



# Deliverable 1.4

## Report on relevant ongoing external projects and test beds

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EFFICIENSEA2 – efficient, safe and sustainable traffic at sea  
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# DOCUMENT STATUS

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## Review

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## Introduction

In WP1 of EfficienSea 2, IALA leads Task 1.2: 'Liaison and coordination with other projects and test beds'. IALA manages the work in Task 1.2, preparing reports and deliverables in conjunction with the other members of the Task Group (DMA, CIRM, OFFIS).

The first deliverable of Task 1.2 is D 1.4: Report on relevant ongoing external projects and test beds. This report sets out the strategy for carrying out the work of identifying the projects, test beds and organizations relevant to E2. The report provides a summary of the more detailed information collected in a spread sheet, the current version of which will be posted on the E2 website and will continue to be updated and posted on the Teamwork site.

## Strategy

### Purpose

A strategy has been formulated for identifying the projects, test beds and organizations relevant to E2. The work of E2 will benefit from liaison with other projects and test beds having related aims, therefore links need to be formed with these activities and with relevant organizations.

It is important to develop liaison with related projects and test beds, as well as relevant organizations and agencies within and outside the EU, to allow lessons to be learned from the experience of others and to avoid duplication of work already carried out.

This strategy will be refined and developed through review meetings and conferences, together with the collaboration forums identified in this report, that provide an opportunity to identify other projects and organizations relevant to E2.

### Timetable

Deliverable D 1.4: Report on relevant ongoing external projects and test beds was submitted by the end of October 2015. At a project meeting on 20 November 2015 it was decided to prepare a revision including matrices showing the relevance of the various projects and test beds identified, to the planned services in E2. These are shown in Tables 1-4.

The information on projects, test beds and organizations was provided to E2 Partners and other interested parties, during November 2015 in the form of this report posted on the E2 website and a tracking tool (an Excel spread sheet), posted on the Teamwork site. This tracking tool has now been reformatted as a database and will be maintained throughout the life of the project and the current version will be posted on Teamwork.

The identification of projects, test beds and organizations relevant to E2 should be completed by the end of January 2016, although the list will be kept under review throughout the project. Contacts between E2 and other projects and organizations will be initiated by the end of January 2016.



## Projects and Test Beds

### Projects/Test Beds (completed)

- EfficienSea** - e-navigation, Competences and Recruitment challenges, Vessel traffic data & Maritime planning, Dynamic Risk Management 2010-2012
- MEH** (Malacca Straits) - Precision navigation on which relevant maritime and environmental systems would be integrated with the ENC-ECDIS as the geospatial platform. 2010-2012
- ACCSEAS** - developed and implemented an innovative e-Navigation Test-bed to prototype key concept solutions to advance shipping accessibility in the North Sea Region 2012-2015
- Mona Lisa** - Motorways of the Sea project which aims at giving a concrete contribution to the efficient, safe and environmentally friendly maritime transport 2010-2013
- ARIADNA** - aimed to optimize the use of maritime and inland infrastructures to manage the increase in traffic density and improve safety based on the volumetric navigation concept 2010-2013
- E-FREIGHT** - Creating the appropriate framework to allow tracing goods in real time, ensure intermodal liability and promote clean freight transport 2010-2013
- FLAGSHIP** - improvement of safety, environmental friendliness and competitiveness of European maritime transport 2010-2011
- SKEMA** - establish a Sustainable Knowledge Platform to be used by policy makers and stakeholder groups in the European Maritime and Logistics Industry 2010-2011
- MARNIS** - an integrated approach to Information Management for Maritime Safety Security & Environmental Risk Management 2004-2008
- IONO** (Ionian Integrated Marine Observatory) - designing and implementing an "IONian Integrated marine Observatory" that will provide environmental information and meteo-oceanographic measurements about the Southern Adriatic and Northern Ionian (SANI) Program Area 2012-2013
- CASCADE** developed new ship bridge designs and new methodologies for information sharing and display on a ship's bridge 2012-2015



Services to improve navigational safety and efficiency	Completed Projects										
	EfficienSea	MEH	ACCSEAS	Mona Lisa	ARIADNA	E-FREIGHT	FLAGSHIP	SKEMA	MARNIS	IONO	CASCADE
Nautical charts based on S-101			x								
MSI & NM	xxx	xxx	xxx	xxx	x	x	x	x	xxx	xx	x
METOC	x	x		xx					x	xxx	
Smart buoy										x	
Ice charts											
Route exchange	xxx	x	xxx	xxx	xx	x	x	x	x		xx
No-go area/comfort zone	xx	x	xxx	x	xx						
Generic route optimization services	xxx	x	xxx	xxx	xx	x	x	x	x		xx
Services to arctic navigation and emergency response											
Arctic live position sharing	xx										
Crowd-sourcing of ice information											
Arctic SAR tool											
Space weather forecast											
Services to decrease administrative burden											x
Automated VTS/SRS reporting	xx	xx	xx	xxx	x	x	x	x	xx		X
Reliable port reporting	x	xx	x	x		xx	xx	x	xx		X
Reliable port information	x	xx	x	x		xx	xx	x	xx		x
Services to improve environmental monitoring & enforcement											
Emission monitoring solution		x		x		x					
Enabling actions to improve availability and accessibility											
Communication framework/Maritime Cloud	xx	x	x	x	x	x			x		x
Communication channels and other technologies	xx	xxx	xx	xx	xx	xx	x		xx		x

**Table 1: Relationships between Completed Projects/Test Beds and Planned E2 services**

x slightly relevant; xx relevant; xxx highly relevant

## Projects/Test Beds (ongoing)

- Mona Lisa 2.0** - Improved safety, environment and efficiency. Industry tool to avoid incidents and better handle the ones that occur 2013-2015
- STM Validation** - Sea Traffic Management, as conceptualized in MONALISA 2.0, explores alternatives to centralized Traffic Coordination 2015-2018
- Torres Straits/GBR NE Shipping Management Plan** - The plan contains proposed measures to manage future increases in shipping traffic, ensure the safety of shipping and the prevention of ship sourced pollution and other environmental impacts in the Great Barrier Reef, Torres Strait and Coral Sea regions. Dynamic Under Keel Clearance information is an import service ongoing
- Great Lakes/St Lawrence Seaway System** - The Draught Information System is a necessary component required for developing "e-Navigation" that will increase the safety of navigation providing the mariner with better information about under keel clearance 2010-2015
- Dublin Bay Digital Diamond** - A demonstrator project for the Dublin Bay area, providing an opportunity the maritime sector to explore the potential of e-Navigation services. 2013-2015
- eMIR** (e-Maritime Integrated Research) - offers a service oriented research infrastructure consisting of a physical test bed for in situ experiments as well as a simulation environment for risk and efficiency assessments 2013-2023
- Arctic web** - single point of access to safety related information, provides streamlined reporting and allows for voluntary coordinated voyage through sharing of positions and planned routes. 2015-
- MUNIN** - The object of investigation is the autonomous vessel, with the aim to improve competitiveness of operation. 2012-2015
- EUCISE2020** - Aims at achieving pre-operational Information Sharing between the maritime authorities of the European States. 2015-2017
- Sesame Strait** - developing and validating a new Ship Traffic Management System concept to optimize sea traffic flow and provide the vessel with advice on the best speed and route 2014 – 2017
- e-Yangshan Port** - Improved navigational safety in poor visibility, by providing comprehensive, timely, reliable and efficient navigation information and facilities for vessels 2014-2016
- Polarice** - develop the next generation of operational sea ice monitoring services to support a range of activities in the Arctic and Antarctic 2014-2016
- SSAP** (Smart Ship Application Platform) - design a master database, interface prototypes, specifications of communication system between ships and shore facilities and international standards of data server requirements, to help application services 2014-2017
- WINMOS** (Winter Navigation Motorways of the Sea) - project is developing winter navigation operations including making information about icebreaking operations easily available for all stakeholders concerned by winter navigation. 2012-2015
- e-SENS** (Electronic Simple European Networked Services) - project is developing generic and re-usable solutions to support cross-border electronic services (e.g. e-Delivery, e-Documents, e-Signature, e-Identity, Semantics). 2013-2016



**ENSI** (Enhanced Navigation Support Information) - project is a test bed for a two-way electronic navigation service to increase vessel traffic safety in the Gulf of Finland. 2015-

**eMSI** joint test bed for the dissemination of electronic Marine Safety Information (eMSI) via AIS, USACE 2015-

**ESABALT** (Enhanced Situational Awareness to Improve Maritime Safety in the Baltic) - to study the feasibility of implementing a software platform for maritime information crowdsourcing in order to enable cross-border cross-sector cooperation, enhanced maritime safety, security, environmental monitoring and emergency response in the entire Baltic Sea region. 2014-2016

**AVANTI/PRONTO** Port Call Optimization, reducing vessel dwell time and improving utilization, improving event data, using the same language and formats 2015-

**Norwegian e-Navigation trial** The Norwegian Coastal Administration (NCA) has initiated the First full-scale trial of e-navigation in Norwegian waters, ferry MS Stavangarfjord digitally sharing routing information with NCA via NAVTOR's NavStation, a 'digital chart table' 2015-

**BONUS PROJECTS** Implementation 3 years, during 2015-2018

**BALTCOAST** A systems approach framework for coastal research and management in the Baltic

**BALTICAPP** Wellbeing from the Baltic Sea - applications combining natural science and economics

**BALTSPACE** Towards sustainable governance of Baltic marine space

**GO4BALTIC** Coherent policies and governance of the Baltic Sea

**MIRACLE** Mediating integrated actions for sustainable ecosystem services in a changing climate

**SHEBA** Sustainable shipping and environment in the Baltic Sea

**STORMWINDS** Strategic and operational risk management for wintertime maritime transportation system





Services to improve navigational safety and efficiency	Ongoing Projects (1)										
	MONA LISA 2	STM validation	Torres Strait/GBR	Gt Lakes/St Lawrence Seaway System	Dublin Bay DD	eMIR	ArcticWeb	MUNIN	EUCISE2020	Sesame Strait	e-Yangshan Port
Nautical charts based on S-101	xx	xx	xx	xx	x	xxx	x	x	x	xx	xx
MSI & NM	xxx	xxx	xxx	xxx	xx	xxx	xxx	xx	x	xxx	xx
METOC	xxx	xxx	xxx	x	x	xxx	xxx	xx	x	xxx	xx
Smart buoy	x	x	xx	xx	xx	xxx	x	x	x	xxx	xx
Ice charts	xxx	xxx		xxx		x	xxx	xx			
Route exchange	xxx	xxx	xx	xx	x	xxx	xxx	xxx		xxx	x
No-go area/comfort zone	xxx	xxx	xxx	xx	x	xxx	xxx	xx		xxx	x
Generic route optimization services	xxx	xxx	xx	x	x	xxx	xx	xxx		xxx	x
Services to arctic navigation and emergency response											
Arctic live position sharing	xxx	xxx		xx		xx	xxx	xx	xx		
Crowd-sourcing of ice information	xxx	xxx		xx		xx	xx	xx	xx		
Arctic SAR tool	xxx	xxx		xx		xx	xxx	x	xx		
Space weather forecast	xxx	xxx		xx		xx		x	xx		
Services to decrease administrative burden											
Automated VTS/SRS reporting	xxx	xxx	xx	xx	x	xxx	xx	x	x	xxx	x
Reliable port reporting	xx	xx	xx	xx	x	xxx	x	x	x	xxx	xx
Reliable port information	xx	xx	xx	xx	x	xxx	x	x	x	xxx	xx
Services to improve environmental monitoring & enforcement											
Emission monitoring solution	x	x	xx	xx	x	xxx	x	x	x	xx	x
Enabling actions to improve availability and accessibility											
Communication framework/Maritime Cloud	xxx	xxx	xx	xxx	xxx	xxx	xxx	xxx	x	xxx	x
Communication channels and other technologies	xxx	xxx	xx	xxx	xxx	xxx	xxx	xxx	x	xxx	x

**Table 2.1: Relationship between Ongoing Projects/Test Beds and Planned E2 services**

x slightly relevant; xx relevant; xxx highly relevant

Services to improve navigational safety and efficiency	Ongoing Projects (2)													
	Polarice	SSAP	WINMOS	e-SENS	ENSI	ESABALT	AVANTI/PRONTO	BALTCOAST	BALTICAPP	BALTSPEACE	CO4BALTIC	MIRACLE	SHEBA	STORMWINDS
Nautical charts based on S-101	x	x	x		xx	x								
MSI & NM	xxx	xx	xxx	x	xxx	xxx		xx	x	x	x	x	x	x
METOC	xxx	xx	xx		x	x		x				x	x	
Smart buoy	xx				x									
Ice charts	xxx		xxx		xx	xx								xx
Route exchange	xxx	xxx	xx	x	xx	xxx								
No-go area/comfort zone	xx		xx		xx	xx		x						xx
Generic route optimization services	xxx	xx	xxx	xx	xxx	xxx		x	x	x	x	x		xx
Services to arctic navigation and emergency response														
Arctic live position sharing	xx		xxx		xx	xx								x
Crowd-sourcing of ice information	xxx		xxx		xx	xxx								x
Arctic SAR tool	xx		xxx		x	xxx								xx
Space weather forecast														
Services to decrease administrative burden														
Automated VTS/SRS reporting		xx	xx	xxx	xx	xx	xx							
Reliable port reporting		xx	x	x			xxx							
Reliable port information		xx	x	x			xxx							
Services to improve environmental monitoring & enforcement														
Emission monitoring solution									x	x				
Enabling actions to improve availability and accessibility														
Communication framework/Maritime Cloud	xx	xxx	xx	x	xx	xx	xx	x						
Communication channels and other technologies	xx	xxx	xx	x	xx	xx	xx	x						

**Table 2.2: Relationships between Ongoing Projects/Test Beds and Planned E2 services**

x slightly relevant; xx relevant; xxx highly relevant

Services to improve navigational safety and efficiency	Ongoing Projects (3)		
	eMSI	NCA/NAVTOR	
Nautical charts based on S-101	x	x	
MSI & NM	xxx	xxx	
METOC		x	
Smart buoy			
Ice charts			
Route exchange	xx	xxx	
No-go area/comfort zone	x	x	
Generic route optimization services	xx	xxx	
Services to arctic navigation and emergency response			
Arctic live position sharing			
Crowd-sourcing of ice information			
Arctic SAR tool			
Space weather forecast			
Services to decrease administrative burden	xx	xxx	
Automated VTS/SRS reporting	xx	xxx	
Reliable port reporting	xx	xxx	
Reliable port information	xx	xxx	
Services to improve environmental monitoring & enforcement	x	x	
Emission monitoring solution			
Enabling actions to improve availability and accessibility			
Communication framework/Maritime Cloud	xx	xx	
Communication channels and other technologies	xx	xx	

**Table 2.3: Relationships between Ongoing Projects/Test Beds and Planned E2 services**

x slightly relevant; xx relevant; xxx highly relevant

## Projects/Test Beds (planned)

SMART-Nav	(incomplete information)
Baltic web	(incomplete information)
Port Information Exchange	(incomplete information)
Chile/Argentina	(incomplete information)
Global e-Navigation test bed (ROK/DK/SWE)	(incomplete information)

## Prioritization

Based on the above analysis the completed projects with which contact should be a priority are: EfficienSea, ACCSEAS, Marine Electronic Highway and Mona Lisa. Of the ongoing projects, priority for liaison should be given to: Mona Lisa 2.0, STM Validation, Torres Strait/GBR, Great Lakes/St Lawrence SS, Sesame Strait, Arctic web, WINMOS, e-MIR, eMSI, ENSI, ESABALT, Polarice and the NCA/NAVTOR trials.

These prioritized lists are the minimum, baseline for liaison – others may be added later.



## EU Agencies & Directorates

**EMSA** - European Maritime Safety Agency - operational tasks in the field of oil pollution response, vessel monitoring and in long range identification and tracking of vessels

**EEA** - European Environment Agency - provides independent information on the environment, helping those involved in developing, adopting, implementing and evaluating environmental policy.

**GSA** - European GNSS Agency - Designing and enabling services that respond to user needs, while continuously improving the European GNSS services and Infrastructure.

**INEA** - Innovation & Networks Executive Agency - the successor of the Trans-European Transport Network, INEA's main objective is to increase the efficiency of the technical and financial management of the programmes it manages.

**DG Mare** (Maritime Affairs & Fisheries) - manages two policy areas: Common Fisheries Policy and Integrated Maritime Policy (including Maritime Spatial planning).

**DG Move** (Mobility and Transport) - manages the policy for trans-European networks in the transport sector (TEN-T).

**DG Research & Innovation** - The Directorate-General for Research and Innovation defines and implements European Research and Innovation (R&I) policy with a view to achieving the goals of the Europe 2020 strategy and its key flagship initiative, the Innovation Union.

**DG Connect** (Communications Networks, Content and Technology) – aligns the work of the DG with key EU policies for the coming decade: ensuring that digital technologies can help deliver the growth which the EU needs. [e-IDAS: Regulation (EU) No 910/2014 ... on electronic identification and trust services for electronic transactions in the internal market.]

**DG Regio** – Directorate General Regional Policy. Provides support for innovation and R&D by promoting greater inventiveness and improving reactivity to changing market conditions and consumer preferences.

**EUSBR** - E2 is a Flagship project under the EU Strategy for the Baltic Sea Region

Note: The EfficienSea 2 Project Officer and officials within DGMOVE are being consulted on the best way to contact these agencies and directorates.

## Non-EU Bodies

**ESA** - European Space Agency - responsible for setting a unified space and related industrial policy, recommending space objectives to the member states, and integrating national programs like satellite development, into the European program. Agency projects:

ESA ARTES 1 VDE System study	2015-2016
ESA ARTES 5.1 VDE-SAT downlink	2015-2017
ESA ARTES 5.1 VDE-SAT user term	2015-2017

**EMPA** – European Maritime Pilots Association

**IAPH** – International Association of Ports and Harbors

**ECSA** – European Chambers of Shipping Association

**CESMA** - Confederation of European Shipmasters' Associations

**BIMCO** – Baltic and International Maritime Council

**NI** - Nautical Institute

Note: some of these bodies are represented on the E2 High Level User Group

## Collaboration Forums

IALA Seminar on Maritime Digital Infrastructure and Testbeds, Gothenburg Nov 2015

IALA Workshop on Development of VDES, Tokyo Feb 2016

IALA Workshop on Shore-based Maritime Services, Lisbon May 2016

Maritime Cloud Development Forum

Digital Transport and Logistics Forum (DTLF)

e-Navigation Underway International, February 2016

IMO NCSR 3, Feb/March 2016

IALA ENAV 18, March 2016

## Information Access

An objective of Task 1.2 is to make the required information on related projects, test beds and organizations available to E2 partners in an easily accessible form. The spread sheet used as an information tracking tool has been reformatted as a database to facilitate searching and this version will be posted on the E2 website. It will be kept updated and the latest version posted on the Teamwork site.

## Next steps

The information collated in the spread sheet will be updated as new data becomes available. The latest version will be made available to E2 partners and other interested parties via the E2 website and Teamwork. This report will also be communicated to the other project partners and the plans for liaison will be discussed with them.

Identification of projects, test beds and organizations relevant to E2, should be completed by the end of January 2016.

Initial contacts will be established with all the relevant entities by the end of January 2016 and the contact points included in the information provided to E2 members and other interested parties.

