John Erik Hagen
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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.
e-navigation needs...

- Harmonized and user friendly tools optimized for good decision making
- Reliable and robust communication
- Proper coordination of technological development
Roadmap

2009
• Survey and prioritizing of User Needs

2010
• Survey and prioritizing of User Needs, services and tasks
• Description of functions and services

2011
• Selection overarching system architecture
• Initial GAP analysis

2012
• Final GAP analysis

2013
• Risk and Cost/benefit analyses

2014
• Proposal for a final Strategy Implementation Plan
• Final decision of Strategy implementation plan
I know what I need
User surveys

- User surveys carried out by several Member States and international organizations
- Identified areas for improvements
- Mariners and land-based personnel participated
- 24 main categories of user needs were identified
Ship-shore interaction

- The use of IHO S-100 standard
- An overarching e-navigation architecture in 2012
- A Common Maritime Data Structure
- An IMO/IHO Harmonization Group on Data Modelling
The GAP

Status

We know where we are

Future

User Needs tell us where we want to go
How to bridge the gap
(the Nordic way)
GAP analysis

and references to be taken into consideration, provided by MSC or NAV

1. User Needs
2. Aspects (MSC 86/23/4)
2. Key elements (NAV 54/25/Annex 12)
3. Core objectives (NAV 54/25/Annex 12)
4. Relevant functions (NAV56/WP.5/Rev.1/Annex 1)
5. Operation area (as identified for Maritime Service Portfolios – MSP)
Gap analysis delivered

• 87 gaps identified based on user needs
• Four areas for improvement:
  – Operational, technical, regulatory and training
• Main categories identified:
  – Information and data coordination
  – Effective and robust communication and data transfer
  – Navigation systems and onboard equipment
  – Ship reporting
  – Training and usability
  – Traffic monitoring
• Could be used as reference in development of new products
Workshops

• **Monaco**: Focused on harmonization and standardization of e-navigation information based on a common global standard.

• **Singapore**: Trials conducted for exchanging information electronically between Vessel Traffic Service centre and ship based on the IHO S-100 standard.

• **Haugesund** (Norway): Discussed the need for communication in Polar Regions based on electronic exchange of ship-shore information. Trials conducted to survey communication coverage in polar regions.
Human Element Analyzing Process
HEAP
How to bridge the e-navigation gaps and identify solutions?

User Needs

Status

Solutions

With reference to:
- Aspects
- Key elements
- Core objectives
- Relevant functions
- Operational areas
Examples of main solutions

Solution 1: Improved, harmonized and user-friendly bridge design

Solution 2: Means for standardized and automated reporting

Solution 3: Improved reliability, resilience and integrity of bridge equipment and navigation information

Solution 4: Integration and presentation of available information in graphical displays received via communication equipment.

Solution 9: Improved Communication of VTS Service Portfolio.
The way forward

If you know the direction, and you take it step by step, - then ___ ___ ___ ___
The next delivery…

• Risk and Cost/Benefit analyses to be delivered to NAV 59

• The prioritization of main solutions to achieve workable and efficient results is the basis for the analyses
Work towards 2014

- Risk analysis
- Cost/benefit analysis
- Development of:
  - Maritime Service Portfolio
  - Guidelines for testing usability
  - Guidelines for test-beds
  - Guidelines for quality assurance of data
- Strategy Implementation Plan
The Strategy Implementation Plan

1. Identification of responsibilities
2. Transition arrangements,
3. A phased implementation schedule
4. Priorities for deliverables
5. Proposals for a systematic assessment of the development of new technology
6. A plan for the requirements of e-navigation in the longer term,
7. Proposals on public relations
8. Identification of potential sources of funding
2014: Mission completed!