

FORMAL SAFETY ASSESSMENT – DETAILED CONSIDERATIONS OF ECDIS AS RISK CONTROL OPTIONS

RISK: POWERED GROUNDING
FUNCTION: SAFE NAVIGATION
RISK CONTROL OPTIONS: PREVENTIVE
SHIP TYPE: ALL SHIP TYPES EXCEPT HIGH SPEED CRAFTS

OBJECTIVE

Formal safety assessment, including cost effectiveness assessment of Electronic Chart Display and Information System (ECDIS) for relevant ship types (excluding High Speed Crafts).

DELIVERABLES

[The submission to MSC 81](#) (as submitted)
[MSC-81/24/5](#) (should be the same as above)

[The INF document submitted to MSC 81](#) (as submitted)
[MSC81/INF.9](#) (as downloaded from IMO, should be as above)

[MSC81/23/13 'Proposal for a new work programme item for the NAV Sub-Committee on carriage requirements for ECDIS, and for the STW Sub-Committee on ECDIS training and familiarization](#)
[Submitted by Denmark and Norway](#)

[The full report \(DNV style\)](#)

FOLLOW UP DOCUMENTS

**NAV 51/6 EVALUATION OF THE USE OF ECDIS AND ENC DEVELOPMENT,
Report of the Correspondence Group, Submitted by Norway**

PRESENTATIONS AND NEWS

[Presentation, Stavanger, February 8th 2006](#)

[Lloyds List, July 18th 2006.](#)

[Lloyds List, July 25th 2006.](#)

[Lloyds List, August 1st, 2006](#)

BACKGROUND

This proposal builds on the FSA - Large Passenger Ship – Navigation. This study is documented in detail in the following documents:

1. The HAZID Report, IMO Document NAV49/INF.2 submitted by Norway
2. A brief FSA summary of results, MSC78/4/2, Submitted to IMO February 9th 2004 by Norway
3. NAV 50 submission , NAV50/11/1, LARGE PASSENGER SHIP SAFETY: EFFECTIVE VOYAGE PLANNING FOR LARGE PASSENGER SHIPS, FSA - Large Passenger Ships - Navigational Safety, Submitted by Norway April 30th 2004.
4. NAV 51 submission, NAV 51/10 PASSENGER SHIP SAFETY: EFFECTIVE VOYAGE PLANNING FOR PASSENGER SHIPS - FSA - Large Passenger Ships - Navigational Safety

These reports and the full FSA report with all annexes are available at:

<http://research.dnv.com/skj/FSALPS/FSA-LPS-NAV.htm>

ECDIS was one of the risk control options that proved cost effective for large passenger ships. The main results were that the Gross Cost of Averting a Fatality was just \$2,000 and \$3,000 for ECDIS with and without track control, respectively. The Net Cost of Averting a Fatality (NCAF) was negative, indicating that the net economic benefits exceeded the costs. ECDIS could therefore be introduced for purely economic reasons as well as purely for safety reasons.

SCOPE

The FSA study referenced above will therefore be updated and extended to be useful as a basis for decision-making at IMO relating to ECDIS in general. Will ECDIS be cost effective for all passenger ships? Will ECDIS be cost effective for all ships, for all ships above a certain size or in specific trades? The study will aim at answering these questions.

The study will therefore be in agreement with the following views expressed by the Working Group on ECDIS during NAV 51 (Extracts from NAV 51/WP.4, from the last sentence of paragraph 6:

(6) The Group was of the view that there should be an FSA on the use of ECDIS on ships other than High Speed Craft and Large passenger Ships prior to any discussion on possible carriage requirements and that the outcome of this FSA would be taken into account when developing any proposal for a carriage requirements.

The following will be carried out:

- Define a set of representative ship types and trades
- General study of the effect of ECDIS
- Update and extend the risk model to become valid for an extended set of ship types. The detailed modelling will be carried out for two ship types. This will be extended to other ship types by more general considerations (e.g. all passenger ships except HSC, tankers, bulkers, container)
- Re-evaluate the risk reduction
- Re-evaluate the costs
- Reporting