



REPORT OF THE 19TH SESSION OF THE IALA E-NAVIGATION (ENAV) COMMITTEE

19 to 23 September 2016

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**Report of the 19th Session of the IALA
e-Navigation (ENAV) Committee
19 to 23 September, 2016
Executive Summary**

The 19th meeting of the ENAV Committee (ENAV19) was held in IALA Headquarters from 19 to 23 September 2016.

122 people from 26 countries and 7 sister organisations, attended the 19th session of the ENAV Committee, of which 22 participants were new and 2 were observers.

The Committee considered 122 input papers and produced 21 output papers and 13 working papers.

The Committee was informed of developments in eLoran driven passing of the GNSS Backup Bill by the US House of Representatives.

The Committee developed a new Recommendation on DGNSS Service Provision Upgrade and Future Use, highlighting the need to retain the 300 kHz infrastructure for future use.

The Committee prepared an Overview Guideline providing a high level description of the VHF Data Exchange System (VDES) which will also be used to provide VDES information on the IALA website. A list of frequently asked questions (FAQ) was also developed for uploading to the IALA website.

The Committee noted the IHO proposal to activate the IMO / IHO Harmonisation Group on Data Modelling and the need for IALA participation and contribution.

The Committee noted that IALA is welcome to join the CIRM User Feedback Forum as a sponsoring organisation.

The Committee identified intellectual property rights issues in connection with AIS R-Mode and AIS Class B carrier sense which will be pursued by the IALA Secretariat in accordance with the draft Guideline on IALA Patent Policy.

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 systems	☐	☒	☐	All tasks progressing per current plan except Tasks 1.1.1, 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 Tasks 3.1.1, 3.1.2 and 3.1.5
4 TD#4 - e-Navigation test beds	☒	☐	☐	All tasks progressing per current plan
5 TD#5 - Maritime Service Portfolios	☐	☐	☒	Development of an MSP Guideline with MSP Service attribute annexes is delayed. Task 5.1.10 is delayed due to lack of expertise in the Committee.

Table of Contents

1.	Opening	6
2.	Review of Action Items from ENAV18.....	7
3.	Review of input papers	7
4.	Reports from other bodies	8
5.	Reports from rapporteurs	10
6.	Presentations	10
7.	Review of work programme and Working Group expectations	11
8.	Establish Working Groups	11
9.	Working Group 1 – Harmonisation (WG1).....	12
10.	Working Group 2 – Implementation (WG2).....	15
11.	Working Groups 3 - Telecommunications (WG3)	18
12.	Working group 4 - e-Nav Services (WG4).....	22
13.	Working Group 5 – PNT (WG5)	23
14.	Review of output and working papers	26
15.	Any Other Business	26
16.	Review of session report	26
17.	Date and venue of next meeting.....	27
18.	Closing of the meeting	27
19.	List of Annexes to the report.....	27
ANNEX A	Agenda	28
ANNEX B	List of Participants	30
ANNEX C	Working Group Participants.....	55
ANNEX D	List of Input Papers.....	60
ANNEX E	List of Output and Working Papers	66
ANNEX F	Work programme - Review of Progress with Deliverables at eNAV 17	68
ANNEX G	Action Items	73

Report of the 19th Session of the IALA

e-Navigation (ENAV) Committee

GENERAL

The 19th meeting of the ENAV Committee was held from 19 to 23 September 2016 at IALA Headquarters, with Omar Frits Eriksson as Chairman and Hideki Noguchi as Vice-Chairman. The Secretary for the meeting was Seamus Doyle.

1. OPENING

1.1 Approval of the agenda

The agenda (paper ENAV19-1.2) was adopted.

1.2 Welcome address

Michael Card, IALA Deputy Secretary-General, welcomed all participants to the 19th session of the ENAV Committee. He noted that Omar Frits Eriksson has taken up the role of Dean of the IALA WWA and was chairing the ENAV19 meeting under special approval of the IALA Council. National Members have been requested to submit nominations for chair of the ENAV Committee for consideration at Council 63.

He announced the recently launched new IALA website with file share facility to aid Committee work. The IALA HQ building will be redecorated in the new colour scheme and meeting rooms will be adjusted to better suit Committee work.

The IALA Basic Documents were approved by IALA Council 62 and are available on the IALA website for downloading. He noted that IALA is developing seven Standards which will be presented for approval at General Assembly in 2018. The detailed content of the Standards is being developed by the PAP and LAP for consideration in October 2017. The content of Recommendations and Guidelines will need revision under the new IALA document structure.

Malaysia was thanked for the excellent facilities and arrangements for the VTS Symposium in Kuala Lumpur.

Qatar was thanked for their hosting of the workshop on AtoN Services in Extremely Hot Climates and it was noted that one new National Member, one new Associate Member and two new Industrial Members had joined IALA during the workshop.

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

Omar Frits Eriksson 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.



The meeting was attended by 122 people from 26 countries and 7 sister organisations, of which 22 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 ENAV19-1.4 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 ENAV18

Paper ENAV19-2.1 refers. It was noted that the action items from ENAV18 for the IALA Secretariat were complete with the following provisos:

- Output papers ENAV18-14.1.16, IALA Guideline 1087 on Procedures for the Management of the IALA Domains under the IHO GI Registry and ENAV18-14.1.17, Guideline 1106 on Producing an IALA S-200 Series Product Specification were returned to the Committee for further work (actions 9, 10).
- The project for IALA to set up a testbed discussion forum is on-going following the recent updating of the IALA website (action 24).
- Output paper ENAV18-14.1.2, Draft IALA Guideline 1107 on Planning and Reporting of e-Navigation Testbeds was approved by Council 62, subject to the Committee adding guidance on what should be done after the testbeds are completed (action 26).

In discussion it was agreed that a disclaimer will be added to each testbed section top and bottom to indicate that IALA is not responsible for the content of the testbed information. It was also noted that the content of EfficienSea2 work did not necessarily represent the official IALA view.

- Liaison note ENAV18-14.1.5 was not necessary as Gilles Bessero was keynote speaker at the workshop on shore-based maritime services in Lisbon (action 36).
- Establishment of an IALA website facility through which neighbouring DGNSS service providers can make contact regarding their planned maintenance periods is on-going following the recent updating of the IALA website (actions 40, 41).

Actions for Committee Participants were referred to the Working Groups.

Action

The Secretariat is requested to add a disclaimer to each testbed section top and bottom on the IALA website to indicate that IALA is not responsible for the content of the testbed information.

The Secretariat is requested to progress establishment of an IALA website facility through which neighbouring DGNSS service providers can make contact regarding their planned maintenance periods.

The Secretariat is requested to set up a testbed discussion forum in accordance with ENAV18 action 24.

3. REVIEW OF INPUT PAPERS

3.1 Input papers

It was noted that all input papers were available on the IALA website. The input papers for each Working Group (WG) were identifiable from the document number.

Action

The Secretariat was requested to reinstate the website feature on the Committee papers page whereby clicking on top of the date column sorts all papers into upload date order, with the most recently updated at the top.

Referring to paper ENAV19-4.1.1, IALA Proposed Standards, it was noted that mapping of IALA documents to the “white boxes” under Standards will be carried out by the Committee Chairs and Vice Chairs in the PAP. The assignment of the MBS was noted.

It was agreed that the Committee would await LAP consideration of paper ENAV19-11.18, Use of AIS Data in Court Cases Rev1.

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.

Action

The Secretariat was requested to upload paper ENAV19-4.4, DNV GL Strategic Research & Innovation Position Paper 04-2015 - Ship Connectivity tcm8-56026, to the IALA Wiki.

4. REPORTS FROM OTHER BODIES

4.1 IALA Council

The Committee noted the report of the 62nd Session of the IALA Council in Lisbon, Portugal , from 21 to 24 June 2016, presented by Seamus Doyle. Paper ENAV19-4.1 refers. Issues relevant to ENAV Committee work were considered.

4.2 PAP31

The Committee noted the report of the 31st Session of the IALA Policy Advisory Panel (PAP31), from 6 to 7 April 2016 in IALA Headquarters, presented by Michael Card. Papers ENAV19-4.2, ENAV19-4.2.1 and ENAV19-4.2.2 refer. Issues relevant to ENAV Committee work were considered.

4.3 Report from Report of ITU-R SG5 and WP5B May 2016

The Committee noted the report of ITU-R SG5 on 8 May 2016 and ITU-R WP 5B from 9 to 20 May 2016, presented by Stefan Bober. Paper ENAV19-4.3 refers. Thanks were expressed to the WSV and Stefan Bober for attending these meetings on behalf of IALA. It was noted that autonomous shipping is an important topic for IALA.

4.4 DNV GL Strategic Research & Innovation Position Paper 04-2015

The Committee noted the DNV GL Strategic Research & Innovation Position Paper 04-2015 on Ship Connectivity presented by Omar Frits Eriksson. Paper ENAV19-4.4 refers.

4.5 Report on the 96th session of the IMO Maritime Safety Committee

The Committee noted the report on the 96th session of the IMO Maritime Safety Committee (MSC) which was held at IMO HQ from 10 to 20 May 2016. Paper ENAV19-4.5 refers.

4.6 Launch of EfficienSea2 web site

The Committee noted the launch of the EfficienSea2 website <http://efficiensea2.org/>. Paper ENAV19-4.6 refers.

4.7 Report of the IALA Workshop on Shore-based Maritime Services from Theory to Practical Use

The Committee noted the report of the IALA Workshop on Shore-based Maritime Services from Theory to Practical Use held in Lisbon, Portugal, from 24 to 26 May 2016 presented by Jon Leon Ervik. Paper ENAV19-4.7 refers. Thanks were expressed to the Portuguese Lighthouse Authority and Jorge Telles for hosting the workshop and the Norwegian Coastal Administration.

4.8 Report from S100 WG1 meeting Tokyo March 14-18 2016

The Committee noted the report from the S100 WG1 meeting held in Tokyo from 14 to 18 March 2016. Paper ENAV19-4.8 refers.

4.9 Report on IALA work in EfficienSea2

The Committee noted the report of IALA work in the EfficienSea2 project, presented by Nick Ward. Paper ENAV19-4.9 refers.

4.10 Report of 12th Joint IMO/ITU EG meeting

The Committee noted the report of the 12th meeting of the Joint IMO/ITU Expert Group on Maritime Radiocommunication Matters held at IMO Headquarters in London from 11 to 15 July 2016, presented by Stefan Bober. Papers ENAV19-4.10 and ENAV19-4.10.1 refer.

4.11 Report of First Joint VTS-ENAV WG meeting

The Committee noted the report of the first meeting of the Joint VTS-ENAV WG held on 5 August 2016 at the Impiana KLCC Hotel, Kuala Lumpur, Malaysia, presented by Omar Frits Eriksson. Papers ENAV19-4.11 and ENAV19-4.10.2, VTS ENAV Joint WG Intro 20160805, refer. It was noted that the VTS and ENAV Committees could merge at some time in the future or at least work closer together and deliver as one Committee. More participation from attendees would be beneficial.

4.12 Draft IALA Patent Policy Guideline

The Committee noted the IALA policy relating to patentable subject matter, patent applications and patents covering, in varying degrees, the subject matters of IALA Documents (Standards, Recommendations, Guidelines, Manuals) presented by Omar Frits Eriksson. Paper ENAV19-4.12 refers. It was agreed that the Committee would await the outcome of LAP discussions but would immediately adopt the principles on the draft Guideline.

The following question was asked of all attendees and two patent issues 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?

It was noted that True Heading has an interest in R-Mode (Alan Grant).

It was noted that a UK company is trying to collect license fees for AIS Class B carrier sense service (Ross Norsworthy).

It was noted that eLoran is a patent free government system, although there may be a patent on the encryption technology (Charles Schue).

It was noted that there is a patents section in the IALA Wiki.

Action

The Secretariat is requested to follow up regarding possible patent issues in relation to R-Mode and AIS Class B carrier sense and report back to ENAV20.

5. REPORTS FROM RAPPORTEURS

5.1 IALA Bulletin

Hideki Noguchi noted that he will be providing a report on ENAV19 for the IALA Bulletin. The next Bulletin is in due for publications in September 2016. He observed that more Bulletin articles regarding e-navigation were required and requested Committee Participants to submit articles for the Bulletin. An article on patents was suggested.

Action

Hideki Noguchi is requested to provide Bulletin articles on ENAV19 and patents.

5.2 IALA Dictionary

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

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

5.3 GMDSS

Jean-Charles Cornillou submitted an update on GMDSS, papers ENAV19-5.3.1 and ENAV19-5.3.2 refer.

5.4 Report from VTS42

Jon Leon Ervik presented a report on e-navigation work during VTS42, paper ENAV19-5.4 refers.

5.5 Testbeds

Mahesh Alimchandani presented a report on testbeds, paper ENAV19-5.5 refers.

Action

The Secretariat is requested to arrange for depopulation of testbed information on e-navigation.net.

5.6 IHO

Edward Hosken presented a report on IHO activities. Paper ENAV19-5.6 refers.

6. PRESENTATIONS

Eight presentations were made 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 ENAV19-6.1 refers.

6.2 CIRM Users Feedback Forum

Richard Doherty described the CIRM User Feedback Forum created to put system designers/manufacturers directly in touch with users and human factors experts willing to participate in development of AtoN equipment and to provide feedback. Paper ENAV19-6.2 refers. It was noted that IALA is welcome to join the forum as a sponsoring organisation.

6.3 IALA EfficienSea2

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). Paper ENAV19-6.3 refers. It was noted that the VDES needs to be kept in the public domain and patent free.

6.4 Technical Services and the Maritime Cloud

Thomas Christensen presented a report on the maritime cloud, focussing on the status of MRN (Maritime Resource Names), the introduction of documents for the Harmonisation Working Group and developing a Maritime Digital Infrastructure. Paper ENAV19-6.4 refers. It was noted that governance was a major issue.

6.5 H2020 Galileo call for proposals

Manuel Lopez-Martinez reported on the EU Horizon 2020 Galileo 2017 Call, inviting participation in EGNSS applications through Action IA (activities aimed at producing plans and arrangements or designs for new, altered or improved products, processes or services) and Action CSA (consisting of accompanying measures such as standardisation, dissemination, awareness-raising and communication, networking, policy dialogues and studies). The fund is €33m with a single stage process. Paper ENAV19-6.5 refers. Participants were invited to attend the H2020 space information day in Prague on 4 to 5 October 2016.

6.6 Port call message standard

Mikael Hägg introduced the STM Port Call Message Standard for an optimised port call system in which, when the vessel reaches an agreed location at a specific time, all necessary facilities and services are ready to receive the vessel ensuring an optimal turn around in the port. Paper ENAV19-6.6 refers. The presentation was referred to WG1 and WG4.

6.7 e-Navigation Underway International 2017

Thomas Christensen presented an invitation to e-Navigation Underway International 2017 with the theme e-Navigation: a Showcase of Progress and Trends, from 31 January 2017 to 2 February 2017.

6.8 China HEAD Aerospace satellite & AIS services

Jinhui Zhao presented a report on the services of HEAD Aerospace using small satellites constellations to serve civilians daily life, providing AIS and SAR service and VDES capability. Paper ENAV19-6.8 refers.

6.9 eLoran

Charles Schue reported on developments in eLoran with a question - are we at a tipping point? Noting that the US Congress has always supported eLoran as the best complement and backup to GPS (GNSS), but has waited for the Administration to take action, he recalled the vulnerabilities of GPS and GNSS. He described global initiatives and opportunities to establish eLoran as a complementary backup for GNSS. He noted that timing is the most critical service requiring backup, although it was stated from the floor that positioning is very important for IALA members. In discussion, the cost benefit of eLoran was queried and it was stated that the cost of provision of eLoran is a fraction of the cost of GNSS service provision.

7. REVIEW OF WORK PROGRAMME AND WORKING GROUP EXPECTATIONS

The Committee work plan and Committee work plan task register were updated, papers ENAV19-14.2.1, ENAV19-14.2.2 refer.

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

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

Working Group		Working Group Chair	Working Group Vice Chair
WG 4	ENAV Services	Jon Leon Ervik	Thomas Porathe
WG5	PNT	Alan Grant	Michael Hoppe

Axel Hahn and Jin Park were welcomed as the new Chair and Vice Chair of WG1. Edward Hosken and Peter Hooijmans were thanked for their excellent work as Chair and Vice Chair of WG1. Anders Brøjde was thanked for his excellent work as Vice Chair of WG2 and Wayne Quinn was welcomed as the new Vice Chair of WG2.

9. WORKING GROUP 1 – HARMONISATION (WG1)

9.1 Review/Agreement S201 (Task 1.2.1)

The Committee progressed work on S-201 and responded to liaison notes from the ARM Committee.

The Committee reviewed comments received intersessionally on S-201 and agreed most of the proposed changes, which will be incorporated in version 0.0.4 to be posted on the IALA website after the meeting for further consideration. Some questions arose during the discussion, which can best be answered by members of the ARM Committee. These questions will be formulated as an input paper for consideration at ENAV20.

Liaison notes were drafted in response to the inputs from ARM on S-201 (ENAV19-14.1.13), and Portrayal of Sector Lights (paper ENAV19-14.1.14).

Actions

The IALA Secretariat is requested to forward output papers ENAV19-14.1.13 and ENAV19-14.1.14 to the ARM Committee and the PAP.

9.2 Unique Identifiers for Maritime Resource /Procedure for MRN

The Committee identified the input papers addressing specific aspects of managing identities are appropriate. Nevertheless, broader understanding of maritime resource naming (MRN) is needed.

Actions

Thomas Christensen is requested to coordinate intersessional work on Maritime Resource Naming (MRN) with the aim of the IALA Secretariat submitting an application for an IALA MRN URN Domain Name to the Internet Engineering Task Force.

9.3 Draft Risk Assessment Plan (Task 4.3.3)

The Committee discussed the Risk Assessment Plan and will provide feedback to the authors informally. Due to the lack of time further work on this agenda item was deferred to ENAV20.

Actions

The IALA Secretariat is requested to submit ENAV19-9.6 as an input document to ENAV20.

9.4 Procedures for the Management of the IALA Domain under the IHO GI Registry (Task 1.3.1)

The Committee considered the comments from the Council and the report from the Lisbon Workshop on Shore Based Maritime Services from Theory to Practical Use.

Amendments were made to documents to include the comments made by Council. Some comments needed further explanation.

Regarding comments about the focus of the Guideline and broadening the scope of it, it was considered that IALA is a Domain owner for the IALA Domain and is responsible for the registers in the registry within its domain. The Guideline was intended to give guidance on domain manager responsibilities and explain

the procedures for intended users of the registries within the IALA domain. These procedures were derived from IHO S-99.

As a part of the domains management and procedure the domains manager will interact with IHO and other domain owners. Harmonisation on a broader scale than within the scope of the registry is within the realm of the IHO-IMO HGDM in which IALA would take part.

Regarding the comment about the explanation of terminologies, it was considered that it was the intention of the Committee to keep the focus on the management procedure and keep the explanation of the IHO GI registry to a minimum. The different registers are extensively described in the IHO S-100 standard. For the convenience of the IALA Members Guideline 1106 was developed to give a more detailed description of the registers related to the foreseen development of product specifications.

Regarding the comment related to technical the focus on the technical issues, it was noted that the IALA Guideline 1106 was amended to reflect the intended audiences for the Guideline.

Actions

Committee Members are requested to provide change suggestions regarding ENAV19-14.1.7 and ENAV19-14.1.8 to ENAV20.

The IALA Secretariat is requested to forward papers ENAV19-14.1.7 and ENAV19-14.1.8 to ENAV20.

9.5 IMO-IHO Harmonization Group on Data Modelling (HGDM)

At MSC 96, following consideration of the proposal in document MSC 96/23/7 (Australia et. al) to activate the IMO-IHO Harmonisation Group on Data Modelling (HGDM) to work on the MSC output “Develop guidance on definition and harmonisation of the format and structure of Maritime Service Portfolios (MSPs)”, the MSC agreed to invite the International Hydrographic Organization (IHO) to submit a proposal to the MSC and /or to the NCSR Sub-Committee to activate the HGDM to work on this issue and include the modalities, e.g. venue and frequency, for consideration at a later session of the MSC. In response to the MSC invitation, the IHO has drafted document NCSR 4/2/XX, containing a proposal to activate the HGDM.

In a joint meeting ENAV WG1 and WG4 identified that the HGDM will have high impact on work in IALA. Due to that anticipated impact it is proposed that IALA should have a representative at HGDM. According to the drafted IMO schedule for the HGDM the first meeting of the HGDM will take place in early 2018. Hence, the work of the HGDM will be in parallel with the next IALA work period (2018-22). Therefore, an appropriate organisation for IALA contribution needs to be set up.

The Committee identified potential topics to be proposed for the work program of HGDM and provided paper ENAV19-14.1.9 to be considered in relation to the Secretariat response to the IHO regarding the HGDM.

Actions

The IALA Secretariat is requested to consider how IALA Committees can best interact with the HGDM, taking into account the needs of all IALA Committees as well as time constraints.

The IALA Secretariat is requested to consider ENAV19-14.1.9 in relation to the response to the IHO regarding the HGDM.

9.6 Proposal for data exchange for ship reporting

The Committee received two input documents on ship reporting (ENAV19-9.11 and ENAV19-12.1). In addition Mikael Hägg delivered a presentation on the outcome of STM Validation Project (ENAV19-6.6). This will be progressed intersessionally.

Actions

Fred Pot is requested to coordinate intersessional work on data exchange for ship reporting in relation to MSP development and provide input to ENAV20.

9.7 Maritime Cloud

The submitters of the input papers ENAV19-9.12, ENAV19-9.13 and ENAV19-9.14 introduced the concepts of the Maritime Cloud (MC) to the Committee. The input paper about the Maritime Cloud Conceptual Model is considered to be outdated but provided for reference. The Committee appreciated the work done on the MC. The Committee discussed which parts of the MC should be handled by IALA and considered whether IALA should have a coordinating role which implies addressing other bodies also. The Committee proposed setting up a roadmap to identify which partitions of the MC are appropriate to which international bodies. WG1 sees potential for the service registry to handle technical services in context of the MSP. It was suggested that the document on service registry be reworked and submitted as an input paper to ENAV20.

Actions

The Maritime Cloud Development Forum (MCDF) is requested to provide an updated version of the Maritime Cloud Service Registry to ENAV20.

The MCDF is invited to draw up a roadmap to identify which partitions of the Maritime Cloud are appropriate to which international bodies and provide as input to ENAV20.

9.8 CSSA

The Committee appreciated that the need for further work on the CSSA was expressed during the opening plenary. It was considered that the elaborated concepts of the CSSA need further explanation and context to be understood broadly. Three further activities were decided:

1. To populate the Dictionary with the terms and definitions of recommendation ENAV-140 ed 2 and Guidelines 1113 and 1114.
2. Define a generic maritime architecture framework, which formally describes the requirements and concepts related to the organisational and technical aspects of e-navigation at a meta level, as guidance to harmonise the work of appropriate standardisation bodies.
3. Inject the need of such framework program of HGDM.

Paper ENAV19-14.1.6 was generated with terms and definitions for the IALA Dictionary.

Actions

The Secretariat is requested to forward paper ENAV19-14.1.6 with new entries for terms and definitions to the Dictionary Working Group (DWG) of the IALA Policy Advisory Panel (PAP) for inclusion in the IALA Dictionary.

Axel Hahn is requested to submit a conceptual description of a generic maritime architecture framework to ENAV20.

9.9 Request from IHO S100WG to Explain Streaming S100 Appendix (Task 1.3.2)

The IHO S100WG sought further clarification for the need and role of streamable data and has invited an IALA representative to attend the next IHO S100WG meeting to present and discuss the proposal.

The Committee proposed that this topic be added to the work program of the HGDM.

Actions

The Secretariat is requested to appoint Sewoong Oh from KRISO as an IALA representative to attend the March 2017 meeting of S100WG of IHO in order to explain the need and role of streamable data in context S100.

9.10 Advice on e-navigation infrastructure (Task 5.1.19)

With the existing guidance material (Recommendation ENAV-140 ed2, Guideline 1113) the Committee could not identify any further need for drafting additional material on e-navigation infrastructure.

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

The Committee agreed on the table of contents for the NAVGUIDE provided by WG2 and its structure.

Action

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 input to section 6, Maritime Digital Infrastructure, assigned to WG1 for ENAV20

10. WORKING GROUP 2 – IMPLEMENTATION (WG2)

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

The Committee noted information on the testbed named “eFairway” (ENAV19-10.9). The goal of the eFairway project is to develop services that makes safety information in a fairway available (from sensors on fairway objects) to users, on standard equipment on board the vessel, using AIS communications. The eFairway testbed demonstrated examples of such systems for providing environmental information in the fairway.

Summary information on this completed testbed has been posted to www.iala-aism.org.

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

The Committee noted that as part of its new corporate identity, IALA has recently upgraded and rebadged its website, to include a new a logo and colours.

As a part of this change, the information on e-navigation testbeds previously posted to the portal www.e-navigation.net has been transferred to the new IALA website (www.iala-aism.org/products-projects/e-navigation/test-bedsprojects). Testbed results can be submitted for consideration to be posted by anyone (not just IALA members).

The new website includes a section on e-navigation testbeds results, including an executive summary and description for each testbed, as provided by the testbed manager. Information on testbeds henceforth will be published on the IALA website. This information is freely accessible and can be used to inform on ongoing and prospective testbeds.

Testbed managers can share results (including interim and final reports) of testbeds with IALA, who in turn will share them with its membership and the wider maritime community.

The IALA Secretariat (contact@iala-aism.org) will be the first point of contact for project managers wishing to post information on new testbeds.

The Committee discussed IALA’s actions with respect to published testbed results. It was agreed that the Committee did not have the resources to undertake detailed analysis of testbed results and lessons learned.

Additionally, it was felt that a legal disclaimer should be added to the testbeds page. The Chair of the IALA Legal Advisory Panel (LAP), Jon Price of UK, was contacted to suggest appropriate text. His suggestion is along the following lines:

Precautions have been taken to ensure that the information on this site is accurate. However, as information on testbeds is provided by third parties, IALA gives no warranties or representations of any kind for its accuracy, completeness, authenticity, reliability or suitability and accepts no liability in relation to its use. Any reliance placed on the information is at the user’s own risk.

Information on this website is subject to change without notice.

The IALA Secretariat is requested to finalise the above text with the Chair of LAP (Jon Price) and arrange for it to be posted to the testbeds page of the IALA website.

The Committee was of the view that it would be useful to gauge usage of the new website. Therefore, the IALA Secretariat should investigate what usage statistics (e.g. number of hits to the landing page, the

duration on the pages visited) are available. Additionally, if possible, the Secretariat should generate a set of usage statistics in time for ENAV 20 (March 2017).

Actions

The IALA Secretariat is requested to arrange for the legal disclaimer in para 10.2 of the Committee report to be agreed by the Chair of LAP (Jon Price) and implemented on the testbeds section of the IALA website.

The IALA Secretariat is requested to investigate (with Redwire) what usage statistics (e.g. number of hits to the landing page, the duration on the pages visited) are available. Additionally, if possible, the Secretariat should generate a set of usage statistics in time for ENAV 20 (March 2017).

10.3 Update IALA Guideline 1107 on the reporting of results of e-navigation testbeds (Task 4.1.4)

The Committee acted on the instruction of Council 62 that some text should be added on what should/could be done with the testbeds when completed. This was in relation to a submission from the ENAV 18, seeking approval for a revised IALA Guideline 1107 on Planning and Reporting of e-Navigation Testbeds, Edition 2.0. Suitable text has been added to the Introduction section of the guideline in the form:

Testbed managers are encouraged to share results (including interim and final reports) of testbeds with IALA, who in turn will share them with its membership and the wider maritime community. IALA will post testbed findings, including an executive summary and description as provided by the testbed manager at www.iala-aism.org/products-projects/e-navigation. This information can be used to inform on ongoing and prospective testbeds.

Guideline 1107 can now be posted to the Publications area of the IALA website.

The Committee further discussed the means of informing the IMO about the revised IALA Guideline 1107 and also considered whether there was need to suggest that IMO modify the related MSC.1/Circ.1494.

After consulting with the representative of the IMO Secretariat at ENAV 19, it was agreed that:

- IALA could submit an information paper to the 4th session of the IMO Sub-Committee on Navigation, Communication and Search and Rescue (NCSR), advising of the revision of IALA Guideline 1107. As the guidance on reporting aspects was unchanged in the IALA document, the Committee was of the view that there was no need for IMO to modify the existing MSC.1/Circ.1494.
- In the same information paper, IALA could also advise of the launch of its new website and a section therein that is the repository of all testbed information known to IALA.

Actions

The IALA Secretariat is requested conduct a final editorial check on ENAV19-14.1.1 (Guideline No 1107 Guideline on planning testbeds and reporting of testbed results Edition 2.0) and post the guideline to the IALA website.

The IALA Secretariat is requested to seek IALA Council approval of the draft information paper to IMO NCSR 4 (ENAV19-14.1.2). This approval, to be sought either out of session or at Council 63 as appropriate, should be in sufficient time to meet the IMO submission deadline for such papers – 30 December 2016.

The IALA Secretariat is requested to forward an accompanying introductory note (ENAV19-14.1.3) to the IALA Council, which provides background to the draft information paper to IMO NCSR4 (ENAV19-14.1.2).

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

The Committee considered ENAV19-10.10 (Liaison note from the VTS Committee), ENAV19-10.3 (Liaison note from the ARM Committee) and ENAV19-11.7 (Comments from ENAV WG3).

It noted that the ARM Committee was supportive of the road map. The VTS Committee provided some general comments. A couple of minor changes were made and a question was answered, based on the VTS Committee's paper. In reply, a liaison note to the VTS Committee (ENAV19-14.1.23) was prepared.

The Committee conducted a final review and completed the e-navigation road map (ENAV19-14.1.5). This will be forwarded to the PAP for information and discussion. Liaison note ENAV19-14.1.4 refers.

The finalisation of the road map raises several issues:

1. The status of the map - is it intended to be an internal, high-level management tool, for use by Council, PAP and all committees?
2. The map should capture a pan-IALA view of the subject and the interdependences between the items listed in the road map and the work on e-navigation taking place in the committees.
3. Is the IALA Secretariat best suited to provide the required IALA-wide perspective for the road map?
4. The Committee is of the view that for a more robust management of all IALA activities related to e-navigation, a detailed project management approach should be implemented, showing the interdependences between the items listed in the road map and the work on e-navigation.
5. Information format - Microsoft Project may be a suitable software program to fulfil the project management approach. However, this needs expertise and resources. The current Microsoft Word version for maintaining the high level roadmap is simple and easy to use – but it cannot display the interdependencies.

In the main, it became clear that there was need for an IALA e-Navigation Strategy Paper. The draft liaison note to PAP accompanying the road map (ENAV19-14.1.4) has captured these issues and provided a visualisation of a proposed way forward. The note also requests the PAP to advise the Committee of the way ahead in this regard.

Actions

The IALA Secretariat is requested to forward ENAV19-14.1.23 (Liaison note re e-navigation roadmap) to the VTS Committee.

The IALA Secretariat is requested to forward ENAV19-14.1.4 (Liaison note on the Road Map for e-Navigation) to the PAP.

The IALA Secretariat is requested to forward the ENAV19-14.1.5 (IALA e-Navigation road map) to PAP for information and discussion.

10.5 Review and update of the IALA NAVGUIDE

The Committee considered ENAV19-10.1 (editorial comments from the ENG Committee on the NAVGUIDE). It was felt that this could be dealt with at the drafting stage at ENAV20.

The Committee also considered ENAV19-10.2, ENAV19-10.3, ENAV19-10.4, ENAV19-10.8 and ENAV19-10.11 relating to the review of Chapter 4 of the NAVGUIDE.

The Committee developed a new structure (manifest in a table of contents) for Chapter 4 of the NAVGUIDE. Working paper ENAV19-14.2.7 refers.

Committee Members are requested to commence drafting substantial text for the respective sections and submit mature text to ENAV 20.

Actions

The IALA Secretariat is requested to forward ENAV19-10.1 (editorial comments from the ENG Committee on the NAVGUIDE) to ENAV20.

The IALA Secretariat is requested to forward ENAV19-14.2.7 (Draft table of contents for revised Chapter 4 of the NAVGUIDE) to ENAV20.

Working Group Chairs are requested to comment on the proposed table of contents in ENAV19-14.2.7 (Draft table of contents for revised Chapter 4 of the NAVGUIDE), commence drafting substantial text for their respective sections and submit mature text to ENAV 20.

11. WORKING GROUPS 3 - TELECOMMUNICATIONS (WG3)

11.1 Develop VDES Message Structures (Task 1.4.1)

See Task 1.4.2.

11.2 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. Discussion between ENAV WG3 and WG1 began, with Dr. Lee, from Korea, providing a presentation on their testbed and thoughts on how addressing to and from the cloud will work. It is now understood that the actual over-the-air link cannot support sophisticated addressing schemas such as IP.

11.3 Update the MRCP (Task 2.1.1)

Paper ENAV19-11.20 was reviewed. The MRCP has been updated to reflect the outcome of WRC-15. Work will continue intersessionally to include references to digital communications and more information on e-navigation. It is anticipated that the update of the MRCP will be completed at ENAV20.

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

11.4.1 VDE SAT Report

Input papers ENAV19-11.5, ENAV19-11.21 refer.

Input ENAV19-11.5 is a previous version of ENAV19-11.21 which was further developed intersessionally. ENAV19-11.21 was reviewed and revised to reflect the discussion to include two frequency plans for VDE-SAT. The VDE-SAT shall be capable of receiving on all VDE channels but this shall not impact the overhead on the modulation and channel encoding for VDE-TER.

This document needs further development but will be provided to ITU WP 5B for their information and feedback. The final version of the report will include technical details that are currently described in the working version of ITU-R M.2092 Annex 4 and 5.

Action

The IALA Secretariat is requested to forward ENAV19-14.1.11 (liaison and VDE-SAT Report), 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 28 October 2016.

11.4.2 Recommendation ITU-R M.2092

Input papers ENAV19-11.2, ENAV19-11.19 refer.

Input ENAV19-11.2 is the current Recommendation of ITU-R M.2092-0. Input ENAV19-11.19 is a working draft towards future revision of ITU-R M.2092-0 as developed intersessionally. This document was reviewed and further amended.

It was concluded that the working draft WD ITU-R M.2092 shall 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 VDE and will be submitted to ITU in 2017 and after WRC-19 the group will be ready to publish ITU-R M.2092-2 with the satellite aspects of the VDE fully defined.

The WD ITU-R M.2092 was restructured to move common VDE components collectively to Annex 1. Annex 4 and 5 have been combined into a single annex (Annex 4).

A discussion on the possibility of alignment of Modulation 16 QAM compared 16 APSK because of similar performance took place. Both possibilities will be left open until simulation results are available. All annexes were aligned to use PI/4 QPSK commonly.

A strategy and time line for the development of revision ITU-R M.2092 was developed, and can be found in the document, 20160920_2092_strategy.pdf

The document needs further development during future meetings. The 2092 Working Document and the strategy document can be found on the IALA website under Meetings/FileShare/WGWorkspace/WG3/ENAV19 WORKING OUTPUT Documents.

Action

Members of WG3 are requested to provide input to ENAV20 regarding WD ITU-R M.2092.

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

11.5.1 VDES Documentation

Input papers ENAV19-11.3, ENAV19-11.4, ENAV19-11.11, ENAV19-11.14, ENAV19-11.2 refer.

Input ENAV19-11.3 and ENAV19-11.14 (related to User Requirements for VDES) were reviewed. A draft VDES Overview Guideline was developed based on these inputs. This work was done taking into consideration the input received in ENAV19-11.11, and noting the need to amend the document from a requirements document to an overview document.

Input ENAV19-11.4 (Draft VDES Operational Concept Technical Annex) was reviewed, and relevant background sections for VDES were included in the draft VDES Overview Guideline. ENAV19-14.1.19, VDES Overview Guideline, was reviewed and agreed to be complete for forwarding to the IALA Council.

Paper ENAV19-11.4 (VDES Technical Annex) will remain a Working Document and can be found on the IALA website under Meetings/FileShare/WGWorkspace/WG3/ENAV19 WORKING OUTPUT Documents.

Input ENAV19-11.12, Frequently Asked Questions (FAQ) for VDES, was reviewed. Responses were developed for core questions. The ENAV19-14.1.20, FAQ on VDES, was reviewed and agreed for posting to the e-navigation section of the IALA website.

Action

The IALA Secretariat is requested to forward ENAV19-14.1.19 Guideline on VDES Overview to Council for approval.

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

The IALA Secretariat is requested to consider providing ENAV19-14.1.19 and Council introduction to ENAV19-14.1.19 to the IMO and other organisations, subject to Council approval.

11.5.2 AIS

11.5.2.1 Reformatted documents – Guidelines 1028 and 1029

Input papers ENAV19-11.16, ENAV19-11.17 refer.

The reformatted documents provided by the IALA Secretariat for AIS Guidelines 1028 and 1029 were reviewed. It was noted that Guideline 1028 – AIS Volume 1, Part 1, Operational Issues (2004) was superseded by the publication of Guideline 1082 – AIS Overview. As such, Guideline 1028 should be withdrawn. It was noted that Guideline 1029 – AIS Volume 1, Part 2, Technical Issues (2002) was subsumed into the work on revisions to Recommendation A-124 – AIS Service, and the associated annexes. Hence Guideline 1029 should be withdrawn.

Action

The IALA Secretariat is requested to withdraw Guideline 1028 and 1029 from the IALA website.

11.5.2.2 Input from IEC TC80 on clarifications to 1371-5

Input paper ENAV19-11.13 refers.

This document was reviewed and the first two points accepted, regarding the renaming of the Limited Base Station as AIS ASM Coast Station (AACS), and the exclusion of semaphore mode for SAR AIS units. The third item considers the definition of IFMO using message 26 and will require more detailed analysis before a form of words can be crafted to accurately describe the functioning of the spare / padding bits. This document is a Working Document and can be found on the IALA website under Meetings/FileShare/WGWorkspace/WG3/ENAV19 WORKING OUTPUT Documents.

Action

The IALA Secretariat is requested to submit ENAV19-14.1.22 to Council for approval by correspondence and forward to ITU WP 5B by the due deadline of 28 October 2016.

11.5.2.3 FATDMA Considerations effecting A-124

Input papers ENAV19-11.9 refers.

The USA has discovered an issue with the current FATDMA reservation scheme as described in IALA Recommendation A-124 Annex 14. They have proposed a change to the global slot map to account for semaphore use at base stations. However the issue is being discussed with the experts to determine if the problem is a systematic one, or whether it is due to the manner in which the USA is reserving the slots. This document is a Working Document and can be found on the IALA website under Meetings/FileShare/WGWorkspace/WG3/ENAV19 WORKING OUTPUT Documents.

11.5.2.4 Transmission of SBAS Corrections over AIS

Input paper ENAV19-11.8 refers.

This document was reviewed and will be placed in the working documents for possible future inclusion in the guidelines. WG3 recommends that WG5 prepare a liaison statement to ITU, requesting station ID's for SBAS stations.

Action

Stefan Bober and Alan Grant are requested to draft an input paper for ENAV20, outlining the requirement for a liaison statement to ITU and requesting station ID's for SBAS stations.

11.5.2.5 Draft input to MSC – AIS Performance Standards

ENAV19-11.15, draft input to IMO MSC for a new work item to review and revise the AIS Performance standards, was reviewed. The approach would enable updating the performance standards to reflect the developments in AIS and VDES. It was noted that the USA are planning to submit the paper to MSC 98 (June 2017), and that the USA are seeking co-sponsors. Members of the Committee were requested to note and support the proposal for a new MSC work item, and liaise directly with J Arroyo regarding possible co-sponsorship of the paper to MSC 98.

Action

Committee members are requested to note the proposed new work item for IMO on revision of the AIS Performance Standards and liaise with J Arroyo [cgnav@uscg.mil] regarding possible co-sponsorship.

11.5.3 Other

11.5.3.1 IALA Navguide Chapter 4

New wording for the communications section of the IALA NAVGUIDE will be developed intersessionally and will be available for review at the next WG3 intersessional meeting.

11.5.3.2 ITU Liaison regarding autonomous maritime radio device

The ITU Liaison note regarding autonomous transmitting devices (previously known as novel uses of AIS) was reviewed. It was noted that input ENAV-19-4.10, report of the Joint IMO-ITU Expert Group, also referred to the ITU liaison note. It was agreed that this is an issue which is of interest to IALA, both for ENAV and ARM Committees. A liaison note was drafted which highlights the interest of IALA in the work on this matter and the fact that IALA is currently working on a Guideline on the Marking and use of mobile aids

to navigation. ENAV19-14.1.12 was agreed, noting this will be forwarded to ARM for review and comment before being finalised for forwarding to ITU. Following ARM review of the liaison note, it is recommended that WG3 chair and co-chair will review the document prior to forwarding to Council.

Action

The Chairs of the ENAV and ARM Committees are requested to agree the content of ENAV19-14.1.12 prior to submission to Council.

Following agreement by the Chairs of the ENAV and ARM Committees, the IALA Secretariat is requested to forward liaison ENAV19-14.1.12 (ITU liaison for autonomous maritime radio devices), to Council for urgent approval by correspondence and, in the event of approval, forward it to the ITU for the WP5B meeting by the deadline of 28 October 2016.

11.5.3.3 IALA Documentation Structure for AIS/VDES

ENAV19-11.6 regarding mapping of AIS/VDES documents was reviewed. The presentation on IALA work with EfficienSea2 (E2) was referenced, noting the tasks related to reviewing the AIS/VDES documents and proposed documentation structure for VDES. It was agreed that ENAV19-11.6 be used by the IALA E2 consultants to be included in their tasks, with a request that the outcome of the work on the related E2 tasks be provided to ENAV20.

11.5.3.4 Review IALA Road Map

ENAV19-11.7, IALA Road Map on e-Navigation, was reviewed in consultation with WG2.

11.5.3.5 Interference on new VDES channels

Input paper ENAV19-11.10 refers.

In order to facilitate a safe transition from use of the frequencies for analogue voice transmissions to digital VDES transmissions a transition process for the use of the frequencies involved needs to be managed.

All the frequencies considered for the VDES are in widespread use by coast or special stations around the world. However some authorities have begun preparations for a transition towards the introduction of VDES.

Based on the needs of a particular testbed project intending to conduct testbeds that span a large number of affected administrations, an information paper on how testbed project may address this task at the competent authority for spectrum management in the specific region should be developed and added to the testbed Guideline being prepared by the Committee.

At ENAV20 WG3 will provide an input radio regulation checklist that would inform a potential testbed of issues that should be considered.

11.6 Manage regional ASM web catalogue (Task 2.3.1)

The current ASM Register is monitored on a continuous basis and its current structure is sufficient until the completion of tasks 1.4.1 and 1.4.2.

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

This work was not progressed.

11.8 Liaise with ARM re Virtual AtoN (Task 3.2.1)

This task should be closed as a liaison note was created to the ARM Committee. The ARM Committee has responded that they will not review until their workshop in 2016.

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

12.1 Report IALA Workshop on Shore-based Maritime Services from Theory to Practical Use

The Committee considered the outcome of the Workshop Shore-based Maritime Services from Theory to Practical Use that was held in Lisbon. It is agreed that the MSP Guidelines need to be further developed to encourage broader acceptance. In the operational description of the MSP, reference to the technical aspects should only be made where necessary, recognising that the technical part might change over time. It was emphasised that the Guideline should have an overarching approach to the development of MSPs.

It was noted that there might be organisations which are specific owners of services, while others are users or providers. In that case organisations should refer to the owner of the service to identify if they want to use or deliver the service.

One of the challenges was how to effectively involve all relevant stakeholders for better harmonisation.

Based on the conclusions from the workshop and the development of the Guideline, a Liaison note to IHO was prepared (ENAV 19-14.1.21).

Actions

The Secretariat to forward the liaison note to IHO regarding the result of workshop on Shore-based Maritime Services and status of development of the Guideline on MSP (ENAV 19-14.1.21) to Council for approval.

The Secretariat to forward the liaison note to IHO Secretariat for HSSC regarding the result of the workshop on Shore-based Maritime Services and status of development of the Guideline on MSP (ENAV19-14.1.21) to IHO together with ENAV19-14.2.9.

12.2 STM - Port Call Message Standard

A presentation of Port Call Message Standard was made to the WG outlining its objectives. The structural Port Call Message comprises three main states: on Arrival; on Port Visit; and on Departure. There are ongoing testbeds for PortCDM areas for port call messages. The time stamp concept within the STM port call message standard was well received, however there were concerns regarding the internationalisation of the European STM model. Terminal operators and ports may still use their existing systems but with an interface with the STM model.

12.3 Proposal for Ship Reporting New Attributes

A presentation was made to WG4 on ENAV19-12.1 which addressed new attributes related to MSP8 - ship reporting, using the template developed by WG4 to list attributes. The new attributes were derived from thirty two (32) different ports involved in the survey. A conceptual entity relationship diagram was presented categorising the attributes as well as identifying subcategories.

Attributes and other terminology need to be harmonised with the CMDS. The challenge is lack of harmonisation in the reporting requirements between ports. Cooperation within WG4 is needed to further develop the attributes. The attributes will be coordinated and harmonised with the ongoing testbed on automatic ship reporting headed by Norway and reported to IMO.

Action

Committee members are encouraged to further develop the list of attributes in ENAV 19-12.1 with reference to the CMDS and submit to ENAV-20.

12.4 Joint Meeting between WG1 and WG4

Several issues of co-operation were discussed including

- The draft input paper from IHO (see above);
- Drafting a paper from IALA to NCSR 4 on the establishment of the HGDM;
- S-100 Standard product specification and the possible streaming capability;

- The content of MSP 8 on ship reporting.

12.5 IHO Document

The Committee considered a draft document from the IHO for submission to NCSR 4 about the activation of the Harmonisation Group on Data Modelling. After a joint meeting between WG1 and WG4, WG1 took this for further action. The draft output of WG1 was reviewed by WG4.

Action

The chairs of WG1 and WG4 are requested to forward the results on the discussion on paper ENAV19-12.6 to the Secretariat.

12.6 Draft IALA Guidelines on MSPs

The draft IALA Guideline on MSPs was further developed. The structure of the document and the introduction section were improved and agreed. It was also agreed to change the title of the document to reflect the operational aspect of the Guideline. The new title is MARITIME SERVICE PORTFOLIOS: DIGITISING MARITIME SERVICES.

It was agreed to add the information on service identification proposed in ENAV19-9.14.1. This provided an important link with the technical standards via Maritime Resource Name (MRN).

It was also agreed to include a diagram showing an overview of the transformation process from conventional to digital services.

The WG agreed on the structure of each MSP.

The Guideline will be further developed intersessionally by correspondence.

Action

The Secretariat to forward the draft Guidelines ENAV19-14.2.9 to ENAV 20.

Committee Members are encouraged to submit comments on the draft working paper ENAV19-14.2.9 to ENAV 20.

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 the revised table of contents and provided comment to the ENAV Vice Chair.

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

Input papers ENAV19-13.2, ENAV19-13.3 were considered. The draft Guideline was developed and is now considered as a final draft. Given the size of the document, it will be carried forward to ENAV20 with an action on all Committee members to review the document between the sessions and provide any comments to Prof Jiwon Seo (jiwon.seo@yonsei.ac.kr) by 1st February 2017.

Actions

The IALA Secretariat is requested to forward working documents ENAV19-14.2.5, Draft eLoran recommendation on eLoran Service Provision, and ENAV19-14.2.6, Draft Guideline on eLoran service provision, to ENAV20.

All Committee members are invited to review the draft eLoran Guideline (ENAV19-14.2.6) and draft eLoran Recommendation (ENAV19-14.2.5) before ENAV20. Any comments should be provided to Prof Jiwon Seo (jiwon.seo@yonsei.ac.kr) by 1st February 2017.

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

An update on the development of eLoran Product Specifications was received which informed the Committee that the current work should be finished prior to ENAV20.

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 ENAV19-13.4, renamed as ENAV19 working paper ENAV19-14.2.8) will be reviewed at ENAV20.

Actions

IALA Secretariat is requested to forward ENAV19-14.2.8, Draft Recommendation on PNT relevant services, to ENAV20.

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

Input paper ENAV19-13.5 was considered along with other comments. The aims and objectives of the draft Guideline were considered and the scope discussed by the Committee. Work on the content of the Guideline was progressed. The latest version of the draft is captured as working paper ENAV19-14.2.3.

Committee members will work on the draft guideline between sessions, interested participants are invited to contact Thoralf Noack (thoralf.noack@dlr.de).

Actions

IALA Secretariat is requested to forward “ENAV19-14.2.3 – Draft Guideline on systems and services for high accuracy positioning and ranging”, to ENAV20.

The draft Guideline on systems and Services for High Accuracy Positioning and Ranging will be updated between sessions via email. Committee members interested in contributing to this update are invited to contact Thoralf Noack (thoralf.noack@dlr.de).

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

Input document ENAV19-13.13 and an accompanying presentation were considered by WG5 and WG3, where required. The Committee considered the provision of SBAS data over marine radiobeacon and AIS infrastructure and noted the trade-off analysis that had been completed. The trade-off analysis has been conducted on an example DGPS architecture, recognising that all service provider’s systems are different. As such, the GSA offered to work with service providers to develop bespoke trade off analysis which could then be included as a worked example in the Guideline. Interested service providers were invited to contact Prof. Manuel Lopez Martinez ((Manuel.LOPEZMARTINEZ@gsa.europa.eu)).

Different technical approaches and the trade-off analysis were used to inform the draft Guideline which remains under development.

Committee members will work on the draft Guideline between sessions. Interested participants are invited to contact Manuel Lopez Martinez.

Actions

IALA Secretariat is requested to forward working paper ENAV19-14.2.4 Draft SBAS Guideline as an input paper to ENAV20.

The draft Guideline on SBAS (ENAV19-14.2.4) will be updated intersessionally via email. Committee members interested in contributing to this update are invited to contact Manuel Lopez Martinez (Manuel.LOPEZMARTINEZ@gsa.europa.eu).

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

Task withdrawn at ENAV18.

WG5 Chair discussed with the Deputy Secretary General how IALA could support the ongoing PNT Guideline under development by an IMO Correspondence Group and IALA will consider supporting the submitted Guidelines when required.

Action

Alan Grant is requested to invite IALA support for the PNT Guideline under development by an IMO Correspondence Group.

13.8 Update R-121 (Task 3.1.9)

Task complete.

13.9 DGNSS Radiobeacon coverage prediction (Task 3.1.10)

Input document ENAV19-13.7 was considered at this meeting. The draft Guideline was reviewed and considered complete by the Committee. The Committee considered the need for an additional Guideline to provide information on antenna efficiency measurements and calculations. This work will be considered for the next work period.

Actions

The IALA Secretariat is requested to submit ENAV19-14.1.15 (Draft Guideline on DGNSS coverage prediction) 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 ENAV19-13.12 and received a presentation on eRacon and eRadar trials which took place in Singapore.

The Committee noted that IMO MSC has approved a new work item on the recognition of IRNSS as a component of the WWRNS.

The Committee discussed the situation regarding eLoran transmissions in Europe and the hold on the demolition of hardware infrastructure on sites pending further discussions.

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 the planned IALA standards as outline in input paper ENAV19-4.1.1 and provided comments to the Deputy Secretary General.

The Committee provided comments on editorial and footnote corrections to Guideline 1112 directly to the Secretariat.

The Committee considered a draft Guideline aimed at amalgamating the content of R-135 and R-115 (ENAV input paper ENAV19-13.11.3) however felt the content was too immature to progress at this meeting. This will be reconsidered at a future meeting.

The WG considered proposed new IALA Dictionary definitions and prepared an output to the IALA Dictionary Working Group (ENAV19-14.1.17 Proposal to DWG re new Dictionary terms).

Actions

IALA Secretariat is requested to forward ENAV19-14.1.17 Proposal to DWG re new Dictionary terms to the DWG.

The Secretariat is requested to implement comments on Guideline 1112.

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 formation of an RTCM SBAS Working Group with the aim of 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 ENAV19-13.8, ENAV19-13.9.1, ENAV19-13.9.2 and ENAV19-13.11.2 were considered.

The Committee considered the current situation regarding the development of R-mode and current trials, noting the field tests currently being conducted in Germany and the recent interference study let by the General Lighthouse Authorities of the UK and Ireland.

The Committee developed a draft R-Mode Guideline that captures the current R-mode activities, aims and objectives. This information is provided with the aim of supporting future development by making public the intended development plan, activities and planned further work. The draft R-Mode Guideline draws upon previous input documents and the legacy of the ACCSEAS project. The draft R-Mode Guideline was forwarded to ENAV20 for further development.

The Committee also received an update on the current situation regarding the potential patent clash with R-Mode AIS and a patent issued to True Heading AB. The WG5 Chair has been in contact with True Heading regarding the issue and provided details of the ACCSEAS feasibility study, which outlines the recommended approach for R-Mode via AIS. True Heading considered that there could be a conflict between the approaches and that a license may be required. True Heading are open to further discussions on such a licence. WG5 Chair has passed the issue to the Deputy Secretary General for further discussion and guidance.

The Committee developed a draft Recommendation to advise service providers to retain their 300kHz broadcast infrastructure should they decide to stop providing marine beacon DGNSS services (ENAV19-14.1.16 on DGNSS provision, upgrades and future use).

Actions

The IALA Secretariat (DSG) is requested to progress the issue of a patent in relation to R-Mode AIS issued to True Heading.

The IALA Secretariat is requested to forward paper ENAV19-14.1.10 Draft Guideline on R-mode - aims, technical approach and current status to ENAV20.

Committee members are requested to submit inputs on ENAV19-14.1.10, Draft Guideline on R-mode - aims, technical approach and current status, to Alan Grant for coordination of input to ENAV20.

The IALA Secretariat is requested to forward ENAV19-14.1.16, Draft Recommendation on DGNSS provision, upgrades and future use, to Council for approval.

14. REVIEW OF OUTPUT AND WORKING PAPERS

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

The Committee produced 21 output papers and 13 working papers.

15. ANY OTHER BUSINESS

Through a video presentation, Pieter Paap invited all participants to attend the VTS Symposium in Rotterdam in 2020 and suggested that this could be a joint VTS/ ENAV event.

16. REVIEW OF SESSION REPORT

The report of the meeting (ENAV19-16.1) 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 ENAV18 report, paper ENAV19-16.1 post plenary, by 30 September 2016.

The Secretariat is requested to forward the report of ENAV19 (ENAV19-16.1) to the Council, to note.

17. DATE AND VENUE OF NEXT MEETING

The 20th session of the ENAV Committee (ENAV20) is expected to meet from 13 to 17 March 2017 in IALA Headquarters.

It was noted that the 21st session of the ENAV Committee (ENAV21) has been changed to commence on 18 September 2017.

18. CLOSING OF THE MEETING

Noting that Omar Frits Eriksson was stepping down from his position as Chair of the ENAV Committee, the ENAV Vice Chair, Hideki Noguchi, expressed appreciation on behalf of the Committee for all Mr Eriksson's excellent leadership and guidance over three years. He wished him every success in his new role as Dean of the Academy. Mr Eriksson expressed his great pleasure in working with the Committee.



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 ENAV20 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.

19th Meeting of the IALA ENAV Committee

The 19th meeting of the IALA ENAV Committee will be held from 19 – 23 September, 2016 at IALA, St Germain en Laye, France.

The opening plenary will commence at 1300 hours on Monday 19 September and the closing plenary will end at approximately 1300 on Friday 23 September.

Committee Chair, Vice-Chair and Working Group Chairs are requested to meet at 0900 hours on Monday 19 September.

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 62nd Session of the IALA Council 2016-06
 - 4.2. Report of the 31st Session of the IALA Policy Advisory Panel 2016-04
 - 4.3. Report of ITU-R SG5 and WP5B May 2016
 - 4.4. DNV GL Strategic Research & Innovation Position Paper 04-2015, Ship Connectivity
 - 4.5. Report on the 96th session of the IMO Maritime Safety Committee
 - 4.6. Launch of EfficienSea2 web site
 - 4.7. Report of the IALA Workshop on Shore-based Maritime Services from Theory to Practical Use 24 – 26 May 2016
 - 4.8. Report from S100 WG1 meeting Tokyo March 14-18 2016
 - 4.9. Report on IALA work in EfficienSea2
 - 4.10. Report of 12th Joint IMO/ITU EG meeting
 - 4.11. (VTS-ENAV1-12) Report of First Joint VTS-ENAV WG meeting
 - 4.12. LAP17-10.2 Draft IALA Patent Policy Guideline
5. Reports from Rapporteurs
 - 5.1. IALA Bulletin liaison Hideki Noguchi
 - 5.2. IALA Dictionary Omar Frits Eriksson

- | | | |
|------|---|------------------------|
| 5.3. | GMDSS | Jean-Charles Cornillou |
| 5.4. | Report from VTS42 | Jon Leon Ervik |
| 5.5. | Testbeds | Mahesh Alimchandani |
| 5.6. | IHO report | Edward Hosken |
| 6. | Presentations (15 minutes duration) | |
| 6.1. | WWA report | Omar Frits Eriksson |
| 6.2. | CIRM Users Feedback Forum | Richard Doherty |
| 6.3. | IALA EfficienSea2 | Nick Ward |
| 6.4. | Technical Services and the Maritime Cloud | Thomas Christensen |
| 6.5. | H2020 Galileo call for proposals | Manuel Lopez-Martinez |
| 6.6. | Port call message standard | Mikael Hägg |
| 6.7. | e-Navigation Underway International 2017 | Thomas Christensen |
| 6.8. | HEAD Aerospace satellite & AIS services | Jinhui Zhao |
| 6.9. | eLoran UrsaNav | Charles Schue |
| 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 | |

ANNEX B

LIST OF PARTICIPANTS

Australia

Australian Maritime Safety Authority

Mr Mahesh ALIMCHANDANI
GPO Box 2181
Canberra ACT 2601
Australia
Phone: +61 2 6279 5927
Fax: +61 2 6279 5966
Mobile phone: +61 419 668 264
e-mail: mxa@amsa.gov.au
e-mail (alternative): mail2maheshu@gmail.com

Bahrain (Kingdom)

Middle East Navigation Aids Service (MENAS)

Mr Jaffer ABDULLA
Building 1191, Road 3931
P O Box 66
Manama
Kingdom of Bahrain
Phone: +973 1782 8555
Fax: +973 1772 7765
Mobile phone: +973 3962 8541
e-mail: jaffer@menas.com.bh

Canada

Canadian Coast Guard

Mr Pierre D'ARCY
200 Kent Street
Ottawa, ON
K1A 0E6
Canada
Phone: +1 612 990 6016
Mobile phone: +1 612 220 8069
e-mail: pierre.Darcy@dfo-mpo.gc.ca

Canadian Coast Guard

Mr Stéphane LESSARD
101 Champlain Blvd
Quebec City
G1K 7Y7
Canada
Phone: +1 418 649 6351
Fax: +1 418 649 6691
Mobile phone: +1 418 931 3642
e-mail: stephane.lessard@dfo-mpo.gc.ca

ExactEarth

Ms Peggy BROWNING
60 Struck Court
Cambridge, Ontario, N1R 8L2
Canada
Phone: +1 941 741 8030
Mobile phone: +1 941 405 9797
e-mail: peggy.browning@exactearth.com

**China
(People's**

China Head Aerospace Technology Co.

Mr Jinhui ZHAO
B-11A-02 Keshi Plaza
28 Shangdi Xinx Road
Beijing 100085
China (People's Rep of)
Phone: +86 10 8289 0174 ext 8033
e-mail: jinhui@head-aerospace.com

China Maritime Safety Administration

Mr Liang ZHANG
Shanghai Maritime Safety Administration
Jianguomennei avenue 11
Beijing 100736
People's Republic of China
Phone: +86 21 6607 2743
Fax: +86 21 6607 2634
Mobile phone: +86 1851 609 6666
e-mail: roadman9999@hotmail.com

Beijing Caton Global Technology Co., Ltd.

Mr Yibo CHAO
Rm. 803 Tower B HuaZun Plaza Jia
29 Beisanhuan Middle Road
Xicheng District
China(People's Republic of)
Phone: +86 10 62369699
Mobile phone: +86 18 611288105
e-mail: vts@catonglobal.cc

China Maritime Safety Administration

Prof Qing HU
Dalian Maritime University
Dalian, Liaoning
People's Republic of China
Phone: +86 411 84 72 31 18
Mobile phone: +86 12387889389
e-mail: hq0518@dlnu.edu.cn

China Maritime Safety Administration

Mr Anjian HOU
Jianguomennei Ave. 11
Beijing 100736
People's Republic of China
Phone: +86 10 6529 2455
Fax: +86 10 6529 2893
Mobile phone: +86 1860 261 6907
e-mail: haj07890051@sina.com

CIRM**Comité International Radio Maritime**

Mr Richard DOHERTY
202 Lambeth Road
London, SE1 7JW
UK

Phone: +44 20 3411 8345
Mobile phone: +44 7747 634734
e-mail: rd@cirm.org

Comité International Radio Maritime

Mr Michael BERGMANN
Bahnhofsstr 2a
63538
Germany

Phone: +49 6 186 912 727
Fax: +49 6 186 912 428
Mobile phone: +49 172 753 6379
e-mail: michael.bergmann@bergmann-marine.com
e-mail (alternative): mbergmann@germanshoe.com

Comité International Radio Maritime - COBHAM

Mr Stefan PIELMEIER
Industrivej 30
9490 Pndrup
Denmark

Phone: +45 96 34 62 76
Mobile phone: +45 31 16 39 10
e-mail: stefan@symlinux.com

Denmark**Danish Maritime Authority**

Mr Ivan CARLSSON
Carl Jacobsens Vej 31
DK-2500 Valby
Denmark

Phone: +45 72 19 63 79
Mobile phone: +45 24 28 82 98
e-mail: imc@dma.dk

Denmark**Danish Maritime Authority**

Mr Thomas CHRISTENSEN
Carl Jacobsen Vej 31
DK-2500 Valby
Denmark

Phone: +45 91 37 60 00
Fax: +45 3257 4341
Mobile phone: +45 72 19 63 24
e-mail: thc@dma.dk

Danish Maritime Authority

Mr Tomas G CHRISTENSEN
Carl Jacobsens Vej 31
DK-2500 Valby
Denmark

Mobile phone: +45 72 19 62 54
e-mail: tgc@dma.dk

Danish Maritime Authority

Mr Rasmus JENSEN
Carl Jakobsens Vej 31
DK-2500 Valby
Denmark

Phone: +45 2681 5724
e-mail: rmj@dma.dk

EfficienSea2**EfficienSea2**

Mrs Jillian CARSON-JACKSON
3 /41 Crisp Circuit
Bruce, ACT, 2617
Australia

Phone: +61 2 6279 5092
Mobile phone: +61 448 468 867
e-mail: jcj@iinet.net.au
e-mail (alternative): paul.carson@grapevine.com.au

National Institute of Telecommunications

Dr Krzysztof BRONK
Jaskowa Dolina 15
80-252 Gdansk
Poland

Phone: +48 58 341 71 21
Fax: +48 58 341 71 12
Mobile phone: +48 790 01 93 15
e-mail: K.Bronk@itl.waw.pl
e-mail (alternative): krzysztofbronk@wp.pl

EfficienSea2

Dr Nick WARD
12 Mariners Drive
Swanage
Dorset BH19 2SJ
UK

Phone: + 44 1929 426 021
Mobile phone: +44 7795 367050
e-mail: nick.ward@gla-rnav.org
e-mail (alternative): nick.ward@fsmail.net

Egypt**Egyptian Authority for Maritime Safety**

Mr Yasser SALAH ABDEL

Bob Gorok (1), Raselin

Alexandrai

Egypt

Phone:

+20 3 42 45 343

Mobile phone:

+20 100 756 808

e-mail:

comm@EAMS.GOV.EG

e-mail (alternative)

yasserelhelow@yahoo.com

ESA**European Space Agency**

Ms Alessandra FIUMARA

Italian Space Agency Representative

8 rue Mario Nikis

75015 Paris

France

Phone:

+33 1 5369 73 66

Mobile phone:

+33 6 77 12 20 90

e-mail:

alessandra.fiumara@esa.int

Finland**Finnish Transport Agency**

Mr Thomas ERLUND

Opastinsilta 12

FI-00521 Helsinki

Finland

Phone:

+358 40 829 9877

Mobile phone:

+358 40 829 9877

e-mail:

thomas.erlund@fta.fi

Finnish Transport Agency

Ms. Kaisu HEIKONEN

P. O. Box 33

FIN-00521 Helsinki

Finland

Phone:

+358 29 534 3302

Fax:

+358 2063 73700

Mobile phone:

+358 40 573 4949

e-mail:

kaisu.heikonen@fta.fi

Furuno Finland Oy

Mr Antti KUKKONEN

Niittyrinne 7

P O Box 74

FI-02271 Espoo

Finland

Phone:

+358 9 4355 670

Fax:

+358 9 4355 6710

Mobile phone:

+358 40 570 4767

e-mail:

antti.kukkonen@furuno.fi

e-mail (alternative):

antti.kukkonen@saunalahti.fi

Furuno Finland Oy

Mr Hannu PEIPONEN

Niityrinne 7

P O Box 74

FI-02270 Espoo

Finland

Phone:

+358 400 301289

Fax:

+358 9 43556710

Mobile phone:

+358 400 301289

e-mail:

hannu.peiponen@furuno.fi

France**CEREMA**

Mr Etienne LEROY

155 rue Pierre Bouguer

Plouzané 29280

France

Mobile phone:

+33 6 27 11 06 85

e-mail:

etienne.leroy@cerema.fr

Cerema / DtechEMF / DT

Mr Michel IMART

151 Quai du Rancy

94381 Bonneuil-sur-Marne

France

Phone:

+33 1 45 12 52 93

Fax:

+33 1 45 12 53 59

Mobile phone:

+33 6 29 45 61 72

e-mail:

michel.imart@cerema.fr

e-mail:

loic.gourmelen@cerema.fr

CEREMA-DTecEMF

Mr Loic PERON

Technopole Brest Iroise

BP5, 155 rue Pierre Bouguer

29280 Plouzané

France

Phone:

+33 2 98 05 88 07

e-mail:

loic.peron@cerema.fr

Direction Affaires Maritime - Direction Inter-Régionale de la Mer – Manche Ouest-**Nord Atlantique**

Mr Eric VASSOR

8 quai Commandant Malbert

29200 Brest

France

Phone:

+33 2 98 33 40 68

Mobile phone:

+33 6 20 67 22 28

e-mail:

eric.vassor@developpement-durable.gouv.fr

e-mail (alternative):

evprof@free.fr

iXBlue

Mr Hugues de BECDELIEVRE
34,rue de la Croix de Fer
78100 St Germain en Laye
France

Phone: +33 1 30 08 97 42
Mobile phone: +33 7 84 28 50 50
e-mail: hugues.de-becdelievre@ixblue.com

Mobilis SA

Mr Samir BENOUDA
370 avenue Jean de Guiramand
Aix en Provence
France

Phone: +33 44 23 71 500
e-mail: sbenouda@mobilis-sa.com

Georgia**State Hydrographic Service of Georgia**

Mr Revaz BABILUA
93D Tavaddebuli Str.

4400 Poti
Georgia

Phone: +995 577 48 05 05
e-mail: r.babilua@hydrography.ge

State Hydrographic Service of Georgia

Mrs Miranda SHONIA
93 D Tavaddebuli Str
4400, Poti
Georgia

Phone: + 995 599 87 19 09
e-mail: m.shonia@hydrography.ge
e-mail (alternative): info@hydrography.ge

Germany**Federal Maritime and Hydrographic Agency**

Mr Jochen RITTERBUSCH
Bernhard-Nocht-Str. 78
20359 Hamburg
Germany

Phone: +49 40 3190 7330
Fax: +49 40 3190 5000
e-mail: jochen.ritterbusch@bsh.de

Federal Waterways & Shipping Administration

Mr Michael HOPPE
Traffic Technologies Centre
Am Berg 3
56070 Koblenz
Germany
Phone: + 49 261 9819 2221
Fax: + 49 261 9819 2155
Mobile phone: +49 151 264 2222 3
e-mail: michael.hoppe@wsv.bund.de

Federal Waterways & Shipping Administration

Mr Jan-Hendrik OLTSMANN
Northern Region Office
Kiellinie 247
24106 Kiel
Germany
Phone: + 49 431 3394 5701
Fax: + 49 431 3394 6399
Mobile phone: +49 172 152 6928
e-mail: jan-hendrik.oltmann@wsv.bund.de

Federal Waterways & Shipping Administration, FVT-Traffic Technologies

Mr Stefan BOBER
Am Berg 3
56070 Koblenz
Germany
Phone: +49 261 9819 2231
Fax: +49 261 9819 2151
Mobile phone: +49 151 264 222 25
e-mail: stefan.bober@wsv.bund.de

German Aerospace Center

Dr Stefan GEWIES
Kalkhorstweg 53
17235 Neustrelitz
Germany
Phone: +49 398 1480 187
Fax: +49 398 1480 123
e-mail: stefan.gewies@dlr.de

German Aerospace Center

Dr Wei WANG
Münchner Straße 20
82234 Oberpfaffenhofen-Wessling
Germany
Phone: +49 8153 28-2801
e-mail: Wei.Wang@dlr.de

German Aerospace Center (DLR)

Mr Francisco LAZARO BLASCO
Deutsches Zentrum für Luft-und Komm.und Nav.
Oberpfaffenhofen
Wessling 82234
Germany
Phone: +49 81 53 282 815
e-mail: francisco.lazaroblasco@dlr.de

German Aerospace Centre

Dipl.-Ing. Thoralf NOACK
Institute of Communications and Navigation
Kalkhorstweg 53
D-17235 Neustrelitz
Germany
Phone: +49 3981 480-126
Fax: +49 3981 480-123
e-mail: thoralf.noack@dlr.de

OFFIS e.V.

Mr Axel HAHN
Escherweg 2
Oldenburg 26121
Germany
Phone: +49441 9722 114
Mobile phone: +49 163 781 85 88
e-mail: reiseverwaltung@offis.de

Trimble Germany GmbH

Mr Goran JEDREJCIC
Haringstr. 19
85635 Höhenkirchen-Siegertsbrunn
Germany
Phone: +49 8102 7433 352
Mobile phone: +49 175 279 0712
e-mail: goran_jedrejic@trimble.com

GSA**European Global Navigation Satellite Systems Agency (GSA)**

Prof. Manuel LOPEZ MARTINEZ
Janovského 438/2
170 00 Prague
Czech Republic
Phone: +420 234 766 659
Mobile phone: +420 602 619 994
e-mail: manuel.lopezmartinez@gsa.europa.eu
e-mail (alternative): m.lopez.martinez@gmail.com

Guinea**Ministère des Transports - ANAM**

Mr Thierno Souleymane BAH

BP 354

Guinea

Mobile phone:

+224 622 373 256

e-mail:

thiernosoulbah@yahoo.fr

Ministère des Transports - ANAM

Mr Mamadou Alpha BALDE

Chef de la Division Phares et Balises

BP 534

Conakry

Republic of Guinea

Phone:

+224 66 49 14 762

Mobile phone:

+224 66 49 14 762

e-mail:

alphabaguire@yahoo.fr

e-mail (alternative):

alphabaguire28@gmail.com

IALA

Mr Omar Frits ERIKSSON

10 rue des Gaudines

78100 St Germain n Laye

France

e-mail:

omar.eriksson@iala-aism.org

ICS**International Chamber of Shipping**

Mr. Matthew WILLIAMS

38 St. Mary Axe

London EC3A 8BH

UK

Phone:

+44 207 090 1473

Mobile phone:

+44 785 53 91258

e-mail:

matthew.williams@ics-shipping.org

IMO**International Maritime Organisation**

Mr Javier YASNIKOUSKI

4, Albert Embankment

London SE1 7SR

UK

Phone:

+44 207 463 4190

e-mail:

jyasniko@imo.org

Ireland**Commissioners of Irish Lights**

Mr Steve BURROWS

Harbour Road

Dun Laoghaire

Co. Dublin

Ireland

Phone:

+353 1 271 5453

Fax:

+353 1 271 5566

Mobile phone:

+353 87 244 9422

e-mail:

steve.burrows@irishlights.ie

e-mail (alternative):

steve.burrows803@gmail.com

Italy**ELMAN S.r.l.**

Mr Francesco BORGHESE

Via di Valle Caia, 37

Pomezia – Roma

Italy

Phone:

+39 06 919 4405

Fax:

+39 06 919 4306

Mobile phone:

+39 339 708 7107

e-mail:

f.borghese@elmansrl.it

Italian Coast Guard

Lt Paolo RENZI

Viale dell'Arte, 16

00144 Roma

Italy

Phone:

+39 0659084255

Fax:

+39 0659084515

Mobile phone:

+39 3396647750

e-mail:

paolo.renzi@mit.gov.it

Italian Coast Guard

Lt Antonio VOLLERO

Italian Coast Guard Headquarters

Viale Dell' Arte N° 16

00144 Rome

Italy

Phone:

+39 06 59 08 40 88

Mobile phone:

+39 320 3124422

e-mail:

antonio.vollero@mit.gov.it

e-mail (alternative):

antonio.vollero@gmail.com

ITU**International Telecommunications Union**

Mr Christian RISSONE
ANFR Pôle technique de Brest - Technopôle Brest-Iroise
265 rue Pierre Rivoalon, CS 12829
29238 Brest Cedex 3
France
Phone: +33 2 98 34 12 35
Fax: +33 2 98 34 12 20
Mobile phone: +33 6 83 81 23 03
e-mail: christian.rissone@anfr.fr

Japan**Furuno Electric Co. Ltd**

Mr Hiroyasu NAKAGAWA
9-52 Ashihara-cho
Nishinomiya, 662-8580
Hyogo
Japan
Phone: +81 798 63 1216
Fax: +81 798 63 1095
Mobile phone: +81 80 85 42 05 70
e-mail: hiroyasu.nakagawa@furuno.co.jp
e-mail (alternative): yass3rdvn@gmail.com

Furuno Electric Co. Ltd.

Mr Akira YAMAMOTO
Section 2, Products Planning and Marketing Department
9-52 Ashihara-cho
Nishinomiya, 662-8580
Japan
Phone: +81 798 72 1216
Fax: +81 798 631095
e-mail: akira.yamamoto@furuno.co.jp

Furuno Electric Co.Ltd

Dr Takuo KASHIWA
9-52 Ashihara-cho
Nishinomiya 662-8580
Japan
Phone: +81 798 63 1172
Fax: +81 798 64 6302
Mobile phone: +81 80 2468 9329
e-mail: takuo.kashiwa@furuno.co.jp

Japan Coast Guard, Maritime Traffic Department, Administration and Planning

CDR Hideki NOGUCHI

2-1-3 Kasumigaseki

Chiyoda-ku

Tokyo 100-8918

Japan

Phone: +81 3 3591 6361 (ext.)

Fax: +81 3 3591 3590

Mobile phone: +81 80 3468 1198

e-mail: jcghkokugikaihatsu1-6r9i@mlit.go.jp

e-mail (alternative): hideki.noguchi@gmail.com

Japan Radio Co. Ltd.

Mr Shigeki ITOH

834 Inasatomachi

Nagano 381-2289

Japan

Mobile phone: +81 26 214 7695

e-mail: itoh.shigeki@jrc.co.jp

Japan Radio Co. Ltd.

Mr Yoshio MIYADERA

Nakano Central Park East

4-10-1, Nakano, Nakano-ku

Tokyo 164-8570

Japan

Phone: +81 3 6832 0990

Fax: +81 3 6832 1844

e-mail: miyadera.yoshio@jrc.co.jp

Oki Consulting Solutions Co., Ltd.

Mr Takamasa YAUCHI

4-11-15 Shibaura

Minato-ku

Tokyo 108-8551

Japan

Phone: + 81 3 5445 6017

Fax: + 81 3 3452 7814

Mobile phone: +81 90 8315 9999

e-mail: yauchi427@oki.com

e-mail (alternative): yauchi73@viola.ocm.ne.jp

**Korea (Rep
of)**

ETRI

Mr Hyung Joo KIM

218 Gajeong-ro, Yuseong-gu

Daejeon 34129

Korea (Rep of)

Mobile phone: +82 42 860 6192

e-mail: kimhj@etri.re.kr

Korea Maritime Institute

Ms HyeJin LEE
26, Haeyang-ro 301 Beon-gil
Yeondo-gu
Busan, 606-080
Korea (Rep of)
Phone: +82 51 797 4626
Mobile phone: +82 10 6798 8801
e-mail: jinlee@kmi.re.kr

Korea Maritime University under Ministry of Oceans and Fisheries

Dr Han-Seon PARK
16, Haeyang-ro 301 Beon-gil
Yeongdo-gu, Busan
Korea (Rep of)
Phone: +82 51 797 4627
Mobile phone: +82 10 3319 8525
e-mail: hspark@kmi.re.kr

Ministry of Oceans and Fisheries

Mr Chae JONGGUK
Pohang Regional Office of Oceans and Fisheries
376 Haedong-ro, Buuk-gu, Pohang-si
Korea (Rep of)
Phone: +82 54 245 1551
Mobile phone: +82 010 5509 8618
e-mail: cjk202@korea.kr

Ministry of Oceans and Fisheries

Mr Jaewoo KIM
491-23 Gyeonggidong-ro
Changli-li, namsa-myun, Cheoin-gu, Youngin city
GG-do
Korea (Rep of)
Phone: +82 31 759 9841
Mobile phone: +82 10 3059 9663
e-mail: jaewooz@hanwha.com
e-mail (Alternative): jaewooz@gmail.com

Ministry of Oceans and Fisheries

Mr Kaemyoung PARK
36 Myeongji Ocean City 9-ro
Gngseo-gu, Busan
Korea (Rep of)
Phone: +82 70 8799 8524
Mobile phone: +82 010 3349 8525
e-mail: kaemyoung@krs.co.kr

Electronics and Telecommunications Research Institute (ETRI)

Mr Kwangil LEE
218 Gajeong-ro, Yuseung Gu
Daejeon 305-700
Korea (Rep of)
Phone: +82 42 860 5025
Fax: +82 10 4455 0533
e-mail: leeki@etri.re.kr

GMT Co. Ltd.

Mr Kil Yong KIM
7th floor Pangyo W-CITY
Sungam
617012
Korea (Republic of)
Phone: +82 02 488 6502
e-mail: yonjjang@gmtc.kr

Korea Research Institute of Ships & Ocean Engineering (KRISO)

Dr Sang-Hyun PARK
32, Yuseong-Daero, 1212 beon-gil
Yuseong-gu , Daejeon, 34103
Republic of Korea
Phone: +82 42 866 3681
Fax: +82 42 866 3689
Mobile phone: +82 10 9141 9900
e-mail: gnss.spark@gmail.com
e-mail (alternative): shpark@kriso.re.kr

Korea Research Institute of Ships & Ocean Engineering (KRISO)

Dr Jin Hyoung PARK
32, Yuseong-daero
1212 beon-gil
Yuseong-gu, Daejeon
Republic of Korea
Phone: +82 42 866 3608
Fax: +82 42 866 3699
Mobile phone: +82 10 3405 7624
e-mail: jin.h.park@kriso.re.kr
e-mail (alternative): Dr.H.Park@gmail.com

Ministry of Oceans and Fisheries

Mr Joon-Bum KIM
Korean Register of Shipping
36, Myeongji ocean city 9-ro
Gangseo-gu, Busan 150-871
Korea (Republic of)
Phone: +82 70 8799 8269
Fax: +82 70 8799 8269
Mobile phone: +82 10 8890 4163
e-mail: jbkim@krs.co.kr
e-mail (alternative): joonbum96@gmail.com

Ministry of Oceans and Fisheries

Mr Chi-Kyoung LEE
Government Complex
Sejong, 94, building 5-Dong
94, Dasom 2-Ro Sejong-Si 339-012
Korea (Rep of)

Phone: +82 44 200 5826
Fax: +82 44 200 5889
Mobile phone: +82 10 4757 7715
e-mail: ndkyoung@korea.kr
e-mail (alternative): snavigation2012@gmail.com

Ministry of Oceans and Fisheries

Prof Jiwon SEO
85 Songdogwahak-ro
Yeonsu-gu, Yonsei University
Veritas Hall C-218, Incheon 21983
Republic of Korea

Phone: +82 32 749 5833
Fax: +82 32 818 5801
Mobile phone: +82 10 5446 7823
e-mail: jiwon.seo@yonsei.ac.kr
e-mail (alternative): jwseo@cs.stanford.edu

Ministry of Oceans and Fisheries

Prof. Yung-Ho YU
Korea Maritime & Ocean University
#1, Dongsamdong Youngdoku
Youngdoku
Republic of Korea

Phone: +82 51 410 4345
Mobile phone: +82 10 4026 4345
e-mail: yungyu@kmou.ac.kr
e-mail (alternative): yungyu10@gmail.com

Netherlands**European Space Agency**

Dr Nader ALAGHA
Research and Technology Centre
Keprerlaan 1
2201 Z Noordwijk ZH
Netherlands

Phone: +31 71 565 8285
e-mail: Nader.Alagha@esa.int

Ministry of Infrastructure and the Environment

Mr Peter HOOIJMANS
Rijkswaterstaat Central Information Services
P O Box 5023
2600 GA Delft
Netherlands

Mobile phone: +31 6 539 451 56
e-mail: peter.hooijmans@rws.nl
e-mail (alternative): pjwhooijmans@yahoo.com

Ministry of Infrastructure and the Environment

Mr Pieter PAAP

Rijkswaterstaat / WVL / BISV

P.O Box2232

3500 GE Utrecht

Netherlands

Phone: +31 64 663 6190

Mobile phone: +31 6 466 36 190

e-mail: pieter.paap@rws.nl

e-mail (alternative): pieter.l.paap@quicknet.nl

Ministry of Infrastructure and the Environment

Mr Jeffrey van GILS

Lange Kleiweg 34

2288 GK Rijswijk

Netherlands

Mobile phone: +31 6 514 2 70 66

e-mail: jeffrey.van.gils@rws.nl

e-mail (alternative): jvgils71@gmail.com

Norway

Kongsberg Norcontrol IT AS

Mr Steve GUEST

PO Box 1024

Bromsvn. 17

N-3194 Horten

Norway

Phone: +44 1454 774466

Fax: +44 1454 774488

Mobile phone: +44 777 3328 929

e-mail: steve.guest@kongsberg.com

Kongsberg Seatex AS

Mr Stig Erik CHRISTIANSEN

Pirsenteret

N-7462 Trondheim

Norway

Phone: +47 73 54 55 77

Fax: +47 73 51 50 20

Mobile phone: +47 95 022 819

e-mail: stig.erik@kongsberg.com

Norwegiann Coastal Administration

Mr Hans Christian HAUGLI

Space Norway

Norway

Phone: +47 993 50010

e-mail: hans.christian.haugli@spacenorway.no

Norwegian Coastal Administration

Mr Harald AASHEIM

Postboks 1502

6025 Alesund

Norway

Fax: +47 52 73 32 01

Mobile phone: +47 95805757

e-mail: harald.aasheim@kystverket.no

Norwegian Coastal Administration

Mr Jon Leon ERVIK

Service Box 2

6002 Alesund

Norway

Phone: + 47 52 73 33 12

Fax: + 47 52 73 32 01

Mobile phone: +47 91 68 15 38

e-mail: jon.leon.ervik@kystverket.no

Norwegian Coastal Administration

Mr Lars LOGE

Statsat AS

Drammensveien 165

Box 66 Skoyen

Norway

Phone: +47 22 51 00 25

Mobile phone: +47 996 99 101

e-mail: lars.loge@statsat.no

Norwegian Coastal Administration

Mr Svein David MEDHAUG

Eidsbakkane 152

4250 Kopervik

Norway

Phone: +47 527 45 157

Mobile phone: +47 975 23 237

e-mail: sdm@sdir.no

Norwegian Coastal Administration

Prof Thomas PORATHE

Norwegian University of Science & Technology

Kolbjørn Hejes vei 2b

NO-7491 Trondheim

Norway

Mobile phone: +46 70 668 1819

e-mail: thomas.porathe@ntnu.no

Norwegian Coastal Administration

Mr Michael RAMBAUT
22 Oakley Gardens
SW3 5QG LONDON
UK

Phone: +44 207 351 1125
Mobile phone: +44 7798 850 626
e-mail: michael.rambaut@btinternet.com

Norwegian Coastal Administration

Mr Ulrich TAGNE
Service Box 2
Aalesund 6002
Norway

Phone: +47 52 733 235
Mobile phone: +47 400 850 72
e-mail: ulrich.tagne@kystverket.no

Peru**Directorate of Hydrography and Navigation, Peru**

Captain José MONTENEGRO
Chucuifo Callao
Peru

Phone: +511 429 8542
e-mail: jmontenegro@dhn.mil.be

Poland**Sprint S.A.**

Mr Janusz HAJDEL
80-298 Gdansk
Budowlanych 64E
Poland

Phone: +48 58 340 70 00
Fax: +48 58 340 70 01
Mobile phone: +48 600 955 431
e-mail: janusz.hajdel@sprint.pl

Portugal**Direcção de Faróis**

CDR Jorge TELES
Estrada Marginal
2770-210 Paço de Arcos

Portugal

Phone: +351 21 446 1663
Mobile phone: +351 9166 30653
e-mail: santos.teles@marinha.pt

RTCM**Radio Technical Commission for Maritime Services**

Mr Ross W NORSWORTHY

c/o REC, Inc.

10530 121st St. N.

Largo, FL 33774-5506

USA

Phone:

+1 727 596 1991

Mobile phone:

+1 727 515 8025

e-mail:

ross_norsworthy@msn.com

Russia**Department of Navigation & Oceanography**

Captain Andrey OLEJNIKOV

8, 11 Liniya

St Petersburg 199034

Russia

Mobile phone:

+7 921 862 33 24

e-mail:

unio_main@mil.ru

e-mail (alternative):

oas-73@mail.ru

Department of Navigation and Oceanography

Mr Oleg OSIPOV

8, 11 Liniya

St Petersburg 199034

Russia

e-mail:

unio_main@mil.ru

Department of Navigation and Oceanography

Mrs Viktoriia POGOSIAN

8, 11 Linia

St Petersburg 199034

Russia

Mobile phone:

+7 812 328 46 32

e-mail:

pogosian@mail.ru

e-mail (alternative):

oas-73@mail.ru

Scotland**Northern Lighthouse Board**

Mr Peter DOUGLAS

84 George Street

Edinburgh

EH2 3DA

Scotland

Phone:

+ 44 121 473 3196

Mobile phone:

+44 7836 787 898

e-mail:

peterd@nlb.org.uk

e-mail (alternative):

petali@talk21.com

Spain**ESSP SAS**

Ms Maria MOTA
ATC Center Madrid
Carretera de la Base km 0,8
28850 Torrejón de Ardoz, Madrid
Spain

Phone: +34 91826 2170
Mobile phone: +34 638 965 619
e-mail: mmota@telespazio.es

GMV

Mr Marcos LOPEZ CABECEIRA
PTB Parcela 101
Boecillo
47151 Valladolid
Spain

Phone: +34 983546554
Fax: +34 983546553
Mobile phone: +34 619128940
e-mail: malopez@gmv.com
e-mail (alternative): lopezcabeceira@gmail.com

Sweden**Saab Transponder Tech**

Mr Stefan OLSSON
Laasblecksgatan 3
Linköping 58941
Sweden

Phone: +46 102 164 111
e-mail: stefan.olsson@saabgroup.com

Sweden**SAAB TranspondeurTech AB**

Mr Johan LINDBORG
Labslecksgatan 3
58941 Linköping
Sweden

Phone: +46 739 18 94 90
Fax: +46 121 823 77
Mobile phone: +46 739 18 94 90
e-mail: johan.lindborg@saabgroup.com

Swedish Maritime Administration

Mr Jesper BACKSTEDT
Östra Promenaden 7
601 78 Norrköping
Sweden

Phone: +46 10 478 6282
Mobile phone: +46 727 24 6282
e-mail: jesper.backstedt@sjofartsverket.se

Swedish Maritime Administration

Mr Torbjörn GRAPE
Östra Promenaden 7
60228 Norrköping
Sweden

Phone: +46 104786141
e-mail: torbjorn.grape@sjofartsverket.se

Swedish Maritime Administration

Mr Mikael HAGG
Lindholmspiren 5
SE41756 Gothenburg
Sweden

Mobile phone: +46 73 029 8001
e-mail: mikael.hagg@sjofartsverket.se

Swedish Maritime Administration

Mr Fredrik KARLSSON
Innovation and Development
Lindholmspiren 5
SE-417 56, Gothenburg
Sweden

Phone: +46 10 47 84 632
e-mail: fredrik.karlsson@sjofartsverket.se

Swedish Transport Agency

Mr Sebastian IRONS
SE-60 173 Norrköping
Sweden

Phone: +46 10 49 53 331
Mobile phone: +46 76 721 1045
e-mail: sebastian.irons@transportstyrelsen.se

UK**General Lighthouse Authorities for UK & Ireland**

Dr Alan GRANT
GLA-RRNAV
Trinity House, The Quay, Harwich
Essex , CO12 3JW
UK

Phone: +44 1255 245 141
Fax: +44 1255 245038
Mobile phone: +44 7747 768445
e-mail: alan.grant@gla-rrnav.org

General Lighthouse Authorities for UK & Ireland

Dr Jan SAFAR
Trinity House, The Quay
Harwich, Essex, CO12 3JW
UK

Phone: +44 1255 245 145
Mobile phone: +44 755 441 5527
e-mail: jan.safar@gla-rrnav.org

Maritime & Coast Guard Agency

Mr Wayne QUINN
Unit 12, Kites Croft Business Park
Fareham, Hampshire
UK
Phone: +44 203 817 2030
Mobile phone: +44 7766 781 695
e-mail: Wayne.Quinn@mcga.gov.uk

Senro Ltd. UK

Mr Ernest BATTY
25 Barnes Wallis Road
Fareham Hampshire PO15 5TT
UK
Phone: +44 2380 694 092/+44
e-mail: ernie.b@imisglobal.com

UK Hydrographic Office

Dr Edward HOSKEN
Admiralty Way
Taunton
Somerset TA1 2DN
UK
Phone: +44 1823 48 34 93
Mobile phone: +44 7824 408 173
e-mail: edward.hosken@ukho.gov.uk

USA

American Pilot's Association

Mr William CAIRNS
499 South Capitol St. SW
Suite 409
Washington, DC 20003
USA
Phone: +1 202 484 0700
Fax: +1 202 484 9320
Mobile phone: +1 240 495 0785
e-mail: bcairns@americanpilots.org
e-mail (alternative): william_cairns@comcast.net

L-3 Communication

Mr Tom MELOCHE
100 Cattleman Road
FL Sarasota 34232
USA
Mobile phone: +1 941 379 1631
e-mail: tom.meloche@L-3com.com

National Geospatial Intelligence Agency - under USCG

Ms LeeAnne GORDON
7501 Heller Road
Springfield
VA 22150
USA

Phone: +1 571 558-0524
Mobile phone: +1 314 365 1831
e-mail: LeeAnne.E.Gordon@nga.mil

Open Connectivity Foundation

Mr Fred W. POT
3855 SW 153rd Drive
Beaverton OR 97003

USA
Mobile phone: +1 206 850 7664
e-mail: fpot@enavsolutions.org
e-mail (alternative): fpot@comcast.net

Tideland Signal Corporation

Mr Paul MUELLER
4310 Director's Row
Houston, Texas 77092
USA

Phone: + 1 712 425 1425
Fax: + 1 712 682 4635
Mobile phone: +1 712 851 6426
e-mail: paulm@tidelandsignal.com
e-mail (alternative): paulfmueller@sbcglobal.net

US Coast Guard

Mr Jorge ARROYO
2703 Martin Luther King Ave
SE Stop 7418 Washington 205-7418
USA

Phone: +1 202 372 1563
Fax: +1 202 372 1990
Mobile phone: +1 202 257 8865
e-mail: jorge.arroyo@uscg.mil

US Coast Guard

Mr Patrick GALLAGHER
2703 Martin Luther King Ave
SE Washington DC 20593
USA

Mobile phone: +1 202 754 1880
e-mail: Patrick.J. Gallagher@uscg.mil

US Coast Guard

Mr Johnny SCHULTZ
93, Arnoni Drive
Dunedin, FL34698
USA

Mobile phone:
e-mail:

+1 727 403 4029
johnnyschultz@odysseyconsult.com

US Coast Guard

Mr John STONE
2703 Martin Luther King Jr Ave.
SE Washington DC
20593
USA

Mobile phone:
e-mail:

+1 703 939 4076
John.m.stone@uscg.mil

Apologies

Apologies were received from:

Name	Organisation	Country
Yves Desnoes	IFN	France
Jean-Charles Cornillou	CEREMA	France
Marek Dziewicki	Maritime Office Gdynia	Poland
Armando Zorzoni	Servicio de Hidrografia Naval	Argentina
Sebastian Espinar	Puertos del Estado	Spain

Working Group 1**Harmonisation**

	Name	Organisation / Country
1	Axel Hahn (Chair)	OFFIS e.v., Germany
2	Jin Park (Vice Chair)	KRISO, Republic of Korea
3	Hannu Peiponen	Furuno, Finland
4	John Stone	US Coast Guard, USA
5	Peter Hooijmans	Ministry of Infrastructure and the Environment, Netherlands
6	Lee-Anne Gordon	National Geospatial Intelligence Agency, USA
7	Jan-Hendrik Oltmann	German Federal Waterways and Shipping Administration, Germany
8	Kwangil Lee	ETRI, Korea
9	Thomas Christensen	Danish Maritime Authority, Denmark
10	Richard Doherty	CIRM, UK
11	Kaisu Heikonen	Finnish Transport Agency, Finland
12	Svein David Medhaug	Norwegian Maritime Authority, Norway
13	Rasmus Madsen Jensen	Danish Maritime Authority, Denmark
14	Anjian Hou	China MSA, China
15	Samir Benouda	Mobilis SA, France
16	Jochen Ritterbusch	German Federal Maritime and Hydrographic Agency, Germany
17	Nick Ward	GLA R&RNAV, UK & Ireland

	Name	Organisation / Country
1	Mahesh Alimchandani (Chair)	AMSA / Australia
2	Wayne Quinn (Vice Chair)	Maritime Coastguard Agency, UK
3	Hye Jin Lee	Korea Maritime Institute, Republic of Korea
4	Han-Seon Park	Korea Maritime Institute, Republic of Korea
5	Zhang Liang	Maritime Safety Administration, China
6	Javier Yasnikowski	IMO, UK
7	Oleg Osipov	Department of Navigation & Oceanography, Russia
8	Victoria Pogolian	Department of Navigation & Oceanography, Russia
9	Miranda Shonia	State Hydrographic Service, Georgia
10	Revaz Babilua	State Hydrographic Service, Georgia
11	Lee Chi-Kyoung	Ministry of Oceans and Fisheries, Republic of Korea
12	Janusz Hajdel	Sprint S.A., Poland
13	Pieter Paap	NL Ministry of Infrastructure and Environment, Netherlands

Working Group 3 Telecommunications

	Participants	Organisation / Country
1	Peggy Browning (Chair)	Exact Earth / Canada
2	Stefan Bober (Vice Chair)	WSV/ Germany
3	Jillian Carson-Jackson (Vice Chair)	JCJ Consulting, Australia
4	Loic Peron	CEREMA, France
5	Patrick Gallagher	US Coastguard, USA
6	Shigeki Itoh	Japan Radio Co. Ltd, Japan
7	Hoshio Miyadera	Japan Radio Co. Ltd, Japan
8	Jinhui Zhao	China HEAD Aerospace, China
9	Johnny Shultz	United States CG, USA
10	Tom Meloche	L-3 Communications, USA
11	Jan Safar	GLA R&RNAV, UK & Ireland
12	Torbjorn Grape	Swedish Maritime Administration, Sweden
13	Ross Norsworthy	RTCM, USA
14	Harald Asheim	Norwegian Coastal Administration, Norway
15	Hiroyasu Nakagawa	Furuno Electric Co, Japan
16	Antti Kukkonen	Furuno Finland, Finland
17	Takamasa Yauchi	OKI Consulting Solutions Co., Japan
18	Stefan Olsson	Saab Transponder Tech, Sweden
19	Johan Lindborg	Saab Transponder Tech, Sweden
20	Hyung Joo Kim	ETRI, Republic of Korea
21	Jaewoo Kim	Hanwha, Republic of Korea
22	Kaemyoung Park	Ministry of Oceans & Fisheries, Republic of Korea
23	Kil Yong Kim	GMT Co. Ltd, Republic of Korea
24	Qzng Hu	Dalian Maritime University, China
25	Stefan Pielmeier	CIRM / Cobham, Denmark
26	Krzysztof Bronk	National Institute of Telecommunications, Poland
27	Lars Loge	Space Norway, Norway
28	Jorge Arroyo	United States CG, USA
29	Jeffrey van Gils	Ministry of Infrastructure & Environment, Netherlands

	Participants	Organisation / Country
30	Francesco Borghese	ELMAN SRL, Italy
31	Antonio Vollero	Italian Coast Guard, Italy
32	Ernest Batty	Senro Ltd, UK
33	Francisco Lazaro	German Aerospace Center (DLR)/ Germany
34	Wei Wang	German Aerospace Center (DLR)/ Germany
35	Hans Haugci	Space Norway, Norway
36	Christian Rissone	ITU
37	Nader Alagha	European Space Agency, Netherlands

Working Group 4

e-Nav Services

	Participants	Organisation / Country
1	Jon Leon Ervik (Chair)	Norwegian Coastal Administration / Norway
2	Thomas Porathe (Vice Chair)	Norwegian University of Science and Technology / Norway
3	Mikael Hägg	Swedish Maritime Administration, Sweden
4	Steve Guest	Kongsberg, UK
5	Edward Hosken	UK Hydrographic Office, UK
6	Bill Cairns	American Pilot's Association, USA
7	Sebastian Irons	Swedish Transport Agency, Sweden
8	Pierre D'Arcy	Canadian Coast Guard, Canada
9	Matthew Williams	ICS
10	Jorge Teles	Portuguese Lighthouse Authority, Portugal
11	Fred Pot	Marine Management Consulting, USA
12	Yung Ho Yu	Korean Maritime and Ocean University, Korea
13	Michael Bergmann	CIRM, Germany
14	Thomas Erlund	Finnish Transport Agency, Finland
15	Eric Vassor	Interregional Directorate for Maritime Safety and Fishery (DIRM)/France
16	Kim Joon-Bum	Ministry of Oceans & Fisheries, Republic of Korea
17	Paolo Renzi	Italian Coast Guard, Italy
18	Ulrich Tagne	Norwegian Coastal Administration, Norway
19	Michael Rambaut	Norwegian Coastal Administration, Norway

	Participants	Organisation / Country
1	Alan Grant (Chair)	General Lighthouse Authorities of UK and Ireland / UK
2	Michael Hoppe (Vice Chair)	WSV / Germany
3	Paul F Mueller	Tideland Signal, USA
4	Marcos Lopez	GMV, Spain
5	Manuel Lopez Martinez	European GNSS Agency (GSA)
6	Akira Yamamoto	Furuno Electric Co. Ltd, Japan
7	Takuo Kashiwa	Furuno Electric Co. Ltd, Japan
8	Jaffer Abdulla	Middle East Navigation Aids Service (MENAS), Bahrain
9	Goran Jedrejic	Trimble Navigation, Germany
10	Peter Douglas	NLB, Scotland
11	Kaisu Heikonen	Finnish Transport Agency, Finland
12	Stefan Gewies	DLR, Germany
13	Thorolf Noack	DLR, Germany
14	Ivan M. Carlsson	DMA, Denmark
15	Sang Hyun Park	KRISO, Republic of Korea
16	Chae Jong-Guk	Ministry of Oceans & Fisheries, Korea
17	Jiwan Seo	Ministry of Oceans & Fisheries, Korea
18	Andrey Oleynikov	Department of Navigation and Oceanography, Ministry of Defense of Russian Federation
19	Yibo Chao	Beijing Caton Global Technology Co. Ltd, China
20	Mamadou Apha Balde	Ministry of Transport ANAM, Republic of Guinea
21	Etienne Leroy	CEREMA, France
22	Maria Mota	ESSP / Spain
23	Alessandra Fiumara	European Space Agency
24	Jesper Backstedt	Swedish Maritime Administration, Sweden

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
ENAV19-	1.2	draft Agenda ENAV19 20160919	IALA Secretariat	Omar Frits Eriksson
ENAV19-	1.4	Programme for the week 20160918	IALA Secretariat	Omar Frits Eriksson
ENAV19-	2.1	Action items from ENAV18 20160629	IALA Secretariat	Seamus Doyle
ENAV19-	3.1	Input paper Committee template January 2016	IALA Secretariat	Omar Frits Eriksson
ENAV19-	4.1	Final report Council 62	IALA Secretariat	Seamus Doyle
ENAV19-	4.1.1	IALA Proposed Standards	IALA Secretariat	Omar Frits Eriksson
ENAV19-	4.2	(PAP31-21 1) Draft report PAP31_V2	IALA Secretariat	Michael Card
ENAV19-	4.2.1	Procedure for submission to the IMO MSC	IALA Secretariat	Seamus Doyle
ENAV19-	4.2.2	ENAV19-2.2.2 MSC-MEPC.1-Circ.4-Rev.4 - Guidelines On The Organization And Method Of Work Of The Maritime Safety Committee And The... (Secretariat) (1)	IALA Secretariat	Seamus Doyle
ENAV19-	4.3	Report of ITU-R SG5 and WP5B May 2016	Stefan Bober	Stefan Bober
ENAV19-	4.4	DNV GL Strategic Research & Innovation Position Paper 04-2015, Ship Connectivity	Omar Frits Eriksson	Omar Frits Eriksson
ENAV19-	4.5	IMO MSC 96 report	IALA Secretariat	Mahdi Al Mosawi / WG2
ENAV19-	4.6	Launch of EfficienSea2 web site	IALA Secretariat	Omar Frits Eriksson
ENAV19-	4.7	Report IALA WS on Shore-based Mar Services from Theory to Practical Use final	Workshop on Shore-based Maritime Services	Jon Leon Ervik
ENAV19-	4.8	Report from S100 WG1 meeting Tokyo March 14-18 2016	Eivind Mong	Eivind Mong / WG1
ENAV19-	4.9	(C62-14.4.2) Report on IALA work in EfficienSea2	Nick Ward	Nick Ward
ENAV19-	4.9.1	Report on IALA Work in EfficienSea 2 (Update)	Nick Ward	Nick Ward
ENAV19-	4.10	20160829 IALA Report Joint IMO-ITU Expert group 11th to 15th July 2016	Stefan Bober	Stefan Bober
ENAV19-	4.10.1	ITU R15-WP5B.AR-C-0040!!MSW-E Report Joint IMO-ITU EG 12 meeting	Stefan Bober	Stefan Bober
ENAV19-	4.10.2	VTS ENAV Joint WG Intro 20160805	Omar Frits Eriksson	Omar Frits Eriksson
ENAV19-	4.11	(VTS-ENAV1-12) Report of Joint VTS-ENAV WG meeting	Joint VTS-ENAV WG	Omar Frits Eriksson
ENAV19-	4.12	LAP17-10.2 Draft IALA Patent Policy Guideline	LAP	Omar Frits Eriksson
ENAV19-	5.3.1	Report from rapporteur on GMDSS SEPT 2016	Jean-Charles Cornillou	Omar Frits Eriksson
ENAV19-	5.3.2	IMO-ITU EG 12-4-2 Remarks on the review of the GMDSS after NCSR3	Jean-Charles Cornillou	Omar Frits Eriksson
ENAV19-	5.4	Report from VTS42	Jon Leon Ervik	Jon Leon Ervik

Meeting	Agenda Item	Title / Author (if required)	Source	Presented by / WG
ENAV19-	5.5	Rapporteur report testbeds	Mahesh Alimchandani	Mahesh Alimchandani
ENAV19-	5.6	IHO rapporteur report to IALA ENAV19	Edward Hosken	Edward Hosken
ENAV19-	6.1	WWA brief to ENAV-19	Omar Frits Eriksson	Omar Frits Eriksson
ENAV19-	6.2	CIRM User Feedback Forum	Richard Doherty	Richard Doherty
ENAV19-	6.3	EfficienSea2 IALA status v2	Nick Ward	Nick Ward
ENAV19-	6.4	Tech Sers and Maritime cloud & E-Navigation Underway Conference & EfficienSea2 website	Thomas Christensen	Thomas Christensen
ENAV19-	6.5	EGNSS Applications in Horizon 2020	Manuel Lopez-Martinez	Manuel Lopez-Martinez
ENAV19-	6.6	Port Call Message Standard, version 0.5_ver4.	Mikael Lind	Mikael Lind WG4 WG1
ENAV19-	6.6.1	Presentation Port Call Message Standard 20160919	Mikael Hägg	Mikael Hägg
ENAV19-	6.8	China HEAD - IALA e-Nav 20160919	Jinhui Zhao	Jinhui Zhao
ENAV19-	6.9	eLoran UrsaNav Presentation 22SEP2016	Charles Schue	Charles Schue
ENAV19-	7.1	ENAV Work Plan revised at ENAV18	ENAV18	Omar Frits Eriksson
ENAV19-	7.2	ENAV work programme task register revised at ENAV18	ENAV18	Omar Frits Eriksson
ENAV19-	9.1	(ENAV18-14.2.10) S-200 Status Report	ENAV18	WG1
ENAV19-	9.2	(ENAV18-14.2.11) S-201 AtoN Information Product Specification Draft 0.0.1	ENAV18	WG1
ENAV19-	9.2.1	Covering note re S-201 v 0.0.4	Nick Ward	WG1
ENAV19-	9.2.2	S-201 Product Specification - draft 0 0 4	Nick Ward	WG1
ENAV19-	9.3	(ARM4-12.1.3) Liaison to ENAV on S-201 PS	ARM4	WG1
ENAV19-	9.3.1	Draft response to ARM4-12.1.3 Liaison to ENAV on S-201 PS	Nick Ward	WG1
ENAV19-	9.4	(ARM4-12.1.4) Liaison to ENAV on portrayal of sector lights in S-201	ARM4	WG1
ENAV19-	9.4.1	Draft liaison note to PAP & ARM on portrayal of sector lights in S-201	Nick Ward	WG1
ENAV19-	9.5	(ENAV18-14.1.20) Draft Guideline Ed.1 on Unique Identifiers for Maritime Resources reformatted1	ENAV18 reformatted	WG1
ENAV19-	9.6	(ENAV18-14.2.12) WG1 Draft Risk Assessment Plan	ENAV18	WG1
ENAV19-	9.7	(C62-11.4.3.1) Draft Guideline 1087 Ed.2 on Procedures for the Management of the IALA Domain under the IHO GI Registry	Council 62	WG1
ENAV19-	9.8.1	(C62-11.4.4.1) Draft IALA Guideline 1106-0 Ed.2 on Producing an IALA S-200 series Product Specification June 2016	Council 62	WG1
ENAV19-	9.8.2	(C62-11.4.4.2) Draft IALA Guideline 1106-1 Ed.1 IALA Product Specification Template amended	Council 62	WG1
ENAV19-	9.8.3	(C62-11.4.4.3) Draft IALA Guideline 1106-2 Ed.1 Proposal for Additional S-100 Feature Concept	Council 62	WG1

Meeting	Agenda Item	Title / Author (if required)	Source	Presented by / WG
		Dictionary item - template June 2016		
ENAV19-	9.8.4	(C62-11.4.4.4) Draft IALA Guideline 1106-3 Ed.1 Product specification under development - template June 2016	Council 62	WG1
ENAV19-	9.9	Comment re draft Guidelines 1087 and 1106 v1	IALA Secretariat	WG1
ENAV19-	9.10	ENAV19-9.10 Progress on implementation of Unique Identifiers for Maritime Resources	IALA Secretariat	WG1
ENAV19-	9.11	Proposal for standard for data exchange for the MS8 vessel shore reporting	Krzysztof Mendalka	WG1 / WG4
ENAV19-	9.12	Maritime Cloud – Conceptual Model	Maritime Cloud Development Forum	WG1
ENAV19-	9.13	Identity Management and Cyber Security	Maritime Cloud Development Forum	WG1
ENAV19-	9.14.1	Specification guideline for Technical Services	Maritime Cloud Development Forum	WG1
ENAV19-	9.14.2	SG Annex A Service Documentation Guidelines	Maritime Cloud Development Forum	WG1
ENAV19-	9.14.3	SG Annex B Service Specification Template	Maritime Cloud Development Forum	WG1
ENAV19-	9.14.4	SG Annex C Service Design Description Template	Maritime Cloud Development Forum	WG1
ENAV19-	9.14.5	SG Annex D Service Implementation Description Template	Maritime Cloud Development Forum	WG1
ENAV19-	9.14.6	SG Annex E Example NW-NM	Maritime Cloud Development Forum	WG1
ENAV19-	9.15	S-200 Status Report (rev 1)	Nick Ward	WG1
ENAV19-	10.1	(ENG4-11.1.12) ENG4 Liaison Note to ENAV re NAVGUIDE	ENG4	WG2
ENAV19-	10.2	(ARM4-12.1.12) Liaison to ENAV on NAVGUIDE update	ARM4	WG2
ENAV19-	10.3	(ARM4-12.1.15) Liaison to ENAV on RoadMap ENAV	ARM4	WG2
ENAV19-	10.4	Revised Navguide Chapter 4 after ENAV18	ENAV18	WG2
ENAV19-	10.5	(ENAV18-10.8.2) ACCSEAS e-Navigation Architecture Report v1	ENAV18	WG2
ENAV19-	10.6	(C62-11.4.2.1) Draft Guideline 1107 on Planning Testbeds and Reporting of Testbed Results Ed.2 June 2016 final.	Council 62	WG2

Meeting	Agenda Item	Title / Author (if required)	Source	Presented by / WG
ENAV19-	10.7	(ENAV18-14.1.30) draft IALA e-navigation Road Map	ENAV18	WG2
ENAV19-	10.8	Restructuring Chapter 4 (on e-Navigation) of the NAVGUIDE	Hideki Noguchi	WG2
ENAV19-	10.9	eFairway - eNav Testbed Final.pdf	Mahesh Alimchandani	WG2
ENAV19-	10.10	(VTS42-12.1.8) Liaison to ENAV on e-Navigation Road Map	VTS42	WG2
ENAV19-	10.11	Proposal for Review of NAVGUIDE Chapter 4	Evelin Engler	WG2
ENAV19-	11.1	ITU Letter and Resolutions 20160404	ITU	WG3
ENAV19-	11.2	(ENAV18-14.2.21) WG3 R-REC-M.2092	ENAV18	WG3
ENAV19-	11.3	(ENAV18-14.2.22) WG3 Draft IALA Guideline Ed.1 on VDES operational1	ENAV18 reformatted	WG3
ENAV19-	11.4	(ENAV18-14.2.24) WG3 Draft IALA Guideline Ed.1 on VDES technical Annex reformatted1	ENAV18 reformatted	WG3
ENAV19-	11.5	(ENAV18-14.2.23) WG3 ITU Draft Report on VDE-SAT	ENAV18	WG3
ENAV19-	11.6	(ENAV18-14.2.25) WG3 Map to compare VDES with AIS documentation Structure	ENAV18	WG3
ENAV19-	11.7	(ENAV18-14.2.26) WG3 Draft IALA road map	ENAV18	WG3 / WG2
ENAV19-	11.8	(ENAV18-14.2.27) WG3 Transmission of sbas corrections over AIS	ENAV18	WG3
ENAV19-	11.9	(ENAV18-14.2.28) WG3 USCG input on FATDMA issue	ENAV18	WG3
ENAV19-	11.10	(ENAV18-14.2.29) WG3 Comms interference on new VDES Channels - Testbed Issue	ENAV18	WG3
ENAV19-	11.11	(ENAV18-14.2.30) WG3 Finland Input - Structure of IALA documentation on VDES	ENAV18	WG3
ENAV19-	11.12	(ENAV18-14.2.31) WG3 Draft FAQ regarding VDES	ENAV18	WG3
ENAV19-	11.13	(ENAV18-14.2.32) WG3 Liason to IALA on certain clarifications to ITU R M1371-5	ENAV18	WG3
ENAV19-	11.14	(ENAV18-14.2.33) WG3 Draft IALA Guideline Ed.1 on VDES related applications reformatted1	ENAV18 reformatted	WG3
ENAV19-	11.15	MSC97 Work Program - Review of AIS Performance Standard AIS_PA_2016-07-28	Jorge Arroyo	WG3
ENAV19-	11.16	Query re IALA Guideline 1028 Ed.1.3-AIS Vol1 Part1 Operational Issues December 2004	IALA Secretariat	WG3
ENAV19-	11.17	Query re IALA Guideline 1029 Ed.1.1 AIS Vol1 Part2 Technical Issues December 2002 rev1.docx	IALA Secretariat	WG3
ENAV19-	11.18	Use of AIS Data in Court Cases Rev1	Nick Ward	WG3
ENAV19-	11.19	Draft Rec ITU-R M.2092-0 20160624_WD_WG3 Item61 JohnnyS REC-M.2092	Peggy Browning	WG3

Meeting	Agenda Item	Title / Author (if required)	Source	Presented by / WG
ENAV19-	11.20	IALA Mar Radio Comms Plan 20160904 WD draft revision MRCP Yoshi	Peggy Browning	WG3
ENAV19-	11.21	VDE-SAT draft report for ITU pdnr ITU-R m VDES SAT IALA 160901	Peggy Browning	WG3
ENAV19-	11.22	Report on Comms Intersessional Cambridge Canada June 2016	Peggy Browning	WG3
ENAV19-	11.23	R15-WP5B-C-0071!N25!MSW-E Liaison to IALA Identification and categorization of autonomous maritime radio devises	Stefan Bober	WG3
ENAV19-	12.1	Proposal for Ship Reporting Data Model v1.2	Yungyu / Fred Pot	WG1
ENAV19-	12.2	(SBMS1-9.1) VTS MSP Matrix - New template V.2	Workshop on Shore-based Maritime Services	WG4
ENAV19-	12.3	(SBMS1-9.2) WG 2 Output 2 of 3 - draft IALA Guidelines on MSPs v5 - Section 2	Workshop on Shore-based Maritime Services	WG4
ENAV19-	12.4	(SBMS1-9.3) WG 2 Output 3 of 3 - Definition of MSP 1,2,3	Workshop on Shore-based Maritime Services	WG4
ENAV19-	12.5	(SBMS1-9.4) draft IALA Guidelines on MSPs v-6 25may	Workshop on Shore-based Maritime Services	WG4
ENAV19-	12.6	NCSR 4-2-xx Activation-HGDM draftV0	Gilles Bessaro	WG4
ENAV19-	13.1	Dictionary Amendment Proposal - Resilience etc	Evelin Engler	WG5
ENAV19-	13.2	(ENAV18-14.2.6) Draft IALA Guideline Ed.1 e-Loran service provision Guideline reformatted1	ENAV18 reformatted	WG5
ENAV19-	13.3	(ENAV18-14.2.13) Draft IALA Recommendation Ed.2 on eLoran Service Provision reformatted1	ENAV18 reformatted	WG5
ENAV19-	13.4	(ENAV18-14.2.14) Draft IALA Recommendation Ed.1 on PNT relevant services and systems reformatted1	ENAV18 reformatted	WG5
ENAV19-	13.5	(ENAV18-14.2.15) Draft IALA Guideline Ed.1 on systems for high accuracy positioning services in critical areas reformatted1	ENAV18 reformatted	WG5
ENAV19-	13.6	(ENAV18-14.2.16) Draft IALA Guideline Ed.1 Use of SBAS reformatted2	ENAV18 reformatted	WG5
ENAV19-	13.7	ENAV19-13.7 (ENAV18-14.2.17) Draft IALA Guideline Ed.1 on marine beacon coverage prediction Rev1 Aug2016	ENAV18 reformatted replaced by Alan Grant	WG5
ENAV19-	13.8	(ENAV18-14.2.18) WG5 Draft R-Mode Roadmap	ENAV18	WG5
ENAV19-	13.9.1	(ENAV18-14.2.19) WG5 R-Mode Mindmap (PDF format - updated 20160316)	ENAV18	WG5
ENAV19-	13.9.2	(ENAV18-14.2.20) WG5 R-Mode Mindmap (Mindmap format - updated 20160316)	ENAV18	WG5
ENAV19-	13.10	WG5 plan for ENAV19	Alan Grant	WG5

Meeting	Agenda Item	Title / Author (if required)	Source	Presented by / WG
ENAV19-	13.11.1	Covernote for draft Recommendation encouraging DGNSS provision, upgrade and future uses	Alan Grant	WG5
ENAV19-	13.11.2	Draft IALA Recommendation on DGNSS provision upgrades and future services	Alan Grant	WG5
ENAV19-	13.11.3	Draft IALA Guideline 1xxx Strategy for the implementation, upgrade and future use of DGNSS - to accompany new Rec	Alan Grant	WG5
ENAV19-	13.12	Singapore eRadar eRacon Trial 19 October 2015 final	Paul Mueller	WG5
ENAV19-	13.13	Transmission of SBAS corrections over IALA beacons and AIS	María Mota	WG5
ENAV19-	13.14	DWG query re IALA Acronyms Rev1	DWG	WG5 and WG3

ANNEX E LIST OF OUTPUT AND WORKING PAPERS

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

Number	OUTPUT PAPERS Title / Author (if required)	Source	Action
ENAV19- 14.1.1	Draft Guideline 1107 on Planning Testbeds and Reporting of Testbed Results Ed.2 June 2016.	WG2	Publish
ENAV19- 14.1.2	Info Paper to NCSR 4 on testbeds	WG2	To Council To NCSR4
ENAV19- 14.1.3	Liaison note to Council re IMO Inf paper to NCSR4	WG2	To Council
ENAV19- 14.1.4	Liaison note to PAP on the Road Map for e-Navigation	WG2	PAP
ENAV19- 14.1.5	IALA Roadmap for e-navigation	WG2	PAP
ENAV19- 14.1.6	Proposal to DWG for new Dictionary terms from WG1	WG1	DWG
ENAV19- 14.1.9	Liaison note to IMO NCSR4 re HGDM work programme - Draft NCSR 4-2-X - Comments on document NCSR 4-2-X	WG1 / WG4	To Secretariat
ENAV19- 14.1.11	Liaison note to ITU re VDE-SAT report	WG3	To Council (early) To ITU WP- 5B
ENAV19- 14.1.12	Liaison note to ITU on autonomous devices	WG3	To Council (early) To ITU WP- 5B
ENAV19- 14.1.13	Response to ARM4-12.1.3 Liaison to ENAV on S-201 PS rev 1	WG1	To ARM5
ENAV19- 14.1.14	Liaison note to ARM5 re portrayal of lights	WG1	To ARM5 To PAP32
ENAV19- 14.1.15	Draft Guideline on DGNSS Coverage prediction	WG5	To Council
ENAV19- 14.1.16	Draft Recommendation on DGNSS Service provision upgrade and future use	WG5	To Council
ENAV19- 14.1.17	Proposal to DWG re new Dictionary terms	WG5	To DWG
ENAV19- 14.1.18	Updated list of acronyms for IALA Dictionary	WG5	To Secretariat
ENAV19- 14.1.19	VDES Overview	WG3	To Council To IMO and other orgs
ENAV19- 14.1.20	VDES FAQ	WG3	To Council Post website To ENAV20
ENAV19- 14.1.21	Liaison note to IHO re result of workshop on Shore-based Maritime Services and status of development of the Guideline on MSP	WG4	To Council To IHO
ENAV19- 14.1.22	Liaison note to ITU re ITU-R M.1371 v1	WG3	To Council (early) To ITU WP 5B
ENAV19- 14.1.23	Liaison note to VTS Committee re e-navigation roadmap	WG2	To VTS43
ENAV19- 16.1	Report 19th Session IALA ENAV Committee - ENAV19	Secretariat	To Council

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

Number	WORKING PAPERS Title / Author (if required)	Source	Action
ENAV19- 14.1.7	Draft IALA Guideline 1087	WG1	To ENAV20
ENAV19- 14.1.8	Draft IALA Guideline 1106	WG1	To ENAV20
ENAV19- 14.1.10	Draft Guideline on R-Mode - Aims, technical approach and current status (revised)	WG5	To ENAV20
ENAV19- 14.2.1	ENAV Work Plan revised at ENAV19	Vice Chair	To ENAV20
ENAV19- 14.2.2	ENAV Work Programme Task Register revised at ENAV19	Vice Chair	To ENAV20
ENAV19- 14.2.3	Draft Guideline High accuracy positioning systems	WG5	To ENAV20
ENAV19- 14.2.4	Draft Guideline on SBAS	WG5	To ENAV20
ENAV19- 14.2.5	Draft IALA Guideline Ed.1 e-Loran service provision Guideline V1.1.	WG5	To ENAV20
ENAV19- 14.2.6	Draft Recommendation on eLoran service provision	WG5	To ENAV20
ENAV19- 14.2.7	Draft table of contents for revised Chapter 4 of the IALA NAVGUIDE 2018 edition	Vice Chair	To ENAV20
ENAV19- 14.2.8	(ENAV19-13.4) Draft IALA Recommendation Ed.1 on PNT relevant services and systems	WG5	To ENAV20
ENAV19- 14.2.9	Draft Guideline on MSP v6	WG4	To ENAV20
ENAV19- 14.2.10	(ENAV19-14.2.10) Draft Risk Assessment Plan	WG1	To ENAV20

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			☐	☒	☐	
1.2.1.	Develop Product Specification on AtoN Information	15	17	19	☐	☒	☐	Delayed to Session 19
1.3.1.	Revise Guideline 1106	15	16	17	☒	☐	☐	Task Completed
1.3.2.	S-100 Service Orientation	16	17	18	☒	☐	☐	Task Completed
4.3.3.	e-Navigation Risk Assessment	16			☒	☐	☐	On going
5.1.18.	CSSA draft documentation	15	21		☒	☒	☐	Task on hold
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 ENAV 18
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		☒	☐	☐	Aim for completion at ENAV19
4.4.1	Develop and progress an online discussion forum on testbeds.	15	16		☒	☐	☐	Task removed ENAV16

Task	Start	Planned	Revised	Progress Indicator			Status
4.4.2 Maintain fora to discuss tested-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		☒			To commence ENAV19
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
2.1.3 Organise a Workshop on VHF Data Exchange System	17	17		☒	☐	☐	Complete

Task		Start	Planned	Revised	Progress Indicator			Status
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
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			☒	☐	☐	
5.1.1	Develop Guideline/ Recommendation on Maritime Service Portfolios	18	21		☒	☐	☐	Commenced ENAV18 and progressed at ENAV19
5.1.2	MSP1 VTS Information Service (IS) / Operational User Needs	16	16	20	☐	☒	☐	Commenced ENAV16. Will be progressed during ENAV20
5.1.3	MSP2 Navigational Assistance Service (NAS) / Operational User Needs	16	17	20	☐	☒	☐	Commenced ENAV16. Will be progressed during ENAV20
5.1.4	MSP3 Traffic Organisation Service (TOS) / Operational User Needs	16	17	20	☐	☒	☐	Commenced ENAV16. Will be progressed during ENAV20
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	20	☐	☒	☐	First draft Complete. Will be Progressed during ENAV20
5.1.7	MSP6 Pilotage Service / Operational User Needs	16	17	20	☐	☒	☐	Commenced ENAV16. Will be progressed during ENAV20
5.1.8	MSP7 Tugs Service / Operational User Needs	16	17	20	☐	☒	☐	Commenced ENAV16. Will be progressed during ENAV20
5.1.9	MSP8 Vessel Shore Reporting / Operational User Needs	16	17	20	☒	☒	☐	First draft Complete. Will be progressed during ENAV20

Task		Start	Planned	Revised	Progress Indicator			Status
5.1.10	MSP9 Telemedical Maritime Assistance Service / Operational User Needs	16	17	20	☐	☐	☒	Commenced ENAV16. Could be progressed during ENAV20 but need expertise in this area
5.1.11	MSP10 Maritime Assistance Service (MAS) / Operational User Needs	16	17	20	☐	☒	☐	Commenced ENAV16. Will be progressed during ENAV20
5.1.12	MSP11 Nautical Chart Service / Operational User Needs	16	16	20	☐	☒	☐	First draft Complete and will be progressed during ENAV20
5.1.13	MSP12 Nautical Publications Service / Operational User Needs	16	16	20	☐	☒	☐	First draft complete and will be progressed during ENAV20
5.1.14	MSP13 Ice Navigation Service / Operational User Needs	16	17	20	☐	☒	☐	First draft complete and will be progressed during ENAV20
5.1.15	MSP14 Meteorological Information Service / Operational User Needs	16	17	20	☐	☒	☐	Commenced ENAV16. Will be progressed during ENAV20
5.1.16	MSP15 Real-Time Hydrographic and Environmental Information Services / Operational User Needs	16	16	20	☐	☒	☐	First draft complete and will be progressed during ENAV20
5.1.17	MSP16 Search and Rescue (SAR) Service / Operational User Needs	16	17	20	☐	☒	☐	Commence ENAV16 Will be progressed during ENAV20
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	19	☐	☒	☐	Final draft to be reviewed by ENAV20
3.1.2.	PNT Product Specification	15	17	18	☐	☒	☐	Work delayed.

Task	Start	Planned	Revised	Progress Indicator			Status
3.1.3. PNT services & Systems	16	18		☒	☐	☐	Draft Rec. prepared awaiting completion of associated Guidelines
3.1.4. High accuracy systems	18	20		☒	☐	☐	
3.1.5. Use of SBAS	17	19	20	☐	☒	☐	Extend to ENAV20
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	19	☒	☐	☐	
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

Action Items for Secretariat

1. The Secretariat is requested to add a disclaimer to each testbed section top and bottom on the IALA website to indicate that IALA is not responsible for the content of the testbed information. 7
2. The Secretariat is requested to progress establishment of an IALA website facility through which neighbouring DGNSS service providers can make contact regarding their planned maintenance periods. 7
3. The Secretariat is requested to set up a testbed discussion forum in accordance with ENAV18 action 24. 7
4. The Secretariat was requested to reinstate the website feature on the Committee papers page whereby clicking on top of the date column sorts all papers into upload date order, with the most recently updated at the top. 8
5. The Secretariat was requested to upload paper ENAV19-4.4, DNV GL Strategic Research & Innovation Position Paper 04-2015 - Ship Connectivity tcm8-56026, to the IALA Wiki. 8
6. The Secretariat is requested to follow up regarding possible patent issues in relation to R-Mode and AIS Class B carrier sense and report back to ENAV20. 9
7. The Secretariat is requested to arrange for depopulation of testbed information on e-navigation.net. 10
8. The IALA Secretariat is requested to forward output papers ENAV19-14.1.13 and ENAV19-14.1.14 to the ARM Committee and the PAP. 12
9. The IALA Secretariat is requested to submit ENAV19-9.6 as an input document to ENAV20. 12
10. The IALA Secretariat is requested to forward papers ENAV19-14.1.7 and ENAV19-14.1.8 to ENAV20. 13
11. The IALA Secretariat is requested to consider how IALA Committees can best interact with the HGDM, taking into account the needs of all IALA Committees as well as time constraints. 13
12. The IALA Secretariat is requested to consider ENAV19-14.1.9 in relation to the response to the IHO regarding the HGDM. 13
13. The Secretariat is requested to forward paper ENAV19-14.1.6 with new entries for terms and definitions to the Dictionary Working Group (DWG) of the IALA Policy Advisory Panel (PAP) for inclusion in the IALA Dictionary. 14
14. The Secretariat is requested to appoint Sewoong Oh from KRISO as an IALA representative to attend the March 2017 meeting of S100WG of IHO in order to explain the need and role of streamable data in context S100. 14
15. The IALA Secretariat is requested to arrange for the legal disclaimer in para 10.2 of the Committee report to be agreed by the Chair of LAP (Jon Price) and implemented on the testbeds section of the IALA website. 16
16. The IALA Secretariat is requested to investigate (with Redwire) what usage statistics (e.g. number of hits to the landing page, the duration on the pages visited) are available. Additionally, if possible, the Secretariat should generate a set of usage statistics in time for ENAV 20 (March 2017). 16
17. The IALA Secretariat is requested conduct a final editorial check on ENAV19-14.1.1 (Guideline No 1107 Guideline on planning testbeds and reporting of testbed results Edition 2.0) and post the guideline to the IALA website. 16
18. The IALA Secretariat is requested to seek IALA Council approval of the draft information paper to IMO NCSR 4 (ENAV19-14.1.2). This approval, to be sought either out of session or at Council 63 as appropriate, should be in sufficient time to meet the IMO submission deadline for such papers – 30 December 2016. 16

19.	The IALA Secretariat is requested to forward an accompanying introductory note (ENAV19-14.1.3) to the IALA Council, which provides background to the draft information paper to IMO NCSR4 (ENAV19-14.1.2).	16
20.	The IALA Secretariat is requested to forward ENAV19-14.1.23 (Liaison note re e-navigation roadmap) to the VTS Committee.	17
21.	The IALA Secretariat is requested to forward ENAV19-14.1.4 (Liaison note on the Road Map for e-Navigation) to the PAP.	17
22.	The IALA Secretariat is requested to forward the ENAV19-14.1.5 (IALA e-Navigation road map) to PAP for information and discussion.	17
23.	The IALA Secretariat is requested to forward ENAV19-10.1 (editorial comments from the ENG Committee on the NAVGUIDE) to ENAV20.	17
24.	The IALA Secretariat is requested to forward ENAV19-14.2.7 (Draft table of contents for revised Chapter 4 of the NAVGUIDE) to ENAV20.	17
25.	The IALA Secretariat is requested to forward ENAV19-14.1.11 (liaison and VDE-SAT Report), 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 28 October 2016.	18
26.	The IALA Secretariat is requested to forward ENAV19-14.1.19 Guideline on VDES Overview to Council for approval.	19
27.	The IALA Secretariat is requested to post ENAV19-14.1.20 FAQ on VDES to the e-navigation section of the IALA website when approved by Council.	19
28.	The IALA Secretariat is requested to consider providing ENAV19-14.1.19 and Council introduction to ENAV19-14.1.19 to the IMO and other organisations, subject to Council approval.	19
29.	The IALA Secretariat is requested to withdraw Guideline 1028 and 1029 from the IALA website.	19
30.	The IALA Secretariat is requested to submit ENAV19-14.1.22 to Council for approval by correspondence and forward to ITU WP 5B by the due deadline of 28 October 2016.	20
31.	The Secretariat to forward the liaison note to IHO regarding the result of workshop on Shore-based Maritime Services and status of development of the Guideline on MSP (ENAV 19-14.1.21) to Council for approval.	22
32.	The Secretariat to forward the liaison note to IHO Secretariat for HSSC regarding the result of the workshop on Shore-based Maritime Services and status of development of the Guideline on MSP (ENAV19-14.1.21) to IHO together with ENAV19-14.2.9.	22
33.	The Secretariat to forward the draft Guidelines ENAV19-14.2.9 to ENAV 20.	23
34.	The IALA Secretariat is requested to forward working documents ENAV19-14.2.5, Draft eLoran recommendation on eLoran Service Provision, and ENAV19-14.2.6, Draft Guideline on eLoran service provision, to ENAV20.	23
35.	IALA Secretariat is requested to forward ENAV19-14.2.8, Draft Recommendation on PNT relevant services, to ENAV20.	24
36.	IALA Secretariat is requested to forward “ENAV19-14.2.3 – Draft Guideline on systems and services for high accuracy positioning and ranging”, to ENAV20.	24
37.	IALA Secretariat is requested to forward working paper ENAV19-14.2.4 Draft SBAS Guideline as an input paper to ENAV20.	24
38.	The IALA Secretariat is requested to submit ENAV19-14.1.15 (Draft Guideline on DGNSS coverage prediction) to Council for approval.	25
39.	IALA Secretariat is requested to forward ENAV19-14.1.17 Proposal to DWG re new Dictionary terms to the DWG.	25
40.	The Secretariat is requested to implement comments on Guideline 1112.	25
41.	The IALA Secretariat (DSG) is requested to progress the issue of a patent in relation to R-Mode AIS issued to True Heading.	26

42.	The IALA Secretariat is requested to forward paper ENAV19-14.1.10 Draft Guideline on R-mode - aims, technical approach and current status to ENAV20.	26
43.	The IALA Secretariat is requested to forward ENAV19-14.1.16, Draft Recommendation on DGNSS provision, upgrades and future use, to Council for approval.	26
44.	The Secretariat is requested to forward the report of ENAV19 (ENAV19-16.1) to the Council, to note.	27

Action Items for Members

45.	Hideki Noguchi is requested to provide Bulletin articles on ENAV19 and patents.	10
46.	Thomas Christensen is requested to coordinate intersessional work on Maritime Resource Naming (MRN) with the aim of the IALA Secretariat submitting an application for an IALA MRN URN Domain Name to the Internet Engineering Task Force.	12
47.	Committee Members are requested to provide change suggestions regarding ENAV19-14.1.7 and ENAV19-14.1.8 to ENAV20.	13
48.	Fred Pot is requested to coordinate intersessional work on data exchange for ship reporting in relation to MSP development and provide input to ENAV20.	13
49.	The Maritime Cloud Development Forum (MCDF) is requested to provide an updated version of the Maritime Cloud Service Registry to ENAV20.	14
50.	The MCDF is invited to draw up a roadmap to identify which partitions of the Maritime Cloud are appropriate to which international bodies and provide as input to ENAV20.	14
51.	Axel Hahn is requested to submit a conceptual description of a generic maritime architecture framework to ENAV20.	14
52.	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 input to section 6, Maritime Digital Infrastructure, assigned to WG1 for ENAV20	15
53.	Working Group Chairs are requested to comment on the proposed table of contents in ENAV19-14.2.7 (Draft table of contents for revised Chapter 4 of the NAVGUIDE), commence drafting substantial text for their respective sections and submit mature text to ENAV 20.	17
54.	Members of WG3 are requested to provide input to ENAV20 regarding WD ITU-R M.2092.	19
55.	Stefan Bober and Alan Grant are requested to draft an input paper for ENAV20, outlining the requirement for a liaison statement to ITU and requesting station ID's for SBAS stations.	20
56.	Committee members are requested to note the proposed new work item for IMO on revision of the AIS Performance Standards and liaise with J Arroyo [cgnav@uscg.mil] regarding possible co-sponsorship.	20
57.	The Chairs of the ENAV and ARM Committees are requested to agree the content of ENAV19-14.1.12 prior to submission to Council.	21
58.	Committee members are encouraged to further develop the list of attributes in ENAV 19-12.1 with reference to the CMDS and submit to ENAV-20.	22
59.	The chairs of WG1 and WG4 are requested to forward the results on the discussion on paper ENAV19-12.6 to the Secretariat.	23
60.	Committee Members are encouraged to submit comments on the draft working paper ENAV19-14.2.9 to ENAV 20.	23
61.	All Committee members are invited to review the draft eLoran Guideline (ENAV19-14.2.6) and draft eLoran Recommendation (ENAV19-14.2.5) before ENAV20. Any comments should be provided to Prof Jiwon Seo (jiwon.seo@yonsei.ac.kr) by 1 st February 2017.	23
62.	The draft Guideline on systems and Services for High Accuracy Positioning and Ranging will be updated between sessions via email. Committee members interested in contributing to this update are invited to contact Thoralf Noack (thoralf.noack@dlr.de).	24

63.	The draft Guideline on SBAS (ENAV19-14.2.4) will be updated intersessionally via email. Committee members interested in contributing to this update are invited to contact Manuel Lopez Martinez (Manuel.LOPEZMARTINEZ@gsa.europa.eu).	24
64.	Alan Grant is requested to invite IALA support for the PNT Guideline under development by an IMO Correspondence Group.	25
65.	Committee members are requested to submit inputs on ENAV19-14.1.10, Draft Guideline on R-mode - aims, technical approach and current status, to Alan Grant for coordination of input to ENAV20.	26
66.	Committee participants are requested to advise any corrections / amendments to the draft ENAV18 report, paper ENAV19-16.1 post plenary, by 30 September 2016.	27



10, rue des Gaudines - 78100 Saint Germain en Laye, France
Tél. +33 (0)1 34 51 70 01- Fax +33 (0)1 34 51 82 05 - contact@iala-aism.org
www.iala-aism.org

International Association of Marine Aids to Navigation and Lighthouse Authorities
Association Internationale de Signalisation Maritime