REPORT

**on**

**the 58th session of the IMO Sub-Committee**

**on Safety of Navigation (NAV)**



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### **Annex**

Sub-Committee on Safety of Navigation (NAV) – 59th session - Agenda proposed to the Maritime Safety Committee.

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# 1. Introduction

The 58th session of the IMO Sub-Committee on Safety of Navigation was held at the IMO headquarters in London during the period 2 to 6 July, 2012. It was attended by representatives from 74 Member States and 30 Observer Organizations. The Secretary General, Omar Frits Eriksson and Jean-Charles Leclair were representing the Association.

The most important item discussed during the week was again e-Navigation. The Sub-Committee succeeded to finalize and approve the e-Navigation Gap Analysis, and to develop a set of Potential e-Navigation Solutions in view of preparing the Cost Benefit and Risk Analysis for its approbation at the NAV 59 session. At the end of the session, it was decided to re-establish the e-Navigation Correspondence Group to continue to progress the work intersessionally. Beyond its active participation to the Correspondence Group, mainly through its Members, IALA submitted two documents to the Sub-Committee on different matters: on the development of e-navigation strategy implementation plan and on modular and open concept of integrated PNT system.

During this session, the Sub-Committee also discussed the report of the correspondence group on development of policy and new symbols for AIS aids to navigation, and approved a new definition of AIS AtoN. It adopted 19 different new or amended routeing measures and mandatory ship reporting systems, but rejected the proposal to create a recommended route in the Mozambique Channel. The IALA delegation informed the participants about the recent development of the IALA World-Wide Academy.

**2 Development of e-Navigation**

At its 86th session (May 2009), the Maritime Safety Committee approved a joint plan of work for NAV 55 (July 2009), together with COMSAR and STW, to set in motion the development of an e-Navigation strategy implementation plan, with a target completion date of 2012, later reported to 2014. NAV 55 decided to establish a Correspondence Group under the chairmanship of John Erik Hagen (Norway).

NAV 56 (July 2010) finalized the user needs and the initial system architecture, and completed an initial gap analysis.

NAV 57 (July 2011) adopted the overarching system architecture and the establishment of an IMO/IHO Harmonization Group on Data modeling (HGDM). It had also maintained the Correspondence Group.

At this session, the Sub-Committee finalized and approved the e-Navigation Gap Analysis, and developed a set of Potential e-Navigation Solutions in view of preparing the Cost Benefit and Risk Analysis for its approbation at the NAV 59 session.

In the meantime, STW and COMSAR sub-committees were able to review the Gap Analysis list and to make the necessary comments and modifications on the items of their competences.

During the session, the NAV Sub-Committee considered the new report of the Correspondence Group on e-Navigation. But before, the IMO Secretary General, in his opening remarks, stressed the importance to only discuss on the agreed work programme and to not become distracted by tangential matters such as new technology. He underlined the importance of remaining focused on finalizing the gap analysis and the cost benefit and risk analysis. Other parallel developments should concentrate on Guidelines for usability evaluation of navigational equipment, Integrated PNT System, Software quality assurance and Guidelines for Test Beds but without delaying the finalization of the Strategy Implementation Plan.

The report of the Correspondence Group contained the ongoing development of the detailed architecture on e-navigation, a proposal for a completed gap analysis for finalization, a procedure for identifying Risk Control Options, further development of the Maritime Service Portfolios, the development of guidelines for usability evaluation of navigational equipment, the development of guidelines for the harmonization of test beds, as well as a draft outline for the final Strategy Implementation Plan. Several documents were also submitted to the Sub-Committee under this agenda item. In particular, three documents submitted by Germany relating to a resilient Integrated PNT System as part of the Integrated Navigation System (INS), which was intended to support meeting e-navigation user needs such as improvement and indication of reliability. One of the two submissions by IALA on that topic was very in line with one of the German proposals. The second IALA submission provided comments on the report of the Correspondence Group including some details of the ongoing IALA activities regarding the development of e-Navigation.

Among the other documents submitted, there was one from Korea outlining the need to include software quality insurance as part of the ongoing e-Navigation gap and cost-benefit analysis process. The proposal was supported and the Sub-Committee agreed to include this item in further discussions. Japan also introduced a proposal to include explanation on how to utilize usability guidelines to ensure practical and flexible assessment of navigational equipment.

Another important document was submitted by Norway and Denmark providing information on future possibilities for exchanging data and information through VHF Data Exchange (VDE) functionalities as developed by IALA rather than AIS, which means that there was no need to introduce a next generation AIS. After discussions, including by the technical working group, the Sub-Committee supported the proposal and the draft of a liaison statement to ITU-R working Party 5B expressing that *the Sub-Committee was of the view that modifications should not be required to existing AIS equipment onboard existing vessels, but rather allow for new e-navigation services to evolve, supported by communication primarily on the new frequencies identified by WRC-12, while protecting the integrity of the original operational purpose of AIS as the primary function on the existing AIS frequencies*. The Sub-Committee, therefore, supported the further development of the plan for future VHF Data Communications and of the VHF Data Exchange, as appropriate.

After a general discussion in plenary, a Working Group on e-Navigation chaired by John Erik Hagen started its discussions based on the report of the Correspondence Group and on the documents submitted to this session. It succeeded to conclude on different items and to progress several others. The Sub-Committee endorsed its proposals. In particular, it approved the final list of gaps of e-Navigation and noted that the gap analysis had been completed. It also endorsed the preliminary list of potential e-Navigation solutions, as work in progress, and agreed that the list should be used as the basis for the further identification of Risk Control Options, as preparation for the Formal Safety Assessment, for which the procedure was also approved.

It was agreed that the e-Navigation solutions should be goal based and their descriptions should be kept generic. It was decided to group the potential e-Navigation solutions into the following broad categories to facilitate the completion of the FSA process by NAV 59:

*.1 Improved, harmonized and user-friendly bridge design;*

*.2 Means for standardized and automated reporting;*

*.3 Improved reliability, resilience and integrity of bridge equipment and navigation information;*

*.4 Integration and presentation of available information in graphical displays received via communication equipment;*

*.5 Information management;*

*.6 Improved access to relevant information for Search and Rescue;*

*.7 Improved reliability, resilience and integrity of bridge equipment and navigation information for shore-based users;*

*.8 Improved and harmonized shore-based systems and services; and*

*.9 Improved communication of VTS service portfolio.*

Furthermore, the Sub-Committee agreed with the further developments of Maritime Service Portfolios, of guidelines for usability evaluation of navigational equipment, and of guidelines for the harmonization of test beds. It also noted the progress made regarding detailed on-board e-Navigation architecture and invited IALA, IHO and other relevant organizations to contribute to its further development.

Finally, the Sub-Committee decided to re-establish the Correspondence Group, under the coordination of John Erik Hagen (Norway), with the following new terms of reference:

*.1 review the preliminary list of potential e-navigation solutions (NAV 58/WP.6, annex 2) and, if necessary, prepare additional potential e-navigation solutions in order to address all gaps identified in annex 1 to NAV 58/WP.6;*

*.2 finalize the Cost Benefit and Risk Analysis, with a view to final approval by NAV 59, using as input documents namely, the final list of gaps and the preliminary list of potential e-navigation solutions that would cover all the identified gaps and taking into account the Formal Safety Assessment process and the Methodology of the Human Element Analysing Process (NAV 58/6, annex 3);*

*.3 further develop:*

*.1 the detailed ship and shore architecture;*

*.2 the concept of Maritime Service Portfolios; and*

*.3 the draft Strategy Implementation Plan;*

*.4 consider documents NAV 58/6/1, NAV 58/6/2 and NAV 58/6/3 (Germany) and provide comments and recommendations, as appropriate;*

*.5 consider the issue of software quality assurance, taking into account document NAV 58/6/4 (Republic of Korea), and provide comments and recommendations, as appropriate;*

*.6 progress the development of draft Guidelines for usability evaluation of navigational equipment and its harmonization with the HEAP, taking into account documents NAV 58/6/6 and Corr.1, NAV 58/INF.12 and NAV 58/INF.13 and Corr.1 (Japan) and NAV 58/INF.10 (Australia);*

*.7 progress the development of draft Guidelines for the harmonization of test beds, taking into account document NAV 58/6/8 (Republic of Korea);*

*.8 submit reports to COMSAR 17 and STW 44 raising specific questions, as required, that should be addressed by the STW and COMSAR Sub-Committees; and*

*.9 submit a consolidated progress report to NAV 59.*

# 3. Ships’ routeing and related matters

## 3.1 Traffic Separation Schemes (TSS) and other routeing measures

The Sub-Committee approved and invited the Maritime Safety Committee to adopt:

* A new Traffic Separation Scheme “in the Approaches of Ijmuiden” (Netherlands)
* Amendments to the existing Traffic Separation Scheme "Off Texel" (Netherlands)
* Amendments to the existing Traffic Separation Scheme "in the Approaches to Hook of Holland and at North Hinder" (Netherlands and Belgium)
* Amendments to the existing Traffic Separation Scheme "Off Rodher Island" (Russia)
* Amendments to the existing Traffic Separation Scheme "Off Ushant" (France)
* Amendments to the existing Traffic Separation Scheme "In the Santa Barbara Channel" (USA)
* Amendments to the existing Traffic Separation Scheme "Off San Francisco" (USA)
* Amendments to the existing Traffic Separation Scheme "in the Approaches to Los Angeles – Long Beach” (USA)
* Establishment of new routeing measures other than Traffic Separation Schemes, as Associated Protective Measures for “Saba Bank PSSA” (Netherlands)
* Establishment of new routeing measures other than Traffic Separation Schemes “In the Approaches to Ijmuiden” (Netherlands)
* Establishment of new routeing measures other than Traffic Separation Schemes in the area “West of Rijnveld” (Netherlands)
* Amendment to the existing Deep-Water Route leading to Ijmuiden (Netherlands)
* Amendments to the Routeing Measures other than Traffic Separation Schemes “in the Approaches to Hook of Hollland and at North Hinder” (Netherlands and Belgium)
* Amendments to the existing Deep-Water Route leading to Europoort (Netherlands and Belgium)
* Revocation of the existing DeepWater Route inside the borders of the Traffic Separation Schemes from Gogland Island to Rodsher Island (Russia)
* Establishment of new recommended tracks and traffic separation line between the Traffic Separation schemes “Off Rodsher Island” and “Off Gogland Island”
* Establishment of a new area to be avoided (ATBA) off the Ningaloo Coast, Western Australia
* Recommendatory measure for vessels crossing the Traffic Separation Scheme and Precautionary Areas in the Singapore Strait during hours of darkness
* Establishment of two new areas to be avoided (ATBA) in waters off the Brazilian South-East coast.

**3.2 Mandatory ship reporting system**

The Sub-Committee approved and invited the Committee to adopt:

* A new mandatory ship reporting system in the Barents Area (Barents SRS – Norway and Russia).

**3.3 Rejection of the proposed Recommended route in the Mozambique Channel**

The Sub-Committee considered a joint proposal by the Comoros, France, Madagascar, Mauritius, Mozambique, the Seychelles, South Africa and the United Republic of Tanzania for the establishment of a new recommended route for all ships in the Mozambique Channel.

Several delegations, leaded by the International Chamber of Shipping, expressed the view that the proposal neither provided sufficient data on traffic flows, accidents or oil spills nor any compelling need for the proposed routeing measure. There were concerns that the proposal would narrow the route and concentrate the traffic, which could have implications for ship security including piracy threats.

The delegation of South Africa clarified that the proposed routeing measure was of a recommendatory nature and the proposed route had been thoroughly surveyed at a cost of nearly US$2 million. Regarding the accident history, there had been minor spills; however, these could pose a risk to UNESCO heritage sites. In light of the above, the countries of the region with the assistance of the World Bank, GEF and IOC had taken a proactive approach and developed the proposal. The IALA delegation added that thanks to the project numerous aids to navigation in the area were refurbished and improved.

However, the Sub-Committee, recognizing there were serious deficiencies in the proposal, invited South Africa and the co-sponsors to re-submit a revised proposal to NAV 59.

**4 Development of Policy and New symbols for AIS Aids to Navigation**

MSC 88 decided to add a new agenda item on the work of the NAV Sub-Committee on "Development of policy and new symbols for AIS aids to navigation". At NAV 57, there was a general support to develop the subject through a Correspondence Group under the coordination of Japan (Cdr Hideki Noguchi). The Correspondence Group was instructed by the Sub-Committee *“to consider documents NAV 56/11, NAV 57/8 (Japan) and NAV 57/8/2 (IALA), including comments made in Plenary and any other relevant information, develop a first draft of a policy for AIS Aids to Navigation and submit a report for consideration and review by NAV 58”.*

Japan submitted the report of the Correspondence Group (document NAV 58/7) which contained the first draft of the IMO policy and new symbols for AIS Aids to Navigation. The document presented three different options concerning the definition of AIS AtoN. After discussion and despite the intervention of the IALA delegation, the Sub-Committee agreed on the following restricted definition:

*“An AIS AtoN is a digital aid to navigation (AtoN) promulgated by an authorized service provider using AIS Message 21 "Aids to navigation report" that is portrayed on devices or systems (e.g. ECDIS, radar or INS). An AIS AtoN can be implemented in two ways.*

*.1 Physical AIS AtoN: a Physical AIS AtoN is an AIS Message 21 representing an AtoN that physically exists.*

*.2 Virtual AIS AtoN: a Virtual AIS AtoN is transmitted as a Message 21 representing an AtoN that does not physically exist.”*

The new definition has consequences for IALA, first to decide if a physical AIS AtoN can be real and synthetic or if it can only be implemented on the AtoN itself, taking into consideration that the reason for the Sub-Committee to choose this alternative was to not confuse the mariner for whom it is not necessary to know the source of the information and its location.

Also, limiting the transmission of virtual AIS AtoN to Message 21 would mean that the AIS transmission of representation of lines, limits, areas, etc. would not be possible under the rubric AtoN.

The Sub-Committee decided to re-establish the Correspondence Group on Development of policy and new symbols for AIS Aids to Navigation, under the coordination of Japan to progress work intersessionally, with the following terms of reference:

*.1 consider documents NAV 58/7 and NAV 58/WP.7, including comments made in plenary and any other relevant information to further review from an editorial point of view and finalize a revised draft of a policy for AIS Aids to Navigation;*

*.2 develop symbols for AIS AtoN, taking into account the symbols contained in SN/Circ.243 and other relevant guidelines, standards and publications; and*

*.3 submit a report for consideration and review to NAV 59.*

**5 ITU and AIS Matters**

In addition of the liaison statement to ITU-R Working Party 5B prepared on the use of VHF Data Exchange as an alternative to AIS, as referred in item 2, the Sub-Committee agreed on a second liaison statement regarding the revision of Recommendation ITU-R M.1371-4 on the technical characteristics for AIS, in particular the use of AIS-SART, AIS MOB and EPIRB-AIS, and the definition of navigational status parameters 11, 12 and 13.

The Sub-Committee also prepared a SN Circular on information on the display of AIS-SART, AIS MOB and EPIRB-AIS devices, and confirmed its approbation of the draft MSC Resolution on “Recommendation for the protection of the AIS VHF data link” as proposed by IALA.

**6 IALA World-Wide Academy**

The Sub-Committee noted with appreciation the information provided by IALA on the recently created IALA World-Wide Academy, which aims to improve the safety of navigation worldwide on a harmonized basis.

## 7. Recommended actions for IALA

## It is recommended that:

## 7.1. the Council

* note the development of e-Navigation (item 2), in particular:
  + the finalization and approbation of the e-Navigation Gap Analysis, and the development of a set of Potential e-Navigation Solutions,
  + the proposed use of the VHF Data Exchange (VDE) functionalities rather than AIS for exchanging data and information,
  + the fact that e-Navigation solutions should be goal based and their descriptions should be kept generic.
  + the categories in which were grouped the potential e-Navigation solutions to facilitate the completion of the FSA process by NAV 59
  + the invitation to IALA, IHO and other relevant organizations to contribute to further development of the detailed e-Navigation architecture, included on-board,
  + the new terms of reference for the e-Navigation Correspondence Group
* note the rejection of the proposed Recommended route in the Mozambique Channel (item3.3)
* note the new definition of AIS AtoN and its consequences for IALA (item 4)
* note the limited use of virtual AIS AtoN (item 4)
* note the decision to reconvene the correspondence group for the development of policy and new symbols for AIS AtoN (item 4)
* note the proposed revised items to the Recommendation ITU-R M.1371-4 on the technical characteristics for AIS (item 5)
* note the information provided by IALA on the IALA World-Wide Academy (item 6)
* note the new agenda items for the next session:
  + Revision of the information contained in the existing annexes to the Recommendation on the use of adequately qualified deep-sea pilots in the North Sea, English Channel and Skegerrak (resolution A.486(XII)
  + Revision of the information contained in the exixting annexes to the Recommendtion on the use of adequately qualified deep-sea pilots in the Baltic (resolution A.480(XII)
  + Revision of the Guidelines for the onboard operational use of shipborne automatic identification systems (AIS)

**7.2. the e-Navigation Committee**

* note the development of e-Navigation (item 2), in particular:
  + the finalization and approbation of the e-Navigation Gap Analysis, and the development of a set of Potential e-Navigation Solutions,
  + the proposed use of the VHF Data Exchange (VDE) functionalities rather than AIS for exchanging data and information,
  + the fact that e-Navigation solutions should be goal based and their descriptions should be kept generic.
  + the categories in which were grouped the potential e-Navigation solutions to facilitate the completion of the FSA process by NAV 59
  + the invitation to IALA, IHO and other relevant organizations to contribute to further development of the detailed e-Navigation architecture, included on-board,
  + the new terms of reference for the e-Navigation Correspondence Group
* note the new definition of AIS AtoN and its consequences for IALA (item 4)
* note the limited use of virtual AIS AtoN (item 4)
* note the decision to reconvene the correspondence group for the development of policy and new symbols for AIS AtoN (item 4)
* note the proposed revised items to the Recommendation ITU-R M.1371-4 on the technical characteristics for AIS (item 5)
* note the new agenda item for the next session:
  + Revision of the Guidelines for the onboard operational use of shipborne automatic identification systems (AIS)

**7.3. the VTS Committee**

* note the development of e-Navigation (item 2), in particular:
  + the finalization and approbation of the e-Navigation Gap Analysis, and the development of a set of Potential e-Navigation Solutions,
  + the proposed use of the VHF Data Exchange (VDE) functionalities rather than AIS for exchanging data and information,
  + the fact that e-Navigation solutions should be goal based and their descriptions should be kept generic.
  + the categories in which were grouped the potential e-Navigation solutions to facilitate the completion of the FSA process by NAV 59
  + the invitation to IALA, IHO and other relevant organizations to contribute to further development of the detailed e-Navigation architecture, included on-board,
  + the new terms of reference for the e-Navigation Correspondence Group
* note the new definition of AIS AtoN and its consequences for IALA (item 4)
* note the limited use of virtual AIS AtoN (item 4)
* note the decision to reconvene the correspondence group for the development of policy and new symbols for AIS AtoN (item 4)
* note the information provided by IALA on the IALA World-Wide Academy (item 6)

**7.4. the Aids to Navigation Management Committee**

* note the development of e-Navigation (item 2), in particular:
  + the finalization and approbation of the e-Navigation Gap Analysis, and the development of a set of Potential e-Navigation Solutions,
  + the proposed use of the VHF Data Exchange (VDE) functionalities rather than AIS for exchanging data and information,
  + the fact that e-Navigation solutions should be goal based and their descriptions should be kept generic.
* note the rejection of the proposed Recommended route in the Mozambique Channel (item3.3)
* note the new definition of AIS AtoN and its consequences for IALA (item 4)
* note the limited use of virtual AIS AtoN (item 4)
* note the decision to reconvene the correspondence group for the development of policy and new symbols for AIS AtoN (item 4)
* note the information provided by IALA on the IALA World-Wide Academy (item 6)

**7.5 the Engineering, Environment and Preservation Committee**

* note the development of e-Navigation (item 2), in particular:
  + the finalization and approbation of the e-Navigation Gap Analysis, and the development of a set of Potential e-Navigation Solutions,
  + the proposed use of the VHF Data Exchange (VDE) functionalities rather than AIS for exchanging data and information,
  + the fact that e-Navigation solutions should be goal based and their descriptions should be kept generic.
* note the new definition of AIS AtoN and its consequences for IALA (item 4)
* note the limited use of virtual AIS AtoN (item 4)
* note the decision to reconvene the correspondence group for the development of policy and new symbols for AIS AtoN (item 4)
* note the information provided by IALA on the IALA World-Wide Academy (item 6)

**7.6 the Pilotage Advisory Panel**

* note the new agenda items (annex) for the next session:
  + Revision of the information contained in the existing annexes to the Recommendation on the use of adequately qualified deep-sea pilots in the North Sea, English Channel and Skegerrak (resolution A.486(XII)
  + Revision of the information contained in the exixting annexes to the Recommendtion on the use of adequately qualified deep-sea pilots in the Baltic (resolution A.480(XII)

# 8. Date of the next session.

The 59th session of the NAV Sub-Committee is tentatively scheduled to be held from 2 to 6 September 2013 in London.

The proposed agenda for the session is attached as annex.

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J.Ch. Leclair

Accredited Representative of IALA to IMO,

16 Juiellet 2012.

### **ANNEX**

**Sub-Committee on Safety of Navigation (NAV) – 59th session - Agenda proposed to the Maritime Safety Committee**

Opening of the session

1 Adoption of the agenda

2 Decisions of other IMO bodies

3 Routeing of ships, ship reporting and related matters

4 ITU matters, including Radiocommunication ITU-R Study Group matters

5 Development of an e-Navigation strategy implementation plan

6 Development of policy and new symbols for AIS aids to navigation

7 Review of general cargo ship safety

8 Revision of the information contained in the existing annexes to the Recommendation on the use of adequately qualified deep-sea pilots in the North Sea, English Channel and Skegerrak (resolution A.486(XII)

9 Revision of the Guidelines for the onboard operational use of shipborne automatic identification systems (AIS)

10 Consolidation of ECDIS-related IMO circulars

11 Development of explanatory footnotes to SOLAS regulations V/15, V/18, V/19 and V/27

12 Revision of the information contained in the exixting annexes to the Recommendtion on the use of adequately qualified deep-sea pilots in the Baltic (resolution A.480(XII)

13 Casualty analysis

14 Consideration of IACS unified interpretation

15 Biennial agenda and provisional agenda for NAV 60

16 Election of Chairman and Vice-Chairman for 2014

17 Any other business

18 Report to the Maritime Safety Committee

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