STM USE CASE/NAV WARNING AREA

Information paper for NIPWG2

EU E-NAV PROJECT OVERVIEW

TRANSAS

EU- STM Validation project (2015-2018)

EU Founded project Swedish Maritime Administration project leader

43 partners South and Northern Europe (Administrations, Industry, Academia, Research)
Focus on building two European test beds (Mediterranean and Baltic Sea) for Sea Traffic
Management including ships, 3 area control centers, 13 ports and VTS (more to come) operating
inside a e-navigation environment striving of more efficient Sea transportation and port calls:

5 Work activities

- Act 1 – Port CDM

- Act 2 – Voyage management

- Act 3 – Maritime simulation Network

- Act 4 – Maritime Service Infrastructure

- Act 5 – Analysis and evaluation

- Act 6 – project coordination and Communication

EU- EfficienSea 2 (2015-2017)
EU Founded Project (11M€) Danish Maritime Authorities project leader
32 partners in Europe (Administrations, Industry, Academia, Research)
Focus on e-Nav Infrastructure, communication ship to shore, Reporting, e-nav services for the
Arctic region

ACT. 2 - AREAS FORMAT

TASK AND PURPOSE OF DATA FORMAT

Task: There is a need in the STM project to come up with a common area format that can be used representing different type of geographical areas such as

- No Go Areas (sail race, etc)

- SAR areas

- Any other type of geo boundary

The format should support
- Creation of areas
- Display in onboard applications used in STM (ECDIS, STM Display/APP)
- Display in VTS
- Display in PPU

The format should be open so that any supplier can use as is or make easy conversion to internal format.
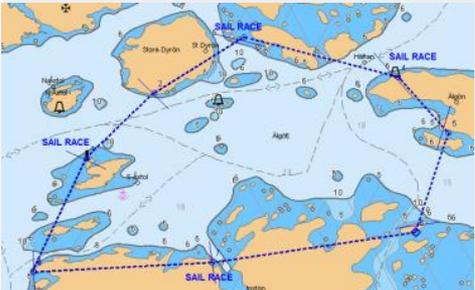
USE CASE

Areas of interest: SAR Areas, MSI Areas, MSP Areas, Protected Areas

| Event	Process Need	Information Needs	Proposed Format & transport
1. Sail Race taking place in an Area between 2 dates	NA	NA	NA
2. Shore Centre send out the Area including attributes to ships	Send areas Display Areas	• Positions (Forming the Area) • Date/Times (In Force/Expiry) • What´s the reason for the area (Sail race in this case)	AIS binary messages according to IMO Circ 289 – transmitted via AIS channels S-124 product specification for Navigational Warnings (MSI/NWs) to improve dissemination and integration within bridge systems and shore systems via a digital format.

USE CASE

USE CASE: AREA

Areas, MSI Areas, MSP Areas, Protected Areas – areas could be used as clarification when sending new route suggestions

Event	Process Need	Information Needs	Proposed Format & transport
3. Ship receives area	Reception. Automatic Confirmation from ship that Area is received (AIS or SeaSWIM)	NARelated VDM12 Addressed msg).	AIS Class A automatically, using VDM7 (Binary Ack for the VDM6 Addressed binary text msg) or VDM13 (Binary Ack for the Safety S-124 – Not applicable
4. Area to be displayed	It would be possible to display such area in ECDIS and generate the Warning: New AREA is received! (with the "focus to" function)	Positions (Forming the Area) Date/Times (In Force/Expiry) Reason - Sail race in this case	S-124 data is processed by ECDIS or STM Display:

USE CASE

Event	Process Need	Information Needs	Proposed Format
5. Area deleted	Area should be deleted automatically when it´s obsolete	Date/Times (In Force/Expiry)	N/A. The areas will be disappeared as part of ECDIS/STM Display functionality

AREAS PRODUCTION AND DISTRIBUTION

TRANSAS
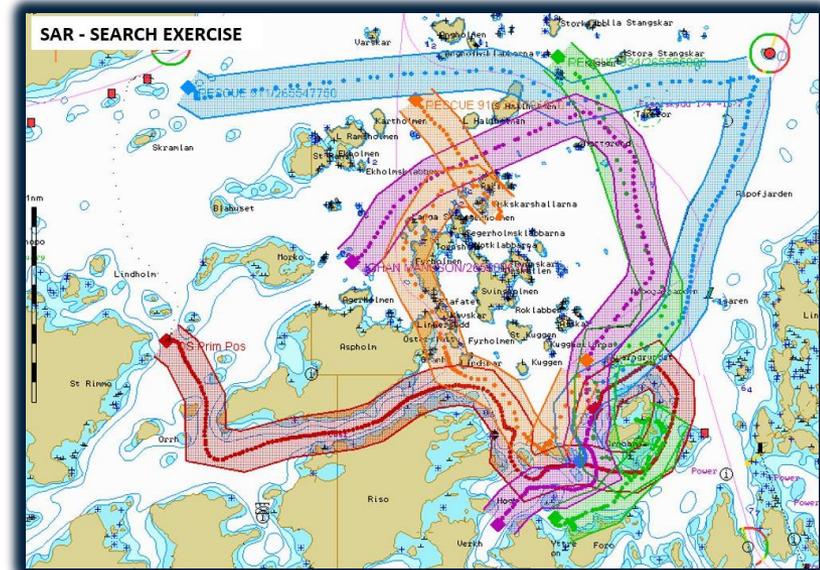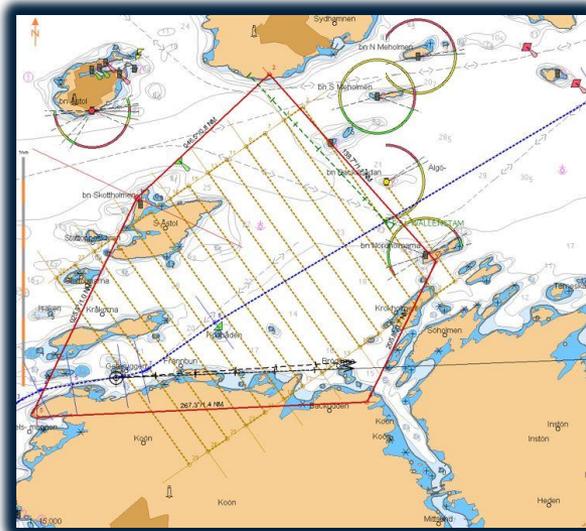
Creation of NW messages

- Control Shore Centre performs creation, editing, update, transmission of NW messages

- **Software tools**: It can be open-source software like Quantum GIS + PostGIS (PostgreSQL) or ESRI products (ArcMap + geodatabase + ArcGISServer).

- In accordance with the approved XSD - scheme (on the basis of S-124 standard, GML) geodatabase structure for the data types of messages should be developed/created.

Publication of information

- The Control Centre carries out publications of these data on the Server. It can be done as part of the SeaSWIM/Maritime Cloud with use of REST/SOAP technology that facilitates secure interoperable information exchange between stakeholders in the maritime community

Onboard user scenario

- A ship is navigating in a certain area. Based on S-123, the S-100 based machine realizes that this is e.g. NAVAREA service. The ECDIS/STM display receiver will automatically receive messages (S-124) without marines interaction.

- Filtering of warnings by time-based criteria, range-based criteria including area-based criteria along ship's route.

MESSAGE PORTRAYAL

PORTRAYAL OF MSI AREAS

• When the message location is given by a polygon, a polyline or a circle, the actual geographical shape will be used for portraying the message. The area could be portrayed with magenta outer boundary and diagonal stripes (ECDIS)

• Acknowledged MSI area management portrayal
  An MSI-NM message in ECDIS will have a flag to indicate if it has been acknowledged by the mariner or not. When a new MSI or NM T&P message is received, the full colored symbol is shown on the ENC. When the navigator has read and acknowledged the message, the corresponding MSI-NM symbol changes to an inverted variant which is not as conspicuous (grey)

• It's possible to add MSI centered symbol **MSI** on top of the displayed area (polygon). Also there is possibility to display the symbol depending on the general category like SAR-event or other. Visualization rules for different events (general category) might be implemented.

REQUIRED ACTIONS

THE NIPWG IS INVITED TO:

- Note and discuss proposal for areas message format

- Advise appropriate S-100 product specification (S-123, S-124?).

- Discuss process for sending the information.

- Discuss proposal for areas portrayal.