

**Report of the 8th Meeting of the e-Navigation Committee**

**20 – 24 September, 2010**

**Executive Summary**

* 98 members attended this meeting of the e-NAV Committee; an increase of 4 on the total for e-NAV7 (94);
* The Committee considered 81 input papers;
* Output papers were produced on:
  + An updated IALA e-Navigation plan (e-NAV8/output/2);
  + A liaison note to the VTS Committee on user needs gap analysis (e-NAV8/output/3);
  + A liaison note to the IMO Correspondence Group on user needs gap analysis (e-NAV8/output/4);
  + A liaison note to the IMO Correspondence Group on IALA publications (e-NAV8/output/5);
  + A liaison note to IEC TC 80 WG 15 on clarification for AIS Class B SO (e-NAV8/output/7);
  + A liaison note to ITU-R WP5B on clarification for ITU-R M.1371-4 (e-NAV8/output/8 & 8a);
  + A liaison note to ITU-R WP5B on Spectrum requirements for e-Navigation - WRC (e-NAV8/output/13);
  + A draft Guideline on an overview of AIS (e-NAV8/output/9);
  + A liaison note to Project EfficienSea on AIS coverage areas (e-NAV8/output/12);
  + A liaison note to IMO and IHO on the IALA UMDM (e-Nav8/output/14);
  + A briefing note to Council on the redundancy of position fixing (e-NAV8/output/15);
* A response was made to the ANM Committee regarding AIS AtoN Authorisation (e-NAV8/output/10 & 11);
* The e-Navigation FAQ were updated (e-NAV8/output/6);
* There was a significant discussion about data structures, which was contributed to by the representatives from the IHO.
* Changes were proposed to the Committee’s Work programme (Annex G).

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| e-NAV Committee  8th Session | 20 – 24 September, 2010 |

Report of the 8th Session of the IALA e-NAV Committee

# General

The eighth meeting of the **e-Navigation Committee** was held from 20 – 24 September, 2010 at IALA, 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** |
| Colin Day | Commissioners of Irish Lights | Ireland |
| Geir Jegstad | Kongsberg Norcontrol IT | Norway |
| Jim King | ExactEarth | Canada |
| Jonathon Pearce | OMC | UK |
| Aaron Frank Sorenson | BIMCO |  |
| Roy Stanbrook | IHMA |  |
| Takamasa Yauchi | OKI | Japan |

## Opening

Bill Cairns welcomed all members to the meeting, particularly those attending the e-NAV Committee for the first time, remarking that it was the first meeting in the current Work Programme. It was observed that a number of Committee members had arrived without having registered and that registration will be important for the next meeting, which may be being held outside IALA headquarters.

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 introduced the IALA Secretary-General, Gary Prosser.

The Secretary-General added his welcome to that of the Chairman. He stressed the importance of the e-Navigation Committee, which was indicated by the 98 people attending it. He acknowledged that arrangements would be ‘tight’ during the week and asked for the Committee’s forbearance. He then outlined the details of the planned move to new premises in Bel-Air, due to take place on 1 March, remarking that as it was due to be held so soon after that date that it may be prudent to hold e-NAV9 elsewhere. He acknowledged e-NAV’s contribution to work at IMO, before mentioning a data structure workshop, to be held at IHO on 4-5 November, which will be hosted by Norway (lead for the IMO Correspondence group on e-Navigation). He said that e-Navigation will prove most successful if it can harmonise such structures. He then said that it would be important to define the limits of e-Navigation and constrain them wherever possible.

In his concluding remarks, the Secretary-General said that he realised that outsiders were surprised by the small size of the IALA staff and offices, until they realised that IALA is essentially its membership and that it is they that do all the work.

Virginia Butler gave a health and safety brief and provided information on internal communications and social events, plus measures recently put in place to counter the spread of influenza.

Mike Hadley provided further administrative information, including the meeting rooms for the various working groups, WiFi availability and distribution of the output documentation.

## Agenda

The draft agenda (e-NAV8/1/1rev4) was adopted.

# Review of Action Items from e-NAV7

It was noted that the action items from e-NAV7, for the IALA Secretariat, were complete.

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 43 was considered to have been overtaken by events. 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-NAV8/3/1) commenting on those of significance and asking authors to introduce them where appropriate. Chairs of Working Groups reported the activities of their groups, including inter-sessional meetings, as the relevant output papers occurred. Agreement was reached on which WGs papers would be sent to and which WG would take the lead, where a response was required.

## Working Group 1 – Strategy and Operations Working Group

There was nothing to report.

## Working Group 2 - PNT / Sensors

It was represented that the Netherlands are concerned about the need to provide a backup to GNSS, following discussions on this topic at IMO NAV56. It was proposed that the wording of Task 8.5 might be amended. It was acknowledged that various recommendations and Guidelines and the World-Wide Radio Navigation Plan (WWRNP) do address this issue but it was considered that a more proactive approach is required. Comments from members, particularly to the WWRNP, were encouraged.

It was agreed that any thought of a standalone approach to IMO about a GNSS back-up would be premature if not supported by a substantial body of work (report).

It was stated that changes to the Work Programme could be suggested in the report of each e-NAV meeting (Annex 7) and that the Chairman and Vice Chairman were already tasked to conduct such a review at e-NAV8. Chairs of Working Groups had also been tasked to review their specific Tasks and members were encouraged to make their contributions.

## Working Group 3 – AIS

The Netherlands raised concerns about the need for more frequencies, asking how proper slot management could be exercised. It was pointed out that this issue is already addressed in recommendation A-124, which is due for revision by WG3.

## Working Group 4 – Communications

There was nothing to report.

## Working Group 5 – Technical Architecture

Jan-Hendrik Oltmann reviewed the paper e-NAV8/11/4 (Cumulative inter-sessional report of WG5). He drew attention to the e-Navigation Stack and its associated layers. He also drew attention to the fact that most of the layers employ the registry concept. There are unique identifiers attached to ‘administered items’ in each layer that is designed in accordance with the registry concept. The group investigated, inter-sessionally, the whether ISO 11179 Standard series could be used as a generic methodology with respect to registries / registers.

## Information Portrayal

Lee Alexander said that this meeting would see WG6 define its scope.

## Other matters

### The Chairman indicated that he and the Vice Chairman would be tackling issues of scope and strategy before enlisting the support of WG1.

### The Secretary introduced Paper e-NAV8/18/14 and asked that members use it as a template for submission of papers, or as a cover note of papers being submitted, to future meetings. The template is available on the ftp server and will be attached to the first invitation for future meetings.

Action item

The Secretariat is requested to attach the Committee input paper template to the 1st invitation for future meetings.

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 46th session

The report was noted, in particular the comments about e-Navigation.

## IALA Council 47th session

The report was noted.

## IALA Council 48th session

The report was noted.

## IALA Council 49th session

The report was noted.

## Report of MSC87

The Committee noted the report.

IMO has concerns about the protection of the VHF data link (VDL), a concern shared by other members. The reasons that the matter was not raised at MSC88 were noted. It was agreed that a submission to MSC89 needed to be discussed and the Netherlands volunteered to act as a sponsor for an input paper, if required.

Following discussion, Jean-Charles Leclair said that he already had sufficient material and that he would create an initial draft and liaise with the Netherlands.

Action item

Jean-Charles Leclair is requested to draft a submission to IMO MSC89 regarding protection of the VDL for review at e-NAV9 and to liaise with Pieter Paap about national member sponsorship.

## Report of NAV56

The Committee noted the report.

There was a brief discussion about why the VTM Concept was not currently included in e-Navigation.

The amendment to IMO Resolution A.953(23) was noted and it was observed that there is a notion of an integrated shipboard radionavigation receiver with capabilities for integration beyond the current receiver specifications. It was suggested that WG2 should continue its work on the specification of this receiver, taking into account the necessity for a terrestrial back-up system, which may or may not be eLoran.

It was remarked that the Navigation status messages in AIS were again open for discussion, which led to a statement that the fact that IALA is not represented at ITU WP5B by a specific person, registering as an IALA delegate, is causing problems. It is, apparently, not considered good enough that a representative of an IALA member state act on IALA’s behalf.

There were concerns about the lack of guidance on the delivery of information in joint (international) fora. Different commercial and legal frameworks apply to the different parties involved. It was stated that the current work on gap analysis would be a suitable way of dealing with this.

## Report of 17th IALA Conference

The report was noted. Specific attention was paid to the Conference’s Conclusions and Recommendations, from which it emerged that items 6, 10, 15, 16 and 17 had relevance for e-Navigation.

Action item

Working Group Chairmen are requested to consider if the 2010 Conference Conclusions and Recommendations affect their Work Programme Tasks and, if so, recommend appropriate modifications.

## Report of PAP19

The report was noted. However it was reported that the Netherlands has concerns about a perceived lack of focus in e-Navigation and believes that it requires greater guidance; e-Navigation needs; structure’ and some issues need side lining. It was also said that the IMO and IALA visions for e-Navigation are drifting apart. It was felt that PAP has an important role to play in such matters and it was strongly suggested that an additional meeting of PAP, which could purely address e-Navigation, would be helpful.

As PAP20 is due to meet in the week commencing 18 October and the Chairman and Vice Chairman are already reviewing the IALA plan for e-Navigation (e-NAV7/output/21) and the scope and strategy for e-Navigation (e-NAV8/12/3), it was requested that members provide comments to them before the end of the meeting.

It was also noted that at IMO NAV56 the Secretary-General of IMO had requested that the focus of current work be on the implementation and delivery of e-Navigation.

# Presentations

5 presentations were made during the week.

* VTM by Pieter Paap;
* Project EfficienSea - update by Thomas Christensen;
* IALA World-Wide Academy (WWA) by Jean-Charles Leclair;
* AIS-SART sea trials by Alan Stewart / David Martin;
* S-100 Registry by Robert Ward.

The first three were made during the opening plenary session and the final two during the plenary session held on the morning of Tuesday 21 September. All have been made available on the IALA ftp site.

### VTM

The script used by Pieter Paap is at ANNEX G.

The presentation provoked several questions. In response it was indicated that VTM could not be considered as a framework for communications between one shore-side stakeholder and another and it was acknowledged that there were similarities between VTM and EMSA’s SafeSeaNet, although there were many other similar developments world-wide.

When asked whether VTM introduces extended traffic planning to VTS, Pieter Paap replied that if a VTS and other stakeholders received sound pre-information then they can plan ahead at various levels. For a VTS, it also strengthens its own information position, which makes it more valuable to other shore based stakeholders, such as harbour masters and other parties in the maritime domain. It was also acknowledged that there would be a strong impact on one of the primary services of a VTS, which is Traffic Organisation Service (space allocation). There will also be benefits to the mariner as they are stakeholders within the framework of VTM. However, the ‘how’ of information dissemination in VTM is not defined; this is part of e-Navigation.

It was confirmed that VTM applies to all navigable waters and not just to domestic waters. It was also stated that VTM will not add a third layer or add the requirement for a third party to communications chain.

Despite the fact that the meaning of management can be taken to include the giving of directions, it was emphasised that VTM is a concept and will not usurp the current responsibilities of a ship’s master (or other third parties).

Commenting on the presentation, it was asked which elements of the shipping industry are driving VTM? In reply, it was said that because of the need for reliable pre-information with ship’s owners, agents and other parties in the chain, they too were driving VTM. Concern was also voiced about comments made during presentations at the Cape Town Conference, where control had been mentioned, as this raises questions of responsibility and liability. It was again stressed that VTM will not usurp the current responsibilities of a ship’s master and admitted that the use of the word control had been inaccurate.

Pieter Paap ended by mentioning the liaison note from the VTS Committee to e-NAV8 (e-NAV8/18/15), which he encouraged members to read and mentioned a short video (DVD) called the Chain which he believes illustrates VTM at work. Members were also invited to discuss the relationship between VTM and e-Navigation. The video can be obtained by applying to Ms I Römers, at the Port of Rotterdam, using e-mail address [romers.ehmc@harbourmaster.org](mailto:romers.ehmc@harbourmaster.org).

### Project EfficienSea - update

Thomas Christensen began with a brief review of the project statistics. He then turned to the main project task, which is to develop a test-bed in the Baltic. The project aims to provide feedback to both IMO and IALA. Although a challenge, some industrial partners had been found and that they are now contributing to some of the project’s services. However, it was indicated that other industrial partners would still be welcome. A mock-up of one such service is already being used to gather user needs.

The current prioritised list of functions / services was presented, followed by an indication of how trials are being held covering different service providers, at different levels in different areas. This was followed by an illustration of the project’s ‘test fleet’.

The forthcoming ‘e-Navigation Underway’ workshop’ (31 January – 2 February 2011), will be taking place in one of the test vessels and several test-beds are expected to be gathered together for the information of delegates. Further details and registration can be made via [www.e-navigation.net](http://www.e-navigation.net). To take advantage of the discount available for registration, members of IALA / the Nautical Institute should use the code 310; invited Speakers should use 315.

The presentation concluded with a brief look ahead at project activities.

In discussion, it was stressed that although voyage planning data was expected to be exchanged between ships and shore authorities, especially VTS, there should be no fear that VTS would ‘direct’ changes. However, they might be expected to offer suggested amendments.

It was confirmed that there is no correlation, at the moment, between the project’s levels of service and those used in IMO procedures. However, no conflict is currently envisaged, as all ships involved belong to the test fleet. There would, of course, be a challenge if an attempt is made to extend operations to general ship traffic.

It was also confirmed that one of the project partners will be testing the human / machine interface.

### IALA World-Wide Academy

Jean-Charles Leclair presented the background, purpose and aims of the WWA. He then presented the current work on AtoN training, which is in support of SOLAS chapter V, regulation 13. He indicated that the aim is to provide a family of documents (Recommendation, Guideline, Model Course), with as many model courses as are necessary. He indicated that a template model course is already available from the IALA website and requested any potential authors to contact him or IALA. He also sought material from members’ training establishments (in English) which could be used to advance the writing of model courses.

When asked if this activity is in conjunction with IMO and its capacity building programme, it was said that IMO has no courses on the safety of navigation but that the intention is to try to work with both IMO and IHO, to this end.

The presentation was followed by a brief mention of the e-Navigation Conference being held in Seattle, details of which can be found at [www.enavigation.org](http://www.enavigation.org).

### AIS-SART sea trials

Alan Stewart began the presentation, which was a condensed version of one presented to RTCM. He gave the background, dates and trials. Three sets of tests had been conducted, using vessels, helicopters and aircraft: off Oban, Key West and Hawaii. The initial response from the users involved in the trials was equally enthusiastic. Success in choppy waters was enhanced by the use of burst transmissions, which enabled the sea state to be used to advantage, with transmissions being detected as the AIS SART crested waves. Although only a 1 Watt transmission was used for the AIS SARTs the ranges achieved, especially at height, soon turned a search into a rescue mission.

David Martin then reviewed the space based aspect of the trials, which had been conducted in the Pacific Ocean and used low earth orbit satellites (600 km) on two days during precise 900 second time slots,. The satellites were first at 1800 km and then at 1300 km slant range. Again the initial results had been most encouraging. He then outlined the use and effect of AIS burst detection.

In summary, David Martin said that the environment was changing, it had been demonstrated that AIS SART can be detected along with the provision of a complete traffic image and it had been shown that aircraft can detect AIS SART transmissions at long range.

In discussion, it was said that the antenna pattern is generally lateral, although this is oriented by sea state. The satellite gathers all data and downloads it to earth stations. This involves latency issues and to provide maximum performance regularly orbiting satellites and strategically placed earth stations are used. The delays are, typically, 90 seconds at the equator, reducing as latitude increases.

It was explained that the access scheme is unique, as the first transmission is made ‘blind’ and then subsequent transmissions are announced. This was referred to as FU (free use) TDMA.

### S-100 Registry

Robert Ward provided a reprise of a presentation given initially at IMO. Having thanked the Committee, on behalf of the IHO, for the opportunity to present its contribution to e-Navigation, he introduced S-100 and its registry. He explained that the S-100 framework standard will replace S-57 and is expected to have a reasonable life-span, having been introduced in 2009. It was not ECDIS specific but would operate with other hydrographic data and services. The registry will support ‘plug and play’ technology thereby allowing extensions and additions to the register entries to be automatically applied in products and services.

There followed an introduction to product specifications and their benefits, which lead to the coverage of the S-100 registry, which can accommodate what was referred to as hard and abstract data, and the compliance with ISO19100 series of standards.

Stressing that provision has been made for other users, it was shown that additional sections had been added to the registry components.

S-100 and its registry has been developed in conjunction with ECDIS and Geo-spatial industrial partners and is now ‘up and running’. Public access is anticipated for 1 January 2011.

An accompanying set of Registry Operating Rules (S-99) is expected to be adopted on 1 January 2011.

Returning to the S-100 registry, it was said that no entry is ever removed from the registry and the status of ‘valid’, ‘superseded’ and ‘retired’ were used, in conjunction with strict versioning.

The S-100 registry now exists and can be accessed via the IHO website. Industry are already exploring the services that can be provided by using it. It was stressed that the registry can handle non-hydrographic data. However, the data is constrained to the maritime domain and should have, however loose, a connection to hydrographic data.

In discussion it was confirmed that there is no restriction on application to ‘brown water’ (inland waterways) and that S-100 could be a possible host for the IALA database of AIS regional binary messages. It was also confirmed that Bathymetric ENC data can be accommodated.

With regard to items that might impact a number of domains, it was said that the first user of an item becomes the principal point of contact. However, if when contacted, there is no response, the register’s ability to maintain different versions of data would enable other users to access their own version of the data, without impacting on the item’s originator.

It was explained that the Portrayal registry is equivalent to the present S-52 but will afford greater flexibility in how information can be portrayed.

Staffing involved in the maintenance of S-100 and the implications for what are known as Submitting Organisations was covered as was the need for increased server size. This led to the statement that IHO had to develop S-100 for its own purposes and that the extension of server capacity to accommodate additional users was not a major issue.

Attention then turned to the e-Navigation workshop, being organised by Norway (lead for the IMO Correspondence Group (IMOCG) on e-Navigation) and to be held at IHO on 4/5 November, 2010.

It was asked if the intention was that the workshop would compare the S-100 registry and current proposals for e-Navigation, which might lead to the use of S-100 to support e-Navigation with the result offered to IMO.

The Chairman thanked all presenters and also the Committee for providing such lively debate on each of the presentations but especially the discussion following the presentation on S-100.

# 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 | Alan Stewart | Bill Kautz |
| WG 5 Technical Architecture | Jan-Hendrik Oltmann | Paul Mueller |
| WG6 Information Portrayal | Lee Alexander | Junji Fukuto |

\* Not present at meeting

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\*)

### List of IALA guidance documents relevant to the development of e-navigation

In discussions with a representative of the IMO Correspondence Group on e-navigation, it became apparent that a list of IALA guidance documents relevant to the development of e-navigation would be a useful tool for the correspondence group.

The committee used the latest (Aug 2010) version of the IALA list of publications and developed a list of relevant documents (e-NAV8/output/5 refers).

Action Item

The Secretariat is requested to forward the list of IALA guidance documents relevant to the development of e-Navigation (e-NAV8/output/5) to the IALA Council for approval

If approved, the Secretariat is requested to forward the list of IALA guidance documents relevant to the development of e-Navigation (e-NAV8/output/5) to the co-ordinator of the IMO Correspondence Group on e-Navigation.

### Update IALA’s list of FAQs on e-Navigation

The committee considered e-NAV8/12/1 (formerly e-NAV7/MIS TG/WP1 – FAQs suggested by the MIS TG at e-NAV7) when updating the IALA e-NAV FAQs. Updating IALA FAQs is a standing item at e-NAV committee meetings. An output paper (e-NAV8/output/6) was produced for posting on the IALA website and committee website.

It was noted that the procedure for advising of the need for additional FAQs, or changes, should be via an input paper.

Action Items

The Secretariat is requested to forward the updated FAQ (e-AV8/output/6) to the Council for approval.

If approved, the Secretariat is requested to post the updated version of the FAQs on e-Navigation (e-NAV8/output/6) on the IALA committee website and the external website.

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

### Shore based user needs – gap analysis

The committee considered documents e-NAV8/4/10 (report of the e-Navigation WG at IMO NAV 56 (WP5 rev1)), e-NAV8/7/4 (blank template for gap analysis, provided by the IMO Correspondence Group), e-NAV8/7/5rev1 (work on gap analysis by Korea) and e-NAV8/7/6 (liaison note and work done on gap analysis by the VTS Committee at VTS 31).

The committee noted that conducting a gap analysis of such magnitude was a significant undertaking. However, e-NAV8 aimed to provide preliminary gap analysis information to the IMO Correspondence Group, which could then be developed further.

Earlier, there were two approaches used to generate information for user needs – a goal based approach and a task based approach. In the former, for example, surveys were conducted. Mariners were asked what improvements they thought were necessary (e.g. MSI on a screen display, alarm management etc.). Both methods were used to develop shore based user needs.

Gaps were identified and additional comments/solutions provided. Work was done on identifying operational, training, regulatory and technical gaps.

Korea provided some background information on the gap analysis presented at IMO NAV 56. Korea added that it would further develop the gap analysis (technical, regulatory, operational and training gaps) and complete this by 15 October 2010, so as to submit the work in time for the IMO CG deadline.

The Committee noted that e-NAV8/7/4 has been provided by the IMO CG as a template to develop gap analyses and agreed to use the template in their work.

In general, the Committee identified gaps in hardware, software and links. It noted that current IALA guidelines were sufficient, but needed to be reviewed with the development of e-navigation. It also noted that there were operational and training needs associated with the understanding of the different types of VTS services – specifically Information Service, Navigational Assistance Service and Traffic Organisation Service.

Action item

The IALA Secretariat is requested to forward e-NAV8/output/3 to the VTS Committee and the members of the VTS Committee’s correspondence group on gap analysis for VTS, as soon as practicable.

### SAR user needs – gap analysis

The committee considered document e-NAV8/4/10 (report of the e-Navigation WG at IMO NAV 56). Recognising that there was limited SAR expertise in the committee, a preliminary gap analysis for search and rescue user needs was developed. This document (e-NAV8 – output – 04) is to be forwarded to the IMO e-Navigation CG, with the caveat that it is a preliminary analysis. The committee would also like to encourage IALA members to contribute to the further development of this SAR gap analysis.

Action Items

The Secretariat is requested to forward e-NAV8/output/4 (preliminary SAR gap analysis) to the Council for approval (by e-mail).

If approved, the Secretariat is requested to forward e-NAV8/output/4 (preliminary SAR gap analysis) to the Chair of the IMO e-Navigation Correspondence Group.

IALA Members are encouraged to contribute to the further development of the preliminary SAR gap analysis (e-NAV8/output/4).

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

Not addressed at this meeting.

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

Not addressed at this meeting.

## Virtual AtoN – risk analysis

The committee considered e-NAV8/9/18. It was noted that the IALA workshop on Virtual AtoN, held at the IALA HQ in January 2010, had produced an IALA Recommendation and an IALA Guideline on the use of virtual aids to navigation.

The committee noted that a full report on the risk analysis for virtual AtoN by the GLAs of UK and Ireland would be made available in due course and asked to be kept informed.

Action Item

The Vice Chairman is requested to keep the Committee appraised of further developments on risk analysis for virtual AtoN.

# Working Group 2 - PNT / Sensors (WG2)

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

This will be addressed during future sessions.

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

The WG reviewed R-129, R-135 and Guideline 1060 to identify subject areas requiring revision. PNT aspects of the IMO e-navigation gap analysis were updated and forwarded to WG1. A briefing note to IALA Council was drafted regarding GNSS vulnerability.

Action item

The Secretariat is requested to forward the briefing note on position fixing redundancy (e-NAV8/output/15) to the IALA Council for consideration.

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

It was noted that IMO NAV56 had forwarded the proposed revision of A.953(23) to MSC.

It was also noted that an input to MSC had been drafted proposing a new work item for performance standards to be developed by NAV for a multi-system receiver. The Committee Vice Chairman undertook to make a draft available to interested members, so that they could express interest in sponsoring such a measure.

Action item

Members were invited to approach their administrations with a view to sponsoring the submission to MSC of a new work item for NAV.

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

No progress at this session.

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

M Hoppe presented a report on the development of a Virtual Reference Station network, and updated the group regarding developments in Inertial Navigation Systems. J Winell briefed the WG on a VRS meeting held in February 2010. K Heikonen introduced a paper comparing different forms of GNSS augmentation. E Engler presented an input regarding an internationally recognised Maritime Radio Navigation Integrity Concept.

Action item

WG members are requested to indicate their interest in an inter-sessional WG meeting and VRS demonstration, to be held in Koblenz (possibly 23-25 Nov 2010), to Michael Hoppe by 15 October 2010.

M Hoppe/J Winell are requested to prepare a draft revision of IALA Rec.R-121 as an input to e-NAV9.

M Dziewicki is requested to prepare a draft revision of IALA Guideline 1060 as an input to e-NAV9.

It was noted that an enquiry had been received from a manufacturer as to whether the IALA list of DGNSS stations was available in a geographic format.

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.

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

No progress at this session. USCG information on portable DGPS is to be sought.

Action item

The Chairman of WG2 is requested to provide information on portable DGPS to e-NAV9.

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

There was discussion on development of NT radar and the future of racons.

Action item

Nick Ward/Paul Mueller are requested to draft a paper on the future of racons as an input to eNAV9.

# Working Group 3 – AIS (WG3)

Rolf Zetterberg reported on the 3 inter-sessional meetings since e-NAV7. The first meeting was a small, joint meeting with the architecture WG with the purpose of dividing the existing material for A-124 into general ‘e-navigation architecture’ related material and AIS specific material.

The second meeting continued the work on A 124, started working on a new AIS Guideline document and updated the Technical Clarifications on 1371-3.

At the third meeting, the work on A124 continued with good progress but it was found that the workload is too big, considering the available resources and that a further prioritization was needed.

At this meeting, the WG continued the ongoing revision of IALA documents, responded to inputs to e-NAV8, discussed and proposed amendments to the Term of Reference for the WG.

The WG3 considered a liaison note from the ANM Committee regarding ‘Procedure for the Authorisation of AIS AtoN’ (input e-NAV8/9/2) and amended the proposed procedure as appropriate (output eNAV8/output/11, with covering note e-NAV8/output/10). The need for clear procedures and the appointment of national competent authorities for VDL-related matters was observed. This issue will be further developed in the continued work on A 124.

Action item

The Secretariat is requested to forward the liaison cover note (e-NAV8/output/10) and the proposed amendments to e-NAV8/9/2 (e-NAV8/output/11) to the ANM Committee.

The WG considered a liaison statement from the VTS Committee regarding ‘SHIP INSTALLATIONS – RADIO – INTERFERENCE’ (e-NAV8/9/17 and e-NAV8/9/24). No conclusions could be made at this point and it was decided to await the expected evaluation and final report as well as additional information from other sources.

Action item

The Secretariat is requested to inform the VTS Committee that the issue of radio interference will be addressed at a future meeting. (See also paragraph 10.2)

The WG will hold an inter-sessional meeting in Melbourne, Australia, February 7-11 2011, at the invitation of AMSA. The meeting will be combined with continued tests of the AIS SART, where SAR units from AMSA will participate.

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

The Committee approved the proposed new ‘AIS Guideline on an overview of AIS’ (e-NAV8/output/9), which will replace the existing Guidelines 1028 and 1029.

Action item

The Secretariat is requested to forward the draft Guideline on an overview of AIS (e-NAV8/output/9) to Council for approval.

The Committee continued the revision of IALA Recommendation A124 and prioritized the remaining work with the intention to have a new edition, containing the prioritized information, ready for endorsement by e-NAV10.

Action item

WG members are requested to participate in the ongoing work on the revision of Recommendation A124 and Recommendation A 126.

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

The Committee responded to a liaison from IEC seeking clarification on some details for AIS Class B SOTDMA (e-NAV8/output/8 & e-NAV8/output/8a) The answer concerns for example the so called ‘polite behaviour’, the use of internal GPS, group assignment, channel management, presentation interface and the use of Msg 17.

The WG also produced a liaison note to IEC TC 80 WG 15 concerning clarification for AIS Class B SO (e-NAV8/output/7).

Action item

The Secretariat is requested to forward the liaison note to IEC TC80 WG15 (e-NAV8/output/7) to Council for approval.

If approved the Secretariat is requested to forward the liaison note to IEC TC80 WG15 (e-NAV8/output/7) to IEC TC80 WG15.

The Committee also responded to a liaison note from ITU and recommended technical clarifications regarding the control of transmission of Msg 27 and the behaviour of the proposed Class B SOTDMA AIS stations in different situations.

Action item

The Secretariat is requested to forward the liaison notes to ITU WP5B (e-NAV8/output/8 & e-NAV8/output/8a) to Council for approval (by e-mail).

If approved, the Secretariat is requested to forward e-NAV8/output/8 & e-NAV8/output/8a to ITU WP5B.

It was noted that the liaison notes to ITU may have very limited effect if they are not presented and explained by an IALA representative with the appropriate expertise in the area. It was also noted that ITU WP5 in their liaison note (e-NAV8/9/5) states: ‘IALA is invited to participate in the future work of Working Party 5B’. The Council is invited to take note of this information and to take action as appropriate.

Action item

The Secretariat is requested to ask the Council to consider sending a suitably qualified person to represent IALA at meetings of ITU WP5B.

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

The e-NAV Committee plans to review the existing proposal for the next generation of AIS starting at e-NAV9 with the intention to finalise e-NAV13.

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

Not progressed at this meeting.

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

Not progressed at this meeting.

## Project EfficienSea

In response to a request from Project EfficienSea, a liaison note was prepared regarding the definition of AIS coverage.

Action item

The Secretariat is requested to forward the liaison note to Project EfficienSea (e-NAV8/output/12) to Council for approval.

If approved, the Secretariat is requested to forward the liaison note to Project EfficienSea (e-NAV8/output/12) to the project.

# Working Group 4 – Communications (WG4)

Working Group 4, Communications met once during e-NAV8.

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

The input on Maritime VHF efficiency e-NAV8/10/2 identified that this study would be available in advance of e-NAV9. WG4 requested that the secretariat post this input from the UK GLAs at the earliest opportunity to allow delegates to consider the matter in advance of e-NAV9.

Action item

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

The Committee Vice Chairman is requested to advise the Secretariat when the Maritime VHF efficiency report becomes available.

The Secretariat is requested to post the Maritime VHF efficiency report to the FTP site as soon as it becomes available.

*WG members are requested to review the Maritime VHF efficiency report when it becomes available on the IALA FTP site.*

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

The input paper from the VTS Committee arrived too late to be given full consideration by WG4 at e-NAV8 however the important issues raised will be addressed at e-NAV9.

Action Item

The Secretariat is requested to inform the VTS Committee that the issue of radio interference will be addressed at a future meeting. (See also paragraph 9.)

WG members are requested to review the late input paper (e-NAV8/10/3) from the VTS committee for a response to be made at e-NAV9.

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

In reviewing the liaison note from ITU (e-NAV8/10/1), WG4 members who attend ITU identified the need for IALA liaison notes to be properly introduced at ITU by a technically competent IALA delegate.

WG4 is concerned that IALA has not been represented at ITU in particular during the presentation of input papers from IALA. It is recommended that IALA has a representative at future ITU meetings who has the technical expertise to introduce liaison notes.

A liaison note to ITU WP5B (e-NAV8/output/13) was drafted in response to e-NAV8/10/1.

Action item

The Secretariat is requested to forward the liaison note to ITU WP5B – WRC (e-NAV8/output/13) to Council for approval.

If approved the Secretariat is requested to forward the liaison note to ITU WP5B – WRC (e-NAV8/output/13) to ITU WP5B.

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

No progressed at this meeting.

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

The need for further sea trials identified at the Ottawa inter-sessional meeting of the AIS TWG (WG3) was discussed. The objectives for the sea trials are;

* Transmit the AIS Satellite message 27 on the current AIS channels
* Transmit the AIS Satellite message 27 on the proposed satellite AIS channels (CH75 & CH76)
* Asses the reception of message 27 both terrestrially and by satellite
* Collect more data on the satellite detection of SART/EPRIB messages

An intersessional meeting to conduct the Sea Trials is proposed;

* Host – US Coast Guard.
* Venue – San Juan, Puerto Rico.
* Dates – week commencing Monday 25th October. (Transmitting Wednesday 27th and Thursday 28th October.)

There is an open invitation to equipment manufacturers, satellite service providers and IALA members to participate in the Sea Trials.

# Working Group 5 – Technical Architecture (WG5)

At the beginning of the break-out session of the Working Group 5 the inter-sessional working results, as presently kept in working papers of the Working Group, were introduced to the new members of the group. Also, the Chair of Working Group 5 announced that new members will be entered in the existing email distribution list in order to ensure that they receive the working documents as they are updated, e.g. by inter-sessional work.

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

The Working Group 5 addressed the data modelling aspect of the proposed ‘IALA e-Navigation stack’ (see above). Input documents e-NAV8/11/4 and e-NAV8/11/5 refer. In these two documents the assessment was made and explained, that the proposed IALA Universal Maritime Data Model (UMDM) layer would be subject to ‘stringent harmonization (and maybe even unification)’ between shore and ships and between different shore stakeholders.

Taking into account:

* the two official notes of IALA to IMO NAV54 (2008) and IMO NAV56 (2010) mentioning or discussing the notion of the IALA UMDM as a subset to the proposed IMO UMDM;
* the specific questions of PAP 19 (2009; input document e-NAV8-4-8, §7.3, refers);
* the planned workshop of the Norwegian Coastal Administration, acting as Co-ordinator for the IMO e-Navigation Correspondence Group, on a ‘Data Enabling Framework for e-Navigation’, 04/05 November 2010, Monaco; and also
* the Plenary presentation by Robert Ward on IHO’s comprehensive S-100 framework and its registry, which also includes a data modelling layer.

The Working Group concerned itself with possibilities to harmonize the proposed IALA UMDM and relevant data model registers of IHO, both being envisaged as eventually, i.e. in the medium to long term, being parts of the IALA proposed overarching IMO UMDM. This work item was prioritized as specifically requested by the Committee Chair.

As a result of the discussions, where also representatives of the secretariat of the IHO were participating as observers, the Working Group 5 produced a Committee working document (e-NAV8/WG5/1) entitled ‘Working towards a proposal on how to achieve the IMO’s envisaged ‘common data structure’ by harmonization between IALA and IHO regarding the operation of data model registers.’ It is intended to finalize the document at e-NAV9.

A working paper (e-NAV8/WG5/WP1) contains an Executive Summary. While the IHO observers were in agreement with the content of the executive summary, the IHO has no formal view for or against the proposal expressed in the rest of the Working Paper (see also paragraph 17.7).

Action item

The Secretariat is requested to forward e-NAV8/WG5/WP1 and e-NAV8/WG5/WP2 to e-NAV9.

The Executive Summary was used as a basis for a Committee output paper, as a liaison note to IHO and IMO (e-NAV8/output/14). This was approved by the Committee.

Action item

The Secretariat is requested to forward the liaison note to IHO and IMO (e-NAV8/output/14) to Council for approval.

If approved, the Secretariat is requested to forward the liaison note (e-NAV8/output/14) to IMO and IHO.

The Committee acknowledged that, as requested by Working Group 5, informal discussions take place between IALA Committee members and the IHB (International Hydrographic Bureau) under the umbrella of the ‘Co-operation Agreement between the International Hydrographic Organization (IHO) and the International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA) (2001)’ for the purpose of progressing the mutual understanding of the matters under consideration.

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

In the previous IALA session period and inter-sessionally between e-Nav7 and e-NAV8, Working Group 5 prepared substantial material on the shore-based e-Navigation architecture (compare e-NAV8/11/4 and e-NAV8/11/5).

It is the intention of the Working Group to finalise the appropriate draft IALA Recommendations on the ‘IALA e-Navigation Stack’ and the ‘Common Shore Based System (CSSA) generic system layout’ and also review the existing IALA Recommendation e-NAV 140 inter-sessionally. These three IALA documents will form a seamless top-down-description of the proposed shore-based e-Navigation architecture.

The Working Group intends to almost completely commit the ***planned inter-sessional meeting 22-26 November 2010, IALA HQ,*** to that purpose so that the above documents will be readily available for e-NAV9 in March 2011.

It is the intention of the Working Group to submit the above new or revised IALA recommendations to e-NAV9, review them at e-NAV9, and request the Committee at e-NAV9 to approve them in general and to forward them to other IALA Committees for comments and feedbacks to e-NAV10 (September 2011).

At e-NAV10 the documents would then be reviewed and finalised for submission to IALA Council (December 2011), taking into account the then finalized overarching IMO e-Navigation architecture (NAV57, June 2011) and also the feedback and comments received from other IALA Committees.

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

The activities and results of the Working Group 5 regarding Task 22 (compare §11.1 above) are a substantial contribution to the co-ordination of future input of IALA to IMO NAV57 regarding the IMO envisaged ‘common data structure’.

The Working Group 5 intends to commit a large part of their intersessional meeting in 17-21 January 2011 (Houston, TX, USA; host: Tideland Signal Corporation) to finalizing appropriate IALA input to IMO e-Navigation Correspondence Group and to NAV57.

Action item

The Chairman of Working Group 5 is requested to set up the inter-sessional meetings of Working Group 5 at 22-26 November 2010 (IALA Headquarters) and 17-21 January 2011 (Houston, TX, USA; host: Tideland Signal Corporation).

WG members are requested to prepare relevant input for the inter-sessional work.

## Inter-VTS Exchange Format Service

The draft recommendation prepared by the VTS Committee (e-NAV8/18/6) was noted. Members with specific comments were asked to contact the Chair of the VTS committee’s technical Working group (Rene Hogendoorn; e-mail: [r.hogendoorn@hitt.nl](mailto:r.hogendoorn@hitt.nl)) directly.

Action item

Members with comments on e-NAV8/18/6 are requested to pass them directly to Rene Hogendoorn

# Working Group 6 – Information Portrayal (WG6)

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

Progressed work on the VTS aspects of *Shipborne and Shore-based Information Trees* (tables) initially developed by the MIS Task Group. It is based on the three primary tasks of present/future VTS’s and related shore-based organizations as described in IMO res. A.857(20):

* Information Service (INS)
* Traffic Organization Service (TOS)
* Navigation Assistance Service (NAS)

Includes: Functionality 🡪 Information Needed 🡪 Source (Shipborne & Ashore) 🡪 Communication Means 🡪 VTS-related information to be shown onboard ships

Work is ongoing and will continue inter-sessionally., in co-ordination with the VTS Committee.

Task Leader: Jon Leon Ervik.

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

Reviewed in detail the IMO ‘Performance Standards for the Presentation of Navigation-related Information on Shipborne Navigational Displays’ (IMO Res. 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 ongoing and will continue inter-sessionally.

Task Leader: Michael Rambaut

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

WG6 plans 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 2010). Believe that INS should be included.

It was confirmed that Voyage Data Recorder (VDR) is not associated with information portrayal. However, it was considered that developments in Integrated Navigation Systems (INS) need to be monitored.

Action item

The Secretariat is requested to delete reference to VDR in Task 27.

The Secretariat is requested to add INS to Task 27.

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

Three important conclusions/realizations occurred at this first meeting of WG6:

1. There are six (6) basic ways to visually portray any type of e-Nav information.
   1. alpha-numeric (e.g., text and numbers)
   2. graphic (e.g., time-series graph)
   3. point, line, or polygon (e.g., vector data)
   4. symbol (or icon)
   5. geo-spatial (e.g., map or chart)
   6. image (photograph or film)
      1. still (a photographic of an floating AtoN)
      2. video (simulated voyage)
2. While the intent of the so-called ‘S-Mode is worthwhile, it would be better to refer to it as a **Default Mode**(s). As recommended by IMPA, it should include two features:

* Pre-set – basic settings (as starting point)
* Saved Settings – An individual user’s preferred settings are saved.

The Committee’s attention was drawn to the importance of the standard menu function, as used within the Default / Mode S-Mode concept.

1. Similar to a Pilot using PPU interfaced to a Pilot Plug, a practical implementation during the next 5-10 years would be to have a supplementary (i.e., secondary or complementary) e-Navigation display.
   1. there is mention of an ‘auxiliary’ display in IMO MSC A.191;
   2. is basically a portable, notebook computer;
   3. would not require any modification of existing equipment or systems (ECDIS, radar, AIS MKD);
   4. can be used by shipborne and shore-based personnel as well.

Action item

WG6 members are requested to continue to lead/participate in the agreed upon categories:

|  |  |
| --- | --- |
| **Category** | **Task Leader**/Participants |
| AIS Application Specific Msgs  - Environmental data | **Markus Porthin**  Lee Alexander  Pierre D’Arcy  Junji Fukuto |
| AIS AtoN | **Hideki Noguchi**  Mike Card |
| VTS Centre | **Jon Leon Ervik**  Arthur Baranowski |
| Port Authority | Roy Stanbrook |
| ECDIS & ENCs | **Robert Ward**  Lee Alexander  Woo-Seong Shim |
| Radar & ARPA | **David Blevins**  Michael Rambaut |
| INS & IBS | Seo-Jeong Lee  Junji Fukuto  David Blevins |
| Pilotage | **Albrecht Kramer**  Simon Pellitier |
| Liaison with VTS Committee | **Jon Leon Ervik** |
| Monitor e-Nav Testbeds | **Pierre D’Arcy**  John Murray  Victor Placido da Conceicao |
| Default-Mode | **Simon Pelletier**  Suhyun Park |
| Virtual AtoN | **Hideki Noguchi** |
| GMDSS | Victor Placido da Conceicao |

The Working group will hold an inter-sessional meeting on 17 & 18 January 2011, in Tokyo, Japan.

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

Liaison notes were generated for various external bodies and other Committees.

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

The existing plan was reviewed and updated (e-NAV8/output/2) with comments from all the IALA Committees. The revision was approved by the Committee and asked to be forwarded to the other Committees and PAP.

Action item

The Secretariat is requested to forward the revised e-Navigation plan (e-Nav8/output/2) to the other Committees and PAP.

# 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\*)

This item was considered and assessed as being redundant and that present methods of co-ordination are sufficient. See proposed amendment to Annex 7.

# Future Work Programme (2014 – 2018)

This was not considered at the meeting but members were asked to consider possible input for the next meeting

Action Item

Members are requested to provide initial input to the future work programme (2014 – 2018) at e-NAV9.

# Review of output and working papers

Before the review began Jon Erik Hagen, Chairman of the IMO Correspondence Group (IMO CG) on e-Navigation brought the meeting up to date with the group’s current progress and challenges.

He stressed the importance of IALA’s contribution to the group’s work, remarking that e-navigation is being supported by many nations who see the trend of casualty statistics and wish to protect the marine environment, not least because of growing public pressure. As well as documentation e-Navigation will impact training for both ship and shore personnel. So far, in excess of 150 user needs have been identified, covering ship, shore and communications. More can be expected from the gap analysis and the use of scenarios.

With regard to which way to go, two scenarios were given as examples; the navigating navigator and the monitoring navigator. Briefly, these were explained, together with their broad consequences.

The IMO CG has raised three queries to STW, covering:

* standard bridge layout;
* Is there a need to review current standards;
* Navigating v monitoring navigator.

He then reminding the meeting that the IMO CG must work within its terms of reference and to the current work programme, noting that the Secretary-General of IMO wishes the group to focus on the task in hand and not be distracted by the introduction of additional matters. He added that if IALA found any of the deadlines too constraining that it should contact him as soon as possible, so that the matter can be raised with IMO.

Once again saying how much the IMO CG depended on IALA for its expertise, he reminded the meeting of the forthcoming data structure workshop being held at the IHO in November.

The output documents listed at Annex 5 were reviewed and approved.

The Secretariat was requested to forward / action these documents, as indicated earlier in the minutes.

During discussions of the work of the Working groups and the output papers, the following points were noted:

1. WG1 should review the query removed from the list of Committee approved FAQs (e-NAV8/output/6) at e-NAV9.

Action item

WG1 is requested to review the proposed FAQ (Should commercially-available services be considered a component of e-Navigation?) at e-NAV9.

1. Council approval of e-NAV8/output/9 (Draft Guideline - AIS overview) would require Guidelines 1027 and 1028 to be deleted from e-NAV8/output/5 (Liaison note to IMO CG - list of IALA publications).

Action item

The Secretariat is requested to monitor the need to amend e-NAV8/output/5, should e-NAV8/output/9 be approved.

1. It would be helpful if the External Organisation Liaison Note Template, for documents going to external bodies, indicated that all such documents come for IALA and not the Committee or a Working Group.

Action item

The Secretariat is requested to amend the External Organisation Liaison Note Template.

1. It is considered that there is a need for someone, at a national level, to be responsible for the AIS VDL. Consideration about this will be given when revising IALA Recommendation A-124.

Action item

WG3 is requested to consider responsibility for the AIS VDL when reviewing A-124.

1. It was requested that a diary be kept for forthcoming AIS / e-Navigation events. The Vice Chairman undertook to investigate.

Action item

The Committee Vice Chairman is requested to investigate the provision of a diary for AIS / e-Navigation events.

1. The facility to collect regional AIS application specific messages is available but, so far, nothing has been posted to it. However, data from the USA is expected to be posted shortly. In further discussion, it was recommended that international and regional messages be kept separate, although WG5 will be investigating where regional messages fit into the e-Navigation ‘stack’.
2. The IHO Observer commented on the report and working paper of WG5. He pointed out that the IHO had no formal position on the Data Architecture proposals currently under development and consideration by the IALA e-Navigation Committee. However, as a result of his participation and discussion during the meeting and the assistance of specific subject matter technical advice from IHO technical staff and IHO NGO observers, he was able to offer a number of observations.

He noted that there were many similarities in the requirements and the methodologies employed in the IHO S-100 registry and the IALA data architecture proposals under development and consideration by the Committee. This means that the prospect of accommodating IALA’s requirements within the S-100 registry construct was promising, but further discussions were required to clarify the extent to which the IHO and the IALA e-Navigation Committee are using different terms and descriptions to describe the same concepts or requirements.

The IHO Observer went on to express serious misgivings over the currently proposed IALA over-arching governance model that would rely on IMO, in effect, allocating responsibility for specific data types or domains to individual international bodies – in effect, creating a semi-permanent ‘stovepipe’ approach. In the view of the IHO Observer, this was incompatible with the S-100 registry concept, which has been based specifically on a contemporary ISO geospatial standard that is widely and increasingly being used and which enables the operation of dynamic and extensible registries and minimises individual ‘ownership’ rights to control contents. Furthermore, as the S-100 Registry exists and is or will be the supporting data infrastructure for all the World’s electronic charts and nautical publications, and an ever increasing number of other non-hydrographic maritime applications including inland ENCs, Marine Information Overlays, Ice coverage reporting, for the next 30+ years, there would be serious consequences to existing applications and data providers if such an overarching governance structure was imposed at some time in the future.

In the circumstances, the IHO Observer expressed the opinion that while the IHO remains as keen as ever that the S-100 registry is available and suitable to the widest possible range of users, it would be most unlikely that the IHO would support the proposals currently under the development by WG5 of the e-Navigation Committee regarding its maritime data model governance concept.

The Secretary-General, who had been sitting in on the session, thanked all the Working Groups but especially WG5, in view of the difficult discussions that had taken place during the meeting. He reminded the meeting of the IMO’s views on how e-Navigation should be progressed and that the paper going forward to e-NAV9 (e-NAV8/WG5/WP1) would require considerable work, given all the examples quoted by the IHO in its statement, if difficulty was to be avoided in an IALA input on data structure to IMO.

The Chairman then thanked the WG Chairs, Vice Chairs and WG members for all their hard work, the considerable progress made and apologised that he would not available to Chair the final plenary session.

# Any Other Business

## Workshops & Seminars (2010 – 2014)

Relevant input document: e-NAV8/18/1.

None were proposed.

## Terms of Reference of WG

Terms of reference were considered and will be reviewed at the next meeting.

Action Item

WG Chairs are requested to update their Working Group’s terms of reference for consideration at e-NAV9.

## Work Programme for 2010 – 2014, approved by C49 (June 2010)

Relevant input paper e-NAV8/18/3.

The input paper was reviewed and WG Chairs considered comments from the Council when reviewing their Tasks’ descriptions.

# Review of session report

The report of the meeting (e-NAV8/output/1) was reviewed and approved by the Committee.

Action item

The Secretariat is requested to forward the report of e-NAV8 (e-NAV8/output/1) to the Council, to note.

# Date and venue of next meeting

e-NAV9 is expected to meet from 14 – 18, March, 2011. The location is subject to the planned move of IALA Headquarters and will be advised when details are known.

# Closing of the meeting

The Vice Chairman thanked all members for their hard work and wished them a safe journey home.

# 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-NAV8 have been highlighted.

1. Presentation by

A script in support of the presentation at agenda item 5.1 is at Annex H.

1. e-NAV8 Agenda

**8th Meeting of the e-NAV Committee**

The 8th meeting of the e-NAV Committee will be held from 20 - 24 September 2010, at the IALA headquarters in Saint Germain en Laye, France.

The opening plenary will commence at 1400 hours on Monday 20 September and the closing plenary will end at approximately 1300 on Friday 24 September.

Committee Chair, Vice-Chair and Working Group Chairs are requested to meet at 1000 hours on Monday 20 September.

**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 – 46th Session, December 2009
   2. IALA Council – 47th Session, March 2010
   3. IALA Council – 48th Session, March 2010
   4. IALA Council – 49th Session, June 2010
   5. IMO – MSC87, May 2010
   6. IMO – NAV56, July 2010
   7. IALA 17th Conference (Cape Town), March 2010
   8. PAP19, October 2009
   9. IMO CG on e-Navigation – report to NAV56
   10. NAV56 WG on e-Navigation report
   11. NAV56 draft report to MSC
5. Presentations (15 minutes)
   1. VTM Pieter Paap
   2. Project EfficenSea - update Thomas Christensen
   3. IALA World-Wide Academy Jean-Charles Leclair
   4. AIS-SART sea trials Alan Stewart
   5. S-100 Robert Ward
6. Establish Working Groups
   1. Work Programme 2010 - 2014
7. WG 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\*)
8. 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\*)
9. 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\*)
10. 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\*)
11. 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\*)
12. 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, VDR and ENCs (Task 27\*)
    4. Monitor and report progress on related systems (Task 28\*)
13. Liaise with other IALA Committees and other bodies (Task 29\*)
14. Prepare a combined IALA e-Navigation Plan (all Committees) (Task 30\*)
15. 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\*)
16. Future Work Programme (2014 – 2018)
17. Review of output and working papers
18. Any Other Business
    1. Workshops & Seminars (2010 – 2014)
    2. Terms of Reference of WG
    3. Review of Work Programme for 2010 – 2014
    4. Inter-VTS Exchange Format Service
19. Date and venue of next meeting
20. Review of session report
21. e-NAV8 Participants

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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-NAV8/1/1 rev4 | Draft Agenda rev3 | B Cairns (BC) / IALA | Late |
| e-NAV8/1/2 | Programme for the week *(to be issued after the Chairman’s Meeting)* | BC / IALA |  |

1. Review of action items from last meeting

|  |  |  |  |
| --- | --- | --- | --- |
| **Number** | **Title / Author (if required)** | **Presented by** | **Posting** |
| e-NAV8/2/1 | Action Items from e-NAV7 | BC / IALA | 1 |

1. Review of input papers & intersessional Working Group reports

|  |  |  |  |
| --- | --- | --- | --- |
| **Number** | **Title / Author (if required)** | **Presented by** | **Posting** |
| e-NAV8/3/1 | List of Input Papers | BC / IALA |  |

1. Reports from other bodies

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| --- | --- | --- | --- |
| **Number** | **Title / Author (if required)** | **Presented by** | **Posting** |
| e-NAV8/4/1 | IALA Council 46th Session | BC / IALA | 1 |
| e-NAV8/4/2 | IALA Council 47th Session | BC / IALA | 1 |
| e-NAV8/4/3 | IALA Council 48th Session | BC / IALA | 1 |
| e-NAV8/4/4 | IALA Council 49th Session | BC / IALA | 4 |
| e-NAV8/4/5 | MSC87 Report | BC / IALA | 2 |
| e-NAV8/4/6 | NAV56 Report | BC / IALA | 4 |
| e-NAV8/4/7 | 17th IALA Conference Report | BC / IALA | 2 |
| e-NAV8/4/8 | PAP19 Report | BC / IALA | 2 |
| e-NAV8/4/9 | IMO Correspondence group report to NAV56 (NAV 56/8) | BC / IALA | 4 |
| e-NAV8/4/10 | Report of NAV56 Working group on e-Navigation (NAV56/WP.5/Rev.1) | BC / IALA | 4 |
| e-NAV8/4/11 | Draft report (of NAV) to the Maritime Safety Committee (NAV56/WP.7) | BC / IALA | 5 |

1. Presentations

| **Number** | **Title / Author (if required)** | **Action** | **Posting** |
| --- | --- | --- | --- |
| e-NAV8/5/1 | VTM Concept - Communication Plan | All | 2 |
| e-NAV8/5/1 rev1 | Communication Strategy for Vessel Traffic Management | 1 / All | Late |
| e-NAV8/5/2 | Liaison note from VTS31 - Communication Strategy for Vessel Traffic Management | 1 / All | Late |

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-NAV8/7/1 | ANM14 Liaison note on e-NAV Plan & the ANM role | BC / NW | 1 |
| e-NAV8/7/2 | Report of intersessional meeting – Cape Town | 1 | 1 |
| e-NAV8/7/3 | EEP Liaison Note on draft IALA Plan for e-Navigation | BC / NW | 1 |
| e-NAV8/7/4 | e-Navigation stakeholder gap analysis - template | 1 | 3 |
| e-NAV8/7/5 | e-Navigation stakeholder gap analysis - Korea | 1 | 6 |
| e-NAV8/7/5 rev1 | e-Navigation stakeholder gap analysis - Korea | 1 | 8 |
| e-NAV8/7/6 | e-Navigation stakeholder gap analysis - VTS | 1 | 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-NAV8/8/1 | Evaluation of different Global Positioning System augmentation options in Finland | 2 | 3 |
| e-NAV8/8/2 | eLoran update (NLB) | All | 4 |
| e-NAV8/8/3 | GNSS update | All | 4 |
| e-NAV8/8/3 rev1 | GNSS update | All | 10 |
| e-NAV8/8/4 | eLoran update (Vice Chair) | All | 4 |
| e-NAV8/8/5 | Racon strategy | 2 | 4 |

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-NAV8/9/1 | AIS TWG Dublin - Report | 3 | 1 |
| e-NAV8/9/2 | ANM14 Liaison – AIS Authorisation | 3 | 1 |
| e-NAV8/9/3 | New Orleans - Input08 (ITU 220v2e) | 3 | 1 |
| e-NAV8/9/4 | New Orleans – Report rev1 | 3 | 1 |
| e-NAV8/9/5 | New Orleans - Output 02 (ANM Authorization AtoN Table) | 3 | 1 |
| e-NAV8/9/6 | New Orleans-Output 03 (Liaison to IEC on revision 1371-3) | 3 | 1 |
| e-NAV8/9/7 | New Orleans-Output 04 (Technical Clarifications ed 2\_4) | 3 | 1 |
| e-NAV8/9/8 | New Orleans-Output 05 (Liaison to ITU on revision 1371-3) | 3 | 1 |
| e-NAV8/9/9 | New Orleans-Output 06 (Technical Clarifications ed 3\_1) | 3 | 1 |
| e-NAV8/9/10 | New Orleans-Output 07 (Liaison to IMO on NAV Status) | 3 | 1 |
| e-NAV8/9/11 | Weather Current via AIS - HI article | 3 | 1 |
| e-NAV8/9/12 | Ottawa/Output/1 Report of AIS TWG meeting-June 201 | 3 | 2 |
| e-NAV8/9/13 | Ottawa Output 02 ITU liaison | 3 | 2 |
| e-NAV8/9/14 | Alert note from ITU-R5B - M.1371-4 | 3 | 3 |
| e-NAV8/9/15 | IMO NAV Liaison Statement-future revision ITU-R M.1371-4 | 3 | 3 |
| e-NAV8/9/16 | IEC-TC 80 WG 15 Liaison note – request for technical clarification | 3 | 4 |
| e-NAV8/9/17 | AIS-Ship installation & radio interference - CETMEF | 3 | 4 |
| e-NAV8/9/18 | VAtoN Risk Analysis | All | 4 |
| e-NAV8/9/19 | New symbols for AIS-Aids to Navigation (AIS-AtoN) - Japan | 6 | 5 |
| e-NAV8/9/20 | Draft IALA Guideline – overview of AIS | 3 | 8 |
| e-NAV8/9/21 | Installation of a VRS-Test Pilot for the transmission of GNSS corrections using MF radio beacons and AIS base stations | 2 | 9 |
| e-NAV8/9/22 | Draft proposal for operational definitions of AIS coverage | 3 | 10 |
| e-NAV8/9/23 | Liaison note from EfficienSea on definition of AIS coverage | 3 | 10 |
| e-NAV8/9/24 | Liaison note from VTS31- ship radio interference | 3/4 | 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-NAV8/10/1 | ITU WP5B liaison note to IALA and IMO - WRC | 4 | 2 |
| e-NAV8/10/2 | Maritime VHF efficiency study | 4 | 4 |
| e-NAV8/10/3 | Liaison note from VTS31 – VHF frequency scarcity | 4 | Very 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-NAV8/11/1 | WG5\_WP1\_Draft Contribution to IMO CG Chapter on User Needs 1.01 | 5,1,2,3,4,6 | 1 |
| e-NAV8/11/2 | WG5\_WP2\_Draft Contribution to IMO-CG Chapter on Initial e-NAV Architecture 1.14 | 5,2,3,4,6 | 1 |
| e-NAV8/11/3 | WG5\_WP3\_Draft Contribution to IMO CG Chapter on Initial Gap Analysis 1.03 | 5,1,2,3,4,6 | 1 |
| e-NAV8/11/4 | Cumulative WG5 Intersessional Report | All | 1 |
| e-NAV8/11/5 | Draft Executive Summary of Intersessional work of WG5 | All | 1 |

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, VDR, and ENCs (Task 27\*)
   4. Monitor and report progress on related systems (Task 28\*)

| **Number** | **Title / Author (if required)** | **Action** | **Posting** |
| --- | --- | --- | --- |
| e-NAV8/12/1 | MIS TG - WP #1 - Additional FAQ | 6 | 1 |
| e-NAV8/12/2 | MIS TG - WP #2 - SOLAS equipment – v1 | 6 | 1 |
| e-NAV8/12/3 | MIS TG - WP #3 – e-Nav Concept & Scope - v1+editorial rev | BC/NW | 1 |
| e-NAV8/12/4 | MIS TG - WP #4 - Ship & Shore Info Tree - v4 | 6 | 1 |
| e-NAV8/12/5 | Use of ECDIS in port approaches, the PLA perspective | 6 | 3 |
| e-NAV8/12/6 | APA input on S Mode | 6 | 5 |
| e-NAV8/12/7 | Information Portrayal WG - Work Plan | 6 | 5 |
| e-NAV8/12/7 rev1 | Information Portrayal WG - Work Plan | 6 | 9 |
| e-NAV8/12/8 | SN.1-Circ.289 - Guidance on the use of AIS application-specific messages | 3,6 | 5 |
| e-NAV8/12/9 | SN.1-Circ.290 - Guidance for the presentation and display of AIS application-specific messages information | 3,6 | 5 |

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

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| **Number** | **Title / Author (if required)** | **Action** | **Posting** |
| e-NAV8/13/1 | IMO e-Navigation Correspondence Group (cover note for e-NAV8/13/2 | BC/NW | 6 |
| e-NAV8/13/2 | IMO e-Navigation CG schedule 2010 - 2011 | BC/NW | 6 |

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

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| **Number** | **Title / Author (if required)** | **Action** | **Posting** |
| e-NAV8/14/1 |  |  |  |

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-NAV8/15/1 |  |  |  |

1. Future Work Programme (2014 – 2018)

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| **Number** | **Title / Author (if required)** | **Action** | **Posting** |
| e-NAV8/16/1 |  |  |  |

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

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| **Number** | **Title / Author (if required)** | **Action** | **Posting** |
| e-NAV8/18/1 | Proposed Workshops & Seminars 2010-2014 rev3 | All | 1 |
| e-NAV8/18/2 | Draft ToR for WG1 | All | 1 |
| e-NAV8/18/3 | Work Programme (2010 – 2014) revised and approved at C49 | All | 2 |
| e-NAV8/18/4 | Draft Recommendation on Inter-VTS Exchange Format Service  Superseded by e-NAV8/18/17 |  | 3 |
| e-NAV8/18/5 | Draft ToR for WG2 | All | 3 |
| e-NAV8/18/6 | ToR for WG4 (2006 – 2010)  Superseded by e-NAV8/18/11 | - | 3 |
| e-NAV8/18/7 | ToR for WG5 (2006 – 2010)  Superseded by e-NAV8/18/12 | - | 3 |
| e-NAV8/18/8 | Draft ToR for WG6 (2010 – 2014) | All | 3 |
| e-NAV8/18/9 | Draft ToR for WG3 (2010 – 2014) | All | 3 |
| e-NAV8/18/10 | ANM Work Programme 2010-2014\_as amended at Council46 | BC/NW | 3 |
| e-NAV8/18/11 | Draft ToR for WG4 | All | 4 |
| e-NAV8/18/12 | Draft ToR for WG5 | All | 5 |
| e-NAV8/18/13 | VRS workshop – report (Sweden) | 2 | 5 |
| e-NAV8/18/14 | Draft IALA Committee input paper template | All | 9 |
| e-NAV8/18/15 | Liaison note from VTS31 - VTS in VTM | All | Late |
| e-NAV8/18/16 | Liaison note from VTS31 to e-NAV- IVEF | 5 | Late |
| e-NAV8/18/17 | Draft Recommendation on Inter-VTS Exchange Format Service (IVEF) | 5 | 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.

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| --- | --- | --- |
| Number | Title | Status |
| e-NAV8/output/1 | Draft e-NAV7 Report | To Council to note |
| e-NAV8/output/2 | Revised IALA e-Navigation plan | To PAP20, EEP15, ANM15 & VTS32 |
| e-NAV8/output/3 | Liaison note to VTS on user needs gap analysis | To VTS32 |
| e-NAV8/output/4 | Liaison note to IMO CG - SAR gap analysis | To Council for approval (e-mail) |
| e-NAV8/output/5 | Liaison note to IMO CG - list of IALA publications | To Council for approval |
| e-NAV8/output/6 | Updated e-Navigation FAQ | To Council for approval |
| e-NAV8/output/7 | Liaison note to IEC TC 80 WG 15 - Clarification for AIS Class B SO | To Council for approval |
| e-NAV8/output/8 | Liaison note to ITU WP5B – Technical clarifications | To Council for approval (e-mail) |
| e-NAV8/output/8a | Liaison note to ITU WP5B (attachment) | To Council for approval (e-mail) |
| e-NAV8/output/9 | Draft Guideline - AIS overview | To Council for approval |
| e-NAV8/output/10 | Liaison to ANM-AIS AtoN Authorisation (cover note) | To ANM15 |
| e-NAV8/output/11 | Liaison to ANM-AIS AtoN Authorisation (amended document) | To ANM15 |
| e-NAV8/output/12 | Liaison note to Project EfficienSea | To Council for approval |
| e-NAV8/output/13 | Liaison note to ITU-R WP5B - WRC | To Council for approval |
| e-NAV8/output/14 | Liaison note to IHO and IMO on UMDM | To Council for approval |
| e-NAV8/output/15 | Briefing note to Council - Redundancy of position fixing | To Council for approval |

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

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| Number | Title | Status |
| e-NAV8/WG1/WP1 |  |  |
|  |  |  |
| e-NAV8/WG2/WP1 |  |  |
|  |  |  |
| e-NAV8/WG3/WP1 |  |  |
|  |  |  |
| e-NAV8/WG4/WP1 |  |  |
|  |  |  |
| e-NAV8/WG5/WP1 | Working towards a proposal on how to achieve the IMO’s envisaged ‘common data structure’ by harmonization between IHO and IALA regarding the operation of data model registers | To e-NAV9 |
| e-NAV8/WG5/WP2 | Explanation of the scope of the UMDM | To e-NAV9 |
|  |  |  |
| e-NAV8/WG6/WP1 |  |  |

1. ACTION ITEMS

Action Items for the IALA Secretariat

1. [The Secretariat is requested to attach the Committee input paper template to the 1st invitation for future meetings. 7](#_Toc273266181)
2. [Jean-Charles Leclair is requested to draft a submission to IMO MSC89 regarding protection of the VDL for review at e-NAV9 and to liaise with Pieter Paap about national member sponsorship. 8](#_Toc273266182)
3. [The Secretariat is requested to forward the list of IALA guidance documents relevant to the development of e-Navigation (e-NAV8/output/5) to the IALA Council for approval 12](#_Toc273266183)
4. [If approved, the Secretariat is requested to forward the list of IALA guidance documents relevant to the development of e-Navigation (e-NAV8/output/5) to the co-ordinator of the IMO Correspondence Group on e-Navigation. 12](#_Toc273266184)
5. [The Secretariat is requested to forward the updated FAQ (e-AV8/output/6) to the Council for approval. 13](#_Toc273266185)
6. [If approved, the Secretariat is requested to post the updated version of the FAQs on e-Navigation (e-NAV8/output/6) on the IALA committee website and the external website. 13](#_Toc273266186)
7. [The IALA Secretariat is requested to forward e-NAV8/output/3 to the VTS Committee and the members of the VTS Committee’s correspondence group on gap analysis for VTS, as soon as practicable. 13](#_Toc273266187)
8. [The Secretariat is requested to forward e-NAV8/output/4 (preliminary SAR gap analysis) to the Council for approval (by e-mail). 13](#_Toc273266188)
9. [If approved, the Secretariat is requested to forward e-NAV8/output/4 (preliminary SAR gap analysis) to the Chair of the IMO e-Navigation Correspondence Group. 13](#_Toc273266189)
10. [The Secretariat is requested to forward the briefing note on position fixing redundancy (e-NAV8/output/15) to the IALA Council for consideration. 14](#_Toc273266190)
11. [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. 15](#_Toc273266191)
12. [The Secretariat is requested to forward the liaison cover note (e-NAV8/output/10) and the proposed amendments to e-NAV8/9/2 (e-NAV8/output/11) to the ANM Committee. 16](#_Toc273266192)
13. [The Secretariat is requested to inform the VTS Committee that the issue of radio interference will be addressed at a future meeting. (See also paragraph 10.2) 16](#_Toc273266193)
14. [The Secretariat is requested to forward the draft Guideline on an overview of AIS (e-NAV8/output/9) to Council for approval. 16](#_Toc273266194)
15. [The Secretariat is requested to forward the liaison note to IEC TC80 WG15 (e-NAV8/output/7) to Council for approval. 16](#_Toc273266195)
16. [If approved the Secretariat is requested to forward the liaison note to IEC TC80 WG15 (e-NAV8/output/7) to IEC TC80 WG15. 16](#_Toc273266196)
17. [The Secretariat is requested to forward the liaison notes to ITU WP5B (e-NAV8/output/8 & e-NAV8/output/8a) to Council for approval (by e-mail). 17](#_Toc273266197)
18. [If approved, the Secretariat is requested to forward e-NAV8/output/8 & e-NAV8/output/8a to ITU WP5B. 17](#_Toc273266198)
19. [The Secretariat is requested to ask the Council to consider sending a suitably qualified person to represent IALA at meetings of ITU WP5B. 17](#_Toc273266199)
20. [The Secretariat is requested to forward the liaison note to Project EfficienSea (e-NAV8/output/12) to Council for approval. 17](#_Toc273266200)
21. [If approved, the Secretariat is requested to forward the liaison note to Project EfficienSea (e-NAV8/output/12) to the project. 17](#_Toc273266201)
22. [The Secretariat is requested to encourage IALA national members to support the recommendations of the IALA MRCP at ITU WRC 12. 17](#_Toc273266202)
23. [The Secretariat is requested to post the Maritime VHF efficiency report to the FTP site as soon as it becomes available. 18](#_Toc273266203)
24. [The Secretariat is requested to inform the VTS Committee that the issue of radio interference will be addressed at a future meeting. (See also paragraph 9.) 18](#_Toc273266204)
25. [The Secretariat is requested to forward the liaison note to ITU WP5B – WRC (e-NAV8/output/13) to Council for approval. 18](#_Toc273266205)
26. [If approved the Secretariat is requested to forward the liaison note to ITU WP5B – WRC (e-NAV8/output/13) to ITU WP5B. 18](#_Toc273266206)
27. [The Secretariat is requested to forward e-NAV8/WG5/WP1 and e-NAV8/WG5/WP2 to e-NAV9. 19](#_Toc273266207)
28. [The Secretariat is requested to forward the liaison note to IHO and IMO (e-NAV8/output/14) to Council for approval. 19](#_Toc273266208)
29. [If approved, the Secretariat is requested to forward the liaison note (e-NAV8/output/14) to IMO and IHO. 19](#_Toc273266209)
30. [The Secretariat is requested to delete reference to VDR in Task 27. 21](#_Toc273266210)
31. [The Secretariat is requested to add INS to Task 27. 21](#_Toc273266211)
32. [The Secretariat is requested to forward the revised e-Navigation plan (e-Nav8/output/2) to the other Committees and PAP. 23](#_Toc273266212)
33. [The Secretariat is requested to monitor the need to amend e-NAV8/output/5, should e-NAV8/output/9 be approved. 24](#_Toc273266213)
34. [The Secretariat is requested to amend the External Organisation Liaison Note Template. 24](#_Toc273266214)
35. [The Secretariat is requested to forward the report of e-NAV8 (e-NAV8/output/1) to the Council, to note. 26](#_Toc273266215)

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. 5](#_Toc273266260)
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](#_Toc273266261)
3. [Working Group Chairmen are requested to consider if the 2010 Conference Conclusions and Recommendations affect their Work Programme Tasks and, if so, recommend appropriate modifications. 8](#_Toc273266262)
4. [IALA Members are encouraged to contribute to the further development of the preliminary SAR gap analysis (e-NAV8/output/4). 14](#_Toc273266263)
5. [The Vice Chairman is requested to keep the Committee appraised of further developments on risk analysis for virtual AtoN. 14](#_Toc273266264)
6. [Members were invited to approach their administrations with a view to sponsoring the submission to MSC of a new work item for NAV. 14](#_Toc273266265)
7. [WG members are requested to indicate their interest in an inter-sessional WG meeting and VRS demonstration, to be held in Koblenz (possibly 23-25 Nov 2010), to Michael Hoppe by 15 October 2010. 15](#_Toc273266266)
8. [M Hoppe/J Winell are requested to prepare a draft revision of IALA Rec.R-121 as an input to e-NAV9. 15](#_Toc273266267)
9. [M Dziewicki is requested to prepare a draft revision of IALA Guideline 1060 as an input to e-NAV9. 15](#_Toc273266268)
10. [The Chairman of WG2 is requested to provide information on portable DGPS to e-NAV9. 15](#_Toc273266269)
11. [Nick Ward/Paul Mueller are requested to draft a paper on the future of racons as an input to eNAV9. 15](#_Toc273266270)
12. [WG members are requested to participate in the ongoing work on the revision of Recommendation A124 and Recommendation A 126. 16](#_Toc273266271)
13. [The Committee Vice Chairman is requested to advise the Secretariat when the Maritime VHF efficiency report becomes available. 17](#_Toc273266272)
14. [WG members are requested to review the late input paper (e-NAV8/10/3) from the VTS committee for a response to be made at e-NAV9. 18](#_Toc273266273)
15. [The Chairman of Working Group 5 is requested to set up the inter-sessional meetings of Working Group 5 at 22-26 November 2010 (IALA Headquarters) and 17-21 January 2011 (Houston, TX, USA; host: Tideland Signal Corporation). 20](#_Toc273266274)
16. [WG members are requested to prepare relevant input for the inter-sessional work. 20](#_Toc273266275)
17. [Members with comments on e-NAV8/18/6 are requested to pass them directly to Rene Hogendoorn 20](#_Toc273266276)
18. [WG6 members are requested to continue to lead/participate in the agreed upon categories: 22](#_Toc273266277)
19. [Members are requested to provide initial input to the future work programme (2014 – 2018) at e-NAV9. 23](#_Toc273266278)
20. [WG1 is requested to review the proposed FAQ (Should commercially-available services be considered a component of e-Navigation?) at e-NAV9. 24](#_Toc273266279)
21. [WG3 is requested to consider responsibility for the AIS VDL when reviewing A-124. 24](#_Toc273266280)
22. [The Committee Vice Chairman is requested to investigate the provision of a diary for AIS / e-Navigation events. 24](#_Toc273266281)
23. [WG Chairs are requested to update their Working Group’s terms of reference for consideration at e-NAV9. 25](#_Toc273266282)

REVISion of the WORK PROGRAMME

(Changes made at e-NAV8 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 and operations (Presentation and User requirements) |  |  |  |
| 1. Monitor and co-ordinate input on Strategy & Operations to the IMO process | 7 | 1 | Inputs to NAV, COMSAR, STW & CG |
| 1. Review and update IALA Strategy for e-Navigation | 3 | 1 | Input for PAP |
| 1. Maintain and update user requirements (in co-ordination with the VTS & ANM Committees) | 4 | 1 | Inputs to NAV & CG |
| 1. Monitor developments in navigation for polar regions | 2 | ALL | Recommendation on e-Navigation for polar regions |
| Position, Navigation, and Timing (Sensors): |  |  |  |
| 1. Review and update World Wide Radio Navigation Plan | 3 | 2 | Input to NAV & CG |
| 1. Prepare Recommendations and Guidelines on PNT systems and radar AtoN | 5 | 2 | Revised Racon & DGNSS Recommendation |
| 1. Co-ordinate input to IMO, ITU, and IEC on PNT systems | 4 | 2 | NAV & CG inputs  (Liaison with RTCM SC104) |
| 1. Prepare a Guideline on establishment and operation of navigation systems in polar regions | 2 | ALL | IALA Recommendation on e-Navigation in polar regions |
| 1. Monitor developments in satellite and terrestrial EPFSs and non-radionavigation systems | 4 | 2 | Periodic updates to Committee |
| 1. Guideline on recommended measures for disaster recovery | 2 | ALL | IALA Guideline |
| 1. Monitor developments in radar technology and their effect on racons | 3 | 2 | Updated Racon Strategy |
| AIS |  |  |  |
| 1. Review and update documentation on AIS (M.1371; A-124, A-126) | 4 | 3 | Revised recs. |
| 1. Co-ordinate input to IMO, ITU, and IEC on AIS | 3 | 3 | Liaison notes, CG & NAV inputs |
| 1. Monitor and contribute to development of AIS, including the next generation of AIS | 4 | 3 | Periodic updates |
| 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. Monitor developments in the use of AIS in polar regions (e.g. AIS AtoN) | 3 | ALL | IALA Recommendation on e-Navigation in polar regions |
| Communications: |  |  |  |
| 1. Review and update IALA Maritime Radio Communications Plan | 5 | 4 | COMSAR & CG input |
| 1. Review Recommendations and Guidelines on communications | 4 | 4 | IALA Recommendations and Guidelines |
| 1. Co-ordinate input to ITU, IMO, and IEC on communications | 4 | 4 | CG & COMSAR inputs |
| 1. Prepare a Guideline on establishment and operation of communications systems in polar regions | 2 | ALL | IALA Recommendation on e-Navigation in polar regions |
| 1. Monitor developments in GMDSS and LRIT | 3 | 4 | Periodic updates |
| Architecture: |  |  |  |
| 1. Develop and maintain shore-based e-Navigation Architecture | 5 | 5  (assisted by 2,3,4 & 6) | Periodic updates to Committee |
| 1. Prepare Recommendations and Guidelines on e-Navigation architecture | 5 | 5 | IALA Recommendations & Guidelines |
| 1. Co-ordinate input to IMO, ISO, and IEC on architecture | 3 | 5 | CG & NAV inputs |
| 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 |
| 1. Prepare Recommendations and guidelines on the portrayal of information | 5 | 6 | IALA Rec. and inputs to NAV & CG. IHO liaison |
| 1. Monitor developments in ECDIS, INS VDR and ENCs | 3 | 6 | Periodic updates to Committee |
| General: |  |  |  |
| 1. Monitor and report progress on related systems | 4 | 2/3/4 | Periodic updates |
| 1. Liaise with other IALA Committees and other bodies | 4 | C/VC | Liaison notes, PAP |
| 1. Prepare a combined IALA e-Navigation Plan (all Committees) | 4 | C/VC | PAP |
| 1. Set up an e-mail group to coordinate work, intersessional meetings and plans using the IALA website and IALA Bulletin, where appropriate | 4 | C/VC | e-mail distribution |

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, INSVDR 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. Set up an e-mail group to coordinate work, inter-sessional meetings and plans using the IALA website and IALA Bulletin, where appropriate | X |  | X |  | X |  | X |

1. VTM Presentation Script

The global concept of Vessel Traffic Management (VTM), and its benefits to all stakeholders within the maritime domain.

**Sheet 1** (Title)

Vessel Traffic Management is a new concept, which has an impact on all stakeholders in the domain of maritime transport.

IALA took responsibility in defining the concept and scope of VTM, and tasked the VTS Committee with the development of this concept. Consequently, the VTS Committee set up a dedicated working group and what I present to you now is the view of the working group 4 on VTM.

**Sheet 2** (concept of VTM)

VTM is about managing the vessel traffic. However, vessel traffic is already managed, by multiple rules, regulations, owners, crews, authorities, aids to navigation, VTS etc. So what is missing?

Well, what seems to be the case is that most parts of maritime transport are already managed - some good, some bad, usually to serve specific interests - but that their coherence is not guided, let alone managed.

Where interdependencies between these parts of the maritime transport chain are not managed, coordination and collaboration between the stakeholders concerned is necessary, to sustain the maritime transport chain.

**Sheet 3** (functional framework)

Authorities used to have a knowledge monopoly. This is no longer the case. Knowledge is everywhere. In addition, many Authorities do need support from other stakeholders, to meet their responsibilities and to fulfil their tasks. This combination makes the information position of the Authority vulnerable, and he is increasingly becoming dependent on the performance of collaborating or contracted parties.

Also in the maritime domain this is the case, and legislation through IMO is not always an option to manage these interdependencies. Also quality management systems are not always the answer to facilitate collaboration.

Consequently, new arrangements - on top of what is already in place - may be needed to manage these interdependencies; in particular those affecting the marine environment and/or the safety, efficiency and security of maritime traffic. These new measures and services should be practicable, adaptable and – where possible – sustainable, and based on functional requirements in serving the benefits of stakeholders concerned.

**Sheet 4** (an example)

Let me give you an example of such an arrangement.

A VTS Authority and Port State Control (PSC) decide to exchange information on incidents & accidents, so that both can do their work more efficiently and effectively. In case this is not regulated, they decide to arrange this exchange through a data sharing agreement.

Result: The VTS Authority has better knowledge of specific risks and can improve her tactical efforts without much investment, and PSC enhances his records of incidents and improves his knowledge of potential deficiencies. A win-win situation for both parties.

In some cases, such exchange of information can be arranged bilaterally. However, in most cases such arrangement need to be discussed and agreed with other stakeholders concerned (i.e. ship owners, ship operators, insurance companies). This is to ascertain that such data exchange is lawful and serves its purpose. In the case of exchanging and re-use confidential or commercial sensitive information, new regulations may be needed or existing ones may need to be modified.

**Sheet 5** (VTM defined)

I said that VTM is about managing the vessel traffic. Only by collaboration between stakeholders, based on mutual agreements and resulting in measures and services; from a pro-active approach, to enhance the safety, security and efficiency of shipping and the protection of the marine environment.

**Sheet 6** (short term consequences for VTS)

Let’s focus on VTS within VTM.

The short term consequences for VTS have been identified and the most visible ones are shown here.

* A broader context implies that more stakeholders and their interests should be taken into account.
* A stronger information position implies that an increased support from VTS to these stakeholders may be expected.
* Increased information exchange implies that more interfaces need to be arranged and the application architecture may need to be revisited.
* More collaboration implies that new priorities may affect the way primary services are carried out.

**Sheet 7** (longer term consequences for VTS (1))

In the longer term, the pro-active approach matures, and a shift of focus (not of scope) to tactical and strategic level may be expected.

In the understanding that through traffic enhanced planning and traffic monitoring from VTS, most risks can be better mitigated or managed than just through the operational support to the conduct of navigation. In addition, traffic planning can also take business benefits from other stakeholders than VTS into account.

A shift of focus to tactical and strategic level does not imply that the VTS services INS and NAS will dramatically change or face a decreasing interest, but it does imply that TOS will further develop and need enhancement. New competencies – like information analysis, resource planning and risk assessment - will be required.

**Sheet 8** (longer term consequences for VTS (2))

Consequences for personnel and training may be expected. In this respect, pressure may come from the shipping business, which is already seeking for the added value of VTS. Please understand, this pressure does not come from the ship herself, but from the business interests behind her. The same is identified for maritime pilot services.

**Sheet 9** (Why VTM)

* Managing risks requires a pro-active approach and knowledge of risk factors.
* Arranging efficiency to ease the administrative burden onboard, to facilitate single window reporting, and to prevent unnecessary downtime in vessel traffic handling.
* Controlling space is needed to facilitate all claims on navigable space, while preventing unwanted encounters.

**Sheet 10** (expected costs and benefits)

Collaboration between public and private interests is based on trust and transparency. This will not be possible without investments.

Where problems or risks appear which need to be tackled, but this cannot be done by one stakeholder alone, collaboration between stakeholders is beneficial.

Although the extent of guidance of vessel traffic may differ from place to place, guidance will be harmonised worldwide. Shipping may expect that VTS follow same guidelines everywhere, and that the different authorities coordinate their efforts and information requirements.

**Sheet 11** (responsibilities)

I already said that IALA took the lead in defining the concept and scope of VTM. But at a certain stage, the results – and ownership of the VTM concept - will be transferred to IMO. VTM will remain an issue to IALA, and we envisage a long-term collaboration between IALA and IMO, in further defining the services, their legal framework and the development of subsequent guidelines.

VTM is expected to be made operational through efforts by IMO Member States, and the various authorities and other stakeholders within those states. Subsequent arrangements should be based on broad consultation of stakeholders concerned, coordinated with arrangements already in place and communicated to IMO.

**Sheet 12** (organization and funding)

VTM does not require a new body or new instruments, but can be made operational through current bodies and instruments. Part of the investments is expected from public funds. Part from private funds, in case of public-private collaborative arrangements.

Regarding the information management, further cooperation with e-Navigation is considered necessary.

**Sheet 13** (implementation strategy)

This sheet suggests that VTS can implement VTM through managing its relationships with other stakeholders, arranging the information exchanges, designing the additional measures and services required to improve its performance – and contribute to the performance of others. Obviously, the role and position of VTS within VTM is expected to be firmly established, before the other stakeholders may accept the arrangement on their relationship with VTS.

**Sheet 14** (VTM – e-Navigation)

VTM – in particular the increased need for information exchange – expects support from e-Navigation. Through its systems, data providing instruments, its procedures and information management processes, e-Navigation provides stakeholders within VTM the capabilities to communicate efficiently, and to interact in a harmonized manner. In addition, e-Navigation can help stakeholders within VTM to make their functional requirements explicit. e-Navigation provides capabilities and technical services to support the collaboration between these stakeholders.