in force in the BSR with regard to conventional and chemical ammunition and wrecks in the marine environment will be compiled. The paper will contain a comparison of the domestic legal regulations in BSR regarding territorial waters and the EEZ and a gap analysis on missing regulations at the national and international levels. The compilation of existing national and international legal and administrative procedures will be included into the DSS. It will include the information on distribution of responsibilities amongst various institutions regarding dealing with munition and wrecks, and on their role in the overall system. Best examples of legal regulation in the countries that already removed dumped munition and wrecks from their waters, i.e. United States of America, Canada, Italy, Japan, will be collected. Based on comparison and gap analysis, limitations will be defined in the aspect of managing hazardous objects, e.g., retrieving and destruction of dumped chemical and conventional weapons in terms of the Convention on the Prohibition of Chemical Weapons and the Convention on the Protection of the Marine Environment of the Baltic Sea Area.

2,000 / 2,000 characters

Which output does this deliverable contribute to?

O 3.3: Recommendations and changes in legal regulations

55 / 100 characters

5.6.6 Timeline

Period:	1	2	3	4	5	6
WP.1: Preparing solutions						
A.1.5: Regulatory background						
D.1.5: Overview and comparison of international and national legal regulations in Baltic Sea region						

5.6.7 This deliverable/output contains productive or infrastructure investment ☐

Work package 2

5.1 Piloting and evaluating solutions

5.2 Aim of the work package

The aim of this work package is to pilot, evaluate and adjust solutions. Plan one or several pilots to validate the usefulness of the solutions prepared in Work Package 1. Start Work Package 2 early enough to have time to pilot, evaluate and adjust solutions, together with your target groups. By the end of this work package implementation the solutions should be ready to be transferred to your target groups in Work Package 3.
The piloted and adjusted solution should be presented in one project output.
Organise your activities in up to five groups of activities. Describe the deliverables and outputs as well as present the timeline.

5.3 Work package leader

Work package leader 1 PP 1 - Institute of Oceanology Polish Academy of Sciences (IOPAS)

Work package leader 2 Please select

5.4 Work package budget

Work package budget 35%

5.4.1 Number of pilots

Number of pilots 3

5.5 Target groups

	Target group	How do you plan to reach out to and engage the target group?
1	International governmental organisation Intergovernmental organizations, e.g. HELCOM, responsible for the coordination of monitoring and assessment of the environmental status of the Baltic Sea; political forums for regional cooperation, e.g., Council of the Baltic Sea States, responsible for the development, economy, and environment protection; international expert groups, e.g. HELCOM SUBMERGED, advising Baltic governments on risk assessment and actions to be taken regarding submerged hazardous objects, such as munitions and wrecks. 500 / 500 characters	HELCOM will be consulted, to identify knowledge gaps and needs, as well as compliancy with BSAP. Both HELCOM group SUBMERGED and CBSS will be consulted regarding areas of concern in particular countries EEZ. Pilots sites will be then adjusted to cover either those areas or places where similar conditions occur, to make the results applicable to apply there. 360 / 1,000 characters
2	National public authority Environment protection agencies from Denmark, Lithuania, Poland and Germany will be included, their geographical coverage covering respective EEZs. They are responsible for working towards environmentally sound and safe management of national marine areas with underwater munition and work towards the achievement of good environmental status under the MSFD. 358 / 500 characters	Environmental agencies will be consulted regarding critical vulnerable areas in the Baltic Sea and challenges they face. They will also help in logistics during pilot activities, in their respective areas of competence. 220 / 1,000 characters
3	Sectoral agency Maritime administrations of PL, NO and SE, responsible for navigation hazards, safety of waterways and spatial planning in their respective EEZs. 147 / 500 characters	Applicability of pilot results for spatial planning purposes will be discussed with maritime administration. Their needs for particular data will be included in the pilot activities design. 189 / 1,000 characters
4	Large enterprise Energy providers and offshore windfarms developers in Poland are responsible for offshore windfarm construction, underwater mining as well as cable laying in the Polish EEZ. 174 / 500 characters	Offshore economy target group will be consulted for synergies between project pilot activities and their existing or planned surveys. Those activities will be synchronized, and data sharing policy will be set up, to both support the target group, and extend the scope of pilot activities of the project by using external data. 326 / 1,000 characters

5.6 Activities, deliverables, outputs and timeline

No.	Name
2.1	Early Warning System testing
2.2	Examination and Impact assessment testing
2.3	Risk assessment procedure implementation and testing
2.4	Policy consultations: prioritizing legal and administration issues
2.5	Remediation options testing

WP 2 Group of activities 2.1

5.6.1 Group of activities leader

Group of activities leader PP 13 - Alfred Wegner Institute Helmholtz Centre for Polar and Marine Research (AWI)

A 2.1

5.6.2 Title of the group of activities

Early Warning System testing

28 / 100 characters

5.6.3 Description of the group of activities

The complete early warning system will be tested in the field. Deployment areas will be chosen after a consultation with the target groups and confirmation of risk with the DSS. Both wrecks and munitions sites will be selected. A list of objects of concern will be produced together with the local target groups and this will be evaluated by the DSS. For the objects that mandate the usage of early warning system, top priority sites in various area of the Baltic Sea Region (Gulf of Finland, Central Baltic, Skagerrak) will be selected. If any areas overlap with those proposed by the offshore economy target groups, they will be given priority. All together three deployments are planned. The early warning system platforms will be deployed for time suggested by the DSS for up to several months in each of the designated areas. Data collected by the system will be imported into DSS system and the risk assessment procedure will be updated. The last step of the pilot will be a workshop with the target users, where feedback for further developments, conclusions and recommendations for management will be presented and discussed.

1,133 / 3,000 characters

5.6.4 This group of activities leads to the development of a deliverable ✔

D 2.1

Title of the deliverable

Refinement of Early Warning methodology

39 / 100 characters

Description of the deliverable

The refinement of the early warning methodology and its combination with multiple sensors, samplers and measurements applied and tested in GoA 2.1. will bring completely new dimensions to its applicability and links it more closely to the characterization and dynamics of exposure, including temporal variability. Suitability of different sensors to an assessment of particular problem (wrecks, conventional or chemical munitions), and their performance in given environmental settings will be evaluated. Most versatile variants of the investigated sensors and methods will be selected for the final design of the early warning platform. Also data flows will be carefully examined.
These will be compiled into a manual on how to successfully deploy these modular platforms, and how to calibrate and deploy the different sensors and import the data into the DSS to provide risk estimations.

889 / 2,000 characters

Which output does this deliverable contribute to?

O 3.1: Advanced DSS

19 / 100 characters

5.6.6 Timeline

Period:	1	2	3	4	5	6
WP.2: Piloting and evaluating solutions						
A.2.1: Early Warning System testing						
D.2.1: Refinement of Early Warning methodology						

5.6.7 This deliverable/output contains productive or infrastructure investment ☐

WP 2 Group of activities 2.2

5.6.1 Group of activities leader

Group of activities leader PP 17 - University of Gdansk (UG)

A 2.2

5.6.2 Title of the group of activities

Examination and Impact assessment testing

41 / 100 characters

5.6.3 Description of the group of activities

The toolbox for examination system of wrecks and munitions, including scene recognition elaborated in the framework of GoA 1.2, joined with the guidelines for impact assessment of underwater munitions and wrecks, resulting from GoA 1.3 will be tested in several typical scenarios, relevant for the target groups. This includes survey for an offshore investment, wreck environmental assessment in different environmental settings, conventional and chemical munition dumpsites.
The data obtained will be introduced to a database and evaluated by AI based DSS. Data spatial resolution and different variants of applied procedures will be evaluated by means of confidence testing. Minimum requirements to obtain unambiguous results will be formulated. Based on that, the toolbox will be revised to include only those methods that lead to the correct risk assessment. This will enable a selection of best suited and most cost effective method for site examination, object identification and impact assessment.
Windfarm developers will support the pilot by sharing their survey data for offshore development areas (AO7), and consult the project regarding suitability of used tools in EIA study. Sectoral agencies will be consulted regarding selection of problem wrecks (AO4 EN, AO6 MO), and risk assessment provided by DSS. National environmental authorities (PP 10, AO1, AO5) will help in logistics of the pilots, and will follow their implementation. They will be consulted in regard of the toolbox suitability for national environmental goals. They will also absorb the DSS results for pilot areas into their environmental assessment. Higher education and research institutions (AO2) will help planning the risk assessment aspect of the pilot.
The pilots will commence the usage of multiple methods included in toolbox from A1.2 and guidelines from A 1.3. The scope of their application will be narrowed down, to ensure cost effectiveness of the tools, while maintaining their accuracy and ability to provide unambiguous results. Final spatial and temporal resolutions will be adjusted to be compatible with the needs and abilities of target groups.
Pilots will be performed in different environmental conditions and facing a variety of problems that could be encountered in the entire Baltic Sea Area. Performing full scale environmental assessment, starting from area survey, through examination, identification and environmental impact assessment, will test the entire procedure. Feeding the resulting data into DSS databases and performing AI assisted risk estimation will test data transfer protocols, data integrity procedures and ability to reach management decision.
Pilots will be conducted in multiple geographical areas (Gulf of Finland, Central Baltic, Skagerrak), using research vessels from Poland, Finland and Germany. Examination procedures will be performed by teams from FI, PL, LT and ES. Environmental impact assessment will be done by teams from DE, PL, ES, FI and LT.

2,993 / 3,000 characters

5.6.4 This group of activities leads to the development of a deliverable ✔

D 2.2

Title of the deliverable

Revised examination and impact assessment testing procedures

61 / 100 characters

Description of the deliverable

The results of the pilot study from all investigated areas will be compiled into a database. The database will include raw and processed geophysical data, as well as photogrammetric materials and 3D models compiled with 2D multibeam sonar records. Also, results of detection of oil or munition payload in examined objects based on sensor and NAA will be attached. Database of adverse effects in the state of the environment in the vicinity of selected submerged objects of anthropogenic origin will be built, followed by a report on habitat damage around selected submerged objects. The database created in the framework of pilot studies will be fed to DSS.
This will be used to evaluate all methods used for the site examination and impact assessment. As a result, A universal set of SOPs and ROPs for both wreck and munition site assessment will be compiled. This will include a detailed application guide, containing parameters or variants of selected methods, their resolution and precision requirements related to different environmental conditions and different problems to solve. A detailed guide how to apply the procedures for three tested scenarios (problem wrecks, explosives, chemical munition) will be developed.

1,228 / 2,000 characters

Which output does this deliverable contribute to?

O 3.1: Advanced DSS

19 / 100 characters

5.6.6 Timeline

Period:	1	2	3	4	5	6
WP.2: Piloting and evaluating solutions						
A.2.2: Examination and Impact assessment testing		■	■	■		
D.2.2: Revised examination and impact assessment testing procedures				■		

5.6.7 This deliverable/output contains productive or infrastructure investment ☐

WP 2 Group of activities 2.3

5.6.1 Group of activities leader

Group of activities leader PP 2 - north.io

A 2.3

5.6.2 Title of the group of activities

Risk assessment procedure implementation and testing

53 / 100 characters

5.6.3 Description of the group of activities

This activity the risk assessment procedure concept is implemented by developing and testing the needed changes to the DSS. Data flows will be established, numerical dispersion simulations will be enabled, and risk assessments will be processed and tested based on the methods and thresholds that were formulated in WP 1.
EQS which are not available through current legislation will be derived form available ecotoxicological data. Risk assessments with respect to marine species and human seafood consumers will be conducted and integrated into the DSS accompanied with a set of recommendations and statements about the risk to these target groups.
Upon completion, the DSS strives to process data from the early warning system and trigger risk assessments and numerical simulations when given thresholds are exceeded, communicating an early warning signal to the DSS user.

878 / 3,000 characters

5.6.4 This group of activities leads to the development of a deliverable ☑

D 2.3

Title of the deliverable

Risk assessment procedure integrated into the early warning system

66 / 100 characters

Description of the deliverable

Based on the data obtained in activities 2.1 and 2.2, An updated risk assessment procedure will be developed. It will include:
Completion of Environmental Quality Standards (UBA)
Of the identified hazardous compounds addressed in WP 1, it is known that available EQS are incomplete. Missing substances EQS will be derived based on database research on ecotoxicological norms and data that is available, following the technical guidance document 27 (EU) on EQS.
Risk Calculations and recommendations for the marine ecosphere and human seafood consumers (UKSH).
Following the output from related activities of working package 1, calculations will be done to assess the risk for marine species and human seafood consumers. In addition, recommendations and a statement will be formulated on impacts and safety for marine species and human seafood consumers.
Dispersion model scenarios (IOPAN)
The prepared dispersion model as yielded from working package 1 will be applied to a series of scenarios at a selected number of sites to verify its results with available field observations.
DSS Integration (north.io)
The DSS will be updated with the changes conceptualized in working package 1 and will be able to visualize the received data and verifications with provided thresholds and model simulations and management options.

1,321 / 2,000 characters

Which output does this deliverable contribute to?

O 3.1: Advanced DSS

19 / 100 characters

5.6.6 Timeline

Period:	1	2	3	4	5	6
WP.2: Piloting and evaluating solutions						
A.2.3: Risk assessment procedure implementation and testing						
D.2.3: Risk assessment procedure integrated into the early warning system						

5.6.7 This deliverable/output contains productive or infrastructure investment ☐

WP 2 Group of activities 2.4

5.6.1 Group of activities leader

Group of activities leader PP 10 - German Environment Agency (UBA)

A 2.4

5.6.2 Title of the group of activities

Policy consultations: prioritizing legal and administration issues

68 / 100 characters

5.6.3 Description of the group of activities

Within the project framework the major challenges for tackling hazardous objects on the seabed will be defined. Workshops with experts and various stakeholders' representatives will be carried out to find the best ways of solving the questions of legal constraints, legal shortcomings and discrepancies, distribution of responsibilities amongst national institutions. A questionnaire amongst experts will be distributed beforehand. Online workshops in each Baltic country (in Q1-Q2 2024), one combined presence workshop for all countries (in Q4 2024) and one final international workshop (in Q4 2025) will be held. Based on discussion the joint actions will be developed, consistent for all interested groups.
Associated partners will act as inner circle of experts and stakeholders. The external circle of stakeholders will involve OPCW, NATO, and other international institutions such as IDUM, HELCOM, OSPAR, ICES, ISTAB, ICCSS as well as representatives from national institutions and national networks responsible for managing munition in the sea and the marine environment.

1,081 / 3,000 characters

5.6.4 This group of activities leads to the development of a deliverable ✔

D 2.4

Title of the deliverable

Conclusions and recommendations from the consultations

55 / 100 characters

Description of the deliverable

The consultations will collect and compile remarks and conclusions on the following items, which have been prepared by the project partners based on the review of existing legal and guidance documents:
1. establishment of a permanent sea area monitoring system and database for dumped hazardous objects;
2. principles of controlling and supervising the proper securing or extracting and destroying "selected" hazardous materials dumped in the sea areas for both territorial waters and EEZ;
3. liability for any damage caused by the above-mentioned activities;
4. investors' responsibility for carrying out a seabed survey for the planned installation and its possible remediation of any residual hazardous materials before starting the assembly of the structure;
5. defining the method of implementing and financing the intervention neutralization of dumped hazardous materials
6. introducing the necessary changes in the applicable legal acts.

956 / 2,000 characters

Which output does this deliverable contribute to?

O 3.3: Recommendations and changes in legal regulations

55 / 100 characters

5.6.6 Timeline

Period:	1	2	3	4	5	6
WP.2: Piloting and evaluating solutions						
A.2.4: Policy consultations: prioritizing legal and administration issues						
D.2.4: Conclusions and recommendations from the consultations						

5.6.7 This deliverable/output contains productive or infrastructure investment ☐

WP 2 Group of activities 2.5

5.6.1 Group of activities leader

Group of activities leader PP 1 - Institute of Oceanology Polish Academy of Sciences (IOPAS)

A 2.5

5.6.2 Title of the group of activities

Remediation options testing

27 / 100 characters

5.6.3 Description of the group of activities

Ecosystem impact of different management strategies will be tested. This will include no-action, Enhanced natural recovery (ENR), monitoring (in connection with A 2.1), recovery and destruction as well as limitation of actions and in-situ detonation. ENR, Monitoring and recovery and destruction will be tested in situ. Monitoring impact will be done by joint pilot activities with A 2.1. Impact of limitation of actions will be done by performing economic simulation, together with offshore AOs and project partner dealing with legal aspects, while in-situ detonation will be performed by studies of former blasting places and its effect on environment.

654 / 3,000 characters

5.6.4 This group of activities leads to the development of a deliverable ✔

D 2.5

Title of the deliverable

Best practices for remediation actions

40 / 100 characters

Description of the deliverable

The main goal is therefore to determine which environmental factors play a major role in natural neutralization of recognized threats originating from sunken objects in the Baltic Sea. For instance, it will be determined if and later which microbial taxa have a capacity to neutralize munition related agents and compounds by their degradation to nontoxic or low-energetic compounds in sediments, porewater and water-column. Simultaneously, we will investigate environmental factors influencing their presence and activity. Activity will aim in combining and adapting experiences, including known metabolic pathways from waste-water treatment, oil-remediation and munition destruction from terrestrial systems into marine environment.

734 / 2,000 characters

Which output does this deliverable contribute to?

O 3.1: Advanced DSS

19 / 100 characters

5.6.6 Timeline

Period:	1	2	3	4	5	6
WP.2: Piloting and evaluating solutions						
A.2.5: Remediation options testing						
D.2.5: Best practices for remediation actions						

5.6.7 This deliverable/output contains productive or infrastructure investment ☐

Work package 3

5.1 WP3 Transferring solutions

5.2 Aim of the work package

In Work Package 3, communicate and transfer the ready solutions to your target groups. Plan at least one year for this work package to transfer your solutions to the target groups, considering their respective needs. Select suitable activities to encourage your target groups to use the solutions in their daily work.
Organise your activities in up to five groups of activities. Describe the deliverables and outputs as well as present the timeline.

5.3 Work package leader

Work package leader 1 PP 1 - Institute of Oceanology Polish Academy of Sciences (IOPAS)

Work package leader 2 PP 10 - German Environment Agency (UBA)

5.4 Work package budget

Work package budget 30%

5.5 Target groups

	Target group	How do you plan to reach out to and engage the target group?
1	International governmental organisation Intergovernmental organizations, e.g. HELCOM, responsible for the coordination of monitoring and assessment of the environmental status of the Baltic Sea; political forums for regional cooperation, e.g., Council of the Baltic Sea States, responsible for the development, economy, and environment protection; international expert groups, e.g. HELCOM SUBMERGED, advising Baltic governments on risk assessment and actions to be taken regarding submerged hazardous objects, such as munitions and wrecks. 500 / 500 characters	HELCOM will be presented with legal recommendations developed within a project. CBSS will participate in presenting the project results to Baltic Sea Region countries 167 / 1,000 characters
2	National public authority Environment protection agencies from Denmark, Lithuania, Poland and Germany will be included, their geographical coverage covering respective EEZs. They are responsible for working towards environmentally sound and safe management of national marine areas with underwater munition and work towards the achievement of good environmental status under the MSFD. 358 / 500 characters	All Agencies that are listed as either partners or Associated organizations will be included in transferring solutions. Best practice recommendations for future conduct in regards to wrecks and munitions sites will be considered by them. Also, existing data for wrecks and munitions in possession of those agencies will be evaluated using new expanded DSS system, and risk reports generated by the system will be included in their databases, enhancing their datasets 466 / 1,000 characters
3	Sectoral agency Maritime administrations of PL, NO and SE, responsible for navigation hazards, safety of waterways and spatial planning in their respective EEZs. 147 / 500 characters	Agencies that are listed as Associated organizations will be included in transferring solutions. Their data will be evaluated by the new DSS system, and will be used to enhance their information. Future management strategies will be discussed based on the pilot results from A.2.5. Early warning system will be introduced to them, as an effective monitoring tool, and rules of deployment of such system will be formulated by respective agencies. 445 / 1,000 characters
4	Large enterprise Energy providers and offshore windfarms developers in Poland are responsible for offshore windfarm construction, underwater mining as well as cable laying in the Polish EEZ. 174 / 500 characters	Large offshore enterprises will evaluate their environmental data using tools provided by the project and pilot results, which will affect their plans and environmental impact assessment for large investments, ie. planned offshore wind farms. Procedures regarding case of conduct in case of encountering munitions will be updated, which will result in safer investment. Procedures developed in the project and tested in pilots will be considered for adoption as a standard of work in munition and wreck sites, both as own activities of companies or as specifications included in contracts they offer to external entities. 621 / 1,000 characters

5.6 Activities, deliverables, outputs and timeline

No.	Name
3.1	**Examination and risk assessment strategy**
3.2	**Management strategies**
3.3	**Harmonization of legal procedures**
3.4	**Durability plan**

WP 3 Group of activities 3.1

5.6.1 Group of activities leader

Group of activities leader PP 2 - north.io

A 3.1

5.6.2 Title of the group of activities

Examination and risk assessment strategy

40 / 100 characters

5.6.3 Description of the group of activities

Awareness of marine munitions and hazardous wrecks has increased over the past decade but is by no means a settled topic with clear guidelines in dealing with these remnants of war. The scientific findings and tools created in this project provided valuable insights as well as tools to monitor and manage the risks and remediation options currently available. Within this activity it is foreseen to communicate the findings and outputs of this project to all relevant stakeholders with a prime focus on environmental protection agencies and governmental institutions to adopt (parts of) these strategies and guidelines to common policy supported by the tools offered.
Dialog will be held among agencies present in the project consortium both as regular partners and associated organizations throughout the project. The adopted approach will be presented to respective stakeholders from governments, administrations and industry employed in the Baltic sea regions in the form of a series of seminars with contribution of consortium members.

1,040 / 3,000 characters

5.6.4 This group of activities leads to the development of a deliverable ☐

O 3.1

Title of the output

Advanced DSS

13 / 100 characters

Description of the output

The concept as defined in WP 1 and implemented in WP 2 will provide an updated decision support system capable of managing characteristics of munition objects and ship wrecks, monitoring data, risk assessments, dealing with project findings regarding monitoring and environmental standards. This will be accompanied by set of guidelines regarding the selection of most versatile methods for munition and wreck examination and impact assessment, as well as a design for early warning platform and SOPs to be used in its operation. An advanced DSS is one toolbox that consists of several tools: (i) a tool for examining the locations of wrecks and ammunition, (ii) a tool for assessing the impact of the above-mentioned on the marine environment, (iii) a tool for data integration and visualization at present and for prediction, (iv) an early warning tool, (v) a tool for risk assessment and proposing solutions for risk management. It will include the environmental and monetary cost of different suggested prevention actions regarding the handling of dumped weapons and wrecks, as well as identify possible legal obstacles/hindrances.

1,139 / 3,000 characters

Target groups and uptake of the solution presented in this output

Target groups	How will this target group apply the output in its daily work?
Target group 1 National public authority Environment protection agencies from Denmark, Lithuania, Poland and Germany will be included, their geographical coverage covering respective EEZs. They are responsible for working towards environmentally sound and safe management of national marine areas with underwater munition and work towards the achievement of good environmental status under the MSFD.	Advanced DSS will assist national authorities responsible for environmental protection with decisions related to issuing investment permits and the structuring of monitoring networks. It will also help to identify hazards related to munitions and wrecks for protected habitats and species. 290 / 1,000 characters
Target group 2 Sectoral agency Maritime administrations of PL, NO and SE, responsible for navigation hazards, safety of waterways and spatial planning in their respective EEZs.	The advanced DSS will help maritime administration authorities in the preparation of spatial plans and in dealing with maritime hazards on a scientific basis. 159 / 1,000 characters
Target group 3 Large enterprise Energy providers and offshore windfarms developers in Poland are responsible for offshore windfarm construction, underwater mining as well as cable laying in the Polish EEZ.	For the offshore industry, the advanced DSS created by the project create an opportunity to process survey data during the preparation of investments and assist efforts in planning the specific offshore activity to maximize the safety of both personnel and the environment. 274 / 1,000 characters

Durability of the output

Tools for wrecks and munitions examination and assessment of their impact will be supported by publishing standard and recommended operating procedures on the project webpage, maintained by LP1 after project termination. To enable target groups to use these tools, a group of laboratories will be established for long time cooperation, ensuring access to skills and analytical equipment needed. Tools related to data integration and risk assessment will be supported based on durability plan D3.4. It will be based by enabling development of extended versions of the DSS system, enhanced with demand-based features and functionalities. The income from this paid, premium versions will be invested into maintenance of the regular DSS version developed within WRUMM project. An early warning tool will be disseminated as a royalty-free design, accompanied by guidelines of usage and manual based on D2.1. This design will be uploaded to open repositories and available for all target groups

989 / 1,000 characters

5.6.6 Timeline

Period:	1	2	3	4	5	6
WP.3: WP3 Transferring solutions						
A.3.1: Examination and risk assessment strategy						
O.3.1: Advanced DSS						

5.6.7 This deliverable/output contains productive or infrastructure investment ✔

	Investment no.	I3.1_1	

Title

Mercury analyzer

16 / 100 characters

Description

Automated analyzer for mercury concentration in water, for rapid analysis of batch water samples

96 / 500 characters

Country

Poland

Responsible project partner(s)

PP 1 - Institute of Oceanology Polish Academy of Sciences (IOPAS)

Justification

Mercury is released to water from munition primers and from impurities in oil contained in wrecks. It is a useful tracer of contaminant release, that is used to select the samples for costly oil and munition related contaminants. This analyser will build capability for rapid contamination screening into IOPAN lab, making it an effective member of future interdisciplinary group for wreck and munition risk assessment.

419 / 500 characters

Transitional relevance

Analyzer will be included in joint investigations on munition and wreck impact on environment, both in the frame of WRUMM project and activities after the project termination, in the frame of expert group of laboratories created during the project.

248 / 500 characters

Benefits

This enables cost-effective screening of munition and wreck sites, replacing expensive investigation with fast and cheap analysis in most cases. It will decrease pilot costs, and build capabilities for future investigations.

224 / 500 characters

Location

IOPAS Laboratory of Contemporary Threats to Marine Ecosystems

61 / 250 characters

Trójmiejski

Location ownership

IOPAS

5 / 250 characters

Ownership

IOPAS

5 / 500 characters

Maintenance

The analyzer maintenance is budgeted within the WRUMM project. After project termination, it will be maintained by the statutory funds of IOPAN.

144 / 500 characters

Climate proofing

☐ Ensured ☑ N/A

	Investment no.	I3.1_2	

Title
Laser in-situ particle counter
30 / 100 characters

Description
Automated in-situ laser particle counter provides size spectra and concentration of particles suspended in the water column. It is deployed from the ship, and provides live reading of sediment cloud resuspending from the bottom.
228 / 500 characters

Country
Poland

Responsible project partner(s)
PP 1 - Institute of Oceanology Polish Academy of Sciences (IOPAS)

Justification
Contaminated sediments may resuspend, due to currents or human activity, and move as a cloud of suspended matter, possibly affecting other regions. This device enables tracking of this cloud, which could be used for direct risk estimation and calibration of transport models.
275 / 500 characters

Transitional relevance
The counter will be included in joint investigations on munition and wreck impact on environment, both in the frame of WRUMM project and activities after the project termination, in the frame of expert group of laboratories created during the project.
251 / 500 characters

Benefits
The counter could be used in early warning system, as well as in detailed examinations in the development and pilot phases of the project. It will replace time consuming laboratory analyses, and will allow live adjustment of measurements already at sea.
253 / 500 characters

Location
IOPAS research vessel “Oceania”
31 / 250 characters
Trójmiejski

Location ownership
IOPAS
5 / 250 characters

Ownership
IOPAS
5 / 500 characters

Maintenance
The counterr maintenance is budgeted within the WRUMM project. After project termination it will be maintained by the statutory funds of IOPAS.
143 / 500 characters

Climate proofing
☐ Ensured ☑ N/A

	Investment no.	I3.1_3	

Title
ROV Fiber communication set
27 / 100 characters

Description
Optic fiber communication set for SEA EYE FALCON ROV, including underwater and deck components and 600m of fiber optic umbilical cable.
135 / 500 characters

Country
Poland

Responsible project partner(s)
PP 1 - Institute of Oceanology Polish Academy of Sciences (IOPAS)

Justification
Inspection of underwater munitions and wrecks requires approaching them with underwater robot. When equipped with optic transmission, the robot could be deployed from greater distance from objects, increasing safety of operation. Excellent transmission bandwidth enables live streaming of HD or 4k video, improving identification capability and making navigation easier.
370 / 500 characters

Transitional relevance
The ROV will be included in joint investigations on munition and wreck impact on environment, both in the frame of WRUMM project and activities after the project termination, in the frame of expert group of laboratories created during the project. It will be used on multiple vessels from Lithuania, Estonia, Poland and Germany, and could be transferred to any other vessel.
374 / 500 characters

Benefits
ROV will be used in almost all pilot sites, on multiple ships. Giving the extended range of fiber tether, it will enable ships that have to anchor for operations a better safety margin and reduce the time needed for repositioning of the ship for each target, which would shorten cruises even by several days, minimizing shiptime expenses.
338 / 500 characters

Location
IOPAS research vessel “Oceania”
31 / 250 characters
Trójmiejski

Location ownership
IOPAS
5 / 250 characters

Ownership
IOPAS
5 / 500 characters

Maintenance
The ROV maintenance is budgeted within the WRUMM project. After project termination, it will be maintained by the polish national funding for s/y “Oceania”.
156 / 500 characters

Climate proofing
☐ Ensured ☑ N/A

WP 3 Group of activities 3.2

5.6.1 Group of activities leader

Group of activities leader PP 8 - University Medical School Schleswig-Holstein (UKSH)

A 3.2

5.6.2 Title of the group of activities

Management strategies

21 / 100 characters

5.6.3 Description of the group of activities

Management strategies included within the DSS, including monitoring using early warning system, remediation strategies like monitored natural recovery (MNR) and enhanced monitored natural recovery (EMNR) will be transferred to respective sectoral agencies. The multiple lines of evidence for applying either MNR or EMNR for polluted locations will be assessed based on literature reviews, including implementation of results from two ongoing scientific projects (Finnish WARTOX and Polish SONATINA 5) covering topics of microbial activity in the Baltic Sea chemical munition dumpsites, supported by new data collected during this project (WP 2.5), and modeling to predict pollutant removal efficiency and necessary time period to achieve remediation action objectives. The established lines of evidence are bases for developing and implementing a monitoring program to verify natural recovery rates and monitor progress of pollutant removal.

944 / 3,000 characters

5.6.4 This group of activities leads to the development of a deliverable ☑

D 3.2

Title of the deliverable

Guidelines regarding the removal, salvage and destruction of conventional munition will be published

100 / 100 characters

Description of the deliverable

Recommendations for implementation of monitored natural recovery and enhanced monitored natural recovery for polluted sediment will be provided. Lines of evidence will be translated into best practices enhancing the effectiveness of natural remediation. Based on the information from pilot studies and WP2.5, site-specific conditions guidelines regarding i.e. the monitoring, removal, salvage and destruction of conventional munition will be created and published. Similar approach will be applied for EMNR or MNR of chemical munitions and wrecks, however it has to be emphasized that existing state of knowledge, even if improved by new data produced in pilot studies, may be insufficient for establishing clear lines of evidence for sources of mix-type pollution.

767 / 2,000 characters

Which output does this deliverable contribute to?

O 3.1: Advanced DSS

19 / 100 characters

5.6.6 Timeline

Period:	1	2	3	4	5	6
WP.3: WP3 Transferring solutions						
A.3.2: Management strategies						
D.3.2: Guidelines regarding the removal, salvage and destruction of conventional munition will be published						

5.6.7 This deliverable/output contains productive or infrastructure investment ☐

WP 3 Group of activities 3.3

5.6.1 Group of activities leader

Group of activities leader PP 14 - International Centre for Chemical Safety and Security (ICCSS)

A 3.3

5.6.2 Title of the group of activities

Harmonization of legal procedures

34 / 100 characters

5.6.3 Description of the group of activities

This activity aims at identifying opportunities and developing recommendations for enhanced coordination and cooperation between international and national agencies and relevant stakeholders.
The current regulations do not take into account the contemporary realities of intensive use of the sea and interference in its bottom, technological progress and scientific development. Recommendations will be developed separately for wreckage, conventional ammunition and chemical ammunition, which will clearly indicate the appropriate, lawful methods and ways of dealing with hazardous objects in the Baltic Sea.
Deliverables from WP1, WP2 will be used to develop the recommendations, amendments, and changes in legislation that would enable handling and efficient management of dumped hazardous objects in the sea. Suggestion of new legal and policy regulations and guidelines, from international to domestic ones, which cover wrecks and ammunition, in the entire Baltic region will be prepared.

996 / 3,000 characters

5.6.4 This group of activities leads to the development of a deliverable ☐

O 3.3

Title of the output

Recommendations and changes in legal regulations

48 / 100 characters

Description of the output

The output of the compilation, analysis and harmonization of legal and administrative procedures on hazardous materials from dumped chemical and conventional munition as well as wrecks will be a set of recommendations for improvements in legal and administrative regulations and procedures.

These will be brought to the attention of the relevant national, regional and international bodies. This will be done on various levels:
- These recommendations will be prepared for submission to HELCOM and the Council of the Baltic Sea States, CBSS.
- A final symposium (online or hybrid) towards the end of the project will present results to a wide audience.
- The groups of stakeholders at national and international level will be informed via workshops.
- The European Commission, which will coordinate activities and response procedures as well as develop the best methods of ammunition clearance as a consequence of adopting by the European Parliament the resolution on chemical residues in the Baltic Sea.

The creation of appropriate legal tools related to the management of dumped chemical and conventional ammunition and wrecks will create an opportunity to develop effective methods of removing dumped hazardous objects from the seabed in accordance with the applicable letter of the law. Thanks to the regularizing of the legal regulations, the problems faced by maritime investors concerning dealing with hazardous objects in the areas of their offshore investments will also be resolved.

1,498 / 3,000 characters

Target groups and uptake of the solution presented in this output

Target groups	How will this target group apply the output in its daily work?
Target group 1 International governmental organisation Intergovernmental organizations, e.g. HELCOM, responsible for the coordination of monitoring and assessment of the environmental status of the Baltic Sea; political forums for regional cooperation, e.g., Council of the Baltic Sea States, responsible for the development, economy, and environment protection; international expert groups, e.g. HELCOM SUBMERGED, advising Baltic governments on risk assessment and actions to be taken regarding submerged hazardous objects, such as munitions and wrecks.	The proposed harmonisation of regulation as well as the proposed ways to fill gaps in regulation will ensure better overall control of underwater munitions and wrecks. It will enable future management actions in regard to wrecks and munitions, better inter-governmental cooperation and ability to improve the environmental status of the Baltic Sea. It can also open better options for transnational approach for the management of munition dumpsites, stray munitions and wrecks threatening the Baltic Sea Region ecosystem. 521 / 1,000 characters
Target group 2 National public authority Environment protection agencies from Denmark, Lithuania, Poland and Germany will be included, their geographical coverage covering respective EEZs. They are responsible for working towards environmentally sound and safe management of national marine areas with underwater munition and work towards the achievement of good environmental status under the MSFD.	By identifying legal obstacles in management of underwater munitions and wrecks, as well as showing options for harmonization and filling of gaps in regulation, the output will speed up any management strategies that environmental agencies may wish to deploy. If the measures identified in the output are adopted, it will simplify decision making process, and will open possibilities of cooperation between environmental agencies across the Baltic Sea region. 459 / 1,000 characters
Target group 3 Sectoral agency Maritime administrations of PL, NO and SE, responsible for navigation hazards, safety of waterways and spatial planning in their respective EEZs.	Harmonization measures will assist sectoral agencies in preparation of maritime spatial plans in areas containing munitions and wrecks. It will enable faster deployment of management options. It will also improve reaction time for incidents related to wrecks and underwater munitions, which should increase safety at sea. 321 / 1,000 characters
Target group 4 Large enterprise Energy providers and offshore windfarms developers in Poland are responsible for offshore windfarm construction, underwater mining as well as cable laying in the Polish EEZ.	Harmonized legal framework, if adopted by Baltic Countries governments should increase business safety in offshore economy. Possible encounters with wrecks or munitions in planned investment area will no longer hinder the entire process for undefinite amount of time. Clear procedures will specify the duties of investor, sectoral agencies and national authorities in unambiguous way. This will speed up necessary actions. 422 / 1,000 characters

Durability of the output

The set of recommendations for improvements in regulations and procedures will be presented to the target groups and published in project reports and scientific publications. They will also be available in the updated DSS. The recommendations will be available to a wide audience. Knowing the processes at governmental level nationally as well as internationally, it will take some time until changes in legal procedures are agreed and implemented. The project forms the basis for such improvements, but it depends on the political will and financial resources to implement improvements. We will only be successful, if administrative organisations and NGOs follow up in their respective fora to push for implementation of the recommendations of the project. Therefore, it is important that we are having a number of AOs from sectoral agencies in the project, which are interested in using the results for their own institutional work, e.g. MO for solving problems derived from wrecks and ammunition.

999 / 1,000 characters

5.6.6 Timeline

Period:	1	2	3	4	5	6
WP.3: WP3 Transferring solutions						
A.3.3: Harmonization of legal procedures						
O.3.3: Recommendations and changes in legal regulations						

5.6.7 This deliverable/output contains productive or infrastructure investment

WP 3 Group of activities 3.4

5.6.1 Group of activities leader

Group of activities leader PP 2 - north.io

A 3.4

5.6.2 Title of the group of activities

Durability plan

15 / 100 characters

5.6.3 Description of the group of activities

In order to secure a durable use of the decision support system, the system will be available with public functionalities as well as adoption of functionalities for a licensed version in coexistence with other services offered via the AmuCad.org platform such as cloud computing, big data processing and access to privately owned datasets regarding marine munitions and ship wrecks. The durability concept will address the obligations to keep the DSS publicly accessible as well as commercially available to bridge the costs made by hosting & maintenance.
In order to create capabilities in regard to the application of D 2.1 and 2.2, a structure for the network of interdisciplinary laboratories will be prepared, which will possess all necessary skills and equipment to deploy tools developed in the frame of WRUMM project on commercial basis.

848 / 3,000 characters

5.6.4 This group of activities leads to the development of a deliverable ✔

D 3.4

Title of the deliverable

Durability Concept

18 / 100 characters

Description of the deliverable

The durability report will be in written from describing:
- Financial resources needed for DSS running costs and maintenance subdivided in corrective, adaptive, preventive and perfective maintenance (classification from minor changes to development of new functionalities).
- Data needs and updates required after a project termination.
- Listing of functionalities of the AmuCad.org platform and embedding of the decision support system.
- Intellectual property rights and listing of dependencies from project partners.

525 / 2,000 characters

Which output does this deliverable contribute to?

O 3.1: Advanced DSS

19 / 100 characters

5.6.6 Timeline

Period:	1	2	3	4	5	6
WP.3: WP3 Transferring solutions						
A.3.4: Durability plan						
D.3.4: Durability Concept						

5.6.7 This deliverable/output contains productive or infrastructure investment ☐

6. Indicators

Indicators

Output indicators				Result indicators		
Output indicators	**Total target value in number**	**Project outputs**	**Please explain how the solution presented in this output serves the target group(s).**	**Result indicator**	**Total target value in number**	**Please explain how organisations in the target groups within or outside the partnership will take up or upscale each solution.**
RCO 84 – Pilot actions developed jointly and implemented in projects	3	N/A	N/A			

Output indicators	Total target value in number	Project outputs	Please explain how the solution presented in this output serves the target group(s).	Result indicator	Total target value in number	Please explain how organisations in the target groups within or outside the partnership will take up or upscale each solution.
		O.3.1: Advanced DSS	Advanced DSS enables efficient management of wrecks and underwater munitions. For national agencies dealing with environment and sectoral agencies handling maritime administrations it provides a set of examination and early warning methods that could be deployed to investigate wrecks and underwater munitions in their area of responsibility. For both of them DSS could be used for performing risk assessment, create management plans and assist them in spatial planning. It also enables cost effective and knowledge based remediation actions and management strategies for increasing safety at sea. For HELCOM it provides a tool for fulfillment of action s34 of the BSAP. For large enterprises, namely offshore developers, it provides a usefull tool for performing pre-investment surveys, performing unambiguous proof of risk levels associated with an investment, and minimizing the risk for the infrastructure, people and marine environment. 941 / 1,000 characters	RCR 104 - Solutions taken up or up-scaled by organisations	2	International intergovernmental organizations will use the risk assessment tools of advanced DSS for fulfilling their goals related to munition management. HELCOM will use it to further update state of knowledge regarding hazardous submerged objects, as stated in action s35 of BSAP, and utilize tools that are included in advanced DSS for creating Best environmental practices in regard to munition and wreck management mentioned in action s34 of BSAP. Council of Baltic Sea States will utilize effects of output 3.3 for the adjustment of regulations regarding underwater munition and wreck management, and using the tools provided by advanced DSS will be able to develop an international action plan and priorities for wreck and munition management in the Baltic Sea Region. National authorities will use advanced DSS to revise their priorities regarding management of wrecks and munitions in their areas of responsibilities, and also compile clear requirements regarding information requested from offshore economy investors in maritime economy. They could also utilize advanced DSS for monitoring planning purposes, and evaluation of threat levels for marine protection areas resulting from dumped munitions and wrecks. They will be also able to improve international cooperation by adopting the legal harmonization proposal of O3.3. Maritime administration will now possess a straightforward tool to improve maritime spatial planning in areas containing munitions and wrecks, as well as to formulate necessary precautions. Large enterprises will use the advanced DSS for their activities, which will both streamline the ongoing plans, and possibly open new areas for offshore economy. Application of harmonized legal guidelines will decrease the financial risk of investors, who, due to complicated regulatory structures could face significant delays, in case munitions or wrecks presence. It will also result in an improvement of transnational impacts evaluation of offshore investments. 1,993 / 2,000 characters

Output indicators		Result indicators		
RCO 116 – Jointly developed solutions	2	Result indicator	Total target value in number	Please describe what types of organisations are planned to actively participate in the project. Explain how this participation will increase their institutional capacity. These types of organisations should be in line with the target groups you have defined for your project.
RCO 87 - Organisations cooperating across borders	32			

Result indicator	Total target value in number	Please describe what types of organisations are planned to actively participate in the project. Explain how this participation will increase their institutional capacity. These types of organisations should be in line with the target groups you have defined for your project.	
PSR 1 - Organisations with increased institutional capacity due to their participation in cooperation activities across borders	35	Project partners and associated organisations	CBSS, as an intergovernmental organization will improve its capacity by gaining the support of scientists and experts to harmonize legislation in regard to munition and wreck magagement, as well as tools needed to plan international actions in that regard. It will also build a lasting cooperation with multidisciplinary team of laboratories able to assess munition threats, which will continue to exist after project termination. Environmental protection agencies and NGOs (PP10, AO 1, 5, 9) will be equipped with tools for environmental risk assessment, improving their capacity to control human activities in the Baltic Sea Region and protect its ecosystem. Scientific institutions and maritime businesses (PP 1-9,11-13,16-20, AO2). will form an interdisciplinary network, able to analyze threats associated with munitions and wrecks, equipped with novel state of the art tools and methods, ready to serve with expert advice to governments, business and international bodies. Maritime Administrations, regional authorities and other sectoral agencies (AO 3,4,6,10,11) will develop their capacity in terms of spatial planning and response capabilities, they will also be equipped with new tools that could be applied to maritime heritage protection. Offshore developers (AO 7) will be equipped with improved risk assessment tool and possibility of regulatory framework harmonization that will decrease financial risks and potentially open new maritime area for offshore development. 1,484 / 1,500 characters
		Other organisations	Other organizations benefitting from the project will be the once related to maritime economy (windfarm, pipeline and cable industry), who will benefit from both O3.1 and O3.3, by having better tools for risk assessment of munitions and wrecks, as well as simplified rules of operations, already one operator expressed their interest. The project will also improve capacity of coastguards and navies, as well as other response services responsible for safety at sea. It will be both in effect of efficient munitions and wreck sites management, which could lead to elimination of the threat in time and avoiding related accidents, and also in effect of hermonization of legal procedures related to incident response and reporting, postulated in O3.3. Project effects will also benefit fishermen and tourist industry, by opening efficient management solution for wrecks and munitions, hence eliminating future Baltic pollution. Regarding intergovernmental organizations, project results will be helpful for HELCOM in fulfilment of BSAP actions S34 and S35, European Union, by addressing some of the issues included in PA Hazards, and OPCW, by suggesting some solutions to the problem of old chemical munitions, which is debated by this organization since 2011. Maritime administrations not included in the partnership ie. Swedish and Norwegian agencies, have already expressed their interest in utilizing project results in their work. 1,433 / 1,500 characters

7. Budget

7.0 Preparation costs

Preparation Costs

Would you like to apply for reimbursement of the preparation costs?	No

7.1 Breakdown of planned project expenditure per cost category & per partner

No. & role	Partner name	Partner status	CAT1 - Staff	CAT2 - Office & administration	CAT3 - Travel & accommodation
1 - LP	Institute of Oceanology Polish Academy of Sciences (IOPAS)	Active 22/09/2022	379,457.00	56,918.55	56,918.55
2 - PP	north.io	Active 22/09/2022	215,000.00	32,250.00	32,250.00
3 - PP	Military University Of Technology (WAT)	Active 22/09/2022	123,000.00	18,450.00	18,450.00
4 - PP	Klaipeda University (KU)	Active 22/09/2022	139,000.00	20,850.00	20,850.00
5 - PP	Tallinn University of Technology (TalTech)	Active 22/09/2022	92,104.00	13,815.60	13,815.60
6 - PP	Norwegian Defence Research Establishment (FFI)	Active 22/09/2022	135,000.00	20,250.00	20,250.00
7 - PP	Federation of Military Universities (FMU)	Active 22/09/2022	127,000.00	19,050.00	19,050.00
8 - PP	University Medical School Schleswig-Holstein (UKSH)	Active 22/09/2022	153,846.00	23,076.90	23,076.90
9 - PP	Finnish Environment Institute (SYKE)	Active 22/09/2022	151,000.00	22,650.00	22,650.00
10 - PP	German Environment Agency (UBA)	Active 22/09/2022	192,640.00	28,896.00	28,896.00
11 - PP	University of Helsinki (UH-VERIFIN)	Active 22/09/2022	220,384.62	33,057.69	33,057.69
12 - PP	Jagiellonian University (UJ)	Active 22/09/2022	96,000.00	14,400.00	14,400.00
13 - PP	Alfred Wegner Institute Helmholtz Centre for Polar and Marine Research (AWI)	Active 22/09/2022	274,229.00	41,134.35	41,134.35
14 - PP	International Centre for Chemical Safety and Security (ICCSS)	Active 22/09/2022	61,500.00	9,225.00	9,225.00
15 - PP	NeutronGate	Active 22/09/2022	84,000.00	12,600.00	12,600.00
16 - PP	University of Tartu (UTartu)	Active 22/09/2022	104,000.00	15,600.00	15,600.00
Total			3,071,259.78	460,688.96	460,688.96

No. & role	Partner name	Partner status	CAT1 - Staff	CAT2 - Office & administration	CAT3 - Travel & accommodation
17 - PP	University of Gdansk (UG)	Active 22/09/2022	90,123.00	13,518.45	13,518.45
18 - PP	KUM Enviromental- and Marine Technology Kiel (KUM)	Active 22/09/2022	134,520.00	20,178.00	20,178.00
19 - PP	Geomar Helmholtz Centr e for Ocean Research Ki el (GEOMAR)	Active 22/09/2022	134,610.00	20,191.50	20,191.50
20 - PP	Chalmers University of T echnology (CUT)	Active 22/09/2022	110,000.00	16,500.00	16,500.00
21 - PP	Council of the Baltic Sea States (CBSS)	Active 22/09/2022	53,846.16	8,076.92	8,076.92
Total			3,071,259.78	460,688.96	460,688.96

No. & role	Partner name	CAT4 - External expertise & services	CAT5 - Equipment	CAT6 - Infrastucture & works	Total partner budget
1 - LP	Institute of Oceanology P	41,500.00	274,000.00	0.00	808,794.10
2 - PP	north.io	0.00	40,000.00	0.00	319,500.00
3 - PP	Military University Of Tec	10,000.00	80,000.00	0.00	249,900.00
4 - PP	Klaipeda University (KU)	17,800.00	3,500.00	0.00	202,000.00
5 - PP	Tallinn University of Tech	488.80	8,500.00	0.00	128,724.00
6 - PP	Norwegian Defence Rese	14,000.00	10,500.00	0.00	200,000.00
7 - PP	Federation of Military Uni	4,000.00	30,900.00	0.00	200,000.00
8 - PP	University Medical School	0.00	0.00	0.00	199,999.80
9 - PP	Finnish Environment Instit	50,000.00	27,000.00	0.00	273,300.00
10 - PP	German Environment Ag	0.00	0.00	0.00	250,432.00
11 - PP	University of Helsinki (UH	13,500.00	0.00	0.00	300,000.00
12 - PP	Jagiellonian University (U	6,000.00	100,000.00	0.00	230,800.00
13 - PP	Alfred Wegner Institute H	7,500.00	0.00	0.00	363,997.70
14 - PP	International Centre for C	95,000.00	5,000.00	0.00	179,950.00
15 - PP	NeutronGate	0.00	19,000.00	0.00	128,200.00
16 - PP	University of Tartu (UTart	0.00	0.00	0.00	135,200.00
17 - PP	University of Gdansk (UG	7,700.00	55,140.40	0.00	180,000.30
18 - PP	KUM Enviromental- and	0.00	0.00	0.00	174,876.00
19 - PP	Geomar Helmholtz Centr	0.00	0.00	0.00	174,993.00
20 - PP	Chalmers University of T	0.00	7,000.00	0.00	150,000.00
21 - PP	Council of the Baltic Sea	0.00	0.00	0.00	70,000.00
Total		267,488.80	660,540.40	0.00	4,920,666.90

7.1.1 External expertise and services

Contracting partner	Group of expenditure	Item no.	Specification	Investment item?	Group of activities no.	Planned contract value
1. Institute of Ocea	Events/meetings	CAT4-PP1-A-0	Costs of organizing kickoff meeting 35 / 100 characters	No	1.1 1.2 1.3 1.4 1.5	2,500.00
1. Institute of Ocea	Other	CAT4-PP1-G-0	Insurance of marine equipment 29 / 100 characters	No	1.1 1.2 1.3 2.1 2.2 2.3	4,000.00
1. Institute of Ocea	Other	CAT4-PP1-G-0	Iridium connectivity for underwater robots 42 / 100 characters	No	1.1 1.2 1.3 2.1 2.2 2.3	3,000.00
1. Institute of Ocea	Communication	CAT4-PP1-C-0	Conference fees 15 / 100 characters	No	1.1 1.3 3.1 3.2 3.3	3,000.00
1. Institute of Ocea	Project management	CAT4-PP1-D-0	Document sending 16 / 100 characters	No	1.1 1.2 1.3 1.4 1.5 2.1 2.2 2.3 2.4 2.5 3.1 3.2 3.3 3.4	3,000.00
1. Institute of Ocea	Other	CAT4-PP1-G-0	Maintenance of analytical Eq 28 / 100 characters	No	1.3 2.2 2.3	6,000.00
	Total					267,488.80

Contracting partner	Group of expenditure	Item no.	Specification	Investment item?	Group of activities no.	Planned contract value	
1. Institute of Ocea	Other	CAT4-PP1-G-0	Maintenance Underwater robots 29 / 100 characters	No	1.1 2.1 2.2 2.3	6,000.00	
1. Institute of Ocea	Events/meetings	CAT4-PP1-A-0	Participation of AOs in project meetings 40 / 100 characters	No	1.1 1.2 1.3 1.4 1.5 2.1 2.2 2.3 2.4 2.5 3.1 3.2 3.3 3.4	10,000.00	
1. Institute of Ocea	Other	CAT4-PP1-G-0	ROV Tech training 17 / 100 characters	No	1.2 1.3 2.1 2.2	4,000.00	
3. Military Universit	Events/meetings	CAT4-PP3-A-1	Scientific conferences 22 / 100 characters	No	1.1 1.2 1.3 2.1 2.2 3.1	10,000.00	
4. Klaipeda Universi	National control	CAT4-PP4-F-1	FLC control 11 / 100 characters	No	1.1 1.2 1.3 1.4 2.1 2.2 2.3 2.5 3.1	6,000.00	
4. Klaipeda Universi	Events/meetings	CAT4-PP4-A-1	Arrangement of project partners meeting in LT (x1) 50 / 100 characters	No	1.1 1.2 1.3 1.4 1.5 2.1 2.2 2.3 2.4 2.5 3.1 3.2 3.3 3.4	2,500.00	
	Total					267,488.80	

Contracting partner	Group of expenditure	Item no.	Specification	Investment item?	Group of activities no.	Planned contract value	
4. Klaipeda Universi	Events/meetings	CAT4-PP4-A-1	National workshops for stakeholders (x 3) 41 / 100 characters	No	1.4 2.3 2.4 3.1 3.3	3,300.00	
4. Klaipeda Universi	Other	CAT4-PP4-G-1	Travel of LEPA experts and other stakeholders to project meetings and relevant events 85 / 100 characters	No	1.1 1.2 1.3 2.1 2.2 2.3 2.5 3.1	4,000.00	
5. Tallinn Universitv	Events/meetings	CAT4-PP5-A-1	Final seminar for the end users and stakeholders at national level 66 / 100 characters	No	2.2 3.1 3.2 3.3	488.80	
6. Norwegian Defen	Project management	CAT4-PP6-D-1	First Level Control 19 / 100 characters	No	1.1 1.2 1.3 2.1 2.2 2.3 3.1	14,000.00	
7. Federation of Mili	Events/meetings	CAT4-PP7-A-1	Catering during workshops 25 / 100 characters	No	1.5 2.4 3.2	2,000.00	
7. Federation of Mili	Events/meetings	CAT4-PP7-A-1	Scientific conferences 22 / 100 characters	No	1.5 2.4 3.2	2,000.00	
9. Finnish Environm	Other	CAT4-PP9-G-1	Maintenance of the field equipment (sensors etc.) 50 / 100 characters	No	1.1 1.3 2.1 2.2	2,000.00	
9. Finnish Environm	Communication	CAT4-PP9-C-2	Scientific conferences 22 / 100 characters	No	1.1 1.2 1.3 2.1 2.2 2.3 3.1	2,000.00	
	Total					267,488.80	

Contracting partner	Group of expenditure	Item no.	Specification	Investment item?	Group of activities no.	Planned contract value	
9. Finnish Environm	Other	CAT4-PP9-G-2	Cost of RV Aranda (2 days) 26 / 100 characters	No	2.2	46,000.00	
11. University of Hel	Other	CAT4-PP11-G-	Passive samplers, reagents, reference chemicals and supplies 60 / 100 characters	No	1.1 1.2 1.3 1.4 2.1	13,500.00	
12. Jagiellonian Uni	Other	CAT4-PP12-G-	All the works and materials needed to integrate the NAA sensor and ROV 70 / 100 characters	No	1.2	6,000.00	
13. Alfred Wegner I	Project management	CAT4-PP13-D-	Audits 6 / 100 characters	No	1.1 1.2 1.3 2.1 2.2 2.3 3.1 3.3	7,500.00	
17. University of Gd	Other	CAT4-PP17-G-	Insurance of Equipment 22 / 100 characters	No	1.1 1.2 1.3 2.1 2.2 2.3	2,500.00	
17. University of Gd	Communication	CAT4-PP17-C-	Conference fees 15 / 100 characters	No	1.1 1.3	1,200.00	
17. University of Gd	Other	CAT4-PP17-G-	Maintenance Analytic Eq 23 / 100 characters	No	1.3 2.2 2.3	4,000.00	
4. Klaipeda Universi	Other	CAT4-PP4-G-2	Translation services 20 / 100 characters	No	1.1 1.2 1.3 2.1 2.2 2.5 3.1	2,000.00	
14. International Ce	Events/meetings	CAT4-PP14-A-	Regular consortium meetings + meeting with national authorities 63 / 100 characters	No	1.5 2.3 2.4 3.1 3.3	10,000.00	
	Total					267,488.80	

Contracting partner	Group of expenditure	Item no.	Specification	Investment item?	Group of activities no.	Planned contract value	
14. International Ce	Communication	CAT4-PP14-C-	Lay-man Reports, marketing, informational materials targeted to national authorities 84 / 100 characters	No	1.5 3.4	25,000.00	
14. International Ce	Project management	CAT4-PP14-D-	General management tasks + financial administration 51 / 100 characters	No	1.5 2.3 2.4 3.1 3.3	20,000.00	
14. International Ce	Specialist support	CAT4-PP14-E-	Admin staff to support workshop and daily operations 52 / 100 characters	No	1.5 2.3 2.4 3.1 3.3	15,000.00	
14. International Ce	Other	CAT4-PP14-G-	Organization of wokshops 24 / 100 characters	No	1.5 2.4 3.3	20,000.00	
14. International Ce	IT	CAT4-PP14-B-	Personnel to handle videconferences and other IT tasks 54 / 100 characters	No	1.5 2.4 3.3	5,000.00	
	Total					267,488.80	

7.1.2 Equipment

Contracting partner	Group of expenditure	Item no.	Specification	Investment item?	Group of activities no.	Planned contract value	
2. north.io	IT hardware and soft	CAT5-PP2-B-0	Hosting and access to AmuCad.org 32 / 100 characters	No	1.4 2.3 3.1	40,000.00	
3. Military Universit	Laboratory equipmen	CAT5-PP3-D-0	Chemiclas 9 / 100 characters	No	1.2 1.3 2.2 2.3	20,000.00	
3. Military Universit	Laboratory equipmen	CAT5-PP3-D-0	Chromatographic consumables 27 / 100 characters	No	1.1 1.2 1.3 2.1 2.2 2.3	20,000.00	
3. Military Universit	Machines and instru	CAT5-PP3-E-0	Potentiostat 12 / 100 characters	No	1.2 2.2	32,000.00	
3. Military Universit	IT hardware and soft	CAT5-PP3-B-0	Notebooks with software 23 / 100 characters	No	1.1 1.2 1.3 2.1 2.2 2.3 3.1	8,000.00	
4. Klaipeda Universi	Laboratory equipmen	CAT5-PP4-D-0	Standard reference materials (SRM) for XRF analysis; materials for preparation of pressed pellets 97 / 100 characters	No	1.3 2.2	2,000.00	
4. Klaipeda Universi	Office equipment	CAT5-PP4-A-0	Laptop for project management 29 / 100 characters	No	1.2 1.3 2.2 2.3 3.1	1,500.00	
	Total					660,540.40	

Contracting partner	Group of expenditure	Item no.	Specification	Investment item?	Group of activities no.	Planned contract value	
5. Tallinn University	IT hardware and soft	CAT5-PP5-B-0	Laptop for the fieldworks 25 / 100 characters	No	1.1 1.2 2.1 2.2	2,500.00	
5. Tallinn University	Tools or devices	CAT5-PP5-F-0	ROV equipment for examination of wrecks 39 / 100 characters	No	2.1 2.2	5,500.00	
5. Tallinn University	Tools or devices	CAT5-PP5-F-1	Tools for collection of biota 29 / 100 characters	No	2.1	500.00	
6. Norwegian Defen	Other specific equip	CAT5-PP6-H-1	Equipment to be installed on the Modular Platform and other equipment for the field campaigns 93 / 100 characters	No	1.1 2.1	10,500.00	
7. Federation of Mili	Other specific equip	CAT5-PP7-H-1	Portable detector of chemical contamination (chemical warfare agents) 69 / 100 characters	No	1.1 1.2 1.3 2.1 2.2	25,000.00	
7. Federation of Mili	IT hardware and soft	CAT5-PP7-B-1	Notebooks with software 23 / 100 characters	No	1.1 1.2 1.5 2.2 2.4 3.1 3.3	3,500.00	
7. Federation of Mili	Other specific equip	CAT5-PP7-H-1	Means of protection against contamination (PPE: masks, protective clothing, decontaminant) 90 / 100 characters	No	1.1 1.2 1.3 2.1 2.2	1,400.00	
7. Federation of Mili	Other specific equip	CAT5-PP7-H-1	AP4C consumable goods 21 / 100 characters	No	1.1 1.2 1.3 2.1 2.2	1,000.00	
9. Finnish Environm	Laboratory equipmen	CAT5-PP9-D-1	Chemicals, consumables etc. 27 / 100 characters	No	1.1 1.3 2.1 2.2 2.5	20,000.00	
	Total					660,540.40	

Contracting partner	Group of expenditure	Item no.	Specification	Investment item?	Group of activities no.	Planned contract value	
9. Finnish Environm	Tools or devices	CAT5-PP9-F-1	Spare parts, batteries, cable etc. 34 / 100 characters	No	1.1 1.3 2.1 2.2 2.5	7,000.00	
12. Jagiellonian Uni	Laboratory equipmen	CAT5-PP12-D-	DT neutron generator - a necessary part of the NAA sensor which will be tested in real conditions 97 / 100 characters	No	1.2 2.1	100,000.00	
15. NeutronGate	Other specific equip	CAT5-PP15-H-	Consumables and materials , Gas, chemicals, experimental setup components, jigs, enclosures 91 / 100 characters	No	1.2	19,000.00	
17. University of Gd	Laboratory equipmen	CAT5-PP17-D-	Reagents and standards phenols 30 / 100 characters	No	1.3 2.2 2.3	10,000.00	
17. University of Gd	Laboratory equipmen	CAT5-PP17-D-	Reagents and standards metals analysis 38 / 100 characters	No	1.3 2.2 2.3	5,000.00	
17. University of Gd	Laboratory equipmen	CAT5-PP17-D-	Reagents and standards additional parameters analysis 53 / 100 characters	No	1.3 2.2 2.3	5,000.00	
17. University of Gd	Machines and instru	CAT5-PP17-E-	Small ROV 9 / 100 characters	No	2.1 2.2 2.3	4,000.00	
17. University of Gd	Laboratory equipmen	CAT5-PP17-D-	Labware for sample preparation and analysis 43 / 100 characters	No	1.3 2.2 2.3	5,440.40	
17. University of Gd	Laboratory equipmen	CAT5-PP17-D-	Tests for microtox analysis 27 / 100 characters	No	1.3 2.2 2.3	18,000.00	
	Total					660,540.40	

Contracting partner	Group of expenditure	Item no.	Specification	Investment item?	Group of activities no.	Planned contract value	
17. University of Gd	IT hardware and soft	CAT5-PP17-B-	Workstation 11 / 100 characters	No	1.1 1.2 1.3 2.1 2.2 2.3	3,000.00	
17. University of Gd	IT hardware and soft	CAT5-PP17-B-	Portable computer 17 / 100 characters	No	1.1 1.2 1.3 2.1 2.2 2.3	1,500.00	
17. University of Gd	IT hardware and soft	CAT5-PP17-B-	Tablet computer 15 / 100 characters	No	1.1 1.2 1.3 2.1 2.2 2.3	1,200.00	
17. University of Gd	Laboratory equipmen	CAT5-PP17-D-	Equipment and materials for the sampling and storage samples 60 / 100 characters	No	1.3 2.2 2.3	2,000.00	
1. Institute of Ocea	Laboratory equipmen	CAT5-PP1-D-3	Reagents and standards oil analysis 35 / 100 characters	No	1.3 2.2 2.3	10,000.00	
1. Institute of Ocea	Laboratory equipmen	CAT5-PP1-D-3	Reagents and standards PAH analysis 35 / 100 characters	No	1.3 2.2 2.3	10,000.00	
1. Institute of Ocea	IT hardware and soft	CAT5-PP1-B-3	Sonar Wiz Sofware 17 / 100 characters	No	1.1 1.2 1.3 2.1 2.2 2.3	5,000.00	
1. Institute of Ocea	Machines and instru	CAT5-PP1-E-3	Mercury analyzer 16 / 100 characters	Yes	I3.1_1	50,000.00	
	Total					660,540.40	

Contracting partner	Group of expenditure	Item no.	Specification	Investment item?	Group of activities no.	Planned contract value	
1. Institute of Ocea	IT hardware and soft	CAT5-PP1-B-3	Workstation 11 / 100 characters	No	1.1 1.2 1.3 1.4 1.5 2.1 2.2 2.3 2.4 2.5 3.1 3.2 3.3 3.4	5,000.00	
1. Institute of Ocea	IT hardware and soft	CAT5-PP1-B-3	Portable computers 18 / 100 characters	No	1.1 1.2 1.3 1.4 1.5 2.1 2.2 2.3 2.4 2.5	8,000.00	
1. Institute of Ocea	IT hardware and soft	CAT5-PP1-B-3	Tablet computers 16 / 100 characters	No	1.1 1.2 1.3 1.4 1.5 2.1 2.2 2.3 2.4 2.5 3.1 3.2 3.3 3.4	3,000.00	
	Total					660,540.40	

Contracting partner	Group of expenditure	Item no.	Specification	Investment item?	Group of activities no.	Planned contract value
1. Institute of Ocea	Laboratory equipmen	CAT5-PP1-D-3	Glassware (9 / 100 characters)	No	1.1 1.2 1.3 1.4 1.5 2.1 2.2 2.3 2.4 2.5	5,000.00
1. Institute of Ocea	Machines and instru	CAT5-PP1-E-3	Laser in-situ particle counter (30 / 100 characters)	Yes	I3.1_2	59,000.00
1. Institute of Ocea	Other specific equip	CAT5-PP1-H-3	Shiptime expenses (17 / 100 characters)	No	1.1 1.2 1.3 2.1 2.2 2.3 2.5	30,000.00
1. Institute of Ocea	Machines and instru	CAT5-PP1-E-4	ROV Fiber communication set (27 / 100 characters)	Yes	I3.1_3	70,000.00
1. Institute of Ocea	Tools or devices	CAT5-PP1-F-4	Outboard motor (14 / 100 characters)	No	1.1 1.2 1.3 2.1 2.2	4,000.00
1. Institute of Ocea	Tools or devices	CAT5-PP1-F-4	Sediment trap (13 / 100 characters)	No	1.1 1.2	5,000.00
1. Institute of Ocea	Laboratory equipmen	CAT5-PP1-D-4	Rotary evaporator (17 / 100 characters)	No	1.3 2.2	10,000.00
14. International Ce	IT hardware and soft	CAT5-PP14-B-	Translation equipment to assist prepration of reports and documentation (71 / 100 characters)	No	1.5 2.3 2.4 3.1 3.3	5,000.00
20. Chalmers Unive	IT hardware and soft	CAT5-PP20-B-	Software for running the VRAKA model (37 / 100 characters)	No	1.4	4,000.00
20. Chalmers Unive	IT hardware and soft	CAT5-PP20-B-	IT hardware for the VRAKA model (31 / 100 characters)	No	1.4	3,000.00
	Total					660,540.40

7.1.3 Infrastructure and works

Contracting partner	Group of expenditure	Item no.	Specification	Investment item?	Group of activities no.	Planned contract value	
Please select	Please select	CAT6-PP--01	0 / 100 characters	Please select		0.00	
	Total					0.00	

7.1.4 Investment summary

Investment item no.	Investment title	Total planned value
I3.1_1	Mercury analyzer	50,000.00
I3.1_2	Laser in-situ particle counter	59,000.00
I3.1_3	ROV Fiber communication set	70,000.00

Investment no. I3.1_1 - Mercury analyzer

Contracting partner	Planned contract value
1. Institute of Oceanology Polish Academy of Sciences (IOPAS)	50,000.00

Investment no. I3.1_2 - Laser in-situ particle counter

Contracting partner	Planned contract value
1. Institute of Oceanology Polish Academy of Sciences (IOPAS)	59,000.00

Investment no. I3.1_3 - ROV Fiber communication set

Contracting partner	Planned contract value
1. Institute of Oceanology Polish Academy of Sciences (IOPAS)	70,000.00

7.2 Planned project budget per funding source & per partner

No. & role	Partner name	Partner status	Country	Funding source	Co-financing rate [in %]	Total [in EUR]	Programme co-financing [in EUR]	Own contribution [in EUR]	State aid instrument
1-LP	Institute of Oceanology Polish Academy of Sciences (IOPAS)	Active 22/09/2022	PL	ERDF	80.00 %	808,794.10	647,035.28	161,758.82	For each partner, the State aid relevance and applied aid measure are defined in the **State aid section**
2-PP	north.io	Active 22/09/2022	DE	ERDF	80.00 %	319,500.00	255,600.00	63,900.00	
3-PP	Military University Of Technology (WAT)	Active 22/09/2022	PL	ERDF	80.00 %	249,900.00	199,920.00	49,980.00	
4-PP	Klaipeda University (KU)	Active 22/09/2022	LT	ERDF	80.00 %	202,000.00	161,600.00	40,400.00	
5-PP	Tallinn University of Technology (TalTech)	Active 22/09/2022	EE	ERDF	80.00 %	128,724.00	102,979.20	25,744.80	
6-PP	Norwegian Defence Research Establishment (FFI)	Active 22/09/2022	NO	Norway	50.00 %	200,000.00	100,000.00	100,000.00	
7-PP	Federation of Military Universities (FMU)	Active 22/09/2022	PL	ERDF	80.00 %	200,000.00	160,000.00	40,000.00	
8-PP	University Medical School Schleswig-Holstein (UKSH)	Active 22/09/2022	DE	ERDF	80.00 %	199,999.80	159,999.84	39,999.96	
9-PP	Finnish Environment Institute (SYKE)	Active 22/09/2022	FI	ERDF	80.00 %	273,300.00	218,640.00	54,660.00	
10-PP	German Environment Agency (UBA)	Active 22/09/2022	DE	ERDF	80.00 %	250,432.00	200,345.60	50,086.40	
11-PP	University of Helsinki (UH-VERIFIN)	Active 22/09/2022	FI	ERDF	80.00 %	300,000.00	240,000.00	60,000.00	
12-PP	Jagiellonian University (UJ)	Active 22/09/2022	PL	ERDF	80.00 %	230,800.00	184,640.00	46,160.00	
Total ERDF						4,720,666.90	3,776,533.52	944,133.38	
Total Norway						200,000.00	100,000.00	100,000.00	
Total						4,920,666.90	3,876,533.52	1,044,133.38	

No. & role	Partner name	Partner status	Country	Funding source	Co-financing rate [in %]	Total [in EUR]	Programme co-financing [in EUR]	Own contribution [in EUR]	State aid instrument
13-PP	Alfred Wegner Institute Helmholtz Centre for Polar and Marine Research (AWI)	Active 22/09/2022	DE	ERDF	80.00 %	363,997.70	291,198.16	72,799.54	
14-PP	International Centre for Chemical Safety and Security (ICCSS)	Active 22/09/2022	PL	ERDF	80.00 %	179,950.00	143,960.00	35,990.00	
15-PP	NeutronGate	Active 22/09/2022	FI	ERDF	80.00 %	128,200.00	102,560.00	25,640.00	
16-PP	University of Tartu (UTartu)	Active 22/09/2022	EE	ERDF	80.00 %	135,200.00	108,160.00	27,040.00	
17-PP	University of Gdansk (UG)	Active 22/09/2022	PL	ERDF	80.00 %	180,000.30	144,000.24	36,000.06	
18-PP	KUM Enviromental- and Marine Technology Kiel (KUM)	Active 22/09/2022	DE	ERDF	80.00 %	174,876.00	139,900.80	34,975.20	
19-PP	Geomar Helmholtz Centre for Ocean Research Kiel (GEOMAR)	Active 22/09/2022	DE	ERDF	80.00 %	174,993.00	139,994.40	34,998.60	
20-PP	Chalmers University of Technology (CUT)	Active 22/09/2022	SE	ERDF	80.00 %	150,000.00	120,000.00	30,000.00	
21-PP	Council of the Baltic Sea States (CBSS)	Active 22/09/2022	SE	ERDF	80.00 %	70,000.00	56,000.00	14,000.00	
Total ERDF						4,720,666.90	3,776,533.52	944,133.38	
Total Norway						200,000.00	100,000.00	100,000.00	
Total						4,920,666.90	3,876,533.52	1,044,133.38	

7.3 Spending plan per reporting period

	EU partners (ERDF)		Norwegian partners (Norway)		Total	
	Total	Programme co-financing	Total	Programme co-financing	Total	Programme co-financing
Period 1	1,139,241.09	911,392.89	42,291.67	21,145.85	1,181,532.76	932,538.74
Period 2	729,360.50	583,488.40	31,541.67	15,770.83	760,902.17	599,259.23
Period 3	764,120.10	611,296.07	31,541.67	15,770.83	795,661.77	627,066.90
Period 4	720,848.83	576,679.06	31,541.67	15,770.83	752,390.50	592,449.89
Period 5	704,850.74	563,880.59	31,541.66	15,770.83	736,392.40	579,651.42
Period 6	662,245.64	529,796.51	31,541.66	15,770.83	693,787.30	545,567.34
Total	4,720,666.90	3,776,533.52	200,000.00	100,000.00	4,920,666.90	3,876,533.52