



Report of the 16th Meeting of the ENAV Committee

20 - 24 April, 2015

Executive Summary

- 117 people from 27 countries and 3 sister organisations, attended the 16th session of the ENAV Committee, of which 12 members were new and 1 was observer;
- The Committee extended working time by moving the output papers review period from Thursday to Friday;
- The Committee considered 113 input papers;
- The Committee produced 21 output papers and 36 working papers;
- The Committee updated the ENAV Committee work plan for the work period 2014-2018. The following table shows a summary progress while progress on each work task to date is shown in 0.
- The IALA Council is invited to promote www.e-navigation.net as the global repository for testbed reporting and encourage testbed project managers to provide information and results to IALA for posting at www.e-navigation.net.
- It is planned to hold ENAV17 in Brest in association with the Safer Seas conference.

Task	Progress Indicator			Status Overview
	Green	Yellow	Red	
1 TD#1 – Data modelling and message systems	☐	☒	☐	All tasks progressing per plan except Task 1.3.1, 1.3.2 completion extended by 1 session
2 TD#2 - e-Navigation communications	☐	☒	☐	All tasks progressing per plan except Task 2.3.1 commencement delayed
3 TD#3 - Shore technical infrastructure	☐	☒	☐	All tasks progressing per plan except Task 3.1.1 duration extended by 1 session
4 TD#4 - e-Navigation test beds	☐	☒	☐	All tasks progressing per plan except Task 4.3.4 commencement delayed
5 TD#5 - Maritime Service Portfolios	☒	☐	☐	All tasks progressing per plan

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ENAV Committee

16th Session

24 April, 2015

Report of the 16th Session of the IALA ENAV Committee

GENERAL

The 16th meeting of the ENAV Committee was held from 20 – 24 April, 2015 at IALA HQ, with Omar Frits Eriksson as Chairman and Hideki Noguchi as Vice-Chairman. The Secretary for the meeting was Seamus Doyle.

1 OPENING

1.1 Administration & Safety Briefing

Virginia Butler provided a Safety and Administrative brief. Attention was drawn to the Committee website and ftp ialashare working arrangements for documents.

1.2 Approval of the agenda

The agenda (paper ENAV16-1.2) was adopted.

1.3 Introductions and apologies

Omar Frits Eriksson introduced himself and the WG chairs. The Deputy Secretary-General welcomed everyone and, on behalf of the Secretary General, brought the Committee up to date on IALA's recent activities in the areas of fulfilment of the IALA vision for the period 2014-2018 through harmonisation and capacity building, change of status of IALA from NGO to IGO, continuing success of the World Wide Academy (WWA) and IALA Secretariat changes. He noted planned changes to the hosting of hosted web sites and explained the funding arrangements for the WWA.

A list of attendees and apologies is provided at ANNEX B.



Omar Frits Eriksson added his welcome to both newcomers and those returning to IALA.

1.4 Programme for the week

Paper ENAV16-1.4.1 refers. The programme for the week was approved. The change of procedure to extend the working time for the Working Groups described in ENAV16-1.4.2 was noted.

2 REVIEW OF ACTION ITEMS FROM e-NAV15

Paper ENAV16-2.1 refers. It was noted that the action items from e-NAV15 for the IALA Secretariat were complete except for actions 5 and 15 where ARM Committee queries necessitated further work, action 9 where pending plans for hosting e-navigation.net are being considered, action 12 where the action was overtaken by events and an alternative input to IMO sufficed, action 16 where Stefan Bober made a verbal presentation to IEC TC80 instead of the ENAV15 output paper. Actions for Committee Members were referred to the Working Groups.

3 REVIEW OF INPUT PAPERS

3.1 Input papers

It was noted that all input papers were available on the IALA website. The input papers for each Working Group (WG) were identifiable from the document number. Discussion regarding the future work on the CSSA was referred to WG1.

3.2 Identify input papers suitable for uploading to the IALA Wiki

The Chairman introduced the IALA Wiki and presented a short demonstration of its use. ENAV Committee members were encouraged to use the IALA Wiki.

It was agreed that input paper ENAV16-9.1 should be uploaded to the IALA Wiki.

Action

The IALA Secretariat is requested to upload input paper ENAV16-9.1 to the IALA Wiki.

4 REPORTS FROM OTHER BODIES

4.1 IALA Council

The Committee noted the report of the 59th Session of Council, IALA HQ, Paris, 9-10 December 2014, Paper ENAV16-4.1.1 refers.

4.2 Report of MSC94, May 2014

The Committee noted the report of the IMO MSC 94 meeting, paper ENAV16-4.2.1 refers. The report highlighted issues relating to ENAV Committee work. It was noted that issues regarding cyber security were deferred to the next meeting.

4.3 USA National GMDSS Task Force - Report of meetings TFSR-79 and TFSR-80

The Committee noted the report of meetings TFSR-79 and TFSR-80 of the USA National GMDSS Task Force noting that these reports are USA oriented, paper ENAV16-4.3.1 refers.

4.4 e-Navigation Underway 2015 Report 20150211

The Committee noted the success of e-Navigation Underway International 2015, paper ENAV16-4.4 refers.

4.5 IMO NCSR2 Report

The Committee noted the report of the IMO NCSR2 meeting, paper ENAV16-4.5 refers. Thanks were expressed to those who contributed to the introduction of receiver performance standards.

4.6 ITU-R WP5BM

The Committee noted the report from Stefan Bober of the ITU-R WP5B meeting in Geneva from 27 October to 7 November 2014 and the report of the ITU Conference Preparatory Meeting, Geneva, 23 March to 2 April 2015, paper ENAV16-4.6 refers.

5 REPORTS FROM RAPPORTEURS

5.1 IALA Bulletin

Hideki Noguchi noted that he will be providing a report on ENAV16 for the IALA Bulletin. He observed that more Bulletin articles regarding e-Navigation were required and requested Committee Members to submit articles for the Bulletin. Thanks were expressed to those who had submitted articles for the Bulletin.

Actions

Michael Hoppe and Jan-Hendrik Oltmann are requested to provide an article for the IALA Bulletin on the subject of R-mode.

5.2 IALA Dictionary

Omar Frits Eriksson noted that the IALA Dictionary is available on the IALA web site and encouraged all Committee Members to use and update it.

The importance of the IALA Dictionary was highlighted and its increasing use as a reference was noted. It was noted that an editor for the Dictionary has been assigned but procedures for management of the Dictionary are needed.

5.3 GMDSS

Jean-Charles Cornillou presented an update on GMDSS, paper ENAV16-5.3 refers. It was noted that the Maritime Cloud may provide a solution for e-Navigation and GMDSS.

5.4 Report from VTS39

Jon Leon Ervik presented a report on e-Navigation work during VTS39, paper ENAV16-5.4 refers. The revision of Recommendation V128 into a shortened Recommendation and a guideline was noted.

6 PRESENTATIONS

Six presentations were made during the meeting. The presentations form part of the input to the meeting.

6.1 Maritime Service Infrastructure

Paper ENAV16-6.1 refers. Jens Kristian Jensen, Michael Lind, Jin Park described a maritime infrastructure framework in a layered model utilising the Maritime Cloud and invited Administrations to contribute. The need for compatibility of different component systems and seamless roaming was noted. Korea expressed an interest in contributing to the project.

6.2 ACCSEAS testbed on tactical route exchange: Intended and Suggested route services

Thomas Porathe described an ACCSEAS simulation with navigators and pilots in October 2014 on tactical route exchange: Intended and Suggested routes, and No-Go area services and the results of the testbed, paper ENAV16-6.2 refers.

6.3 ENAV17 in association with Safer Seas Conference in Brest

Pierre-Yves Martin described the plan to host the 17th Session of the ENAV Committee in Brest from 26 – 30 October, 2015 at Centre de Congrès du Quartz, Brest, France in association with the Safer Seas conference, paper ENAV16-6.3 refers.

6.4 R-Mode demonstrator

Michael Hoppe described an ACCSEAS feasibility to determine the performance of DGPS and AIS as a source of radio ranging information (R-Mode), paper ENAV16-6.4 refers. Results of the test confirmed that IMO position accuracy standards could be met. Mr Hoppe also provided a live demonstration of R-Mode in the lounge area throughout ENAV16.

6.5 EGNOS corrections over IALA radiobeacons and AIS/VDES

Manuel Lopez Martiniez described the Call for Interest from the European Global Navigation Satellite Systems Agency regarding a trial of EGNOS corrections over IALA radiobeacons and AIS/VDES, paper ENAV16-6.5 refers. He invited Maritime and Inland Waterways Authorities interested in collaborating in such pilots project to offer a DGNSS station or an AIS station for the tests by 15 May 2015.

6.6 World-Wide Academy (WWA) report

Jacques Manchard, IALA Senior Advisor, presented the WWA report, input paper ENAV16-6.6 refers. He highlighted the commencement of Gerardine Delanoyeon 1 March 2015 as WWA Programme Manager, Academy funding arrangements, eNAV-related Academy Activities and ENAV model courses.

7 ESTABLISH WORKING GROUPS

Five working groups were established, as outlined below:

Working Group		Working Group Chair	Working Group Vice Chair
WG 1	Harmonization	Edward Hosken	Peter Hooijmans
WG 2	Implementation	Mahesh Alimchandani	Bill Cairns
WG 3	Telecommunication	Peggy Browning	Stefan Bober
WG 4	ENAV Services	Jon Leon Ervik	Thomas Porathe
WG5	PNT	Alan Grant	Michael Hoppe

8 WORKING GROUP 1 – HARMONISATION (WG1)

8.1 Clarify the terminology used in IHO S-100 and the Common Marine Data Structure (CMD5)

ENAV16-9.26 was reviewed and its relevance and future discussed. It remains as a working document for further consideration when writing future guidance on S-100.

Actions

The IALA Secretariat is requested to forward working paper ENAV16-14.2.6, S-100 and CMDS Definitions, to ENAV17.

8.2 Develop Product Specification on AtoN Information (Task 1.2.1)

The current status of S-201 development was reported (ENAV16-9.25 S-200 - Status and Way Forward). No progress has been made since September 2014 due to a lack of suitable resource. Options for continuing this work are being considered. Options for testing and trials of AtoN data transfer within the EfficienSea2 project will be explored once the project is underway.

Actions

Nick Ward is requested to confirm the development plan for continuing to draft S-201 with the aim of completing a draft product specification during ENAV17.

8.3 Revise Guideline 1087 (Task 1.3.1)

The task description was amended to correct the document number to 1106 with the title 'Producing an IALA S-100 Product Specification'. This will be carried forward as a working paper for input for further work at ENAV17, paper ENAV16-14.2.7 refers

Guideline 1087 is still required for Domain Management.

A draft recommendation was completed for Product Specification Development and Management and submitted for review and approval, paper ENAV16-14.1.10 refers.

Actions

The Secretariat is requested to forward ENAV16-14.1.10 to Council for approval

The Secretariat is requested to forward Guideline 1106, paper ENAV16-14.2.7, to ENAV17

8.4 Amend S-100 for Service Orientation (Task 1.3.2)

No work progressed on this item at this session. No collaboration with IHO TSMAD has taken place. Intercessional meeting are planned for September 2015 with the aim of submitting an input paper to ENAV17 such that progress can be reported to IHO HSSC7 (Nov 2015).

Task definition was amended to reflect WG changes at HSSC and realistic collaboration with the new S-100 WG (date of next meeting not yet confirmed).

ENAV16-9.7, S-100 appendix 4a, remains as a working paper and will be considered at ENAV17, working paper ENAV16-14.2.8 refers.

Actions

The Secretariat is requested to forward paper ENAV16-14.2.8 to ENAV17.

Edward Hosken is requested to organise an intersessional meeting on IALA's requirements for data services with S-100 such that the requirements can be discussed at IHO HSSC in November 2015.

8.5 Risk assessment and management plan (Task 4.3.3)

The draft risk assessment plan was further developed into a working paper ENAV16-14.2.9.

Actions

The Secretariat is requested to add a presentation on risk management to the agenda for ENAV17.

The Secretariat is requested to forward ENAV16-14.2.9 to ENAV17

ENAV Members are requested to consider risks in advance of further discussion and development of a risk register at ENAV17.

Yves Desnoes is requested to deliver a presentation on ENAV risks in opening plenary at ENAV17.

8.6 Develop Recommendation on Common Shore based System Architecture (Task 5.1.18)

Recommendation e-NAV 140 was revised with removal of the Annex to a Guideline, ENAV16-14.1.11 refers.

The Annex to the original e-NAV 140 was converted to a Guideline on Design and Implementation Principles for Harmonised System Architecture of Shore Based Infrastructure, ENAV16-14.1.6 refers.

The application note 'Support of the CSSA for the Maritime Service Portfolios (MSPs) and for the Maritime Cloud', from appendix 1 of ENAV16-9.16 'Guideline on a Technical Specification for the Common Shore-based System Architecture (CSSA)', was removed from that Guideline, and has been retained as a potential new Guideline on application notes of the CSSA. The remainder of the document has been reworked as a new Guideline, ENAV16-14.1.12 refers.

It was agreed that application notes of the CSSA to fields of applications would be useful. The removed appendix 1 (as described above) is a working document for further consideration (ENAV16-14.2.10)

The Committee agreed the above Recommendation and two supporting Guidelines (ENAV16-14.1.11; 14.1.6; 14.1.12) for submission to Council.

It was agreed that further work on CSSA documents should be suspended, pending a review of the task to get a clear understanding of what is required. The task register will be amended to reflect any changes in the planned work.

Papers ENAV16-9.17 to 9.20 relating to a service engineering model and M2M were retained as working documents for further development, pending the above review of task 5.1.18.

Jan-Hendrik Oltmann invited Committee Members to a technical visit to a CSSA facility in Germany.

Actions

The Secretariat is requested to forward Recommendation 14.1.11 and guidelines 14.1.6 and 14.1.12 to Council for approval.

Edward Hosken is requested to cease further work on the CSSA (Task 5.1.18) in WG1, and revise, together with WG1, the work task 5.1.18 at a future session, proposing the way forward to the Committee.

Edward Hosken is requested to amend the ENAV Task Register task 5.1.18 in relation to the future work on the CSSA.

8.7 e-Navigation infrastructure and its governance (Task 5.1.19)

Input papers ENAV16-9.22, ENAV16-9.23, ENAV16-9.24 were considered.

Input paper ENAV16-10.5 'Proposal for a workshop on digital infrastructures of e-navigation' was reviewed, and further developed.

A list of questions about the potential operation of a digital infrastructure framework (including the Maritime Cloud) and potential implications to IALA, was developed, working paper ENAV16-14.2.15 'Questions on a digital infrastructure framework for e-navigation' refers.

Actions

The IALA Secretariat is requested to forward working paper ENAV16-14.2.15 to ENAV17.

Committee Members are requested to consider what questions need to be addressed on digital infrastructure frameworks (including the Maritime Cloud) to be able to contribute to discussions at ENAV17 to help form the structure of a potential seminar.

8.8 Persistent Unique Identifiers

A draft Recommendation was developed as a working document for further consultation and discussion at ENAV17, paper ENAV16-14.2.16 refers.

Actions

The IALA Secretariat is requested to forward working paper ENAV16-14.2.16 to ENAV17.

Committee Members are requested to consider the suitability and applicability of the proposal in ENAV16-14.2.16 on unique identifiers to inform development of a draft working paper during ENAV17.

8.9 IACS

Paper ENAV16-9.1 MSC 95-21-6 – ‘Format for electronic exchange and standard reports’ from the International Association of Classification Societies (IACS) was reviewed, together with related e-mails (including from IHO), and IMO paper – MSC95/INF13 (31 March 2015). A briefing note to IALA Secretary General was prepared, paper 14.1.14 refers.

Action

The IALA Secretariat is requested to forward briefing note ENAV16-14.1.14 on IACS MSC paper on exchange standards to the IALA Secretary General.

8.10 Product Specification Numbering

A liaison note to the ARM Committee regarding product specification numbering was prepared, paper ENAV16-14.1.15 refers.

Action

The IALA Secretariat is requested to forward liaison note ENAV16-14.1.15 to the ARM Committee.

9 WORKING GROUP 2 – IMPLEMENTATION (WG2)

The Committee reviewed, and responded as necessary, to input papers ENAV16-10.1 to 10.7 and ENAV16-9.22 to 9.24.

9.1 Gather and present information on testbeds (including results) globally (Task 4.1.1)

Dave Lewald of the United States Coast Guard presented information on its Joint Capabilities Technical Demonstration, which is due to begin in late 2015. The goals of the demonstration are to identify how maritime safety information and information on electronic aids to navigation are exchanged currently, develop a communications plan to gather feedback from the maritime community, and recommend improvements.

The Committee was generally supportive of the aims, scope, and process of the project. Dave Lewald was requested to provide summary information on the project to the IALA Secretariat for posting to www.e-navigation.net.

Maria Mota, EGNOS Multimodal Development Expert from European Satellite Services Provider (ESSP), which provides the EGNOS service, described a potential EGNOS testbed. The Committee affirmed that such testbeds would be considered as an e-Navigation testbed and requested her to report testbed plans and results to IALA.

Actions

Dave Lewald was requested to provide summary information on the Joint Capabilities Technical Demonstration project to the IALA Secretariat for posting to www.e-navigation.net.

The IALA Secretariat is requested to post summary information on the United States Coast Guard Joint Capabilities Technical Demonstration project to www.e-navigation.net

Maria Mota was requested to provide summary information on any future EGNOS related testbeds to the IALA Secretariat for posting to www.e-navigation.net.

9.2 Maintain a global repository for test-bed results (Task 4.1.2)

The Committee noted that IALA intends to take over ownership and management of external e-Navigation websites hosted by IALA Members (e.g., www.e-navigation.nl and www.e-navigation.net) under a single IALA site. Marie-Helene Grillet, the newly appointed Technical Operations Manager, will oversee this new IALA website.

Actions

The IALA Secretariat is requested to inform the IALA membership when the management of external websites (e.g., www.e-navigation.nl and www.e-navigation.net) is taken over by IALA.

9.3 Encourage testbed project managers to provide information and results to IALA for posting at www.e-navigation.net (Task 4.1.3)

The Committee agreed that the IALA Secretariat should request regional and sister organisations to link their websites to www.e-navigation.net.

Actions

The IALA Secretariat is requested to contact regional and sister organisations and request they link their websites to www.e-navigation.net

The IALA Secretariat is requested to invite the IALA Council to promote www.e-navigation.net as the global repository for testbed reporting and encourage testbed project managers to provide information and results to IALA for posting at www.e-navigation.net

9.4 Monitor testbed outcomes (lessons learnt) and advise the membership as appropriate (Task 4.2.1)

Working Paper ENAV15-14.2.1 was considered. It was felt that a comprehensive analysis of testbed outcomes from a lessons learned perspective would have, for the resources expended, limited value for the broader IALA membership. The Committee examined the extensive work done intersessionally on this topic, which included information on planning of testbeds and felt that this information would be useful for the IALA membership when planning testbeds. See section 10.6 below.

9.5 Provide guidance to IALA members to formulate the scope and topics of their testbeds (Task 4.3.1)

The Committee had developed text intersessionally that described the process for analysing lessons learnt. This also contained extensive material which could be taken into account when planning testbeds. It was felt that this material ought to be provided as guidance for members when planning testbeds, working paper ENAV16-14.2.1 refers.

Actions

The IALA Secretariat is requested to forward ENAV16-14.2.1 to ENAV17.

Jin Park is requested to lead intersessional work to further develop working paper ENAV16-14.2.1 (guidance on planning testbeds).

Interested ENAV Committee members are encouraged to contact Jin Park to assist in developing guidance on planning testbeds intersessionally, working paper ENAV16-14.2.1 refers.

9.6 Jointly (with Working Group 1) develop an IALA Seminar to include e-navigation testbeds in 2016/17 (Task 4.3.2)

A Proposal for a Seminar on Digital Infrastructure for e-Navigation was prepared.

Actions

The IALA Secretariat is requested to forward output paper ENAV16-14.1.1 (A Proposal for a Seminar on a Maritime Digital Infrastructure and Testbeds) to Council for approval.

If approved by Council, the IALA Secretariat is requested to advise Sweden of the approval of ENAV16-14.1.1 and organise the first meeting of the seminar steering group.

9.7 Revise and maintain e-Navigation roadmap (Task 4.3.4)

The Committee agreed that this task pends an outcome of IMO MSC 95 (June 2015).

9.8 Develop and monitor fora to discuss testbed-related issues (Task 4.4.2)

It was agreed that input paper ENAV16-10.2 (A discussion paper on effective communication of information concerning testbeds) should be brought to the attention of Marie-Helene Grillet, IALA Technical Operations Manager, for implementation when upgrading the existing IALA website.

Actions

Marie-Helene Grillet, IALA Technical Operations Manager, is requested to consider ENAV16-10.2 (A discussion paper on effective communication of information concerning testbeds) when upgrading the existing IALA website.

9.9 Monitor ship-board developments in order to provide appropriate e-Navigation services (Task 4.5.6)

It was agreed that Anders Brodje would act as a rapporteur on ship-board developments, regularly reporting on developments at IMO NCSR meetings.

Actions

Anders Brodje is requested to act as rapporteur on ship-board developments and provide a verbal update on ship board developments at IMO NCSR.

10 WORKING GROUPS 3 - TELECOMMUNICATIONS (WG3)

The Committee reviewed, and responded, as necessary, to input papers ENAV16-11.1 through ENAV-11.27.

10.1 Develop VDES Message Structures (1.4.1)

Work will progress on this task beginning ENAV17; this task should be moved to ENAV18 pending decisions from ITU WRC15.

10.2 Develop e-NAV Message Structure (1.4.2)

Work will progress on this task beginning ENAV17; this task should be moved to ENAV18 pending decisions from ITU WRC15.

10.3 Develop Recommendation on VDES (2.1.2)

Input papers ENAV16-11.5, ENAV16-11.6, ENAV16-11.7, ENAV16-11.11 through ENAV16-11.14, ENAV16-11.16, through ENAV16-11.22, ENAV16-11.25.1 and ENAV16-11.25.2 and ENAV16-11.27 were considered.

Work progressed on the ITU document - Working Document Toward a Preliminary Draft New Recommendation ITU-R M.[VDES]. Excellent progress was made on Annex 2, Annex 5 and Annex 6. Annex 3 needs will be progressed during an intersessional meeting on 11th May 2015. Currently the Preliminary Draft New Recommendation ITU-R M.[VDES] remains a working document, ENAV-14.2.17, but will become an official output document after the May intersessional.

The ENAV Committee delegated authority to WG3 to forward the completed VDES document directly to Council for approval. This delegated authority is necessary because the ITU deadlines require IALA to provide the Preliminary Draft New Recommendation ITU-R M.[VDES] no later than the beginning of June so that ITU WP5B has adequate time to review before their final meeting to be held in July to prepare for World Radio Conference 15.

10.4 Update Recommendations and Guidelines for AIS (2.2.1)

This is an on-going task to review the AIS documentation.

10.4.1 Update IALA Recommendation A-126: The Use of the Automatic Identification System (AIS) in Marine Aids to Navigation Services;

Input Papers ENAV-11.8 refers.

IALA Recommendation A-126 was updated to reflect clarifications on the use of the AIS Status Bits in AIS message 21 to clarify the use of regional status reporting requirements. However, publication of the revised A.126 will be delayed until after the ARM Committee workshop in 2016. However, the Committee prepared a liaison to the IEC WG15 so that work at IEC can progress, ENAV16-14.1.7 refers.

10.4.2 Update IALA Guideline 1082 on an Overview of AIS

Input papers ENAV-11.1, ENAV-11.6 and ENAV-11.15 and informal inputs from AMSA and USCG refer.

Work continued on updating IALA Guideline 1082 on an Overview of AIS.

10.4.3 Update IALA Guideline 1081 on Virtual AtoN

Input Paper ENAV-11.8 refers.

This work will continue after the ARM committee workshop in 2016.

Action

The IALA Secretariat is requested to forward the liaison note, ENAV16-14.1.7, to Council for approval by the IALA Council. In the event of approval, forward ENAV16-14.1.7 to IEC TC80 WG15 Convenor.

Peggy Browning is requested to contact the Chair of the ARM Committee regarding deferral of work on Guideline 1081 and the liaison note to IEC TC80.

The IALA Secretariat is requested to forward output paper ENAV16-14.1.8, to Council for approval, and in the event of approval, forward to ITU WP5B chairman for consideration at the July 2015 meeting in preparation of WRC15.

The IALA Secretariat is requested to forward ENAV16-14.1.18 to Council for approval.

The IALA Secretariat is requested to forward working papers from WG3 to ENAV17.

Peggy Browning is requested to arrange an intersessional VDES meeting, inviting all Committee members, on the week of 11th May 2015 at IALA Headquarters to further progress the work on ENAV16-14.2.17.

The IALA Secretariat is requested to forward the output document developed during the intersessional VDES meeting on 11th May 2015 to Council for approval.

The IALA Secretariat is requested, upon approval, to forward the output VDES document from intersessional ENAV meeting on 11th May 2015 to the ITU WP5B Chairman in time for the input papers deadline of 1 June immediately following the Council meeting.

10.5 Monitor Developments with GMDSS Modernization (2.4.1)

Input Papers ENAV16-11.24 and an informal report ENAV-report on GMDSS refer.

No work was progressed. However, it was noted that the US GMDSS task force is not considering the VDES capabilities.

Action

Peggy Browning is requested to contact Mr. Bob Markle who is leading the IMO Correspondence group for GMDSS modernisation to clarify the issue of exclusion of VDES capabilities from the work of the IMO Correspondence Group and ask for guidance.

11 WORKING GROUP 4 - E-NAV SERVICES (WG4)**11.1 Note regarding document ENAV16-9.13**

The Committee reviewed input paper ENAV16-9.13. The Committee wishes to thank the author for this valuable input paper. After some discussion, the Committee was of the opinion that the work is comprehensive, highly technical and very complex. The Committee, however, believed that the architecture described in the paper would not always be consistent with the needs of a given mariner in a particular area. The Committee was also concerned with the fact that, without having identified yet the attributes of the information that will be exchange in the e-NAV environment, it appears to be premature to work on an output at this point.

11.2 MSP attribute lists

The work was done on three MSPs in accordance with the terms of reference for WG 4 and task registry:

- MSP 5, Maritime Safety Information Service (ENAV16-14.2.3)
- MSP 11, Nautical Chart Service (ENAV16-14.2.4)

- MSP 15, Real-Time Hydrographic and Environmental Information Services (ENAV16-14.2.5)

The list of attributes for these three MSPs were delivered to WG 1 for further development in cooperation with WG 1.

Yves Desnoës from WG 1 gave a presentation of a suggested risk assessment plan for all MSPs.

The WG 4 noted the information.

11.3 Workshop proposal

A workshop proposal was prepared, output paper ENAV16-14.1.9 refers.

Action

The IALA Secretariat is requested to forward output paper ENAV16-14.1.9 to Council for approval.

11.4 VTS

A liaison note to the VTS committee was produced, output paper ENAV16-14.1.2 refers.

Action

The IALA Secretariat is requested to forward output paper ENAV16-14.1.2 to the VTS Committee.

11.5 IMPA

The Committee agrees with IMPA that MSP 6, Pilotage Services, will be developed by IMPA. It was further recognised that IMPA owns the information contained in MSP 6.

11.6 Cooperation with the IHO

The Committee recognised that close cooperation with IHO needs to be established and is crucial for further development of the MSPs to reach a practical solution. This will be done intersessionally.

11.7 The task registry has been updated in accordance with the progress made in this session.

Two MSPs (MSP 1 and 12) have been postponed to the next session and will be further developed intersessionally.

11.8 Meeting with WG 1 concerning cooperation on the development of product specifications, features, and attributes.

It was agreed to have an intercessional meeting, to harmonise and agree on further work including a gap analysis on existing product specifications.

12 WORKING GROUP 5 – PNT (WG5)

12.1 Develop Guidelines on eLoran, including data formats and ASF (Task 3.1.1)

Due to the lack of availability of experts on eLoran attending the meeting, it was considered that the draft Guideline (ENAV15-14.2.4) should be progressed intersessionally, via email correspondence. A Task Group was established to work on this Guideline and to report back to ENAV17.

The Committee prepared a statement of work for the Task Group (ENAV16-14.2.40)

Action Item

The IALA Secretariat is requested to forward the working paper ENAV16-14.2.40, Draft Guideline on eLoran service provision to ENAV17.

The IALA Secretariat is requested to forward working paper ENAV16-14.2.2, Task Group statement of work to develop Guideline on eLoran service provision to ENAV17.

12.2 Develop a Product Specification on eLoran data, beacon corrections, and data exchange (Task 3.1.2)

The Task Group established at ENAV15, provided feedback on the development of eLoran and DGNSS product specifications.

A presentation was given on the development of DGNSS product specifications and captured the content of input paper ENAV16-13.16. A request was made for additional DGNSS expert support to the Task Group and several Committee members volunteered to assist in this work.

IALA manages which DGNSS station numbers are used in each country. The process for allocating these numbers is being reviewed and the subject of input document ENAV16-13.10. In discussion with the IALA Secretariat, a new process has been agreed.

An update on the eLoran data product specification was provided and it was noted that international agreement is being sought on how the eLoran almanac, and ASF data, is formatted. A request for support with S-100 formatting was also made and the WG5 Chair will liaise with WG1 to seek such support.

Actions

Alan Grant is requested to seek S-100 support to aid the development of eLoran and DGNSS product specifications.

12.3 PNT relevant services & systems that can contribute to Resilient PNT (Task 3.1.3)

A draft Recommendation on PNT relevant services & systems was developed during this session and will be considered further at ENAV17, working paper ENAV16-14.2.41 refers.

Actions

The IALA Secretariat is requested to forward working paper ENAV16-14.2.41, Draft Recommendation on PNT relevant services and systems, as an input paper to ENAV17.

12.4 Develop a Guideline on port and harbour high accuracy systems and services (Task 3.1.4)

Consideration was given on the scope and content of this Guideline during this session.

12.5 Develop a Guideline on the use of SBAS (Task 3.1.5)

The Committee received a presentation based on input paper ENAV16-13.14 which requested an indication of interest from service providers on whether they would like to take part in a trial of providing SBAS corrections over marine beacon DGNSS.

It was noted that that SBAS could provide a benefit, particularly when used as an additional source of integrity, and raised a number of technical and legal questions for consideration under this work item, working paper ENAV16-14.2.42 refers.

The scope of the Guideline on the use of SBAS was developed, working paper ENAV16-14.2.43 refers.

Committee Members were invited to attend a planned EGNOS workshop scheduled to take place in June 2015.

Actions

The IALA Secretariat is requested to forward working paper ENAV16-14.2.42, SBAS discussion comments, to ENAV17.

The IALA Secretariat is requested to forward working paper ENAV16-14.2.43, Draft Guideline on the use of SBAS to ENAV17.

12.6 Techniques used for on-board PNT data processing (Task 3.1.7)

A Draft Guideline on the Techniques used for on-board PNT data processing was developed, working paper ENAV16-14.2.44 refers.

Actions

The IALA Secretariat is requested to forward working paper ENAV16-14.2.44, Draft Guidelines on the Techniques used for on-board PNT data processing to ENAV17.

12.7 PNT performance status message for e-navigation services (Task 3.1.8)

The Committee considered this item to be outside the scope of its terms of reference and therefore suggest the cancellation of this work item.

Action

Hideki Noguchi is requested to remove Task 3.1.8 from the ENAV work plan

12.8 Update R-121 (Task 3.1.9)

The final draft of Recommendation R-121 was divided into a Recommendation (ENAV16-14.1.3) and an associated Guideline (ENAV16-14.1.4).

Actions

The IALA Secretariat is requested to forward Recommendation R-121 (ENAV16-14.1.3) and its associated Guideline on the performance and monitoring of DGNSS services in the Frequency band 283.5-325 kHz (ENAV16-14.1.4) to Council for approval.

12.9 Monitor developments in GNSS, DGNSS, radar, resilient PNT, e-Pelorus, terrestrial systems, inertial and any other relevant areas etc. (Task 3.1.11)

The WG received a presentation by Mr Peter Stewart from Applanix on the current status and expected performance of inertial navigation systems.

The WG received an update on the development of an ePelorus system.

The WG received an update on the Polish DGNSS network which included an overview of how their system is monitored by a number of far field monitors.

The WG discussed the recent satellite launches across the different GNSS.

12.10 Liaise with RTCM on broadcast standards and ITU on M.823 (Task 3.1.12)

The Committee consider this work task a duplication of task 3.1.15 and therefore suggest the cancellation of this work item.

Action

Hideki Noguchi is requested to remove Task 3.1.12 from the ENAV work plan.

12.11 Liaise with IMO on PNT matters (including revision of Res. A.915) (Task 3.1.13)

The Committee considered a Liaison Note from ARM on the need to revise IMO Resolution A.915. Following discussion, the Committee considered it would be better to prepare a draft revision which could then be used to seek further comment from ARM.

12.12 Maintain WG relevant Recommendations and Guidelines, e.g. WWRNP, R-135 (Task 3.1.14)

A number of existing Recommendations and Guidelines related to WG5 were identified. These documents will be reviewed in order to understand whether they remain current, need revision or retirement. This process will consider the new document structure and recognise that this may lead to the revision of more documents.

12.13 Develop a Guideline on the provision and use of marine beacon R-mode (Task 3.1.16)

The Committee considered that a Guideline on the provision and use of marine beacon R-mode services will be required once R-mode has been proven a viable service. As such, a new work item was proposed.

Action

Hideki Noguchi is requested to add a work task on R-Mode services to the ENAV work plan.

12.14 Additional work

The Committee reviewed the syllabus for the new module 3 and other modules as appropriate for a level 1 “Global Navigation Satellite Systems (GNSS) and e-Navigation” course and made suggested amendments, output paper ENAV16-14.1.13 refers.

A liaison note to ENG regarding ENAV16-14.1.13 was prepared, output paper ENAV16-14.1.5 refers.

Actions

The IALA Secretariat is requested to forward the Liaison Note (ENAV16-14.1.5) and amended model course on GNSS and e-Navigation (ENAV16.14.1.13) to the ENG Committee.

13 REVIEW OF WORK PROGRAMME

The Committee work plan, terms of reference for the Working Groups and Committee work plan task register were updated, papers ENAV16-14.1.19, ENAV16-14.1.21, ENAV16-14.1.20 refer.

Progress in carrying out the ENAV Committee work programme is shown in 0.

Action

The Secretariat is requested to forward papers ENAV16-14.1.19 to Council for approval.

The Secretariat is requested to forward paper ENAV16-14.1.20 to ENAV17.

The Secretariat is requested to forward papers ENAV16-14.1.19, ENAV16-14.1.21, ENAV16-14.1.20 to ENAV17.

14 REVIEW OF OUTPUT AND WORKING PAPERS

Output papers were reviewed and their disposition agreed as indicated in ANNEX E.

15 ANY OTHER BUSINESS

Following consideration of the issues associated with potential patent infringement, the Committee agreed a draft Guideline on Patent Policy and Procedures (ENAV16-14.1.17) with associated Liaison note to PAP and LAP on the urgent need for a Patent Policy (ENAV16-14.1.16). It was noted that IALA should have a public open archive providing conference and workshop reports to provide patent infringement protection. The following question was asked of all attendees:

Does anyone present have the knowledge of any patents, including pending Patents, held either by themselves or by other organisations or individuals, the use of which may be required to practice or implement the content of IALA Documents being developed or worked on in this Committee?

Two patents were identified, one held by Exact Earth and one by SRT.

Action

The Secretariat is requested to forward output papers ENAV16-14.1.16 and ENAV16-14.1.17 to the PAP and the LAP.

Omar Frits Eriksson is requested to place a current list of relevant patents on the IALA Wiki.

The Secretariat is requested to set up, as soon as possible, a web page on the IALA web site in the public domain where information regarding the work of the Committee can be published.

Manuel Lopez-Martinez made a presentation inviting Committee Members to a Workshop on the Maritime Use of EGNOS in Madrid (Spain) on one day between 19th - 26th June (tbc), co-organised by EMRF and GSA.

The Secretariat was requested to consider extension of the teleconferencing facilities in IALA HQ to accommodate large groups in IALA.

Action

Hideki Noguchi is requested to submit a paper to the PAP regarding extension of the teleconferencing facilities in IALA HQ to accommodate large groups in IALA.

16 REVIEW OF SESSION REPORT

The report of the meeting (ENAV16-16.1) was considered. Committee members were requested to advise any corrections / amendments within two weeks, following which the final version will be issued via the IALA web site.

Action item

Committee members are requested to advise any corrections / amendments to the draft ENAV16 report, paper ENAV16-16.1 post plenary1, by 8th May 2015.

The Secretariat is requested to forward the report of ENAV16 (ENAV16-16.1) to the Council, to note.

17 DATE AND VENUE OF NEXT MEETING

The 17th Session of the ENAV Committee (ENAV17) is expected to meet on 26 - 30 October 2015 in Brest, France, in association with the Safer Seas conference. Paper ENAV16-17.1 refers.

18 CLOSING OF THE MEETING

The Chairman expressed his thanks to all Committee Members for what the Committee had achieved during the week and for planned intersessional work. He also thanked the WG Chairs, the Vice Chair and the IALA Secretariat for their support. He invited all participants to attend ENAV17 in Brest and wished everyone a safe journey home. He then declared the meeting closed.

19 LIST OF ANNEXES TO THE REPORT**1 Agenda**

A copy of the agenda is at ANNEX A.

2 Participants

A list of participants and apologies is at ANNEX B.

3 Working Groups – List of participants

A list of Working Group participants is at ANNEX C.

4 Input Papers

A list of input papers is at ANNEX D.

5 Output and Working Papers

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

6 Work programme progress

A summary of progress in completing the work programme and progress with deliverables is at 0.

7 Action Items

A list of action items is at ANNEX G.

ANNEX A AGENDA**16th Meeting of the IALA ENAV Committee**

The 16th meeting of the **IALA ENAV Committee** will be held from 20 – 24 April, 2015 at IALA, St Germain en Laye, France.

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

Committee Chair, Vice-Chair and Working Group Chairs are requested to meet at 0900 hours on Monday 20 April.

Work items / Tasks being addressed during this meeting are listed in the ENAV Committee Workplan 2014-2018 which will be provided on the IALA website.

AGENDA

1. Opening
 - 1.1. Administration & safety briefing
 - 1.2. Approval of the agenda
 - 1.3. Introductions and apologies
 - 1.4. Programme for the week
2. Review of action items from last meeting
3. Review of input papers
 - 3.1. Input papers
 - 3.2. Identify input papers suitable for uploading to the IALA Wiki
4. Reports from other bodies
 - 4.1. Report on 59th Session of the IALA Council 2015-12-09
 - 4.2. IALA Report of IMO MSC94 rev2
 - 4.3. USA National GMDSS Task Force - Report of meetings TFSR-79 and TFSR-80
 - 4.4. e-Navigation Underway 2015 Report 20150211
 - 4.5. IMO NCSR2 Report
 - 4.6. (C60-12.2.1) ITU-R WP5BM
5. Reports from Rapporteurs

5.1. IALA Bulletin liaison	Hideki Noguchi
5.2. IALA Dictionary	Omar Frits Eriksson
5.3. GMDSS	Jean-Charles Cornillou
5.4. Report from VTS39	Jon Leon Ervik
6. Presentations (15 minutes duration)

6.1. Maritime Service Infrastructure	Jens Kristian Jensen & Michael Lind
6.2. ACCSEAS testbed on tactical route exchange: Intended and Suggested route services	Thomas Porathe

- | | | |
|------|---|--------------------|
| 6.3. | ENAV17 in association with Safer Seas Confence in Brest | Pierre-Yves Martin |
| 6.4. | R-Mode demonstrator | Michael Hoppe |
| 6.5. | EGNOS corrections over IALA radiobeacons and AIS/VDES | Manuel Lopez Marti |
| 6.6. | WWA report | Jacques Manchard |
-
7. Review of Work Programme and Working Group expectations
 8. Establish Working Groups
 9. WG 1 - Harmonization
 10. WG 2 - Implementation
 11. WG 3 - Telecommunication
 12. WG 4 - ENAV Services
 13. WG 5 - PNT
 14. Review of output and working papers
 15. Any Other Business
 16. Review of session report
 17. Date and venue of next meeting
 18. Close of meeting

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Richard WOOTTON	MCGA	Richard WOOTTON
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ANNEX D LIST OF INPUT PAPERSAll papers are posted on the [IALA Committee website](#)

Paper Number	Title / Author (if required)	Source	Presented by / WG
ENAV16- 1.2	draft Agenda ENAV16 20150420	IALA Sec	Omar Frits Eriksson
ENAV16- 1.4.1	Programme for the week 20150420	IALA Sec	Omar Frits Eriksson
ENAV16- 1.4.2	ENAV16-1.4.2 Changes to ENAV work programme for the week	IALA Sec	Omar Frits Eriksson
ENAV16- 2.1	Action items from ENAV15	ENAV15	Seamus Doyle
ENAV16- 3.1.1	Input paper Committee template July 2014	IALA Sec	Omar Frits Eriksson
ENAV16- 4.1.1	Council 59 report 2015-12-09 (note sn 8.2)	IALA Sec	Omar Frits Eriksson
ENAV16- 4.2.1	IALA IMO MSC94 Report rev2	N Ward, Anders Brojde	N Ward M Card
ENAV16- 4.3.1	US National GMDSS Task Force TFSR-79 Meeting 2014-10-09 report	Jack Fuechsel	WG3
ENAV16- 4.3.2	USA National GMDSS Task Force - Report of meeting of 2015-01-08 TFSR-80	Jack Fuechsel	WG3
ENAV16- 4.4	e-Navigation Underway 2015 Report 20150211	IALA Sec	Omar Frits Eriksson
ENAV16- 4.5	(C60-12.1.4) IMO NCSR2 Report	IALA Sec	M Card
ENAV16- 4.6	(C60-12.2.1) ITU-R WP5B	Stefan Bober	Stefan Bober
ENAV16- 5.3	Rapporteur report on GMDSS	Jean-Charles Cornillou	Jean-Charles Cornillou
ENAV16- 5.4	Report from VTS39	Jon Leon Ervik	Jon Leon Ervik
ENAV16- 6.1	Presentation on a maritime infrastructure framework	Jens Kristian Jensen Jin Park Michael Lind	Jens Kristian Jensen Jin Park Michael Lind
ENAV16- 6.2	Presentation on ACCSEAS testbed on tactical route exchange Intended and Suggested route services	Thomas Porathe	Thomas Porathe
ENAV16- 6.3	Presentation on Safer Seas 2015 Overview	Pierre-Yves Martin	Pierre-Yves Martin

Paper Number	Title / Author (if required)	Source	Presented by / WG
ENAV16- 6.4	Presentation on R-Mode demonstrator	Michael Hoppe	Michael Hoppe
ENAV16- 6.5	Presentation on IALA Plenary - GSA Call for interest EGNOS over IALA beacons and AIS-VDES 16042015	Manuel Lopez Martinez	Manuel Lopez Martinez
ENAV16- 6.6	ENAV16 IALA WWA brief Apr 20 Rev 3	WWA	Jacques Manchard
ENAV16- 7.1	(ENAV15-14.1.2 & C59-8.2.4-2) ENAV Committee Work Plan 2014-2018	ENAV15 C59	Omar Frits Eriksson
ENAV16- 7.2	(ENAV15-14.2.51) ENAV Work Programme Task Register - All WG	ENAV15	Omar Frits Eriksson
ENAV16- 8.1	(ENAV15-14.1.6) ENAV Committee WG Terms of Reference 20141113	ENAV15	Omar Frits Eriksson
ENAV16- 9.1	MSC 95-21-6 - Format for electronic exchange and standard reports (International Association of Classification Societies	Bill Cairns	WG1
ENAV16- 9.2	Annexes to Draft Guideline for CSSA Generic Service Engineering Mode. Updated in ENAV16-9.18	ENAV15	WG1
ENAV16- 9.3	(ENAV15-14.2.34) (e-nav14-12.3.1) harmonisation of MSPs considerations 20130917	ENAV15	WG1
ENAV16- 9.4	(ENAV15-14.2.35) architecture WG - WG5_intersessionalmeeting 20121204 06 v1 00	ENAV15	WG1
ENAV16- 9.5	(ENAV15-14.2.36) draft document the structure of maritime service portfolios MSP 1 04 20121206	ENAV15	WG1
ENAV16- 9.6	(ENAV15-14.2.37) standalone document implementation of MSP strategic perspective	ENAV15	WG1
ENAV16- 9.7	(ENAV15-14.2.38) s-100 appendix 4a service	ENAV15	WG1
ENAV16- 9.8	(ENAV15-14.2.49) IALA workshop on employing the e-navigation common shore based system architecture CSSA report	ENAV15	WG1
ENAV16- 9.9	1087 Ed2 Procedures for the Management of the IALA Domains under the IHO GI Registry_Oct2014	ENaV15	WG1
ENAV16- 9.10	(ARM1-11.1.5) Liaison note to ENAV on PUI	ARM1	WG1
ENAV16- 9.11	ENAV16-9.11 (ARM1-11.1.6) Liaison note to ENAV on PS numbering scheme	ARM1	WG1

Paper Number	Title / Author (if required)	Source	Presented by / WG
ENAV16- 9.12	ENAV16-9.12 (ARM1-11.1.12) Liaison note to ENAV on CSSA	ARM1	WG1
ENAV16- 9.13	CSSA-Correspondence-Group Report 20150306 final	Jan-Hendrik Oltmann	WG1
ENAV16- 9.14	Draft Revision of IALA Recommendation e-NAV140 On the Architecture for the Shore based Infrastructure 'Fit_for_e-Navigation' 20150304	Jan-Hendrik Oltmann	WG1
ENAV16- 9.15	Draft IALA Guideline on Design and Implementation Principles for harmonized System Architectures of Shore-based Infrastructure 1-02_20150304	Jan-Hendrik Oltmann	WG1
ENAV16- 9.16	Draft IALA guideline on the IALA common shore based system architecture CSSA 1-07c 20150204	Jan-Hendrik Oltmann	WG1
ENAV16- 9.17	Guideline on generic service engineering model - Main Body 0-07 20150409	Jan-Hendrik Oltmann	WG1
ENAV16- 9.18	Appendices to Guideline GenericServiceModel@CSSA (2015-03-12) ZIPPED FILES	Jan-Hendrik Oltmann	WG1
ENAV16- 9.19	(ENAV15-14.2.28) CSSA Generic Service Model WorkPlan 1-00.	Jan-Hendrik Oltmann	WG1
ENAV16- 9.20	Guideline M2M Interfacing@CSSA (2015-04-09) ZIPPED FILE	Fred Pot	WG1
ENAV16- 9.21	draft risk assessment plan	Yves Desnoës	WG1
ENAV16- 9.22	A Federated Approach to Distributed Service Interaction in Sea Traffic Management	Jens Kristian Jensen	WG1
ENAV16- 9.23	How the Maritime Cloud supports e-navigation	Jens Kristian Jensen	WG1
ENAV16- 9.24	A maritime infrastructure framework	Jens Kristian Jensen	WG1
ENAV16- 9.25	S-200 - Status and Way Forward 20150419	Nick Ward	WG1
ENAV16- 9.26	20150325 S-100 CMDS definitions DRAFT 0.2	Edward Hosken	WG1
ENAV16- 9.27	(VTS39-12.1.4) Liaison note from VTS to e-NAV regarding Proposed Product Specification Numbering Scheme	VTS39	WG1
ENAV16- 9.28	Comments on shore-based architecture documents	Yves Desnoës	WG1

Paper Number	Title / Author (if required)	Source	Presented by / WG
ENAV16- 9.29	Comments on ENAV-16-9.10 by the IHO Standardization of Nautical Publications WG	Eivind Mong	WG1
ENAV16- 9.30.1	Cover note for ENAV16-30.2	Bill Cairns	WG1
ENAV16- 9.30.2	MSC 95-INF.13 - Format for electronic exchange and standard reports (IACS)	Bill Cairns	WG1
ENAV16- 10.1	WP on Testbed Analysis and Lessons Learned	ENAV15	WG2
ENAV16- 10.2	(ENAV15-14.2.2) Discussion Paper on Effective Communication of Information concerning Testbeds.	ENAV15	WG2
ENAV16- 10.3	(ARM1-11.1.8) Liaison note to all committees on ways of working for the NAVGUIDE update.	ARM1	WG2
ENAV16- 10.4	Submission MSC 95-19-e-nav - Proposal six outputs for inclusion in the High-level Action Plan	Mahesh Alimchandani	WG2
ENAV16- 10.5	Proposal for a workshop on Digital Infrastructures of e-Navigation - FINAL 150331	Anders Brojde	WG2
ENAV16- 10.6	U.S. Coast Guard & U.S. Army Corps of Engineers Joint Capabilities Technical Demonstration (JCTD)	Robert Dave Lewald	WG2
ENAV16- 10.7	Information on e-Navigation testbeds - European Satellite Services Provider (ESSP)	Maria Mota, ESSP	WG2
ENAV16- 11.1	(ENAV15-14.2.45) Revision to IALA Guideline 1082	ENAV15	WG3
ENAV16- 11.2	(ENAV15-14.2.43) Draft IALA guideline VDES	ENAV15	WG3
ENAV16- 11.3	(ENAV15-14.2.44) Draft IALA Recommendation for VDES	ENAV15	WG3
ENAV16- 11.4	(ENAV15-14.2.46) Design considerations for ASM	ENAV15	WG3
ENAV16- 11.5	11.5 (ENAV15-14.2.47) design considerations for VDES	ENAV15	WG3
ENAV16- 11.6	(ENAV15-14.2.48) guidance on AIS vulnerability	ENAV15	WG3
ENAV16- 11.7	(ENAV15-14.2.42) Toward a preliminary draft new recommendation ITU r m VDES	ENAV15	WG3
ENAV16- 11.8	(ARM1-11.1.3) Liaison note to ENAV on Guideline 1081, Rec A-126 and O-143	ARM1	WG3
ENAV16- 11.9	Call for interest EGNOS over AIS VDES	Manuel Lopez-Martinez	WG3
ENAV16- 11.10	Output 10 Tokyo workshop report (editorial changed)	Peggy Browning	WG3

Paper Number	Title / Author (if required)	Source	Presented by / WG
ENAV16- 11.11	Output 1 last official PDNR submitted to ITU-R12-WP5B-C-0761!N08!MSW	Peggy Browning	WG3
ENAV16- 11.12	Output 2 VDES channel select document R12-WP5B-C-0761!N13!MSW-E 17-20-2015	Peggy Browning	WG3
ENAV16- 11.13	Output 3 WD Annex 3 VDE_TER v0.1	Peggy Browning	WG3
ENAV16- 11.14	Output 4 WD VDES Satellite downlink v1 Haugli	Peggy Browning	WG3
ENAV16- 11.15	Output 5 IALA-1082 AIS Overview Ed2 WD150222	Peggy Browning	WG3
ENAV16- 11.16	Output 6 R12-WP5B-C-0695!!MSW-E(1) Canada study regarding VDES channel plan	Peggy Browning	WG3
ENAV16- 11.17	Output 7_WD_Comms WG-SG-Feb-2015-UserRequirements-WD01-Use Case Studies-Brainstorm	Peggy Browning	WG3
ENAV16- 11.18	Output 8_WD_Comms WG-SG-Feb-2015-UserRequirements-WD03-rev1-Use Case-Requirements	Peggy Browning	WG3
ENAV16- 11.19	Output 9_WD_Comms WG-SG-Feb-2015-UserRequirements-WD02-rev1-Use Case_Requirements	Peggy Browning	WG3
ENAV16- 11.20	Output 11_DRAFT INF PAPER on VDES for MSC95	Peggy Browning	WG3
ENAV16- 11.21	Output 12_WD_PDNR-M-VDES Annex 2	Peggy Browning	WG3
ENAV16- 11.22	Output 13 Report on Comms Intersessional Feb 2105 after plenary	Peggy Browning	WG3
ENAV16- 11.23	Proposal for IALA Workshop on VDES	Hideki Noguchi	WG3
ENAV16- 11.24	US GMDSS Task Force Next Meeting	Jack Fuechsel	WG3
ENAV16- 11.25.1	Cover Note for ENAV16-11.25.2 - VDES Waveform Study	Jan Safar	WG3
ENAV16- 11.25.2	GLA R&RNAV RPT-15-JSa-15 VDES Waveform Scoping Study Report	Jan Safar	WG3
ENAV16- 11.26	The Result of CPM15-2 WRC-15 AI1.16	Yoshio Miyadera	WG3

Paper Number	Title / Author (if required)	Source	Presented by / WG
ENAV16- 11.27	Additional substance for PDNR-M-VDES Annex 2	Yoshio Miyadera	WG3
ENAV16- 12.1	PAME-IALA Cooperation - agreed next steps from 19 March 2015 20150410	Peter Oppenheimer	WG4
ENAV16- 12.2	e-Navigation Services Progress Report WP4	Jon Leon Ervik	WG4
ENAV16- 12.3	WG4 Task Register on MSP	Jon Leon Ervik	WG4
ENAV16- 12.4	MSP5 Maritime Safety Information Service	Jon Leon Ervik	WG4
ENAV16- 12.5	MSP15 Real-Time Hydrographic and Environmental Information Services	Jon Leon Ervik	WG4
ENAV16- 12.6	MSP11 Nautical Chart Service	Jon Leon Ervik	WG4
ENAV16- 13.1	(ENAV15-14.2.4) Draft guideline on eloran service provision wg2 review up to chapter 4 at e-nav14	ENAV15	WG5
ENAV16- 13.2	(ENAV15-14.2.5) Statement of work for a Task Group on IALA DGNSS and eLoran databases	ENAV15	WG5
ENAV16- 13.3	(ENAV15-14.2.7) Proposal for extending sbas coverage using VDES	ENAV15	WG5
ENAV16- 13.4	(ENAV15-14.2.41) VDES user requirements to technical requirements template v2	ENAV15	WG5
ENAV16- 13.5	(ENAV15-14.2.3) draft r-121 amended following ENAV14 2014-09-20 ajg rev@ENAV15 final	ENAV15	WG5
ENAV16- 13.6	(ENAV15-14.2.40) Suggested approach for analysing different combinations of radionavigation systems	ENAV15	WG5
ENAV16- 13.7	(ENAV15-14.2.39) Existing IALA documents related to PNT 16 October 2014	ENAV15	WG5
ENAV16- 13.8	(ENAV15-14.2.6) Procedures for managing DGNSS information	ENAV15	WG5
ENAV16- 13.9	ENAV16-13.9 (ARM1-11.1.1) Liaison note to ENAV on A 915	ARM1	WG5
ENAV16- 13.10	ENAV16-13.10 (ENAV15-14.2.6) Procedures for managing DGNSS information	ENAV15	WG5
ENAV16- 13.11	WWA L1 Model Course 1.4 on GNSS and e-Navigation 2015 (Rev 0)	WWA	WG5
ENAV16- 13.12	Cover note re WWA L1 Model Course 1.4 on GNSS and e-Navigation	WWA	WG5

Paper Number	Title / Author (if required)	Source	Presented by / WG
ENAV16- 13.13	Plan for WG5 for ENAV16	Alan Grant	WG5
ENAV16- 13.14	Call for interest EGNOS corrections over radiobeacons	Manuel Lopez-Martinez	WG5
ENAV16- 13.15.1	NF Resilient PNT	Evelin Engler	WG5
ENAV16- 13.15.2	INF Resilient PNT Annex NCSR 2-7-1	Evelin Engler	WG5
ENAV16- 13.16	Progress on the development of S-240 for DGNSS Station Almanac	Yonghun Cho	WG5
ENAV16- 17.1	ENAV16-17 2015-04-08 eNav17 Scope and Content	ENAV17 SG	Omar Frits Eriksson

ANNEX E LIST OF OUTPUT AND WORKING PAPERS

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

Number	Title (Output paper)	Status
ENAV16- 14.1.1	Proposal for a Seminar on Digital Infrastructure	To Council
ENAV16- 14.1.2	Liaison Note from ENAV to VTS Cttee re Dev of MSPs for VTS	To VTS
ENAV16- 14.1.3	draft Recommendation R-121 on DGNSS update final V1	To Council
ENAV16- 14.1.4	draft Guideline on On the Performance and Monitoring of DGNSS Services in the Frequency Band 283.5 – 325 kHz -final v1	To Council
ENAV16- 14.1.5	Liaison note ENAV to ENG committee on WWA model course on GNSS and e-Navigation	To ENG2
ENAV16- 14.1.6	Draft Guideline on Design and Implementation Principles for Harmonized System Architecture of Shore Based Infrastructure 1-03 20150423	To Council
ENAV16- 14.1.7	Liaison to IEC on the AtoN status bits	To Council To IET
ENAV16- 14.1.8	Liaison and revision to ITU to the ITUR VDES channel select document	To Council To ITU
ENAV16- 14.1.9	Proposal Workshop on Shore Based Maritime Services from Theory to Practical Use v2	To Council
ENAV16- 14.1.10	draft IALA recommendation on Product Specification Development and Management	To Council
ENAV16- 14.1.11	Draft Revision of IALA Recommendation eNav140 on the Architecture for Shore Based Infrastructure fit for e-Navigation 20150423	To Council
ENAV16- 14.1.12	Draft IALA Guideline on a Technical Specification for the IALA common Shore Based System Architecture CSSA 1-10a 20150423	To Council
ENAV16- 14.1.13	WWA L1 Model Course 1-4 on GNSS and e-Navigation 2015 rev 0	To ENG2
ENAV16- 14.1.14	Briefing note to IALA Sec Gen on IACS input MSC95	To IALA Sec
ENAV16- 14.1.15	Liaison note from eNAV to ARM	To ARM
ENAV16- 14.1.16	Liaison to PAP and LAP on the urgent need for a Patent Policy 20150423	To PAP To LAP
ENAV16- 14.1.17	draft Guideline on Patent Policy and Procedures 20150423	To PAP To LAP
ENAV16- 14.1.18	Proposal for IALA Workshop on VDES	To Council
ENAV16- 14.1.19	ENAV work plan-revised at ENAV16	To Council
ENAV16- 14.1.20	ENAV Work Programme Task Register - revised at ENAV16	To ENAV17

Number	Title (Output paper)	Status
ENAV16- 14.1.21	ENAV Terms of Reference - revised at ENAV16	To ENAV17
ENAV16- 16.1	Report ENAV16	To Council

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

Number	Title (Working Paper)	Status
ENAV16- 14.2.1	WG2 draft Guideline on Planning an e-Navigation Testbed v0.1	To ENAV17
ENAV16- 14.2.2	WG5 Statement of work for a Task Group on eLoran Guideline	To ENAV17
ENAV16- 14.2.3	WG4 MSP5 Maritime Safety Information Service wp1	To ENAV17
ENAV16- 14.2.4	WG4 MSP15 Real-Time Hydrographic and Environmental Information Services vf1 wp2	To ENAV17
ENAV16- 14.2.5	WG4 MSP11 Nautical Chart Service wp3	To ENAV17
ENAV16- 14.2.6	WG1 ENAV16-9.26 S-100 and CMDS Definitions	To ENAV17
ENAV16- 14.2.7	WG1 Draft revision Guideline on producing IALA S100 PS	To ENAV17
ENAV16- 14.2.8	WG1 S-100 Appendix 4a - Service Orientation	To ENAV17
ENAV16- 14.2.9	WG1 draft Risk Assessment Plan	To ENAV17
ENAV16- 14.2.10	WG1 Support of the CSSA for the MSPs and for the Maritime Cloud	To ENAV17
ENAV16- 14.2.15	WG1 Questions on a digital infrastructure framework for e-navigation	To ENAV17
ENAV16- 14.2.16	WG1 draft IALA Recommendation for NUID	To ENAV17
ENAV16- 14.2.17	WG3 PDNR with Annexes 2 - 6 added 2015-04-23	To ENAV17
ENAV16- 14.2.18	WG3 PDNR Annex 2 v5	To ENAV17
ENAV16- 14.2.19	WG3 PDNR Annex 3 WD v0.2	To ENAV17
ENAV16- 14.2.20	WG3 PDNR Annex 4 Satellite downlink	To ENAV17
ENAV16- 14.2.21	WG3 PDNR Annex 5 Satellite uplink	To ENAV17
ENAV16- 14.2.22	WG3 PDNR Annex 6 v0	To ENAV17
ENAV16- 14.2.23	WG3 CPM 1 16 output v2 rev1	To ENAV17
ENAV16- 14.2.24	WG3 Information paper on vdes v1	To ENAV17
ENAV16- 14.2.25	WG3 Info paper on tech guidelines for impenetation of vdes v1	To ENAV17
ENAV16- 14.2.26	WG3 Design considerations for vdes	To ENAV17
ENAV16- 14.2.27	WG3 Demonstration objectives for vdes	To ENAV17
ENAV16- 14.2.28	WG3 VDES user reqs to technical requirements template v2	To ENAV17
ENAV16- 14.2.29	WG3 VDES waveform study	To ENAV17
ENAV16- 14.2.30	WG3 Guidance on ais vulnerability	To ENAV17

Number	Title (Working Paper)	Status
ENAV16- 14.2.31	WG3 Innovative use of AIS St Germain sep 2014 wd 05	To ENAV17
ENAV16- 14.2.32	WG3 IALA A-126 Status bits edited 20150423	To ENAV17
ENAV16- 14.2.33	WG3 IALA 1082 AIS Overview Ed2 WD150422	To ENAV17
ENAV16- 14.2.34	WG3 AIS17-FAQ update 2015-04-23	To ENAV17
ENAV16- 14.2.35	WG3 Report on GMDSS enav16	To ENAV17
ENAV16- 14.2.40	WG5 Draft Guideline on eLoran service provision	To ENAV17
ENAV16- 14.2.41	WG5 Draft Recommendation on PNT relevant services and systems	To ENAV17
ENAV16- 14.2.42	WG5 SBAS discussion comments from ENAV16	To ENAV17
ENAV16- 14.2.43	WG5 Draft Guideline on use of SBAS	To ENAV17
ENAV16- 14.2.44	WG5 Draft Guideline on techniques used for on-board PNT data processing	To ENAV17

ANNEX F WORK PROGRAMME - REVIEW OF PROGRESS WITH DELIVERABLES AT ENAV 16

Task	Start Session	Planned End Session	Revised End Session	Progress Indicator			Status Overview
				Green	Yellow	Red	
WG1 – Operations							
1.2.1. Develop Product Specification on AtoN Information	15	17		☐	☒	☐	Still on target
1.3.1. Revise Guideline 1106	15	16	17	☐	☒	☐	Task extended
1.3.2. S-100 Service Orientation	16	17	18	☒	☒	☐	task extended
4.3.3. E-navigation Risk Assessment	16			☒	☐	☐	on going
5.1.18. CSSA draft documentation	15	21		☒	☐	☐	on going
5.1.19 e-navigation infrastructure and governance	15	20		☒	☐	☐	on going
WG2 Implementation							
4.1.1 Gather and present information testbeds (including results) globally	15	On going		☒	☐	☐	Commenced ENAV15
4.1.2 Maintain a global repository for test-bed results.	15	On going		☒	☐	☐	Commenced ENAV15
4.1.3 Encourage testbed project managers to provide information and results to IALA for posting at www.e-Navigation.net .	After 15	On going		☒	☐	☐	Commenced ENAV15
4.1.4 Update IALA Guideline 1107 on the reporting of results of e-Navigation testbeds.	19	21		☒	☒	☐	Expect to commence at ENAV 19
4.2.1 Evaluate / analyse testbed outcomes (lessons learnt) and provide guidance.	15	ongoing		☒	☐	☐	Commenced ENAV15
4.3.1 Assist the IALA membership to shape, at a high level, the scope of their testbeds.	15	ongoing		☒	☐	☐	Commenced ENAV15
4.3.2 Coordinate an IALA Seminar on e-Navigation testbed results in 2016/17.	16	19		☒	☐	☐	To commence at ENAV 16
4.3.4 Develop and maintain e-Navigation Roadmap	16	20		☐	☒	☐	Start Session not known
4.4.1 Develop and progress an online discussion forum on testbeds.	15	16		☒	☐	☐	Task removed ENAV16

Task	Start	Planned	Revised	Progress Indicator			Status
4.4.2 Maintain fora to discuss testbed-related issues.	15	16		☒	☐	☐	Commenced ENAV15
4.5.1 Liaise with IMO on e-Navigation implementation and related regulatory matters	15	ongoing		☒	☐	☐	Commenced ENAV15
4.5.2 Monitor and analyse the execution of relevant tasks, in particular those in the IMO e-Navigation strategy implementation plan.	15	Ongoing		☒	☐	☐	Commenced ENAV15
4.5.3 Provide implementation guidance on developments in the e-Navigation domain, in cooperation with other IGO/NGOs.	15	On going		☒	☐	☐	Commenced at ENAV 15
4.5.4 Provide guidance and support to the decision-making process related to the implementation of e-Navigation.	15	On going		☒	☐	☐	Commenced at ENAV 15
4.5.5 Support IMO with the future development and implementation of e-Navigation and contribute to related tasks.	17	On going		☒	☐	☐	Not due
4.5.6 Monitor ship board developments in order to provide appropriate e-Navigation services.	16	On going		☒	☐	☐	Commenced at ENAV16
4.5.7 Inform IALA's Legal Advisory Panel (LAP) of any apparent legal implications of emerging implementation issues.	16	On going		☒	☐	☐	Not commenced
4.6.1 Evaluate developments and identify potential impacts on authorities.	16	On going		☒	☐	☐	On going
WG3 Telecommunications							
1.4.1 Develop VDES Message Structures	17	21		☒	☐	☐	Commence ENAV20
1.4.2 Develop e-NAV Message Structure	17	21		☒	☐	☐	Commence ENAV20
2.1.1 Update the Marine Radio Communication Plan	20	21		☒	☐	☐	Commence ENAV20
2.1.2 Develop Recommendation on VDES	15	21		☐	☐	☐	On-going
2.2.1 Update Recommendations and Guidelines for AIS	15	21		☒	☐	☐	On-going

Task		Start	Planned	Revised	Progress Indicator			Status
2.3.1	Manage Application Specific Message (ASM) catalogue	16/20	17/21		☐	☒	☐	Start delayed
2.4.1	Monitor Developments with GMDSS Modernization	15	21		☒	☐	☐	On-going
WG4 e-Nav Services								
5.1.1	Develop Guideline/ Recommendation on Maritime Service Portfolios	18	21		☒	☐	☐	Commence ENAV18
5.1.2	MSP1 VTS Information Service (IS) / Operational User Needs	16	16		☒	☐	☐	Commence ENAV16
5.1.3	MSP2 Navigational Assistance Service (NAS) / Operational User Needs	16	17		☒	☐	☐	Commence ENAV16
5.1.4	MSP3 Traffic Organization Service (TOS) / Operational User Needs	16	17		☒	☐	☐	Commence ENAV16
5.1.5	MSP4 Local Port Service (LPS) / Operational User Needs	16	17		☒	☐	☐	Commence ENAV16
5.1.6	MSP5 Maritime Safety Information (MSI) Service / Operational User Needs	15	17		☒	☐	☐	On-going
5.1.7	MSP6 Pilotage Service / Operational User Needs	16	17		☒	☐	☐	Commence ENAV16
5.1.8	MSP7 Tugs Service / Operational User Needs	16	17		☒	☐	☐	Commence ENAV16
5.1.9	MSP8 Vessel Shore Reporting / Operational User Needs	16	17		☒	☐	☐	Commence ENAV16
5.1.10	MSP9 Telemedical Maritime Assistance Service / Operational User Needs	16	17		☒	☐	☐	Commence ENAV16
5.1.11	MSP10 Maritime Assistance Service (MAS) / Operational User Needs	16	17		☒	☐	☐	Commence ENAV16
5.1.12	MSP11 Nautical Chart Service / Operational User Needs	16	16		☒	☐	☐	Commence ENAV16
5.1.13	MSP12 Nautical Publications Service / Operational User Needs	16	16		☒	☐	☐	Commence ENAV16
5.1.14	MSP13 Ice Navigation Service / Operational User Needs	16	17		☒	☐	☐	Commence ENAV16

Task		Start	Planned	Revised	Progress Indicator			Status
5.1.15	MSP14 Meteorological Information Service / Operational User Needs	16	17		☒	☐	☐	Commence ENAV16
5.1.16	MSP15 Real-Time Hydrographic and Environmental Information Services / Operational User Needs	16	16		☒	☐	☐	Commence ENAV16
5.1.17	MSP16 Search and Rescue (SAR) Service / Operational User Needs	16	17		☒	☐	☐	Commence ENAV16
WG5 PNT								
3.1.1.	eLoran Guideline	15	17		☐	☒	☐	Duration extended by one session
3.1.2.	PNT Product Specification	15	17		☒	☐	☐	
3.1.3.	PNT services & Systems	16	18		☒	☐	☐	
3.1.4.	High accuracy systems	18	20		☒	☐	☐	
3.1.5.	Use of SBAS	17	19		☒	☐	☐	
3.1.7.	PNT data processing	18	20		☒	☐	☐	
3.1.8.	PNT performance message	18	20		☒	☐	☐	
3.1.9.	R-121 update	15	16		☒	☐	☐	
3.1.10.	DGNSS Coverage prediction	17	18		☒	☐	☐	
3.1.11.	Updates on PNT developments	15	21		☒	☐	☐	
3.1.12.	RTCM/ITU liaison re M823	18	18		☒	☐	☐	
3.1.13.	IMO Liaison	15	21		☒	☐	☐	
3.1.14.	WG5 Document maintenance	15	21		☒	☐	☐	
3.1.15.	Liaison with related bodies	15	21		☒	☐	☐	
3.1.16.	R-mode Guideline	18	20		☒	☐	☐	New Task

ANNEX G ACTION ITEMS*Action Items for the IALA Secretariat*

1. The IALA Secretariat is requested to upload input paper ENAV16-9.1 to the IALA Wiki. 7
2. The IALA Secretariat is requested to forward working paper ENAV16-14.2.6, S-100 and CMD5 Definitions, to ENAV17. 10
3. The Secretariat is requested to forward ENAV16-14.1.10 to Council for approval 10
4. The Secretariat is requested to forward Guideline 1106, paper ENAV16-14.2.7, to ENAV17 10
5. The Secretariat is requested to forward paper ENAV16-14.2.8 to ENAV17. 10
6. The Secretariat is requested to add a presentation on risk management to the agenda for ENAV17. 10
7. The Secretariat is requested to forward ENAV16-14.2.9 to ENAV17 11
8. The Secretariat is requested to forward Recommendation 14.1.11 and guidelines 14.1.6 and 14.1.12 to Council for approval. 11
9. The IALA Secretariat is requested to forward working paper ENAV16-14.2.15 to ENAV17. 12
10. The IALA Secretariat is requested to forward working paper ENAV16-14.2.16 to ENAV17. 12
11. The IALA Secretariat is requested to forward briefing note ENAV16-14.1.14 on IACS MSC paper on exchange standards to the IALA Secretary General. 12
12. The IALA Secretariat is requested to forward liaison note ENAV16-14.1.15 to the ARM Committee. 12
13. The IALA Secretariat is requested to post summary information on the United States Coast Guard Joint Capabilities Technical Demonstration project to www.e-navigation.net 13
14. The IALA Secretariat is requested to inform the IALA membership when the management of external websites (e.g., www.e-navigation.nl and www.e-navigation.net) is taken over by IALA. 13
15. The IALA Secretariat is requested to contact regional and sister organisations and request they link their websites to www.e-navigation.net 13
16. The IALA Secretariat is requested to invite the IALA Council to promote www.e-navigation.net as the global repository for testbed reporting and encourage testbed project managers to provide information and results to IALA for posting at www.e-navigation.net 13
17. The IALA Secretariat is requested to forward ENAV16-14.2.1 to ENAV17. 14
18. The IALA Secretariat is requested to forward output paper ENAV16-14.1.1 (A Proposal for a Seminar on a Maritime Digital Infrastructure and Testbeds) to Council for approval. 14
19. If approved by Council, the IALA Secretariat is requested to advise Sweden of the approval of ENAV16-14.1.1 and organise the first meeting of the seminar steering group. 14
20. Marie-Helene Grillet, IALA Technical Operations Manager, is requested to consider ENAV16-10.2 (A discussion paper on effective communication of information concerning testbeds) when upgrading the existing IALA website. 14
21. The IALA Secretariat is requested to forward the liaison note, ENAV16-14.1.7, to Council for approval by the IALA Council. In the event of approval, forward ENAV16-14.1.7 to IEC TC80 WG15 Convenor. 16
22. The IALA Secretariat is requested to forward output paper ENAV16-14.1.8, to Council for approval, and in the event of approval, forward to ITU WP5B chairman for consideration at the July 2015 meeting in preparation of WRC15. 16
23. The IALA Secretariat is requested to forward ENAV16-14.1.18 to Council for approval. 16
24. The IALA Secretariat is requested to forward working papers from WG3 to ENAV17. 16

25. The IALA Secretariat is requested to forward the output document developed during the intersessional VDES meeting on 11th May 2015 to Council for approval. 16
26. The IALA Secretariat is requested, upon approval, to forward the output VDES document from intersessional ENAV meeting on 11th May 2015 to the ITU WP5B Chairman in time for the input papers deadline of 1 June immediately following the Council meeting. 16
27. The IALA Secretariat is requested to forward output paper ENAV16-14.1.9 to Council for approval. 17
28. The IALA Secretariat is requested to forward output paper ENAV16-14.1.2 to the VTS Committee. 17
29. The IALA Secretariat is requested to forward the working paper ENAV16-14.2.40, Draft Guideline on eLoran service provision to ENAV17. 17
30. The IALA Secretariat is requested to forward working paper ENAV16-14.2.2, Task Group statement of work to develop Guideline on eLoran service provision to ENAV17. 18
31. The IALA Secretariat is requested to forward working paper ENAV16-14.2.41, Draft Recommendation on PNT relevant services and systems, as an input paper to ENAV17. 18
32. The IALA Secretariat is requested to forward working paper ENAV16-14.2.42, SBAS discussion comments, to ENAV17. 18
33. The IALA Secretariat is requested to forward working paper ENAV16-14.2.43, Draft Guideline on the use of SBAS to ENAV17. 19
34. The IALA Secretariat is requested to forward working paper ENAV16-14.2.44, Draft Guidelines on the Techniques used for on-board PNT data processing to ENAV17. 19
35. The IALA Secretariat is requested to forward Recommendation R-121 (ENAV16-14.1.3) and its associated Guideline on the performance and monitoring of DGNSS services in the Frequency band 283.5-325 kHz (ENAV16-14.1.4) to Council for approval. 19
36. The IALA Secretariat is requested to forward the Liaison Note (ENAV16-14.1.5) and amended model course on GNSS and e-Navigation (ENAV16.14.1.13) to the ENG Committee. 20
37. The Secretariat is requested to forward papers ENAV16-14.1.19 to Council for approval. 20
38. The Secretariat is requested to forward paper ENAV16-14.1.20 to ENAV17. 20
39. The Secretariat is requested to forward papers ENAV16-14.1.19, ENAV16-14.1.21, ENAV16-14.1.20 to ENAV17. 20
40. The Secretariat is requested to forward output papers ENAV16-14.1.16 and ENAV16-14.1.17 to the PAP and the LAP. 21
41. The Secretariat is requested to set up, as soon as possible, a web page on the IALA web site in the public domain where information regarding the work of the Committee can be published. 21
42. The Secretariat is requested to forward the report of ENAV16 (ENAV16-16.1) to the Council, to note. 21

Action items for members

43. Michael Hoppe and Jan-Hendrik Oltmann are requested to provide an article for the IALA Bulletin on the subject of R-mode. 8
44. Nick Ward is requested to confirm the development plan for continuing to draft S-201 with the aim of completing a draft product specification during ENAV17. 10
45. Edward Hosken is requested to organise an intersessional meeting on IALA's requirements for data services with S-100 such that the requirements can be discussed at IHO HSSC in November 2015. 10

46. ENAV Members are requested to consider risks in advance of further discussion and development of a risk register at ENAV17. 11
47. Yves Desnoes is requested to deliver a presentation on ENAV risks in opening plenary at ENAV17. 11
48. Edward Hosken is requested to cease further work on the CSSA (Task 5.1.18) in WG1, and revise, together with WG1, the work task 5.1.18 at a future session, proposing the way forward to the Committee. 11
49. Edward Hosken is requested to amend the ENAV Task Register task 5.1.18 in relation to the future work on the CSSA. 11
50. Committee Members are requested to consider what questions need to be addressed on digital infrastructure frameworks (including the Maritime Cloud) to be able to contribute to discussions at ENAV17 to help form the structure of a potential seminar. 12
51. Committee Members are requested to consider the suitability and applicability of the proposal in ENAV16-14.2.16 on unique identifiers to inform development of a draft working paper during ENAV17. 12
52. Dave Lewald was requested to provide summary information on the Joint Capabilities Technical Demonstration project to the IALA Secretariat for posting to www.e-navigation.net. 13
53. Maria Mota was requested to provide summary information on any future EGNOS related testbeds to the IALA Secretariat for posting to www.e-navigation.net. 13
54. Jin Park is requested to lead intersessional work to further develop working paper ENAV16-14.2.1 (guidance on planning testbeds). 14
55. Interested ENAV Committee members are encouraged to contact Jin Park to assist in developing guidance on planning testbeds intersessionally, working paper ENAV16-14.2.1 refers. 14
56. Anders Brodje is requested to act as rapporteur on ship-board developments and provide a verbal update on ship board developments at IMO NCSR. 14
57. Peggy Browning is requested to contact the Chair of the ARM Committee regarding deferral of work on Guideline 1081 and the liaison note to IEC TC80. 16
58. Peggy Browning is requested to arrange an intersessional VDES meeting, inviting all Committee members, on the week of 11th May 2015 at IALA Headquarters to further progress the work on ENAV16-14.2.17. 16
59. Peggy Browning is requested to contact Mr. Bob Markle who is leading the IMO Correspondence group for GMDSS modernisation to clarify the issue of exclusion of VDES capabilities from the work of the IMO Correspondence Group and ask for guidance. 16
60. Alan Grant is requested to seek S-100 support to aid the development of eLoran and DGNSS product specifications. 18
61. Hideki Noguchi is requested to remove Task 3.1.8 from the ENAV work plan 19
62. Hideki Noguchi is requested to remove Task 3.1.12 from the ENAV work plan. 19
63. Hideki Noguchi is requested to add a work task on R-Mode services to the ENAV work plan. 20
64. Omar Frits Eriksson is requested to place a current list of relevant patents on the IALA Wiki. 21
65. Hideki Noguchi is requested to submit a paper to the PAP regarding extension of the teleconferencing facilities in IALA HQ to accommodate large groups in IALA. 21
66. Committee members are requested to advise any corrections / amendments to the draft ENAV16 report, paper ENAV16-16.1 post plenary1, by 8th May 2015. 21