



## Presentation for IALA Council



## Project in numbers

Length: **36** months

Start: May **2015**

Budget: **11.5** M Euro

EU funding: **9.8** M Euro

Partners: **32**

Partner countries: **12**

Total work: **1164** man months

## Participants: Governmental

★ Danish Maritime Authority (Coordinator)	Denmark
Danish Geodata Agency	Denmark
Danish Meteorological Institute	Denmark
★ Estonian Maritime Authority	Estonia
★ Finnish Transport Agency	Finland
★ Maritime Office of Gdynia	Poland
National Institute of Telecommunications	Poland
★ Swedish Maritime Administration	Sweden

★ = IALA members

## Participants: Academia

Chalmers University of Technology

Department of Computer Science, University of  
Copenhagen

National Space Institute at the Technical University  
of Denmark

Latvian Maritime Academy

★ Offis e.V.

Sweden

Denmark

Denmark

Latvia

Germany

## Participants: International Associations

- The Baltic and International Maritime Council BIMCO
- ★ Comité International Radio-Maritime CIRM
- ★ The International Association of Marine Aids to Navigation and Lighthouse Authorities IALA

## Participants: Other non-profit organisations

- |                                       |         |
|---------------------------------------|---------|
| Maritime Development Centre of Europe | Denmark |
| SSPA Sweden AB                        | Sweden  |
| ★ FORCE Technology                    | Denmark |

## Participants: Commercial enterprises

★ Collecte Localisation Satellites	France
Danelec Marine	Denmark
★ Frequentis AG	Austria
★ Furuno Finland Oy	Finland
★ GateHouse	Denmark
LITEHAUZ ApS	Denmark
Lyngsø Marine A/S	Denmark
MARSEC-XL	Malta
Rocketbrothers.dk ApS	Denmark
Thrane & Thrane A/S	Denmark
★ Transas Marine International AB	Sweden
★ Vissim AS	Norway
★ United Kingdom Hydrographic Office	United Kingdom

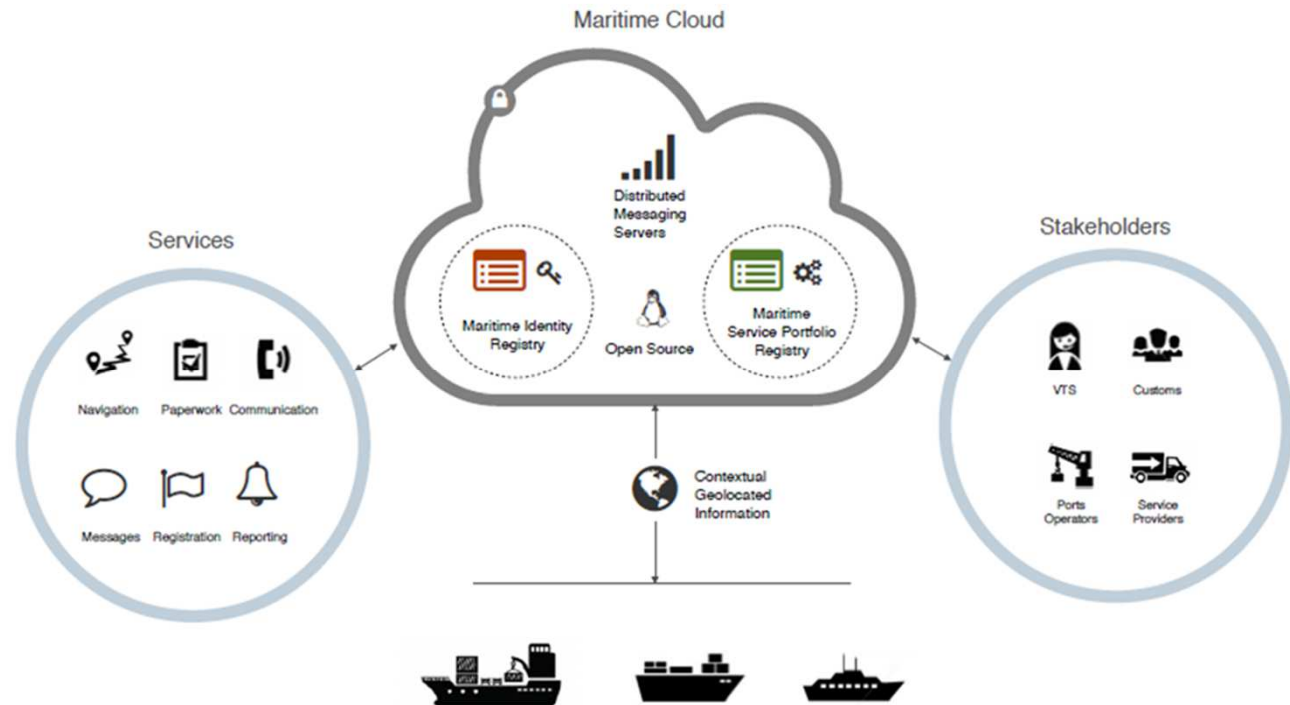
## Project objective

- The overall objective is to co-create and deploy innovative solutions for safer and more efficient waterborne operations.
- The project has seven specific objectives



# 'The Maritime Cloud'

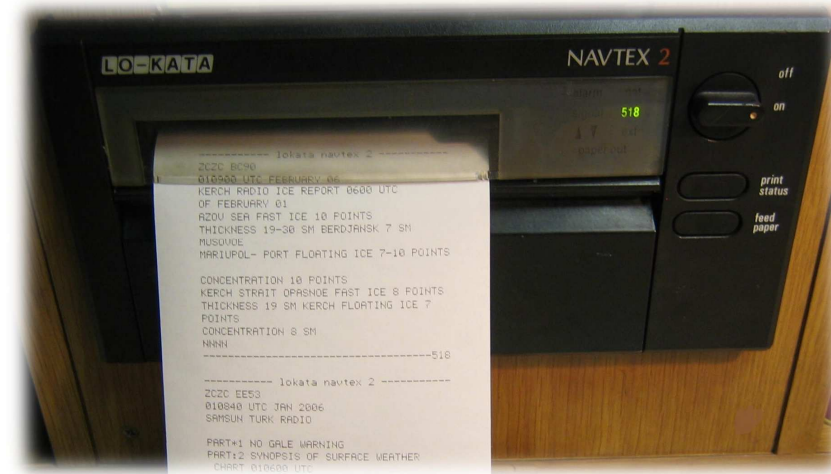
- **Create and implement a ground-break communication framework**





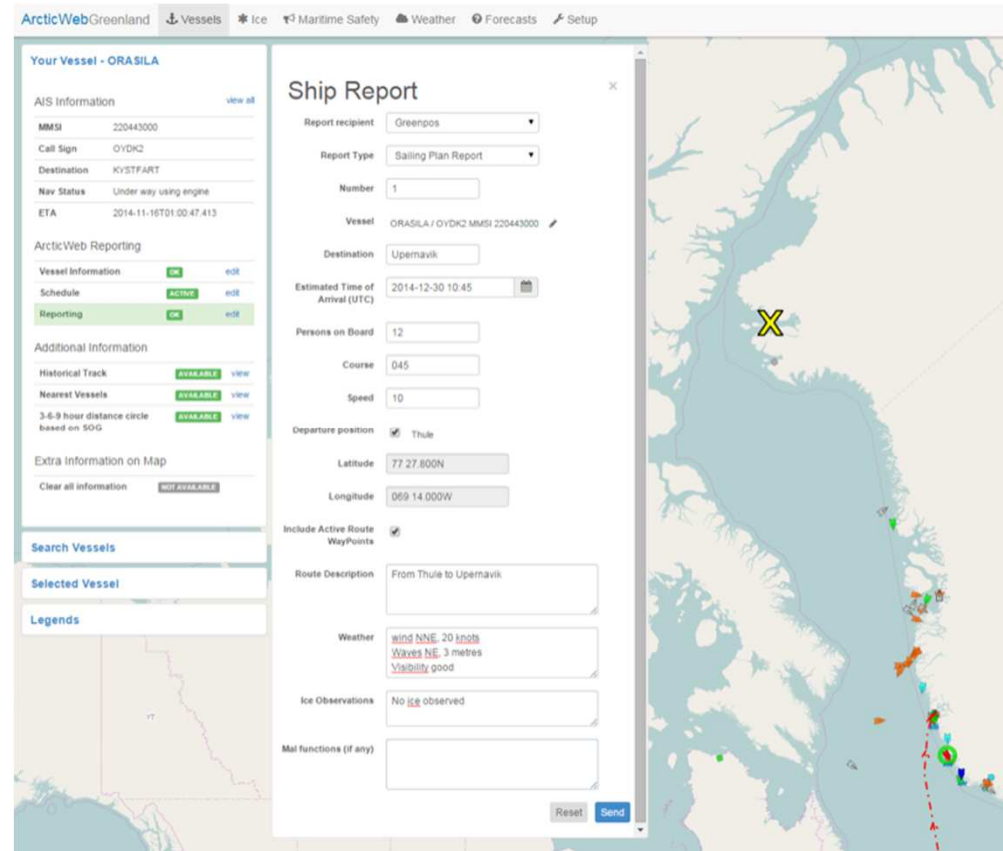
## e-navigation services

- Solutions that will reduce the risk of accidents
- 7 different e-navigation services



## e-maritime services

- Develop, test and, where possible, implement e-maritime solutions.
- 3 services to decrease administrative burdens



The screenshot shows the 'ArcticWebGreenland' interface with a 'Ship Report' form for vessel 'ORASILA'. The form is divided into several sections:

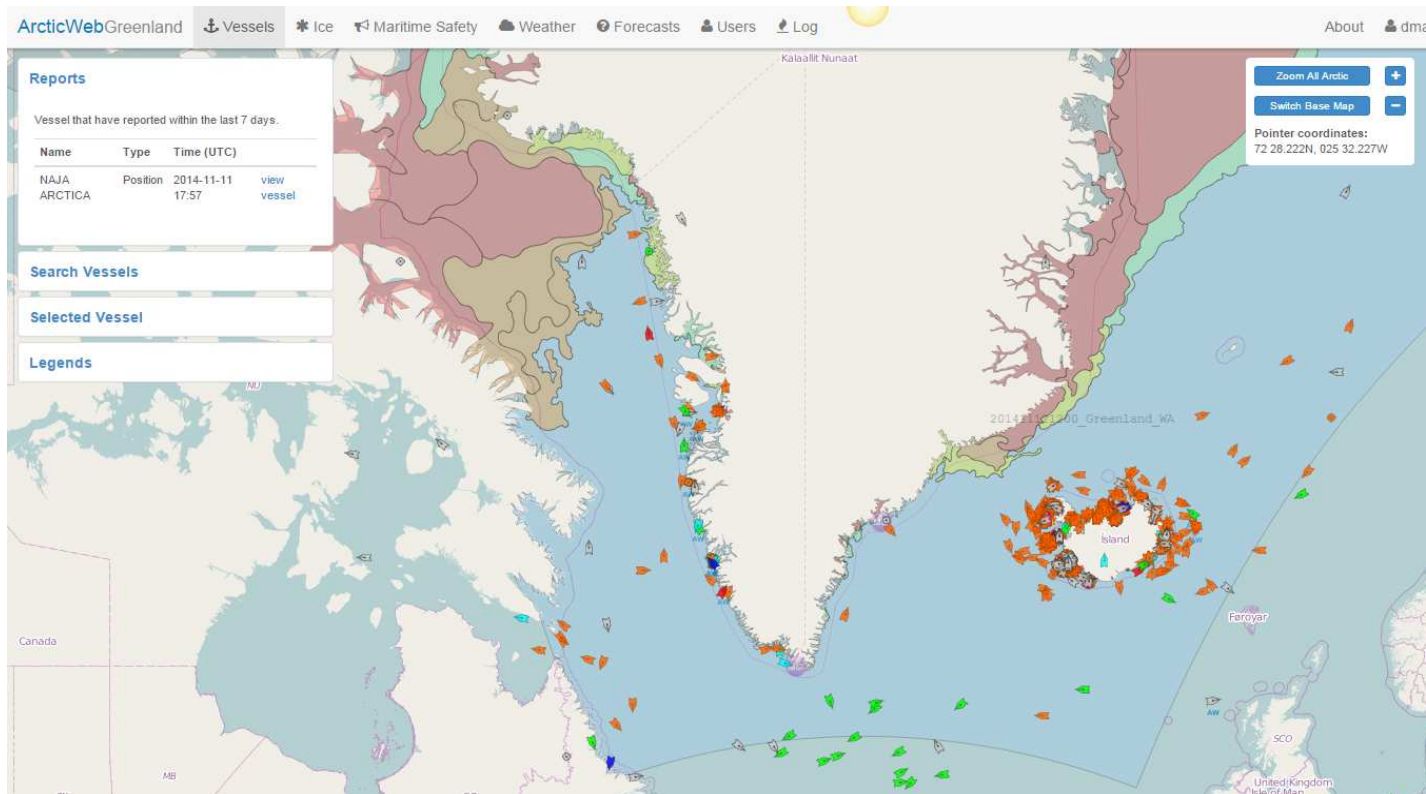
- AIS Information:** MMSI 220443000, Call Sign OYDK2, Destination KYSTFART, Nav Status Under way using engine, ETA 2014-11-16T01:00:47.413.
- ArcticWeb Reporting:** Vessel Information (OK), Schedule (ACTIVE), Reporting (OK).
- Additional Information:** Historical Track (AVAILABLE), Nearest Vessels (AVAILABLE), 3-6-9 hour distance circle based on SOG (AVAILABLE).
- Extra Information on Map:** Clear all information (NOT AVAILABLE).

The 'Ship Report' form includes the following fields:

- Report recipient: Greenpos
- Report Type: Sailing Plan Report
- Number: 1
- Vessel: ORASILA / OYDK2 MMSI 220443000
- Destination: Upernavik
- Estimated Time of Arrival (UTC): 2014-12-30 10:45
- Persons on Board: 12
- Course: 045
- Speed: 10
- Departure position:  Thule
- Latitude: 77 27.800N
- Longitude: 069 14.000W
- Include Active Route WayPoints:
- Route Description: From Thule to Upernavik
- Weather: wind NNE, 20 knots; Waves NE, 3 metres; Visibility good
- Ice Observations: No ice observed
- Mal functions (if any):

The form has 'Reset' and 'Send' buttons at the bottom right. A map on the right shows the vessel's location marked with a yellow 'X' in the Arctic region.

# Emergency response solution for Arctic



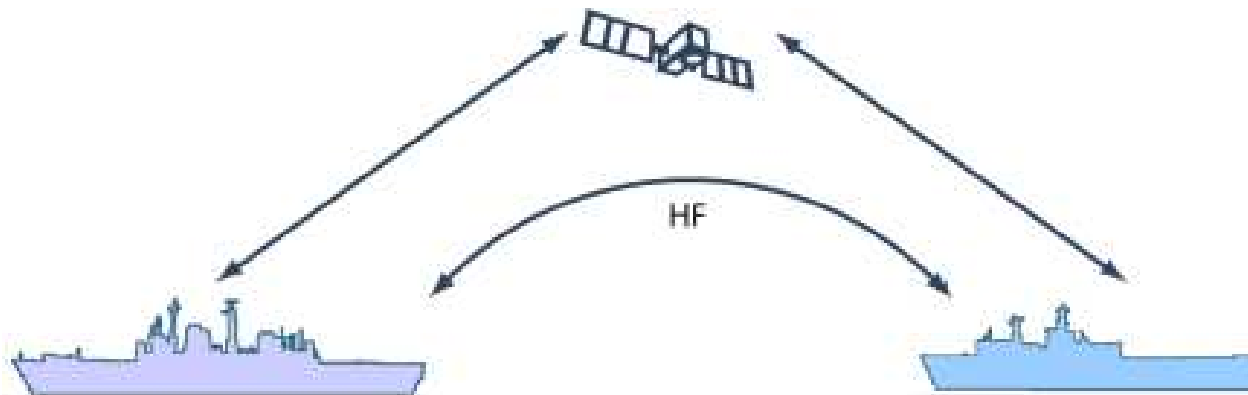
## SOx emissions monitoring service

- **Develop solutions to monitor emissions with a focus on SOx and conduct validation trials in the Baltic Sea Region.**
- **A service for monitoring information about vessels' SOx emissions will be developed**



## Novel communication channels

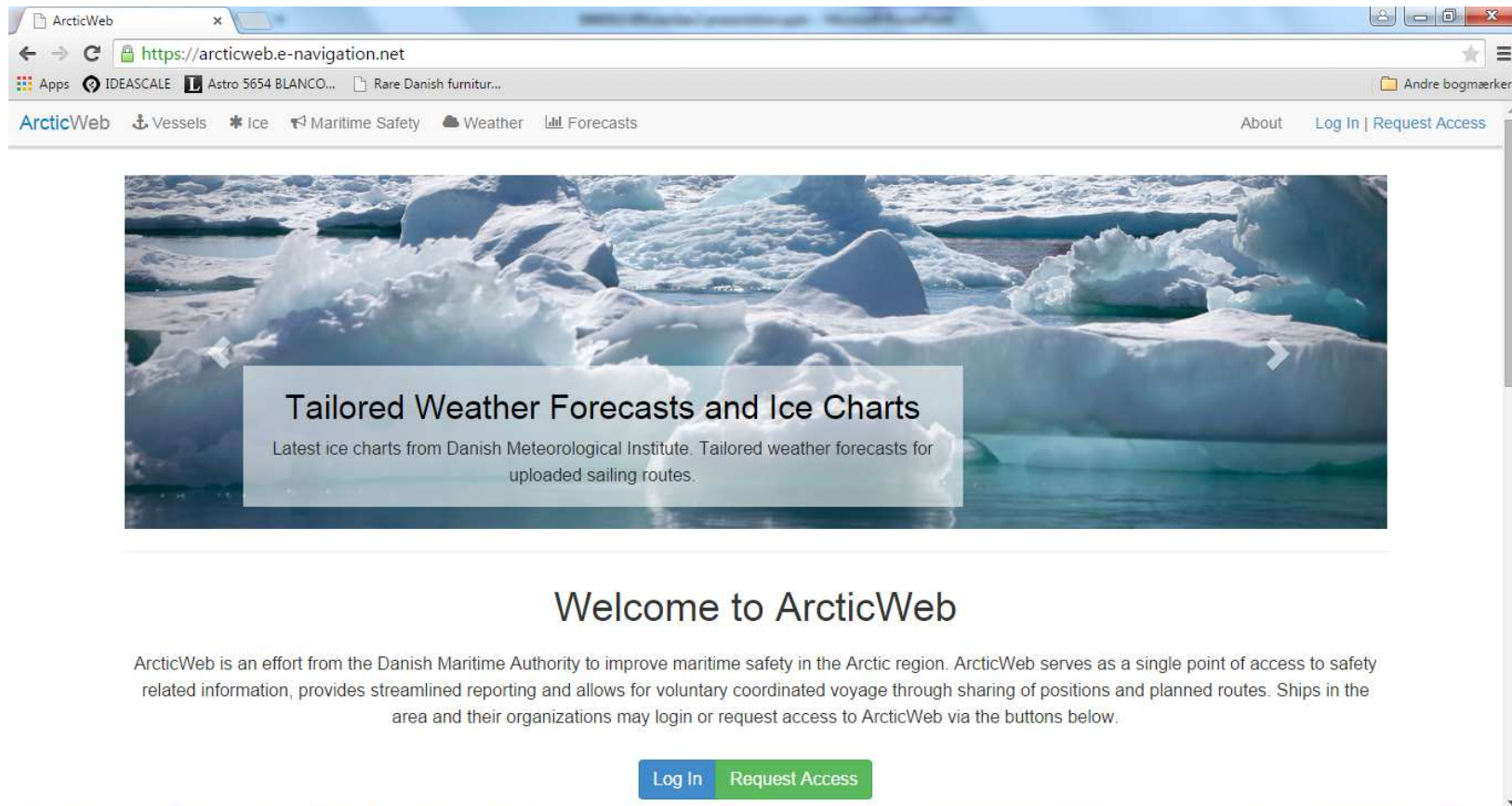
- Create innovative and cost-effective solutions with novel communication technology to deal with ships' challenge of getting access to information services at a reasonable price, especially in remote places such as the Arctic.
- Work will focus on maturing VDES (VHF Data Exchange System)



## Standardisation and harmonisation













# First the Arctic and Baltic – then the rest of the globe



The screenshot shows a web browser window with the URL <https://arcticweb.e-navigation.net>. The browser's address bar and tabs are visible. The website's navigation menu includes links for Vessels, Ice, Maritime Safety, Weather, and Forecasts. A main banner image of icebergs is displayed with the text: "Tailored Weather Forecasts and Ice Charts" and "Latest ice charts from Danish Meteorological Institute. Tailored weather forecasts for uploaded sailing routes." Below the banner, the text reads: "Welcome to ArcticWeb" and "ArcticWeb is an effort from the Danish Maritime Authority to improve maritime safety in the Arctic region. ArcticWeb serves as a single point of access to safety related information, provides streamlined reporting and allows for voluntary coordinated voyage through sharing of positions and planned routes. Ships in the area and their organizations may login or request access to ArcticWeb via the buttons below." At the bottom of the page, there are two buttons: "Log In" and "Request Access".



# EfficienSea 2 – Path to Impact

Service coverage	Arctic & Baltic Sea	Global spread emerging from Baltic and Arctic	Continued global expansion
 <p>End user adoption of Services and Maritime Cloud</p>	 <p>80% Cruise ships in Arctic 15% in Baltic</p>	 <p>&lt; 50% in Baltic 15% World Fleet</p>	 <p>40% World Fleet</p>
	<b>2018</b>	<b>2020</b>	<b>2025</b>
<b>SERVICES AND IMPACT</b>	 <p>Solution to improve Navigational Safety and Efficiency</p>	<p>4 Services implement on web 1 Service on ECDIS The rest have draft standards on web</p>	<p>Fully implemented on ECDIS Standards set</p>
 <p>Solution to Arctic Navigation and Emergency response</p>	<p>Arctic SAR and live positioning on web</p>	<p>Standards Set Implementation on ECDIS Transferred to Antarctic</p>	<p>Fully implemented Concept transferred to other domains</p>
 <p>Solution to decrease Administrative Burdens</p>	<p>1–2 services on web Standard Drafts</p>	<p>3 Services on web and other appropriate platforms Standards Set</p>	<p>Fully implemented</p>
 <p>Solution to improve Environmental Monitoring and Enforcement</p>	<p>Prototype demonstrated in Baltic</p>	<p>Service implement in Baltic Service being rolled out in the rest of EU</p>	<p>Implemented in relevant areas around the world</p>
<b>ENABLERS</b>	 <p>Maritime Cloud</p>		
 <p>Novel Communication Technologies</p>	<p>Operational in Baltic and Arctic Standards set</p>	<p>World Wide Communication Infrastructure for e-navigation supported by IMO</p>	<p>Used by 40% of World Fleet</p>
	<p>Tested prototype standards draft</p>	<p>Standards set Commercial product with knowledge from E2</p>	<p>Low cost communication links with better coverage widely implemented</p>

## IMPACT TIMING PROFILES





## IALA's role in EfficienSea 2

Task lead on two tasks:

1. Liaison and coordination with other projects and test beds
2. Coordinating standardization of solutions

Activities



## High Level User Group

- **The Nautical Institute**
- **The International Chamber of Shipping (ICS)**
- **Arctic Expeditions Cruise Operators (AECO)**
- **Oceanwide Marine Services**
- **Lindblad Expeditions/National Geographic**
- **Maersk Maritime Technology**
- **Elbe Pilots**
- **DanPilot**
- **DFDS Seaways A/S**
- **Scandlines A/S**
- **Royal Arctic Line A/S**
- **SIMAC Svendborg International Maritime Academy**
- **Anthony Veder Rederijzaken B.V.**



**Thank you**

