

VTS-ENAV1-10



KYSTVERKET
NORWEGIAN COASTAL ADMINISTRATION

E-navigation from theory to practical applications

Jon Leon Ervik

Head of Department

Opportunities in e-navigation

*E-navigation is the harmonised **collection**, **integration**, **exchange**, **presentation** and **analysis** of maritime information **onboard** and **ashore** by **electronic** means to enhance berth to berth navigation and related services, for safety and security at sea and protection of the marine environment.*

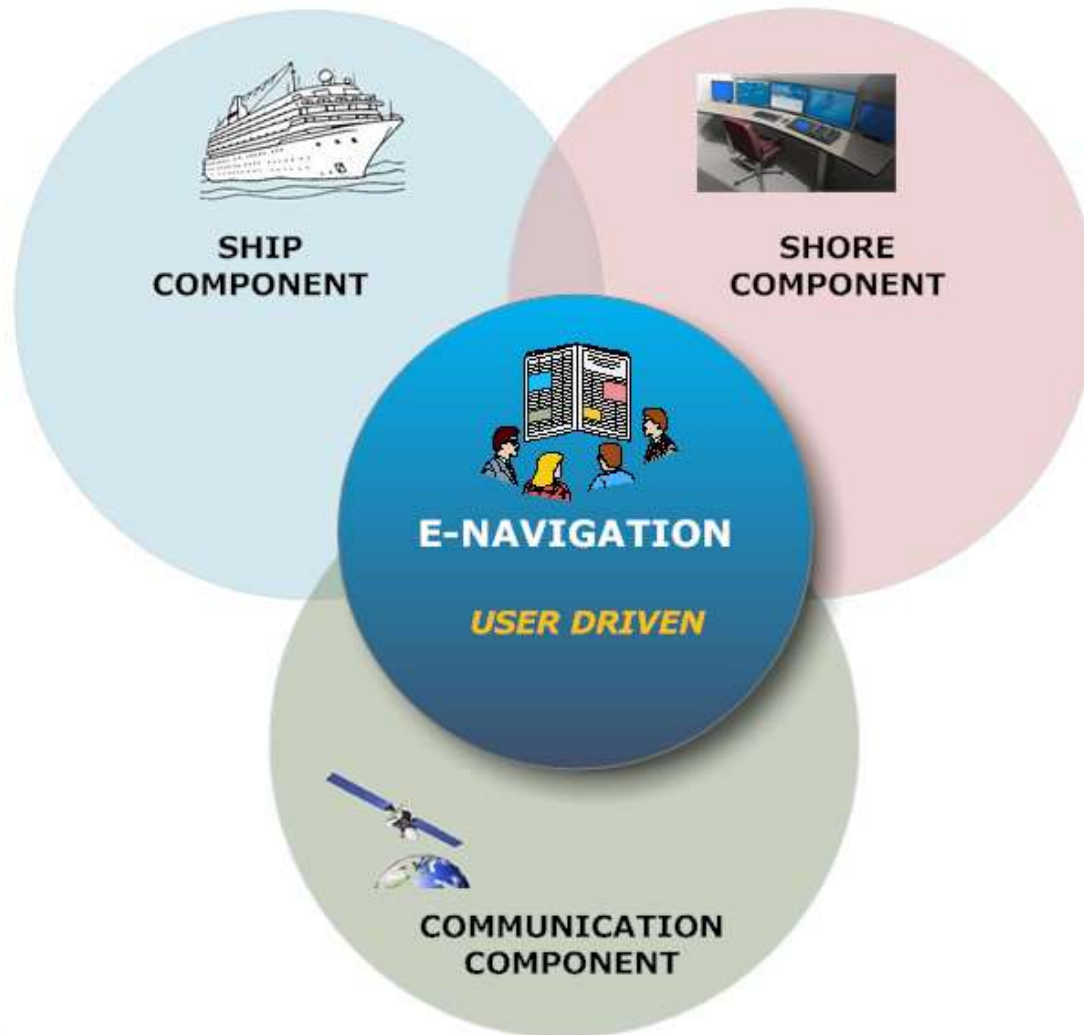


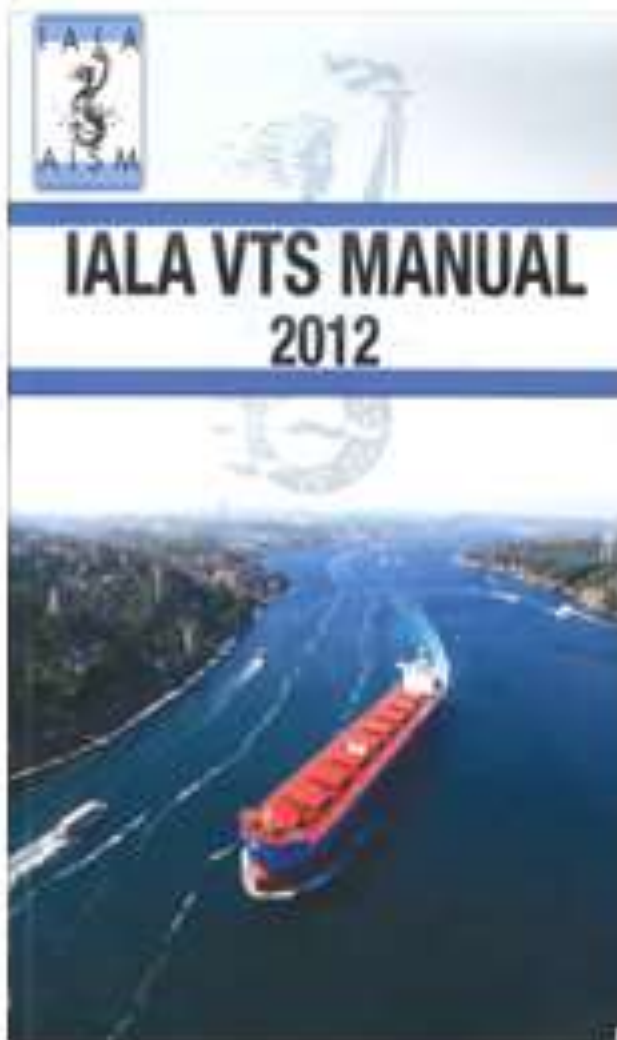
5 Agreed e-Navigation Solutions

Solution S1	Improved, harmonized and user-friendly bridge design
Solution S2	Means for standardized and automated reporting
Solution S3	Improved reliability, resilience and integrity of bridge equipment and navigation information
Solution S4	Integration and presentation of available information in graphical displays received via communication equipment.
Solution S9	Improved Communication of VTS Service Portfolio.

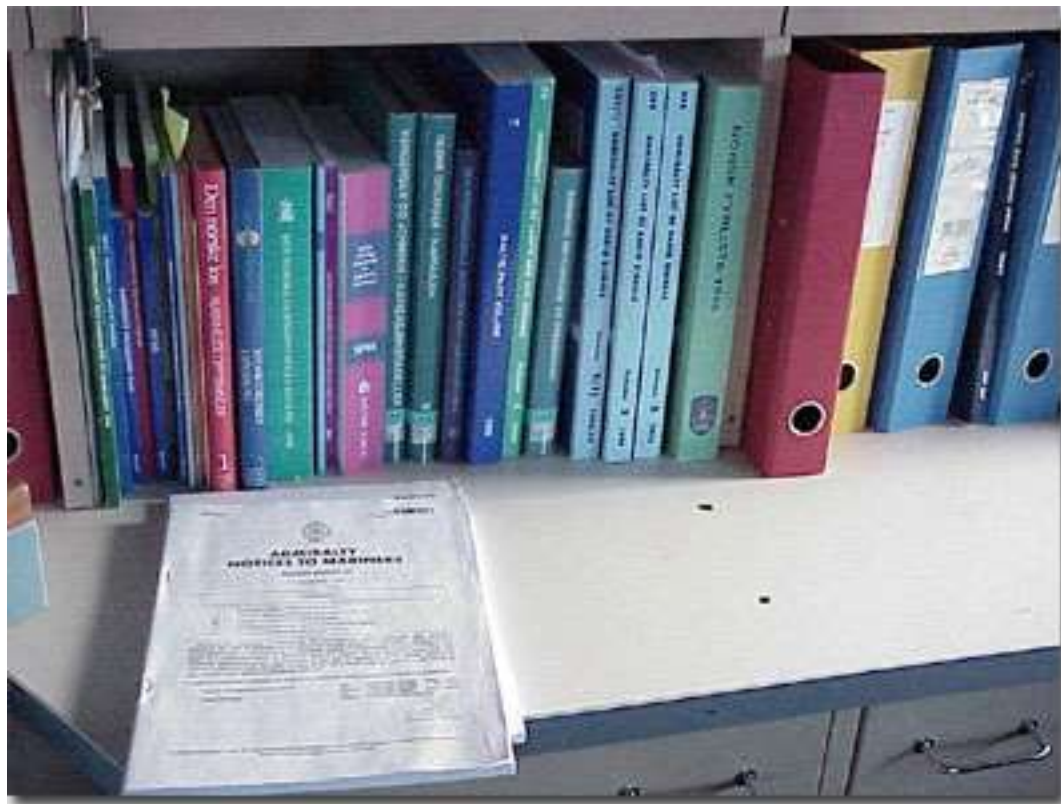


Key Components of e-Navigation





User-friendly?



IMO Resolution A857 (20)

2.3 VTS services

The following guidance concerning the services that are rendered by a VTS should be taken into account:

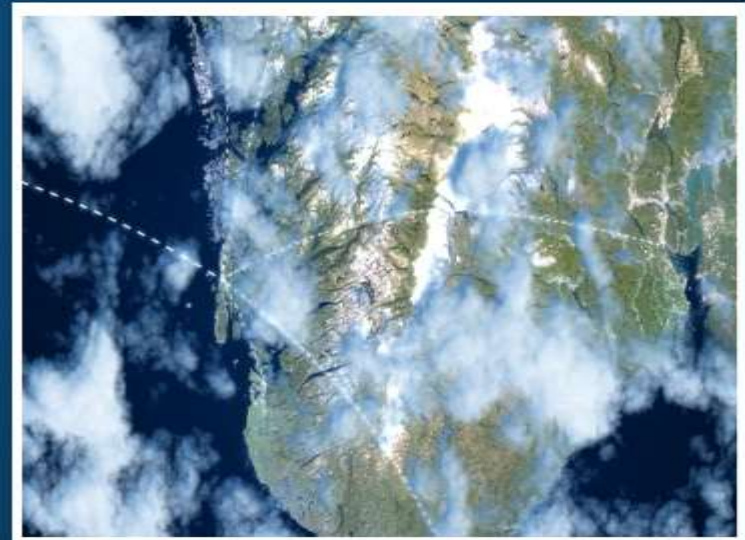
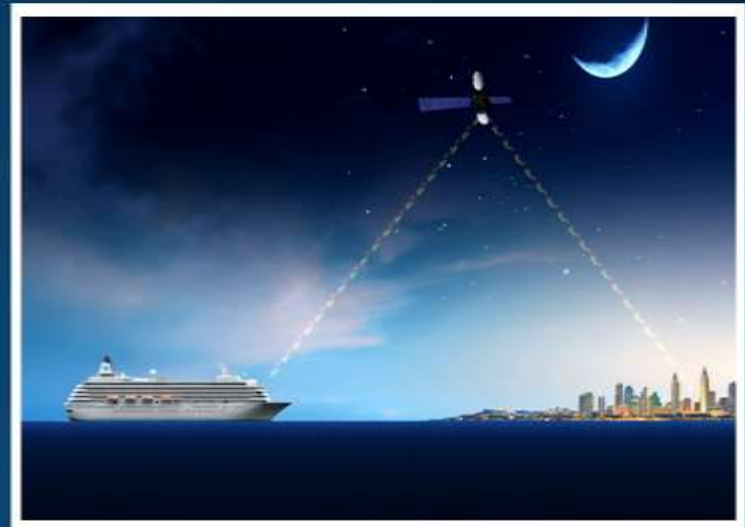
2.3.1 The *information service* is provided by broadcasting information at fixed times and intervals or when deemed necessary by the VTS or at the request of a vessel, and may include for example reports on the position, identity and intentions of other traffic; waterway conditions; weather; hazards; or any other factors that may influence the vessel's transit.

2.3.2 The *navigational assistance service* is especially important in difficult navigational or meteorological circumstances or in case of defects or deficiencies. This service is normally rendered at the request of a vessel or by the VTS when deemed necessary.

2.3.3 The *traffic organization service* concerns the operational management of traffic and the forward planning of vessel movements to prevent congestion and dangerous situations, and is particularly relevant in times of high traffic density or when the movement of special transports may effect the flow of other traffic. The service may also include establishing and operating a system of traffic clearances or VTS sailing plans or both in relation to priority of movements, allocation of space, mandatory reporting of movements in the VTS area, routes to be followed, speed limits to be observed or other appropriate measures which are considered necessary by the VTS authority.

2.3.4 When the VTS is authorized to issue instructions to vessels, these instructions should be result-oriented only, leaving the details of execution, such as course to be steered or engine manoeuvres to be executed, to the master or pilot on board the vessel. Care should be taken that VTS operations do





Interaction



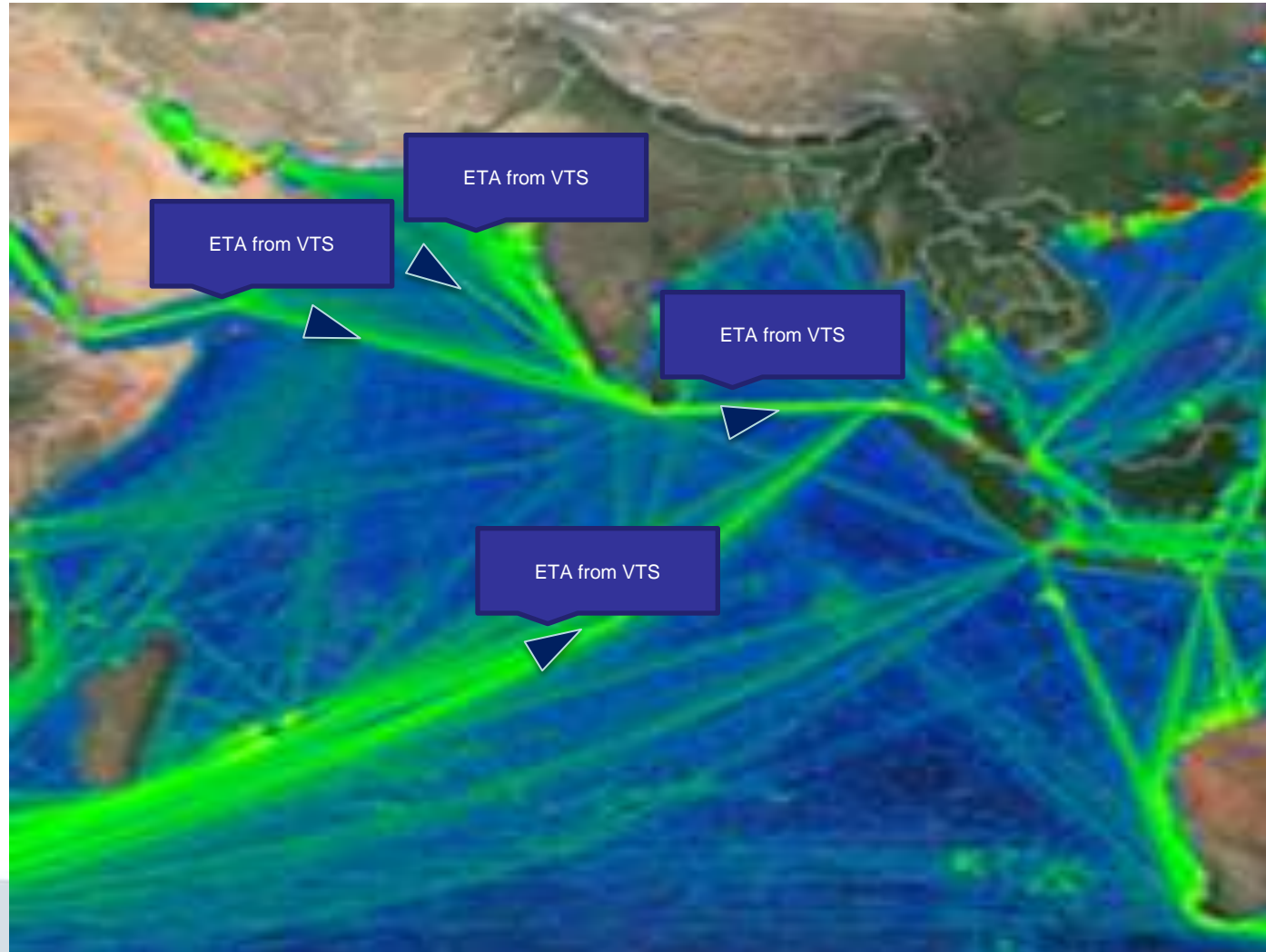
NAVTOR, NavStation ; On Board e-NAV services with seamless data updating



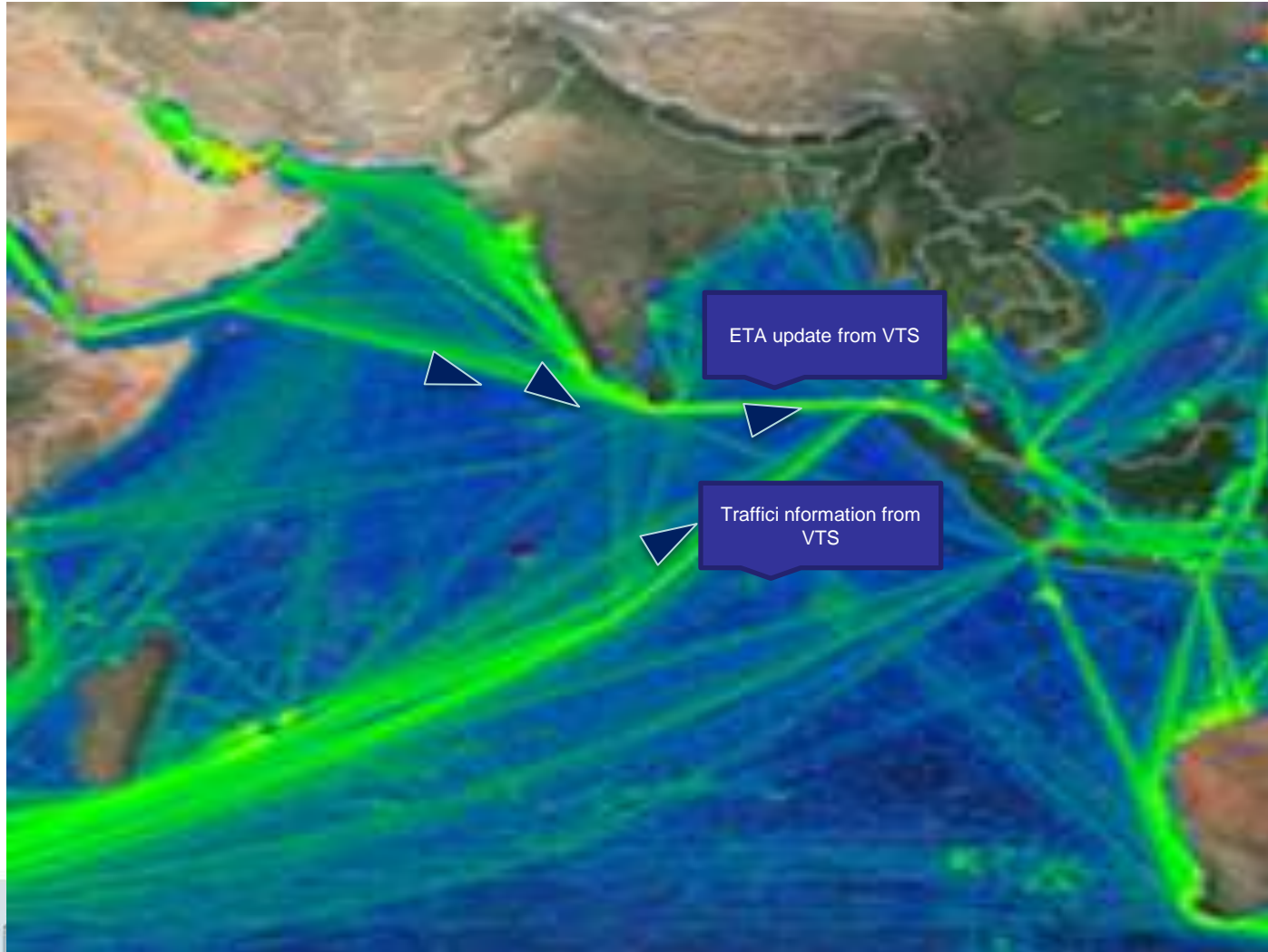
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Providing information service in all areas along the MEH



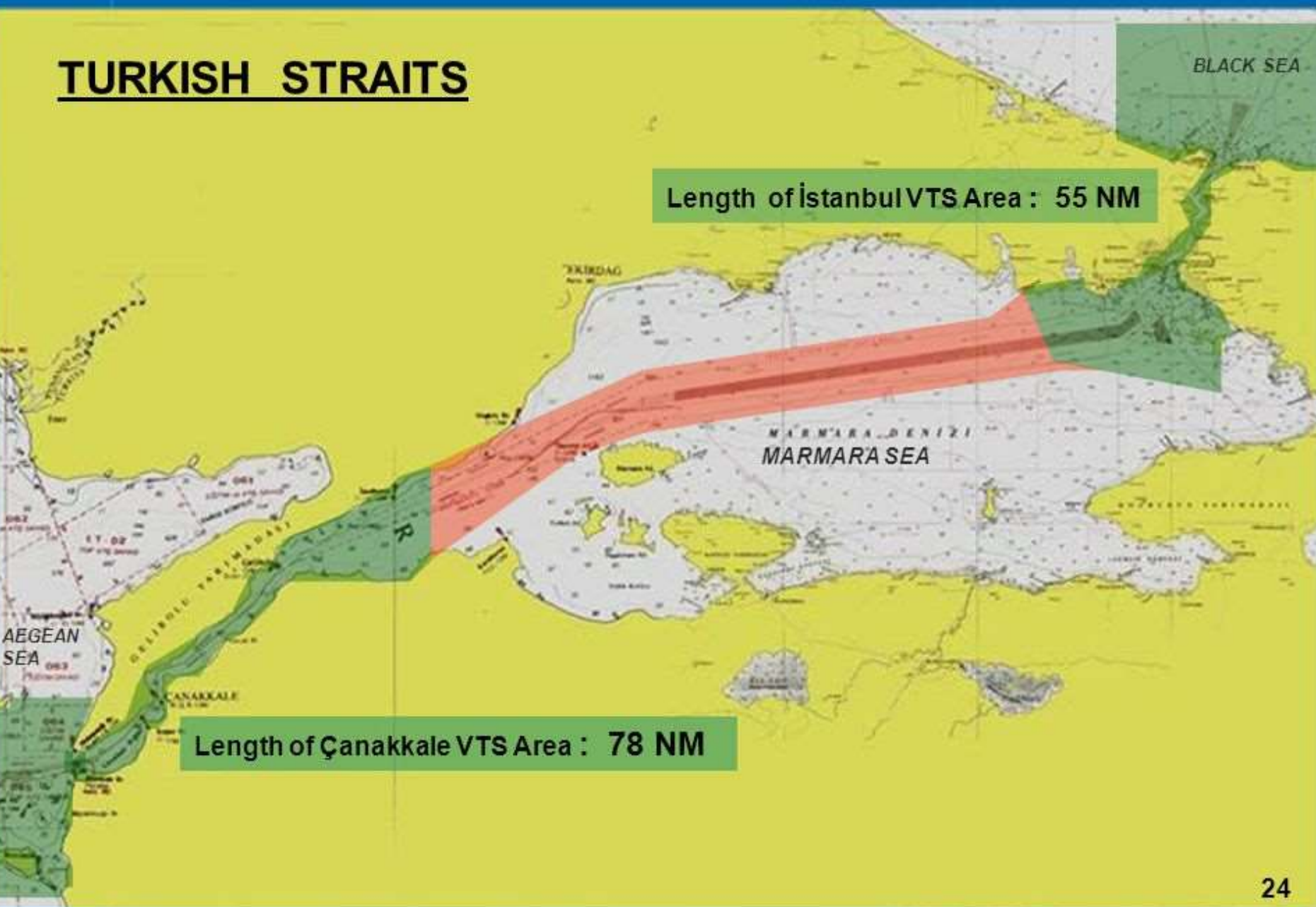
Providing information service in all areas along the MEH



Providing information service in all areas along the MEH



TURKISH STRAITS

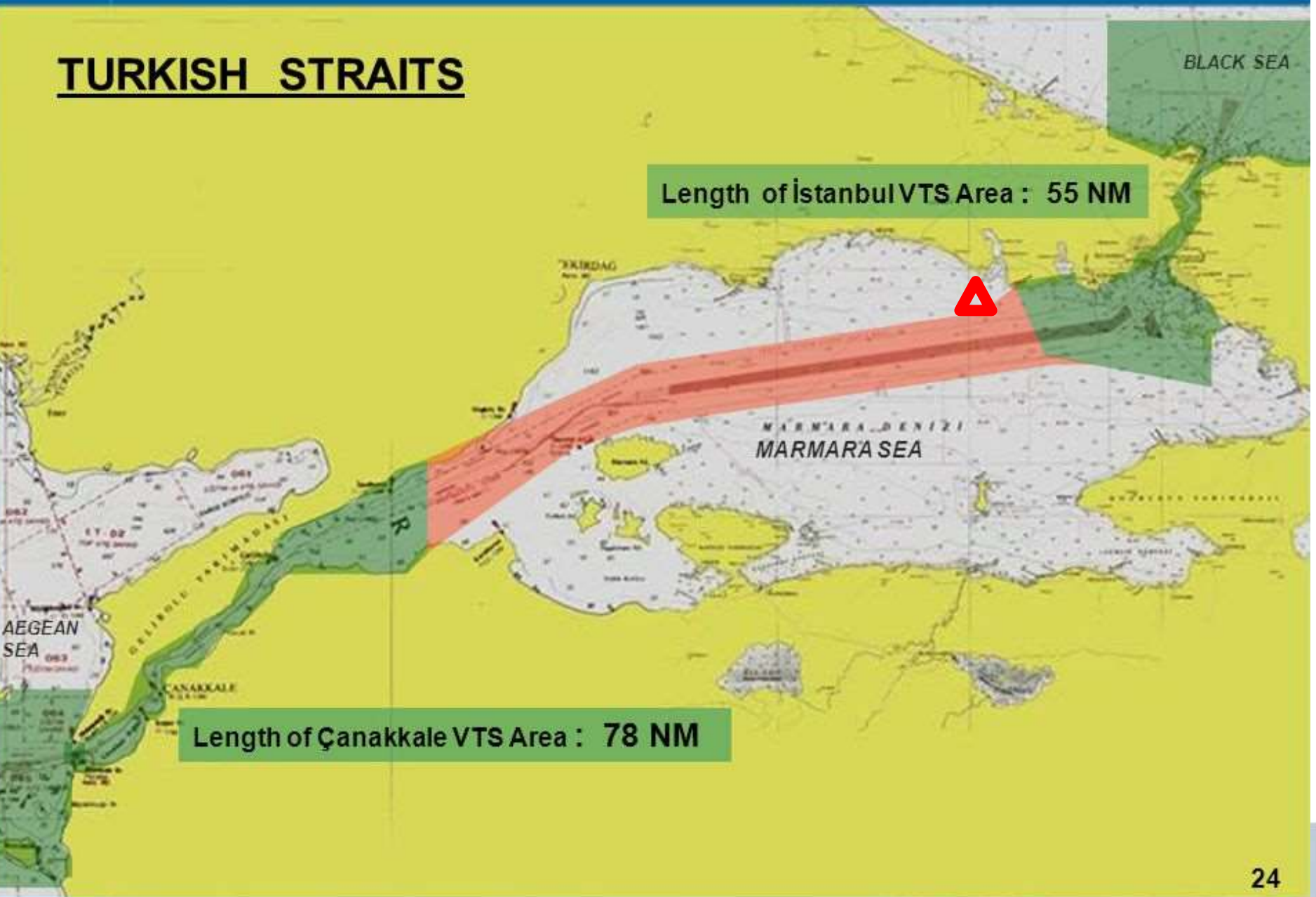




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TURKISH STRAITS



by electronic means ?



The KVITSØY VTS DEMO; Route exchange as a practical approach to e-Navigation.

By NCA, Kongsberg Maritime, Kongsberg Norcontrol and NAVTOR.

GOALS;

- Route exchange on board Vessel;
 - Edited route Front of Bridge (FOB) -> Back of Bridge (BOB)
 - Edited route BOB -> FOB
 - Standard route format
 - Seamless and safe exchange
- Route exchange Vessel – VTS;
 - Vessel -> VTS
 - Edited route VTS -> Vessel
- Validation;
 - Validation of complete system before Sea trial.
- Sea Trail



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Framework and structure for an IALA guideline on MSP



IALA GUIDELINE

????

MARITIME SERVICE PORTFOLIOS

Edition 1.0



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Shore services need attributes from different standards

IHO: S-101 to S-199 – OHI : S-101 à S-199

IHO S-101 ENC

IHO S-102 Bathymetric Surface

IHO S-103 Sub-surface Navigation

IHO S-104 Tidal Information for Surface Navigation

IHO S-111 Surface Currents

IHO S-112 Dynamic Water Level Data

IHO S-121 Maritime Limits and Boundaries

IHO S-122 Marine Protected Areas;

IHO S-123 Radio Services

IHO S-124 Navigational Warnings

IHO S-125 Navigational Services

IHO S-126 Physical Environment

IHO S-127 Traffic Management

IHO S-128 Catalogues of Nautical Products

IHO S-1xx Marine Services

IHO S-1xx Digital Mariner Routeing Guide

IHO S-1xx Harbour Infrastructure

IHO S-1xx (Social/Political)

IALA: S-201 to S-299 – AISM : S-201 à S-299

IALA S-201 Aids to Navigation Information

IALA **S-210** Inter-VTS Exchange Format

IALA **S-230** Application Specific Messages

IALA **S-240** DGNSS Station Almanac

IALA **S-245** eLoran ASF Data

IALA **S-246** eLoran Station Almanac

Various: S-401 to S-... - Divers : S-401 à S-...

IEHG S-401 Inland ENC

JCOMM S-411 Ice Information

JCOMM S-412 Weather Overlay



BUT?

Can we manage to deliver one holistic, practical and user-friendly standard for e-navigation portfolios to the maritime world ?

And only one standard, protocol and specification?

Can we manage to coordinate the work ?

Do we need to know who is doing what?

Do we need a roadmap?



Thank you



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