**VTS36** Information paper

**Agenda item** 5.6

**Task Number**

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Rapporteur Report - Use and impact of risk and decision support tools

# Summary

This report aims to brief members on recent developments being undertaken in the use and impact of risk and decision support tools. It is not intended to be an exhaustive list, it simply contains information identified by the rapporteur over the past six months.

## Purpose of the document

To foster the exchange of information on decision making tools within the VTS Committee.

# INFOrmation from IALA e-Nav Committee

Two items from the e-NAV Committee which are of particular relevance.

## Draft Guideline on Harmonised Portrayal of e-Navigation-related Information

This guideline was completed at e-Nav12 and has been forwarded to VTS Committee, amongst others, to note the draft guideline and provide comment (refer to VTS36-18 Liaison Note to PAP VTS EEP ANM - e-Navigation Portrayal Guideline). The purpose of this Guideline is to provide suitable guidance regarding how the presentation and display of e-Navigation-related information should be harmonized for both shipborne and shore-based systems / services.

In Annex A, this document lists examples of new applications or systems that may be e-Navigation-related. These demonstrate various ways which decision support tools have been implemented around the world.

More detail on each portrayal example can be found on the website at: <http://www.e-navigation.net>. There is lots of good information available on this website and highly worth browsing.

## e-Navigation Underway Conference

The third international e-Navigation Underway conference took place from   
29 to 31 January 2013 onboard MS PEARL SEAWAYS transiting between Copenhagen to Oslo and back again.

Copies of the presentations (both video uploads and slides) are available on the   
e-Navigation website at: <http://www.e-navigation.net/index.php?page=presentations>. In particular, these were more relevant to decision support tools:

* [Working with the human element: Decision support systems and the human factors](http://www.e-navigation.net/index.php?page=working-with-the-human-element-decision-support-systems-and-the-human-factors) - Thomas Porathe, Chalmers University of Technology
* [Have we addressed Human Element user needs?](http://www.e-navigation.net/index.php?page=Have-we-addressed-Human-Element-user-needs) - Margareta Lützhöft, Chalmers University of Technology
* [Sharing of Complex Maritime Information](http://www.e-navigation.net/index.php?page=Sharing-of-Complex-Maritime-Information) - Ulf Svedberg, Swedish Maritime Administration
* [ACCSEAS: improving Access for Shipping in the North Sea Region](http://www.e-navigation.net/index.php?page=accseas-improving-access-for-shipping-in-the-north-sea-region) - Nick Ward, General Lighthouse Authorities of the UK and Ireland
* [Vessel Monitoring and advisory Service](http://www.e-navigation.net/index.php?page=vessel-monitoring-and-advisory-service) - Robert Tremlett

The conference derived 13 conclusions, of which, IALA will consider and identify if any appropriate actions required. There was one in particular which highlighted that consideration to the human element is essential.

*4. The Human Element remains vital. The minimization of accidents and incidents due to human errors, including single person error is essential. This can be assisted by applying Human Centred Design as well as risk and error management. Systems and displays need to be designed to fit the work process of the humans involved, providing safe decision support rather than a lot of alerts.*

The final report is located at: <http://www.e-navigation.net/index.php?page=final-report>

# WEB RESEARCH

## EfficienSeas Project

A comprehensive report entitled *‘Dynamic risk management - user need description’* is available at: <http://efficiensea.org/files/mainoutputs/wp6/d_wp6_1_01.pdf>

The executive summary notes that this study is part of Work Package 6 concerning “Dynamic Risk Management”. The work package aims to develop and demonstrate different approaches to dynamic risk management. Part of this work is the assessment of decision support tools used for the provision of vessel traffic service (VTS).

The following research questions were considered:

1. What characterizes decision making in the settings of a VTS centre?
2. What decision support tools are used today to provide vessel traffic service?
3. What user needs do VTS operators have today and how can these be included in the decision support system development of the future?

There may be merit in the material contained in this report being considered by the breakout group developing the guideline on decision support tools.

## TransNav – International Journal on Marine Navigation and Safety of Sea Transportation (http://www.transnav.eu)

These papers can be a little technical but demonstrate examples of studies that have been undertaken over the last few years:

*Journal Vol. 6 No. 3 - September 2012*

* A Decision Support Tool for VTS Centers to Detect Grounding Candidates   
  by A. MazaheriF. GoerlandtJ. MontewkaP. Kujala <http://www.transnav.eu/Article_A_Decision_Support_Tool_for_Mazaheri,23,370.html>
* Evolutionary Sets of Safe Ship Trajectories: Evaluation of Individuals   
  by R. SzłapczynskiJ. Szlapczynska. <http://www.transnav.eu/Article_Evolutionary_Sets_of_Safe_Szłapczynski,23,371.html>

*Journal Vol. 5 No. 4 - December 2011*

* Applications and Benefits for the Development of Cartographic 3D Visualization Systems in support of Maritime Safety by R. GoralskiC. RayC. Gold <http://www.transnav.eu/Article_Applications_and_Benefits_Goralski,20,312.html>

*Journal Vol. 4 No. 3 - September 2010*

* Knowledge Representation in a Ship’s Navigational Decision Support System by Z. PietrzykowskiJ. Uriasz <http://www.transnav.eu/Article_Knowledge_Representation_Pietrzykowski,15,230.html>
* Development of Decision Supporting Tools for Determining Tidal Windows for Deep-drafted Vessels by K. ElootM. VantorreJ. RichterJ. Verwilligen <http://www.transnav.eu/Article_Development_of_Decision_Supporting_Eloot,15,238.html>

*Journal Vol. 3 No. 3 - September 2009*

* Simulation-Based Risk Analysis of Maritime Transit Traffic in the Strait of Istanbul by B. OzbasI. OrO. S. UluscuT. Altiok <http://www.transnav.eu/Article_Simulation-Based_Risk_Analysis_Ozbas,11,168.html>

# UPCOMING workshopS

## ACCSEAS

ACCSEAS (Accessibility for Shipping, Efficiency Advantages and Sustainability) is a project led by the General Lighthouse Authorities of the UK and Ireland with eleven other partners: from Denmark, Germany, The Netherlands, Norway and Sweden. Started in April 2012, and being delivered within a three-year timescale to February 2015, the project is funded under the INTERREG IVB North Sea Region programme.

The principal aim of ACCSEAS is to implement and demonstrate a practical e-Navigation test-bed for the North Sea Region. The project aims to build on the development of e-Navigation in Europe to date, through co-ordination with related projects –namely EfficienSea (Baltic Sea) and Mona Lisa.

They have an upcoming conference in Flensburg, Germany, 5-7 March 2013.

It will be important to monitor the developments of this project and see how the shore side elements can be potentially integrated into a VTS environment.

More information can be found on their website at: <http://www.accseas.eu/>.

## e-Navigation Usability Workshop

Workshop on the usability of navigation equipment will be held in Kingscliff, NSW, Australia 5-6 March 2013. The aim of the workshop is to further discussion and develop guidance on:

1. The usability of navigational equipment.
2. Quality assurance of software used in navigational systems (including updating regimes for software-driven applications).
3. Human element issues associated with e-navigation.

# MEMBERS REquested TO ASSIST WITH INPUT TO THIS REPORT

This report is about creating an awareness of what is happening around the world in the area of the use and impact of risk and decision making tools. If there is an item that you would like to share, or are aware of something progressing in your country, please contact me: [kerrie.abercrombie@amsa.gov.au](mailto:kerrie.abercrombie@amsa.gov.au).