

**Report of the 9th Meeting of the e-Navigation Committee**

**14 – 18 March, 2011**

**Executive Summary**

* 108 members attended this meeting of the e-NAV Committee, of which 27 were new members;
* 11 members did not register before the meeting and 6 who registered did not attend;
* The Committee considered 66 input papers;
* There was an extensive and useful discussion on e-Navigation architecture (para. 5.1.4);
* 22 Output papers included:
  + Draft revised Recommendation A-126;
  + An information paper supporting Recommendation e-NAV-140;
  + Draft Recommendation on Harmonized implementation of Application Specific Messages;
  + Draft Guideline giving an Overview of AIS;
  + Draft revised Guideline No.1060 on Recapitalisation of DGNSS
  + Three draft inputs to IMO NAV57, requiring e-mail approval by the IALA Council;
  + Three Liaison notes to the IMO Correspondence Group on e-Navigation;
  + Liaison notes to IEC, ITU & RTCM;
  + A Liaison note to the IMO-ITU Joint Experts Group on Spectrum Requirements;
  + Five liaison notes to other Committees;
  + An additional e-Navigation FAQ.
* Outcomes from the e-Navigation Underway conference were seen to have provided impetus to e-Navigation and stimulated a debate about the regulatory process governing it;
* Committee tasks have been correlated with IALA Strategy items;
* Changes were proposed to the Committee’s Work programme; proposed new Work item (Annex G).

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| e-NAV Committee  9th Session | 18 March, 2011 |

Report of the 9th Session of the IALA e-NAV Committee

# General

The ninth meeting of the **e-Navigation Committee** was held from 14 – 18 March, 2011 in Copenhagen, with Bill Cairns as Chairman and Nick Ward as Vice-Chairman. The Secretary for the meeting was Mike Hadley.

Apologies were received from:

|  |  |  |
| --- | --- | --- |
| **Name** | **Organisation** | **Country** |
| Michele Fiorini | ICG | Italy |
| Geir Jegstad | Kongsberg Norcontrol IT | Norway |
| Karl Otto | SAMSA | South Africa |
| David Pietraszewski | Radioaid USCG | USA |
| Aaron Frank Sorenson | BIMCO |  |
| Marco Tomaino | ICG | Italy |
| Antonio Vollero | ICG | Italy |

**Opening**

Bill Cairns welcomed all members to the meeting, particularly those attending the e-NAV Committee for the first time, remarking that the Committee membership had now exceeded 100. He expressed the Committee’s concern and sympathy for Japan and said that he was grateful that so many Japanese members had been able to attend.

Thanks were given to DaMSA for their very kind hospitality during the move of IALA’s offices. The Chairman then introduced Ómar Frits Eriksson (DaMSA and Chairman of the EEP Committee).

Ómar Frits Eriksson observed that at the current count of 113 delegates the e-NAV Committee is now some three times larger than his own. He said that it was a great pleasure for DaMSA to welcome the e-NAV Committee to Copenhagen, remarking that the IALA Committees are the workhorses of the Association. With the e-NAV Committee focussing on modern technology he observed that with the meeting being held in a museum it might be as well to reflect that technologies come and go. He wished everyone a pleasant stay in Copenhagen and that e-NAV9 would be a fruitful meeting.

The Secretary then apologised for the absence of the Secretary-General but said that he would join the meeting the following day for the remainder of the week.

It was observed that, despite the request made at e-NAV8, a number of Committee members had arrived without having registered and that registration will be important for the next meeting, which will be held at IALA headquarters, where there is a fire code restriction limiting the number in the new plenary room to 99.

Action item

Members are requested to register, in advance, for Committee meetings, due to the high number of participants and the need to make satisfactory arrangements for them.

The Chairman then reminded the meeting that it was the members who decided matters in the Committee and that no one should feel that they cannot express reservations or concerns about anything that was being decided in the name of the Committee.

With the large number of ‘Late Papers’, the Chairman urged Committee members to submit their inputs at least 17 days before the start of a meeting

The Secretary and Annemette Knagaard (DaMSA) provided health and safety information, followed by information on administration, internal communications and social events.

# Agenda

The draft agenda (e-NAV9/1/1rev2) was adopted.

# Review of Action Items from e-NAV8

Apart from the following comments, it was noted that the action items from e-NAV8, for the IALA Secretariat, were complete.

Action 11. This action is continuing.

Action item

The IALA Secretariat is requested to investigate the possibility of displaying the IALA list of radionavigation services in a mapping format via the IALA website.

Actions 28 & 29 were withdrawn.

Action 33 is pending approval of the draft Guideline – Overview of AIS by the IALA Council.

Action items for committee members were then reviewed and, in particular, it was noted that:

Further work is required to complete Actions 40, 41 and 46.

Action 55. This action was considered to be open to misinterpretation, as it is not clear which ‘services’ are referred. The question posed was considered to be valid but that there is currently no good answer. It was concluded that, currently, no action can be taken but that the issue should continue to be borne in mind.

Action 57. The Vice Chair said that his initial approach of using a Wiki had run into access problems. He was now proposing use the public area of the GLA website. However, during the meeting he provided the events list to Omar Frits Eriksson, who set up a Wiki on the IALA website (http://ialathree.org/ialawiki/).

With these exceptions, the actions due to members are complete.

# Review of input papers & inter-sessional Working Group reports

The Chairman ran through the list of input papers (e-NAV9/3/1 rev2) commenting on those of significance. Chairs of Working Groups (WG) reported the activities of their groups, including inter-sessional meetings. Agreement was reached on which WGs papers would be sent to and which WG would take the lead, where a response was required. WG Chairmen also outlined their expectations for the meeting.

## Other matters

The Secretary mentioned the meeting input paper template and asked that members use it for the submission of new papers, or as a cover note for papers from other bodies. The template is available on the ftp server.

Action item

Members are requested to use the template for the submission of documents, or as a cover note for the submission of documents for future meetings.

# Reports from other bodies

## IALA Council 50th session

The report was noted, in particular, the:

* concern expressed about (WG) inter-sessional meetings;
* comments about VTM;
* comments about the draft Guideline – AIS overview, which had been returned to the Committee;
* approval for the Committee to liaise directly with the IMO Correspondence Group on e-Navigation.

## Report of MSC88

The Committee noted the report and Jean-Charles Leclair was asked to guide the Committee through it. It was observed that there had been no specific discussion about e-Navigation but the three points in e-NAV9/4/2, para. 7.3, were covered. The opportunity was then taken to make some comments on STW42 and COMSAR15.

### STW42

As this meeting had followed on from the recent Manila conference, it had been possible to devote one day to a discussion about e-Navigation. It was noted that several delegations had said that there was no need for international standards for shore based personnel and that these delegations seemed unaware of IALA’s work in VTS matters. There had also been discussion about navigating v monitoring navigation officers but that no firm conclusion had been reached.

### COMSAR15

The conclusions from the recent meeting organised by the Correspondence Group on e-Navigation in Monaco had been noted and the use of the S-100 Geographical Information (GI) registry, as a baseline, had been agreed. There had been a proposal for the formation of an Harmonisation Group on Data Models and the revised Korean template for capturing e-Navigation gap analysis had been accepted. It had also been decided to continue the scoping exercise for a Correspondence Group to consider the continuation of GMDSS.

During the meeting a draft rev1 to COMSAR15 WP6 became available and was posted on the ftp server as e-NAV9/11/10.

## Report of PAP20

The report was noted, in particular the comments made about VTM, UMDM and e-Navigation across the Committees.

## IALA Strategy monitoring

The need to reconcile the IALA strategy with the Committee’s tasks was noted. The Chairman said that he and the Vice Chairman would undertake this work.

# Presentations

5 presentations were made during the opening plenary:

* Project EfficienSea - update by Thomas Christensen;
* Australian AIS Trials by Stefan Bober
* Ship network and 4S integrated system for ship information integration by Prof. Yu Yung-ho ;
* e-Navigation architecture update by Jan-Hendrik Oltmann.
* e-Navigation regulatory process by Nick Ward

The first three presentations, which form part of the output from the meeting, were followed by a discussion about the e-Navigation regulatory process.

### Project EfficienSea - update

Thomas Christensen’s presentation was in three parts:

* A review of progress with the EfficienSea Project;
* The e-Navigation Underway conference;

In this section, Thomas Christensen gave a short summary of the conference, the topic of which had been e-Navigation with a special focus on test beds. The conference was very well attended, with 130 participants from 21 countries and with representatives from many maritime sectors (administrations, academia, industry, international organizations etc.). Among the items discussed were; test beds around the world, methodologies used and possible harmonization of these, and how test bed results are best used in the overall e-Navigation process. Conference conclusions and proceedings were included as INF papers for e-NAV9. A follow on conference will be held early in 2012. Confirmed dates are 18 - 20 January 2012.

* The IALA / EfficienSea open source social experiment on e-Navigation.

In this section, Thomas Christensen invited IALA's members to participate in a social coding experiment. Most of the e-Navigation prototype software developed in the EfficienSea project will be made available as open source on a platform that facilitates collaborative development (social coding). The vision is that the platform will be used as a reference e-Navigation implementation to be tested in different places in the world by different organizations, and that these organizations can collaborate in developing this platform further with new functionality / services. EfficienSea will send a separate invitation for this with further information in the next two to three months.

In discussion, it was asked:

1. Given that harmonisation of services is important to the mariner, to what extent has EfficienSea taken account of work elsewhere (particularly outside Europe)? It was acknowledged that this is a broad question, which applies to e-Navigation as a whole. EfficienSea has tried to look at work elsewhere and, in fact, this was one of the objectives of the e-Navigation Underway conference.
2. Although Baltic Sea data is likely to be accurate and reliable, what can be done about other areas of the world where this may not be the case? The answer was believed to lie in the use of regional services, using national services that can cover for nations where services may need support. It was also remarked that deficiencies could be addressed by sharing the tools being developed using open software.
3. What notice has EfficienSea taken of services to navigators and the possibility of their input into e-Navigation? It was stressed that the project had used user needs as its starting point. It was then commented that not everyone has realised that e-Navigation is a loop process and that feedback can (and should) now be taken into account.
4. Why has the project been extended by two years? The response to this was that even more time could be usefully employed as the ideas being generated by the project show no signs of stopping.
5. What kind of methodology is being employed to evaluate the project? This is ‘work in progress’ and an important part of the task for Chalmers University.

### Australian AIS Trials

Stefan Bober presented the conduct and outcomes of the continuing series of AIS SART trials. He reported that there had been problems experienced with the EPIRB, which he believed were due to problems with the unit used. The position of the SART antenna, which had been designed for use in a life raft and so was incorrectly oriented for a floating person, would require further consideration. It was considered that the trials were successful and gratitude was expressed to AMSA for arranging them.

### Ship network and 4S integrated system for ship information integration

Professor Yu Yung-ho gave details of an e-Navigation conference held in Busan in February 2011. This covered details of the conference itself, the envisaged Paradigm Shift in Marine Transportation and Ship network & 4S Comms (S*hip to Shore, Ship to Ship Communications).*

### e-Navigation architecture update

Many of those who commented or asked questions congratulated Jan-Hendrik Oltmann on the work that he and his group had done.

Jan-Hendrik Oltmann introduced two input documents (e-NAV9/11/4B & e-NAV9/11/5B). He explained the relationship between these documents and then took the meeting through each of them. He said that he felt that the combination of an Integrated Navigation System (INS) and the Maritime Service Portfolio (MSP) was a powerful and symbiotic combination. Specific aspects that he felt needed drawing to the PAP’s and IALA Council’s attention were covered.

In the following discussion the balance to be drawn between an early submission to the IALA Council and providing time for all members (and their Administrations) to be comfortable with the direction of progress was debated; the required involvement of the other IALA Committees was also noted. There were several claims that there was probably insufficient time to do the documents justice. It was agreed that this issue could be better addressed at the end of the meeting, after the WG had had time to consider the issues raised. A decision would also be required as to whether the approach to the IALA Council should be taken in steps or as a whole. As a result, members were asked to provide their comments / concerns to WG5 as soon as possible, during the meeting.

Referring to one of the diagrams that referred to the e-Maritime domain, it was confirmed that this European concept could be more widely drawn. It was also confirmed that the ideas being expressed had been contributed to by the IHO. However, it was stated that the S-100 GI registry is only a tool box and that IALA now needs to determine the services and products to be produced.

The reference to the involvement of the IMO mandatory audit scheme in the implementation of e-Navigation was noted by Jan-Hendrik Oltmann. In his view, this is a long term goal but it was accepted that this was a topic that needed to be approached cautiously and probably not mentioned at this stage, as it is currently a contentious issue at IMO.

Specific comments were made about details contained in the two papers (e-NAV9/11/4B and e-NAV9/11/5B), each of which were acknowledged. Comments included:

* e-Maritime is a policy concept;
* the reference to a VTMIS operator;
* the apparent lack of reference to the IALA MRCP
* indicate that other national authorities, as well as IALA, would be providing services;
* identify relevant commercial services, as these will be covered by the MSP;
* collaborate with other bodies, such as IEC;
* discuss with IMO the oversight of the registry.

It was also noted that national members would need time to study the documents and that not all were present.

There was a suggestion that e-NAV9/11/5B would make a useful briefing document for the other Committees and PAP if its name was changed and section 4 were restyled as ‘decisions that will require making in the future’.

### e-Navigation regulatory process

A short note on this subject (e-NAV9/INF/14) was introduced by the Vice Chairman. This followed discussions at the e-Navigation Underway conference (see para. 5.1.1) regarding the lengthy regulatory process, which could delay the implementation of e-Navigation. This was followed by a brief discussion, the aim of which was to inform the Working Groups, who were asked to consider the issues raised. The task of leading this work was accepted by WG6.

Following the presentations and discussion, the Chairman thanked all the presenters and the Vice Chairman and also the Committee for providing much lively debate.

# Establish Working Groups

Six working groups were established, as outlined below:

|  |  |  |
| --- | --- | --- |
| Working Group | Working Group Chair | Working Group Vice Chair |
| WG 1 Operations and Strategy | David Patraiko | Mahesh Alimchandani |
| WG 2 PNT / Sensors | Peter Douglas | Colin Day |
| WG 3 AIS | Rolf Zetterberg | Jorge Arroyo |
| WG 4 Communications | Bill Kautz |  |
| WG 5 Technical Architecture | Jan-Hendrik Oltmann | Paul Mueller |
| WG6 Information Portrayal | Lee Alexander | Junji Fukuto |

It was agreed that when the Committee was not in plenary session:

* WG1, 2, 5 and 6 would meet throughout the week;
* WG3, WG4 would meet sequentially.

It was accepted that there would, inevitably, be some cross-over in personnel between the groups.

# Working Group 1 – Operations and Strategy

## Monitor and co-ordinate input on Strategy & Operations to the IMO process (Task1\*)

The committee drew on the work done by the VTS Committee the previous week (VTS32/output/07 refers), relating to the development of shore based gap analysis. Identified VTS user needs (e.g., maintaining a traffic image and the provision of Information Services (INS), Navigational Assistance Services (NAS) and Traffic Organisation Services (TOS)) were migrated to the COMSAR endorsed template developed by the Republic of Korea. The committee then identified practical e-navigation solutions, addressing operational, technical, regulatory and training gaps. The committee commented on issues specifically prioritised for operations including, the issue of using Integrated Navigational Systems (INS) as the dominant factor of shipboard systems, training and assessment issues, human machine interface and the use of SMCP.

The Committee also reviewed version 2 of the report of the IMO Correspondence Group on e-Navigation to IMO NAV 57. This version had been prepared at the conclusion of the 15th session of IMO COMSAR. The Committee discussed various questions posed by the CG and prepared responses.

A liaison note was prepared to the IMO Correspondence Group on e-Navigation (e-NAV9/output/15 refers).

Action Items

The IALA Secretariat is requested to forward the liaison note (e-NAV9/output/15) to the IMO CG on e-Navigation, including three annexes (Annex 1: Comments on version 2 (post IMO COMSAR 15) (e-NAV9/output/15A) of the report of the IMO Correspondence Group on e-Navigation, Annex 2: VTS32/output/07 – work done by the VTS Committee on developing the shore side gap analysis, with a focus on VTS (e-NAV9/output/15B) and Annex 3: COMSAR endorsed gap analysis spreadsheet) (e-NAV9/output/15C).

## Review and update IALA Strategy for e-Navigation (Task 2\*)

This task was not progressed at e-NAV9.

## Maintain and update user requirements (in co-ordination with the VTS Committee) (Task 3\*)

See para. 7.1 action item.

## Monitor developments in navigation for polar regions (Task 4\*)

This task was not progressed at e-NAV9.

## Update Frequently Asked Questions

In response to a request from the 50th Session of the IALA Council (December 2010), the committee addressed the following question: How will e-Navigation impact on the provision of traditional aids to navigation?

An answer was prepared. The IALA Secretariat is requested to update the current version of the FAQs by adding this Q and A.

Action Item

The IALA Secretariat is requested to add the Q and A on traditional aids to navigation in an e-navigation environment (e-NAV9/output/16) to the existing version of the FAQs and post the revised document on the IALA external and committee websites.

# Working Group 2 - PNT / Sensors (WG2)

## Review and update the World Wide Radio Navigation Plan (Task 5\*)

This task will be addressed during future sessions.

## Prepare Recommendations and Guidelines on PNT systems and radar AtoN (Task 6\*)

The WG reviewed Guideline 1060; Edition 2 is an output from the meeting. A Liaison note to ANM and EEP regarding the proposed ePelorus was drafted in conjunction with WG1.

***Action Item***

The Secretariat is requested to forward the Liaison Note on ePelorus (e-NAV9/output/19) to the ANM & EEP Committees.

The Secretariat is requested to forward the draft revised Guideline 1060 (e-NAV9/output/21) to the IALA Council for approval.

Work commenced on the requirements standard for an Integrated PNT system. An input on the revision of R-121 was deferred to a later meeting.

## Co-ordinate input to IMO, ITU, and IEC on PNT systems (Task 7\*)

WG3 were advised of the WG view on the use of Space Based Augmentation Systems within Class B AIS. An output paper regarding resilience of Position, Navigation & Timing was compiled as a short input to IMO NAV57.

Action items

The Secretariat is requested to forward the input paper to IMO NAV57 on resilient PNT (e-NAV9/output/20) to the IALA Council for approval.

If approved, the Secretariat is requested to forward the input paper to IMO NAV57 on resilient PNT (e-NAV9/output/20).

WG2 members are requested to review the paper e-NAV9/8/5 (and Add.1) on an inter-sessional basis and provide feedback to M Hoppe.

WG2 members are requested to notify M Hoppe of their interest in attending an inter-sessional meeting (early June) to progress Integrated PNT architecture and system development, including multi-system receivers.

## Prepare a Guideline on establishment and operation of navigation systems in polar regions (Task 8\*)

This task will be addressed during future sessions.

## Monitor developments in satellite and terrestrial EPFSs and non-radionavigation systems (Task 9\*)

The WG were briefed on developments in Finland regarding adaptation of a DGNSS transmitter to undertake accurate time transfer.

The WG noted an input paper (eNAV9/INF/12) on LF Solutions for Alternative PNT & Data and associated receiver technology. The WG welcome research into these areas and would encourage adoption of a worldwide standard for LF PNT, including the data stream required. A quantitative assessment of the legacy receiver market should form part of these studies.

## Prepare a Guideline on recommended measures for disaster recovery (Task 10\*)

This task will be addressed during future sessions.

Action item

Victor Placido da Conceicao is requested to provide an input paper on disaster recovery to e-NAV10.

## Monitor developments in radar technology and their effect on racons (Task 11\*)

This task will be addressed during future sessions. Input papers should be carried forward from e-NAV9.

Action item

The Secretariat is requested to forward e-NAV9/8/4, e-NAV9/8/7, e-NAV9/8/7 & e-NAV9/8/9 to e-NAV10.

## IALA list of Radionavigation Services

Action item

WG2 members are requested to review their National inputs within the IALA list of Radionavigation Services, and advise the IALA Secretariat of any updates.

# Working Group 3 – AIS (WG3)

WG3 met during e-NAV9 in sequence with WG4 (Communications) and the majority of attendees participated in both WGs.

The main focus for the work was on preparing a number of documents, as described below, but some other issues was also discussed.

The Chair of WG6, Lee Alexander, joined the group to discuss a suitable process to develop recommendations and guidelines for the display of AIS ASMs. It was agreed that the initial step will be to examine the ~300 data parameters contained in ITU-R.M 1371and IMO SN/Circ. 289 in terms of verifying what information should be displayed on existing or supplemental navigational displays. The next step will involve an assessment of how (e.g. alpha numeric, symbol, point/line/area or geographic) and on which type of systems. This will be an expansion of the basic guidance provided in IMO SN.1 Circ 290. WG 3 will incorporate relevant parts in the document ‘Harmonised implementation of ASM’ which is under development.

As decided at e-Nav6, IALA has started a collection of Regional Application Specific Messages. The secretariat have written to all members encouraging their submissions to the collection hosted by Dr. Lee Alexander and Dr. Kurt Schwehr at University of New Hampshire. Based on the previous experience an improved collection with a user friendly access portal has been developed, hosted by the Rijkswaterstaat in the Netherlands. The collection is available at [*http://www.e-navigation.nl/asm*](http://www.e-navigation.nl/asm). The SW supporting the collection and the procedures for its use will be further developed inter-sessionally.

Action item

The Secretariat is requested to forward the Recommendation on the Harmonized Implementation of Application Specific Messages (e-NAV9/output/18) to the IALA Council for approval.

If approved, the Secretariat is requested to publish the Recommendation on the Harmonized Implementation of Application Specific Messages (e-NAV9/output/18) on the IALA website and communicate the new recommendation to all members together with an explanation of the procedure for submitting material to the ASM collection.

The Chair of WG3 is requested to provide the text for the procedure for submitting material to the ASM collection to the Secretariat.

WG members are encouraged to submit all their regional ASM messages, in use or planned, to the IALA collection.

In light of the importance of harmonization in the implementation of Application Specific Messages, as a vehicle for operational information transfer in e-Navigation, the committee approved a draft Recommendation on the Harmonized Implementation of Application Specific Messages, to go to Council for approval, and to proceed with developing a guideline for how the harmonization process could proceed.

The WG3 is planning for an inter-sessional meeting on 4 – 8 July, 2011, with the aim of preparing a draft new revision of ITU-R M. 1371 at the request of ITU WP5B and to continue the revision of IALA Recommendation A124. The meeting will be held in Koblenz, at the invitation of the German Federal Waterway and Shipping Administration.

Action item

WG members are requested to submit comments on and contributions to the revision of Recommendation A124, particularly on Annex 1, 3, 17 and 18.

## Review and update documentation on AIS (M.1371; A-124, A-126) (Task 12\*)

The work on Recommendation A-124 continued with revision of some of the prioritized Annexes. Annex 14 ‘FATDMA planning and operation’ and Annex 16 ‘DGNSS broadcast via the AIS service’ was reviewed and approved by the WG. The revision continues with a goal to submit a revised IALA Recommendation A-124 with the prioritized Annexes to e-NAV10.  
The Committee finalised the work on updating of IALA Recommendation A-126, reflecting the developments of AIS AtoN.

Action item

The Secretariat is requested to forward the draft revised IALA Recommendation A-126 on The Use of the Automatic Identification System (AIS) in Marine Aids to Navigation Services (e-NAV9/output/4) to the IALA Council for approval.

If approved, the Secretariat is requested to publish the draft revised IALA Recommendation A-126 (e-NAV9/output/4).

The draft Guideline on AIS overview, which has been amended inter-sessionally as a response to comments and questions from Council 50, was finalised.

The Secretariat is requested to forward the draft revised IALA Guideline on AIS overview (e-NAV9/output/5) to the IALA Council for approval.

If approved, the Secretariat is requested to publish the revised IALA Guideline on AIS overview (e-NAV9/output/5).

The Committee approved a Liaison Note to the EEP Committee agreeing to provide drafts of AIS documents to the EEP Committee that deal with monitoring, power consumption directly, or issues that are likely to affect power consumption of AtoN AIS units.

Action item

The Secretariat is requested to forward the Liaison Note on AtoN monitoring by AIS and AIS power consumption (e-NAV9/output/10) to EEP16.

## Co-ordinate input to IMO, ITU, and IEC on AIS (Task 13\*)

The Committee responded to a liaison note from IEC (e-NAV9/9/5), seeking clarification on some details for AIS Class B SOTDMA. The answer concerns for example a recommendation on output power, use of garbled slots, receiver and transmitter characteristics. A corresponding liaison note to ITU, regarding the output power for AIS Class B SO was developed (e-NAV9/output/7).

Action item

The Secretariat is requested to forward the Liaison Note Regarding ITU 1371-4 clarifications (e-NAV9/output/6) to the IALA Council for approval.

If approved, the Secretariat is requested to forward the Liaison Note Regarding ITU 1371-4 clarifications (e-NAV9/output/6) to IEC TC80 WG15.

The Secretariat is requested to forward the Liaison Note on the output power for AIS Class B SO (e-NAV9/output/7) to the IALA Council for approval by e-mail.

If approved, the Secretariat is requested to forward the Liaison Note on the output power for AIS Class B SO (e-NAV9/output/7) to ITU R WP5B.

An answer to a liaison note from RTCM (e-NAV9/9/12) was developed, noting that the Committee agrees with the solutions proposed by RTCM.

Action item

The Secretariat is requested to forward the Liaison Note regarding AIS MOB and EPIRB AIS Devices (e-NAV9/output/8) to the IALA Council for approval.

If approved, the Secretariat is requested to forward the Liaison Note regarding AIS MOB and EPIRB AIS Devices (e-NAV9/output/8) to RTCM.

The Committee approved a draft paper for submission by IALA to IMO NAV57 on IMO work on policy and symbols for AIS AtoN. The paper briefly describes the existing IALA documentation with relevance to AIS AtoN. This paper needs to be submitted to IMO after the Japanese paper has been formally submitted.

Action item

The Secretariat is requested to forward the Liaison Note responding to the paper from Japan on ‘Development of Policy and New Symbols for AIS Aids to Navigation’ (e-NAV9/output/9) to the IALA Council for approval by e-mail.

Cdr. Hideki Noguchi is requested to advise the Secretariat when the Japanese paper on AtoN symbology has been submitted to IMO NAV57.

If approved, the Secretariat is requested to forward the Liaison Note (e-NAV9/output/9) to IMO NAV57, after the submission of the Japanese paper on AtoN symbology.

The Committee approved a draft paper for submission by IALA to IMO NAV 57 on the coding of navigational status in AIS messages.

Action item

The Secretariat is requested to forward the input paper for IMO NAV57 on Clarifications on AIS Navigation Status (e-NAV9/output/11) to the IALA Council for approval by e-mail.

If approved, the Secretariat is requested to forward the input paper (e-NAV9/output/11) to IMO NAV57.

## Monitor and contribute to development of AIS, including the next generation of AIS (Task 14\*)

This task was not progressed at this meeting.

## Monitor developments in the technical definition of AIS stations at IEC, satellite detection of AIS, and terrestrial long range AIS (Task 15\*)

This task was not progressed at this meeting.

## Monitor developments in GMDSS and LRIT (Task 21\*)

This task was not progressed at this meeting.

# Working Group 4 – Communications (WG4)

Working Group 4 met twice and worked in a small drafting group between two plenary sessions. The WG reviewed the Terms of Reference and the Maritime Radio Communications plan. The group discussed and developed a plan and timeline for finalising the next revision of the MRCP.

WG4 reviewed the liaison note from the EEP Committee (e-NAV9/10/4) on Visible Light Communications and was of the view that more research into Visible Light Technology was necessary to determine its usefulness for e-Navigation. A liaison note to the EEP Committee was drafted requesting that the EEP Committee continue to advise the e-NAV Committee on new developments and research as it becomes available.

Action item

The Secretariat is requested to forward the Liaison Note on Visible Light Technology (e-NAV9/output/12) to EEP16.

The WG considered four liaison statements from the VTS Committee (e-NAV9/10/1, e-NAV9/10/2, e-NAV9/10/3 and e-NAV9/10/7) regarding additional VHF frequencies, Spectrum Management, and spectrum requirements for VTS and other VTM operations. Realizing it was too late in the ITU WRC-12 process to request new channels for VTS operations, WG4 decided a new WRC-16 agenda item for e-Navigation (to include VTS operations) would be necessary.

Action item

WG members are requested to support a new WRC-16 agenda item for e-Navigation (including VTS operations) and GMDSS Modernization at ITU WRC-12

The group also recognised that WRC-12 agenda item 1.10 included the possibility for additional simplex channels that could be available for VTS operations. The group also noted the concerns from VTS Committee regarding spectrum management and difficulties with cross border interference. The WG was of the opinion that spectrum management issues for cross border arrangements to mitigate interference are individual national administration concerns.

A liaison note was drafted to the IMO/ITU Joint Experts group regarding the need for a WRC-16 agenda item.

A liaison note to the VTS Committee - Response on Additional VHF Frequencies, Spectrum Management, and Specific VTS and other VTM related user needs in relation to allocation of the radio frequency spectrum - was drafted.

Action items

The Secretariat is requested to forward the Liaison Note on Spectrum Requirements (e-NAV9/output/13) to VTS33.

The Secretariat is requested to forward the Liaison Note on Spectrum Requirements (e-NAV9/output/14) to the IALA Council for approval.

If approved, the Secretariat is requested to forward the Liaison Note on Spectrum Requirements (e-NAV9/output/14) to the IMO-ITU Joint Experts Group.

The Secretariat is requested to encourage IALA national members to support the recommendations of the IALA MRCP at ITU WRC-12.

The Secretariat is requested to encourage national members to support a new WRC-16 agenda item for e-Navigation (including VTS operations) and GMDSS Modernization at ITU WRC-12

The working group noted the input paper e-NAV9/10/5 on the outcome of the 6th meeting of the Joint IMO-ITU Experts Group.

WG4 noted the input paper on the Maritime VHF efficiency study (e-NAV9/10/6) and the group was encouraged to visit the website to review the entire report.

## Review and update IALA Maritime Radio Communications Plan (Task 17\*)

The WG developed the following work plan to update the MRCP.

* Work through email correspondence and inter-sessional meetings
  + Inter-sessional - July
  + Location – TBD
* Produce 1st draft by e-NAV10
* Continue work at e-NAV10
  + Inter-sessional – Dec or Jan 2012
  + Location – TBD
* Finalize draft and approve at e-NAV11

Action item

WG members are requested to support the recommendations of the IALA MRCP at ITU WRC-12.

## Prepare Recommendations and Guidelines on communications (Task 18\*)

No action was taken at this meeting.

## Co-ordinate input to ITU, IMO, and IEC on communications (Task 19\*)

A liaison note to ITU/IMO Joint Experts Group for a new WRC-16 Agenda Item for e-NAV, VTS Operations, and GMDSS Modernisation (see para. 10).

## Prepare a Guideline on the establishment and operation of communications systems in polar regions (Task 20\*)

A drafting group, led by Robert Tremlett, was established to research and begin the draft guideline. The completion date has yet to be determined. The existing polar communication systems will also be included in the MRCP.

## Monitor developments in GMDSS and LRIT (Task 21\*)

COMSAR 15 established a Correspondence Group headed by Bob Markle (RTCM) to work between COMSAR 15 and 16 and assist the IMO/ITU Joint Experts Group with the GMDSS scoping exercise.

Action Item

The Secretariat is requested to encourage IALA national members to support the Netherlands, IALA submission on the protection of the VDL when it is raised at IMO MSC89.

Information on VDL concerns is available in e-NAV9/9/4.

# Working Group 5 – Technical Architecture (WG5)

The Working Group 5 held a break-out session during the Committee meeting. The break-out session was attended by 17 members.

Relevant input documents were: e-NAV9/11/3; e-NAV9/11/4A&B; e-NAV9/11/ A&B; e-Nav9/11/ A&B; e-NAV9/11/7 A&B

## Develop and maintain shore-based e-Navigation architecture (Task 22\*)

The Working Group 5 progressed a document (**e-NAV9/WG5/WP4)** which intends to bring to the attention of IALA **‘matters requiring IALA’s consideration regarding ‘e-Navigation’ and ‘Maritime Transportation’’**. This document draws conclusions from the information paper on e-Navigation architecture (e-NAV/output/3).

Action items

The Secretariat is requested to forward e-NAV9/WG5/WP1, e-NAV9/WG5/WP2, e-NAV9/WG5/WP3 & NAV9/WG5/WP4 to e-NAV10.

The Secretariat is requested to forward the information paper on e-Navigation architecture (e-NAV9/output/3) to, PAP and all other IALA Committees for their consideration.

The Secretariat is requested to forward the information paper on e-Navigation architecture (e-NAV9/output/3) to the IMO Correspondence Group on e-Navigation

The Chair of WG5 prepared and introduced a proposal for the creation of a new Working Group of the e-NAV Committee, dedicated to form the focal point of IALA in all matters regarding data modelling, data structures, IHO liaison, and interfacing. The proposed new Working Group was tentatively entitled ‘The Data Model and the Interfacing Technical Working Group’. The rationale, the justification and the proposed Terms of Reference of this proposed new Working Group of the e-NAV Committee are contained in document **e-NAV9/WG5/WP1**.

Action item

The Chair and the Vice-Chair are requested to consider setting up the proposed new Working Group of the e-NAV Committee on data modelling and interfacing and decide as appropriate.

## Prepare Recommendations and Guidelines on e-Navigation architecture (Task 23\*)

The Working Group 5 could not progress the ‘Draft Revision of IALA Recommendation e-NAV140 on the e-Navigation architecture – the shore perspective (Ed. 2)’ at this Committee meeting. This input document is kept for future consideration as **e-NAV9/WG5/WP3**.

In order to progress the allotted tasks in a timely manner, the Working Group 5 considers it necessary to hold **one inter-sessional meeting** until e-NAV10 which is tentatively planned to take place from **29 August - 2 September 2011 at IALA Headquarters, St-Germain-en-Laye, France.** The following justification is given: The following tasks from the ‘Terms of Reference’ of the WG 5 need to be progressed or finalized in a timely manner:

* ‘Create the conceptual and technical framework for a shore-based e-Navigation system, in particular the system architecture [refer to e-NAV Committee work programme item 22]’:
  + finalize the initial investigation regarding an ‘IALA domain’ within IHO’s GI registry;
  + the concept of ‘Maritime Service Portfolio’;
  + the notion of ‘products’;
  + the Draft Revision of Recommendation e-NAV-140 on the e-Navigation architecture – the shore-based perspective;
  + the Common Shore-Based System Layout (CSSA).
* ‘Co-ordinate input to IMO, IHO, ISO, IEC and others on architecture issues [refer to e-NAV Committee work programme item 24]’, in particular: draft input to the IMO Correspondence Group on ‘gap analysis’ related to the e-Navigation architecture;
* ‘Consider the status and ongoing development of shipboard equipment as far as relevant due to the co-operative nature of the overarching e-Navigation architecture’, i.e. consider shore-based requirements to shipboard Integrated Navigation System (INS).

## Co-ordinate input to IMO, ISO, and IEC on e-Navigation architecture (Task 24\*)

The Working Group 5 finalized an **information paper on the e-Navigation architecture (e-NAV9/output/3)**, which describes relevant aspects of the e-Navigation architecture in a concise manner using several figures. This information paper should be sent to all IALA Committees and PAP.

The WG 5 prepared for a meeting with members of IHO TSMAD, 4 - 6 May, 2011, Taunton, UK, by creating **e-NAV9/WG5/WP2**.

Action Items

The Chair of WG5 is requested to set up the joint meeting with IHO TSMAD members, 4 - 6 May 2011, Taunton, UK, using the working paper e-NAV9/WG5/WP2.

The Chair of WG5 is requested to progress the e-Navigation architecture inter sessionally.

The Chair of WG5 is requested to set up one inter-sessional meeting at IALA Headquarters 29 August to 2 September 2011.

# Working Group 6 – Information Portrayal (WG6)

## Prepare Recommendations and Guidelines on Maritime Information Systems (in co-ordination with the VTS Committee) (Task 25\*)

Work was completed on the document: ‘Maritime Information Systems (MIS) as a Component of e-Navigation.’ This document describes a variety of shore-based and shipborne equipment, systems, services and processes that, collectively, can be considered to fall under the scope of e-Navigation. In particular, a series of tables list: the tasks/functions, information needed, shipborne and shore-based sources of information, the communication means to provide this information, and VTS-related information to be shown onboard.

The document represents the efforts conducted over three e-NAV Committee meetings, including inter-sessional work. An earlier version was sent to the VTS Committee for review and comment. In turn, a Liaison Note was sent back from VTS Committee (VTS32/output/13, 11 March 2010). Comments provided by the COMSAR 15 (SAR Working Group) have also been taken into account.

Action Item

The Secretariat I requested to forward the Liaison Note on Maritime Information Systems (MIS) (e-NAV9/output/22) to the IMO e-Navigation Correspondence Group for their work on Gap Analysis.

The document can also be considered by the IMO/IHO Harmonization Group on Data Model when it begins it work. In the future, this document could serve as a reference when the IALA Service Portfolio is developed.

Task Members: **Jon Leon Ervik**, Pierre D’Arcy, Seo-Jeong Lee, **David Blevins**, Victor Placido da Conceiçao, and Antonio Camilo.

## Prepare Recommendations and guidelines on the portrayal of information (Task 26\*)

### Compilation of *e-Navigation Portrayal Examples* (two documents)

1. **Summary Sheet** – A comprehensive reference document that summarizes portrayal examples that will be considered prior to developing recommendations and guidelines. It will be used by WG6 to summarize:

* Papers submitted to:
  + IMO (NAV 54 - NAV 57);
  + IALA e-NAV Committee (e-NAV 4 – e-NAV10).
* Papers/presentations given at meetings and conferences, including:
  + IALA 2010 Conference;
  + e-Navigation Underway;
  + Korean Regional e-Navigation Conference.
* Reports on Trials / Testbed Projects:
  + AIS Baltic Project;
  + *BLAST* Project;
  + *EfficienSea* Project;
  + etc.
* Reports on existing and new system developments:
  + Collision avoidance;
  + VTS;
  + R&D Projects.

Work will continue inter-sessionally to more fully populate this document.

1. **Detail Sheet** – It includes four (4) basic categories for compiling information:

* Brief Description (PowerPoint Presentation or 1-2 page information paper);
* Functional Capabilities (types of data 🡪 information content);
* Intended Purpose (including benefits);
* Portrayal examples (means or methods of portrayal):
  + good examples;
  + lessons-learned;
  + some concerns.

Action Item

e-NAV Committee members are encouraged to submit examples of e-Navigation Portrayal examples. In particular, more shore-based examples are needed.

Task Leader: Michael Bergmann

### Continued a review of the IMO ‘Performance Standards for the Presentation of Navigation-related Information on Shipborne Navigational Displays’ (IMO Resolution MSC 191(79), 6 Dec 2004).

The primary focus is the sections that appear to pertain to e-Navigation-related data and information. Identified a number of sections that should be revised if e-Navigation is to be accommodated on the displays of existing equipment (e.g., ECDIS, radar, INS).

Work is on-going and will continue inter-sessionally.

Task Leader: Michael Rambaut

### Develop recommendations and guidelines for the presentation/display of AIS Application-Specific Messages (ASMs)

A discussion was held with WG3 to establish a suitable process.. It was agreed that the initial step will be to examine the data parameters contained in relevant ITU and IMO standard in terms of what information should be displayed on existing shipborne and shore-based navigational displays. The work will be progressed inter-sessionally by correspondence.

Task Leader: Markus Porthin

## Monitor developments in ECDIS, INS, and ENCs (Task 27\*)

WG6 intends to use the IHO S-100 Registry for establishing an e-Navigation Information Portrayal Register. WG6 Chair will attend the annual IHO Technical Committee Meeting (November 2011).

WG6 will take on the task of proposing possible solutions to the ‘Concerns about the Lengthy Regulatory Process causing Delays to Introduction of e-Navigation’. It will address the three proposed solutions that were provided as a ‘Note’ to WG Chairs (e-NAV9/prep and later e-NAV 9/INF/14). This topic will become an input paper at e-NAV10.

Action item

The Vice Chairman of the Committee is requested to provide an input paper on ‘The Regulatory Process for e-Navigation’ to e-NAV10.

## Other Matters

### Inter-sessional Meetings

There is no plan to hold an intercessional WG6 meeting before e-NAV10. Instead, work will be progressed via e-mail and telephone and possibly by ‘e-Conference meeting.’ Some WG6 members plan to meet the Sunday afternoon / Monday morning before e-NAV10.

# Monitor and report progress on related systems (Task 28\*)

The current IMO SOLAS navigation and communication equipment list that may need to be modified for e-Navigation was updated. A previous version was used by the IMO e-Navigation Correspondence Group and is currently part of the Draft Report to NAV57. The requested action will enable the IMO e-Navigation Correspondence Group should update their report with this new information. Further work will be necessary on some references as they become out-of-date.

Action item

The Secretariat is requested to forward the Liaison Note on Current IMO SOLAS navigation and communications (e-NAV9/output/17) to the IMO e-Navigation Correspondence Group.

Task Members: **Michael Rambaut** and Andy Norris.

# Liaise with other IALA Committees and other bodies (Task 29\*)

Actions required were undertaken under other agenda items.

# Prepare a combined IALA e-Navigation Plan (all Committees) (Task 30\*)

This action has been completed.

# Future Work Programme (2014 – 2018)

This was not considered at the meeting. Members were asked to consider possible input for the next meeting

Action Item

Members are requested to provide input to e-NAV10.

# Review of output and working papers

Output and working papers were reviewed and their disposition agreed as indicated above.

# Any Other Business

## Terms of Reference of WG

Terms of reference for each of the Working Groups have been collated and will be reviewed at e-NAV10.

# Review of session report

The report of the meeting (e-NAV9/output/1) was reviewed and approved by the Committee.

Action item

The Secretariat is requested to forward the report of e-NAV9 (e-NAV9/output/1) to the Council, to note.

# Date and venue of next meeting

e-NAV10 is expected to meet from 26 – 30 September, 2011 at IALA.

# Closing of the meeting

The Chairman thanked all Working Group Chairs, Vice Chairs and members for their hard work and again expressed the Committee’s sympathies to the Japanese members. Cdr Noguchi responded by saying that the members from Japan were most grateful for the sympathy and considerations shown to them during the week, observing that Japan had ‘weathered such storms’ in the past and he was sure would do so again in this case and looked forward to seeing IALA members at future meetings.

The Chairman wished everyone a safe journey home and then declared the meeting closed.

# List of Annexes to the report

1. Agenda

A copy of the agenda is at Annex A.

1. Participants

A list of participants is at Annex B.

1. Working Groups – List of participants

A list of working group participants is at Annex C.

1. Input Papers

A list of input papers is provided at Annex D.

1. Output and Working Papers

A list of output and working papers is at Annex E.

1. Action Items

A list of action items is at Annex F.

1. Revision of the Work Programme

An updated e-Navigation Committee Work Programme for 2010-2014 is at Annex G. Changes made at e-NAV9 have been highlighted.

1. e-NAV9 Agenda

The 9th meeting of the **e-NAV Committee** will be held from 14 - 18 March 2011, in the National Museum in Copenhagen, Denmark.

The opening plenary will commence at 1400 hours on Monday 14 March and the closing plenary will end at approximately 1300 on Friday 18 March.

Committee Chair, Vice-Chair and Working Group Chairs are requested to meet at 1000 hours on Monday 14 March.

Work items / Tasks being addressed during this meeting are listed in the final table of Annex G of the report of the previous meeting, which was included in the initial invitation to this meeting.

Change from e-NAV8.

**PROVISIONAL AGENDA**

1. Approval of the agenda
2. Review of action items from last meeting
3. Review of input papers & inter-sessional Working Group reports
4. Reports from other bodies:
   1. IALA Council – 50th Session, December 2010
   2. IMO – MSC88, December 2010
   3. PAP20, October 2010
   4. IALA strategy monitoring
   5. Rapporteur VTS32 – e-NAV9
5. Presentations (15 minutes)
   1. Project EfficenSea – update (30 minutes) Thomas Christensen
   2. Australian AIS Trials Stefan Bober
   3. Ship network and 4S integrated

system for ship information integration Prof. Yu Yong-ho

* 1. Architecture update (30 minutes) Jan-Hendrik Oltmann
  2. Discussion on regulatory processes

1. Establish Working Groups
   1. Quality control of output documents
2. WG 1 – Operations & Strategy (User requirements)
   1. Monitor and co-ordinate input on Strategy & Operations to the IMO process (Task1\*)
   2. Review and update IALA Strategy for e-Navigation (Task 2\*)
   3. Maintain and update user requirements (in co-ordination with the VTS Committee) (Task 3\*)
   4. Monitor developments in navigation for polar regions (Task 4\*)
3. WG 2 – PNT / Sensors
   1. Review and update the World Wide Radio Navigation Plan (Task 5\*)
   2. Prepare Recommendations and Guidelines on PNT systems and radar AtoN (Task 6\*)
   3. Co-ordinate input to IMO, ITU, and IEC on PNT systems (Task 7\*)
   4. Prepare a Guideline on establishment and operation of navigation systems in polar regions (Task 8\*)
   5. Monitor developments in satellite and terrestrial EPFSs and non-radionavigation systems (Task 9\*)
   6. Prepare a Guideline on recommended measures for disaster recovery (Task 10\*)
   7. Monitor developments in radar technology and their effect on racons (Task 11\*)
4. WG 3 – AIS
   1. Review and update documentation on AIS (M.1371; A-124, A-126) (Task 12\*)
   2. Co-ordinate input to IMO, ITU, and IEC on AIS (Task 13\*)
   3. Monitor and contribute to development of AIS, including the next generation of AIS (Task 14\*)
   4. Monitor developments in the technical definition of AIS stations at IEC, satellite detection of AIS, and terrestrial long range AIS (Task 15\*)
   5. Monitor developments in the use of AIS in polar regions (e.g. AIS AtoNs) (Task 16\*)
5. WG 4 – Communications
   1. Review and update IALA Maritime Radio Communications Plan (Task 17\*)
   2. Prepare Recommendations and Guidelines on communications (Task 18\*)
   3. Co-ordinate input to ITU, IMO, and IEC on communications (Task 19\*)
   4. Prepare a Guideline on the establishment and operation of communications systems in polar regions (Task 20\*)
   5. Monitor developments in GMDSS and LRIT (Task 21\*)
6. WG 5 – Technical Architecture
   1. Develop and maintain shore-based e-Navigation architecture (Task 22\*)
   2. Prepare Recommendations and Guidelines on e-Navigation architecture (Task 23\*)
   3. Co-ordinate input to IMO, ISO, and IEC on e-Navigation architecture (Task 24\*)
7. WG 6 – Information Portrayal
   1. Prepare Recommendations and guidelines on Maritime Information Systems (in co-ordination with the VTS Committee) (Task 25\*)
   2. Prepare Recommendations and guidelines on the portrayal of information (Task 26\*)
   3. Monitor developments in ECDIS, INS, and ENCs (Task 27\*)
8. Monitor and report progress on related systems (Task 28\*)
9. Liaise with other IALA Committees and other bodies (Task 29\*)
10. Prepare a combined IALA e-Navigation Plan (all Committees) (Task 30\*)
11. Future Work Programme (2014 – 2018)
12. Review of output and working papers
13. Any Other Business
    1. Terms of reference of WG
14. Date and venue of next meeting
15. Review of session report
16. e-NAV9 Participants

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1. AIS

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1. Communications

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|  | Jingbo Zhang | DMV / China |

1. Technical Architecture

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1. Information Portrayal (WG6)

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|  | David Blevins | Northrop Grumman Sperry Marine / USA |
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1. LIST OF INPUT PAPERS

**All papers are posted on the FTP server**

Items highlighted are not on the Committee website.

1. Approval of the agenda

|  |  |  |  |
| --- | --- | --- | --- |
| **Number** | **Title / Author (if required)** | **Presented by** | **Posting** |
| e-NAV9/1/1 | Draft Agenda | B Cairns (BC) / IALA | 1 |
| e-NAV9/1/2 | Programme for the week *(to be issued after the Chairman’s Meeting)* | BC / IALA |  |
| e-NAV9/1/3 | Outline programme for the week | - | 1 |

1. Review of action items from last meeting

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| --- | --- | --- | --- |
| **Number** | **Title / Author (if required)** | **Presented by** | **Posting** |
| e-NAV9/2/1 | Action Items from e-NAV8 | BC / IALA | 1 |

1. Review of input papers & inter-sessional Working Group reports

|  |  |  |  |
| --- | --- | --- | --- |
| **Number** | **Title / Author (if required)** | **Presented by** | **Posting** |
| e-NAV9/3/1 rev1 | List of Input Papers *(to be issued after the Chairman’s Meeting)* | BC / IALA |  |

1. Reports from other bodies

|  |  |  |  |
| --- | --- | --- | --- |
| **Number** | **Title / Author (if required)** | **Presented by** | **Posting** |
| e-NAV9/4/1 | IALA Council 50th Session | BC / IALA | 3 |
| e-NAV9/4/2 | MSC88 Report | BC / IALA | 2 |
| e-NAV9/4/3 | PAP20 Report | BC / IALA | 1 |
| e-NAV9/4/4 | Strategy monitoring – list October 2010 | BC / IALA | 1 |
| e-NAV9/4/5 | Rapporteur report from VTS32 | Pieter Paap | Late |

1. Presentations

| **Number** | **Title / Author (if required)** | **Action** | **Posting** |
| --- | --- | --- | --- |
| e-NAV9/5/1 |  |  |  |

1. Establish Working Groups
2. Working Group 1 – Operations & Strategy
   1. Monitor and co-ordinate input on Strategy & Operations to the IMO process (Task1\*)
   2. Review and update IALA Strategy for e-Navigation (Task 2\*)
   3. Maintain and update user requirements (in co-ordination with the VTS Committee) (Task 3\*)
   4. Monitor developments in navigation for polar regions (Task 4\*)

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| **Number** | **Title / Author (if required)** | **Action** | **Posting** |
| e-NAV9/7/1 | Liaison note to e-NAV9 on Gap Analysis | 1 | Late |
| e-NAV9/7/2 | CG In put paper to NAV57 – v2 (post COMSAR15) | 1/ALL | Late |
| e-NAV9/7/2A | Annex 2 Gap analysis template | 1/ALL | Late |

1. WG 2 – PNT/Sensors
   1. Review and update the World Wide Radio Navigation Plan (Task 5\*)
   2. Prepare Recommendations and Guidelines on PNT systems and radar AtoN (Task 6\*)
   3. Co-ordinate input to IMO, ITU and IEC on PNT systems(Task 7\*)
   4. Prepare a Guideline on establishment and operation of navigation systems in polar regions (Task 8\*)
   5. Monitor developments in satellite and terrestrial EPFSs and non-radionavigation systems (Task 9\*)
   6. Prepare a Guideline on recommended measures for disaster recovery (Task 10\*)
   7. Monitor developments in radar technology and their effect on racons (Task 11\*)

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| **Number** | **Title / Author (if required)** | **Action** | **Posting** |
| e-NAV9/8/1 | Report Koblenz TWG meeting | 2 | 2 |
| e-NAV9/8/2 | Draft revised Guideline 1060 Ed2-Recapitalisation of DGNSS-Mar2011 | 2 | 3 |
| e-NAV9/8/3 | R121 Update on Integrity | 2 | 4 |
| e-NAV9/8/4 | Future Strategy for Racons | 2 | 4 |
| e-NAV9/8/5 | Development of a Maritime Integrated PNT System | 2 | 5 |
| e-NAV9/8/5 Add1 | Development of a Maritime Integrated PNT System – Graphical depiction | 2 | Late |
| e-NAV9/8/6 | Options for Resilient Position-Fixing | 2 | 5 |
| e-NAV9/8/7 | Enhanced RACON | 2 | Late |
| e-NAV9/8/8 | Enhanced Radar Positioning | 2 | Late |
| e-NAV9/8/9 | Proposal regarding Enhanced RACON and Enhanced RADAR Positioning | 2 | Late |

1. WG 3 – AIS
   1. Review and update documentation on AIS (M.1371; A-124, A-126) (Task 12\*)
   2. Co-ordinate input to IMO, ITU, and IEC on AIS (Task 13\*)
   3. Monitor and contribute to development of AIS, including the next generation of AIS (Task 14\*)
   4. Monitor developments in the technical definition of AIS stations at IEC, satellite detection of AIS, and terrestrial long range AIS (Task 15\*)
   5. Monitor developments in the use of AIS in polar regions (e.g. AIS AtoNs) (Task 16\*)

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| **Number** | **Title / Author (if required)** | **Action** | **Posting** |
| e-NAV9/9/1 | Liaison note from EEP - AtoN monitoring by AIS and AIS power consumption | 3 | 1 |
| e-NAV9/9/2 | Liaison note from ITU - ITU-R M.1371-4 | 3 | 1 |
| e-NAV9/9/3 | Draft Guideline - AIS overview\_C50 comments  See e-NAV9/9/6 | 3 | 1 |
| e-NAV9/9/4 | Liaison note to MSC on the protection of the AIS VDL | 3 | 2 |
| e-NAV9/9/5 | Liaison note from IEC - Request for Technical Clarification to ITU 1371 | 3 | 2 |
| e-NAV9/9/6 | Draft Guideline - AIS Overview - Melbourne review  Supersedes e-NAV9/9/3 | 3 | 3 |
| e-NAV9/9/7 | Draft input to IMO NAV57 re AIS AtoN from Melbourne TWG plenary | 3 | 3 |
| e-NAV9/9/8 | Cover note for Development of policy and new symbols for AIS AtoN – Japan – NAV57 | 3 | 4 |
| e-NAV9/9/8A | Development of policy and new symbols for AIS AtoN – Japan – NAV57 | 3 | 4 |
| e-NAV9/9/9 | Melbourne Output 01 Report of the AIS TWG meeting Feb 2011 | 3 | 4 |
| e-NAV9/9/10 | Melbourne Output 03 Liaison Note to EEP - AtoN monitoring by AIS and AIS power consumption | 3 | 4 |
| e-NAV9/9/11 | Risk Analysis for Virtual AtoN | 3 | 4 |
| e-NAV9/9/12 | Liaison statement to IALA AIS Working Group concerning on-going projects involving potential AIS applications | 3 | 5 |
| e-NAV9/9/13 | Proposal regarding type of AtoN code for AIS AtoN on Emergency Wreck Mark | 3/6 | Late |
| e-NAV9/9/14 | IALA Recommendation A-124 Draft Annex 16 (DGNSS Broadcasts from an AIS Service) | 3 | Late |
| e-NAV9/9/15 | Output power consideration for Class-B’SO’ AIS | 3 | Late |

1. WG 4 – Communications
   1. Review and update IALA Maritime Radio Communications Plan (Task 17\*)
   2. Prepare Recommendations and Guidelines on communications (Task 18\*)
   3. Co-ordinate input to ITU, IMO, and IEC on communications (Task 19\*)
   4. Prepare a Guideline on the establishment and operation of communications systems in polar regions (Task 20\*)
   5. Monitor developments in GMDSS and LRIT (Task 21\*)

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| **Number** | **Title / Author (if required)** | **Action** | **Posting** |
| e-NAV9/10/1 | Liaison note from VTS26 on VHF Frequencies | 4 | 1 |
| e-NAV9/10/2 | Liaison note from VTS31 on VHF Frequencies | 4 | 1 |
| e-NAV9/10/3 | Liaison note from VTS30 on Future use of the VHF Radio Spectrum in the Port Environment | 4 | 1 |
| e-NAV9/10/4 | Liaison note from EEP on visible light communications | 4 | 1 |
| e-NAV9/10/5 | Outcome of the 6th meeting of the Joint IMO-ITU Experts Group | 4 | 1 |
| e-NAV9/10/6 | Maritime VHF efficiency study | 4 | 4 |
| e-NAV9/10/7 | Liaison note from VTS regarding the radio spectrum | 4 | Late |

1. WG 5 – Technical Architecture
   1. Develop and maintain shore-based e-Navigation architecture (Task 22\*)
   2. Prepare Recommendations and Guidelines on e-Navigation architecture (Task 23\*)
   3. Co-ordinate input to IMO, ISO, and IEC on e-Navigation architecture (Task 24\*)

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| **Number** | **Title / Author (if required)** | **Action** | **Posting** |
| e-NAV9/11/1 | Working towards a common data structure (now superceded) | 5 | 1 |
| e-NAV9/11/2 | Explanation of the scope of the UMDM (now superceded) | 5 | 1 |
| e-NAV9/11/3 | Report of Inter-sessional Work of the Architecture Technical Working Group | 5 | 3 |
| e-NAV9/11/4A | Draft PAP/Council Policy Decision Paper Cover Note | 5/ALL | 3 |
| e-NAV9/11/4B | Draft PAP/Council Policy Decision Paper | 5/ALL | 3 |
| e-NAV9/11/5A | e-Navigation Architecture 'PictureBook' (Information Paper on e-NAV140) cover note | 5/ALL | 3 |
| e-NAV9/11/5B | e-Navigation Architecture 'PictureBook' (Information Paper on e-NAV140 | 5/ALL | 3 |
| e-NAV9/11/6A | Draft Revised Recommendation e-NAV140 Cover Note | 5 | 3 |
| e-NAV9/11/6B | Draft Revised Recommendation e-NAV140 | 5 | 3 |
| e-NAV9/11/7 | Note from e-NAV Vice Chair to all Committees about Data Structures (drawing contained in e-NAV9/11/7A) | 5 | 4 |
| e-NAV9/11/7A | IHO GI Registry and IALA Domain and IMO Flipchart-Drawing Refined | 5 | 4 |
| e-NAV9/11/8 | Liaison note from VTS regarding Data Structures | 5 | Late |
| e-NAV9/11/9 | Liaison note from VTS on the use of the IHO S-100 framework for VTS | 5 | Late |
| e-NAV9/11/ | COMSAR15 WP6\_Rev.1-DRAFT | 5/All | Late |

1. WG 6 – Information Portrayal
   1. Prepare Recommendations and guidelines on Maritime Information Systems (in co-ordination with the VTS Committee) (Task 25\*)
   2. Prepare Recommendations and guidelines on the portrayal of information (Task 26\*)
   3. Monitor developments in ECDIS, INS, and ENCs (Task 27\*)

| **Number** | **Title / Author (if required)** | **Action** | **Posting** |
| --- | --- | --- | --- |
| e-NAV9/12/1 | Maritime Information Systems (MIS) - Scope and Focus | 6 | 5 |
| e-NAV9/12/2 | Liaison note from VTS on Maritime Information Systems | 6 | Late |

1. Monitor and report progress on related systems (Task 28\*)

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| --- | --- | --- | --- |
| **Number** | **Title / Author (if required)** | **Action** | **Posting** |
| e-NAV9/13/1 |  |  |  |

1. Liaise with other IALA Committees and other bodies (Task 29\*)

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| **Number** | **Title / Author (if required)** | **Action** | **Posting** |
| e-NAV9/14/1 |  |  |  |

1. Prepare a combined IALA e-Navigation Plan (all Committees) (Task 30\*)

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| --- | --- | --- | --- |
| **Number** | **Title / Author (if required)** | **Action** | **Posting** |
| e-NAV9/15/1 | Liaison note from EEP - IALA e-Navigation plan | BC/NW | 1 |

1. Set up an e-mail group to co-ordinate work, inter-sessional meetings and plans using the IALA website and IALA Bulletin, where appropriate (Task 31\*)

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| **Number** | **Title / Author (if required)** | **Action** | **Posting** |
| e-NAV9/16/1 |  |  |  |

1. Future Work Programme (2014 – 2018)

|  |  |  |  |
| --- | --- | --- | --- |
| **Number** | **Title / Author (if required)** | **Action** | **Posting** |
| e-NAV9/17/1 |  |  |  |

1. Review of output and working papers
2. Any Other Business
   1. Workshops & Seminars (2010 – 2014)
   2. Terms of Reference for WG

|  |  |  |  |
| --- | --- | --- | --- |
| **Number** | **Title / Author (if required)** | **Action** | **Posting** |
| e-NAV9/18/1 |  |  |  |

**Information Papers**

|  |  |  |
| --- | --- | --- |
| **Number** | **Title / Author (if required)** | **Posting** |
| e-NAV9/INF/1 | Revised Rules of Procedure for IALA Committees (2010-2014) | 2 |
| e-NAV9/INF/2 | IALA Documentation procedures and quality control | 2 |
| e-NAV9/INF/3 rev1 | Meeting dates 2010 – 2014, to 10December 2010 | 3 |
| e-NAV9/INF/4 | Creating and Writing Strategies - USCG | 2 |
| e-NAV9/INF/5 | ITU WP Group 5B representation at IALA | 2 |
| e-NAV9/INF/6 | Submission to MSC89 on protection of the AIS-VDL | 2 |
| e-NAV9/INF/7 | EfficienSea e-Navigation Underway 2011 Conference Report | 3 |
| e-NAV9/INF/8 | EfficienSea Conference proceedings | 4 |
| e-NAV9/INF/9 | Draft report from the Correspondence Group on e-navigation to NAV 57 | 4 |
| e-NAV9/INF/10 | Operating anomalies identified within ECDIS – Draft submission to MSC89 | 5 |
| e-NAV9/INF/11 | Protection of the AIS VHF Data Link; proposal to update resolution MSC.140(76) | Late |
| e-NAV9/INF/12 | Low Frequency (LF) Solutions for Alternative Positioning, Navigation, Timing, and Data (APNT&D) and Associated Receiver Technology | Late |
| e-NAV9/INF/13 | Report of WG6 Inter-sessional meeting in Tokyo, January 2011 | Late |
| e-NAV9/INF/14 | Note about regulatory process | Late |

1. Date and venue of next meeting
2. Review of session report
3. LIST OF OUTPUT AND WORKING PAPERS

Output papers are submitted for review by a body other than the Committee initiating the paper.

| Number | Title | Status |
| --- | --- | --- |
| e-NAV9/output/1 | Draft e-NAV9 Report | To Council to note |
| e-NAV9/output/2 | Liaison note to PAP & other Committees – e-Navigation policy – reverted to e-NAV9/WG5/WP4 | To PAP, VTS33, EEP16 & ANM16 |
| e-NAV9/output/3 | Draft Information paper on IALA Recommendation e-NAV-140 | To IMO CG |
| e-NAV9/output/4 | Draft revised Recommendation A-126 | To Council to approve |
| e-NAV9/output/5 | Draft Guideline on an Overview of AIS | To Council to approve |
| e-NAV9/output/6 | Liaison note to IEC | To Council to approve |
| e-NAV9/output/7 | Liaison note to ITU | To Council to approve by e-mail |
| e-NAV9/output/8 | Liaison note to RTCM | To Council to approve |
| e-NAV9/output/9 | Liaison note to IMO NAV57 on AIS AtoN | To Council to approve by e-mail |
| e-NAV9/output/10 | Liaison note to EEP | To EEP16 |
| e-NAV9/output/11 | Liaison to IMO NAV57 on AIS NavStatus | To Council to approve by e-mail |
| e-NAV9/output/12 | Liaison note to EEP - Visible Light Communications Technology | To EEP16 |
| e-NAV9/output/13 | Liaison note to VTS - Frequency spectrum | To VTS33 |
| e-NAV9/output/14 | Liaison note to IMO-ITU Joint Experts Group-Spectrum Requirements | To Council to approve |
| e-NAV9/output/15 | Liaison note to IMO Correspondence Group on the e-Navigation strategy implementation plan | To IMO CG |
| e-NAV9/output/15A | Annex A to e-NAV9/output/15 | To IMO CG |
| e-NAV9/output/15B | Annex B to e-NAV9/output/15 | To IMO CG |
| e-NAV9/output/15C | Annex C to e-NAV9/output/15 | To IMO CG |
| e-NAV9/output/16 | Amend to e-Navigation FAQ | To Council to approve |
| e-NAV9/output/17 | Liaison note to IMO Correspondence Group on Current IMO SOLAS navigation and communications | To IMO CG |
| e-NAV9/output/18 | Draft Recommendation on Harmonized implementation of Application Specific Messages | To Council to approve |
| e-NAV9/output/19 | Liaison note ANM & EEP on ePelorus | To EEP16 & ANM16 |
| e-NAV9/output/20 | Draft input to IMO NAV 57 on Options for Resilient Position, Navigation & Timing (PNT) | To Council to approve by e-mail |
| e-NAV9/output/21 | Draft revised Guideline No.1060 on Recapitalisation of DGNSS | To Council to approve |
| e-NAV9/output/22 | Liaison note to IMO Correspondence Group on Maritime Information Systems | To IMO CG |

Working Papers are papers that will remain within the committee for further review.

|  |  |  |
| --- | --- | --- |
| Number | Title | Status |
| e-NAV8/WG1/WP1 |  |  |
|  |  |  |
| e-NAV8/WG2/WP1 |  |  |
|  |  |  |
| e-NAV8/WG3/WP1 |  |  |
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| e-NAV8/WG4/WP1 |  |  |
|  |  |  |
| e-NAV8/WG5/WP1 | Draft Terms of Reference for the Data Modelling & Interfacing Working Group | To e-NAV10 |
| e-NAV8/WG5/WP2 | What Does WG5 Want from the TSMAD Meeting | To e-NAV10 |
| e-NAV8/WG5/WP3 | Draft Revision of Rec. e-NAV-140 | To e-NAV10 |
| e-NAV8/WG5/WP4 | Draft Information paper for PAP & IALA Committees - Policy Decision Paper | To e-NAV10 |
|  |  |  |
| e-NAV8/WG6/WP1 |  |  |

1. ACTION ITEMS

Action Items for the IALA Secretariat

1. [The IALA Secretariat is requested to investigate the possibility of displaying the IALA list of radionavigation services in a mapping format via the IALA website. 6](#_Toc288214513)
2. [The IALA Secretariat is requested to forward the liaison note (e-NAV9/output/15) to the IMO CG on e-Navigation, including three annexes (Annex 1: Comments on version 2 (post IMO COMSAR 15) (e-NAV9/output/15A) of the report of the IMO Correspondence Group on e-Navigation, Annex 2: VTS32/output/07 – work done by the VTS Committee on developing the shore side gap analysis, with a focus on VTS (e-NAV9/output/15B) and Annex 3: COMSAR endorsed gap analysis spreadsheet) (e-NAV9/output/15C). 11](#_Toc288214514)
3. [The IALA Secretariat is requested to add the Q and A on traditional aids to navigation in an e-navigation environment (e-NAV9/output/16) to the existing version of the FAQs and post the revised document on the IALA external and committee websites. 11](#_Toc288214515)
4. [The Secretariat is requested to forward the Liaison Note on ePelorus (e-NAV9/output/19) to the ANM & EEP Committees. 11](#_Toc288214516)
5. [The Secretariat is requested to forward the draft revised Guideline 1060 (e-NAV9/output/21) to the IALA Council for approval. 11](#_Toc288214517)
6. [The Secretariat is requested to forward the input paper to IMO NAV57 on resilient PNT (e-NAV9/output/20) to the IALA Council for approval. 12](#_Toc288214518)
7. [If approved, the Secretariat is requested to forward the input paper to IMO NAV57 on resilient PNT (e-NAV9/output/20). 12](#_Toc288214519)
8. [The Secretariat is requested to forward e-NAV9/8/4, e-NAV9/8/7, e-NAV9/8/7 & e-NAV9/8/9 to e-NAV10. 12](#_Toc288214520)
9. [The Secretariat is requested to forward the Recommendation on the Harmonized Implementation of Application Specific Messages (e-NAV9/output/18) to the IALA Council for approval. 13](#_Toc288214521)
10. [If approved, the Secretariat is requested to publish the Recommendation on the Harmonized Implementation of Application Specific Messages (e-NAV9/output/18) on the IALA website and communicate the new recommendation to all members together with an explanation of the procedure for submitting material to the ASM collection. 13](#_Toc288214522)
11. [The Secretariat is requested to forward the draft revised IALA Recommendation A-126 on The Use of the Automatic Identification System (AIS) in Marine Aids to Navigation Services (e-NAV9/output/4) to the IALA Council for approval. 14](#_Toc288214523)
12. [If approved, the Secretariat is requested to publish the draft revised IALA Recommendation A-126 (e-NAV9/output/4). 14](#_Toc288214524)
13. [The Secretariat is requested to forward the draft revised IALA Guideline on AIS overview (e-NAV9/output/5) to the IALA Council for approval. 14](#_Toc288214525)
14. [If approved, the Secretariat is requested to publish the revised IALA Guideline on AIS overview (e-NAV9/output/5). 14](#_Toc288214526)
15. [The Secretariat is requested to forward the Liaison Note on AtoN monitoring by AIS and AIS power consumption (e-NAV9/output/10) to EEP16. 14](#_Toc288214527)
16. [The Secretariat is requested to forward the Liaison Note Regarding ITU 1371-4 clarifications (e-NAV9/output/6) to the IALA Council for approval. 14](#_Toc288214528)
17. [If approved, the Secretariat is requested to forward the Liaison Note Regarding ITU 1371-4 clarifications (e-NAV9/output/6) to IEC TC80 WG15. 14](#_Toc288214529)
18. [The Secretariat is requested to forward the Liaison Note on the output power for AIS Class B SO (e-NAV9/output/7) to the IALA Council for approval by e-mail. 14](#_Toc288214530)
19. [If approved, the Secretariat is requested to forward the Liaison Note on the output power for AIS Class B SO (e-NAV9/output/7) to ITU R WP5B. 14](#_Toc288214531)
20. [The Secretariat is requested to forward the Liaison Note regarding AIS MOB and EPIRB AIS Devices (e-NAV9/output/8) to the IALA Council for approval. 14](#_Toc288214532)
21. [If approved, the Secretariat is requested to forward the Liaison Note regarding AIS MOB and EPIRB AIS Devices (e-NAV9/output/8) to RTCM. 14](#_Toc288214533)
22. [The Secretariat is requested to forward the Liaison Note responding to the paper from Japan on ‘Development of Policy and New Symbols for AIS Aids to Navigation’ (e-NAV9/output/9) to the IALA Council for approval by e-mail. 15](#_Toc288214534)
23. [If approved, the Secretariat is requested to forward the Liaison Note (e-NAV9/output/9) to IMO NAV57, after the submission of the Japanese paper on AtoN symbology. 15](#_Toc288214535)
24. [The Secretariat is requested to forward the input paper for IMO NAV57 on Clarifications on AIS Navigation Status (e-NAV9/output/11) to the IALA Council for approval by e-mail. 15](#_Toc288214536)
25. [If approved, the Secretariat is requested to forward the input paper (e-NAV9/output/11) to IMO NAV57. 15](#_Toc288214537)
26. [The Secretariat is requested to forward the Liaison Note on Visible Light Technology (e-NAV9/output/12) to EEP16. 15](#_Toc288214538)
27. [The Secretariat is requested to forward the Liaison Note on Spectrum Requirements (e-NAV9/output/13) to VTS33. 16](#_Toc288214539)
28. [The Secretariat is requested to forward the Liaison Note on Spectrum Requirements (e-NAV9/output/14) to the IALA Council for approval. 16](#_Toc288214540)
29. [If approved, the Secretariat is requested to forward the Liaison Note on Spectrum Requirements (e-NAV9/output/14) to the IMO-ITU Joint Experts Group. 16](#_Toc288214541)
30. [The Secretariat is requested to encourage IALA national members to support the recommendations of the IALA MRCP at ITU WRC-12. 16](#_Toc288214542)
31. [The Secretariat is requested to encourage national members to support a new WRC-16 agenda item for e-Navigation (including VTS operations) and GMDSS Modernization at ITU WRC-12 16](#_Toc288214543)
32. [The Secretariat is requested to encourage IALA national members to support the Netherlands, IALA submission on the protection of the VDL when it is raised at IMO MSC89. 17](#_Toc288214544)
33. [The Secretariat is requested to forward e-NAV9/WG5/WP1, e-NAV9/WG5/WP2, e-NAV9/WG5/WP3 & NAV9/WG5/WP4 to e-NAV10. 17](#_Toc288214545)
34. [The Secretariat is requested to forward the information paper on e-Navigation architecture (e-NAV9/output/3) to, PAP and all other IALA Committees for their consideration. 17](#_Toc288214546)
35. [The Secretariat is requested to forward the information paper on e-Navigation architecture (e-NAV9/output/3) to the IMO Correspondence Group on e-Navigation 17](#_Toc288214547)
36. [The Secretariat I requested to forward the Liaison Note on Maritime Information Systems (MIS) (e-NAV9/output/22) to the IMO e-Navigation Correspondence Group for their work on Gap Analysis. 19](#_Toc288214548)
37. [The Secretariat is requested to forward the Liaison Note on Current IMO SOLAS navigation and communications (e-NAV9/output/17) to the IMO e-Navigation Correspondence Group. 21](#_Toc288214549)
38. [The Secretariat is requested to forward the report of e-NAV9 (e-NAV9/output/1) to the Council, to note. 22](#_Toc288214550)

Action items for members

1. [Members are requested to register, in advance, for Committee meetings, due to the high number of participants and the need to make satisfactory arrangements for them. 6](#_Toc288214551)
2. [Members are requested to use the template for the submission of documents, or as a cover note for the submission of documents for future meetings. 7](#_Toc288214552)
3. [WG2 members are requested to review the paper e-NAV9/8/5 (and Add.1) on an inter-sessional basis and provide feedback to M Hoppe. 12](#_Toc288214553)
4. [WG2 members are requested to notify M Hoppe of their interest in attending an inter-sessional meeting (early June) to progress Integrated PNT architecture and system development, including multi-system receivers. 12](#_Toc288214554)
5. [Victor Placido da Conceicao is requested to provide an input paper on disaster recovery to e-NAV10. 12](#_Toc288214555)
6. [WG2 members are requested to review their National inputs within the IALA list of Radionavigation Services, and advise the IALA Secretariat of any updates. 12](#_Toc288214556)
7. [The Chair of WG3 is requested to provide the text for the procedure for submitting material to the ASM collection to the Secretariat. 13](#_Toc288214557)
8. [WG members are encouraged to submit all their regional ASM messages, in use or planned, to the IALA collection. 13](#_Toc288214558)
9. [WG members are requested to submit comments on and contributions to the revision of Recommendation A124, particularly on Annex 1, 3, 17 and 18. 13](#_Toc288214559)
10. [Cdr. Hideki Noguchi is requested to advise the Secretariat when the Japanese paper on AtoN symbology has been submitted to IMO NAV57. 15](#_Toc288214560)
11. [WG members are requested to support a new WRC-16 agenda item for e-Navigation (including VTS operations) and GMDSS Modernization at ITU WRC-12 16](#_Toc288214561)
12. [WG members are requested to support the recommendations of the IALA MRCP at ITU WRC-12. 16](#_Toc288214562)
13. [The Chair and the Vice-Chair are requested to consider setting up the proposed new Working Group of the e-NAV Committee on data modelling and interfacing and decide as appropriate. 18](#_Toc288214563)
14. [The Chair of WG5 is requested to set up the joint meeting with IHO TSMAD members, 4 - 6 May 2011, Taunton, UK, using the working paper e-NAV9/WG5/WP2. 18](#_Toc288214564)
15. [The Chair of WG5 is requested to progress the e-Navigation architecture inter sessionally. 18](#_Toc288214565)
16. [The Chair of WG5 is requested to set up one inter-sessional meeting at IALA Headquarters 29 August to 2 September 2011. 18](#_Toc288214566)
17. [e-NAV Committee members are encouraged to submit examples of e-Navigation Portrayal examples. In particular, more shore-based examples are needed. 20](#_Toc288214567)
18. [The Vice Chairman of the Committee is requested to provide an input paper on ‘The Regulatory Process for e-Navigation’ to e-NAV10. 20](#_Toc288214568)
19. [Members are requested to provide input to e-NAV10. 21](#_Toc288214569)
20. REVISion of the WORK PROGRAMME

(Changes made at e-NAV9 have been highlighted)

e-Navigation is an holistic concept of enhanced navigation through electronic systems, based on user needs and derived user requirements. In particular, the e-Navigation concept simultaneously targets:

* the harmonization of shipborne and shore-based functionality;
* the harmonization of shore-based operational and technical functionalities and services of different shore-based stake-holders;
* multi-dimensional quality improvements of shore-based operational and technical services;
* demonstration of service levels achieved, using appropriate management and engineering methods.

The e-NAV Committee deals with:

* progressive contributions to IMO and other relevant international bodies to support the IMO stated ‘core goals’ and ‘key strategic elements’ of its e-Navigation concept and to reap its intended, stated ‘benefits’;
* harmonized derivation of user requirements from stated user needs, both existing and new, regarding shore-based operational services as well as technical services and systems, in close liaison with other IALA Committees;
* the appropriate description of operational presentation surfaces to shore-based users, employing the methodology of information portrayal;
* radio navigation and communications services and systems for the provision of integrated electronic navigation information (including AIS, GNSS, etc.);
* the architectural aspects of IMO’s e-Navigation concept, in particular regarding harmonized concepts such as the (IALA) Universal Maritime Data Model (UMDM), the (IALA) Maritime Data Exchange Format (MDEF), and the IALA Common Shore-based System Architecture (CSSA);
* the impact of IMO’s e-Navigation concept on the Work Programme of IALA.

In the work of the Committee, the following general aspects are to be taken into consideration:

* Strategic focus of IALA;
* Harmonized use of definitions and terms;
* Concepts associated with risk Assessment / management;
* IMO e-Navigation strategy;
* Work Programme 2010 – 2014.

| Task | Estimated number of sessions | WG | Deliverable | Strategy element(s) |
| --- | --- | --- | --- | --- |
| Strategy and operations, User requirements) |  |  |  |  |
| 1. Monitor and co-ordinate input on Strategy & Operations to the IMO process | 7 | 1 | Inputs to NAV, COMSAR, STW & CG | 1.2 |
| 1. Review and update IALA Strategy for e-Navigation | 3 | 1 | Input for PAP | 1.2 |
| 1. Maintain and update user requirements (in co-ordination with the VTS & ANM Committees) | 4 | 1 | Inputs to NAV & CG | 1.2 |
| 1. Monitor developments in navigation for polar regions | 2 | ALL | Recommendation on e-Navigation for polar regions | 11 |
| Position, Navigation, and Timing (Sensors): |  |  |  |  |
| 1. Review and update World Wide Radio Navigation Plan | 3 | 2 | Input to NAV & CG | 1.2 |
| 1. Prepare Recommendations and Guidelines on PNT systems and radar AtoN | 5 | 2 | Revised Racon & DGNSS Recommendation | 10.11 |
| 1. Co-ordinate input to IMO, ITU, and IEC on PNT systems | 4 | 2 | NAV & CG inputs  (Liaison with RTCM SC104) | 1.2, 10.11, 15.2 |
| 1. Prepare a Guideline on establishment and operation of navigation systems in polar regions | 2 | ALL | IALA Recommendation on e-Navigation in polar regions | 10.3, 11 |
| 1. Monitor developments in satellite and terrestrial EPFSs and non-radionavigation systems | 4 | 2 | Periodic updates to Committee | 13.2, 13.6, 15.1 |
| 1. Guideline on recommended measures for disaster recovery | 2 | ALL | IALA Guideline | 10.11 |
| 1. Monitor developments in radar technology and their effect on racons | 3 | 2 | Updated Racon Strategy | 13.6 |
| AIS |  |  |  |  |
| 1. Review and update documentation on AIS (M.1371; A-124, A-126) | 4 | 3 | Revised recs. | 5, 10.3 |
| 1. Co-ordinate input to IMO, ITU, and IEC on AIS | 3 | 3 | Liaison notes, CG & NAV inputs | 1.2, 15.2 |
| 1. Monitor and contribute to development of AIS, including the next generation of AIS | 4 | 3 | Periodic updates | 13.6 |
| 1. Monitor developments in the technical definition of AIS stations at IEC, satellite detection of AIS, and terrestrial long range AIS. | 5 | 3 | IEC inputs | 1.2 |
| 1. Monitor developments in the use of AIS in polar regions (e.g. AIS AtoN) | 3 | ALL | IALA Recommendation on e-Navigation in polar regions | 11 |
| Communications: |  |  |  |  |
| 1. Review and update IALA Maritime Radio Communications Plan | 5 | 4 | COMSAR & CG input | 1.2, 15.1 |
| 1. Review Recommendations and Guidelines on communications | 4 | 4 | IALA Recommendations and Guidelines | 10.3 |
| 1. Co-ordinate input to ITU, IMO, and IEC on communications | 4 | 4 | CG & COMSAR inputs | 1.2, 15.2 |
| 1. Prepare a Guideline on establishment and operation of communications systems in polar regions | 2 | ALL | IALA Recommendation on e-Navigation in polar regions | 10.3, 11 |
| 1. Monitor developments in GMDSS and LRIT | 3 | 4 | Periodic updates | 13.2 |
| Architecture: |  |  |  |  |
| 1. Develop and maintain shore-based e-Navigation Architecture | 5 | 5  (assisted by 2,3,4 & 6) | Periodic updates to Committee | 10.11 |
| 1. Prepare Recommendations and Guidelines on e-Navigation architecture | 5 | 5 | IALA Recommendations & Guidelines | 10.3, 10.11 |
| 1. Co-ordinate input to IMO, ISO and IEC on architecture | 3 | 5 | CG & NAV inputs | 1.2, 10.11, 15.2 |
| Information Portrayal: |  |  |  |  |
| 1. Prepare Recommendations and Guidelines on Maritime Information Systems (in co-ordination with the VTS Committee) | 5 | 6 | IALA Rec. and inputs to NAV & CG. Liaison with IHO | 10.11, 13.2 |
| 1. Prepare Recommendations and Guidelines on the portrayal of information | 5 | 6 | IALA Rec. and inputs to NAV & CG. IHO liaison | 10.3 |
| 1. Monitor developments in ECDIS, INS and ENCs | 3 | 6 | Periodic updates to Committee | 10.3, 13.2, 15.1 |
| General: |  |  |  |  |
| 1. Monitor and report progress on related systems | 4 | 2/3/4 | Periodic updates | 13.4 |
| 1. Liaise with other IALA Committees and other bodies | 4 | C/VC | Liaison notes, PAP | 1.2, 13.4 |
| 1. Prepare a combined IALA e-Navigation Plan (all Committees) | 4 | C/VC | PAP | 1.2, 13.6 |
| 1. Consider the regulatory process for e-Navigation and recommend the best approach | 3 | ALL | Policy paper for Council | 15.2 |

Monitoring Items

|  |  |  |
| --- | --- | --- |
| Task | Duration | Strategy element(s) |
| M1 None at this time |  |  |

Deferred Items

|  |  |  |
| --- | --- | --- |
| Task | No. of sessions | Strategy element(s) |
| D1 None at this time |  |  |

**e-NAV Committee Work Plan - 2010 – 2014**

| Task | Session | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| 1. Monitor and co-ordinate input on Strategy & Operations to the IMO process | X | X | X | X | X | X | X |
| 1. Review and update IALA Strategy for e-Navigation | X | X | X |  |  |  |  |
| 1. Maintain and update user requirements (in co-ordination with the VTS & ANM Committees) |  |  | X | X | X | X |  |
| 1. Monitor developments in navigation for polar regions |  |  |  | X |  |  | X |
| 1. Review and update World Wide Radio Navigation Plan |  | X |  | X |  | X |  |
| 1. Prepare Recommendations and Guidelines on PNT systems and radar AtoN | X | X |  | X | X | X |  |
| 1. Co-ordinate input to IMO, ITU, and IEC on PNT systems | X |  |  | X |  | X | X |
| 1. Prepare a Guideline on establishment and operation of navigation systems in polar regions |  | X |  |  | X |  |  |
| 1. Monitor developments in satellite and terrestrial EPFSs and non-radionavigation systems |  | X | X |  | X |  | X |
| 1. Guideline on recommended measures for disaster recovery |  |  | X | X |  |  |  |
| 1. Monitor developments in radar technology and their effect on racons | X |  |  | X |  | X |  |
| 1. Review and update documentation on AIS (M.1371; A-124, A-126) |  | X |  | X |  | X | X |
| 1. Co-ordinate input to IMO, ITU, and IEC on AIS | X |  | X |  |  |  | X |
| 1. Monitor and contribute to development of AIS, including the next generation of AIS | X | X | X |  |  | X |  |
| 1. Monitor developments in the technical definition of AIS stations at IEC, satellite detection of AIS, and terrestrial long range AIS | X | X |  | X | X |  | X |
| 1. Monitor developments in the use of AIS in polar regions (e.g. AIS AtoN) | X |  | X |  |  | X |  |
| 1. Review and update IALA Maritime Radio Communications Plan |  | X |  | X | X | X | X |
| 1. Review Recommendations and Guidelines on communications | X | X |  | X |  | X |  |
| 1. Co-ordinate input to ITU, IMO, and IEC on communications |  | X |  | X | X |  | X |
| 1. Prepare a Guideline on establishment and operation of communications systems in polar regions | X |  |  | X |  |  |  |
| 1. Monitor developments in GMDSS and LRIT |  | X |  |  | X |  | X |
| 1. Develop and maintain shore-based e-Navigation Architecture | X | X | X | X |  | X |  |
| 1. Prepare Recommendations and Guidelines on e-Navigation architecture | X | X | X | X | X |  |  |
| 1. Co-ordinate input to IMO, ISO, and IEC on architecture |  |  | X | X |  | X |  |
| 1. Prepare Recommendations and guidelines on Maritime Information Systems (in co-ordination with the VTS Committee) | X | X |  | X | X |  | X |
| 1. Prepare Recommendations and guidelines on the portrayal of information | X |  | X | X |  | X | X |
| 1. Monitor developments in ECDIS, INS and ENCs |  | X |  | X |  | X |  |
| 1. Monitor and report progress on related systems | X |  | X |  | X |  | X |
| 1. Liaise with other IALA Committees and other bodies |  | X |  | X |  | X | X |
| 1. Prepare a combined IALA e-Navigation Plan (all Committees) | X | X |  |  | X | X |  |
| 1. Consider the regulatory process for e-Navigation and recommend the best approach |  |  | X | X | X |  |  |