

SUB-COMMITTEE ON SAFETY OF
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DEVELOPMENT OF AN E-NAVIGATION STRATEGY IMPLEMENTATION PLAN

Observations on IMO's e-navigation strategy

Submitted by the International Maritime Pilots' Association (IMPA)

SUMMARY

Executive summary: E-Navigation has been the subject of considerable attention in recent years by IMO and other international organizations involved in maritime navigation. IMO's 2008 *Strategy for the Development and Implementation of e-navigation* and its 2009 *Plan of Work for the Implementation of the Strategy* have set out a path to guide the international maritime community towards the most practical and effective application of e-navigation. IMPA believes the successful implementation of this strategy requires that three considerations not only be kept in mind but be regarded as paramount. These are: fostering consensus among key stakeholders as to the principal components of the strategy and how they are applied; ensuring a pragmatic and flexible approach that takes account of the complexity and diversity of the world's marine transportation system; maintaining a realistic appreciation of the evolutionary nature of change to navigation systems.

Strategic direction: 5.2

High-level action: 5.2.6

Planned output: 5.2.6.1

Action to be taken: Paragraph 10

Related documents: MSC/Circ.878, MSC/Circ.1091; MEPC/Circ.346; NAV 58/6 and MSC 86/23/4

Background

1 IMPA is committed to efficient and cost-effective e-navigation and has been actively involved in IMO's activities associated with the development of an e-navigation strategy and the elaboration of a related implementation plan.

2 As IMO moves forward with implementing its strategy, IMPA believes that it would be beneficial to formally state its view on the current development process and expectations for the future implementation of e-navigation.

3 Marine pilots' support of advanced navigation technologies is demonstrated by their innovative use of e-navigation around the world. This includes the use of Portable Pilot Units, AIS Application Specific messages for met/hydro information, and dynamic under-keel clearance decision support. As knowledgeable and experienced practitioners of safe and efficient navigation, pilots are early innovators of e-navigation. Pilots are not only aware of e-navigation's capabilities and potential, but also of its limitations.

Staying true to the definition of e-navigation

4 IMO has defined e-navigation as: "*...the harmonized collection, integration, exchange, presentation and analysis of maritime information onboard and ashore by electronic means to enhance berth to berth navigation ...*"

5 The correct interpretation of this definition is that electronic means **are intended** to enhance berth-to-berth navigation. More than semantics, the use and placement of the words "to enhance" is crucial, and conveys a very specific meaning. The purpose of the e-navigation initiative is to improve already existing navigational systems by facilitating the exchange of information electronically, not to replace those systems. Surely, the goal is not to have vessels sailing the seven seas from "berth-to-berth" solely on the basis of electronic equipment. Similarly, there is no suggestion in the definition that IMO either envisions or supports fundamental changes in the way mariners navigate ships or in the respective roles of shipboard and shoreside personnel.

Overarching and interrelated principles

6 IMPA considers that the following three overarching and interrelated principles should guide the implementation of the e-navigation strategy:

.1 Predominance of the human element

While e-navigation has the potential to enhance navigation safety, this will not occur if there is the misperception that mariners are no longer the most critical factor in safe navigation.

While e-navigation can provide useful information for making informed decisions, the expert human element on the bridge of a ship must continue to be at the centre of the decision-making process. This is especially crucial in those areas where navigational challenges are at their greatest, as is the case in compulsory pilotage areas. The manner in which specific e-navigation data should be relied upon during the course of a particular pilotage assignment must be left to the independent, professional judgment of the pilot.

.2 Meeting the needs of the bridge team and the pilot

The development and implementation of e-navigation must be focused on ensuring that it responds to demonstrated needs. First and foremost, is support for the decisions that must be made by the bridge team and the pilot. Under all circumstances, particular attention must be given to ensuring that the information provided by e-navigation components and applications is reliable, accurate, and up-to-date. Without this assurance, the bridge team and the pilot may be hindered in performing

their tasks or achieving the goal of the safest navigation possible. This principle was stated very clearly by the IMO in SOLAS regulation V/15: the aim of all decisions regarding navigation systems and equipment must be to facilitate the tasks of the bridge team and the pilot.

.3 *Looking out of the window remains essential*

E-navigation is a useful concept that promises to advance navigation safety through better integration of all information provided by electronic sources available from both onboard and onshore. However, the integration of information obtained electronically does not preclude the need for information obtained through *other* means. To ensure safe navigation, it is essential that e-navigation data be complemented by, and validated through, traditional methods. This includes voice communications and visual inspection of fixed/floating aids-to-navigation.

Paramount considerations

7 In regard to the e-navigation implementation process, IMPA recommends that three considerations always be kept in mind:

- .1 *Find consensus* – If key stakeholders feel their concerns are not being addressed, they will resist the initiative rather than help implement it.

For example, marine pilots and many other stakeholders are concerned about any effort to link e-navigation with shore-based navigation control. Transferring decision-making from the bridge to the shore is obviously controversial, and an issue on which stakeholders have strong views. To connect this issue with otherwise sound e-navigation strategies, will only serve to impede further progress towards e-navigation implementation;

- .2 *Remain practical* – The world's marine transportation system is complicated, including many jurisdictions and levels of government, complex infrastructure, international and intermodal considerations, diverse local requirements, and important economic considerations. All of this calls for a pragmatic and flexible approach.

Instead of developing prescriptive rules that attempt to define every single detail, the best approach is to develop "goal-based" standards whereby overarching objectives are defined, but freedom to innovate is left to developers and users. In particular, the specific ways by which new forms of e-navigation data are portrayed as "information" should not be overly prescribed. This especially relates to AIS Application Specific Messages, AIS AtoN, and virtual AtoN; and

- .3 *Be realistic* – Enhanced use of electronic navigational tools can deliver significant benefits, and will contribute to making navigation even safer and more efficient. However it is more evolution than revolution. It will be particularly important not to overstate benefits or underestimate the time required to fully implement the new approach to e-navigation.

Summary

8 IMPA believes that the e-navigation initiative undertaken by the IMO is worthwhile.

9 Comments provided in this document are intended to facilitate implementation of IMO's e-navigation strategy and suggest an approach that is based on consensus among stakeholders is practical in terms of what is called for and is realistic in respect of what can be achieved.

Action requested of the Sub-Committee

10 The Sub-Committee is invited to note the information provided.
