



## D4.3 Operational MSI/NM T&P Service

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EFFICIENSEA2 – efficient, safe and sustainable traffic at sea

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## Document Status

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### Document History

| Version | Date       | Initials | Description                  |
|---------|------------|----------|------------------------------|
| 1       | 25.04.2017 | MCB      | First draft                  |
| 2       | 28.04.2017 | MCB      | Iteration for final approval |
|         |            |          |                              |
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### Review

| Name | Organisation |
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## 1. Background

The most important information to vessels is information related to safety, including Maritime Safety Information, Notices to Mariners and chart corrections. These three information types, together with nautical charts and position updates form the basis for safe navigation of ships.

*Maritime Safety Information (MSI) is navigational and meteorological warnings, meteorological forecasts and other urgent safety-related messages.*

*Notices to Mariners (NMs) are promulgated in order to keep paper nautical charts and publications, as far as possible, up to date. Temporary and Preliminary NMs (T) and (P) advise mariners of important matters affecting navigational safety, including new hydrographic information (in advance of new editions or chart updates), changes to routing measures and aids to navigation, and other important categories of data. Not all ENC's include T&P information currently.*

*Chart corrections are corrections to paper and digital nautical charts which makes it possible for the Mariner to keep the vessel's charts up to date.*

The Meteorological Warnings of MSI is in the EfficienSea2 project handled in Task 4.3. When discussing MSI in the following we are referring to the Navigational Warning (NW) part of this information type,

Chart corrections and the way they are promulgated have evolved tremendously the past 10 years and are in many ways very different from traditional MSI and NM (T) and (P) today. Chart corrections are georeferenced and portrayable by nature. MSI and NM (T) and (P) are often georeferenced but not necessarily portrayable with text and symbols.

The main differences between MSI and NM today are the way of promulgation and speed of handling and thereby quality assurance. The content of the two message types are on the other hand more or less the same and they solve the same user need.

MSI is today promulgated in text or voice via SafetyNET, NAVTEX, coast radio stations and is in some countries accessible on the Internet. NMs are promulgated on paper weekly, fortnightly or monthly and are often accessible on the internet in pdf format.

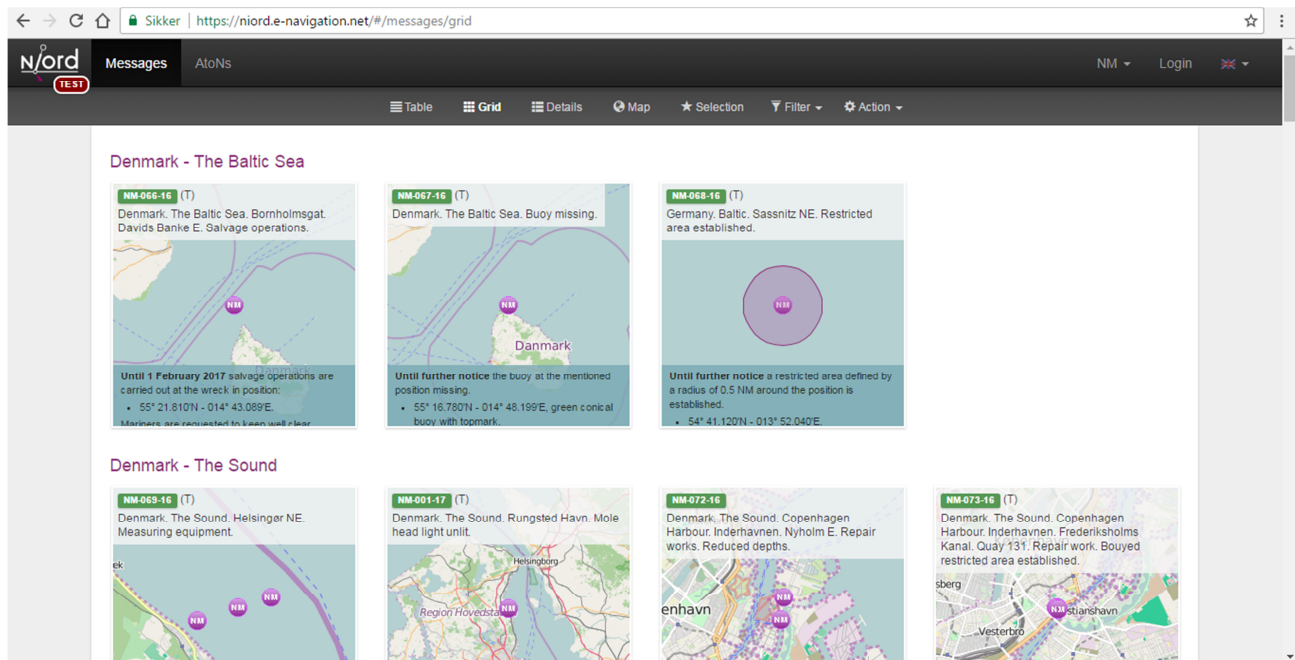
All of the above methods are time consuming for the Mariner and there is a risk of human error. Some navigation equipment developers are working on systems taking existing messages from for example NAVTEX broadcasts and transferring them into geo-referenced

warnings for presentation on navigation displays. There are many advantages in this approach building on already established systems but a number of limitations still exist, mainly because of duplication of data, inconsistency of radio communication and the difficulties of managing multiple sources on board the vessel.

NM's are received on board in paper or as pdf files, often prior to a voyage taking place, and are then transferred manually to navigational charts by the navigator. This approach is time consuming and important information may be lost or misinterpreted.

Nautical Information, MSI and NM (T&P), may in the future be broadcasted or transmitted via any available communication method, e.g. satellite, GSM (mobile), VHF-data, AIS, etc. in addition to traditional systems such as NAVTEX and radio broadcasts. Nautical Information should be received and displayed on bridge displays automatically for correct and immediate assessment by the navigator.

## 2. Nautical Information Directory (NIORD)



The Nautical Information Directory (NIORD) has been developed to a fully operational stage and will be operational for the Danish area from 1. June 2017. NIORD have been developed OpenSource and have been offered and is considered for use in other Baltic countries.

NIORD is a system as described above delivering Nautical Information – Navigational Warnings (NW) and Notices to Mariners (NM) – to all existing promulgation systems, together with standardized messages for presentation on vessels, in the project on BalticWeb and on other webpages (see below links) and in the future for presentation on ECDIS's or ECS's.

Work in task 4.2 will for the remainder of the project focus on inclusion of standardized reception and presentation of Nautical Information on bridge displays delivered by industry partners (Furuno, RocketBrothers and Transas).

NIORD has functionality to export to the draft IHO S-124 standard for Navigational Warnings – the standard is expected finalized in 2017 and will be tested by the EfficienSea2 project.

For a closer look on the Nautical Information Directory (NIORD), functionality, data and display, please follow below link:

<https://niord.e-navigation.net/>

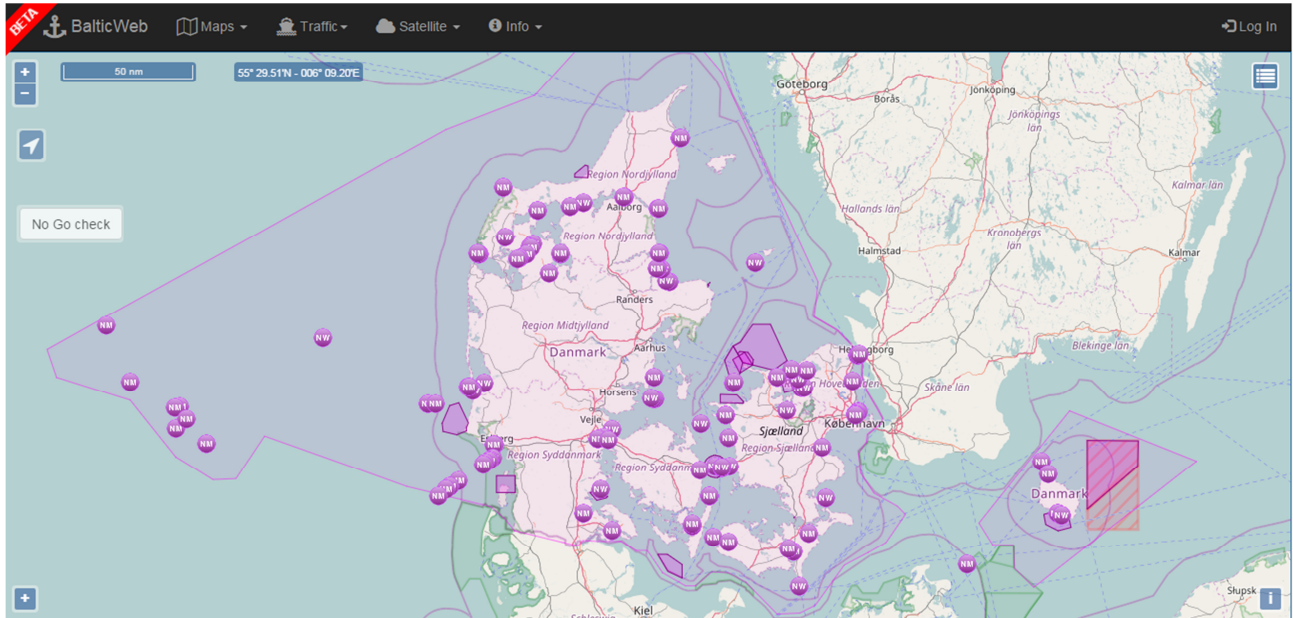
It is possible to login with different users with access to different domains. Passwords are identical with username.

- a) nwadmin: Can edit navigational warnings (NW) and base data
- b) nweditor: Can edit navigational warnings (NW)
- c) nadmin: Can edit notices to mariners (NM) and base data
- d) nmeditor: Can edit notices to mariners (NM)

NW and NM are made available on website below and as API's.



### 3. Operational end user products



Examples of operational end user products showing NW and NM can be seen here:

EfficienSea2 BalticWeb:

<https://balticweb.e-navigation.net/>

Danish Maritime Authority webpage:

<http://nautiskinformation.soefartsstyrelsen.dk/#/messages/map>

User test will be conducted and documentation produced by month 30.