KYSTVERKET
NORWEGIAN COASTAL ADMINISTRATION

e-navigation – enhanced safety of navigation and efficiency of shipping

MEH and e-navigation, Singapore, September 2012

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The e-navigation concept

- Intends to promote safety, security and efficiency in global shipping, and, consequently, the protection of marine and coastal environments.

Marine accidents

- An increased focus on **public accountability** highlights the need for participation and involvement by the global shipping community.

Shipping has undergone a rapid and advanced technological development

e-navigation – a better future for shipping

cruiseshipphotos.blogspot.com

In e-navigation the level of automation will increase

Some functions may be automated, while others will continue to be carried out through interactions between people and actions.

e-navigation aims to improve the coordination of shipping regimes and systems, and actively engage the mariner in the process of safe and efficient navigation, while preventing distraction and overburdening.

e-navigation key strategy elements

- Architecture
- Human element
- Conventions and standards
- Position fixing
- Communications technology and information systems
- ENCs
- Equipment standardization
- Scalability

Proposed solutions

- Improved, harmonized and user-friendly bridge design, including extended use of standardized and unified symbology for relevant bridge equipment.
- Standardized and automated ship reporting, including single-entry of reportable information in a single-window solution.
- Improved reliability, resilience and integrity of bridge equipment and navigation information.
- Integration and graphical presentation of available information received via communication equipment, such as Maritime Safety Information, Automatic Identification System, charts, and radar.

Proposed solutions (cont.)

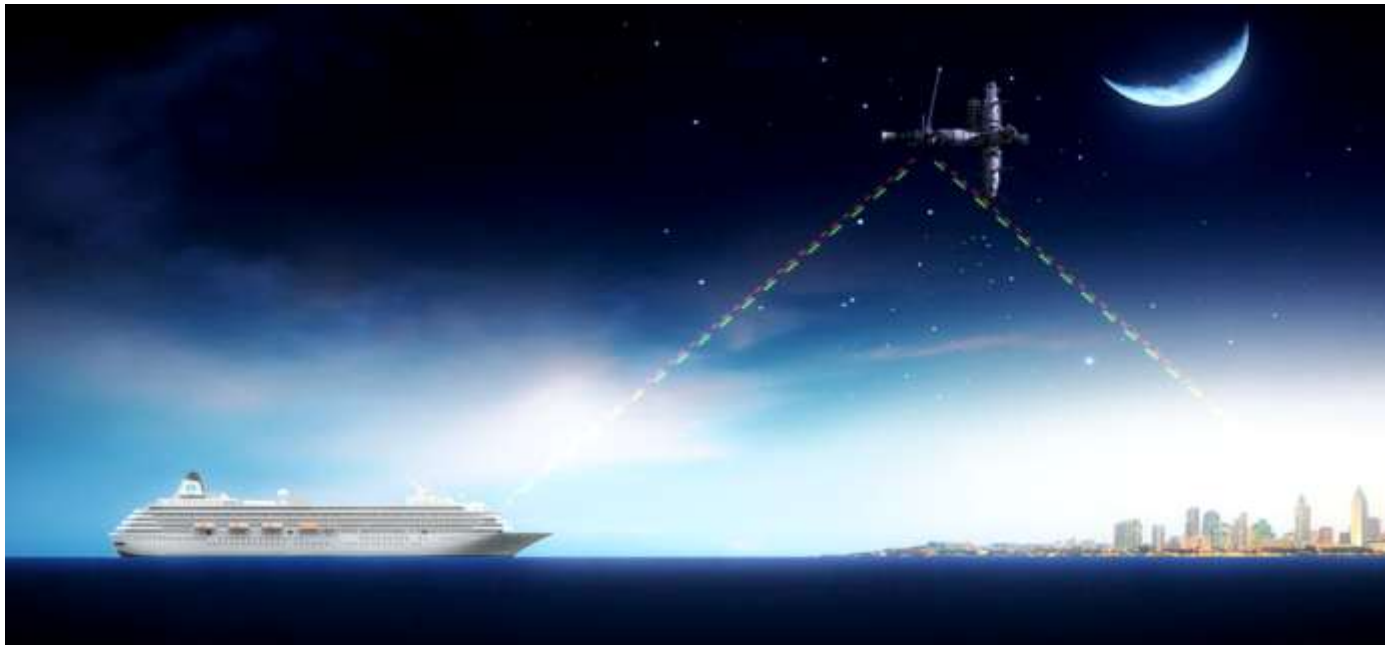
- Optimal routing and filtering of information onboard, for example weather forecast and intended route.
- A holistic display presentation library.
- Optimal information management that provides improved display of status of available updates.
- Automated and timely updates of Electronic Navigational Charts (ENCs), nautical publications and other documentation.
- Electronic information to be searchable to the appropriate shipboard user.
- Improved access to relevant information for Search and Rescue services (SAR).

Cooperation and improved SAR accessibility

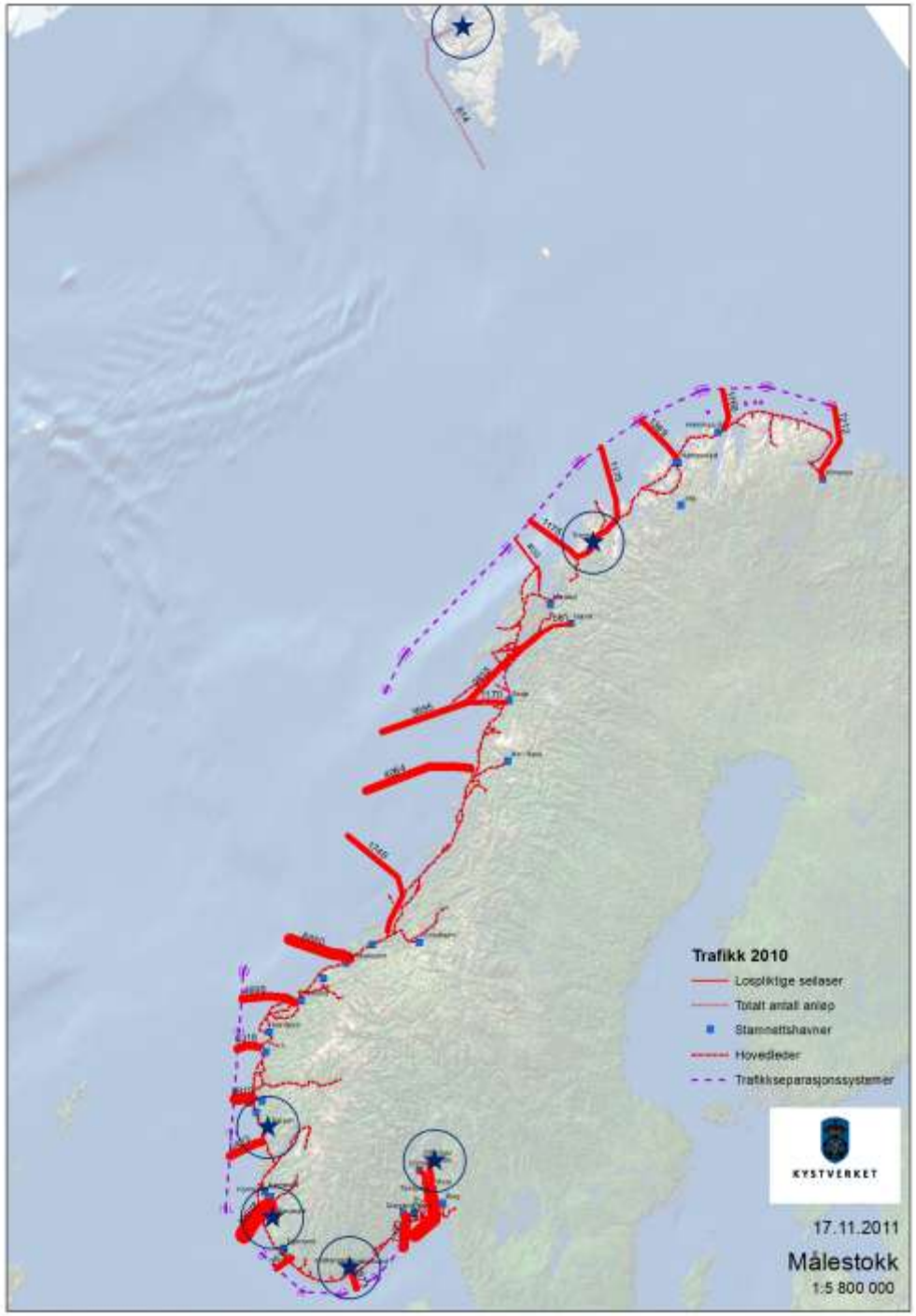
Integration and presentation of available information

Back-tracking using monitoring and ship reporting systems

Standardized and automated ship reporting – a common need



http://www.youtube.com/watch?v=sV6LI3wNmuA&list=UUliCEXR9eSmY9PDb2lXov7Q&index=1&feature=plcp

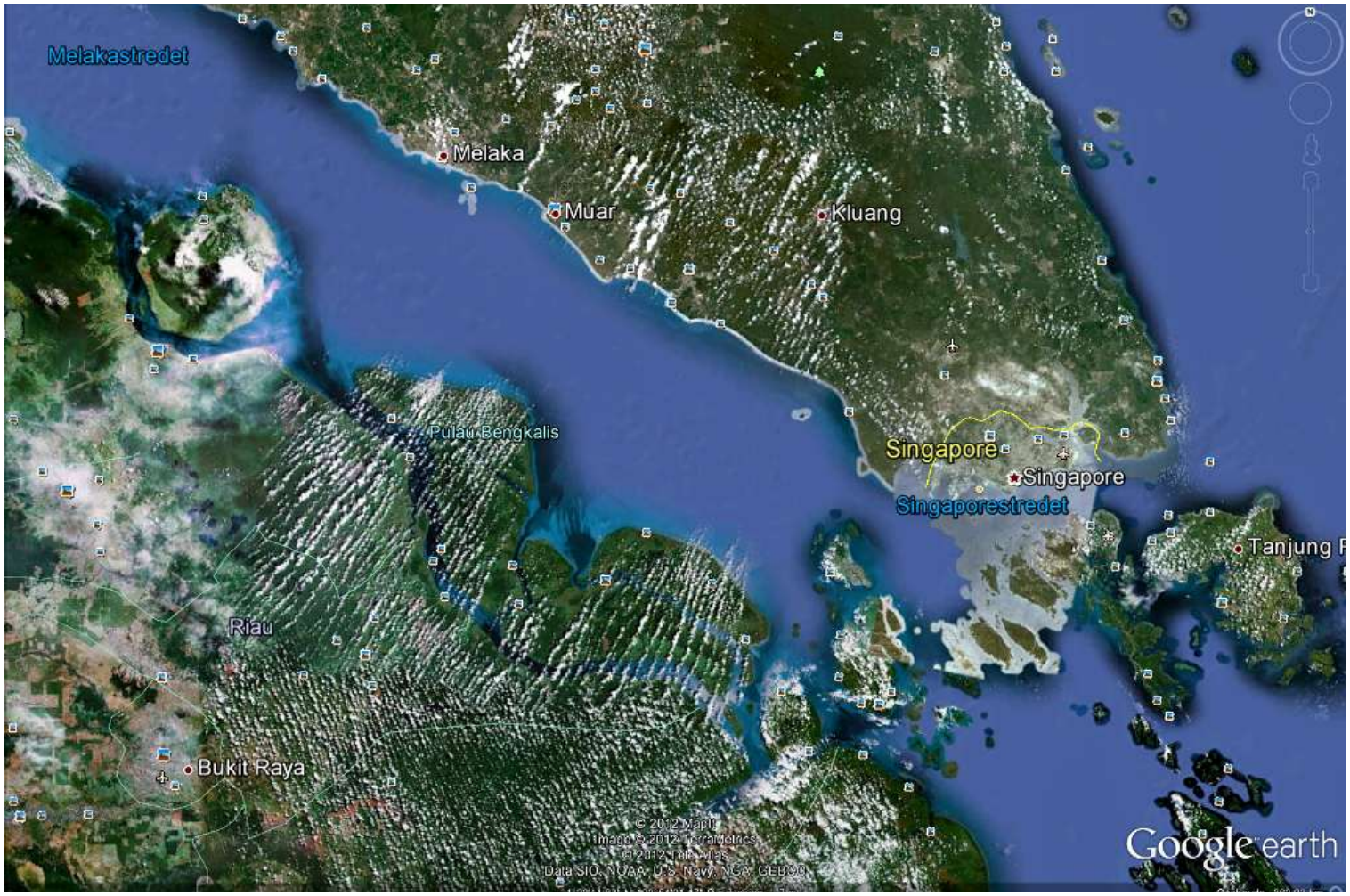


Marine Electronic Highways in Norway

- Norwegian policy influenced by the IMO e-navigation development.
- The Norwegian Green Paper on National Transport Plan 2014-2023 proposes the establishment of Norwegian Marine Electronic Highways for the main fairways.

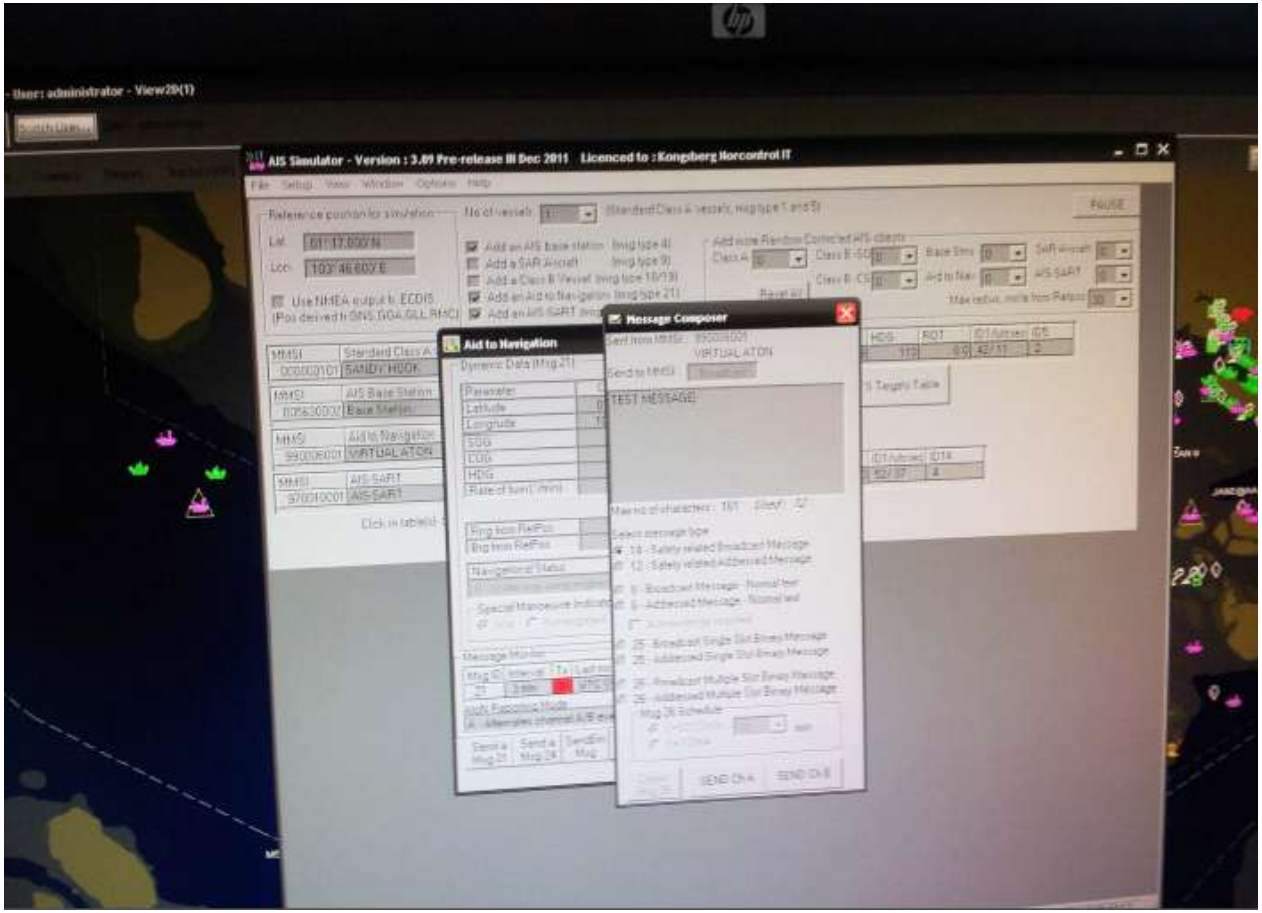
e-navigation services

Test-bed in Singapore

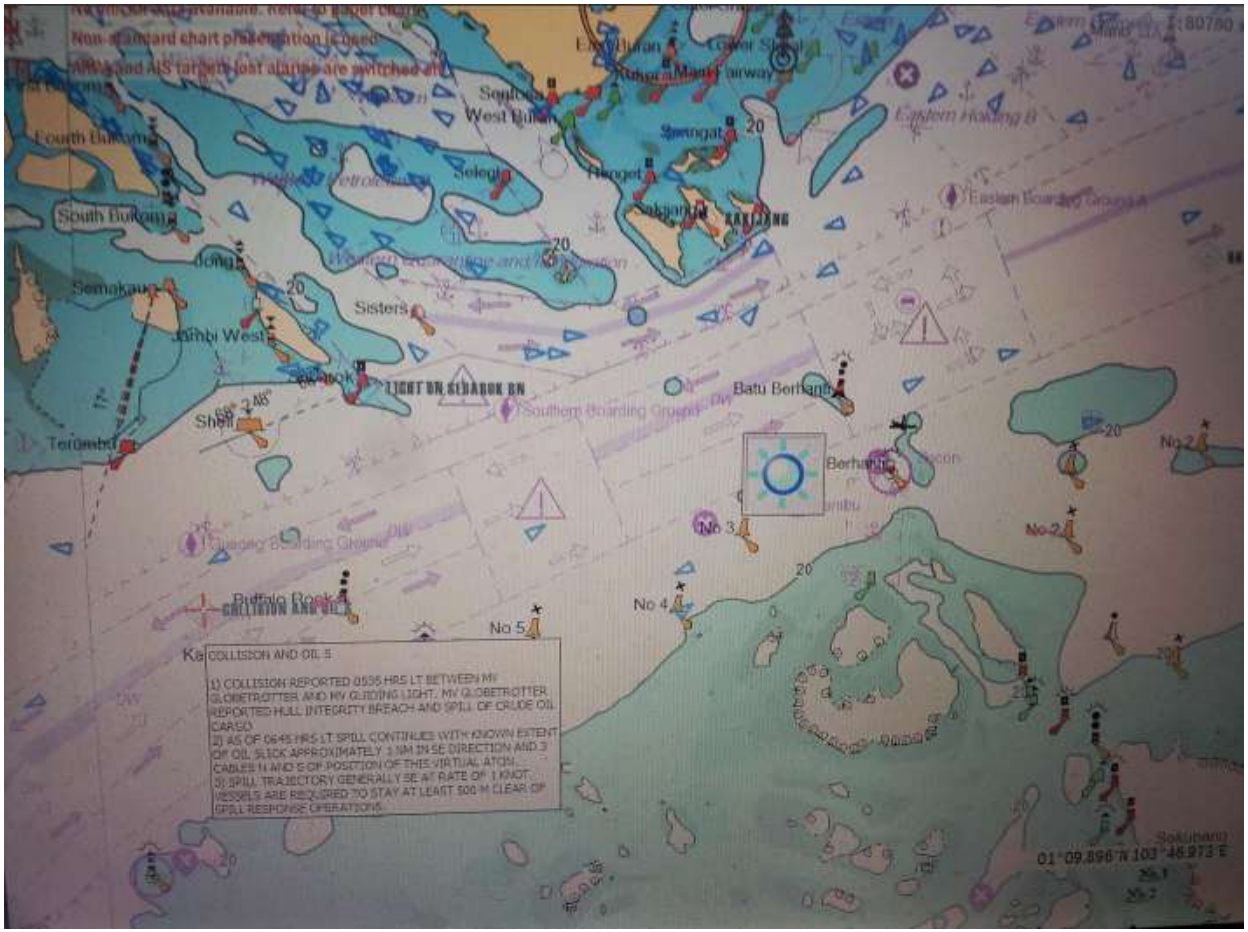


Test-bed in Singapore

Providing MSI from the VTS



Receiving MSI on board

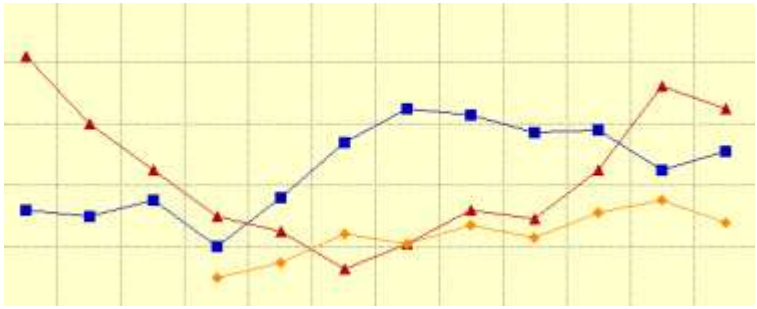


Human-machine interface – involvement of industry

The development of guidelines for usability of navigational equipment and its harmonization with the human element.

Progress

- Risk and Cost/Benefit assessments
- Sources of funding



The bottom line

- Safety procedures
- Suitable training
- Good seamanship


Thank you for your attention!