REPORT OF THE 20ᵀᴴ SESSION OF THE IALA E-NAVIGATION (ENAV) COMMITTEE

13 to 17 March 2017

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Report of the 20th Session of the IALA e-Navigation (ENAV) Committee

13 to 17 March, 2017

Executive Summary

The 20th meeting of the ENAV Committee (ENAV20) was held in IALA Headquarters from 13th to 17th March 2017.

137 people from 29 countries and 5 sister organisations, attended the 20th session of the ENAV Committee, of which 33 participants were new and 2 were observers.

The Committee considered 144 input papers including presentations and produced 37 output papers and 9 working papers.

Work on the Maritime Service Portfolios (MSPs) was refocused on developing a single IALA Recommendation and Guideline on MSPs. Development of individual MSPs was deferred awaiting guidance from relevant stakeholders.

The Committee prepared a plan for promotion of testbeds through the IALA website.

A draft Recommendation and Guideline on eLoran were produced. It is noted that these are the first IALA Documents on eLoran.

Good progress was made with work associated with S-200 which contributes to harmonisation with IMO and IHO.

Work on VDES progressed with development of IALA Documentation on VDES and liaison with ITU regarding preparation for WRC-19.

A study on racons has identified two major causes for their poor performance in busy harbours. Liaison was initiated with CIRM to work with radar manufacturers to better define racon frequencies and usage.

The ENAV Committee work plan for the work period 2014-2018 was updated in the light of emerging developments. The following table shows a progress summary while progress on each work task to date is shown in ANNEX F of the meeting report.

Task	Progress Indicator			Status Overview
	Green	**Yellow**	**Red**	
1 TD#1 – Data modelling and message systemsS	☐	☒	☐	All tasks progressing per current plan except Tasks 1.3.2, 1.2.1
2 TD#2 - e-Navigation communications	☒	☐	☐	All tasks progressing per current plan
3 TD#3 - Shore technical infrastructure	☐	☒	☐	All tasks progressing per current plan except 5 tasks which are scheduled for completion at ENAV21
4 TD#4 - e-Navigation test beds	☒	☐	☐	All tasks progressing per current plan
5 TD#5 - Maritime Service Portfolios	☐	☐	☒	Development of an MSP Guideline is delayed. Task 5.1.10 is delayed due to lack of expertise in the Committee while other MSP tasks are not in the IALA Domain.

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Report of the 20th Session of the IALA
e-Navigation (ENAV) Committee

GENERAL

The 20th meeting of the ENAV Committee was held from 13th to 17th March 2017 at IALA Headquarters, with Hideki Noguchi as Chairman and Jorge Arroyo as Vice-Chairman. The Secretary for the meeting was Seamus Doyle.

1. OPENING

1.1 Approval of the agenda

The agenda (paper ENAV20-1.2) was adopted.

1.2 Welcome address

Michael Card, IALA Deputy Secretary-General, welcomed all participants to the 20th session of the ENAV Committee. He welcomed Hideki Noguchi and Jorge Arroyo as the new Chair and Vice-Chair respectively of the Committee.

He briefed the Committee on the draft IALA Position Paper which is presently being prepared and will ultimately be uploaded to the website. The preparation of revised IALA document structure with Standards, Recommendations and Guidelines is progressing. Seven initial standards will be considered by Council 64 in June 2017 and submitted for approval by General Assembly in May 2018. Some Recommendations are in need of updating while some new Recommendations are required.

The project for IALA transition from NGO to IGO status is progressing with a preparatory diplomatic conference planned for 18th and 19th April in Paris.

The IALA Conference is planned for May 2018 and information is available on the IALA website. Following this IALA will commence a new work period. It is considered that connectivity and information transfer are the areas where IALA can provide most relevant input. e-Navigation may be a mix of public and private services.

While IALA is not a primary radio positioning service provider, it makes major input to terrestrial backup services. China, Korea and Russia coordinate hyperbolic positioning system in Asia through the FERNS and IALA considers that a greater role for FERNS is possible.

It is envisaged that VTS will move from a voice service to a more digital communications system. The future impact of autonomous ships on AtoN and VTS is uncertain.

Because of the speed with which e-navigation services development is progressing, it was suggested that ENAV Committee work could progress through intersessional Working Group meetings during the early part of 2018. It was agreed a schedule for these intersessional meetings should be prepared.

IALA is a partner in the EfficienSea2 project and it is hoped that EfficienSea2 deliverables may contribute to the work of IALA in the future. An EfficienSea2 workshop on the Maritime Cloud will be held in IALA HQ in November 2017.

1.2.1 Discussion

In discussion it was considered that IALA should submit a paper on VDES to IMO MSC to help inform MSC on VDES in preparation for ITU WRC-19.

It is expected that the IMO / IHO Harmonisation Group for Data Modelling will be reactivated at MSC98 and IALA work should proceed on the assumption of this reactivation.

It was noted that IGO status will require a high performance IALA quality management system.

RTCM work on NAVDAT range and data rate was noted. It was suggested that RTCM should cooperate with CIRM because the 500kHz frequency band is vulnerable and is an interference risk because of the frequency proximity to DGPS and R-Mode.

1.3   Administration & Safety Briefing

Seamus Doyle provided a Safety and Administrative briefing. Attention was drawn to the Committee website and file sharing working arrangements.

1.4   Introductions and apologies

Hideki Noguchi introduced himself and the working group (WG) chairs and welcomed both newcomers and those returning to IALA ENAV. Apologies were noted.

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

137 people from 29 countries and 5 sister organisations, attended the 20th session of the ENAV Committee, of which 33 participants were new and 2 were observers.

Because of the large number of participants, attendees were accommodated in the plenary room and in room 4 with video and audio links between rooms.

1.5   Programme for the week

Paper ENAV20-1.4 refers. The programme for the week was approved, noting that the plenary session to review output documents would commence on Thursday afternoon.

2.   REVIEW OF ACTION ITEMS FROM ENAV19

Paper ENAV20-2.1 refers. It was noted that the action items from ENAV19 for the IALA Secretariat were complete with the following provisos:

- Actions 27 and 28 are in progress.

- It was noted that no response had been received from the PAP regarding ENAV19-14.1.4 (Liaison note on the Road Map for e-Navigation) and a follow up with the PAP is required (Action 21).

Actions for Committee Participants were referred to the Working Groups.

Actions

The IALA Secretariat is requested to complete ENAV19 actions 27 and 28.

The IALA Secretariat is requested to post ENAV19-14.1.20 FAQ on VDES to the e-navigation section of the IALA website.

The IALA Secretariat is requested to provide ENAV19-14.1.19 and Council introduction to ENAV19-14.1.19 to the IHO, IEC, CIRM, RTCM, IMPA and IHMA.

3. REVIEW OF INPUT PAPERS

3.1 Input papers

The Committee considered 144 input papers, including presentations. 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.

The following question was asked of all attendees and no patents were noted:

> *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?*

3.2 Identify input papers suitable for uploading to the IALA Wiki

ENAV Committee participants were encouraged to suggest input papers that should be included on the IALA Wiki which can be used as a repository for input papers and information that would be of long term benefit to IALA participants.

4. REPORTS FROM OTHER BODIES

4.1 IALA Council

The Committee noted the report of the 63rd Session of the IALA Council in IALA Headquarters, from 13th to 16th December 2016, presented by Seamus Doyle. Paper ENAV20-4.1 refers. Issues relevant to ENAV Committee work were highlighted in the input paper.

4.2 PAP32

The Committee noted the report of the 32nd Session of the IALA Policy Advisory Panel (PAP32), from 5 to 7 October 2016 in IALA Headquarters, presented by Seamus Doyle. Papers ENAV20-4.2 refers. Issues relevant to ENAV Committee work were highlighted in the input paper.

4.3 Report on IALA work in EfficienSea2

The Committee noted the report of IALA work in the EfficienSea2 project, presented by Nick Ward. Paper ENAV20-4.3 refers.

4.4 Draft IALA Standards

At Council session 62, Council agreed the names of the first seven Standards for IALA and noted the proposed subsidiary topic areas. The Committee was requested to submit comments on the seven draft Standards to Council session 64. Papers ENAV20-4.4.2, ENAV20-4.4.3, ENAV20-4.4.4, ENAV20-4.4.5, ENAV20-4.4.6, ENAV20-4.4.7, and ENAV20-4.4.8 refer.

In discussion it was queried why Model Courses are not included in the overview of e-navigation. Omar Frits Eriksson will raise this matter with the PAP.

4.5 Report IALA Workshop on AIS AtoN developments, Seoul, 19-20 Oct 2016

The Committee noted the report of the IALA Workshop on AIS AtoN developments held in Seoul, Korea from 19th to 20th Oct 2016. Paper ENAV20-4.5 refers.

4.6 Report e-Navigation Underway International 2017

The Committee noted the report of the e-Navigation Underway International 2017 conference held on board the DFDS ferry M/S PEARL SEAWAYS from 31st January 2017 to 2nd February 2017. Paper ENAV20-4.6 refers. The increased participation by industry was noted.

4.7   Position on the Development of AtoN Services

The Committee noted the position paper on the development of AtoN Services. The paper described the positions that that IALA will take concerning certain critical technical and operational aspects of its work with the object of assisting the work of the technical Committees of IALA and informing IALA members. Paper ENAV20-4.7 refers.

4.8   Report on VDES conference 2017 – Cape Town

The Committee noted the report of the one day conference on the VHF data exchange system (VDES) which was held in Cape Town, South Africa on 13th February 2017. The event was sponsored and arranged by IMIS Global, Senro and Stone Three Venture Technology and there were more than 100 participants. Paper ENAV20-4.8 refers.

4.9   MTCAS- an e-navigation assistance system for cooperative collision avoidance at sea

The Committee noted the report on MTCAS- an e-navigation assistance system for cooperative collision avoidance at sea presented by Axel Hahn. Paper ENAV20-4.9 refers.

Action

The Secretariat is requested to forward paper ENAV20-4.9 to the VTS Committee.

4.10   Report of ITU-R WP5B meeting 07 to18 Nov 2016

The Committee noted the report of ITU-R WP5B meeting from 7th to 18th November 2016. Paper ENAV20-4.10 refers.

5.   REPORTS FROM RAPPORTEURS

5.1   IALA Bulletin

Hideki Noguchi noted that IALA are now providing eBulletins at frequent intervals which are posted on the IALA website. He invited participants to submit articles for either the twice yearly Bulletin or the eBulletin.

5.2   IALA Dictionary

Seamus Doyle noted that the IALA Dictionary is available on the IALA website and encouraged all Committee participants to use and update it. A small but growing number of definitions are available in French and Spanish.

In discussion it was stated that, once IALA is an IGO, it should only provide definitions in languages covered by the convention. Translations need to be accurate to avoid legal complications.

Action

French and Spanish speaking ENAV Members are invited to assist IALA with translation of Dictionary terms to French and Spanish.

5.3   GMDSS

Jean-Charles Cornillou submitted an update on GMDSS, paper ENAV20-5.3 refers. It was noted that a GMDSS modernisation plan is being drafted in IMO.

5.4   Testbeds

Mahesh Alimchandani presented a report on testbeds, paper ENAV20-5.4 refers. He noted that the website usage statistics indicated a constant level of usage. He observed that testbed internal standards should be prepared with global solutions and standards in mind.

6.   PRESENTATIONS

Seven presentations were made to plenary and one presentation was made to WG5 during the meeting. The presentations form part of the input to the meeting.

6.1   World-Wide Academy (WWA) report

Omar Frits Eriksson, IALA WWA Dean, presented the WWA report, input paper ENAV20-6.1 refers. He requested volunteers for e-navigation training in 2017.

6.2   IALA EfficienSea2

Noting that IALA is a partner in the EfficienSea2 project, Nick Ward presented a report on IALA-led EfficienSea2 Tasks 1.2 (Project/Test Bed Liaison) and Task 1.3 (Standardisation) in EfficienSea 2. IALA also contributes to WP 2 (Communications - VDES) and WP 3 (Maritime Cloud). He invited participation in the EfficienSea2 workshop on Maritime Cloud user requirements, business model & governance in November 2017 in IALA Headquarters. EfficienSea2 deliverables may be input to IALA to assist in IALA work. Paper ENAV20-6.2 refers.

6.3   Maritime Cloud update

Thomas Christensen presented a report on the Maritime Cloud. Paper ENAV20-6.3 refers. He invited participants to join the MRN Google Group where a number of questions raised in discussion are being discussed. The Maritime Cloud Development Forum will run until at least 2021.

6.4   IALA/IHO Interaction on the IMO Maritime Service Portfolio

LeeAnne Gordon presented the IHO view of on the development of MSPs and considered the IMO Input and control of MSPs and the effects on the work of IALA and the IHO. She made three recommendations for IALA work on MSPs. Paper ENAV20-6.4 refers. It was noted that paper ENAV20-12.2 may have relevance to the VTS Committee.

Action

The Secretariat is requested to forward ENAV20-12.2 to the VTS Committee when reviewed by WG4.

6.5   Status Report on S-200

Noting that IHO has approved IALA as a Submitting Organisation and Domain Controller for IALA Product Specifications compliant with the IHO S-100 standard, use the numbering series S-201 to S-299, Nick Ward briefed the Committee on progress with preparation of IALA Product Specifications. It was anticipated that the web application for an S-201 testbed may be available in one month. Paper ENAV20-6.5 refers.

6.6   SBAS/EGNOS positioning services for Off-Shore Oil & Gas Operations

Jose-Manuel Alvarez presented a value proposition on EGNOS for off-shore Oil & Gas Operations in Europe in which he identified a potential niche for EGNOS Augmentation. Papers ENAV20-6.6 and ENAV20-13.15 refer.

6.7   ESSP-Generic Cost Analysis for the transmission of SBAS corrections over IALA beacon and AIS v1.2   (for WG5)

Jose-Manuel Alvarez made a presentation to WG5 on a generic cost analysis for the transmission of SBAS corrections over IALA DGPS beacons and AIS. Paper ENAV20-6.7 refers.

6.8   Invitation to 19th IALA Conference in Korea 2018

Prof Jiwon Seo invited participants to attend the 19th IALA conference to be held in Incheon, Korea, from 27 May 2018 to 2 June 2018. Paper ENAV20-6.8 refers.

7. REVIEW OF WORK PROGRAMME AND WORKING GROUP EXPECTATIONS

The Committee work plan and Committee work plan task register were updated, papers ENAV20-7.1, ENAV20-7.2 refer.

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

Action

Working Group chairs are requested to identify documents that will be completed at ENAV21 and advise the Chair and Vice-Chair.

8. ESTABLISH WORKING GROUPS

Five working groups were established, as outlined below:

Working Group		Working Group Chair	Working Group Vice Chair
WG 1	Harmonization	Axel Hahn	Jin Park
WG 2	Implementation	Mahesh Alimchandani	Wayne Quinn
WG 3	Telecommunication	Peggy Browning	Stefan Bober
WG 4	ENAV Services	Jon Leon Ervik	Thomas Porathe
WG5	PNT	Alan Grant	Michael Hoppe

9. WORKING GROUP 1 – HARMONISATION (WG1)

WG1 received 50 input papers to be considered during ENAV20. The resulting workload is reaching the limits of the WG.

Action

The Chair and Vice-Chair are requested to consider if the work of WG1 should be divided into harmonisation and conceptual work in the 2018 – 2022 work period.

9.1 Review and update NAVGUIDE Chapter 4, section 4.5.2 -4.5.5 (Task 1.1.1)

Input document ENAV20-10.2.1 refers.

The Committee adopted the table of contents for the NAVGUIDE provided by WG2.

WG1 proposed a revised structure of the NAVGUIDE to WG2 for harmonisation in revision and management of the NAVGUIDE. WG1 provided also text blocks for the introduction to section 7.

Actions

Members are invited to review the Draft table of contents for revised Chapter 4 of the IALA NAVGUIDE 2018 Edition, ENAV19-14.2.8 and provide content intersessionally for section 6, Maritime Digital Infrastructure, assigned to WG1 for ENAV20.

Stephane Lessard is requested to manage the inputs for amendments to Chapter 4 and section 6 of the NAVGUIDE.

9.2 Review of Guidelines 1010-1070

Input documents ENAV20-4.4.2 – ENAV20-4.4.8 refer.

The Committee reviewed and approved the content of the Guidelines.

9.3   Position Document on AtoN Services

Input documents ENAV20-4.7 refers.

WG1 noted the content of the document with no further comments.

9.4   Guideline on MSP 8

Please refer to the corresponding section 12.2 of this report.

9.5   Revise Guideline 1106 and 1087 (Task 1.3.1)

Input documents ENAV20-9.3 and ENAV20-9.4 refer.

The Committee recognised the valuable contributions by Norway. The Committee reviewed the revised version of Guidelines 1106 and 1087 and submitted the Guidelines to be approved by Council.

Actions

The Secretariat of IALA is requested to conduct a final editorial check on ENAV20-14.1.6 (Guideline No 1106 Producing an IALA S-200 series Product Specification) and ENAV20-14.1.5 (Guideline No 1087 Procedures for the Management of the IALA Domain under the IHO GI Registry) and submit the Guidelines to Council for approval.

The Secretariat is requested to source better quality pictures in editable form for ENAV20-14.1.5 and verify that the acronyms are in the IALA Dictionary list.

The Secretariat is requested to convert tables 10,11 etc. into editable form in ENAV20-14.1.6.

9.6   Data Models Liaison with ARM

Input documents ENAV20-9.8, ENAV20-9.8.1, ENAV20-9.8.2, ENAV20-9.8.3 refer.

The Committee thanked the ARM Committee for their invitation to the joint S-201 meeting (ARM6). The Committee prepared a liaison note, ENAV20-14.1.7, accordingly.

Actions

The Secretariat of IALA is requested to forward output document ENAV20-14.1.7 to the ARM Committee.

Martin Bransby and Justin Kimura are requested to present information on S-201 at the ARM6.

9.7   Unique Identifiers for Maritime Resource/Procedure for MRN

Input documents ENAV20-9.9, ENAV20-9.9.1 refer.

The Committee checked the compatibility of MRN with URN that is specified in S-100. It is planned to use MRN in S-201 in the same way.

An initial document (an "Internet-Draft") for a Request for Comment (RFC) has been sent to the Internet Engineering Task Force (IETF) by the Danish Maritime Authority. After approval it is proposed that MRN will be used in the S-100 standard and related Product Specifications. MRN is a general concept not limited to use in the S-100 based standards.

In addition, IALA may become the organisation that has the ownership of MRN registry for issuing and maintaining MRNs. It was thought that this was considered at Council 62.

The Committee prepared a liaison note to NIPWG, paper ENAV20-14.1.8 refers.

Actions

The IALA Secretariat is requested to forward ENAV20-14.1.8 to the Council for approval and thence to NIPWG and the IMO/IHO Harmonization Group on Data Modelling when the HGDM is initiated.

The IALA Secretariat is requested to consider IALA's ownership of MRN registry.

9.8 Review/Agreement S201 (Task 1.2.1)

Input documents ENAV20-9.10, ENAV20-9.10.1 refer.

The following input papers were considered relating to S-201 (AtoN Information Product Specification):

    a. ENAV 20-9.12 and ENAV20-9.12.1 Current Revision of S-201 v0.0.6;

    b. ENAV 20-9.18 and ENAV20-9.18.1 From IHO on new version of S-100 – possibly effect on S-201;

    c. ENAV 20-9.8, ENAV20-9.8.1, ENAV20-9.8.2 and ENAV20-9.8.3 from the ARM Committee, comments on S-201;

    d. ENAV 20-9.9/9.9.1 From NIPWG on use of MRN in S-201;

    e. ENAV 20-9.10/10.1 From NIPWG on Coordination of S-101 & S-201 with List of Lights model;

    f. ENAV 20-9.28 Information paper from ROK regarding cooperation on S-201 development.

Liaison notes to ARM and to NIPWG were drafted in response to c, d & e.

In response to f, the Committee welcomed the interest and support from ROK (see section 9.17) and encouraged them to contribute to ENAV WG1 during ENAV meetings and to Task Group 1 intersessionally on development of S-201. The names of the paper's authors will be added to the distribution list for WG1 TG1 on S-201.

Actions

The IALA Secretariat is requested to forward output paper ENAV20-14.1.10 to Council for approval and thence to NIPWG.

9.9 eNAV-147 Ed.1 Product Specification

Input document ENAV20-9.11 refers.

The Committee edited Recommendation e-NAV-147 to be in the new IALA format and to be aligned with other Recommendations.

Actions

The IALA Secretariat is requested to submit output document ENAV20-14.1.9, draft Recommendation e-NAV-147 to Council for approval.

9.10 S 201 AtoN Product Specification

Input documents ENAV20-9.12, 9.12.1 refer.

The Committee recognised the work of the WG1 Task Group on S-201 and thanked them for their work so far.

9.11 S-412, A Weather Overlay Product Specification for Electronic Chart Display and Information Systems (ECDIS)

Input document ENV20-9.13 refers.

The Committee noted the submitted document without any remarks.

9.12 Approval of new Edition 3.0 of IHO S-100

Input documents ENAV20-9.18, 9.18.1 refer.

The Committee thanked the IHO for its work on S-100. The new edition will be used for future revisions of IALA S-200 series of Product Specifications.

In parallel to the ENAV Committee meeting, IALA was invited to propose a section in S-100 on data streaming services.

Action

Work will be conducted intersessionally to provide an input paper regarding S-100 data streaming services for ENAV21, coordinated by Peter Hooijmans.

9.13 Maritime Architecture Framework (MAF)

Input document ENAV20-9.14 refers.

The Committee will support the development of a Guideline on MAF or integration of this concept into IALA ENAV Guidelines.

Action

Axel Hahn is requested to develop a MAF Guideline and to include the concepts in the NAVGUIDE.

9.14 Specification of e-Navigation technical services / Maritime Cloud

Input documents ENAV20-9.19, ENAV20-9.21, ENAV20-9.22, ENAV20-9.23, ENAV20-9.24, ENAV20-9.25, ENAV20-9.26 refer.

The Committee noted the information papers on the work on the Maritime Cloud.

The Committee drafted a Guideline on specification of e-navigation technical services as a generic concept to describe e-navigation technical services.

Actions

The Secretariat of IALA is requested to forward liaison note ENAV20-14.1.34 and paper ENAV20-14.1.11, Draft Guideline on specification e-navigation technical services, as a draft document to other organisations to be agreed between the Chair, Vice Chair and the Secretariat with the intention of completing the Guideline at ENAV21.

Axel Hahn is requested to provide a cover note to accompany paper ENAV20-14.1.11 when sending to other organisations.

The Secretariat is requested to forward paper ENAV20-14.1.11 to ENAV21.

9.15 Risk Management Plan

Input documents ENAV20-9.1, ENAV20-9.2, ENAV20-9.3 refer.

The Committee revised the structure and content of the Risk Management Plan. The document was intended as an ongoing working document of ENAV committee.

Actions

Committee Participants are requested to further elaborate on the Risk Management Plan by editing the list of risks. Jin H. Park, Jean-Charles Cornillou and Yves Desnoes are requested to coordinate the work intersessionally.

The IALA Secretariat is requested to resubmit the working document ENAV20-14.2.11 to ENAV21 in case there is no other document replacing ENAV20-14.2.11.

9.16 MTCAS- An e-Navigation Assistance System for Cooperative Collision Avoidance at Sea

Input documents ENAV20-4.9 refers.

The MTCAS consortium wants to make the Committee aware of the project and its approach. The paper and associated PPT should be sent to VTS Committee for information.

The Committee noted the effort on maritime collision avoidance in Germany and requested the submitter to provide information on this activity to the ARM, ENG and VTS Committees.

Action

The Secretariat is requested to forward ENAV20-4.9 to the VTS, ENG and ARM Committees.

Axel Hahn is requested to provide information on the effort on maritime collision avoidance in Germany.

9.17 Information paper - S-201 development cooperation and research plan

Input documents ENAV20-9.27 refers.

The Committee welcomed the proposal on S-201 in paper ENAV20-14.9.7. The Committee encourages the proposer to support the work on S-201 in the Task Group under the leadership of Nick Ward.

10. WORKING GROUP 2 – IMPLEMENTATION (WG2)

10.1 Review and update Chapter 4 (On e-Navigation) of the IALA NAVGUIDE (Task 1.1)

The Committee considered ENAV20-10.1(editorial comments from the ENG Committee on the NAVGUIDE), ENAV20-10.3 and ENAV20-10.3.1 (Liaison note and tracking table from the ARM Committee).

The Committee reviewed and updated some sections of Chapter 4 of the NAVGUIDE. A working paper ENAV20-14.2.3 was produced. It was recognised that a lot of work was required to be completed by the Committee between ENAV20 and ENAV21, in order to provide a mature final draft for approval by the Committee at ENAV21.

A liaison note, including the tracking table (ENAV20-14.1.1 and ENAV20-14.1.1.1) was prepared for the ARM Committee. It informs of a new table of contents and advises that a final draft of Chapter 4 would be provided in time for ARM 7.

Mahesh Alimchandani will co-ordinate input from the Committee members intersessionally and provide a final draft to ENAV21.

Actions

The IALA Secretariat is requested to forward ENAV20-14.1.1 and ENAV20-14.1.1.1 (Liaison note and tracking table) to ARM 6.

Committee members are requested to review and update relevant sections of the NAVGUIDE and provide input via their working group chairs in time for ENAV21.

Committee members are requested to provide quality diagrams and photographs for the NAVGUIDE via their working group chairs in time for ENAV21.

Working group chairs are requested to ensure that their sections of the NAVGUIDE are reviewed and updated in time for ENAV21.

Mahesh Alimchandani is requested to ensure that input by working group chairs and Committee members is consolidated into a final draft of Chapter 4 in time for ENAV21.

The IALA Secretariat is requested to forward ENAV20-14.2.3 (Working version of Chapter 4 of the NAVGUIDE) to ENAV21, for reference and record.

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

The Committee noted that the Finnish Transport Agency (FTA) is planning a testbed project (Intelligent Fairway Finland) (ENAV20-10.5 refers). The project aims to develop new services for mariners and other users, such as pilots and harbour authorities. In the first phase, the FTA has defined and implemented methods for collecting and distributing data. In the second phase, the intention is to test how data could be used by end users.

Summary information on this testbed will be provided to the IALA Secretariat for posting to the testbeds area of www.iala-aism.org.

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

The Committee noted that Redwire UK (redwire.co.uk), IALA's Content Management System provider, had generated statistics for the testbed portion of the IALA website for period 1st October 2016 to 28th February 2017 (ENAV20-10.6 refers).

The statistics indicate average, "un-promoted" use of the IALA testbed website. For example, there were 1261 pages views of the main testbed page in 150 days. This translates to over 8 page views a day. Also, a total of 4588 page views were recorded in 150 days. This translates to 30 page views a day. In contrast, for example, the SEASAME project website has 20-30 visitors a day. The same information on the IALA website gets 1 visitor every 2 days. It is recognised that the IALA website is a one-stop shop for information on all testbeds reported to IALA.

The average time on a page (1-2 minutes) however, suggests that visitors read the contents and did not move on quickly.

The Committee is of the view that the above numbers can be improved with a strategy to promote the website. This includes strengthening the pages by including key words and phrases (in English and if possible, in all IALA working languages).

The Committee noted that these results cannot be compared or benchmarked against other similar sites, as it believes the contents of this site are fairly unique and used by a specialist group of interested maritime stakeholders.

The Committee was of the view that some additional functionality should be added to the testbed website. This includes:

1. Providing the IALA reporting template as a web-based form that interested parties can use to submit information efficiently.
2. An area where prospective testbed managers can publicise (and seek cooperation and interest from other parties) their intention to conduct testbeds and pilot projects. Information to include a short description, geographical area, time frame, specific expertise required, reference to an area of e-navigation developments and contact information.
3. The ability to filter testbed pages based on key words and if possible criteria such as geographical areas, technologies and times frames.

Actions

The IALA Secretariat is requested to arrange for similar statistics (for the testbeds portion of the IALA website, as provided in ENAV20-10.6) for the period 1st March 2017 to 31st July 2017 - that is for the next five months - so that a like for like comparison can be conducted. This will help identify trends in individual parameters.

The IALA Secretariat is requested to seek information from Redwire on key words searches and the geographical regions (i.e. IP addresses) from where unique page views are generated for the IALA testbeds website.

The IALA Secretariat is requested to set up its own Google account, so that it can conduct analysis on the usage of the testbeds portion of its own website. This will provide additional statistics such as key words and geographical areas of search origins.

The IALA Secretariat is requested to ask Redwire for information on (or generate information from its own Google account) whether visitors come to the testbed area via the main IALA website or via searches with key words.

IALA is requested to work with Redwire to develop a search optimisation strategy to promote the website. This includes strengthening individual pages to include key words and phrases (in English and, if possible, in all IALA working languages).

The IALA Secretariat is requested to work with Redwire to implement additional functionality, which will:

- *Provide the IALA reporting template as a web-based form that interested parties can use to submit information efficiently.*

- *Create an area where prospective testbed managers can publicise (and seek cooperation and interest from other parties) their intention to conduct testbeds and pilot projects. Information provided should include a short description, geographical area, time frame, specific expertise required, reference to an area of e-navigation developments and contact information.*

- *Implement the ability to filter testbed pages based on key words and, if possible, criteria such as geographical areas, technologies and time frames.*

10.4 Encourage testbed project managers to provide information and results to IALA for posting on the IALA website, through a marketing plan to inform and to attract consumers (Task 4.1.3)

The Committee was of the view that a communications strategy was required to encourage and influence testbed managers to report testbed results to IALA, so that the information could be shared with the international maritime community.

The Committee developed a new communications strategy that identifies target audiences and communication channels, and articulates key messages. ENAV20-14.1.2 refers.

Actions

The IALA Secretariat is requested to adopt the communications strategy and act on the items listed within section 9 of ENAV20-14.1.2 (IALA communications strategy – promoting the sharing of e-navigation testbed results).

10.5 e-Navigation Road Map and coordinating proposals

The Committee noted section 6.1.3 of the Report of PAP32 (ENAV20-4.2 / PAP32-17.1) which refers to the Roadmap for e-Navigation developed by the e-Navigation Committee at ENAV19. It was noted that PAP32 did not provide its views on the proposals made by the ENAV Committee on IALA's management of e-navigation, as queried in document ENAV19-14.1.4 (input document PAP32-6.1.3.1). In particular, the ENAV Committee had sought responses to actions 3, 4 and 5 (i.e. robust management of all IALA e-navigation activities, a detailed project approach and the use of information format software).

The Committee produced a new liaison note ENAV20-14.1.29 to PAP with a request to reconsider the proposals and to respond to ENAV21 as requested.

Actions

The IALA Secretariat is request to forward liaison note ENAV20-14.1.29 to the PAP.

The IALA Secretariat is requested to consider adding the e-navigation roadmap (ENAV19-14.1.5) to the IALA position paper.

11. WORKING GROUPS 3 - TELECOMMUNICATIONS (WG3)

11.1 Review and update NAVGUIDE Chapter4, section 4.10 - 4.12 (Task 1.1.3)

Input papers ENAV20-10.2.1, 10.3; 10.3.1, and 11.18.5 were reviewed.

Content related to the VDES was agreed for inclusion in the IALA NAVGUIDE. In addition, placeholders were provided for additional maritime communications related areas within the appropriate area of the NAVGUIDE.

It was noted that this work will continue intersessionally for completion at ENAV 21.

J Carson-Jackson was asked to liaise with S Burrows to finalise the radiocommunications aspects for the revision of the NAVGUIDE, and provide an input paper for ENAV21.

11.2 Develop VDES Message Structures (Task 1.4.1)

See Task 1.4.2.

11.3 Assist in the Development of Message Structures for E-Navigation (Task 1.4.2)

Task 1.4.1 and 1.4.2 are very similar because the message structures defined for e-navigation by ENAV WG1 will need to be translated into VDES over-the-air message structures. Until WG1 progresses its work, WG3 has agreed to use the binary structures for free-form messages as defined by AIS. Once common data structures are better defined the Committee will create common message structures (e.g. AIS position reports are common messages) necessary to support e-navigation.

11.4 Update the MRCP (Task 2.1.1)

Papers ENAV20-11.11, ENAV20-11.1, ENAV20-11.12, and ENAV20-11.12.1 were reviewed. This work has not been completed at this meeting but will be ready for submission to the ITU in the fall of 2017 as planned.

11.5 Develop Recommendation on VDES, VDE-SAT Report and ITU-R M.2092 (Task 2.1.2)

11.5.1 VDE SAT Report

Input paper ENAV20-11.16.1 is a late submission providing an update to ENAV20-11.16 as work continued after the last intersessional. This report includes two frequency plans for VDE-SAT.

A mature document ready for submission to WRC19 by ITU WP5B was completed. However, it is recognised that ITU WP5B may require further input and justifications before the final deadline of May 2018 for document submissions to WRC19 therefore it is prudent to provide this mature document at the upcoming May 2017 meeting of ITU WP5B.

Action

The IALA Secretariat is requested to forward ENAV20-14.1.26 Preliminary Draft New Report ITU-R M.[VDES-SAT], to Council for urgent approval by the IALA Council by correspondence and, in the event of approval, forward it to the ITU WP 5B meeting by the deadline of 10 April 2017.

11.5.2 Recommendation ITU-R M.2092

Input papers ENAV20-11.6, ENAV20-11.15, ENAV20-11.17, ENAV20-11.18.4, ENAV20-11.19 refer.

Input ENAV20-11.6 is a liaison from the ENG committee on AIS performance under extreme temperature and humidity. The group found this very interesting with many questions on how the measurements were taken as the results are not consistent with known AIS performance. Understanding that the ENG Committee provided this data so that the VDES system would take such conditions into consideration the group prepared a liaison note to the ENG committee explaining that the VDES will address these issues by providing flexibility through adaptive coding and modulations, adaptive service areas, and a freewheeling receiver capability. Output paper ENAV20-14.1.27 refers.

Input ENAV20-11.15 is the current Recommendation ITU-R M.2092-0. This document was reviewed and further amended. There will also be additional work at the next intersessional meeting of ENAV WG3 with a goal to submit ITU-R M.2092-1 to ITU WP5B in November of 2017.

It was concluded that the working draft WD ITU-R M.2092 will contain all functions of VDES including VDE-SAT (working towards ITU-R M.2092-2). However the document which will be provided to ITU WP 5B will be without VDE-SAT to follow up on the decision of ITU WRC15. The current Annexes 4 and 5 of ITU-R M.2092 will be included in the report on VDES-SAT. For clarity, the ITU-R M.2092-1 will not contain the satellite aspects of the VDE.

Input ENAV20-11.17 is a liaison note concerning the maritime numbering system (MRN) to support the Maritime Cloud. The Committee reviewed this method and has no objection. However, it must be recognised that the MMSI is the maximum size of addressing scheme that can be used by the VDES without imposing unwanted overhead.   It was agreed that the MRN as described in the liaison note would be supported by the service layers above the VDES, and that ships would continue to be identified by the MMSI and where possible the IMO hull number.

Input ENAV20-11.18.4 is a draft IEC test standard developed under the EfficienSea2 program. The Committee agreed that the draft is useful and has prepared a liaison note to IEC WG15 for consideration.

Input ENAV20-11.19 is a report on the channel modelling efforts undertaken as part of the EfficienSea 2 program. The group noted the findings and had further presentations from Arunas Macikunas detailing the results of the satellite analysis from data provided by ExactEarth.   The group appreciates the work that has gone into these models as these details are absolutely vital to ensure that the VDES communications link is designed to be robust under all conditions. The group believes that further sounding should be undertaken to study areas with unusual topologies such as were done in Tokyo.   The group intends to solicit the USCG for support to conduct soundings in Galveston, Long Beach and San Francisco.

Action

The IALA Secretariat is requested to forward ENAV20-14.1.27 to the ENG committee for their consideration.

The IALA Secretariat is requested to forward liaison ENAV20-14.1.28 and its associated output ENAV20-14.1.32 to the IEC WG15.

Members of the ENAV Committee are requested to provide input to ENAV21 regarding working document ENAV20-14.2.6 ITU-R M.2092-0 Technical characteristics for a VHF data exchange system in the VHF maritime mobile band.

11.6   Update IALA Recommendations and Guidelines on AIS and VDES (Task 2.2.1)

11.6.1   VDES Recommendation

Input paper ENAV20-11.14 was reviewed. In addition, IALA Recommendation A-123 was also noted. The draft recommendation on VDES was reviewed and agreed.

Action

The IALA Secretariat is requested to forward ENAV20-14.1.22, draft Recommendation on VDES, to Council for approval.

11.6.2   Review of IALA documentation – related to the introduction of VDES

Input papers ENAV20-11.18, ENAV20-11.18.1 and ENAV20-11.18.2 refer.

The review of the IALA documents that may need to be revised to reflect the introduction of VDES was noted. It was clarified that this review had been carried out within the E2 project, and the Committee noted that 21 of the 24 Recommendations reviewed were identified for revision to reflect the introduction of VDES. Similarly, 38 of the 44 Guidelines reviewed were identified for revision. In addition, 7 Recommendations were noted as possible candidates for combining or archiving. To support the revision of documentation, the sample text provided was also reviewed.

Comments on the review were provided to assist the revision and update process of IALA documentation with regard to the introduction of VDES. The comments on the E2 documents were indicated in track changes, to be provided to the appropriate IALA E2 representative.

The suggestions within the document to archive documents, or combine documents, were noted. It was highlighted that the possible archive or amalgamation of documents requires agreement by other IALA Committees, specifically the VTS Committee and the ARM Committee, and liaison notes for these Committees were prepared.

Input paper ENAV20-11.5, VDES Frequently Asked Questions, was noted. This document was not reviewed in detail, noting that the FAQ had been agreed at ENAV19 for posting to an appropriate area on the IALA website. As VDES is developed, the FAQ will be monitored and updated as required.

Action

The IALA Secretariat is requested to post the agreed VDES FAQ to the appropriate area of the IALA website, and to forward ENAV20-11.5 to ENAV 21 for further review.

The IALA Secretariat is requested to forward liaison ENAV20-14.1.23 and the associated documents ENAV20-14.1.30 and ENAV20-14.1.31 to the ARM Committee.

The IALA Secretariat is requested to forward ENAV20-14.1.24 to the VTS Committee.

The IALA Secretariat is requested to forward ENAV20-14.1.25, [with the associated file of documents in track changes] to the appropriate E2 project officer for consideration.

11.6.3 Review of IALA Draft Standards

Input papers ENAV20-4.4.1 through ENAV20-4.4.8 refer.

The draft IALA standards were reviewed and comments provided to ENAV WG2.

11.6.4 Liaison notes on clarifications to 1371-5

Input papers ENAV20-11.1 (liaison from ITU WP 5B) and ENAV20-11.9 and ENAV20-11.10 (liaison from IEC WG15) were noted. The work was not completed at this meeting, and will require further consideration at the ENAV WG3 intersessional meeting.

11.7 Develop a timeline for submission of VDES documents to ITU with a view to seeking delegated authority to submit from Council (Task 2.4.2)

11.7.1 Relevant milestones for ITU

The Committee is working towards the following milestones:

- o ENAV20: Final Preliminary Draft New Report ITU-R M.[VDES-SAT] will require Council approval via correspondence for submission to ITU WP5B May 2017 meeting. This document will require early Council approval before submission to ITU.
- o ENAV21: Draft submission to the ITU regarding the revision of ITU-R M.2092-0, Technical characteristics for a VHF data exchange system in the VHF maritime mobile band, to the ITU WP5B November meeting. This document will require early Council approval before submission to ITU.
- o ENAV21: If required by ITU WP5B, additional changes to Preliminary Draft New Report ITU-R M.[VDES-SAT] for submission to the ITU WP5B November meeting. This document will require early Council approval before submission to the ITU.

Intersessional work will continue into 2018 to prepare for ITU WRC19 and the eventual approval of the satellite aspects of VDES. In addition, intersessional meetings may be required to deal with any feedback from the ITU for the Preliminary Draft New Report ITU-R M.[VDES-SAT] and for revision of ITU-R M.2092-0. It is anticipated that there will be a meeting in Q1 of 2018 and depending on the review by ITU an additional intersessional in Q3 of 2018.

It should be noted that if ITU requires clarifications or additional information for either the revision of ITU-R M. 2092-0 or Preliminary Draft New Report ITU-R M.[VDES-SAT] the edited documents will require early Council approval before submission back to ITU.

11.7.2 Information Plan / Briefings on VDES

Input paper ENAV20-11.8 and 11.8.1 were reviewed.

The proposed information plan to promote the VDES and provide briefings to support the development of the VDES was agreed in principle, with additional comments provided for consideration. It was noted that this document would be forwarded for further development within the IALA E2 project.

It was noted that a project plan (i.e. Gantt chart) that details the key tasks, milestones and critical paths in the development of the VDES would be desirable.

Action

The IALA Secretariat is requested to forward ENAV20-14.1.25 to the appropriate E2 project officer for consideration.

Nick Ward is requested to arrange for a presentation on the VDES at NCSR5.

11.8   Manage regional ASM web catalogue (Task 2.3.1)

IALA has recently moved the ASM catalogue to the IALA website which is an excellent first step and much appreciated. However it should be noted that the former e-navigation.nl site, created and maintained by Mr. Jeffrey van Gils, had the following functionality available and the IALA catalogue no longer seems to have the capabilities listed in paper ENAV20-14.1.35.

Action

The IALA Secretariat is requested to consider the changes listed in paper ENAV20-14.1.35 as they have been proven to be very useful to many administrations. In particular, the Committee requests that the email lists and FTP access to files be implemented as soon as practical.

11.8.1   Review of ASM with regards to introduction of VDES

Input papers ENAV20-4.5, ENAV20-11.3 and ENAV20-11.4 were reviewed.

The outcomes of the IALA AtoN workshop, held in Busan, South Korea, were noted. It was agreed that a review of ASM as provided in both IMO SN/Circ.289 and within the ASM catalogue is required. The table provided in ENAV20-11.4 could be used as the basis for a focused review to determine which ASM may be suitable to be transmitted on the additional frequencies available within THE VDES (remain on AIS, move to ASM and/or VDE).

It was noted that the requirements of AtoN devices (low power, etc.) must be considered in future revisions of IALA documents for VDES.

11.9   Monitor developments in GMDSS and liaise with IMO to coordinate the developments for communication in GMDSS and e-Navigation (Task 2.4.1)

While no input papers were received the group has monitored the development of the GMDSS modernisation and is pleased to note the inclusion of VDES in the current IMO GMDSS modernisation plan.

11.10   Liaise with ARM re Virtual AtoN (Task 3.2.1)

Input papers ENAV20-11.2, ENAV20-11.2.1 and ENAV20-11.2.2 were reviewed.

Although this task is for Virtual AtoN, the Committee addressed the subject of mobile AtoN having no other appropriate task.

The working group noted the development of mobile AtoNs. The draft Recommendation and Guideline were reviewed and comments provided.

A liaison note for ARM was prepared as set out in 11.6.2 above.

11.11   Other

Input paper ENAV20-4.7 was reviewed.

This paper was reviewed and specific references to VDES were noted and comments were provided. An annex on VDES was not added at this time. It was noted that this was a significant document that will require a more detailed review. The document was sent to WG2 for consolidation and review at ENAV21.

12.   WORKING GROUP 4 - E-NAV SERVICES (WG4)

12.1   Review and update NAVGUIDE Chapter5, section 5.1 and 5.2 (Task 1.1.4)

A revised text on Maritime Service Portfolios as part of the IALA NAVGUIDE was delivered to WG2 for inclusion in the updating of Chapter 4 of the NAVGUIDE.

12.2   Provide guidance on the implementation of MSPs and associated infrastructure to IALA membership (Task 4.6.2)

WG 1 & 4 had a joint meeting regarding MSP8 on ship reporting. The background for the meeting was the co-operative work on ship reporting by Prof Yung Ho Yu (Republic of Korea) and presented by Fred Pot.

The Committee noted that elements regarding ship reporting were also included in the ongoing IHO work on product specifications in S-122. Further research including types of vessels is needed. Some of the text in the document will be used in the Guideline for MSPs, with a focus on the provision of reporting formalities from shore to ship.

The Committee considered how to take this work forward, for example, how to deliver this work to IMO FAL, who is the competent authority and what is the role of IALA.

The Committee concluded that further work should be carried out and reported to ENAV21. Based on the input to ENAV21, IALA should evaluate its position regarding development of ship reporting.

Action

The IALA Secretariat is requested to forward papers ENAV20-12.3 and ENAV20-12.4 and Annexes to ENAV21.

12.3   Develop Guideline / Recommendation on Maritime Service Portfolios (Task 5.1.1)

The Committee noted the relevant parts of the IHO paper No. S3/3103, and amended the draft Guideline accordingly.

The Committee agreed to the proposal from the IHO to use the overall definition on Maritime Service Portfolios as defined by IMO NAV 57.

The Committee noted the view of the IHO regarding the description of some of the MSPs that was quoted from the SIP and the Committee invited IHO to prepare new text.

IALA considers the contribution and cooperation with IHO on this Guideline as an important step towards a harmonised understanding of MSPs. This will contribute to the process that has to be done by the IMO-IHO Harmonization Group on Data Modelling.

In this respect the Guideline ENAV20-14.1.14, has to be developed intersessionally with contribution from several organisations and members as well as the VTS Committee and the ARM Committee. Several members of the working group volunteered to work on the Guideline via correspondence with a goal to complete a draft Guideline at ENAV21.

A liaison note to IHO was prepared as part of this work. Other liaison notes were prepared for the VTS Committee, the ARM Committee, IMPA, IMRF, WMO and the new IMO/IHO Harmonization Group on Data Modelling.

It must be emphasised that completion of the Guideline is dependent on prioritisation and delivery from other Committees and Organisations.

Action

The Secretariat to forward the draft Guideline on MSPs in paper ENAV20-14.2.5 to ENAV21.

The WG 4 Chair to forward a further version of the draft Guidelines after intersessional work to ENAV21.

The Secretariat to forward the Liaison note ENAV20-14.1.12 to the VTS Committee.

The Secretariat to forward the Liaison note ENAV20-14.1.13 to the ARM Committee.

The Secretariat is to forward the Liaison note ENAV20-14.1.14 to IHO to the Council for approval and if approved, forward to IHO with the draft Guideline on MSPs in paper ENAV20-14.2.5.

The Secretariat is to forward the Liaison note ENAV20-14.1.15 to IMPA to the Council for approval and if approved forward to IMPA.

The Secretariat is to forward the Liaison note ENAV20-14.1.16 to IMRF to the Council for approval and if approved forward to IMRF.

The Secretariat is to forward the Liaison note ENAV20-14.1.17 to WMO to the Council for approval and if approved forward to WMO.

The Secretariat is to forward the Liaison note ENAV20-14.1.18 to the IMO/IHO HGDM to the Council for approval and if approved forward to the HGDM after the HGDM is approved by the IMO MSC.

The Chair of the ENAV Committee is requested to clarify the definition and scope of AtoN with the PAP.

12.4   MSP1 VTS Information Service (IS) / Operational User Requirements (Task 5.1.2)

Input on MSP1 was requested from the VTS Committee via Liaison note ENAV20-14.1.12.

12.5   MSP2 Navigational Assistance Service (NAS) / Operational User Requirements (Task 5.1.3)

Input on MSP2 was requested from the VTS Committee via Liaison note ENAV20-14.1.12.

12.6   MSP3 Traffic Organisation Service (TOS) / Operational User Requirements (Task 5.1.4)

Input on MSP3 was requested from the VTS Committee via Liaison note ENAV20-14.1.12.

12.7   MSP16 Search and Rescue (SAR) Service / Operational User Requirements (Task 5.1.17)

12.8   Task Registry

The task registry was updated.

The development of attributes for the following MSPs have been deleted from the Task Registry:

- MSP6 Pilotage service,
- MSP7 Tug service,
- MSP9 Telemedical Maritime Assistance service,
- MSP11 Nautical Chart Service
- MSP12 Nautical publications Service,
- MSP13 Ice navigation Service,
- MSP14 Meteorological information Service,
- MSP15 Real-time hydrographic and environmental services,
- MSP16 Search and Rescue Services.

The attributes and product specifications for these services will be developed by others.

13.   WORKING GROUP 5 – PNT (WG5)

13.1   Review and update NAVGUIDE Chapter 4, section 4.8 – 4.9 (Task 1.1.5)

The Committee reviewed Chapter 4, section 8 of the NAVGUIDE (ENAV20-10.2.1) and provided updated text to WG2 for consolidation into the ENAV updating of the NAVGUIDE.

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

Input papers ENAV20-13.1, ENAV20-13.2, ENAV20-13.12 and ENAV20-13.12.1 were considered.

The draft Recommendation on eLoran Service Provision was amended taking into account comments received since ENAV19. No comments were received on the draft Guideline on eLoran Service Provision. Both documents are now considered complete and ready to be sent to Council for approval.

Actions

IALA Secretariat is requested to send ENAV20-14.1.4 (Draft Recommendation on eLoran Service Provision) and ENAV20-14.1.3 (Draft Guideline on eLoran Service Provision) to Council for approval.

The ENAV Chair and Vice-Chair are requested to consider NAVDAT antenna efficiency ref ITU report on NAVDAT ITU-R M.2201 for the Committee work plan 2018 to 2022.

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

Input papers ENAV20-13.19 & ENAV20-13.20 were considered.

The Committee was invited to provide comments on progress made in the development of eLoran product specifications (S-245 eLoran ASF Data, S-246 eLoran Station Almanac and S-247 Differential eLoran Reference Station Almanac). Comments received will help shape the ongoing development of these product specifications.

A presentation verifying the S-240 DGNSS almanac and identifying new uses was received and discussed.

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

No work was carried out under this item during this meeting. The draft Recommendation (input paper ENAV20-13.3, renamed as ENAV20-14.2.9) will be reviewed at ENAV21.

Actions

IALA Secretariat is requested to forward ENAV20-14.2.9 – Draft Recommendation on PNT relevant services to ENAV21.

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

Input papers ENAV20-13.5 and ENAV20-13.17 were considered under this Task. The aims and objectives of the draft Guideline were reviewed and work on the content of the Guideline was progressed. The latest version of the draft is captured as working paper ENAV20-14.2.8.

Given the time remaining in this work period an intersessional meeting is requested prior to ENAV21.

Actions

IALA Secretariat is requested to forward paper ENAV12-14.2.8, Draft Guideline on systems and services for high accuracy positioning and ranging, to ENAV21.

WG5 participants are requested to participate in an intersessional meeting re high accuracy systems prior to ENAV21.

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

Input documents ENAV20-13.14, ENAV20-13.15, ENAV20-13.16, ENAV20-13.18 and ENAV20-13.18.1 were considered.

The scope of the draft SBAS Guideline was reviewed and further work was undertaken during the week. The latest version of the draft is captured as working paper ENAV20-14.2.7.

Given the remaining time available in this work period an intersessional is requested to be completed prior to ENAV21.

Actions

IALA Secretariat is requested to include the working paper ENAV20-14.2.7, Draft SBAS Guideline, as an input paper to ENAV20.

WG5 members are requested to participate in an intersessional meeting re SBAS prior to ENAV21.

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

Task withdrawn at ENAV18.

13.8 Update R-121 (Task 3.1.9)

Task complete.

13.9 DGNSS Radiobeacon coverage prediction (Task 3.1.10)

DGNSS Radiobeacon coverage prediction task was completed at ENAV19. However, it was felt that an additional Guideline on antenna efficiency calculations was required.

This was the topic of input paper ENAV20-13.10 which was used to produce a draft Guideline on DGNSS antenna efficiency calculations. The draft Guideline is complete and ready to be sent to Council for approval.

Actions

IALA Secretariat is requested to send ENAV20-14.1.19, Draft Guideline on DGNSS antenna efficiency calculations, to Council for approval.

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

The Committee reviewed input paper ENAV20-13.11 on the use of Racons in harbours and other busy areas.

The paper reported on a study conducted to quantify anecdotal reports that racons perform poorly in busy harbours. The effects can range from limited response to no response, which can change over time due to vessel movement. It concluded that radar frequencies seem to be concentrated around a small number of frequencies and that many radars use the same frequency. This can lead to some radar pulses not being responded to as part of the racon side lobe suppression.

Future developments with new technology radar could result in more precise frequency management and manufacturers should be encouraged to utilise the available frequency band and to ensure radars do not cluster on discrete frequencies as this could limit racon performance.

The Committee thought the situation was sufficiently important to share the findings of this study with the other IALA Committees and CIRM, therefore two Liaison Notes have been prepared.

Actions

IALA Secretariat is requested to send ENAV20-14.1.20, Liaison note on the use of Radar in busy harbors, to ARM, ENG and VTS committees.

IALA Secretariat is requested to send ENAV20-14.1.21, Liaison note on the use of Radar in busy harbors, and ENAV20-13.11 as an attachment, to Council for approval to go to CIRM.

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

No work carried out under this item.

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

The Committee considered input papers related to the draft IALA Standards (ENAV20-4.4.1 through to ENAV20-4.4.8), draft Position on the Development of AtoN Services (ENAV20-4.7) and the transposition of existing Recommendations and Guidelines into the new IALA template (ENAV20-13.7 through to ENAV20-13.9).

The Committee provided comments on the draft Standards, focusing on the Radionavigation Services Standard, to the Committee Chair and Vice Chair. Papers in zip file ENAV20-14.1.33 refers.

The Committee reviewed the draft Position on the Development of AtoN Services paper and made suggested amendments which included the addition of a new annex on the current status of R-Mode. All WGs were invited to review and provide further comments on the draft, which was then passed to the Secretariat. The WG felt that more time to further review the content of this important document would be appreciated to ensure the content is complete.

Working papers relating to the reformatting of existing documents will be reviewed between sessions and revised versions will be submitted to ENAV21.

13.13 Liaison with IEC, ITU, CIRM, RTCM and other bodies on PNT matters (Task 3.1.15)

A verbal update on the recent RTCM SC104 meeting was provided to the Committee, noting the work of SBAS Working Group and the developing maritime receiver performance guidelines.

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

Input papers ENAV20-13.6 & ENAV20-4.7 were considered.

The Committee was invited to move the content of the input paper from a draft Guideline, to an annex to the IALA draft Position on the Development of AtoN Services (ENAV20-4.7).

The Committee considered the preliminary results of current R-Mode studies and a decision on the Interreg Baltic Sea project which is due in May 17.

From discussion it was noted that most, if not all, competent authorities have an interest in AIS R-Mode from the point of considering services in the future.

While a Guideline on R-Mode (MF and AIS) remains a requirement, it was noted that the technology is not sufficiently mature to enable the development of such guidance within this current work period.

Considering the impact to the AIS VDL future R-Mode services may be more appropriate for transmission using VDES.

14. REVIEW OF OUTPUT AND WORKING PAPERS

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

The Committee produced 37 output papers and 9 working papers.

15. ANY OTHER BUSINESS

There was no additional business.

16. REVIEW OF SESSION REPORT

The report of the meeting (ENAV20-16.1) was considered. Committee Participants were requested to advise any corrections / amendments within one week, following which the final version will be issued via the IALA web site.

Action item

Committee participants are requested to advise any corrections / amendments to the draft ENAV20 report, paper ENAV20-16.1 post plenary, by 24 March 2017.

The Secretariat is requested to forward the report of ENAV20 (ENAV20-16.1) to the Council, to note.

17. DATE AND VENUE OF NEXT MEETING

The 21st session of the ENAV Committee (ENAV21) is expected to meet from 18 to 22 September 2017 in IALA Headquarters.

18. CLOSING OF THE MEETING

The Deputy Secretary-General thanked all participants for the good work over the week. He advised that IALA will be in contact with the IHO, CIRM and the HGDM to identify a common approach in relation to MSPs for maximum efficiency. He commented on the good progress with development and review of Recommendations and Guidelines. The PAP will finalise the plan for Recommendations which impacts on the introduction of Standards. Following approval of Standards in 2018, new Recommendations will come into force but will not be listed in the Standards until the next revision of the Standards. The Position paper is a living management level document which will be regularly updated. He noted that VTS43 and the IALA workshop on sustainable light and power for the next generation in Koblenz were scheduled for the following week. He concluded by thanking all participants for the superb output and high volume of work. The thanked the Chair and Vice-Chair for their leadership.

The Chairman expressed his thanks to all Committee Participants for what the Committee had achieved during the week and for planned intersessional work. He also thanked the Working Group Chairs, the Vice Chair and the IALA Secretariat for their support. He invited all participants to attend ENAV21 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 ANNEX F.

7   Action Items

    A list of action items is at ANNEX G.

20th Meeting of the IALA ENAV Committee

The 20th meeting of the IALA ENAV Committee will be held from 13 – 17 March, 2017 at IALA, St Germain en Laye, France.

The opening plenary will commence at 1300 hours on Monday 13 March and the closing plenary will end at approximately 1300 on Friday 17 March.

Committee Chair, Vice-Chair and Working Group Chairs are requested to meet at 0900 hours on Monday 13 March.

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.   Approval of the agenda

    1.2.   Welcome address from the Secretary-General/Deputy Secretary-General

    1.3.   Administration & safety briefing

    1.4.   Introductions and apologies

    1.5.   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 63rd Session of the IALA Council 2016-12

    4.2.   Report of the 32nd Session of the IALA Policy Advisory Panel

    4.3.   Report on IALA work in EfficienSea2

    4.4.   Draft IALA Standards

    4.5.   Report IALA Workshop on AIS AtoN developments, Seoul, 19-20 Oct 2016

    4.6.   Report e-Navigation Underway International 2017 final

    4.7.   Position on the Development of AtoN Services

    4.8.   Report on VDES conference 2017 – Cape Town

    4.9.   MTCAS- An e-Navigation Assistance System for Cooperative Collision Avoidance at Sea

    4.10.   Report of ITU-R WP5B meeting 07 to18 Nov 2016

5.   Reports from Rapporteurs

    5.1.   IALA Bulletin liaison   Hideki Noguchi

    5.2.   IALA Dictionary   Seamus Doyle

5.3.	GMDSS	Jean-Charles Cornillou
5.4.	Testbeds	Mahesh Alimchandani
5.5.	IHO report	Edward Hosken

6. Presentations (15 minutes duration)

6.1.	WWA report	Omar Frits Eriksson
6.2.	Report on IALA Work in EfficienSea 2	Nick Ward
6.3.	Maritime Cloud update	Thomas Christensen
6.4.	IALA/IHO Interaction on the IMO Maritime Service Portfolio Program	LeeAnne Gordon
6.5.	Status Report on S-200	Nick Ward
6.6.	SBAS/EGNOS positioning services for Off-Shore Oil & Gas Operations	Jose-Manuel Alvarez
6.7.	ESSP-Generic Cost Analysis for the transmission of SBAS corrections over IALA beacon and AIS v1.2(for WG5)	Jose-Manuel Alvarez
6.8.	Invitation to 19th IALA Conference in Korea 2018	Prof Jiwon Seo

7. Review of Work Programme and Working Group expectations

8. Establish Working Groups

9. WG 1 - Harmonisation

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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ANNEX D   LIST OF INPUT PAPERS
All papers are posted on the IALA Committee website

Meeting	Agenda Item	Title / Author (if required)	Source	Presented by / WG
ENAV20-	1.1	Draft Agenda ENAV20 201703121	IALA Secretariat	Hideki Noguchi
ENAV20-	1.2	MDC Presentation ENAV20	IALA Secretariat	Michael Card
ENAV20-	1.5	Programme for the week 20170306	IALA Secretariat	Hideki Noguchi
ENAV20-	2.1	Action items from ENAV19 20160926	IALA Secretariat	Seamus Doyle
ENAV20-	3.1	Input paper Committee template January 2016	IALA Secretariat	Hideki Noguchi
ENAV20-	4.1	Report of the 63rd session of the IALA Council	IALA Secretariat	Seamus Doyle
ENAV20-	4.2	(PAP32-17.1) Report PAP32	IALA Secretariat	Seamus Doyle
ENAV20-	4.4.1	Draft IALA Standards	IALA Secretariat	Michael Card
ENAV20-	4.4.2	(C63-8.4.1.1) IALA Standard 1010 AtoN Planning & Service Requirements draft	IALA Secretariat	WG1, WG2, WG3, WG4, WG5
ENAV20-	4.4.3	(C63-8.4.1.2) IALA Standard 1020 AtoN Design and Delivery draft	IALA Secretariat	WG1, WG2, WG3, WG4, WG5
ENAV20-	4.4.4	(C63-8.4.1.3) IALA Standard 1030 Radionavigation Services draft	IALA Secretariat	WG1, WG2, WG3, WG4, WG5
ENAV20-	4.4.5	(C63-8.4.1.4) IALA Standard 1040 Vessel Traffic Services draft	IALA Secretariat	WG1, WG2, WG3, WG4, WG5
ENAV20-	4.4.6	(C63-8.4.1.5) IALA Standard 1050 Training and Certification draft	IALA Secretariat	WG1, WG2, WG3, WG4, WG5
ENAV20-	4.4.7	(C63-8.4.1.6) IALA Standard 1060 Digital Communication Technologies draft.	IALA Secretariat	WG1, WG2, WG3, WG4, WG5
ENAV20-	4.4.8	(C63-8.4.1.7) IALA Standard 1070 Information Services draft	IALA Secretariat	WG1, WG2, WG3, WG4, WG5
ENAV20-	4.5	Report IALA Workshop on AIS AtoN developments, Seoul, 19-20 Oct 2016	IALA Workshop on AIS AtoN developments, Seoul	Hideki Noguchi
ENAV20-	4.6	Report e-Navigation Underway International 2017 final	ENUW International 2017	Omar Frits Eriksson
ENAV20-	4.7	(PAP33-12.1) Position on the Development of AtoN Services	IALA Secretariat	WG1, WG2, WG3, WG4, WG5
ENAV20-	4.8	Report on VDES conference 2017 – Cape Town	Ernie Batty	Ernie Batty
ENAV20-	4.9	MTCAS- An e-Navigation Assistance System for Cooperative Collision Avoidance at Sea	Axel Hahn	Axel Hahn
ENAV20-	5.3	Report from rapporteur on GMDSS.	Jean-Charles Cornillou	Jean-Charles Cornillou
ENAV20-	5.4	Testbeds rapporteur report	Mahesh Alimchandani	Mahesh Alimchandani
ENAV20-	4.10	Report of ITU-R WP5B meeting 07 to18 Nov	Stefan Bober	Stefan Bober

Meeting	Agenda Item	Title / Author (if required)	Source	Presented by / WG
		2016		
ENAV20-	6.1	WWA Committee brief	Gerardine Delanoye	Omar Frits Eriksson
ENAV20-	6.2	Report on IALA Work in EfficienSea 2	Nick Ward	Nick Ward
ENAV20-	6.2.1	Presentation Report on IALA Work in EfficienSea2	Nick Ward	Nick Ward
ENAV20-	6.2.2	Workshop proposal on the Maritime Cloud draft 20170128	Nick Ward	Nick Ward / WG3
ENAV20-	6.2.3	D1.23 Introduction to VDES - presentation -vs5 for E2 pdf v2	Jillian Carson-Jackson	Nick Ward / WG3
ENAV20-	6.3	Presentation ENAV20 Maritime Cloud	Thomas Christensen	Thomas Christensen
ENAV20-	6.4	Presentation IALA/IHO Interaction on the IMO Maritime Service Portfolio Program	Michael Kushla	LeeAnne Gordon
ENAV20-	6.5	S-200 status report	Nick Ward	Nick Ward / WG1
ENAV20-	6.5.1	Presentation S-200 status report	Nick Ward	Nick Ward
ENAV20-	6.6	Presentation ESSP-Identifying a potential niche for EGNOS Augmentation v1.2	Virginia Antón	José Manuel Álvarez
ENAV20-	6.7	ESSP-Generic Cost Analysis for the transmission of SBAS corrections over IALA beacon and AIS v1.2	Virginia Antón	José Manuel Álvarez
ENAV20-	6.8	Invitation to 19th IALA Conference in Korea 2018	Jiwon Seo	Jiwon Seo
ENAV20-	7.1	ENAV Work Plan revised at ENAV19 20170225	ENAV19	Hideki Noguchi
ENAV20-	7.2	ENAV work programme task register revised at ENAV19	ENAV19	Hideki Noguchi
ENAV20-	7.3	New Draft Recommendations for early completion	IALA Secretariat	Michael Card
ENAV20-	9.1	Guidelines on Cyber Security on-board Ships version 1-1 Feb2016	BIMCO website	WG1
ENAV20-	9.2	(ENAV19-9.6) WG1 Draft Risk Assessment Plan	ENAV19	WG1
ENAV20-	9.3	(ENAV19-14.1.7) draft IALA Guideline 1087	ENAV19	WG1
ENAV20-	9.4	(ENAV19-14.1.8) draft IALA Guideline 1106	ENAV19	WG1
ENAV20-	9.5	(ENAV19-14.2.10) Draft Risk Assessment Plan	ENAV19	WG1
ENAV20-	9.8	(ARM5-12.1.9) Liaison to ENAV on amends to S-201 products-1	ARM5	WG1
ENAV20-	9.8.1	(ARM5-12.1.10) S-201 Product Specification - draft 0 0 4 arm5 day2	ARM5	WG1
ENAV20-	9.8.2	(ARM5-12.1.11) S-201 Product Specification - draft 0.0.1 Annex A DCEG_rev5 arm5 gt day2	ARM5	WG1
ENAV20-	9.8.3	(ARM5-12.1.12) S-201 Product Specification - draft 0.0.1 Annex D.1 Feature Catalogue mb edits	ARM5	WG1
ENAV20-	9.9	Addition of Maritime Resource Names (MRN) into S-101 and S-201	Jens Schröder-Fürstenberg	WG1
ENAV20-	9.9.1	S-125 draft data model - S100 - Data model extension ANNEX_B	Jens Schröder-Fürstenberg	WG1
ENAV20-	9.10	Coordination of the data model between S-101 and S-201 and addition of data needed for	Jens Schröder-Fürstenberg	WG1

Meeting	Agenda Item	Title / Author (if required)	Source	Presented by / WG
		the List of Lights into S-201		
ENAV20-	9.10.1	Data model extension ANNEX_A - Light information UML model for the LoL	Jens Schröder-Fürstenberg	WG1
ENAV20-	9.11	ENAV20-9.11 IALA Recommendation eNAV-147 Ed.1 Product Specification Development and Management May2015 reformatted rev4	M Hadley	WG1
ENAV20-	9.12	Revision 0.0.6 of S-201 overview	Nick Ward	WG1
ENAV20-	9.12.1	S-201 overview	Nick Ward	WG1
ENAV20-	9.13	Progress report on S-412, A Weather Overlay Product Specification for ECDIS	Mahesh Alimchandani	WG1
ENAV20-	9.14	A common architecture framework for the maritime domain	Axel Hahn	WG1
ENAV20-	9.15	Comment re draft Guidelines 1087 and 1106 v1	Michael Rambaut	WG1
ENAV20-	9.16	(C62-11.4.3.1) draft Guideline 1087 24-02-17	Michael Rambaut	WG1
ENAV20-	9.17	(C62-11.4.4.1) Draft Guideline 1106-0 24-02-17	Michael Rambaut	WG1
ENAV20-	9.18	Ref IHO Circular Letter 15/2017 - Call for approval of a new ed of IHO S-100	Eiving Mong/ Nick Ward	WG1
ENAV20-	9.18.1	IHO Circular Letter 15-2017, 10 Feb 2017. Call for approval of a new ed of IHO S-100	Eiving Mong/ Nick Ward	WG1
ENAV20-	9.19	Input paper - Maritime Cloud conceptual model	Thomas Christensen / MCDF	WG1
ENAV20-	9.20	NW-NM Maritime Cloud service specification example	Thomas Christensen / MCDF	WG1
ENAV20-	9.21	MC Maritime Messaging Service	Thomas Christensen / MCDF	WG1
ENAV20-	9.22	Maritime Resource Name MRN	Thomas Christensen / MCDF	WG1
ENAV20-	9.23	Draft Guideline on e-Navigation Technical Services Documentation	Thomas Christensen / MCDF	WG1
ENAV20-	9.24	Service Design Description Template	Thomas Christensen / MCDF	WG1
ENAV20-	9.25	Service Instance Description Template	Thomas Christensen / MCDF	WG1
ENAV20-	9.26	Service Specification Template	Thomas Christensen / MCDF	WG1
ENAV20-	9.27	WG1 Work Program	Axel Hahn	WG1
ENAV20-	9.28	Information paper - S-201 development cooperation and research plan	Sewoong Oh	WG1

Meeting	Agenda Item	Title / Author (if required)	Source	Presented by / WG
ENAV20-	10.1	(ENG4-11.1.12) ENG4 Liaison Note to ENAV re NAVGUIDE	ENAV19	WG2
ENAV20-	10.2.1	Navguide CHAPTER 4 on e-navigation - revised draft feb 2017	ENAV19 / Mahesh Alimchandani	WG2
ENAV20-	10.3	(ARM5-12.1.8) Liaison to all committees - reminder on the NAVGUIDE	ARM5	WG2
ENAV20-	10.3.1	(ARM5-12.2.9) WG2-NAVGUIDE 2015 tracking table	ARM5	WG2
ENAV20-	10.4	IALA Recommendation eNAV-142 Ed.1 Maritime Data Sharing IALA-NET December 2009 reformatted rev2 sd	M Hadley	WG2
ENAV20-	10.5	FTA Testbed Intelligent Fairway Finland	Jorma Timonen	WG2
ENAV20-	10.6	IALA testbed usage statistics	IALA Secretariat	WG2
ENAV20-	11.1	Liaison note from ITU WP 5B re Future Revision of Recommendation ITU-R M.1371-5	ITU-R WP 5B	WG3
ENAV20-	11.2	(ARM5-12.1.5) Liaison to ENAV-VTS-ENG on Mobile AtoN	ARM5	WG3
ENAV20-	11.2.1	(ARM5-12.2.7) WG1 IALA Recommendation MAtoN ARM 5_v2	ARM5	WG3
ENAV20-	11.2.2	(ARM5-12.2.8) WG1 IALA Guideline MAtoN ARM 5 v2	ARM5	WG3
ENAV20-	11.3	VDES & AtoN-mind map vs2	IALA Workshop on AIS AtoN developments, Seoul	WG3
ENAV20-	11.4	AIS AtoN Workshop - Seoul - Oct 2016 - WG2-rev1	IALA Workshop on AIS AtoN developments, Seoul	WG3
ENAV20-	11.5	(ENAV19-14.1.20) VDES FAQ	ENAV19	WG3
ENAV20-	11.6	(ENG5-11.1.17) Liaison Note to ENAV Committee on VHF Range in different climatic conditions.	ENG5	WG3
ENAV20-	11.8	ENAV20-11.8 E2 VDES Information Plan ref D 1.22	Nick Ward	WG3
ENAV20-	11.8.1	ENAV20-11.8.1 D1.22-EfficienSea2 Information Plan to promote VDES -Feb2017	Nick Ward	WG3
ENAV20-	11.9	WG15 MTG23 O 007 Liaison to IALA on clarifications to ITU-R-M1371-5 2017-01-27	Stefan Bober / IEC TC80	WG3
ENAV20-	11.10	WG15 MTG19 O 011 Liaison to IALA on certain clarifications to ITU-R-M1371-5 2016-01-15	Stefan Bober / IEC TC80	WG3
ENAV20-	11.11	Input E2 Strategy for Future Digital Communications ref D 1.10	Nick Ward	WG3
ENAV20-	11.11.1	E2 D1.10 -Strategy for Future Digital Communications	Nick Ward	WG3
ENAV20-	11.12	Input E2 Report on Future Digital Communications - Strategy supporting document ref D 1.11	Nick Ward	WG3
ENAV20-	11.12.1	E2 Report on Future Digital Communications - Strategy supporting document	Nick Ward	WG3

Meeting	Agenda Item	Title / Author (if required)	Source	Presented by / WG
ENAV20-	11.13	Report on Communications Intersessional meeting Cape Town South Africa	Stefan Bober	WG3
ENAV20-	11.14	(PAP33-10.2.3) Draft Recommendation on the VHF Data Exchange System	IALA Secretariat	WG3
ENAV20-	11.15	20170217 WD WG3_intersessional REC ITU-R M.2092-1	Stefan Bober	WG3
ENAV20-	11.16	PDNR ITU-R M VDES-SAT IALA20170216	Stefan Bober	WG3
ENAV20-	11.16.1	ENAV20-11.16.1 PDNR ITU-R M VDES-SAT LL 20170306	Peggy Browning	WG3
ENAV20-	11.17	ENAV WG Intersessional Cape Town - MRN way forward 01	Stefan Bober	WG3
ENAV20-	11.18	Input paper re Draft EfficienSea2 Deliverables	Nick Ward	WG3
ENAV20-	11.18.1	Report on Review of IALA documentation related to VHF Data Exchange System	Nick Ward / Jillian Carson-Jackson	WG3
ENAV20-	11.18.2	Report on Review of IALA documentation related to VDES – proposed changes and text	Nick Ward / Jillian Carson-Jackson	WG3
ENAV20-	11.18.4	Draft IEC Specification for VDES	Nick Ward / Ernie Batty	WG3
ENAV20-	11.18.5	D1.15 VDES sample text for IALA Documents-Navguide-vs1.0	Nick Ward / Jillian Carson-Jackson	WG3
ENAV20-	11.19	EfficienSea 2 Progress Report on VDES Channel Modelling	Nick Ward/ Arunas Macikunas	WG3
ENAV20-	11.20	R15-WP5B-C-0195!N32!MSW-E liaison note to IALA "Maritime Radiocommunication Systems & Requirements" An overview of systems in the maritime mobile	Stefan Bober	WG3
ENAV20-	11.21	R15-WP5B-C-0195!N33!MSW-E liaison note to IALA Identification and Categorization of autonomous maritime radio devices	Stefan Bober	WG3
ENAV20-	11.22	LAP 17 Action item 12 Legal introduction to ENAV paper AIS data court cases	LAP17	WG3
ENAV20-	12.1	(ENAV19-14.2.9) Draft IALA Guidelines on MSPs v6	ENAV19	WG4
ENAV20-	12.2	NIPWG3 IALA-IHO Interaction on the IMO Maritime Service Portfolio Program	Michael Kushla	WG4
ENAV20-	12.3	Input paper on the Draft IALA Guideline for MSP8 Vessel Shore Reporting v1.2	Fred Pot	WG4 & WG1
ENAV20-	12.4	Draft IALA Guideline on MSP8 Vessel Shore Reporting v3.1	Fred Pot	WG4 & WG1
ENAV20-	12.4.1	Annex 1 VSRS Draft S-2XX Product Specifications - Ship Report Template V1.1	Fred Pot	WG4 & WG1
ENAV20-	12.4.2	Annex 1 VSRS Draft S-2XX Product Specifications - CMDS Sources for Ship Report Types	Fred Pot	WG4 & WG1
ENAV20-	12.4.3	Annex 1 VSRS Draft S-2XX Product Specifications - CMDS v1.1	Fred Pot	WG4 & WG1
ENAV20-	12.4.4	Annex 1 VSRS Draft S-2XX Product Specifications - Ship Reporting Data Model Attribute Specification v2.0.1Complete	Fred Pot	WG4 & WG1

Meeting	Agenda Item	Title / Author (if required)	Source	Presented by / WG
ENAV20-	12.5	IHO Comment on MSP Guideline + Annex	Gilles Bessero	WG4
ENAV20-	13.1	(ENAV19-14.2.5) Draft IALA Guideline Ed.1 e-Loran service provision Guideline reformatted2-V1.1	ENAV19	WG5
ENAV20-	13.2	(ENAV19-14.2.6) Draft IALA Recommendation Ed.2 on eLoran Service Provision	ENAV19	WG5
ENAV20-	13.3	(ENAV19-14.2.8) Draft IALA Recommendation Ed.1 on PNT relevant services and systems	ENAV19	WG5
ENAV20-	13.4	(ENAV19-14.2.3) Draft Guideline High accuracy systems V6.0	ENAV19	WG5
ENAV20-	13.5	(ENAV19-14.2.4) Draft IALA Guideline Ed.1 Use of SBAS	ENAV19	WG5
ENAV20-	13.6	(ENAV19-14.1.10) Draft Guideline on R-Mode - Aims, technical approach and current status (revised)	ENAV19	WG5
ENAV20-	13.7	IALA Recommendation eNAV-146 Strategy for Maintaining RACON Service Capability December 2011 reformatted rev3	M Hadley	WG5
ENAV20-	13.8	Proposal for reformatting Recommendation R-101	M Hadley	WG5
ENAV20-	13.8.1	IALA Recommendation R-101 Ed.2 Marine Radar Beacons December 2004 reformatted draft rev2	M Hadley	WG5
ENAV20-	13.8.2	Draft IALA Guideline 11xx (to accompany Recommendation R-101) Marine Radar Beacons (RACON)	M Hadley	WG5
ENAV20-	13.9	Proposal for reformatting R-129	M Hadley	WG5
ENAV20-	13.9.1	IALA Recommendation R-129 Ed.2 GNSS Vulnerability and Mitigation Measures December 2012 reformatted rev2	M Hadley	WG5
ENAV20-	13.9.2	Draft IALA Guideline 11xx Ed.1 (to accompany R-129) reformatted 16Nov16 rev1	M Hadley	WG5
ENAV20-	13.10	Draft IALA Guideline Calculation of DGNSS antenna efficiency	Peter Douglas	WG5
ENAV20-	13.11	On Racons in Busy Harbours 24 February 2017	Paul Mueller	WG5
ENAV20-	13.12	Input cover note for suggested amendments to IALA Recommendation on eLoran (ENAV19-14.2.5)	Alan Grant	WG5
ENAV20-	13.12.1	Draft IALA Recommendation Ed.2 on eLoran Service Provision - Update for ENAV20 following received comments	Alan Grant	WG5
ENAV20-	13.13	WG5 plan for ENAV20	Alan Grant	WG5
ENAV20-	13.14	Draft IALA Guideline Ed.1 Use of SBAS	José Manuel Álvarez	WG5
ENAV20-	13.15	EGNOS for offshore operations v0.4	José Manuel Álvarez	WG5
ENAV20-	13.16	Generic CBA - SBAS corrections over IALA beacons and AIS	José Manuel Álvarez	WG5
ENAV20-	13.17	Draft Guideline on High accuracy systems V7.0	Stefan Gewies	WG5
ENAV20-	13.18	Info paper - Introductory note to FEGNOS	Kaisu Heikonen	WG5

Meeting	Agenda Item	Title / Author (if required)	Source	Presented by / WG
		project report		
ENAV20-	13.18.1	Finland's EGNOS Monitoring and Performance Evaluation (FEGNOS) - Project Report	Kaisu Heikonen	WG5
ENAV20-	13.19	Information paper (Application case of S-240 DGNSS Station Almanac)	Younghoon Han	WG5
ENAV20-	13.20	Progress on Development of eLoran S-20X Product Specification	Younghoon Han	WG5

LIST OF OUTPUT AND WORKING PAPERS

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

Number		OUTPUT PAPERS Title / Author (if required)	Source	Action
ENAV20-	14.1.1	Liaison note to the ARM Committee - Progress report on the review and update of Chapter 4 of NAVGUIDE	WG2	To ARM6
ENAV20-	14.1.1.1	NAVGUIDE tracking table updated at ENAV 20	WG2	To ARM6
ENAV20-	14.1.2	Plan for promoting IALA testbeds info	WG2	To Secretariat
ENAV20-	14.1.3	Draft Guideline on eLoran service provision	WG5	To Council
ENAV20-	14.1.4	Draft Recommendation on eLoran service provision	WG5	To Council
ENAV20-	14.1.5	Draft Guide 1087 on procedures for the management of the IALA domain under the IHO GI registry	WG1	To Council
ENAV20-	14.1.6	Draft Guide 1106 on Producing an IALA S-200 series product specification	WG1	To Council
ENAV20-	14.1.7	Draft Liaison note to ARM Committee on amendments to S-201	WG1	To ARM6
ENAV20-	14.1.8	Liaison Note to IHO NIPWG on use of MRN in S-201	WG1	To Council To NIPWG To HGDM
ENAV20-	14.1.9	IALA Recommendation eNAV-147 Ed.2 Product Specification Development and Management	WG1	To Council
ENAV20-	14.1.10	Liaison note to NIPWG re List of Lights	WG1	To Council To NIPWG
ENAV20-	14.1.11	Draft Guideline on specification e-navigation technical services	WG1	To Council To other organisations
ENAV20-	14.1.12	ENAV20-14.1.12 liaison note from ENAV to VTS re MSPs	WG4	To VTS43
ENAV20-	14.1.13	Liaison from ENAV to ARM re MSPs	WG4	To ARM6
ENAV20-	14.1.14	Liaison from IALA to IHO on MSPs.	WG4	To Council To IHO
ENAV20-	14.1.15	Liaison from IALA to IMPA on MSPs	WG4	To Council To IMPA
ENAV20-	14.1.16	Liaison note to IMRF International Maritime Rescue Federation re MSPs	WG4	To Council To IMRF
ENAV20-	14.1.17	Liaison note to WMO re MSPs	WG4	To Council To WMO
ENAV20-	14.1.18	Liaison note to IMO/ IHO correspondence Group on Data Modelling (IMO/IHO CGDM	WG4	To Council To IMO/ IHO CGDM
ENAV20-	14.1.19	Draft Guideline on Antenna Efficiency Calculations	WG5	To Council
ENAV20-	14.1.20	Liaison note on racon use in busy harbours (with ENAV20-13.11)	WG5	To ARM6 To ENG6 To VTS43
ENAV20-	14.1.21	Liaison note on racon use in busy harbours (with ENAV20-13.11)	WG5	To Council To CIRM
ENAV20-	14.1.22	Draft Recommendation on VDES	WG3	To Council
ENAV20-	14.1.23	Liaison note to ARM Committee re provision of mobile AtoN	WG3	To ARM6
ENAV20-	14.1.24	Liaison note to VTS re VTS documentation review	WG3	To VTS43
ENAV20-	14.1.25	Liaison note Comments on EfficienSea2 draft	WG3	To Nick Ward

Number		OUTPUT PAPERS Title / Author (if required)	Source	Action
		deliverables with 5 draft E2 deliverables with track changes.		
ENAV20-	14.1.26	Preliminary draft new report ITU-R M.[VES-Sat]	WG3	To Council (early) To ITU WP 5B (early)
ENAV20-	14.1.27	Liaison note to ENG Committee re VHF performance in harsh environments	WG3	To ENG6
ENAV20-	14.1.28	Liaison note to IEC re draft VDES performance test standard (with ENAV20-14.1.32)	WG3	To Council To IEC via Stefan Bober
ENAV20-	14.1.29	Liaison note to PAP re e-navigation roadmap	WG2	To PAP33
ENAV20-	14.1.30	IALA Recommendation on mobile AtoN	WG3	To Council
ENAV20-	14.1.31	IALA Guideline on the use of mobile AtoN	WG3	To Council
ENAV20-	14.1.32	Draft IEC technical specification for VDES	WG3	To Council To IEC via Stefan Bober
ENAV20-	14.1.33	Comments on draft IALA Standards from PAP33	WG2	To Secretariat
ENAV20-	14.1.34	Liaison note re Draft Guideline on specification of e-navigation Technical Services	WG1	To Council To other organisations
ENAV20-	14.1.35	Note To IALA Secretariat Re Management Of Regional ASM Web Catalogue And ENAV WG3 Files	WG3	To Secretariat
ENAV20-	16.1	Report 20th Session IALA ENAV Committee - ENAV20	IALA Sec	To Council

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

Number		WORKING PAPERS Title / Author (if required)	Source	Action
ENAV20-	14.2.1	Workplan	ENAV VC	To ENAV21
ENAV20-	14.2.2	task register	ENAV VC	To ENAV21
ENAV20-	14.2.3	Navguide update Chapter 4	WG2	To ENAV21
ENAV20-	14.2.5	Draft Guideline on MSPs	WG4	To intersessional (Michael Rambaut)
ENAV20-	14.2.6	ITU-R M.2092-0 technical characteristics for a VHF data exchange system in the VHF maritime mobile band	WG3	To ENAV21
ENAV20-	14.2.7	Draft Guideline on SBAS	WG5	To ENAV21
ENAV20-	14.2.8	Draft Guideline on high accuracy systems	WG5	To ENAV21
ENAV20-	14.2.9	Draft Recommendation on relilient PNT	WG5	To ENAV21
ENAV20-	14.2.11	IALA e-navigation risk assessment	WG1	To ENAV21

Task	Start Session	Planned End Session	Revised End Session	Progress Indicator			Status Overview
				Green	Yellow	Red	
WG1 – Operations							
1.1.1. Review and update NAVGUIDE Chapter 4, section 4.5.2 -4.5.5	18		21	☐	☒	☐	Delayed to Session 21
1.2.1. Develop Product Specification on AtoN Information	15	17	21	☐	☒	☐	Delayed to Session 21
1.3.1. Revise Guideline 1106	15	16	17	☒	☐	☐	Task Completed
1.3.2. S-100 Service Orientation	16	17	21	☐	☒	☐	Delayed to Session 21
4.3.3. e-Navigation Risk Assessment	16	… …		☒	☐	☐	On going
5.1.18. CSSA draft documentation	15	21		☒	☐	☐	Task completed
5.1.19 e-Navigation infrastructure and governance	15	20	21	☒	☐	☐	Task Completed
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 and include guidance on the planning of testbeds.	17	21		☒	☐	☐	Completed ENAV18
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		☒	☐	☐	Completed ENAV17
4.3.4 Develop and maintain e-Navigation Roadmap	17	20		☒	☐	☐	Completed at ENAV19

Task	Start	Planned	Revised	Progress Indicator			Status
4.4.1 ~~Develop and progress an online discussion forum on testbeds.~~	~~15~~	~~16~~		☒	☐	☐	Task removed ENAV16
4.4.2 ~~Maintain fora to discuss testbed related issues.~~	~~15~~	~~16~~		☒	☐	☐	Task removed ENAV19
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 ENAV15
4.5.4 Provide guidance and support to the decision-making process related to the implementation of e-Navigation.	15	On going		☒	☐	☐	Commenced ENAV15
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 ENAV16
4.5.7 Inform IALA's Legal Advisory Panel (LAP) of any apparent legal implications of emerging implementation issues.	16	On going		☒	☐	☐	On-going
4.6.1 Evaluate developments and identify potential impacts on authorities.	16	On going		☒	☐	☐	On-going
4.6.2 Provide guidance on the implementation of MSPs and associated infrastructure to the IALA membership.	19	20		☒			On-going
WG3 Telecommunications							
1.4.1 Develop VDES Message Structures	18	21		☒	☐	☐	Commenced ENAV18
1.4.2 Assist in the Development of Message Structures for e-Nav	18	21		☒	☐	☐	Commence ENAV18 provided WG1 is ready
2.1.1 Update the Marine Radio Communication Plan	20	21		☒	☐	☐	Commence ENAV20
2.1.2 Develop Recommendation on VDES	15	21		☒	☐	☐	On-going

	Task	Start	Planned	Revised	Progress Indicator			Status
2.1.3	Organise a Workshop on VHF Data Exchange System	17	17		☒	☐	☐	Complete
2.2.1	Update IALA Recommendations and Guidelines for AIS and VDES	15	21		☒	☐	☐	On-going
2.3.1	Manage Application Specific Message (ASM) catalogue	20	21		☒	☐	☐	Complete until ENAV20
2.4.2.	Develop a timeline for submission of VDES documents to ITU with a view to seeking delegated authority to submit from Council	21	21		☒	☐	☐	
3.2.1	Liaise with ARM regarding Virtual AtoN	17	17		☒	☐	☐	Complete
WG4 e-Nav Services								
1.1.4.	Review and update NAVGUIDE Chapter4, section 4.5.1	18			☒	☐	☐	Complete
5.1.1	Develop Guideline/ Recommendation on Maritime Service Portfolios	18	21		☐	☒	☐	Commenced ENAV18 and will be progressed at ENAV21
5.1.2	MSP1 VTS Information Service (IS) / Operational User Needs	16	16	20	☐	☐	☒	Action required by VTS Ctte
5.1.3	MSP2 Navigational Assistance Service (NAS) / Operational User Needs	16	17	20	☐	☐	☒	Action required by VTS Ctte
5.1.4	MSP3 Traffic Organisation Service (TOS) / Operational User Needs	16	17	20	☐	☐	☒	Action required by VTS Ctte
5.1.5	MSP4 Local Port Service (LPS) / Operational User Needs	16	17	20	☐	☒	☐	Commenced ENAV16. Will be progressed during ENAV20
5.1.6	MSP5 Maritime Safety Information (MSI) Service / Operational User Needs	15	17	21	☐	☒	☐	First draft Complete. Will be Progressed during ENAV21
5.1.7	MSP6 Pilotage Service / Operational User Needs	16	17	20	☐	☐	☒	Commenced ENAV16. The MSP is outside of scope for IALA, and is expected to be developed by IMPA as competent body

	Task	Start	Planned	Revised	Progress Indicator			Status
5.1.8	MSP7 Tugs Service / Operational User Needs	16	17	20	☐	☐	☒	Commenced ENAV16. The MSP is outside of scope for IALA, and is expected to be developed by IMPA as competent body
5.1.9	MSP8 Vessel Shore Reporting / Operational User Needs	16	17	21	☐	☒	☐	First draft Complete. Will be progressed during ENAV21
5.1.10	MSP9 Telemedical Maritime Assistance Service / Operational User Needs	16	17	20	☐	☐	☒	Commenced ENAV16. Could be progressed during ENAV21 but need expertise in this area
5.1.11	MSP10 Maritime Assistance Service (MAS) / Operational User Needs	16	17	21	☐	☒	☐	Commenced ENAV16. Will be progressed during ENAV21
5.1.12	MSP11 Nautical Chart Service / Operational User Needs	16	16	20	☐	☐	☒	First draft Complete and could be progressed during ENAV21. To be developed by IHO as it is not IALA domain
5.1.13	MSP12 Nautical Publications Service / Operational User Needs	16	16	20	☐	☐	☒	First draft Complete and could be progressed during ENAV21. To be developed by IHO as it is not IALA domain
5.1.14	MSP13 Ice Navigation Service / Operational User Needs	16	17	20	☐	☐	☒	First draft Complete and could be progressed during ENAV21. To be developed by IHO as it is not IALA domain

Task		Start	Planned	Revised	Progress Indicator			Status
5.1.15	MSP14 Meteorological Information Service / Operational User Needs	16	17	20	☐	☐	☒	Commenced ENAV16. could be progressed during ENAV21 This is not an IALA domain and should be pass to JCOM as part of WMO
5.1.16	MSP15 Real-Time Hydrographic and Environmental Information Services / Operational User Needs	16	16	20	☐	☐	☒	First draft complete and could be progressed during ENAV21. IHO and other will develop this MSP
5.1.17	MSP16 Search and Rescue (SAR) Service / Operational User Needs	16	17	20	☐	☐	☒	Commence ENAV16 could be progressed during ENAV21. IALA will not work on the MSP but will refer to the responsible competent body.
5.1.20	Organise a Workshop on Shore Based Maritime Services	16	19		☒	☐	☐	Complete
WG5 PNT								
1.1.5.	Review and update NAVGUIDE Chapter 4, section 4.8 – 4.9	18			☒	☐	☐	
3.1.1.	eLoran Guideline	15	18	20	☒	☐	☐	Complete
3.1.2.	PNT Product Specification	15	17	21	☐	☒	☐	Work delayed.
3.1.3.	PNT services & Systems	16	18	21	☐	☒	☐	Draft Rec. prepared awaiting completion of associated Guidelines
3.1.4.	High accuracy systems	18	20	21	☐	☒	☐	Delayed to ENAV21
3.1.5.	Use of SBAS	17	19	21	☐	☒	☐	Extend to ENAV21

Task	Start	Planned	Revised	Progress Indicator			Status
3.1.7. ~~PNT data processing~~	~~18~~	~~20~~		☐	☐	☐	Withdrawn ENAV18
3.1.8. ~~PNT performance message~~	~~18~~	~~20~~		☐	☐	☐	Withdrawn
3.1.9. R-121 update	15	16		☒	☐	☐	Complete
3.1.10. DGNSS Coverage prediction	17	18	20	☒	☐	☐	Complete
3.1.11. Updates on PNT developments	15	21		☒	☐	☐	
3.1.12. ~~RTCM/ITU liaison re M823~~	~~18~~	~~18~~		☐	☐	☐	Withdrawn
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	21	☐	☒	☐	Delayed start by 1 session

ANNEX G **ACTION ITEMS**

Action Items for Secretariat

Action Items for Members

IALA