1. Identification

Call	Date of submission
C1	26/04/2022

1.1. Full name of the project

A Digital Solution for Green Cruising of Small Craft in the Baltic Sea

71 / 250 characters

1.2. Short name of the project

Green Small Craft

17 / 20 characters

1.3. Programme priority

2. Water-smart societies

1.4. Programme objective

2.2 Blue economy

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

The population of small high-speed craft (SHC) in the Baltic Sea Region (BSR) is dense and grows yearly. In addition to leisure use, SHC are serving as work boats in official duties, in research and monitoring use, as well as in transport services in archipelago areas. CO2 and underwater noise emissions from the vessels have raised concerns concerning their environmental and ecological impacts, and the national and Baltic Sea wide transnational environmental targets are creating pressure for the green transition in both the boat industry and boating. The Green Small Craft project tackles this challenge by suggesting solutions for green and sustainable SHC design and by promoting the development of new markets for such solutions. The focus is on the development of solutions considering fuel-efficient hull forms, green and silent propulsion design, and green on-board operation. In addition, a web-based tool to support sustainable green SHC design and operations is developed. The project brings together representatives from universities and research institutes, enterprises in the boat industry, boat operators and relevant national authorities to consider the problem and evaluate the developed solutions from various perspectives.

1,247 / 1,500 characters

1.8. Summary of the partnership

The consortium is formed by a group of universities responsible for higher education and RDI work in the field of marine technology, a research institute specialised in sustainable maritime development, and two craft design and building SMEs. The team is led by a research association, working on the science - stakeholder interface. The associates represent national marine authorities, the boat industry and boaters. Through this collective, all the target groups and dimensions of the BSR are represented. Through the project activities, relevant actors from all BSR countries are targeted. The share of the project budget among the partners is built on their responsibilities and work plans, acknowledging the realistic cost estimates of the activities. KMRA is expert in supporting multi-sectoral collaboration to solve maritime-related sustainability issues and an experienced project leader, having extensive networks and personnel capable of planning and organising impactful events and ensuring effective project dissemination. KTH is a leading technical university in Northern Europe, well-known for their expertise on SHC. KTH will lead the hull design part of the project, working with industry and society in the pursuit of sustainable solutions to small craft design in the Baltic sea region. KTH embraces academia and the public and private sectors working together. AALTO is a leading Finnish multidisciplinary university with focus in academic research, education and added socioeconomic benefit. Their primary role in the project is the incorporation of the benefits of silent emerging propulsion, efficiency-related performance as well as sustainable design operations. The ideas and methods developed will help educate future professionals and support future policy actions in BSR. GUT is involved in education and research in the field of maritime technology and science. GUT brings in their ability to model and analyse the operational aspects of SHC, and their laboratory and other facilities. They have a role in the validation of the developed solutions and in promoting the results. TalTech is the only institution in Estonia offering higher maritime education on all levels. TalTech brings in their expertise in safer and cleaner shipping through the improvement of on-board systems performance and the development of sustainable propulsion systems. TalTech has excellent contacts in the maritime industry and bears extensive experience of international RDI projects, as well as training course development. SSPA provides the project hull shapes and test arrangements, being also able to provide feedback on the developed tools as an end-user. SSPA enables benchmark hull testing in their towing tank. SSPA also works on the health impacts of motion-related exposures aboard high-speed craft, and supports the stakeholder mapping and attitudes survey.
R2 and BWB bring in the business perspective, supporting the pilot activities with their expertise and resources.

2,996 / 3,000 characters

1.11. Project Budget Summary

Financial resources [in EUR]		Preparation costs	Planned project budget
ERDF	ERDF co-financing	0.00	2,361,280.50
	Own contribution ERDF	0.00	590,320.13
	ERDF budget	0.00	2,951,600.63
NO	NO co-financing	0.00	0.00
	Own contribution NO	0.00	0.00
	NO budget	0.00	0.00
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	2,361,280.50
	Total own contribution	0.00	590,320.13
	Total budget	0.00	2,951,600.63

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	Kotka Maritime Research Association	Meriturvallisuuden ja -liikenteen tutkimusyhdistys ry	FI	Interest group	a)	501,336.70 €	Active	22/09/2022
2	PP	KTH Royal Institute of Technology	Kungliga Tekniska högskolan	SE	Higher education and research institution	a)	227,299.80 €	Active	22/09/2022
3	PP	Tallinn University of Technology	Tallinna Tehnikaülikool	EE	Higher education and research institution	a)	280,681.60 €	Active	22/09/2022
4	PP	Gdańsk University of Technology	Politechnika Gdańska	PL	Higher education and research institution	a)	255,640.00 €	Active	22/09/2022
5	PP	Aalto University	Aalto-korkeakoulusäätiö sr	FI	Higher education and research institution	a)	649,412.50 €	Active	22/09/2022
6	PP	Baltic Workboats	Baltic Workboats	EE	Small and medium enterprise	b)	328,798.00 €	Active	22/09/2022
7	PP	R2 Marine Ltd	R2 Marine Oy	FI	Small and medium enterprise	b)	62,493.60 €	Active	22/09/2022
8	PP	SSPA Sweden AB	SSPA Sweden AB	SE	Higher education and research institution	a)	645,938.43 €	Active	22/09/2022

2.1.2 Associated Organisations

No.	Organisation (English)	Organisation (Original)	Country	Type of Partner
AO 1	ABB Oy	ABB Oy	FI	Large enterprise
AO 2	POLBOAT – The Polish Chamber of Marine Industry and Water Sports	Polska Izba Przemysłu Jachtowego i Sportów Wodnych – Polskie Jachty	PL	Business support organisation
AO 3	Sweboat – Swedish Marine Industry Federation	Sweboat – Båtbranschens Riksförbund	SE	Interest group
AO 4	Swedish Yachting Association	Svenska Båtunionen	SE	Interest group
AO 5	Finnish Marine Industries Federation Finnboat	Venealan Keskusliitto Finnboat ry	FI	Business support organisation
AO 6	Swedish Maritime Administration	Sjöfartsverket	SE	National public authority
AO 7	Petestep AB	Petestep AB	SE	Small and medium enterprise
AO 8	Estonian Transport Administration	Transpordiamet	EE	National public authority
AO 9	Finnish Transport and Communications Agency Traficom	Liikenne- ja viestintävirasto Traficom	FI	National public authority
AO 10	Baltic Marine Environment Protection Commission - HELCOM	Baltic Marine Environment Protection Commission - HELCOM	FI	International governmental organisation
AO 11	Finnish Sailing and Boating Federation	Suomen Purjehdus ja Veneily ry	FI	Interest group

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 Meriturvallisuuden ja -liikenteen tutkimusyhdistys ry

53 / 250 characters

Organisation in English	Kotka Maritime Research Association (35 / 250 characters)
Department in original language	N.A. (4 / 250 characters)
Department in English	N.A. (4 / 250 characters)

Partner location and website:

Address	Keskuskatu 7 (13 / 250 characters)	**Country**	Finland
Postal Code	FI-48100 (8 / 250 characters)	**NUTS1 code**	Manner-Suomi
Town	Kotka (5 / 250 characters)	**NUTS2 code**	Etelä-Suomi
Website	https://www.merikotka.fi/en/ (28 / 100 characters)	**NUTS3 code**	Kymenlaakso

Partner ID:

Organisation ID type	Business Identity Code (Y-tunnus)
Organisation ID	2023333-8
VAT Number Format	FI + 8 digits
VAT Number	**N/A** ☐ FI20233338 (10 / 50 characters)
PIC	n/a (3 / 9 characters)

Partner type:

Legal status	a) Public	
Type of partner	Interest group	Trade union, foundation, charity, voluntary association, club, etc. other than NGOs
Sector (NACE)	94.99 - Activities of other membership organisations n.e.c.	

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:

KMRA is responsible for the project coordination and management. The partner and leads WP3, with their general focus in the coordination and management of the stakeholder and policy interaction, and the dissemination activities.

228 / 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 2

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

Partner name:

Organisation in original language	Kungliga Tekniska högskolan (27 / 250 characters)
Organisation in English	KTH Royal Institute of Technology (33 / 250 characters)
Department in original language	Teknisk mekanik (15 / 250 characters)
Department in English	Engineering Mechanics (21 / 250 characters)

Partner location and website:

Address	Kungliga Tekniska Högskolan (27 / 250 characters)	**Country**	Sweden
Postal Code	SE-100 44 (10 / 250 characters)	**NUTS1 code**	Östra Sverige
Town	STOCKHOLM (9 / 250 characters)	**NUTS2 code**	Stockholm
Website	https://www.kth.se (18 / 100 characters)	**NUTS3 code**	Stockholms län

Partner ID:

Organisation ID type	Organisation number (Organisationsnummer)
Organisation ID	202100-3054
VAT Number Format	SE + 12 digits
VAT Number	N/A ☐ SE202100305401 (14 / 50 characters)
PIC	999990946 (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:

KTH will lead preparing the solution regarding hull hydrodynamics design in collaboration with other partners such as SSPA, Petestep, TalTech and GUT. KTH is well-known in the field of small craft and we bring our hydrodynamic knowledge to the project by conducting and supervising the activities focusing on numerical simulation of various hull forms provided by the end-users namely SSPA and Petestep. Accordingly, we are responsible for finding the best hull form by considering simulations in the calm water and waves. Moreover, we will participate in the test and pilot studies in the towing tank by investigating the test conditions and analysing the results related to calm water tests and boat motions in regular and irregular waves. Finally, we will provide high-quality dissemination activities through publications as well as workshops/training sessions.

865 / 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 3

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

Partner name:

Organisation in original language	Tallinna Tehnikaülikool (24 / 250 characters)
Organisation in English	Tallinn University of Technology (33 / 250 characters)
Department in original language	Eesti Mereakadeemia (20 / 250 characters)
Department in English	Estonian Maritime Academy (26 / 250 characters)

Partner location and website:

Address	Ehitajate tee 5 (16 / 250 characters)	**Country**	Estonia
Postal Code	19086 (6 / 250 characters)	**NUTS1 code**	Eesti
Town	Tallinn (8 / 250 characters)	**NUTS2 code**	Eesti
Website	https://taltech.ee/ (20 / 100 characters)	**NUTS3 code**	Põhja-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:

Having expertise in green maritime technology, including clean solutions and increasing the performance of marine vehicles, TalTech will work in close cooperation with PP2 in A1.1 and A2.1 to develop and pilot energy efficient hull forms. In addition, TalTech is the co-leader of WP3 Transferring solutions. By collaborating with PP1, TalTech will work on stakeholder mapping and analysing the demand of the small craft sector, as well as contributes to overall dissemination of the results by organising workshops, writing publications and participating in conferences.

572 / 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	Politechnika Gdańska (20 / 250 characters)
Organisation in English	Gdańsk University of Technology (31 / 250 characters)
Department in original language	Wydział Inżynierii Mechanicznej i Okrętownictwa (47 / 250 characters)

Department in English Faculty of Mechanical Engineering and Ship Technology

53 / 250 characters

Partner location and website:

Address G. Narutowicza 11/12

20 / 250 characters

Postal Code 80-233

6 / 250 characters

Town Gdańsk

6 / 250 characters

Website pg.edu.pl

9 / 100 characters

Country Poland

NUTS1 code Makroregion północny

NUTS2 code Pomorskie

NUTS3 code Trójmiejski

Partner ID:

Organisation ID type Tax identification number (NIP)

Organisation ID 5840203593

VAT Number Format PL + 10 digits

VAT Number N/A ☐ PL5840203593

12 / 50 characters

PIC 999588784

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:

The role of GUT in this project includes the following items:
1. RDI activities: mainly under WP1 (A1.3, D1.3) and WP2 (A2.3, O2.3) in respect to: a) general arrangement optimisation of the selected SHSCs, and b) operational aspects of their propulsion systems in relation to power management, control and safety systems, as well as their integration, leading to minimisation of fuel consumption and emissions;
2. Management activities: leading WP2 with another project partner, providing formal and organisational assistance in the range of this project for industrial partners, mainly Galeon and BWB, and for POLBOAT as an associate partner;
3. Dissemination activities: supporting the coordinator and other partners for promotion and verification of the solutions, mainly under WP3.

786 / 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	Aalto-korkeakoulusäätiö sr (26 / 250 characters)
Organisation in English	Aalto University (17 / 250 characters)
Department in original language	Mekaaninen suunnittelu, Meritekniikka (37 / 250 characters)
Department in English	Mechanical Engineering, Marine Technology (41 / 250 characters)

Partner location and website:

Address	Aalto University, P.O. Box 11000, Otakaari 1B (45 / 250 characters)	**Country**	Finland
Postal Code	00076 (5 / 250 characters)	**NUTS1 code**	Manner-Suomi
Town	Aalto (5 / 250 characters)	**NUTS2 code**	Helsinki-Uusimaa
Website	https://www.aalto.fi/fi (24 / 100 characters)	**NUTS3 code**	Helsinki-Uusimaa

Partner ID:

Organisation ID type	Business Identity Code (Y-tunnus)
Organisation ID	2228357-4
VAT Number Format	FI + 8 digits
VAT Number	N/A ☐ FI22283574 (10 / 50 characters)
PIC	991256096 (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

Financial data	**Reference period**	01/01/2021	–	31/12/2021
	Staff headcount [in annual work units (AWU)]			4,398.0
	Employees [in AWU]			4,398.0
	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]			365,678,000.00
	Annual balance sheet total [in EUR]			2,043,811,000.00
	Operating profit [in EUR]			-11,588,000.00

Role of the partner organisation in this project:

AALTO University will contribute to the project by contributing to Task A1.1 on seakeeping and performance hydrodynamics of HSC, the dissemination and exploitation elements of WP3 and last but not least by leading Tasks A1.2, A2.2 and A1.4, A2.4. Tasks A1.2 and A2.2 will develop a digital tool for green (energy-efficient and silent) propulsion design. The solutions proposed will be (i) guidelines for underwater noise reduction and (ii) a decision making procedure for green and efficient propeller selection. Tasks A1.4 and A2.4 aims to holistically improve the safety and efficiency of HSCs at concept design stage, i.e., by developing guidance for combined implementation of technologies developed in A1.1 – A1.3. Aalto will lead the development of an AI web based tool that may be used for safe and sustainable design of small green HSCs.

847 / 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	Baltic Workboats
	16 / 250 characters
Organisation in English	Baltic Workboats
	16 / 250 characters
Department in original language	Elektriprojekteerimise osakond
	30 / 250 characters
Department in English	Electrical Design Department
	28 / 250 characters

Partner location and website:

Address	Sadama tee 26 (13 / 250 characters)	**Country**	Estonia
Postal Code	93872 (5 / 250 characters)	**NUTS1 code**	Eesti
Town	Nasva (5 / 250 characters)	**NUTS2 code**	Eesti
Website	https://bwb.ee/ (15 / 100 characters)	**NUTS3 code**	Lääne-Eesti

Partner ID:

Organisation ID type	Registration code (Registrikood)
Organisation ID	10657801
VAT Number Format	EE + 9 digits
VAT Number	N/A ☐ EE100619757 (11 / 50 characters)
PIC	923047345 (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)	30.11 - Building of ships and floating structures	

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)]		158.0
	Employees [in AWU]		157.0
	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]		0.0
	Annual turnover [in EUR]		36,739,161.00
	Annual balance sheet total [in EUR]		46,939,345.00
	Operating profit [in EUR]		3,280,431.00

Role of the partner organisation in this project:

Baltic Workboats (BWB) is mainly focusing on vessels' operational solution of the project. Area of expertise lies in modelling vessel power management system and overall integration of equipment and subsystems to vessel management system. Thus, Baltic Workboats has been chosen to develop software based on the matrix of control strategies and algorithms prepared in the earlier states of the project. BWB is responsible for embedding and testing the software on the vessels available in their shipyard. The results of piloting the software will be composed to a framework and shared to public as an important project output.

625 / 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 7

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

Partner name:

Organisation in original language	R2 Marine Oy (12 / 250 characters)
Organisation in English	R2 Marine Ltd (13 / 250 characters)
Department in original language	Naval Architecture (18 / 250 characters)
Department in English	Naval Architecture (18 / 250 characters)

Partner location and website:

Address	Laivakatu 3 (11 / 250 characters)	**Country**	Finland
Postal Code	00150 (5 / 250 characters)	**NUTS1 code**	Manner-Suomi
Town	Helsinki (8 / 250 characters)	**NUTS2 code**	Helsinki-Uusimaa
Website	www.r2marine.fi (15 / 100 characters)	**NUTS3 code**	Helsinki-Uusimaa

Partner ID:

Organisation ID type	Business Identity Code (Y-tunnus)
Organisation ID	2538527-7
VAT Number Format	FI + 8 digits
VAT Number	N/A ☐ FI25385277 (10 / 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)	70.22 - Business and other management consultancy activities	

Partner financial data:

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

Financial data	**Reference period**	01/09/2020 –	31/08/2021
	Staff headcount [in annual work units (AWU)]		36.0
	Employees [in AWU]		16.0
	Persons working for the organisation being subordinated to it and considered to be employees under national law [in AWU]		16.0
	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]		2.0
	Annual turnover [in EUR]		1,101,524.05
	Annual balance sheet total [in EUR]		534,965.51
	Operating profit [in EUR]		254,707.78

Role of the partner organisation in this project:

R2 marine will support the project partners with in-depth technical knowledge. R2 Marine will also contribute with the concept design and CFD validation of new hull types as well as propulsion system evaluations.

R2 Marine's key contribution to this project is based on its vast experience in high speed craft design for commercial and leisure market.

R2 Marine will be the key contributor to the activities associated with hull design and CFD. High speed hull design is one of R2 marine's specialisation areas backed up with multiple realized projects and validation with computational fluid dynamic tools (CFD).

R2 marine will assign an agreed number of man-hours to assist in the above-mentioned tasks and provide expert consultancy to the project partners. R2 will provide required technical drawings and CFD calculations.

832 / 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 8

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

Partner name:

Organisation in original language	SSPA Sweden AB
	14 / 250 characters
Organisation in English	SSPA Sweden AB
	14 / 250 characters
Department in original language	Forskningsavdelning
	19 / 250 characters
Department in English	Research department
	19 / 250 characters

Partner location and website:

Address	P.O. Box 24001 (14 / 250 characters)	**Country**	Sweden
Postal Code	400 22 (6 / 250 characters)	**NUTS1 code**	Södra Sverige
Town	Gothenburg (10 / 250 characters)	**NUTS2 code**	Västsverige
Website	www.sspa.se (11 / 100 characters)	**NUTS3 code**	Västra Götalands län

Partner ID:

Organisation ID type	Organisation number (Organisationsnummer)
Organisation ID	556224-1918
VAT Number Format	SE + 12 digits
VAT Number	N/A ☐ SE556224191801 (14 / 50 characters)
PIC	998073159 (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

Financial data

Reference period	01/01/2021 –	31/12/2021
Staff headcount [in annual work units (AWU)]		195.0
Employees [in AWU]		95.0
Persons working for the organisation being subordinated to it and considered to be employees under national law [in AWU]		100.0
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]		12,000,000.00
Annual balance sheet total [in EUR]		12,000,000.00
Operating profit [in EUR]		0.00

Role of the partner organisation in this project:

In this project, SSPA will provide to the project partners a number of hull shapes that will be utilized for a comparative environmental and seakeeping analysis. For one of the shapes, a complete general arrangement will also be provided. SSPA will then manufacture and test a boat model in SSPA's test basin(s) in calm water, regular and irregular waves. SSPA will perform human factors analyses for the chosen hull shape and general arrangement in terms of the physical safety and well-being of the operators onboard the boat in order to assess and propose a more sustainable planing boat. SSPA will also provide support into the stakeholder mapping and attitudes survey and analyses. SSPA will contribute to the deliverables and project documentation as well as dissemination of results.

790 / 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

2.3 Associated Organisation Details - AO 1

Associated organisation name and type:

Organisation in original language: ABB Oy (7 / 250 characters)

Organisation in English: ABB Oy (6 / 250 characters)

Department in original language: Marine and Ports (17 / 250 characters)

Department in English: Marine and Ports (17 / 250 characters)

Legal status: b) Private

Type of associated organisation: Large enterprise — ≥ 250 employees

Associated organisation location and website:

Address: Merenkulkijankatu 1 (20 / 250 characters)

Country: Finland

Postal Code: 00980 (6 / 250 characters)

Town: Helsinki (8 / 250 characters)

Website: https://new.abb.com/marine (27 / 100 characters)

Role of the associated organisation in this project:

ABB Marine and Ports brings knowledge on propulsion, electrification and pilot control on sea and contributes on guidance and result dissemination activities.

ABB has wide experience on vessel performance evaluations where the whole scope of design aspects are considered. The complete chain of propulsion (hydrodynamics, power plant, vessel operation and control systems) combined with environmental targets including underwater noise are top priority at ABB. Optimization of vessel operation combined with digital tools will in future have an important role when new rules and regulations come into force.

612 / 1,000 characters

2.3 Associated Organisation Details - AO 2

Associated organisation name and type:

Organisation in original language: Polska Izba Przemysłu Jachtowego i Sportów Wodnych – Polskie Jachty
67 / 250 characters

Organisation in English: POLBOAT – The Polish Chamber of Marine Industry and Water Sports
65 / 250 characters

Department in original language: Stowarzyszenie producentów jachtów oraz dostawców
49 / 250 characters

Department in English: The association of boat builders and suppliers
46 / 250 characters

Legal status: b) Private

Type of associated organisation: Business support organisation

Chamber of commerce, chamber of trade and crafts, business incubator or innovation centre, business clusters, etc.

Associated organisation location and website:

Address: Al. Ks. J. Poniatowskiego 1
27 / 250 characters

Country: Poland

Postal Code: 03-901
6 / 250 characters

Town: Warsaw
6 / 250 characters

Website: www.polboat.eu
14 / 100 characters

Role of the associated organisation in this project:

POLBOAT will support the project partners by:
- arranging and facilitating the ad-hoc consultations with the selected company (or companies), when the project partner(s) require such a need for the considered solution,
- reviewing the worked-out solutions within the project and sharing the feedback with the project partners,
- when it is required, reviewing the recommendations, guidelines, and deliverables of the project by sending them to the member companies, gathering their feedback, and sending them to the project partners.,
- helping the project partners to have direct contact with the member companies for any cooperation based on the mutual agreement between them,
- promoting and assisting in transferring the solutions that are confirmed and validated to the member companies.

In this regard, POLBOAT can contribute to piloting solutions (WP2) and transferring solutions (WP3). POLBOAT will be a hub for the project, which connects its member companies to the project partners.

995 / 1,000 characters

2.3 Associated Organisation Details - AO 3

Associated organisation name and type:

Organisation in original language: Sweboat – Båtbranschens Riksförbund (35 / 250 characters)

Organisation in English: Sweboat – Swedish Marine Industry Federation (45 / 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: Interest group — Trade union, foundation, charity, voluntary association, club, etc. other than NGOs

Associated organisation location and website:

Address: Hammarby Allé 91 (16 / 250 characters)

Country: Sweden

Postal Code: 120 63 (7 / 250 characters)

Town: Stockholm (9 / 250 characters)

Website: www.sweboat.se (15 / 100 characters)

Role of the associated organisation in this project:

The organization will be participating in this project as a representative of boat makers and users. The organization will provide input to work packages 1-3 by participating in periodic meetings, revising results and documentation as well as attending workshops/seminars. The organization might be able to support with further networking, reaching out to stakeholders relevant for the survey in work package 3 and dissemination of project results.

448 / 1,000 characters

2.3 Associated Organisation Details - AO 4

Associated organisation name and type:

Organisation in original language
Svenska Båtunionen
18 / 250 characters

Organisation in English
Swedish Yachting Association
28 / 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
Interest group
Trade union, foundation, charity, voluntary association, club, etc. other than NGOs

Associated organisation location and website:

Address
af Pontins Väg 6
16 / 250 characters

Country
Sweden

Postal Code
115 21
6 / 250 characters

Town
Stockholm
9 / 250 characters

Website
https://batunionen.se/
22 / 100 characters

Role of the associated organisation in this project:

The Swedish Yachting Association represents more than 900 Swedish boat clubs and their 180,000 members (individual boat owners). We have long and solid experience of issues related to boating, the environment and maritime safety. Since we have a close relationship with our members, we can support the project partners with a local and national perspective and give objective feedback on the matter.
403 / 1,000 characters

2.3 Associated Organisation Details - AO 5

Associated organisation name and type:

Organisation in original language: Venealan Keskusliitto Finnboat ry
33 / 250 characters

Organisation in English: Finnish Marine Industries Federation Finnboat
45 / 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: Business support organisation

Chamber of commerce, chamber of trade and crafts, business incubator or innovation centre, business clusters, etc.

Associated organisation location and website:

Address: Käenkuja 8 A 47
15 / 250 characters

Country: Finland

Postal Code: 00500
5 / 250 characters

Town: Helsinki
8 / 250 characters

Website: www.finnboat.fi
15 / 100 characters

Role of the associated organisation in this project:

Finnboat is the recreational marine industry association in Finland. Our membership consists of boat and boating equipment manufacturers, importers, retailers and service companies, so we can offer industrial expertise as well as a contact network to the relevant industry partners.
282 / 1,000 characters

2.3 Associated Organisation Details - AO 6

Associated organisation name and type:

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

Organisation in English: Swedish Maritime Administration (31 / 250 characters)

Department in original language: Rederiet, Tekniska enheten & Transport och farledsservice (57 / 250 characters)

Department in English: Ship management, technical unit & Transport and fairway service unit (68 / 250 characters)

Legal status: a) Public

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

Associated organisation location and website:

Address: - (1 / 250 characters)

Country: Sweden

Postal Code: 60178 (5 / 250 characters)

Town: Norrköping (10 / 250 characters)

Website: sjofartsverket.se (17 / 100 characters)

Role of the associated organisation in this project:

Participate as a reference group member, i.e. in providing input, from an authority perspective and as a representative of boat crew. In the development and piloting only included to a minor extent, but part in the dissemination.

SMA has a wide experience of operating small craft i.e. pilot boats, in various locations and conditions, that could be valuable input to the project. Further SMA is currently performing a GHG-reduction programme to reduce emissons by energy efficiency measures by both technical and operational means. The expected results from the project can support this work as input and implementation in future design and operational solutions.

665 / 1,000 characters

2.3 Associated Organisation Details - AO 7

Associated organisation name and type:

Organisation in original language
Petestep AB
11 / 250 characters

Organisation in English
Petestep AB
11 / 250 characters

Department in original language
Utvecklingsavdelning
20 / 250 characters

Department in English
R&D
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
Tegelängsvägen 20
17 / 250 characters

Country
Sweden

Postal Code
145 53 Norsborg
15 / 250 characters

Town
Stockholm
9 / 250 characters

Website
www.petestep.com
16 / 100 characters

Role of the associated organisation in this project:

We are experts in planing hull design and will provide with our expertise in the project during the first and second WP.
121 / 1,000 characters

2.3 Associated Organisation Details - AO 8

Associated organisation name and type:

Organisation in original language: Transpordiamet
14 / 250 characters

Organisation in English: Estonian Transport Administration
33 / 250 characters

Department in original language: Taristu Haldamise Teenistus
27 / 250 characters

Department in English: Infrastructure Management Service
33 / 250 characters

Legal status: a) Public

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

Associated organisation location and website:

Address: Valge 4
7 / 250 characters

Country: Estonia

Postal Code: 11413
5 / 250 characters

Town: Tallinn
7 / 250 characters

Website: https://www.transpordiamet.ee/
30 / 100 characters

Role of the associated organisation in this project:

The Estonian Transport Administration is a competence centre uniting all modes of transport and a developer of a safe, comfortable and fast traffic environment. With the focus of designing smart mobility solutions and implement policies and projects covering all modes of transport, Estonian Transport Administration enables the additional expert knowledge to the main partnership.
Additionally, with one of the strategic goals being the making of environmentally sustainable choices and guide others to do the same in order to decrease the CO2 footprint, Estonian Transport Administration plays an important role in communicating the result of the project to target groups, such as boat builders and and small craft owners to make more environmentally concious choices.

773 / 1,000 characters

2.3 Associated Organisation Details - AO 9

Associated organisation name and type:

Organisation in original language
Liikenne- ja viestintävirasto Traficom
38 / 250 characters

Organisation in English
Finnish Transport and Communications Agency Traficom
52 / 250 characters

Department in original language
Liikennejärjestelmäpalvelut / Kestävä ja puhdas ympäristö -verkosto (shared responsibility)
91 / 250 characters

Department in English
Transport System Services / Sustainable and Clean Environment -network (shared responsibility)
96 / 250 characters

Legal status
a) Public

Type of associated organisation
National public authority
Ministry, etc.

Associated organisation location and website:

Address
PO Box 320
10 / 250 characters

Country
Finland

Postal Code
FI-00059
9 / 250 characters

Town
TRAFICOM
8 / 250 characters

Website
https://www.traficom.fi/en/
28 / 100 characters

Role of the associated organisation in this project:

Traficom can provide support for the project partners in issues related to both technical and environmental requirements from the Recreational Craft Directive as well as the Finnish national legislation related to recreational craft and water traffic.
Traficom can, resources allowing, participate in meetings and workshops.

Contact persons:
Ville Räisänen, ville.raisanen@traficom.fi
Tom Wilenius, tom.wilenius@traficom.fi

427 / 1,000 characters

2.3 Associated Organisation Details - AO 10

Associated organisation name and type:

Organisation in original language
Baltic Marine Environment Protection Commission -HELCOM
55 / 250 characters

Organisation in English
Baltic Marine Environment Protection Commission -HELCOM
55 / 250 characters

Department in original language
-
1 / 250 characters

Department in English
-
1 / 250 characters

Legal status
a) Public

Type of associated organisation
International governmental organisatio
HELCOM, BSSSC, CBSS, VASAB, etc.

Associated organisation location and website:

Address
Katajanokanlaituri 6B
21 / 250 characters

Country
Finland

Postal Code
FI-00160
8 / 250 characters

Town
Helsinki
8 / 250 characters

Website
www.helcom.fi
14 / 100 characters

Role of the associated organisation in this project:

The project supports the work and objectives of HELCOM and especially the updated Baltic Sea Action Plan (2021), Action S24 aiming to enhance the use of alternative fuels and sources of energy in shipping and recreational boating, as well as enhance the use of digitalization and other innovations in technology by 2027 to optimize energy efficiency in the Baltic Sea area. HELCOM can support the project by providing advice and expertise in questions relevant to HELCOM's function and responsibilities.

504 / 1,000 characters

2.3 Associated Organisation Details - AO 11

Associated organisation name and type:

Organisation in original language
Suomen Purjehdus ja Veneily ry
31 / 250 characters

Organisation in English
Finnish Sailing and Boating Federation
38 / 250 characters

Department in original language
-
1 / 250 characters

Department in English
-
1 / 250 characters

Legal status
b) Private

Type of associated organisation
Interest group
Trade union, foundation, charity, voluntary association, club, etc. other than NGOs

Associated organisation location and website:

Address
Särkiniementie 5 B 62
21 / 250 characters

Country
Finland

Postal Code
00210
5 / 250 characters

Town
Helsinki
8 / 250 characters

Website
https://spv.fi/
15 / 100 characters

Role of the associated organisation in this project:

As representative of boat owners in Finland, SPV can support the project by providing advice and expertise in questions relevant to SPVs function and responsibilities, and by helping to reach out its members.
208 / 1,000 characters

3. Relevance

3.1 Context and challenge

The European Green Deal aims to make Europe climate-neutral by 2050, thus novel and innovative solutions are needed to reach cleaner, safer and more sustainable operations on all sectors of the society.

According to HELCOM, about 3.5 million leisure boats are active in the Baltic Sea, a large number of them powered by classic combustion engines. The number increasing each year, the emissions of these vessels, especially high speed crafts, have raised environmental concerns in the coastal areas. The stringent climate objectives, common for all the countries in the Baltic Sea Region, put pressure also on the small craft sector to comply with the set requirements for new equipment and sustainability. In addition to leisure use, small high-speed vessels are serving as work boats in official duties, in research and monitoring use, as well as in transport services in archipelago areas.

Improving energy-efficiency and decreasing the GHG-emissions of the small high-speed craft (SHC) requires optimization of their hull, propulsion systems and operational performance by integrated and advanced control systems. With the same adjustments also the underwater noise can be reduced. The small craft traffic is typically densest close to the coast and in the archipelago areas, where seal and coastal fish populations sensitive to underwater noise live. The Baltic Sea has been established as Particularly Sensitive Sea Area and Emission Control Area by the International Maritime Organisation IMO.

The project tackles this challenge in the Baltic Sea Region by suggesting sustainable solutions for green SHC design, increasing the awareness of the target groups concerning the solutions, and this way creating demand and markets for them. The focus is on the development of solutions considering fuel-efficient hull forms, green and silent propulsion design, and green on-board operation. In addition, a web-based tool to support sustainable green SHC design and operations is developed.

1,998 / 2,000 characters

3.2 Transnational value of the project

The European climate goals are common for the BSR countries and emissions at sea typically spread across national borders. Clean environment is relevant not only from the viewpoint of nature and habitat protection, but also tourism, fisheries and many other economic sectors rely on it. The Baltic Sea provides numerous ecosystem services for all its coastal countries, making well-being and sustainable use of the sea common interests.

The lively cross-border boating tourism supports economic growth, creates jobs, and improves the livelihoods in coastal municipalities and remote archipelago communities around the BSR. On the other hand, areas tempting boaters are also hotspots of the environmental impacts of boating and this may pose local-level sustainability challenges. Paying attention to the sustainability of boating is a common interest and through the transnational collaboration the goals of the blue economy are most effectively promoted.

The boat industry across the BSR employs e.g. designers, manufacturers, resellers, and component suppliers. The economic value of the industry in the area is significant and growing. In recent years, both the households with at least one leisure boat and the numbers of employees working in the industry have increased. In Finland and Sweden together, approximately 7500 people are employed in the boat industry. In Estonia the value is around 4000, about 12000 Estonian people being in some way dependent on boating for their livelihood. At a global scale, Poland is ranked 5th in yacht production by volume and 2nd in the production of yachts up to 10 m in length, 95% of Polish yachts being exported worldwide.

Cross-country collaboration strengthens the global position of the BSR boat industry in terms of innovation of the products, ramping up naval architecture education too. New technologies can be developed and a relatively new market created. The combination of national specialities leads to multidisciplinary innovations.

1,999 / 2,000 characters

3.3 Target groups

Target group	Sector and geographical coverage	Its role and needs
Small and medium enterprise	Boat industry: Small High-speed Craft designers, manufacturers and resellers in FIN, SWE, EST, PL and other BSR countries. 122 / 500 characters	Responsible for the availability of the greener Small High-speed Craft solutions. The project provides support for the design and production of such solutions, as well as create demand and markets for them. The companies are also potential employers of the future naval architects and engineers educated by the participating universities. 343 / 1,000 characters
Higher education and research instituti	Units responsible for the education of naval architects and engineers, and the related RDI operation in all BSR countries. 122 / 500 characters	Responsible for educating future designers and manufacturers with the knowledge and skills to develop innovative green boat and ship solutions. Responsible for developing and running RDI projects. The project will produce teaching materials based on the concepts and solutions developed during it. The results will be utilised in the future RDI projects to further develop green and sustainable shipping and boating. 418 / 1,000 characters

Target group	Sector and geographical coverage	Its role and needs
Interest group	Boat operators in FIN, SWE, EST, PL and other BSR countries: leisure boaters; authorities and research institutes using HSC as work boats; operators of marine public transport in coastal areas. 194 / 500 characters	The port operators are the clients of the boat industry, creating the market for the greener boat solutions. Responsible also for the green, safe and sustainable operation of the boats. The project develops greener boat solutions, increases awareness of the boat operators concerning the utilities and existence of the solutions, and provides guidelines and tools for the sustainable operating strategies. 408 / 1,000 characters
National public authority	Authorities planning and regulating boating activities in all BRS countries. 76 / 500 characters	Can draw attention to the small craft emissions, and consider the need for restrictions or regulations. The project develops new solutions that enable greener small craft traffic and provides information about their existence, and the impact of the operation in terms of the GHG and noise reductions. It gathers data about the attitudes and limitations of the boat operators and manufacturers concerning the implementation of greener solutions, generating intersectoral discussion. 484 / 1,000 characters
Large enterprise	Big maritime design and manufacturing companies in FIN, SWE, EST, PL and other BSR countries 92 / 500 characters	Responsible for the availability and large scale RDI work in terms of the green maritime solutions. Can provide guidance for the project, and support the dissemination and transferability activities. Are potential end-users of the resulting solutions and will benefit from the transferability and dissemination activities. Potential employers of the future naval architects and engineers educated by universities. 420 / 1,000 characters

3.4 Project objective

Your project objective should contribute to:

Blue economy

The project aims for developing novel solutions and tools for green, safe and sustainable design and operation of small high-speed craft (SHC), applicable specifically in the Baltic Sea conditions. This is targeted by: (1) designing and testing an optimised fuel-efficient hull form to decrease GHG-emissions; (2) developing and testing energy-efficient and silent propulsion design solutions to decrease the GHG-emissions and underwater noise; (3) designing and evaluating strategies for safe and green small craft operation; and by (4) developing an integrative sustainability framework and optimisation tool to support the comprehensively green and sustainable small craft design and operations.

To ensure the transferability of the concepts and solutions developed, the project aims to create a future market (supply and demand) for the green and sustainable SHC by increasing the stakeholders' awareness concerning the significance of the new solutions, as well as their development stage and availability. The transferability is also advanced by integrating the results to education materials of future naval architects and engineers, as well as by communicating the key message to the relevant authorities responsible for planning and regulation of small craft operations in the BSR. The maximal transferability is targeted by: (1) surveying the prevailing attitudes and limitations of the SHC operators (the boat users) and manufacturers concerning the implementation of the green small craft solutions to understand what is needed to increase the supply and demand; (2) increasing the awareness of the target groups concerning the GHG and noise emissions of the SHC and the availability of the developed new solutions; (3) producing educational materials for the higher education institutes, to be involved in their educational programmes for naval architects; and by (4) communicating the results of the project to relevant national public authorities in the BSR countries.

1,986 / 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 Ship

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

The project contributes to Action 1 that supports various clean shipping measures involving relevant stakeholders and aims to develop research and policy measures to reduce emissions of maritime traffic. The action also supports activities improving energy efficiency of the sector, and the capacity and competence of the area to address climate neutral and clean shipping.

Green Small Craft project develops novel technology and tools to improve fuel-efficiency and thus lower the GHG emissions of the small high-speed craft (SHC) vessels, the number and use of which is continuously growing in the BSR. With the developed propulsion solutions also underwater noise can be reduced. In addition, the project will provide guidance for the greener operating practices and produce a tool for the design of sustainable SHC and operation strategies. The project actively involves stakeholders and seeks dialogue with policy-makers.

928 / 1,500 characters

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

Action 1 of PA Tourism supports transnational tourism development in remote and rural areas, such as archipelago and islands, taking into account the protection of the environment and ecosystems. Action 2, in turn, supports solutions that drive the digital transformation, skills and competences to promote the sustainable development of the tourism industry. Action 3 supports solutions that can make tourism greener and sustainable.

Boating is an important part of coastal tourism activities in the BSR and occurs also across the national borders. Leisure boaters have a positive impact on the economy and services in the archipelago areas. However, especially in the sensitive ambient areas, active boat traffic may risk the viability of ecosystems, creating local-level sustainability challenges. The project develops new knowledge, technical solutions and tools to enable and promote greener and more sustainable boating tourism.

Action 1 of PA Innovation aims for transnational value chains (e.g. in the areas of blue growth and digitalisation) and challenge-driven innovations that can turn challenges into opportunities for sustainable growth in Baltic Sea region. The project launches a transnational innovation ecosystem (the project consortium with its external collaborators) and sets the scene for a BSR market of novel solutions for greener and more sustainable small craft vessels.

1,400 / 1,500 characters

3.6 Other political and strategic background of the project

Strategic documents

EU Green Deal aims to make Europe climate-neutral by 2050. Reaching the goal in an inclusive manner requires a green transition that is expected to materialise through (e.g.) a transition to greener mobility everywhere, including the most remote areas; creating markets for clean technologies and products; improving energy efficiency throughout the society; protecting and restoring nature and biodiversity. The project supports all these transition aspects directly or indirectly.

482 / 500 characters

HELCOM Baltic Sea Action Plan states sustainable management of sea-based activities is essential for achieving good environmental status of the sea. The project supports following aims of the BSAP: (1) Promote environmentally sustainable recreational boating, (2) Enhance the use of digitalization and other innovations optimising energy efficiency to reduce emissions of both greenhouse gases and air pollutants; (3) Minimize noise to levels that do not adversely affect marine life.

485 / 500 characters

The EU Strategy for a Sustainable Blue Economy encompasses all industries and sectors related to seas and coasts, including marine trafficking, boat yards and coastal tourism. These activities have a cumulative impact on the marine environment and emissions. The strategy states the contribution of a healthy ocean is essential for a sustainable economy. The blue economy drives the green transition with clean, climate-proof and sustainable activities, including greening maritime transport.

492 / 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

Please enter the title of this seed money project.

Green Cruising for High-speed Craft in the Baltic Sea

53 / 200 characters

Please select which Policy Area (PA) or Horizontal Action (HA) this seed money project contributed to most.

PA Ship

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
Design of an ecological water ferry to the waters of the city of Gdańsk 71 / 200 characters	Provincial Fund for Environmental Protection - Polish national grants 69 / 200 characters	The focus of the project was in the design of the shape of the hull, as well as the propulsion and control of the inland small ferries to satisfy the safety, functionality and attractive appearance with high operational performance. The outcome of the project was design of a small shore-powered ferry with electrical propulsion and supported by solar energy, that was intended for inland waters of cities as a ferry / small water tram, and dedicated to the service in Gdańsk connecting the Long Embankment with the Ołowianka Island. The outcomes of this project have been utilised while planning the Small Green Craft project and will be taken into account during the project, while the solutions are developed and tested. 723 / 1,000 characters
Assessment and modelling of working conditions on planing high-speed marine craft 81 / 200 characters	Gösta Lundeqvist foundation for ship research The Swedish Maritime Administration (Sjöfartsverket) Swedish Transport Administration (Trafikverket) 147 / 200 characters	The project identifies and quantifies the associations between the working conditions aboard High-Performance Marine Craft (HPMC) and the adverse health and performance effects on the occupants while quantifying the effect of occupational exposure to shock and vibration on health in HPMC occupants. The outcomes of this project are planned to be used to evaluate the motions of the hulls in A2.1 and operational strategies of craft in A2.3 from the human perspective. 469 / 1,000 characters
“ASK - Arbetsbåtars Sjöegenskapskriterier” (Seakeeping criteria of work boats) 78 / 200 characters	Swedish Transport Administration (Trafikverket) 47 / 200 characters	This project focuses on identifying a set of seakeeping criteria and assessment methods that can be employed during the design phase of work boats (below 75m-length) to measure and compare their performance, safety and comfort. The criteria should also serve as a basis for decision support during operations. Subjective measures such as interviews with boat crew have been performed to capture their experiences with different boat shapes and characteristics during specific onboard operations. Objective measures will be utilised to investigate boat motions. The outcomes of this project have been utilised while planning the Small Green Craft project and will be taken into account during the project, while the solutions are developed and tested. 751 / 1,000 characters

Full name of the project	Funding Source	Use of the project outcomes and/or planned cooperation
FLARE (FLooding Accident REsponse) 35 / 200 characters	EU Commision Horizons 2020 funding programme (Grant no. : 814753) 65 / 200 characters	The project develops generic risk-based methods for “live” risk assessment and control of new and existing ships. Innovative technical solutions in ship concepts and equipment for risk containment and control are accompanied by proposals for the revision of relevant IMO regulations. Experience gained from this project will help shape up the format and objectives of a white paper for consideration by the BSR authorities (A3.4). The philosophy of the safe and sustainable holistic risk design based methods developed under A1.4 relate directly to experience gained from this project. 586 / 1,000 characters
Waterborne Urban Mobility 25 / 200 characters	Swedish Transport Administration (Trafikverket) 47 / 200 characters	The project aimed at illustrating modern waterborne commuter vessels, their design and how those year-around units are incorporated in tools for strategic public transport planning. The results contributed to developing the design of standardised smaller and lighter ferries and improving planning tools to assess effects on the transport system from the waterborne mode and its technology development. The outcomes of this project have been utilised while planning the Small Green Craft project and will be taken into account during the project, while the solutions are developed and tested. 592 / 1,000 characters

3.10 Horizontal principles

Horizontal principles	Projects's direct impact
Sustainable development	positive
Non-discrimination including accessibility	neutral
Equality between men and women	neutral

4. Management

Allocated budget 10%

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.

A steering committee will be set up for ensuring efficient strategic management of the project.

An advisory committee consisting of representatives from interested associated organisations can be established to regularly receive comments and support from the end-users and interest groups.

291 / 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.

A part-time financial manager will be appointed by the LP.
External expertise will be used for contractual issues during drafting the partnership agreement.

158 / 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 is created for the project, guiding all partners to project communication and visibility actions.

The project organises a workshop, a symposium, a final seminar and discussion events with authorities (A/D3.4). The web page platform provided by the BSR programme will be utilised for project communication in addition to the home pages of the partner organisations. A twitter account for the project will be created for project communication in social media.

489 / 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	Simulation of efficient innovative hull forms
1.2	Developing a digital tool for energy-efficient and silent propulsion design
1.3	Designing concepts for safe and green operation
1.4	Design of a sustainability framework and optimisation tool to support GSC design and operations

Number	Work Package Name
2	Piloting and evaluating solutions

Number	Group of Activity Name
2.1	Model testing, validating and evaluating the selected high-efficiency HSC hull form
2.2	Testing and validating the digital tool for energy-efficient and silent propulsion design
2.3	Validating and evaluating the strategies for safe and green operation
2.4	Evaluating the sustainability framework and tool to support green SHC design and operations

Number	Work Package Name
3	Transferring solutions

Number	Group of Activity Name
3.1	Stakeholder mapping and analysis for the effective outreach
3.2	Survey on attitudes and boundary conditions concerning the implementation of green SHC solutions
3.3	Promoting the sustainable Green Small Craft solutions and markets
3.4	Policy dialogue: Regulatory implications
3.5	Integrating the results to the training programmes of the future naval architects

Work plan overview

Period:	1	2	3	4	5	6	Leader
WP.1: Preparing solutions							**PP5**
A.1.1: Simulation of efficient innovative hull forms							PP8
D.1.1: Efficient hull form with a pilot plan			D				
A.1.2: Developing a digital tool for energy-efficient and silent propulsion design							PP5
D.1.2: Guidance for the selection of green and efficient SHC propellers with a pilot plan			D				
A.1.3: Designing concepts for safe and green operation							PP4
D.1.3: Draft concept for the green general arrangement and operational strategies with pilot plans				D			
A.1.4: Design of a sustainability framework and optimisation tool to support GSC design and operations							PP5
D.1.4: Framework and a web-based decision support tool with a pilot plan			D				
WP.2: Piloting and evaluating solutions							**PP4**
A.2.1: Model testing, validating and evaluating the selected high-efficiency HSC hull form							PP8
O.2.1: Green and Safe hull form for small high speed craft					O		
A.2.2: Testing and validating the digital tool for energy-efficient and silent propulsion design							PP5
O.2.2: Guideline document for green (energy-efficient and silent) propulsion design					O		
A.2.3: Validating and evaluating the strategies for safe and green operation							PP4
O.2.3: Strategies and finalized guideline document					O		
A.2.4: Evaluating the sustainability framework and tool to support green SHC design and operations							PP5
O.2.4: Finalised decision support framework and open access web-based tool					O		
WP.3: Transferring solutions							**PP1**
A.3.1: Stakeholder mapping and analysis for the effective outreach							PP1
D.3.1: Database of interested organisations, their contact persons and stakes in greener boating		D					
A.3.2: Survey on attitudes and boundary conditions concerning the implementation of green SHC solutions							PP1
D.3.2: Situational picture of the critical points for creating green small craft market in the BSR area				D			
A.3.3: Promoting the sustainable Green Small Craft solutions and markets							PP1
D.3.3: Events and publications to promote the sustainable Green Small Craft solutions and markets			D	D	D	D	
A.3.4: Policy dialogue: Regulatory implications							PP1
D.3.4: Policy dialogue and its documentation						D	
A.3.5: Integrating the results to the training programmes of the future naval architects							PP3
D.3.5: Online educational material package						D	

Outputs and deliverables overview

Code	Title	Description	Contribution to the output	Output/ deliverable contains an investment
D 1.1	Efficient hull form with a pilot plan	The deliverable of D1.1 will be based on a new small craft hull series provided by SSPA that will be designed applying high-fidelity numerical simulations. The main purposes behind developing such hull forms are to reduce the small craft hull resistance in calm water as well as to increase the ride quality of small boats in waves. The developed hulls can be implemented in various applications including leisure boats, military craft, search and rescue vessels as well as workboats. In A1.1 the provided hull shapes will be initially evaluated and compared together by implementing validated and verified numerical methods. The end users and target groups are interested in knowing the most efficient hull form and this is the key deliverable D1.1, to be validated and piloted under A2.1. In addition, a detailed plan for how the performance of the hull is tested and validated, is part of this deliverable. The selection process under A1.1 will be based on various criteria including fuel efficiency parameters as well as safety factors. Based on the pre-defined criteria, the most efficient hull form will be recognized to help the partners to develop a unique green and safe hull form during the piloting phase as one of the project outputs. The selected hull form will be piloted (A2.1) through towing tank experiments in calm water, regular waves and irregular waves. The finalised hull can be used by boat designers and boat builders in their future productions or a validation basis for their own designs. It is worth mentioning that this deliverable will be conducted by cooperation of various industries and academic partners from Sweden, Poland, Estonia and Finland that will lead to knowledge transfer in transnational level covering almost the entire Baltic sea region	O2.1	
D 1.2	Guidance for the selection of green and efficient SHC propellers with a pilot plan	Task A1.2 will deliver guidance notes for the selection of green and efficient propulsors for use in SHC and will also develop a pilot plan for the validation of those under task A2.2 . This is exceptionally useful especially considering that fully electric outboard, inboard and pod propulsion units for potential use in SHC emerged only recently and the practical impact of Underwater Radiated Noise (URN) from SHC operations in semi-open seas or coastal regions is neither measured or regulated. The guidance notes will help develop SHC designs that are silent and more sustainable. The know-how developed will be integrated in the sustainability decision making tool and framework under A1.4. In this way it will also contribute to the development of future designs and emission abatement regulations from SHC in the Baltic area and beyond. The co-existent participation of Aalto, R2, KTH, ABB and SSPA in the development process and the communication of findings to end users across the Baltic region under WP3 will ensure the translational value of this work.	O2.2	
D 1.3	Draft concept for the green general arrangement and operational strategies with pilot plans	The deliverable includes two main parts: D1.3.1: Assumptions and requirements for the optimal design of general arrangements of the SHC to reduce the emissions and increase the energy efficiency of the selected vessels D1.3.2: A set of propulsion control strategies with the related algorithms for each considered voyage mode and sea condition, ready for verification and testing The guidance notes will help develop SHC designs that are silent and more sustainable. The know-how developed will be integrated in the sustainability decision making tool and framework under A1.4. In this way it will also contribute to the development of future designs and emission abatement regulations from SHC in the Baltic area and beyond. The co-existent participation of Aalto, R2, KTH, ABB and SSPA in the development process and the communication of findings to end users across the Baltic region under WP3 will ensure the translational value of this work	O2.3	
D 1.4	Framework and a web-based decision support tool with a pilot plan	Task A1.4 will deliver the framework, a preliminary web-based tool and pilot plan for implementation under task A2.4. Those will help evaluate the equivalent emissions footprint of SHC under different operational scenarios and environmental conditions. It is envisaged that the web based tool developed will practically assist end-users (boat owners and manufacturers) to select the most suitable design and operational solutions in terms of environmental, safety, and economic benefits. The tool will include guidance on the general applicability of each technology, potential cost-benefits, and associated safety implications. This information will serve as an important backbone to a web-based catalogue which can subsequently be extended and improved. The optimal combination of different technology options and their feasibility will be enabled by the implementation of an AI module. Special emphasis will be placed on cyber security and intellectual property rights. The online application will give thorough guidance to boat owners, builders, and design offices on the energy efficiency saving technologies/solutions and relevant industry standards, regulatory approvals, best practice guidance, and easy-to-customize business strategies. Lastly, the application will enable the user to simulate investment scenarios (CAPEX, OPEX) over the life cycle, the performance of the ship/fleet, assess regulatory compliance, and share the solutions with end users, boat associations, and other stakeholders. The co-existent participation of Aalto, R2, KTH, ABB and SSPA in the development process and the communication of findings to end users across the Baltic region under WP3 will ensure the translational value of this work.	O2.4	

O 2.1	Green and Safe hull form for small high speed craft	The output 2.1 will be an innovative, fuel efficient, and safe hull form that will be piloted through experimental tests in different practical scenarios. The main purpose for developing this output is providing the target groups a small craft hull form that can address the environmental concerns regarding high speed craft activities in the Baltic sea region. Since small high speed craft hull design is a multi-dimensional task, mere focus on emission aspects cannot be a real solution. Because of that we will also consider safety and ride quality of small craft operation in sea by conducting model tests in irregular waves. Therefore, the developed output will satisfy various market demands regarding green and safe boating. Today the European boat industry owns 26% of the world SHC market. Notwithstanding this, in recent years the growing competition from Asia and North America is threatening Europe's future market share. Since foreign competitors adapt their products more closely to consumer demands, accelerating innovation in design is essential to maintain the competitiveness of the EU boat industry. Therefore, development of a green and safe hull form based on the scientific numerical and experimental campaign and releasing it to the target groups in the region, will increase competitiveness of Baltic and northern boat builders and boat designers in the global market. To maximize the effectiveness of the developed solution and output in the region, partners, target groups and end users from Sweden, Estonia, Poland and Finland have been involved in development of O 2.1 as mentioned in A2.1. It will also be tried to invite interested parties from other countries to our meeting.		
O 2.2	Guideline document for green (energy-efficient and silent) propulsion design	The purpose of this output is to assist designers and manufacturers of SHC propulsion systems with the development and selection of silent and energy efficient propulsion systems. The content of the deliverable will consist of (i) overview of systems, design targets and specifications; (ii) green propulsor design implementation measures; (iii) overview of method and tools for the evaluation of underwater emissions; (iv) a process for design development and assessment. Piloting will involve four open end user workshops with the aim to validate each of the aforementioned chapters (i) – (iv). The criteria and applicability of the information presented will be judged from end user, designer, boat builder and policy maker perspectives. Such an approach will ensure better implementation of the guidelines under the web based tool and sustainability framework developed in A1.4		
O 2.3	Strategies and finalized guideline document	Purpose: To increase the energy-efficiency and safety of SHC. Content: The output includes two main parts: the first is a set of verified strategies and algorithms ready for application and the second is a guideline on integrating the safety, power management, and control systems. The output will be worked out by GUT, BWB and SSPA. The presented solutions: The outcome is a visual tool giving recommendations to captains on how to navigate in an environmentally-friendly manner. Decreasing the fuel consumption by 10%, decreasing GHG emissions, and considering safety by including human factors are the goals of the solution that are presented by this output. Transnational value: 3 partners from 3 different EU countries will work together on this output. The results will be available via a web tool for public use in all BSR countries.		
O 2.4	Finalised decision support framework and open access web-based tool	The output will be a product lifecycle management system for high-speed crafts with a web-based Artificial Intelligence tool that accounts for environmental sustainability, considering CO2 and noise emissions. The system aims to optimise the conceptual design and operation strategies of SHC, considering their purpose and lifecycle. The developed decision support tool aims to assist ship designers, manufacturers, and boat owners in selecting the most suitable design and operational solutions for environmental, safety, and economic benefits. The applicability and reliability of the framework are ensured by inviting the international end user parties into the project to test and verify the feasibility of the individual technical solutions, the decision support tool, and the web-based application. The transnational value and applicability of the project are ensured by its scale, considering the entire region of the Baltic Sea.		
D 3.1	Database of interested organisations, their contact persons and stakes in greener boating	As a result of A3.1, an international BSR-wide database of organisations interested in the project's progress, activities and/or outcomes is created including the contact points they have nominated. This database will be for the project's internal use only and the information included in it can be used only for the purposes of the project communication, as agreed with the organisations and addressed in the database. Based on the database, fit-for-purpose email distribution lists can be created throughout the project – something that makes the dissemination and interaction effective and impactful, maximising the project's capability to (a) involve the target groups in the project activities, and (b) ensure the transferability and durability of the outcomes. Deliverable D3.1 ensures that the target groups throughout the whole BSR area will get an opportunity to be involved in the project's activities and/or be informed about the project's progress and outcomes according to their level and area of interest.	O2.1 - O2.4	
D 3.2	Situational picture of the critical points for creating green small craft market in the BSR area	As the result of the analysed query responses, a situational picture is formed concerning the factors (opportunities and threats) that motivate and hinder the boat industry actors and the boat operators when it comes to their transition towards the design and production or procurement of greener and more sustainable small craft solutions. This information is needed in A3.3. and A3.4., to communicate the outputs (O2.1 - 2.4) of the project to the target groups and ensure their transfer to production and use, to advance the green transition, sustainable maritime traffic and coastal tourism, and the blue economy in the BSR.	O2.1 - O2.4	

D 3.3	Events and publications to promote the sustainable Green Small Craft solutions and markets	Transnational events organised by the project: Event 1: a 1-day workshop (online or hybrid) - “Developing a BSR market for green small craft solutions”. The event will be organised at the end of period 4 based on the query results (D3.2) and the ongoing work (D1.1. - 1.4. and the ongoing pilots A2.1 - 2.4). Short presentations from the project personnel and potential external experts; panel discussions around the given themes and questions. A summarising memo to be compiled jointly with the participants after the event. Event 2: a 1-day symposium (online or hybrid) - “Potential of the hull and propulsion optimisation, and the role of sustainable operation strategies in decreasing the GHG and noise emissions in the BSR”. The event will be organised at the end of period 5 based on the results and findings of the project (O2.1. - 2.4.). Presentations from the project researchers and partner companies. Event 3: a 2-day final seminar (a hybrid event) - Launching and demonstrating the finalised solutions (O2.1 - 2.4). In period 6. Presentations and demonstration workshops. Panel discussions. Final conclusions. External events to be participated to introduce and promote the project and its outputs - “BoatShow” (annual exhibition, http://boatshow.pl, Warsaw) - “Baltexpo” (biannual exhibition - next: Sept. 2023, Gdańsk) - “Vene Båt” (the largest boating event in Northern Europe, organised yearly in Helsinki) - The Association of Polish Maritime Industries FORUM OKRĘTOWE and Polish Maritime Technology Forum (each with more than 50 industrial members). - Lighthouse centre and/or the Swedish Maritime Technology Forum (SMTF - RISE) - HSBO 2023 forum for High-Speed Boat Operations (https://hsbo.org/) - FAST 2023 (International Conference on Fast Sea Transportation) - Events organised by the Interreg BSR community	O2.1 - O2.4	
D 3.4	Policy dialogue and its documentation	Online or hybrid discussions (N 1-3) with relevant grouping (defined based on the stakeholder mapping study A/D3.1) of authorities, in which the participants share their knowledge and views with each other, the project consortium members, and potential invited external experts. Summarising memos of the discussions. A white paper, making a synthesis of the societal impacts of the results of the project, acknowledging the discussions undergone with the authorities. The white paper reflects the EU directives 2013/53/EU and 89/391/EEC in terms of the project’s outcomes. It will be in line with the Directives, and new amendments to the International Code of Safety for High-speed Craft, 1994 (1994 HSC Code) and amendments to the International Code of Safety for High-speed Craft, 2000 (2000 HSC Code), which were adopted in Nov. 2021.	O2.1 - O2.4	
D 3.5	Online educational material package	Open source online package of educational materials directed to be used as part of the university teaching. The package can consist of e.g. video lectures, pieces of text and Power point slide shows. This deliverable will contribute remarkably to the durability of the project’s outputs, transferring the information and tools to the use of tomorrow’s yacht designers and builders.	O2.1 - O2.4	

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 5 - Aalto University

Work package leader 2 PP 4 - Gdańsk University of Technology

5.4 Work package budget

Work package budget 25%

5.5 Target groups

	Target group	How do you plan to reach out to and engage the target group?
1	Small and medium enterprise Boat industry: Small High-speed Craft designers, manufacturers and resellers in FIN, SWE, EST, PL and other BSR countries. 122 / 500 characters	Various Baltic SMEs with interests in the small SHC design, manufacturing and technology development will become engaged via the network of R2, SSPA and ABB who already participate in the project. Interaction will be achieved by organising an online workshop at the end of each Task (A1.1. - A1.4). The aim of the workshop with reference to SMEs will be to (i) demonstrate top level progress and activities; (ii) inform the industry on the technological and practical progress / viability of the tools, procedures and methods developed for design, manufacturing and sustainable operations. This dialogue will help validate the relevance of solutions on a step by step basis. 676 / 1,000 characters
2	Higher education and research institution Units responsible for the education of naval architects and engineers, and the related RDI operation in all BSR countries. 122 / 500 characters	Academic cooperation is facilitated by the universities (Aalto, KTH, TalTech, GUT) and SSPA. Candidates for the exchange of ideas are Chalmers University (SE) on naval architecture and sustainable design, the University of Rostock (DE) on performance modelling and simulations, DTU (DK) on dynamics and underwater noise. Interaction will be achieved by inviting the institutions to online workshops at the end of each Task (A1.1. - A1.4). The aims of the meetings are to (i) discuss academic developments; (ii) shortlist emerging education and training needs for the sector and (iii) specify how universities can contribute in this area. International interaction will be achieved by dissemination of scientific publications in international fora (e.g. HSBO and FAST 2023 events) and online meetings with leading R&D institutions (e.g. the Wolfson Unit of the Uni Southampton - UK, Dept. of Naval and Aerospace Engng at Virginia Tech - USA, MARIN Research Institute, Netherlands etc.) 988 / 1,000 characters
3	Interest group Boat operators in FIN, SWE, EST, PL and other BSR countries: leisure boaters; authorities and research institutes using HSC as work boats; operators of marine public transport in coastal areas. 194 / 500 characters	The Swedish Marine Industries Federation and the Swedish Boaters Union will be engaged via SSPA. The Finnish Boatbuilders Association will be invited by KMRA. These organisations will be engaged as representatives of boat manufacturers and of boat users through participation in the online workshop at the end of each Task alongside SMEs, national authorities, universities and large enterprises. This dialogue will help validate the relevance of solutions on a step by step basis. 482 / 1,000 characters
4	National public authority Authorities planning and regulating boating activities in all BRS countries. 76 / 500 characters	The Swedish Maritime Administration will be invited by SSPA as a member of the reference group. They will be engaged as a regulatory authority and as a representative of boat users by attending the online workshops organised at the end of each Task (A1.1. - A1.4). Their participation in this step by step dialogue is important as they act as a key contact point to a broader network of boat users and manufacturers and therefore understand both the regulatory and technological impact of the progress made. Their role will be to provide constructive input in terms of the impact of developments made on the formulation of technical policy and broader regulations. 666 / 1,000 characters
5	Large enterprise Big maritime design and manufacturing companies in FIN, SWE, EST, PL and other BSR countries 92 / 500 characters	Engagement of large enterprises will be ensured via the participation of ABB as a consortium associate. Both ABB and the existing consortium SMEs (R2, SSPA) have significant access to a network of large organisations. Interaction with large enterprises including ABB and beyond will be achieved by organising an online workshop at the end of each Task (A1.1. - A1.4). The aim of the workshop with reference to SMEs will be to (i) demonstrate top level progress and activities; (ii) inform the industry on the technological and practical progress / viability of the tools, procedures and methods developed for design, manufacturing and sustainable operations. This involvement is considered significant as it will help validate the relevance of solutions on a step by step basis. 781 / 1,000 characters

5.6 Activities, deliverables, outputs and timeline

No.	Name
1.1	**Simulation of efficient innovative hull forms**
1.2	**Developing a digital tool for energy-efficient and silent propulsion design**
1.3	**Designing concepts for safe and green operation**
1.4	**Design of a sustainability framework and optimisation tool to support GSC design and operations**

WP 1 Group of activities 1.1

5.6.1 Group of activities leader

Group of activities leader PP 8 - SSPA Sweden AB

A 1.1

5.6.2 Title of the group of activities

Simulation of efficient innovative hull forms

45 / 100 characters

5.6.3 Description of the group of activities

In recent years, small high-speed craft have been used for commercial, military, and leisure purposes among others. There are a variety of hull forms that are available for small craft. These hull forms can be different in terms of geometry, orientation, dimensional ratios etc. Accordingly, A1.1 will present innovative hull forms that not only are able to achieve higher velocities considering relevant safety criteria but also are green and fuel-efficient in both calm sea and waves. Therefore, the main objective of the defined solution is to reduce main negative impacts of small high-speed craft cruising in the Baltic Sea by improving the design and operation of future high-speed craft for a green and sustainable boating. To this end, the following steps will be taken by the partners involved in the development of the solution:

Step 1. Developing new hull forms: SSPA as end users of this solution will provide 4 hull forms (as inputs) based on their extensive hull design knowledge and experience. The hull forms vary in terms of various hull geometry characteristics that can have significant effects on boat performance in calm water and waves.

Step 2. Simulating the developed hull forms: KTH and TalTech will develop a high-fidelity numerical setup based on Computational Fluid Dynamic to model the performance and behaviour of the developed hull forms in both calm water and regular waves. The developed numerical model has been also validated and verified in our previous studies and has shown a very high level of accuracy in modelling boat performance in calm water and regular waves.

Step 3. Comparisons and analysis: Various outputs will be obtained through numerical simulations including boat resistance and boat motion in waves that will enable partners (KTH, TalTech, Aalto and SSPA) to compare developed hull forms provided by the end user. The comparisons and assessments will be performed in terms of both calm water and seakeeping performance to figure out which hull form will be greener and safer.

According to results, the main deliverable of A1.1 will be a fuel-efficient hull form that will be tested, piloted and adjusted in model scale during the WP2. It is worth mentioning that the preparation of the solution needs active participation of the partners from Sweden, Estonia and Finland. Their tasks have been clarified in defined steps.

2,381 / 3,000 characters

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

D 1.1

Title of the deliverable

Efficient hull form with a pilot plan

37 / 100 characters

Description of the deliverable

The deliverable of D1.1 will be based on a new small craft hull series provided by SSPA that will be designed applying high-fidelity numerical simulations. The main purposes behind developing such hull forms are to reduce the small craft hull resistance in calm water as well as to increase the ride quality of small boats in waves. The developed hulls can be implemented in various applications including leisure boats, military craft, search and rescue vessels as well as workboats. In A1.1 the provided hull shapes will be initially evaluated and compared together by implementing validated and verified numerical methods.

The end users and target groups are interested in knowing the most efficient hull form and this is the key deliverable D1.1, to be validated and piloted under A2.1. In addition, a detailed plan for how the performance of the hull is tested and validated, is part of this deliverable.

The selection process under A1.1 will be based on various criteria including fuel efficiency parameters as well as safety factors. Based on the pre-defined criteria, the most efficient hull form will be recognized to help the partners to develop a unique green and safe hull form during the piloting phase as one of the project outputs. The selected hull form will be piloted (A2.1) through towing tank experiments in calm water, regular waves and irregular waves. The finalised hull can be used by boat designers and boat builders in their future productions or a validation basis for their own designs.

It is worth mentioning that this deliverable will be conducted by cooperation of various industries and academic partners from Sweden, Poland, Estonia and Finland that will lead to knowledge transfer in transnational level covering almost the entire Baltic sea region

1,788 / 2,000 characters

Which output does this deliverable contribute to?

O2.1

4 / 100 characters

5.6.6 Timeline

Period:	1	2	3	4	5	6
WP.1: Preparing solutions						
A.1.1: Simulation of efficient innovative hull forms						
D.1.1: Efficient hull form with a pilot plan						

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 5 - Aalto University

A 1.2

5.6.2 Title of the group of activities

Developing a digital tool for energy-efficient and silent propulsion design

75 / 100 characters

5.6.3 Description of the group of activities

Today, outboard or sterndrive propulsion units used in SHC are mainly made of propellers of submerged or surface-piercing specification. For larger working boats with speed less than 20 kn, inboard or pod propulsion units with a controlled or fixed pitch propeller are commonly used. For larger working boats with speed less than 20 kn, inboard or pod propulsion units with a controlled or fixed pitch propeller are commonly used. For SHC cruising faster than 30kn, waterjet propulsion systems are the best choice. Contra-rotating propellers are adopted sometimes for higher efficiency. All these propulsion units suffer from high noise emission levels.

The aim of this task is to enable the green (energy efficient and silent) propulsion design of the above mentioned SHC. The solutions proposed will be (i) guidelines for underwater noise reduction and (ii) a decision making procedure for green and efficient propeller selection. The steps undertaken to prepare the solutions for piloting will involve :

1. Review of state-of-the-art methods for the prediction of flow-generated noise, hydrodynamic efficiency, cavitation and ventilation with the aim to outline the advantages and limitations of accuracy, efficiency, and availability of available methods.
2. Simulation of propeller flow hydrodynamics embedded in commercial software. Results will be validated against available full scale measurement data before being used for the noise evaluation.
3. Evaluation of noise emissions from different propulsors operating under different operating conditions by the acoustic analogy method.
4. Detailed comparisons of underwater noise levels and associated emissions at different operating velocities and vibration forces will help conclude on noise reduction measures with minimal impact on the efficiency of different propulsors.

Through understanding the noise emission properties including main noise sources and noise directivity, noise reduction measures having little negative impact on the propulsion efficiency will be developed. Aalto, R2 and KTH will collaborate to develop these solutions that will be implemented in the web-based tool of task A1.4. SSPA and ABB will participate by advising the development and thus will make sure that the solutions developed are practical and applicable for the benefit of target groups. The participation of partners from different countries will ensure that the results achieved are translational and will benefit designers, coastal communities, and regulators across the Baltic region.

2,548 / 3,000 characters

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

D 1.2

Title of the deliverable

Guidance for the selection of green and efficient SHC propellers with a pilot plan

82 / 100 characters

Description of the deliverable

Task A1.2 will deliver guidance notes for the selection of green and efficient propulsors for use in SHC and will also develop a pilot plan for the validation of those under task A2.2 . This is exceptionally useful especially considering that fully electric outboard, inboard and pod propulsion units for potential use in SHC emerged only recently and the practical impact of Underwater Radiated Noise (URN) from SHC operations in semi-open seas or coastal regions is neither measured or regulated. The guidance notes will help develop SHC designs that are silent and more sustainable. The know-how developed will be integrated in the sustainability decision making tool and framework under A1.4. In this way it will also contribute to the development of future designs and emission abatement regulations from SHC in the Baltic area and beyond. The co-existent participation of Aalto, R2, KTH, ABB and SSPA in the development process and the communication of findings to end users across the Baltic region under WP3 will ensure the translational value of this work.

1,066 / 2,000 characters

Which output does this deliverable contribute to?

O2.2

5 / 100 characters

5.6.6 Timeline

Period:	1	2	3	4	5	6
WP.1: Preparing solutions						
A.1.2: Developing a digital tool for energy-efficient and silent propulsion design						
D.1.2: Guidance for the selection of green and efficient SHC propellers with a pilot plan						

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 4 - Gdańsk University of Technology

A 1.3

5.6.2 Title of the group of activities

Designing concepts for safe and green operation

47 / 100 characters

5.6.3 Description of the group of activities

A1.3 includes two main tasks towards higher safety and energy-efficiency in the SHC operation: (a) conceptualization for a green and safe general arrangement (GA), and (b) developing the operational propulsion control strategies and algorithms. The inputs for both tasks are vessel(s) performances and mathematical models applied also in 1.1 and 1.2, as well as human and safety factors based on the R&D and boat builders' expertise.

Steps of the task a: (a1) Analysis of existing solutions in terms of their modification towards green shipbuilding, (a2) Determination of the optimization process for agreed level of functional decomposition of the ship, (a3) Developing the general workflow of the design process for expected objectives. Steps of the task b: (b1) Developing the control strategies and algorithms for different modes of operation to reduce emissions and fuel consumption, and (b2) Preparing the requirements for integration of control system, power management system and safety system to reduce emissions, fuel consumption, and enhancing the level of safety and autonomy.

The activities and transnational setting:

Task a: The decomposition of GA into functional subsystems will enable analysis in terms of its modification towards green solutions (GUT, SSPA, KTH, Aalto). The analysis of the emission impact, and of the human factors in layout designing will deliver data to establish a comprehensive set of optimization constraints and objectives (green and safety) and guidelines for optimal design. Expected set of goals will contain incl. minimization of mass, resistance and demanded energy, maximising safety, comfort and usability (GUT, SSPA, KTH, Aalto). The multi-objective optimization process for the arrangement of functional design processes will be prepared (GUT). Obtained results will be used for preparing the assumptions and requirements for the optimal design of GA (GUT, SSPA, BWB).

Task b: The operation periods will be divided into 7 modes: start, acceleration, normal, maximum, manoeuvring under calm conditions, deceleration, and stop. The sailing condition will be divided into 3 parts: calm, moderate, and severe seas. It generates a matrix with 21 elements. For each element, an optimal control strategy with a specific algorithm for the propulsion control system will be worked out. The optimality criterion will be minimum fuel consumption with minimum selected GHG emissions. The data for setting up the parameters of the model will be delivered by the boat builder (BWB), based on available vessel. The overall model consists of the models of the control system (prepared by GUT), power management system (prepared by BWB), safety and human factors system (prepared by SSPA). By using the simulators and simulation processes (SSPA, GUT), the required strategies will be worked out. The results will be used for preparing the assumptions for integrating control, power management and safety management systems.

2,965 / 3,000 characters

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

D 1.3

Title of the deliverable

Draft concept for the green general arrangement and operational strategies with pilot plans

91 / 100 characters

Description of the deliverable

The deliverable includes two main parts:
D1.3.1: Assumptions and requirements for the optimal design of general arrangements of the SHC to reduce the emissions and increase the energy efficiency of the selected vessels
D1.3.2: A set of propulsion control strategies with the related algorithms for each considered voyage mode and sea condition, ready for verification and testing

The guidance notes will help develop SHC designs that are silent and more sustainable. The know-how developed will be integrated in the sustainability decision making tool and framework under A1.4. In this way it will also contribute to the development of future designs and emission abatement regulations from SHC in the Baltic area and beyond. The co-existent participation of Aalto, R2, KTH, ABB and SSPA in the development process and the communication of findings to end users across the Baltic region under WP3 will ensure the translational value of this work

947 / 2,000 characters

Which output does this deliverable contribute to?

O2.3

5 / 100 characters

5.6.6 Timeline

	Period: 1	2	3	4	5	6
WP.1: Preparing solutions						
A.1.3: Designing concepts for safe and green operation						
D.1.3: Draft concept for the green general arrangement and operational strategies with pilot plans						

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 5 - Aalto University

A 1.4

5.6.2 Title of the group of activities

Design of a sustainability framework and optimisation tool to support GSC design and operations

95 / 100 characters

5.6.3 Description of the group of activities

The simultaneous use of multiple green solutions and strategies is not always technically feasible and may be sensitive to end-user expectations (e.g. leisure vs. official operation), navigation under varying environmental conditions and associated operational scenarios. This is the reason why green SHC designs should be developed on the basis of well-balanced Key Performance Indicators (KPIs) that account for both safe and sustainable operations. A1.4 (leading to A/O2.4) aims to holistically improve the safety and efficiency of SHC at concept design stage, i.e., by developing guidance for combined implementation of technologies developed in A1.1 – A1.3 (A/O2.1-2.3). The result will be an web-based Artificial Intelligence tool to support safe and sustainable design and operation of small green SHC. The steps to prepare the solutions for piloting will be as follows :

1. Data collection, management and evaluation focusing on developing a database with information on existing operational profiles and design specifications of SHC used in the BSR (e.g. routes, hydro-meteorological conditions, emissions, engineering technologies, naval architectural and performance characteristics). This will help identify patterns of operation and clarify targets for safe and sustainable SHC design development.

2. Simulations of SHC operations will make use of the typical design and operation profiles to define target KPIs for green SHC (e.g., reduced CO2 and underwater noise, cost and efficiency indicators, safety measures). The development process will explore the benefits of applying the Life Cycle Assessment methodology for 35% emission reductions in real operational conditions.

3. A concept design synthesis tool will be developed for the selection, combination, and implementation of green SHC technologies. The tool will utilize surrogates involving the methods developed in A1.1 – A1.3 and best practices to determine the best combination of technologies, naval architecture principles and operational practices.

4. Development of the concept of an interactive web-based tool and framework for safe and sustainable SHC design. The tool will include guidance on the general applicability of different technologies, potential cost-benefits, and associated safety implications. The online application will give thorough guidance to end-users, boat builders, designers, good understanding of the emissions, efficiency and safety and easy-to-customize strategies whilst minimising the commercial risks of deployment.

The activities of this task require the collaboration of Aalto, KTH, GUT and SSPA. This transnational collaboration will extend the boundaries of the framework's applicability to the entire Baltic region and beyond. Notably the development of a sustainable SHC framework may lead to the formation of policies for improved safety and performance while maintaining higher airborne and underwater noise emissions standards

2,956 / 3,000 characters

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

D 1.4

Title of the deliverable

Framework and a web-based decision support tool with a pilot plan

65 / 100 characters

Description of the deliverable

Task A1.4 will deliver the framework, a preliminary web-based tool and pilot plan for implementation under task A2.4. Those will help evaluate the equivalent emissions footprint of SHC under different operational scenarios and environmental conditions. It is envisaged that the web based tool developed will practically assist end-users (boat owners and manufacturers) to select the most suitable design and operational solutions in terms of environmental, safety, and economic benefits. The tool will include guidance on the general applicability of each technology, potential cost-benefits, and associated safety implications. This information will serve as an important backbone to a web-based catalogue which can subsequently be extended and improved. The optimal combination of different technology options and their feasibility will be enabled by the implementation of an AI module. Special emphasis will be placed on cyber security and intellectual property rights. The online application will give thorough guidance to boat owners, builders, and design offices on the energy efficiency saving technologies/solutions and relevant industry standards, regulatory approvals, best practice guidance, and easy-to-customize business strategies. Lastly, the application will enable the user to simulate investment scenarios (CAPEX, OPEX) over the life cycle, the performance of the ship/fleet, assess regulatory compliance, and share the solutions with end users, boat associations, and other stakeholders. The co-existent participation of Aalto, R2, KTH, ABB and SSPA in the development process and the communication of findings to end users across the Baltic region under WP3 will ensure the translational value of this work.

1,727 / 2,000 characters

Which output does this deliverable contribute to?

O2.4

4 / 100 characters

5.6.6 Timeline

Period:	1	2	3	4	5	6
WP.1: Preparing solutions						
A.1.4: Design of a sustainability framework and optimisation tool to support GSC design and operations						
D.1.4: Framework and a web-based decision support tool with a pilot plan						

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 4 - Gdańsk University of Technology

Work package leader 2 Please select

5.4 Work package budget

Work package budget 30%

5.4.1 Number of pilots

Number of pilots 6

5.5 Target groups

	Target group	How do you plan to reach out to and engage the target group?
1	Small and medium enterprise Boat industry: Small High-speed Craft designers, manufacturers and resellers in FIN, SWE, EST, PL and other BSR countries. 122 / 500 characters	The solution will be presented and distributed through the SME boat builders in the BSR. They can directly embed these solutions in their design process, as well as in the existing systems such as Power Management System (or add it as an additional software to the control system, if there is no PMS in advance). Representatives of this target group will be involved in the testing and evaluation of O2.1 (the partner SME BWB), as well as of O2.2-2.4 (invited boat builders and designers). 492 / 1,000 characters
2	Higher education and research institution Units responsible for the education of naval architects and engineers, and the related RDI operation in all BSR countries. 122 / 500 characters	The used methodology for design, optimisation and operation of the SHC will be published and accessible for higher education and research institutes, so they can improve them for further application not only for SHC but for large sea-going ships, as well as inland water vessels. Academic cooperation is facilitated in WP2 by the universities (Aalto, KTH, TalTech, GUT) and SSPA. Candidates for the exchange of ideas are Chalmers University (SE) on naval architecture and sustainable design, the University of Rostock (DE) on performance modelling and simulations, DTU (DK) on dynamics and underwater noise. Interaction will be achieved by organising online meetings and presentations. The aims of the meetings are to (i) share thoughts about the pilot set-ups and the piloted solutions in academic terms; (ii) discuss the important aspects to be included in the educational materials (A/D3.5). 898 / 1,000 characters
3	Interest group Boat operators in FIN, SWE, EST, PL and other BSR countries: leisure boaters; authorities and research institutes using HSC as work boats; operators of marine public transport in coastal areas. 194 / 500 characters	The boat operators and associations in the BSR are the main interest groups. They include leisure boaters, authorities and research institutes using SHC as work boats, operators of marine public transport in coastal areas. Particularly, the associated partner organisations Swedish Marine Industries Federation and the Swedish Boaters Union, the Finnish Boatbuilders Association, and The Polish Chamber of Marine Industry and Water Sports – POLBOAT are the already committed representatives of interest groups. Invited boat owners and operators are involved in the evaluation of the O2.4 (web-based tool) 606 / 1,000 characters
4	National public authority Authorities planning and regulating boating activities in all BRS countries. 76 / 500 characters	The authorities planning and regulating boating activities in the BSR countries are the national public authorities that are considered as the target groups. For instance, The Swedish Maritime Administration, the Polish Maritime Office in Gdynia by GUT. Invited representatives of regulatory authorities will be involved in the evaluation of O2.4. (web-based tool). 367 / 1,000 characters
5	Large enterprise Big maritime design and manufacturing companies in FIN, SWE, EST, PL and other BSR countries 92 / 500 characters	Large enterprises (for example ABB) can use the prepared pilots and solutions for further integration and application in their products. Invited representatives of large enterprises will be involved in the evaluation of O2.4 and potentially also some other outputs. 268 / 1,000 characters

5.6 Activities, deliverables, outputs and timeline

No.	Name
2.1	Model testing, validating and evaluating the selected high-efficiency HSC hull form
2.2	Testing and validating the digital tool for energy-efficient and silent propulsion design
2.3	Validating and evaluating the strategies for safe and green operation
2.4	Evaluating the sustainability framework and tool to support green SHC design and operations

WP 2 Group of activities 2.1

5.6.1 Group of activities leader

Group of activities leader PP 8 - SSPA Sweden AB

A 2.1

5.6.2 Title of the group of activities

Model testing, validating and evaluating the selected high-efficiency HSC hull form

83 / 100 characters

5.6.3 Description of the group of activities

The efficient hull form introduced in A1.1 and D1.1 has been developed based on the high-fidelity numerical simulations. To be able to introduce the hull as an output useful to the target groups, we need to conduct the model test in SSPA's towing tank in Gothenburg, Sweden. Model testing is the standard procedure to prove the high performance and efficiency of boat hulls in near real world condition. To this end, the following steps will be taken:

Step 1. Calm water test: the hull model will be towed in calm water to predict the performance of the hull in various velocities. Accordingly, the resistance of the hull can be estimated; this is considered equivalent to the emission.

Step 2. Motions in regular waves: Afterwards, the hull performance in a simplified case of regular waves will be evaluated to be able to verify the validity of our numerical simulations.

Step 3. Motions in irregular waves: since in the real world, sea waves are not regular, we will conduct model tests in irregular waves to assure that the hull form has a soft ride quality in real sea conditions. The ride quality has a direct relation to the fuel consumption. Softer the boat moves in waves, lesser fuel needs to be consumed.

Step 4. Evaluating and analysing the results: after conducting the model tests in calm water, regular and irregular waves, we will go through evaluating and analysing the piloting results. For that purpose, we will gather the target groups from various countries and present our findings from piloting. We will also compare the piloting results with our numerical simulations to discover any inconsistency in the results and needs for an adjustment.

Step 5. Adjusting the results: will be mainly based on the standard procedure defined by International Towing Tank Conference (ITTC) adopted by boat builders and boat designers worldwide. This procedure transforms the results from the model scale to the full scale. Since there are always challenges in this transformation, we will organise our simulations in both model and full scales to assure that the planned adjustment satisfies the required accuracy.

After finalising the above mentioned steps, the output will be a well-piloted/evaluated high-efficiency hull form that will be ready to be transferred to the target groups with a very high level of fidelity. It is worth mentioning that the whole piloting, evaluating and adjusting process will be conducted by cooperation of academic bodies, target groups and end users from four different countries. In the preparation phase, KTH, SSPA, Aalto and TalTech will be involved. The piloting will be performed by SSPA and KTH. Evaluations and analysis will be conducted by KTH, Aalto, BWB, SSPA, GUT and TalTech, and adjustments will be executed by SSPA, KTH, TalTech and Aalto.

2,804 / 3,000 characters

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

O 2.1

Title of the output

Green and Safe hull form for small high speed craft

51 / 100 characters

Description of the output

The output 2.1 will be an innovative, fuel efficient, and safe hull form that will be piloted through experimental tests in different practical scenarios. The main purpose for developing this output is providing the target groups a small craft hull form that can address the environmental concerns regarding high speed craft activities in the Baltic sea region. Since small high speed craft hull design is a multi-dimensional task, mere focus on emission aspects cannot be a real solution. Because of that we will also consider safety and ride quality of small craft operation in sea by conducting model tests in irregular waves. Therefore, the developed output will satisfy various market demands regarding green and safe boating.

Today the European boat industry owns 26% of the world SHC market. Notwithstanding this, in recent years the growing competition from Asia and North America is threatening Europe's future market share. Since foreign competitors adapt their products more closely to consumer demands, accelerating innovation in design is essential to maintain the competitiveness of the EU boat industry. Therefore, development of a green and safe hull form based on the scientific numerical and experimental campaign and releasing it to the target groups in the region, will increase competitiveness of Baltic and northern boat builders and boat designers in the global market.

To maximize the effectiveness of the developed solution and output in the region, partners, target groups and end users from Sweden, Estonia, Poland and Finland have been involved in development of O 2.1 as mentioned in A2.1. It will also be tried to invite interested parties from other countries to our meeting.

1,709 / 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 Small and medium enterprise Boat industry: Small High-speed Craft designers, manufacturers and resellers in FIN, SWE, EST, PL and other BSR countries.	Through SSPA's design office, SMEs that design and develop work boats and military crafts will be involved in using the tools and outcomes from A1.1 and O2.1 in the years following the project completion. 205 / 1,000 characters
Target group 2 Higher education and research institution Units responsible for the education of naval architects and engineers, and the related RDI operation in all BSR countries.	Tank testing and O2.1 ensures a hands-on and direct visualisation of results, adding benefit to the more numerical approach taken by the higher education academic partners and allowing to integrate lecture notes and seminars with pictures and data from O2.1. Transfer and co-development of sustainable design knowledge and practices among universities is also a remarkable added value that can promote the development of technology needed in the Green and Digital Transition. 475 / 1,000 characters
Target group 3 Interest group Boat operators in FIN, SWE, EST, PL and other BSR countries: leisure boaters; authorities and research institutes using HSC as work boats; operators of marine public transport in coastal areas.	The Swedish Marine Industries Federation and the Swedish Boaters Union are invited by SSPA and the Finnish Boatbuilders Association invited by KMRA as members of the reference group. They will be engaged as representatives of boat manufacturers and of boat users through participation in periodic meetings, provision of input into project outcomes and documentation, and attendance of project events. This will create trust and willingness to use the outcomes from D1.1 and O2.1 in the years following the project completion in the design and development as well as in the recommendations to users of SHC. The Lighthouse centre (invited by SSPA) can also be an important platform via which the project can communicate results as they can provide support in the dissemination of project events and results. 805 / 1,000 characters
Target group 4 National public authority Authorities planning and regulating boating activities in all BRS countries.	The Swedish Maritime Administration and Estonian Maritime Administration are invited by SSPA and TalTech as members of the reference group. They will be engaged as the authorities and as the representatives of boat users via periodic meetings; will provide input into project outcomes and documentation and attend project events. O2.1 will also be of particular interest to public authorities that regulate inland traffic and fast ferries in the Baltic region in terms of outcomes beyond the project timeline that can benefit sustainable transport of the Baltic sea. 566 / 1,000 characters
Target group 5 Large enterprise Big maritime design and manufacturing companies in FIN, SWE, EST, PL and other BSR countries	Engagement of large enterprises will be ensured via the participation of ABB as a consortium associate and via the participation of R2 and SSPA in the consortium. These companies have significant access to a network of large organisations. With A2.1 being held in SSPA's facilities, it will be possible to engage with SSPA's customers that will be able to attend the tests virtually, allowing them to engage in the outcomes even beyond the project's timeline. 460 / 1,000 characters

Durability of the output

Keeping the output alive is an interest arising from the institutional natures of all the partners. The results will be published in high-quality journals and conferences as part of the normal operation of the partners. The partners respect the open access principle in their publishing. The post-project activities and outcomes will be disseminated on the social media pages of the participants where target groups can be reminded of the project and the outputs, and informed about their impact. The experimental data will be documented in laboratory reports including the electronic link to the raw data stored in repositories that support permanent handles. Discussion on the outputs will continue in the partners' networks and new projects will be developed.

763 / 1,000 characters

5.6.6 Timeline

Period:	1	2	3	4	5	6
WP.2: Piloting and evaluating solutions						
A.2.1: Model testing, validating and evaluating the selected high-efficiency HSC hull form						
O.2.1: Green and Safe hull form for small high speed craft						

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 5 - Aalto University

A 2.2

5.6.2 Title of the group of activities

Testing and validating the digital tool for energy-efficient and silent propulsion design

89 / 100 characters

5.6.3 Description of the group of activities

The purpose of this task is to carry out a pilot for the validation of the guidance notes developed under A1.2 for energy efficient and silent propulsors. The pilot plan will involve testing of the steps for design selection and implementation of silent propulsion on designs developed by R2 and commercial specifications manufactured by BWB. The plan will be implemented in three stages namely (i) presentation by Aalto of the guidance notes and discussion to all project stakeholders and associated to the project organisations; (ii) testing of the procedure by design and manufacturing teams employed by R2, BWB, and commented also by the R&D team of SSPA; (iii) an open workshop that will communicate final results and establish the criteria for procedure development and implementation. The collaboration between project partners from different BSR will ensure the translational setup of this process. The open workshop will help adjust the solutions for transfer to WP3.

980 / 3,000 characters

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

O 2.2

Title of the output

Guideline document for green (energy-efficient and silent) propulsion design

76 / 100 characters

Description of the output

The purpose of this output is to assist designers and manufacturers of SHC propulsion systems with the development and selection of silent and energy efficient propulsion systems. The content of the deliverable will consist of (i) overview of systems, design targets and specifications; (ii) green propulsor design implementation measures; (iii) overview of method and tools for the evaluation of underwater emissions; (iv) a process for design development and assessment. Piloting will involve four open end user workshops with the aim to validate each of the aforementioned chapters (i) – (iv). The criteria and applicability of the information presented will be judged from end user, designer, boat builder and policy maker perspectives. Such an approach will ensure better implementation of the guidelines under the web based tool and sustainability framework developed in A1.4

881 / 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 Small and medium enterprise Boat industry: Small High-speed Craft designers, manufacturers and resellers in FIN, SWE, EST, PL and other BSR countries.	The guidance notes will be presented and distributed through R2 and associated SME boat builders (their interest organisations SweBoat, POLBOAT, Finnboat and the Association of Estonian Marine Industries) in the BSR. These enterprises and organisations will contribute to the validation of the guidance notes and embed them in their quality control design development/manufacturing process. 391 / 1,000 characters
Target group 2 Higher education and research institution Units responsible for the education of naval architects and engineers, and the related RDI operation in all BSR countries.	The methodology embedded in the guidance notes will be used for the development of teaching and learning material on SHC. Such courses will be taught by university partners to undergraduate and postgraduate naval architects. 224 / 1,000 characters
Target group 3 Interest group Boat operators in FIN, SWE, EST, PL and other BSR countries: leisure boaters; authorities and research institutes using HSC as work boats; operators of marine public transport in coastal areas.	The Swedish Marine Industries Federation and the Swedish Boaters Union are invited by SSPA and the Finnish Boatbuilders Association invited by KMRA as members of the reference group. They will be engaged as representatives of boat manufacturers and of boat users. The knowledge developed will be embedded in future policy standards 332 / 1,000 characters
Target group 4 National public authority Authorities planning and regulating boating activities in all BRS countries.	The Swedish Maritime Administration is invited by SSPA as a member of the reference group. They will be engaged as an authority and as a representative of boat users via periodic meetings. They will make use of the guidance notes to develop an initial format of the future rules and regulations for SHC. 304 / 1,000 characters
Target group 5 Large enterprise Big maritime design and manufacturing companies in FIN, SWE, EST, PL and other BSR countries	Large enterprises (e.g., ABB) can use the solutions for further integration of power management, control and safety systems in their products. 142 / 1,000 characters

Durability of the output

Keeping the output alive is an interest arising from the institutional natures of all the partners. The guideline document is made available and disseminated in channels maximising its impact. The link to its location is provided on the project's web page. The results are published in high-quality journals and conferences as part of the normal operation of the partners. The partners respect the open access principle in their publishing. The output will continue its life as part of the basic operations of universities. The universities will (i) develop novel ideas on disciplines of marine hydrodynamics, engineering and technology that contribute to the green and silent design of SHC; (ii) develop new courses for the education of naval architects/marine engineers; (iii) develop concept tools that could form future spin-off enterprises and help grow the services in the sector. Discussion on the output continue in the partners' networks and new projects are developed.

979 / 1,000 characters

5.6.6 Timeline

Period:	1	2	3	4	5	6
WP.2: Piloting and evaluating solutions						
A.2.2: Testing and validating the digital tool for energy-efficient and silent propulsion design						
O.2.2: Guideline document for green (energy-efficient and silent) propulsion design						

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 4 - Gdańsk University of Technology

A 2.3

5.6.2 Title of the group of activities

Validating and evaluating the strategies for safe and green operation

69 / 100 characters

5.6.3 Description of the group of activities

Steps:
The first version of the operational control strategies and algorithms to reduce fuel consumption and GHG emissions will be assessed.
1st Pilot: Based on the assessment above, the prepared strategies and algorithms should pass two steps under two parallel actions: they will be verified and also embedded in software and hardware.
In case of need of modification, the strategies will be revised and modified.
2nd Pilot: The final validation and testing of the strategies and algorithms will be done and approved.

The results will be evaluated using simulators and real vessels. Boatbuilders and associate organisations, which are directly engaged in the building and operation of SHC vessels, will assess the results.

The test results will be used to prepare the guidelines on integrating the safety, power management and control systems for developing the deliverable. The goal is to decrease the annual fuel consumption by 10%. Additionally, the safety level will be accounted for through a human factors perspective. The solution also enhances the digitization and digitalization level of SHC, as three different systems can be integrated under an overall system with optimum operation possibilities. The latter should improve the quality of shore-vessel cooperation, as well as the autonomy of SHC. The solution is general and applicable for all SHC, independent of the power source, type of prime mover, and propeller.

The worked out strategies will also be embedded both in software and hardware to be integrated into the decision support tool (O2.4) of the project for demonstration. The solution which is regarded as operational aspects of small high-speed craft to reduce the fuel consumption and the selected (main) elements of GHGs can be directly delivered to the manufacturers, shipyards, and industrial stakeholders.

Transnational setting: The outputs include strategies and algorithms to reduce fuel consumption and GHG emissions (prepared by GUT) and an assessment of these strategies and algorithms. The outcome of the assessment is a visual tool giving recommendations to captains on how to navigate in an environmentally-friendly manner (prepared by BWB). Based on the first version of the outputs within WP1(1.3), the prepared strategies and algorithms should pass two steps under two parallel actions: they will be verified by SSPA using the existing simulators, and will also be embedded in software and hardware (by BWB and SSPA), so that they can be tested, and integrated into the final solution.

2,533 / 3,000 characters

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

O 2.3

Title of the output

Strategies and finalized guideline document

43 / 100 characters

Description of the output

Purpose: To increase the energy-efficiency and safety of SHC.

Content: The output includes two main parts: the first is a set of verified strategies and algorithms ready for application and the second is a guideline on integrating the safety, power management, and control systems. The output will be worked out by GUT, BWB and SSPA.

The presented solutions: The outcome is a visual tool giving recommendations to captains on how to navigate in an environmentally-friendly manner. Decreasing the fuel consumption by 10%, decreasing GHG emissions, and considering safety by including human factors are the goals of the solution that are presented by this output.

Transnational value: 3 partners from 3 different EU countries will work together on this output. The results will be available via a web tool for public use in all BSR countries.

845 / 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 Small and medium enterprise Boat industry: Small High-speed Craft designers, manufacturers and resellers in FIN, SWE, EST, PL and other BSR countries.	The solution regarding the operational aspects of SHCs that includes a set of control strategies for reducing the fuel consumption and emissions with keeping the safety at the required level, as well as optimisation of general arrangements will be presented and distributed through the SME boat builders in the BSR. They can directly embed these solutions in their design process, as well as in the existing systems such as Power Management System (or add it as an additional software to the control system, if there is no PMS in advance). 539 / 1,000 characters
Target group 2 Higher education and research institution Units responsible for the education of naval architects and engineers, and the related RDI operation in all BSR countries.	The methodology used for preparing the control strategies will be published and accessible for higher education and research institutes, so they can improve the strategies for further application not only for SHCs but for large sea-going ships. 245 / 1,000 characters
Target group 3 Interest group Boat operators in FIN, SWE, EST, PL and other BSR countries: leisure boaters; authorities and research institutes using HSC as work boats; operators of marine public transport in coastal areas.	The outcome of is a visual tool giving recommendations to captains on how to navigate in an environmentally-friendly manner. 124 / 1,000 characters
Target group 4 National public authority Authorities planning and regulating boating activities in all BRS countries.	When informed about the output and its opportunities, the authorities responsible for boating-related activities in the BSR can consider its applicability when it comes to their regulatory and planning work. 207 / 1,000 characters
Target group 5 Large enterprise Big maritime design and manufacturing companies in FIN, SWE, EST, PL and other BSR countries	Large enterprises (for example ABB) can use the prepared pilots and solutions for further integration of power management, control and safety systems in their products 167 / 1,000 characters

Durability of the output

Keeping the output alive in a way or another is an interest arising from the institutional natures of all the partners. The guideline document and the visual tool will be made available and disseminated in channels that maximise their impact. The links to their locations are provided on the project's web page. The results are published in high-quality journals and conferences as part of the normal operation of the partners. The partners respect the open access principle in their publishing. The output will continue its life as part of the education in universities. The output will also be integrated into the final O2.4 tool. Discussion on the outputs will continue in the partners' networks and new projects will be developed.

734 / 1,000 characters

5.6.6 Timeline

Period:	1	2	3	4	5	6
WP.2: Piloting and evaluating solutions						
A.2.3: Validating and evaluating the strategies for safe and green operation						
O.2.3: Strategies and finalized guideline document						

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 5 - Aalto University

A 2.4

5.6.2 Title of the group of activities

Evaluating the sustainability framework and tool to support green SHC design and operations

91 / 100 characters

5.6.3 Description of the group of activities

The steps to pilot the solution include:
1. Testing the SHC operation profiles, i.e., evaluating the obtained description of the most common scenarios of an SHC operation in the Baltic Sea by representatives of the target groups, including members of the project partners. Adjusting the operation profiles (e.g., weather data and description of task-related operation behaviour of an SHC) considering the received feedback based on the completed questionnaire survey.

2. Testing the model for simulation of SHC operation lifecycle is a cycle including (1) an update of the model considering the current testing results on the model elements (design solutions, the optimized automation and control strategies, and different operation profiles), (2) checking the relevance and reliability of the model with multiple runs of the model visualizing the dynamic of SHC operation, (3) recording the model errors and logic issues found in the model, (4) adjusting the model, and (5) evaluating the model by representatives of the target groups, including members of the project partners. The cycle is iteratively repeated as much as necessary during the testing period.

3. Testing the multi-objective optimization tool, namely executing multiple optimization rounds to collect data on the reliability (possible errors in the code), efficiency (ability to find the best solution), and performance (calculation time) of the algorithms. Adjusting the tool to deal with the found issues.

4.Testing an interactive web-based tool for safe and sustainable SHC design. The step aims to test the finalized SHC optimization framework, packed together with the guidance on the general applicability of each technology, potential cost benefits, and associated safety implications. Functionality testing is performed by representatives of the target groups, including members of the project partners, to provide feedback on the usability (user-friendliness) and reliability (possible errors in the code) of the framework, as well as a review of the guidance strength and weakness. The testing is finalized by the final adjusting considering the obtained feedback.

Steps 1-4 directly develop the output O2.4 Finalised decision support framework and open access web-based tool, contributing to sustainable shipping. Group of activities A 2.4 integrates the results of A 2.1 – A 2.3 and naturally requires the collaboration of Aalto, KTH, and GTU. Consulting with SSPA and ABB will ensure the practical relevance of the solutions. Transnational collaboration extends the boundaries of the framework's applicability to the entire Baltic region.

2,624 / 3,000 characters

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

O 2.4

Title of the output

Finalised decision support framework and open access web-based tool

67 / 100 characters

Description of the output

The output will be a product lifecycle management system for high-speed crafts with a web-based Artificial Intelligence tool that accounts for environmental sustainability, considering CO2 and noise emissions. The system aims to optimise the conceptual design and operation strategies of SHC, considering their purpose and lifecycle. The developed decision support tool aims to assist ship designers, manufacturers, and boat owners in selecting the most suitable design and operational solutions for environmental, safety, and economic benefits. The applicability and reliability of the framework are ensured by inviting the international end user parties into the project to test and verify the feasibility of the individual technical solutions, the decision support tool, and the web-based application. The transnational value and applicability of the project are ensured by its scale, considering the entire region of the Baltic Sea.

936 / 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 Small and medium enterprise Boat industry: Small High-speed Craft designers, manufacturers and resellers in FIN, SWE, EST, PL and other BSR countries.	The solution includes guidance on the general applicability of the evaluated technologies and the potential cost-benefits to support safe and sustainable design and operation of green SHC, acknowledging the associated safety implications. The online application will give thorough guidance to boat designers and builders on the energy saving technologies/solutions and relevant industry standards, regulatory approvals, best practice guidance, and easy-to-customise business strategies. Lastly, the application will enable the companies to simulate investment scenarios (CAPEX, OPEX) over the life cycle, the performance of the ship, and assess regulatory compliance. The boat designing and building companies can potentially embed the solution in their design and business processes 783 / 1,000 characters
Target group 2 Higher education and research institution Units responsible for the education of naval architects and engineers, and the related RDI operation in all BSR countries.	The engineering methods, optimization logic and sustainability framework behind the web-based tool will be discussed in the scientific community and can be used to develop new courses and teaching materials (partly as part of A/D3.5). 234 / 1,000 characters
Target group 3 Interest group Boat operators in FIN, SWE, EST, PL and other BSR countries: leisure boaters; authorities and research institutes using HSC as work boats; operators of marine public transport in coastal areas.	O2.4 is a web-based tool, easy to access for boat owners and operators. The solution includes guidance on the general applicability of the evaluated technologies and the potential cost-benefits to support safe and sustainable design and operation of green SHC, acknowledging the associated safety implications. The online application will give thorough guidance to boat operators on energy saving technologies/solutions and operation strategies supporting more sustainable (greener but still safe) boating. 506 / 1,000 characters
Target group 4 National public authority Authorities planning and regulating boating activities in all BRS countries.	By providing information on the energy efficiency saving technologies/solutions and relevant industry standards, as well as the current regulatory approvals, the online application of O2.4 can support the authorities in their work, when they aim for planning standards, recommendations, services, and regulations to advance the green transition and sustainable blue economy in terms of the SHC traffic in BSR. 410 / 1,000 characters
Target group 5 Large enterprise Big maritime design and manufacturing companies in FIN, SWE, EST, PL and other BSR countries	The solution includes guidance on the general applicability of the evaluated technologies and the potential cost-benefits to support safe and sustainable design and operation of green SHC, acknowledging the associated safety implications. The online application will give thorough guidance on the energy saving technologies/solutions and relevant industry standards, regulatory approvals, best practice guidance, and easy-to-customize business strategies. Lastly, the application will enable the companies to simulate investment scenarios (CAPEX, OPEX) over the life cycle, the performance of the ship, and assess regulatory compliance. The large enterprises (e.g. ABB) can consider the solution to be embedded in their design and business processes, or for further integration of power management, control and safety systems in their products. 847 / 1,000 characters

Durability of the output

Keeping the output alive in a way or another is an interest arising from the institutional natures of all the partners. The web-based optimisation tool will be disseminated in diverse channels to maximise its use and societal impact. The link to its location is provided on the project's web page. The results are published in high-quality journals and conferences as part of the normal operation of the partners. The partners respect the open access principle in their publishing. The partner universities will utilise O2.4 both in their education (for example in group projects or BSc and MSc theses) and in research for further developments (for example within institutional, national, or international grants, or Ph.D. theses). KMRA will take special care for disseminating the potential publications and media appearances also after the project. Discussion concerning the outputs continue in the partners' networks and new projects will be developed.

955 / 1,000 characters

5.6.6 Timeline

	Period: 1	2	3	4	5	6
WP.2: Piloting and evaluating solutions						
A.2.4: Evaluating the sustainability framework and tool to support green SHC design and operations						
O.2.4: Finalised decision support framework and open access web-based tool						

5.6.7 This deliverable/output contains productive or infrastructure investment ☐

Work package 3

5.1 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 - Kotka Maritime Research Association

Work package leader 2 PP 3 - Tallinn University of Technology

5.4 Work package budget

Work package budget 35%

5.5 Target groups

	Target group	How do you plan to reach out to and engage the target group?
1	Small and medium enterprise Boat industry: Small High-speed Craft designers, manufacturers and resellers in FIN, SWE, EST, PL and other BSR countries. 122 / 500 characters	In A3.1 Stakeholder mapping study BSR SMEs and their representative bodies in the boat industry are mapped, contacted (by email) and informed about the project. Their interests towards the project are surveyed, enabling targeted dissemination and involvement. The contact networks of the associated organisation can be utilised. A3.2 conducts a web-based query targeted to the SMEs, to map attitudes of the boat industry actors towards green small craft solutions and the challenges and limitations hindering the green transition in their products. Also this information is utilised when planning the project events of A3.3., to communicate the solutions (O2.1 - 2.4) to the target groups and ensure the transfer to production and use. SMEs will be involved in the A3.3 events aiming to create dialogue among the SMEs and boat operators about critical points when creating a market for green small craft solutions in the BSR area, acknowledging both the requirements for supply and demand. 990 / 1,000 characters
2	Higher education and research institution Units responsible for the education of naval architects and engineers, and the related RDI operation in all BSR countries. 122 / 500 characters	Units responsible for the education of naval architects and engineers, and the related RDI operation in all BSR countries will be made aware of the project by inviting their representatives to the project events under A3.3. (especially the symposium and final seminar). The A3.5 produces an open source educational material package "from universities to universities", to be launched as part of the final seminar and disseminated to the relevant educational institutes. Also the partner universities will benefit from the package and use it in their future teaching operation. 577 / 1,000 characters

	Target group	How do you plan to reach out to and engage the target group?
3	Interest group Boat operators in FIN, SWE, EST, PL and other BSR countries: leisure boaters; authorities and research institutes using HSC as work boats; operators of marine public transport in coastal areas. 194 / 500 characters	In the A3.1 Stakeholder mapping and analysis, key representative organisations of BSR boat operators are mapped, contacted (by email) and informed about the project. These organisations are the key contact points to the boaters. The contact networks of the associated interest group organisations will be utilised. A3.2 conducts a web-based query targeted to boat operators, to map their attitudes towards green small craft solutions and the challenges and limitations hindering the boaters' green transition. This information is utilised when planning the project events of A3.3., to communicate the solutions (O2.1 - 2.4) to the target groups and ensure the transfer to production and use. Representatives of the boat operators will be involved in the A3.3 events aiming to create dialogue among the SMEs and boat operators about critical points when creating a market for green small craft solutions in the BSR area, acknowledging both the requirements for supply and demand. 980 / 1,000 characters
4	National public authority Authorities planning and regulating boating activities in all BRS countries. 76 / 500 characters	Authorities responsible for monitoring and regulation of maritime activities in the BSR are mapped, contacted and informed about the project (A3.1). Their interests towards the project are surveyed, enabling targeted dissemination and involvement. Under A3.4 discussion events with authorities will be organised, through which the project aims to support (1) the Commission considerations on the incorporation of new propulsion systems in the current review of the Recreational Craft Directive; (2) the work of maritime administrations to develop rules and regulations for the design of green small high-speed craft for operations in the Baltic and beyond; (3) the work of naval administrations to assure the mission of coast guard vessels that are safe and efficient; (4) the policy of governments to regulate safe and sustainable operations of small HSC in the BSR coastal areas and to support the regional economy with high-tech state of the art products in the recreational boating sector. 995 / 1,000 characters
5	Large enterprise Big maritime design and manufacturing companies in FIN, SWE, EST, PL and other BSR countries 92 / 500 characters	Big maritime design and manufacturing companies in BSR are mapped, contacted and informed about the project (A3.1). Their interests towards the project are surveyed, enabling targeted dissemination and involvement. The contact networks of the associated organisation can be utilised. The query (A3.2) targeted to the boat industry actors can be sent to the suitable large enterprises too to map the challenges and limitations hindering the green transition in their products. The interested large enterprise actors are kept aware of the project's outcomes and invited to the project events of A3.3., to communicate the solutions (O2.1 - 2.4) to them, to be potentially adopted also by the large companies. Interested large enterprises will be involved in the A3.3 events aiming to create dialogue among the boat industry actors and boat operators about critical points when creating a market for green small craft solutions in the BSR area. 941 / 1,000 characters

5.6 Activities, deliverables, outputs and timeline

No.	Name
3.1	**Stakeholder mapping and analysis for the effective outreach**
3.2	**Survey on attitudes and boundary conditions concerning the implementation of green SHC solutions**
3.3	**Promoting the sustainable Green Small Craft solutions and markets**
3.4	**Policy dialogue: Regulatory implications**
3.5	**Integrating the results to the training programmes of the future naval architects**

WP 3 Group of activities 3.1

5.6.1 Group of activities leader

Group of activities leader PP 1 - Kotka Maritime Research Association

A 3.1

5.6.2 Title of the group of activities

Stakeholder mapping and analysis for the effective outreach

59 / 100 characters

5.6.3 Description of the group of activities

To maximise the transferability of the project outcomes (O2.1 - O2.4), WP3 is started already in the beginning of the project. Under A3.1 a comprehensive stakeholder mapping and analysis of interests will be conducted, to reach the target groups in all BSR countries and to make the communication and interaction with them smooth and efficient.

As part of this activity group, electronic project dissemination materials will be prepared and all the identified organisations (relevant to the project framing) in the BSR area representing the listed target groups will be contacted by email, surveying their interest in being informed about the project's progress, activities and outcomes. In this context, the contact point and interests towards the different outcomes and coming project activities will be asked from each organisation, and the information stored in a database (for the project's internal use only). This way the dissemination and other communication during the project can be done effectively, avoiding unnecessary loading of the target organisations and the unnecessary workload of the project personnel.

The activity will be implemented by KMRA, SSPA and TalTech, but utilising the wide networks of all the partners and associates of the project. In addition, internet searches and web-based databases will be utilised for identifying the relevant organisations to be contacted.

In addition to the five target groups listed, the interest of other relevant groups will also be enquired, including for example NGOs and international and regional authorities.

1,580 / 3,000 characters

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

D 3.1

Title of the deliverable

Database of interested organisations, their contact persons and stakes in greener boating

89 / 100 characters

Description of the deliverable

As a result of A3.1, an international BSR-wide database of organisations interested in the project's progress, activities and/or outcomes is created including the contact points they have nominated. This database will be for the project's internal use only and the information included in it can be used only for the purposes of the project communication, as agreed with the organisations and addressed in the database. Based on the database, fit-for-purpose email distribution lists can be created throughout the project – something that makes the dissemination and interaction effective and impactful, maximising the project's capability to (a) involve the target groups in the project activities, and (b) ensure the transferability and durability of the outcomes. Deliverable D3.1 ensures that the target groups throughout the whole BSR area will get an opportunity to be involved in the project's activities and/or be informed about the project's progress and outcomes according to their level and area of interest.

1,019 / 2,000 characters

Which output does this deliverable contribute to?

O2.1 - O2.4

11 / 100 characters

5.6.6 Timeline

	Period: 1	2	3	4	5	6
WP.3: Transferring solutions						
A.3.1: Stakeholder mapping and analysis for the effective outreach						
D.3.1: Database of interested organisations, their contact persons and stakes in greener boating						

5.6.7 This deliverable/output contains productive or infrastructure investment ☐

WP 3 Group of activities 3.2

5.6.1 Group of activities leader

Group of activities leader PP 1 - Kotka Maritime Research Association

A 3.2

5.6.2 Title of the group of activities

Survey on attitudes and boundary conditions concerning the implementation of green SHC solutions

96 / 100 characters

5.6.3 Description of the group of activities

A3.2 aims to produce information that is relevant for maximising the transferability of the outputs (O2.1 - O2.4) of the project. This activity group plans and conducts two web-based cross-border surveys in the BSR area, one directed to the boat industry actors and another to boat operators (boaters). The first surveys the attitudes of the boat industry actors (the producers) towards greener small craft solutions and the challenges and limitations the actors may face that hinder the green transition in their products. The second survey focuses on the attitudes of, and the challenges and limitations faced by, the boat operators (the consumers/clients) in terms of their transition towards the use of greener small craft solutions. The survey results will be carefully analysed to understand what are the critical points when creating a market for green small craft solutions in the BSR area, acknowledging both the requirements for supply and demand.

As part of the queries, the respondents' awareness of the GHG and noise emissions from boating and the level to which the boaters acknowledge their possibilities to reduce the emissions through their operation strategies will also be surveyed. This information is needed in A3.3. and A3.4. where the outputs (O2.1 - 2.4) and their relevance and significance are communicated to the target groups.

The database (D3.1) created in A3.1 will be utilised to reach the relevant survey respondents, reinforced by utilising the social media channels of the project and its consortium members. The partners responsible for A3.2 are KMRA, SSPA and TalTech, but the expertise of the whole consortium will be utilised in planning the queries and interpreting the results.

1,721 / 3,000 characters

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

D 3.2

Title of the deliverable

Situational picture of the critical points for creating green small craft market in the BSR area

96 / 100 characters

Description of the deliverable

As the result of the analysed query responses, a situational picture is formed concerning the factors (opportunities and threats) that motivate and hinder the boat industry actors and the boat operators when it comes to their transition towards the design and production or procurement of greener and more sustainable small craft solutions. This information is needed in A3.3. and A3.4., to communicate the outputs (O2.1 - 2.4) of the project to the target groups and ensure their transfer to production and use, to advance the green transition, sustainable maritime traffic and coastal tourism, and the blue economy in the BSR.

629 / 2,000 characters

Which output does this deliverable contribute to?

O2.1 - O2.4

11 / 100 characters

5.6.6 Timeline

Period:	1	2	3	4	5	6
WP.3: Transferring solutions						
A.3.2: Survey on attitudes and boundary conditions concerning the implementation of green SHC solutions						
D.3.2: Situational picture of the critical points for creating green small craft market in the BSR area						

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 1 - Kotka Maritime Research Association

A 3.3

5.6.2 Title of the group of activities

Promoting the sustainable Green Small Craft solutions and markets

65 / 100 characters

5.6.3 Description of the group of activities

Under this activity group, transnational events are planned and organised to promote the development of a BSR market for green small craft solutions, particularly those developed in the project, but also in general for the new innovations to come. Boat operators should be made aware of the solutions and tools developed to enable and support greener boating. The boat industry actors should be informed both about new solutions to support their industrial work, but also about the interest and limitations of their clients (the boat operators) in terms of their motivations to invest in the green small craft products.

The events of A3.3 will increase the target groups' awareness of the solutions developed, the execution being carefully based on the D3.2 findings. One aim of the events is also to create dialogue among the target groups, to create a joint picture of the functional market and the required actions to create it. Here, the general findings of D3.2 can also be utilised as the starting point for the discussions.

As part of A3.3, the target groups will be informed about the results of the project concerning how much the GHG and under-water noise emissions can be decreased through (a) the developed technical solutions, (b) operating the vessels more sustainably, and (c) combining these optimally. The guidelines for green and sustainable operation (O2.3), as well as the open access web-based tool to support the green and sustainable design and operation (O2.4), will be launched and demonstrated.

The events are organised online or as hybrid events, as best suits the purpose and the world situation. The possibility for online attendance will remarkably improve the accessibility of the events and lower the threshold for participation, thus increasing the audience. Three transnational events will be arranged during periods 4 - 6. The final seminar will be a large hybrid event to bring together representatives of all target groups around the BSR and introduce them to the project's results and to discuss the opportunities and future of the green and sustainable small craft solutions. In addition to the previous, the project will be presented in a variety of external events.

KMRA will coordinate the activities, but all partners will have an important role in the planning and implementation. All dissemination concerning the project's outputs will occur under this activity group and be conducted jointly by the project partners.

2,471 / 3,000 characters

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

D 3.3

Title of the deliverable

Events and publications to promote the sustainable Green Small Craft solutions and markets

90 / 100 characters

Description of the deliverable

Transnational events organised by the project:

Event 1: a 1-day workshop (online or hybrid) - “Developing a BSR market for green small craft solutions”. The event will be organised at the end of period 4 based on the query results (D3.2) and the ongoing work (D1.1. - 1.4. and the ongoing pilots A2.1 - 2.4). Short presentations from the project personnel and potential external experts; panel discussions around the given themes and questions. A summarising memo to be compiled jointly with the participants after the event.

Event 2: a 1-day symposium (online or hybrid) - “Potential of the hull and propulsion optimisation, and the role of sustainable operation strategies in decreasing the GHG and noise emissions in the BSR”. The event will be organised at the end of period 5 based on the results and findings of the project (O2.1. - 2.4.). Presentations from the project researchers and partner companies.

Event 3: a 2-day final seminar (a hybrid event) - Launching and demonstrating the finalised solutions (O2.1 - 2.4). In period 6. Presentations and demonstration workshops. Panel discussions. Final conclusions.

External events to be participated to introduce and promote the project and its outputs
- “BoatShow” (annual exhibition, http://boatshow.pl, Warsaw)
- “Baltexpo” (biannual exhibition - next: Sept. 2023, Gdańsk)
- “Vene Båt” (the largest boating event in Northern Europe, organised yearly in Helsinki)
- The Association of Polish Maritime Industries FORUM OKRĘTOWE and Polish Maritime Technology Forum (each with more than 50 industrial members).
- Lighthouse centre and/or the Swedish Maritime Technology Forum (SMTF - RISE)
- HSBO 2023 forum for High-Speed Boat Operations (https://hsbo.org/)
- FAST 2023 (International Conference on Fast Sea Transportation)
- Events organised by the Interreg BSR community

1,839 / 2,000 characters

Which output does this deliverable contribute to?

O2.1 - O2.4

11 / 100 characters

5.6.6 Timeline

Period:	1	2	3	4	5	6
WP.3: Transferring solutions						
A.3.3: Promoting the sustainable Green Small Craft solutions and markets						
D.3.3: Events and publications to promote the sustainable Green Small Craft solutions and markets						

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 1 - Kotka Maritime Research Association

A 3.4

5.6.2 Title of the group of activities

Policy dialogue: Regulatory implications

40 / 100 characters

5.6.3 Description of the group of activities

Whereas A3.3 focuses specifically on the small craft manufacturers and operators, A3.4 operates on the RDI - policy interface. The specific target groups of A3.4 are the national authorities responsible for the planning, monitoring and regulation of maritime activities, or alternatively, resources or activities impacted by the small craft traffic in the BSR. These actors in the BSR area and their specific stakes will be mapped as part of A/D3.1 and they will be informed about the project's progress and results according to their request. In addition, the project plans to interact with the representatives of the European Commission responsible for the EU directives on recreational craft (2013/53/EU) and, in terms of work boats, directive on occupational safety and health (89/391/EEC).

Through A3.4 the project aims to support (1) the Commission considerations on the incorporation of new propulsion systems in the current review of the Recreational Craft Directive; (2) the work of maritime administrations to develop rules and regulations for the design of green, efficient and silent small high-speed craft (SHC) for operations in the Baltic and beyond; (3) the work of the naval administrations to assure the mission of coast guard vessels that are safe and efficient; (4) the policy of governments to regulate safe and sustainable operations of small SHC in the BSR coastal areas and to support the regional economy with high-tech state of the art products in the recreational boating sector. The above targets are justified by the project through the development of intellectual infrastructure, guidance notes, and educational material.

Under A3.4 Online or hybrid discussions (N 1-3) with relevant grouping (defined based on the stakeholder mapping study A/D3.1) of authorities will be organised, in which the participants share their knowledge and views with each other, the project consortium members, and potential invited external experts. In the last period, a white paper is produced, making a synthesis of the results of the project and the discussions undergone with the authorities. The project aims to involve authorities from all the BSR countries. Potential additional needs, channels and methods for policy impact will be mapped during the project.

A3.4 will be implemented by the research and education -oriented partners (SSPA, TalTech, Aalto; KTH, GUT), led by KMRA.

2,410 / 3,000 characters

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

D 3.4

Title of the deliverable

Policy dialogue and its documentation

38 / 100 characters

Description of the deliverable

Online or hybrid discussions (N 1-3) with relevant grouping (defined based on the stakeholder mapping study A/D3.1) of authorities, in which the participants share their knowledge and views with each other, the project consortium members, and potential invited external experts.

Summarising memos of the discussions.

A white paper, making a synthesis of the societal impacts of the results of the project, acknowledging the discussions undergone with the authorities. The white paper reflects the EU directives 2013/53/EU and 89/391/EEC in terms of the project's outcomes. It will be in line with the Directives, and new amendments to the International Code of Safety for High-speed Craft, 1994 (1994 HSC Code) and amendments to the International Code of Safety for High-speed Craft, 2000 (2000 HSC Code), which were adopted in Nov. 2021.

844 / 2,000 characters

Which output does this deliverable contribute to?

O2.1 - O2.4

11 / 100 characters

5.6.6 Timeline

Period:	1	2	3	4	5	6
WP.3: Transferring solutions						
A.3.4: Policy dialogue: Regulatory implications						
D.3.4: Policy dialogue and its documentation						

5.6.7 This deliverable/output contains productive or infrastructure investment ☐

WP 3 Group of activities 3.5

5.6.1 Group of activities leader

Group of activities leader PP 3 - Tallinn University of Technology

A 3.5

5.6.2 Title of the group of activities

Integrating the results to the training programmes of the future naval architects

81 / 100 characters

5.6.3 Description of the group of activities

Based on the results of WP1 and WP2 (D1.1. - 1.4. and O2.1 - 2.4) an open source online package of educational materials to be used for the education of naval architects, marine engineers and potentially master mariners will be prepared and published. The potential platforms for publishing will be mapped among the university partners, the Google Courses and LinkedIn courses being potential options, too. TalTech coordinates the activity, whereas all the university partners will participate in the planning and production of the materials (e.g. recorded lectures and slide shows).

583 / 3,000 characters

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

D 3.5

Title of the deliverable

Online educational material package

35 / 100 characters

Description of the deliverable

Open source online package of educational materials directed to be used as part of the university teaching. The package can consist of e.g. video lectures, pieces of text and Power point slide shows.
This deliverable will contribute remarkably to the durability of the project's outputs, transferring the information and tools to the use of tomorrow's yacht designers and builders.

382 / 2,000 characters

Which output does this deliverable contribute to?

O2.1 - O2.4

11 / 100 characters

5.6.6 Timeline

Period:	1	2	3	4	5	6
WP.3: Transferring solutions						
A.3.5: Integrating the results to the training programmes of the future naval architects					■	■
D.3.5: Online educational material package						■

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	6	N/A	N/A	**RCR 104 - Solutions taken up or up-scaled by organisations**	4	O2.1: The SME boat industry actors can embed the solution in their design and manufacturing processes. Large ship and boat building enterprises can use the solutions for further integration to their products. The boat operators are the clients who use the greener products. O2.2: The boat industry actors can use the output in the design specifications or for retrofitting on existing boats with the aim to improve efficiency and reduce underwater emissions. The boat operators are the clients who use the greener products. O2.3: The boat industry actors can directly embed the solution in their design process to develop greener small high-speed craft solutions. Boat operators can apply the solution to learn how they can navigate in a more environmentally-friendly manner. O2.4: The solution assists boat operators and boat industry actors to select the most suitable combinations of SHC design and operational solutions in terms of environmental, safety, and economic benefits. The tool will include guidance on the general applicability of each technology, potential cost-benefits, and associated safety implications. The optimal combination of different technology options and their feasibility can be identified. All: Universities can apply all the solutions in the education of naval architects/engineers. The knowledge gained through the solutions can be embedded in future policy standards and regulation. 1,418 / 2,000 characters
RCO 116 – Jointly developed solutions	4	O.2.1: Green and Safe hull form for small high speed craft	Providing the target groups with a small craft hull form geometry and specifications that can address environmental (energy-efficiency) as well as human factors (particularly exposure to motions) concerns regarding small high speed craft activities in the Baltic Sea Region given the large volume of the small crafts traffic in the sensitive coastal areas especially in summer months. 386 / 1,000 characters			
		O.2.2: Guideline document for green (energy-efficient and silent) propulsion design	Providing the target groups with guidance notes for efficient and silent propulsors for use in modern small high-speed craft designs / operations. The solution will help minimise underwater noise emissions and improve boat energy efficiency. 241 / 1,000 characters			
		O.2.3: Strategies and finalized guideline document	Providing the target groups with guidance for sustainable (green and safe) operation of small high-speed craft, including a set of control strategies for reducing the fuel consumption and emissions with keeping the safety at the required level. With a sustainable operation strategy, the fuel consumption and GHG emissions to air can be remarkably reduced, in parallel with the improved safety. 396 / 1,000 characters			

Output indicators	Total target value in number	Project outputs	Please explain how the solution presented in this output serves the target group(s).
		O.2.4: Finalised decision support framework and open access web-based tool	Providing the target groups with a framework and a web-based optimisation tool for the sustainable (safe and green) SHC design and operation. The tool accounts for environmental sustainability, considering CO2 and noise emissions. The system aims to optimise the conceptual design and operation strategies of small high-speed craft, considering their purpose and lifecycle. The developed decision support tool aims to assist ship designers, manufacturers, and boat owners in selecting the most suitable design and operational solutions for environmental, safety, and economic benefits.

587 / 1,000 characters

Output indicators | **Result indicators**

Output indicator	Total target value in number
RCO 87 - Organisations cooperating across borders	19

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	40	Project partners and associated organisations	Four universities in the field of marine technology (KTH, Aalto, GUT, TalTech), a research institute specialised in sustainable maritime development (SSPA), and two craft design and building SMEs (R2, BWB). The team is led by a research association (KMRA), dedicated to working on the science - stakeholder interface. The associates represent national marine authorities, boat industry and boat operators, and a Baltic-wide Intergovernmental Organisation (HELCOM). KMRA's mission is to support multi-sectoral collaboration to solve maritime-related sustainability issues. Universities conduct academic research and provide highest level education. SSPA is involved in the consortium both as end user and research institute aiming to sustainable maritime solutions. The SMEs wish to develop their business in a sustainable manner. The partners and associated organisations of different types share a common vision of the sustainable use of the Baltic Sea. The objectives and contents of the project and the planned roles support this. The project provides for the whole team a wide transnational network and possibilities to affect the development of solutions that will support the sustainable Green Transition and and Blue Economy The green transition is unavoidable for all the sectors of the society and the project is at the very core of their goal.
			1,360 / 1,500 characters
		Other organisations	The project aims to involve SMEs, large enterprises, boat operators' interest organisations, universities, and authorities outside the consortium, from as many BSR countries as possible. For them the project provides useful solutions to support their everyday operations. The project also aims - in collaboration with these actors - to increase awareness concerning the relevancy and existence of solutions to decrease the emissions of high-speed small craft traffic, and together start creating novel markets for these solutions, advancing the Green Transition and sustainable blue economy, as well as the global competitiveness of the Baltic Sea Region.
			655 / 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	Kotka Maritime Research Association	Active 22/09/2022	308,259.00	46,238.85	46,238.85
2 - PP	KTH Royal Institute of Technology	Active 22/09/2022	174,846.00	26,226.90	26,226.90
3 - PP	Tallinn University of Technology	Active 22/09/2022	207,832.00	31,174.80	31,174.80
4 - PP	Gdańsk University of Technology	Active 22/09/2022	172,800.00	25,920.00	25,920.00
5 - PP	Aalto University	Active 22/09/2022	482,625.00	72,393.75	72,393.75
6 - PP	Baltic Workboats	Active 22/09/2022	224,460.00	33,669.00	33,669.00
7 - PP	R2 Marine Ltd	Active 22/09/2022	48,072.00	7,210.80	7,210.80
8 - PP	SSPA Sweden AB	Active 22/09/2022	411,947.25	61,792.09	61,792.09
Total			2,030,841.25	304,626.19	304,626.19

No. & role	Partner name	CAT4 - External expertise & services	CAT5 - Equipment	Total partner budget
1 - LP	Kotka Maritime Research Association	95,600.00	5,000.00	501,336.70
2 - PP	KTH Royal Institute of Technology	0.00	0.00	227,299.80
3 - PP	Tallinn University of Technology	4,500.00	6,000.00	280,681.60
4 - PP	Gdańsk University of Technology	4,500.00	26,500.00	255,640.00
5 - PP	Aalto University	10,000.00	12,000.00	649,412.50
6 - PP	Baltic Workboats	0.00	37,000.00	328,798.00
7 - PP	R2 Marine Ltd	0.00	0.00	62,493.60
8 - PP	SSPA Sweden AB	0.00	110,407.00	645,938.43
Total		114,600.00	196,907.00	2,951,600.63

7.1.1 External expertise and services

Contracting partner	Group of expenditure	Item no.	Specification	Investment item?	Group of activities no.	Planned contract value	
4. Gdańsk Universit	Events/meetings	CAT4-PP4-A-0	Participation and publication fees (35 / 100 characters)	No	N/A	4,500.00	
5. Aalto University	Communication	CAT4-PP5-C-0	Dissemination Material (23 / 100 characters)	No	3.1 3.2 3.3 3.4 3.5	10,000.00	
3. Tallinn Universitv	Events/meetings	CAT4-PP3-A-0	Organising a partner meeting (28 / 100 characters)	No	N/A	2,000.00	
3. Tallinn Universitv	Events/meetings	CAT4-PP3-A-0	Organising a dissemination event (32 / 100 characters)	No	3.3	2,000.00	
3. Tallinn Universitv	Communication	CAT4-PP3-C-0	Promotional materials (21 / 100 characters)	No	3.3	500.00	
1. Kotka Maritime	Events/meetings	CAT4-PP1-A-0	Event 1: workshop, 1 day, on-line (marketing, studio rents, interpretation, IT services) (88 / 100 characters)	No	3.3	4,200.00	
1. Kotka Maritime	Events/meetings	CAT4-PP1-A-0	Event 2: Symposium, 1 day, on-line (marketing, studio rents, interpretation, IT services) (89 / 100 characters)	No	3.3	4,200.00	
1. Kotka Maritime	Events/meetings	CAT4-PP1-A-0	Event 3: Final seminar, 2 days, hybrid (marketing, venue rent, catering, interpretation, IT serv.) (98 / 100 characters)	No	3.3	12,000.00	
1. Kotka Maritime	Events/meetings	CAT4-PP1-A-0	On-line discussion event (policy dialogue)(on-line/hydrid) (58 / 100 characters)	No	3.4	4,200.00	
1. Kotka Maritime	Events/meetings	CAT4-PP1-A-1	Vene - Båt Fair (15 / 100 characters)	No	3.3	8,500.00	
1. Kotka Maritime	Communication	CAT4-PP1-C-1	Translation, proof readings (27 / 100 characters)	No	N/A	2,500.00	
1. Kotka Maritime	Project management	CAT4-PP1-D-1	Legal consultancy/services (partnership agreement) (50 / 100 characters)	No	N/A	60,000.00	
	Total					114,600.00	

7.1.2 Equipment

Contracting partner	Group of expenditure	Item no.	Specification	Investment item?	Group of activities no.	Planned contract value
4. Gdańsk Universit	IT hardware and soft	CAT5-PP4-B-0	2 PCs with high calculating capacity 36 / 100 characters	No	1.3 2.3	6,500.00
4. Gdańsk Universit	Other specific equip	CAT5-PP4-H-0	Sensors, signal registration and logs 37 / 100 characters	No	1.3 2.3	20,000.00
5. Aalto University	IT hardware and soft	CAT5-PP5-B-0	Mini supercomputer 18 / 100 characters	No	N/A	12,000.00
3. Tallinn Universitv	IT hardware and soft	CAT5-PP3-B-0	Star CCM+ software license, 2000 €/year 39 / 100 characters	No	1.1 2.1	6,000.00
8. SSPA Sweden A	Other specific equip	CAT5-PP8-H-0	Selection and purchase of material for hull model manufacturing for towing tank testing 88 / 100 characters	No	2.1	23,000.00
8. SSPA Sweden A	Other specific equip	CAT5-PP8-H-0	One week of experimental testing facilities and hull model build in SSPA's towing tank 86 / 100 characters	No	2.1	87,407.00
6. Baltic Workboats	Other specific equip	CAT5-PP6-H-0	PCs, controllers, interface units for measuring, calculations and software development 86 / 100 characters	No	1.3 2.3	18,000.00
6. Baltic Workboats	Other specific equip	CAT5-PP6-H-0	Visual interfaces 17 / 100 characters	No	1.3 2.3	4,000.00
6. Baltic Workboats	Other specific equip	CAT5-PP6-H-0	Sensors, signal registrations and logs 38 / 100 characters	No	1.3 2.3	15,000.00
1. Kotka Maritime	Office equipment	CAT5-PP1-A-1	Computer, phone, head set 25 / 100 characters	No	N/A	5,000.00
	Total					196,907.00

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	

7.2 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	Kotka Maritime Research Association	Active 22/09/2022	FI	ERDF	80.00 %	501,336.70	401,069.36	100,267.34	For each partner, the State aid relevance and applied aid measure are defined in the **State aid section**
2-PP	KTH Royal Institute of Technology	Active 22/09/2022	SE	ERDF	80.00 %	227,299.80	181,839.84	45,459.96	
3-PP	Tallinn University of Technology	Active 22/09/2022	EE	ERDF	80.00 %	280,681.60	224,545.28	56,136.32	
4-PP	Gdańsk University of Technology	Active 22/09/2022	PL	ERDF	80.00 %	255,640.00	204,512.00	51,128.00	
5-PP	Aalto University	Active 22/09/2022	FI	ERDF	80.00 %	649,412.50	519,530.00	129,882.50	
6-PP	Baltic Workboats	Active 22/09/2022	EE	ERDF	80.00 %	328,798.00	263,038.40	65,759.60	
7-PP	R2 Marine Ltd	Active 22/09/2022	FI	ERDF	80.00 %	62,493.60	49,994.88	12,498.72	
8-PP	SSPA Sweden AB	Active 22/09/2022	SE	ERDF	80.00 %	645,938.43	516,750.74	129,187.69	
Total ERDF						2,951,600.63	2,361,280.50	590,320.13	
Total						2,951,600.63	2,361,280.50	590,320.13	

7.3 Spending plan per reporting period

	EU partners (ERDF)		Total	
	Total	Programme co-financing	Total	Programme co-financing
Period 1	533,875.89	427,100.73	533,875.89	427,100.73
Period 2	486,362.30	389,089.84	486,362.30	389,089.84
Period 3	573,422.11	458,737.68	573,422.11	458,737.68
Period 4	526,645.14	421,316.11	526,645.14	421,316.11
Period 5	485,423.82	388,339.05	485,423.82	388,339.05
Period 6	345,871.37	276,697.09	345,871.37	276,697.09
Total	2,951,600.63	2,361,280.50	2,951,600.63	2,361,280.50