REPORT OF THE SIXTEENTH MEETING

**OF THE WWNWS SUB COMMITTEE (WWNWS16)**

 **SHOA, Valparaiso, Chile**

**2 to 6 September 2024**

1. **OPENING REMARKS AND ADMINISTRATIVE ARRANGEMENTS**

Chair WWNWS-SC welcomed all participants and introduced himself. He provided brief background details to the meeting and expressed his appreciation to all present for making the effort to participate in person. He extended his thanks to Chile for hosting the meeting and remarked on the fantastic facilities and the effort that they had gone to.

The Chair asked the 80 participants introduce themselves - [list of participants](http://online.iho-khoa.kr/participants?title=16th%20Meeting%20of%20the%20World%20Wide%20Navigational%20Warning%20Service%20Sub-Committee%20&pdf=true)

1. Welcome by the Host

Rear Admiral Arturo Oxley, Director of SHOA welcomed participants to Chile. Referencing the unique geographic location of Chile on a major fault line, and its inherent exposure to Tsunami inundation, he emphasized the importance of the WWNWS-SC to his nation and the region. He noted that the 16th meeting of the WWNWS-SC was being held in the 150th anniversary year of SHOA and welcomed participants to be part of this celebration.

IHO Assistant Director (AD) Sam Harper welcomed participants and extended the greetings of IHO Director Luigi Sinapi. He passed on some comments from Director Sinapi which included:

* The WWNWS Sub-Committee represents an example to be followed by all the WGs / Sub-Committees of the IHO in the faithful and active interpretation and implementation of the IHO Strategic Plan 2021-2026 and its Goals and Targets (example is the achievement of about 90% target of the IHO SPI 1.3.1)”.
* Acknowledging the WWNWS’ support to the IHO's Capacity Building programme, through continued availability to provide MSI courses for members of the Regional Hydrographic Commissions, facilitating inter-regional and intra-regional cooperation for the safety of navigation.

In looking ahead to the meeting AD Harper reminded participants of the multi organisational nature if the work of the WWNWS and that as we move into the implementation of S-100, and specifically S-124, this collaboration will become evermore important in order to observe the reporting and governance processes of all organisations involved. He opined that in doing so we have to also be prepared to stand back from existing ways of doing things and ask ourselves “what is it that the customer (The mariner) is demanding of us, and what will new technology allow us to do better.

1. Working Arrangements

The Secretary introduced the working arrangements, including articulating some remote meeting procedures and protocols.

1. Administrative Arrangements

The Secretary provided details on the meeting arrangements and reminded all to remember those whose first language is not English, to speak slowly and clearly to allow all to be able to understand and engage in the meeting.

1. Adoption of the Agenda

Agenda was introduced, discussed and approved without amendment.

**Decision 1 - Agenda adopted without revision**

1. Review of Action Items from WWNWS15

The actions items from WWNWS15 were reviewed and it was agreed that some items were covered in the agenda.

**Action 1 - All participants to review list of actions from WWNWS15 and provide an update on the status of those for which they have responsibility.**

1. Report from IRCC16 and HSSC16 - [Report](https://iho.int/uploads/user/Inter-Regional%20Coordination/WWNWS/WWNWS16/WWNWS16_2024_1.6_EN_HSSC16_IRCC16_Report.pdf) - [Presentation](https://iho.int/uploads/user/Inter-Regional%20Coordination/WWNWS/WWNWS16/WWNWS16_2024_1.6_EN_HSSC16_IRCC16_Presentation.pptx)

The Chair presented the report of relevant activities at IRCC16 and HSSC16. He recapped on the role of both bodies and explained that there was a need to report to HSSC as well as IRCC given the importance on the work relating to S-124 and other S-100 activity. He noted that all of the detail was included in the associated report but highlighted a number of key points including the recurring theme of increased work on S-124 and cross-cutting elements of S-100.

**HSSC16.** The Recalled that HSSC16 took place in Tokyo, Japan from 27-31 May 2024. The Committee discussed the use of Secure Exchange and Communication (SECOM) with S-100 based products and services and requested that the IHO Council recognise the St. Lawrence River as an “IHO Canada Sea Trial Area” (for S-100 testing) along with the possibility to identify additional official areas around the world.

Paper HSSC16-07C - S-124 *Data Dissemination issues related to e-navigation,* was presented to HSSC16. The paper noted the MSI dissemination systems information transmission options identified by IMO MSC.1/Circ.1645, and predicted that MSC.1/Circ.1645 would be updated to include NAVDAT in the near future. It further highlighted that radio frequencies are required to disseminate MSI and that these frequencies are protected. Indeed, MSI is part of the GMDSS and any new transmission method can only be implemented in the GMDSS structure by modifying the Radio Regulations. The point was made that this modification can only be carried out by a World Radio Conference (WRC).

Comment paper HSSC16-07F - *Comment on S-124 data dissemination issues related to e-navigation*, was submitted by the Chair of the IHO WWNWS-SC. The paper addressed NAVDAT and VDES as potential new dissemination methods and the challenges that remain for each. The Chair noted that MSC 108 was expected to adopt the draft resolution MSC.530(106)/Rev.1 on ECDIS performance standards and highlighted that IEC Publication 63173-2, *Maritime Navigation and Radiocommunication Equipment and Systems – Data Interface – Part 2: Secure Communication Between Ship and Shore* is referenced in MSC.530. Further, communication between SECOM information services for data exchange relies on IP-based web services and the result of the adoption of the draft resolution MSC.530(106)/Rev.1 at MSC 108, is that Member States acknowledged the requirement for the use of a broadband and IP-based connection to the S-100 ECDIS when it approved route exchange via SECOM.

**IRCC16.** The 16th meeting of the Inter-Regional Coordination Committee (IRCC) took place in Santa Cruz Island – Galapagos, Ecuador from 10-12 June 2024. Key discussions included the need for harmonized development and implementation of S-100 products and services, and updates on the readiness of S-100 data migration through exchange technology. The need for Member States to allocate additional resources to start S-101 and S-102 production and how to better serve Sub-ECDIS customers with reliable, affordable and easy to access digital navigational products was also covered.

The IRCC was informed that the limited funds available to the Capacity Building programme proved that strengthening collaboration across RHCs is very beneficial for cooperation amongst coastal states. The challenges with S-101 scheming and the possible high workload during the dual fuel period due to parallel production of both S-57 and S-101 ENCs was acknowledged. IRCC16 tasked the IRCC Chair and WWNWS Chair to coordinate and send a letter to the specific RHCs where there is a need to implement IMO recognized mobile satellite services for MSI transmission to encourage relevant Member States to do so.

The Chair reported the annual statistics on global MSI provision that were presented to IRCC16 as part of the WWNWS-SC return against the IHO SPI 3.1.1 *Percentage of Coastal States that are capable to provide maritime safety information (MSI) [navigational warnings] according to the joint IMO/IHO/WMO manual on MSI (2026 - 90%).* He noted that the current figure is at 87%.

1. **MATTERS RELATED TO THE GMDSS MASTER PLAN**
2. Review of content of GMDSS Master Plan Annexes 7 & 8

The Chairs of the IMO NAVTEX Coordinating Panel and EGC Coordinating Panels reminded the Sub-Committee to regularly review their information in the NAVTEX and EGC services section of the GMDSS Master Plan of GISIS, in particular information on MSI coastal warning areas.  All MSI providers are encouraged to validate regularly that their allocated broadcast schedule is aligned and reflected accurately in GISIS for NAVTEX, SafetyNET and SafetyCast services and published in relevant nautical publications.

1. **PROMULGATION OF MARITIME SAFETY INFORMATION (MSI)**
2. Relevant IMO meetings

(Agenda items 3.1, 3.2 and 3.3 were taken under one agenda item)

Osamu Marumoto presented the following update on behalf of the IMO Secretariat.

**OUTCOME OF MSC 108**

MSC 108 considered matters of relevance to the WWNWS as recorded in MSC 108/20, Section 12.

**Revised descriptions of Maritime Services in the context of e-navigation**

The committee approved MSC.1/Circ.1610/Rev.1 on *Descriptions of Maritime Services in the context of e-navigation.* Maritime Service 5 includes the description of MSI. The information contained in the circular is a contribution towards the harmonization of the format and structure of Maritime Services. These descriptions are expected to continue to be periodically updated, taking into account developments and related work on harmonization.

**Recognition and implementation of new terrestrial GMDSS services**

The committee considered the need to develop a formal recognition framework for new terrestrial services that could become part of the GMDSS, such as the digital navigational data (NAVDAT) System, including implementation and cost-related issues for shore-based facilities, and:

1. Taking into account the relevant provisions of SOLAS, in particular SOLAS regulation IC/5, agreed that the establishment of a formal recognition framework for new terrestrial GMDSS services was not necessary;
2. Agreed that NAVDAT implementation should not entail replacement of shipborne NAVTEX receivers with NAVDAT receivers; and
3. Instructed the NCSR Sub-Committee to consider NAVDAT implementation issues and implications of its introduction, both from the shore and ship perspectives, including coordination with existing NAVTEX services and carriage requirements, and advise the Committee, as appropriate.

**S-100 implementation matters**

Upon adoption of resolution MSC.530(106)/Rev.1 on Performance standards for electronic chart display and information systems (ECDIS), the Committee instructed the NCSR Sub-Committee to consider the development of appropriate operational guidance for route exchange in accordance with operative paragraph 4 of the resolution and advise the Committee, as appropriate. The Committee also:

1. Instructed NCSR 11, if time permitted, to further consider under "Any other business" the issues raised in documents MSC 108/12/4 and MSC 108/12/5, i.e. S-100 implementation matters and training needs of seafarers, taking into account the views expressed at this session (see paragraph 12.13), and advise MSC 109, as appropriate;
2. invited interested parties to consider, if necessary, submitting proposals for new outputs to a future session of the Committee.

**Joint IMO/IHO/WMO Manual on Maritime Safety Information**

The Committee approved MSC.1/Circ.1310/Rev.2 on Joint IMO/IHOIWMO Manual on Maritime Safety Information to be implemented as from1 January 2025.

**Dissemination of information over multiple recognized mobile satellite services**

The Committee considered the actions emanating from NCSR 10 concerning the dissemination of information over multiple recognized mobile satellite services (RMSSs) (MSC 108/12, paragraph 3.7), taking into account other documents submitted.

In this regard, the Committee considered, in particular, the following issues:

1. Mandatory dissemination of MSI and SAR related information over multiple RMSSs, including setting a deadline for disseminating information over the Iridium SafetyCast service;
2. Scope of the revision of resolution A.707(17), and its harmonization with the revision of resolution A.1001(25); and
3. Cost implications for information providers regarding the dissemination of information over multiple RMSSs.

With regard to the mandatory dissemination of MSI and SAR related information over multiple RMSSs, the Committee:

1. Instructed the NCSR Sub-Committee to prepare draft amendments to the SOLAS Convention, including any necessary consequential amendments to related instruments, clearly stating the requirement for dissemination of MSI and SAR related information through all operational RMSSs, as appropriate;
2. Agreed that MSI should be disseminated through all operational RMSSs with an implementation date not later than 31 December 2026; urged Member States responsible for the dissemination of MSI to complete the implementation of the Iridium SafetyCast service as soon as possible; and invited Member States that might experience delays with the implementation of the Iridium SafetyCast service to provide relevant information to the IMO Secretariat; and
3. Agreed also that rescue coordination centres (RCCs) should disseminate SAR related information through all operational RMSSs, as appropriate, or, alternatively, establish the necessary arrangements with other certified providers for dissemination of information within the areas for which the RCC was responsible, taking into account the Guidance for the dissemination of search and rescue related information through the international enhanced group call service (MSC.1 /Circ.1659) and the relevant provisions of SOLAS regulation V/7. In this regard, NAVAREA Coordinators may wish to note that SAR authorities with no access to EGC services may establish arrangements with an authorized EGC information provider (i.e. preferably another SAR authority already in receipt of a Certificate of Authorization, or a NAVAREA coordinator) that can disseminate the information on their behalf. In these cases, the SAR authority that originates the information is always responsible for any information that is disseminated by other authorized EGC information providers on their behalf.

With regard to the revision of resolutions A. 707(17) and A.1001(25), the Committee agreed that:

1. The review, approval and adoption of the above resolutions should be aligned;
2. Resolution A.707(17) should remain compatible with, and should not duplicate the requirements for, ship-to-shore distress and safety communications originating from a maritime mobile station in ITU-T Recommendation D.90;
3. the revision of resolution A.707(17) should apply to all RMSSs used in the GMDSS and would not address cost issues for information providers at this stage; and
4. the use of any new satellite system, including the VHF Data Exchange System (VOES), for use in the GMDSS, should be recognized by the Organization in accordance with the applicable procedures.

With regard to options to address cost implications for information providers, the Committee, considering that no concrete proposals had been received on the cost issue, agreed that no further action was needed to address cost implications for information providers at this stage.

**OUTCOME OF NCSR 11**

NCSR 11 considered matters of relevance to the JWG, as indicated in the following paragraphs (NCSR 11/19, sections 5, 7, 8, 9, 11 and 18).

**GMDSS Master Plan**

The Sub-Committee noted that the modifications to the GMDSS Master Plan module of GISIS agreed by NCSR 9 (NCSR 9/24, paragraph 10.46.3), consisting mainly of the consolidation of all enhanced group call (EGC) services under a single section, had been completed and encouraged Member States to regularly check the information and keep it updated, in particular that concerning EGC services, including the Iridium SafetyCast service, its broadcasting schedule and implementation status.

**Annual reports of recognized mobile satellite service providers**

The Sub-Committee, having noted the information on the annual reports of RMSS providers, invited Member States to:

1. Consider encouraging MSI providers and SAR services using the lnmarsat SafetyNET service to migrate to SafetyNET II given the cost and functionality benefits; and
2. ensure that MSI providers broadcast information via the Iridium SafetyCast service.

**World-Wide Navigational Warning Service**

The Sub-Committee noted the information provided in document NCSR 11/5/6 (IHO) concerning the outcomes of the fifteenth session of the IHO World-Wide Navigational Warning Service (WWN/S) Sub-Committee, held from 4 to 8 September 2023, in particular the ongoing discussions in IHO regarding the complexities associated with the development of the product specification of S-124 for navigational warnings, including its implementation and dissemination of information.

In relation to S-124, the Sub-Committee noted also the information provided in document NCSR 11/INF.9 (Canada) on Canada's experience related to the incorporation of S-124 products into their navigational warning issuing system.

**Dissemination of MSI and SAR related information**

Having noted the outcome of MSC 108 (see paragraphs 2.4 to 2.8), the Sub-Committee instructed the Joint IMO/ITU Experts Group on Maritime Radiocommunications, at its twentieth meeting (7 to 11 October 2024), to prepare draft amendments to the SOLAS Convention, including any necessary consequential amendments to related instruments, to state clearly the requirement for dissemination of MSI and SAR related information through all operational RMSSs as soon as possible.

The Sub-Committee also finalized the draft Assembly resolution on Charges for distress, urgency and safety communications through recognized mobile satellite services in the GMDSS, revising and revoking resolution A.707(17), and the draft Assembly resolution on Criteria for the provision of mobile satellite communication systems in the Global Maritime Distress and Safety System (GMDSS), revising and revoking resolution A.1001 (25) and MSC.1/Circ.1414, for approval by MSC 109 (2 to 6 December 2024) and subsequent adoption by the Assembly (November/December 2025).

**Development of performance standards for a digital navigational data system**

The Sub-Committee approved the draft MSC resolution on Performance standards for the reception of maritime safety information and search and rescue related information by MF and HF digital navigational data (NAVDAT) system and the draft revision of resolution MSC.509(105) on Provision of radio services for the Global Maritime Distress and Safety System (GMDSS) (NCSR 11/19, annexes 5 and 6, respectively), with a view to adoption by MSC 109.

With regard to the remaining work required to be conducted in the context of implementation of the NAVDAT system, the Sub-Committee, inter alia:

1. Invited the IMO NAVTEX Coordinating Panel to develop a NAVDAT service coordination scheme, taking into account timeslots, promulgation characteristics, establishment of NAVDAT service areas and impact on MSI providers; and
2. Instructed the Joint IMO/ITU Experts Group, at its next meeting, to further review the draft NAVDAT manual (NCSR 10/8, annex 3) and consider the draft revised road map on issues to be considered regarding the introduction of the NAVDAT service (NCSR 11/WP.8, annex 5) and advise the Sub-Committee, as appropriate.

**Development of amendments to SOLAS chapters IV and V and performance standards and guidelines to introduce VHF data exchange system (VDES)**

Subject to the Committee's agreement to extend the target completion year of the associated output, the Sub-Committee agreed to re-establish the Correspondence Group on VHF Data Exchange System (VDES) (see also paragraph 16.6.1), under the coordination of Japan', instructing it, taking into account the comments and decision made at this session, to:

1. Finalize the draft amendments to SOLAS chapter V, including consequential amendments, if necessary, to the appendix (Certificates), including SOLAS Protocols and associated instruments, taking into consideration the possible substitution of the mandatory carriage requirement of AIS by the AIS component of VDES;
2. finalize the draft performance standards for VDES as a navigational equipment;
3. finalize the draft guidelines for the operational use of shipborne VDES;
4. Prepare the draft check/monitoring sheet for the amendments to SOLAS chapter V and assess capacity-building implications, taking into account the guidance in MSC.1/Circ.1500/Rev.3; and
5. Submit a report for consideration at NCSR 12.

Development of guidelines for the use of electronic nautical publications (ENP)

Having noted the considerations of the Working Group (NCSR 11/WP.7, section 4), the Sub-Committee agreed to establish a Correspondence Group on Guidelines for the use of electronic nautical publications (ENP) (see also paragraph 16.6.2), under the coordination of the Republic of Korea instructing it, taking into account the comments and decisions made at this session, to:

1. Finalize the draft guidelines for the use of electronic nautical publications (ENP), based on the annex to document NCSR 11/12, taking into account the views expressed in paragraph 4.2 of document NCSR 11/WP.7; and
2. Submit a report for consideration at NCSR 12

Following the report, Iridium noted that whilst the deadline for use of all RMSS is 31st December 2026, it was strongly recommended that this is done as soon as possible.

1. Self Assessments by NAVAREA Coordinators (*Brief reports highlighting only significant events in previous period, S-124 status, identified deliverables/outputs and matters requiring WWNWS-SC action, full reports can be downloaded from the WWNWS-SC website*). For WWNWS16, NAVAREA coordinators used a new summary presentation template. Links to the reports and the presentations (if supplied) are provided below.

**NAVAREA I**

The NAVAREA I coordinator gave their [report](https://iho.int/uploads/user/Inter-Regional%20Coordination/WWNWS/WWNWS16/WWNWS16_2024_3.2-I_EN_Self%20Assessment%20NAVAREA%20I.pdf). ([presentation](https://iho.int/uploads/user/Inter-Regional%20Coordination/WWNWS/WWNWS16/WWNWS16_2024_3.2-I_EN_Self%20Assessment%20NAVAREA%20I_Presentation.pptx))

Summary - NAVAREA I remains in a good state. No significant changes since the WWNWS15 report

**NAVAREA Ib**

The NAVAREA Ib coordinator gave their [report](https://iho.int/uploads/user/Inter-Regional%20Coordination/WWNWS/WWNWS16/WWNWS16_2024_3.2-Ib_EN_Self%20Assessment%20NAVAREA%20Ib.pdf). ([Presentation](https://iho.int/uploads/user/Inter-Regional%20Coordination/WWNWS/WWNWS16/WWNWS16_2024_3.2-Ib_EN_Self%20Assessment%20NAVAREA%20Ib%20Presentation.pptx))

Summary - The Baltic Sea Sub-area Coordinator introduced the Self-Assessment Report, document WWNWS16/3/2/Ib. No significant change since previous report.

**NAVAREA II**

The NAVAREA II coordinator gave their [report](https://iho.int/uploads/user/Inter-Regional%20Coordination/WWNWS/WWNWS16/WWNWS16_2024_3.2-II_EN_Self%20Assessment%20NAVAREA%20II.pdf). ([Presentation](https://iho.int/uploads/user/Inter-Regional%20Coordination/WWNWS/WWNWS16/WWNWS16_2024_3.2-II_Self%20Assessment%20NAVAREA%20II%20Presentation.pptx))

Summary - The NAVAREA II coordinator informed the WWNWS members of the developments of S124 project in Shom through the PING platform and provided a demonstration. She also provided an update on the trials and expected date of return to service of the NAVTEX station of Corsen.

**NAVAREA III**

The NAVAREA III coordinator gave their [report](https://iho.int/uploads/user/Inter-Regional%20Coordination/WWNWS/WWNWS16/WWNWS16_2024_3.2-III_EN_NAVAREA%20III%20Self%20Assessment.pdf). ([Presentation](https://iho.int/uploads/user/Inter-Regional%20Coordination/WWNWS/WWNWS16/WWNWS16_2024_3.2-III_EN_NAVAREA%20III%20Self%20Assessment%20Presentation.pdf))

Summary - The number of NAVAREA III warnings promulgated has remained consistent over the last few years.

The number of non-operational NAVTEX stations in NAVAREA III has increased since WWNWS15. As a consequence, messages from Italy, Greece, Bulgaria and Malta have had to resend the messages from France, Tunisia, Egypt and Libya. NAVAREA III Coordinator centre also has to broadcast NAVAREA III warnings through SafetyNET II and SafetyCast. All Member States are encouraged to use only NAVAREA warning for Safety to Navigation purposes as stated on IMO Res A.706 (17), NOT FOR ANY OTHER REASONS. Libya Navtex Station is still under construction.

**NAVAREA IV & XII**

The NAVAREA IV & XII coordinator gave their [report](https://iho.int/uploads/user/Inter-Regional%20Coordination/WWNWS/WWNWS16/WWNWS16_2024_3.2-IV_XII_EN_Self%20Assessment%20NAVAREA%20IV%20XII.pdf). ([Presentation](https://iho.int/uploads/user/Inter-Regional%20Coordination/WWNWS/WWNWS16/WWNWS16_2024_3.2-IV-XIII_NAVAREA_IV-XIII_Self%20Assessment%20Presentation.pdf))

Summary - The NAVAREA IV and XII Deputy Coordinator provided a report on NAVAREA activities in the reporting period since WWNWS15. He highlighted the challenges regarding NAVTEX equipment within the NAVAREA, updates on Space Activity effecting shipping, and the latest developments of the Maritime Safety Information Working Group within the MACHC.

**NAVAREA V**

The NAVAREA V coordinator gave their [report](https://iho.int/uploads/user/Inter-Regional%20Coordination/WWNWS/WWNWS16/WWNWS16_2024_3.2-V_EN_NAVAREA%20V%20Self%20Assessment.pdf). ([Presentation](https://iho.int/uploads/user/Inter-Regional%20Coordination/WWNWS/WWNWS16/WWNWS16_2024_3.2-V_EN_NAVAREA%20V%20Self%20Assessment%20Presentation.pptx))

Summary - NAVAREA V transmits MSI at scheduled times via Inmarsat's EGC service, the Internet, and high frequency. A new contingency plan is being developed between the NAVAREA V and NAVAREA VI for MSI transmission through other RMSS. Brazil aims to complete internal administrative procedures to join Iridium's EGC service by the end of 2024; if successful, operational MSI transmissions are expected to start on January 1, 2025.

**NAVAREA VI**

The NAVAREA VI coordinator gave their [report](https://iho.int/uploads/user/Inter-Regional%20Coordination/WWNWS/WWNWS16/WWNWS16_2024_3.2-VI_EN_Self%20Assessment%20NAVAREA%20VI.pdf).

Summary - The SHN in its capacity as NAVAREA VI National Coordinator promulgates and broadcasts navigational warnings in compliance with IMO and IHO guidelines and in-force regulations. Navigation warnings are broadcasted through SafetyNET II and steps have been taken to begin the SafetyCast trial period.

Warnings over 42 days old are included in the next Notices to Mariners, when appropriate for amendment reasons.

The Contingency plan exercise with Brazil was performed in February 2024. Page 9 of 9 During the reported period, we have kept 6 operational NAVTEX stations for broadcasting warnings on 518 kHz and 490 kHz within a 280 NM coverage range.

Maritime safety information on our website is constantly updated. Our website has been modernized this year to enable users to access to navigational warnings easier.

NAVAREA VI is unlikely to declare operational S-124 services by 1 January 2026.

**NAVAREA VII**

No report or presentation submitted

**NAVAREA VIII**

The NAVAREA VIII coordinator gave their report. ([Presentation](https://iho.int/uploads/user/Inter-Regional%20Coordination/WWNWS/WWNWS16/WWNWS16_2024_3.2-VIII_EN_Self%20Assessment%20NAVAREA%20VIII%20Presentation.pdf))

Summary - The NAVAREA VIII self-assessment report highlights MSI activities for the period 2023-24. India is actively involved with various IHO committees and working groups.

**NAVAREA IX**

The NAVAREA IX coordinator gave their [report](https://iho.int/uploads/user/Inter-Regional%20Coordination/WWNWS/WWNWS16/WWNWS16_2024_3.2-IX_EN_Self%20Assessment.pdf). (Presentation)

Summary – The NAVAREA IX Coordinator is responsible for disseminating Maritime Safety Information (MSI) to all 16 countries within the region. Navigational warnings are issued via INMARSAT and IRIDIUM satellites and are also included in the weekly Notice to Mariners (NTMs). All active warnings and NTMs are consistently posted and monitored on the NAVAREA IX website. NAVAREA IX maintains internet access to both service providers and monitors broadcasts from both systems. Additionally, the reception of all NAVAREA warnings distributed through Safety Net/Safety Cast and coastal warnings is monitored at the National Hydrographic Office (NHO) via the appropriate communication centre terminals.

**NAVAREA X**

The NAVAREA X coordinator gave their [report](https://iho.int/uploads/user/Inter-Regional%20Coordination/WWNWS/WWNWS16/WWNWS16_2024_3.2-X_EN_Self%20Assessment%20NAVAREA%20X.pdf). ([Presentation](https://iho.int/uploads/user/Inter-Regional%20Coordination/WWNWS/WWNWS16/WWNWS16_2024_3.2-X_EN_Self%20Assessment%20NAVAREA%20X_Presentation.pdf))

Summary - NAVAREA X and the National Coordinator for Australia are fulfilling its responsibilities for promulgation of navigational warnings in accordance with IMO and IHO guidelines and regulation. The NAVAREA X Coordinator is actively engaged internationally to promote the WWNWS and the service it provides, particularly, improvement of the services to sustain them in the future.

Australia is progressing implementation of S-100 and S-124, though progress is unlikely to result in a declared service by 1 January 2026. Due to competing commitments and ability to coordinate funding arrangements, the intentions of NAVAREA X and XIV to host/facilitate an MSI capacity building training activity in 2025 will be postponed until 2026 at this stage.

**NAVAREA XI**

The NAVAREA XI coordinator gave their [report](https://iho.int/uploads/user/Inter-Regional%20Coordination/WWNWS/WWNWS16/WWNWS16_2024_3.2-XI_EN_NAVREA%20XI%20Self%20Assessment.pdf). ([Presentation](https://iho.int/uploads/user/Inter-Regional%20Coordination/WWNWS/WWNWS16/WWNWS16_2024_3.2-XI_EN_NAVREA%20XI%20Self%20Assessment%20Presentation.pptx))

Summary - The NAVAREA XI Deputy Coordinator provided a report on NAVAREA activities in the reporting period since WWNWS15. He highlighted activities on NAVTEX stations and needs of capacity building in the region.

NAVAREA XIV clarified that Kiribati had received regular MSI training despite the report to the contrary.

NAVAREA IV and XII noted the mention of virtual remote training with Malaysia and asked for further details on the arrangement, noting the potential benefit. In response it was indicated that it was bilateral arrangement to support Malaysia to establish NAVTEX Stations.

**NAVAREA XIII**

The Chair provided the NAVAREA XIII [report](https://iho.int/uploads/user/Inter-Regional%20Coordination/WWNWS/WWNWS16/WWNWS16_2024_3.2-XIII_EN_Self%20Assessment%20NAVAREA%20XIII.pdf). (Presentation)

Summary – After test broadcasting NAVAREA XIII is ready to use the SafetyCast system. No change since the SafetyCast service was tested in 2021. Further progress depends on the actions of the national authorized body under Ministry of Transport. There are no significant changes since NAVAREA XIII report to WWNWS15.

**NAVAREA XIV**

The NAVAREA XIV coordinator gave their [report](https://iho.int/uploads/user/Inter-Regional%20Coordination/WWNWS/WWNWS16/WWNWS16_2024_3.2-XIV_EN_Self%20Assessment%20NAVAREA%20XIV.pdf). ([Presentation](https://iho.int/uploads/user/Inter-Regional%20Coordination/WWNWS/WWNWS16/WWNWS16_2024_3.2-XVI_EN_NAVAREA%20XVI%20Self%20Assessment%20Presentation.pptx))

Summary - The NAVAREA XIV self-assessment report provides MSI statistics for the 2023 calendar year and highlights the MSI-related activities since WWNWS 15.

New Zealand is actively involved with several IMO and IHO Sub-Committees and

Working Groups; and capacity building in the SWP region for MSI, charting and

hydrography. The New Zealand RMSS EGC API has been operational for over 12 months and feedback from the users has been very positive. Due to scheduling conflicts and funding issues, NAVREA XIV and X are considering rescheduling their MSI capacity building course from 2025 to 2026. New Zealand government agencies are collaborating on a project to implement S-100 products. As part of this project, NAVAREA XIV intends to implement an integrated navigational warning service to produce S-124 and S-53 navigational warnings.

**NAVAREA XV**

The NAVAREA XV coordinator gave their [report](https://iho.int/uploads/user/Inter-Regional%20Coordination/WWNWS/WWNWS16/WWNWS16_2024_3.2-XV_EN_Self%20Assessment%20NAVAREA%20XV.pdf).

Summary - NAVAREA warnings are transmitted by Valparaíso Playa Ancha Radio (CBV) through the International Enhanced Group Calling Service (EGC) in accordance with the IMO manual of recognized mobile satellite service providers, currently having in a fully operational state SafetyNet II and SafetyCast. Regarding NAVTEX and EGC services, the information contained in the GISIS module is updated. Rapa Nui (Easter Island) NAVTEX station is temporarily out of service, meanwhile, coastal warnings of the mentioned area, are being emulated by EGC. A contingency plan was signed on September 21, 2023 with NAVAREA XVI and an annual verification exercise was carried out on July 11, 2024. No significant progress has been made on S-124.

**NAVAREA XVI**

The NAVAREA XVI coordinator gave their [report](https://iho.int/uploads/user/Inter-Regional%20Coordination/WWNWS/WWNWS16/WWNWS16_2024_3.2-XVI_EN_NAVAREA%20XVI%20Self%20Assessment.pdf).

Summary - The Directorate of Hydrography and Navigation of the Peruvian Navy, as NAVAREA XVI coordinator, transmits in force MSI messages everyday, at 0500 and 1700 hrs UTC time, by SafetyNET and SafetyCast Service through INMARSAT (AOR-W) and IRIDIUM; and by NAVTEX when required. Also, MSI messages will also be transmitted at any schedule upon reception of warning messages. NAVAREA XVI is divided in 3 sub-areas defined as Ocean Pacific: Coastal Paita, Coastal Callao and Coastal Mollendo. These Coastal Centres operate autonomously promulgating Navigational Warnings via NAVTEX. Peruvian Contingency Plan provides actions needed to face emergencies caused by natural disasters, as well as provisions for the dissemination of alerts in case of a Tsunami warning occurrence. In addition, Coordination Center NAVAREA XVI has ISO 9001:2015 quality management certification.

**NAVAREA XVII & XVIII**

The NAVAREA XVII & XVIII coordinator gave their [report](https://iho.int/uploads/user/Inter-Regional%20Coordination/WWNWS/WWNWS16/WWNWS16_2024_3.2-XVII-XVIII_EN_Self%20Assessment.pdf). ([Presentation](https://iho.int/uploads/user/Inter-Regional%20Coordination/WWNWS/WWNWS16/WWNWS16_2024_3.2-XVII-XVIII_EN_Self%20Assessment%20Presentation.pptx))

Summary - As of 1 January 2024, Canada has discontinued the use of NAVAREA rectangular broadcasts for vessels with older Inmarsat terminals although METAREA broadcasts are still promulgated this way. NAVAREA duties transitioned from Prescott MCTS to Iqaluit MCTS in May 2024. Prescott MCTS has been designated the alternate Centre when Iqaluit closes at the end of the Arctic navigational season in mid-December. Canada had not previously reported on NAVTEX station Upernavik, located in Greenland so data is supplied for 2022 and 2023. The NAVAREA warnings are now promulgated on the national Navigational Warning Issuing System (NIS) website. Canada is undergoing a NAVTEX renewal project for 2024/25. Work is ongoing in an effort to be ready for S-124 implementation with a target date of Dec 2025.

**NAVAREA XIX**

The NAVAREA XIX coordinator gave their [report](https://iho.int/uploads/user/Inter-Regional%20Coordination/WWNWS/WWNWS16/WWNWS16_2024_3.2-XIX_EN_Self%20Assessment%20NAVAREA%20XIX.pdf). ([Presentation](https://iho.int/uploads/user/Inter-Regional%20Coordination/WWNWS/WWNWS16/WWNWS16_2024_3.2-XIX_EN_Self%20Assessment%20NAVAREA%20XIX%20-%20Presentation.pptx))

Summary - The NAVAREA XIX Coordinator introduced the Self-Assessment Report covering the period since WWNWS 15. NAVAREA XIX is fully operational on Inmarsat SafetyNET II and Iridium SafetyCast and have integrated the MSI API in their system/operation. A conversation ensued regarding the implementation of APIs and whether there are significant efficiencies. General feeling that there are a number of work arounds/concerns that have been mentioned by NAVAREAs that mean a more detailed conversation is merited.

**National Report China**

The National Coordinator For China gave their [report](https://iho.int/uploads/user/Inter-Regional%20Coordination/WWNWS/WWNWS16/WWNWS16_2024_3.2-NCR_EN_Self_Assessemnt_China.pdf).

Summary - The coastal warnings with a VITAL priority are mainly search and rescue information. When receiving the coastal warnings of "VITAL" level, the duty personnel will immediately monitor the working frequency, and broadcast the information immediately if the frequency is idle. If the frequency is occupied, the duty personnel will contact the relevant station to ask for interruption of its transmission, and broadcast it immediately after the frequency is idle. The NAVTEX system is equipped with primary and secondary transmission and antenna equipment as well as primary and secondary power supplies to ensure the stable operation of the service. At the same time, the coast radio station has formulated an emergency response plan to ensure the orderly implementation of various works when emergency events occur. Every year, the coast radio station organizes emergency drills, including the switch of the main and standby servers, which exercises the emergency response ability and coordination ability of the personnel on duty. China MSA established a coastal radio staff training, testing and certificating system since 2020. In 2023, China has carried out training relating with in-force bulletin of navigational warnings.

 .3 Broadcast Systems and Services

* 1. Report of the IMO NAVTEX Coordinating Panel - [Report](https://iho.int/uploads/user/Inter-Regional%20Coordination/WWNWS/WWNWS16/WWNWS16_2024_3.3.1_EN_NAVTEX_Panel_Report.pdf)

The Panel Chair provided an overview of NAVTEX activities. Key points included the ongoing challenges in NAVAREA III due to the conflict in Ukraine, with efforts to guide NAVTEX station operators in the eastern region on appropriate message content. In NAVAREA XI, discussions are underway to establish NAVTEX facilities in Brunei, highlighting the Coordinator's dedication to expanding service coverage. The report noted no significant operational issues affecting the global dissemination of MSI via NAVTEX but emphasized the importance of verifying information before retransmission to prevent discrepancies. Authorities are urged to report the status of non-operational NAVTEX stations and update their entries in the Global Integrated Shipping Information System (GISIS). Additionally, the report touched on the development of the NAVDAT system, indicating that further comprehensive testing is necessary before it can be integrated alongside existing services.

1. Report of the IMO EGC Coordinating Panel - [Report](https://iho.int/uploads/user/Inter-Regional%20Coordination/WWNWS/WWNWS16/WWNWS16_2024_3.3.2_EN_EGC%20Panel%20report.pdf)

The Chair of the EGC panel delivered his report. He recapped the ToRs, highlighting that all NAVAREA coordinators should attend the meetings of the Panel. He recalled the mandate and remit of the group and explained how the group does its work. He went through the process and reasons behind securing an EGC certificate. He explained the rationale behind making contingency arrangements and cited a number of examples where this has proved necessary. He advertised the details of the next meeting and requested all to attend.

The IMO representative indicated that the GMDSS Master plan allows for different time schedules from the standard regime. He asked that if alignment isn’t possible, please let them know so that this can be validated.

A discussion was had about some of the challenges with using contingency arrangements when all communications are lost, making it impossible to contact your contingency partners. It was agreed that despite these challenges, it was still advised that all NAVAREAs make contingency arrangements, noting that it is free to implement.

1. Report of the AG-WWMIWS - [Report](https://iho.int/uploads/user/Inter-Regional%20Coordination/WWNWS/WWNWS16/WWNWS16_2024_3.3.3_EN_WMO%20AG-WWMIWS-SubC%20report_V1.1.pptx)

Vice Chair of the AG-WWMIWS gave report. He went through the changes in membership and noted that the next meeting was in the UK the following week. In terms of Iridium SafetyCast status, he reported that 13 METAREAS are operational 3 are in trials and six have not started the process. He went through the updates to relevant publications and noted the work on S-411, S-412, S-413 and S-414. In terms of WMO relevant updates, he reported on the new editions of the sea-ice information and services, the operational handbook for METAREA Coordinators, WMO’s roll in Tsunami early Warnings, Marine emergency response and marine services course. Finally, he noted that the WMO is also considering actions and initiatives to increase the representation of women within the meteorological community.

**Action 1. Update IHO Page for WWMIWS membership/remove link**

 .4 Developments in GMDSS

1. Inmarsat Services update – significant items/upgrades of relevance – Presentation

John Dodd gave an update on Inmarsat activities. He explained how Inmarsat sits within the wider Viasat parent company and how the acquisition had progressed since the last meeting. He gave an update on SafetyNET and SafetyNET II implementation. He gave an overview of online training resources that are available through the Inmarsat Maritime Safety Training Hub.

He introduced Corey Ranslem, who gave a demonstration of Dryad Global’s Automated Risk Management Solution (ARMS) – Presentation.

IMSO questioned the IMB broadcast issue and assistance was offered with dealing with this problem.

NAVAREA II asked how the ARMS system displays warnings that have associated polygonal geometry as opposed to point features. The answer was that this would be handled in future versions.

1. Iridium Service update – significant items/upgrades of relevance; operational implementation progress update – Presentation

Mark Lawson gave an update on Iridium activity of relevance to the group. He went through the Status of iridium implementation and the relevant changes to SOLAS that came into effect on 1 Jan 2024. He covered the expansion of Iridium GMDSS to Certus terminals and noted that iridium acquired a number of Satellites which provides redundancy and safeguards the supply of components.

1. BDMSS progress update – [Report](https://iho.int/uploads/user/Inter-Regional%20Coordination/WWNWS/WWNWS16/WWNWS16_2024_3.4.3_EN_BDMSS%C2%A0progress%C2%A0update.pptx)

Phillip Lane (IMSO) and Falong Liu (CITTC) provided an update which detailed significant advancements in integrating BDMSS into the Global Maritime Distress and Safety System (GMDSS). They reported that following the International Maritime Organization's (IMO) recognition of BDMSS in November 2022, the focus has been on developing the SafetyLink service, which facilitates the broadcast of Maritime Safety Information (MSI) and Search and Rescue (SAR) communications within the defined service region of 75°E to 135°E longitude and 10°N to 55°N latitude. The presentation highlighted the establishment of operational protocols, coordination with NAVAREA and METAREA coordinators, and the creation of an interim SafetyLink Service Manual to guide information providers. Emphasis was placed on ensuring compliance with IMO resolutions and the Joint IMO/IHO/WMO Manual on MSI, as well as on the importance of capacity building and training for effective implementation.

The BDMSS implementation plan was reviewed in detail and the outcome of the frequency interference challenges at the World Radio Conference 23 was discussed.

Regarding the interim BDMSS Manual, the discussions at DRWG22 were recapped ahead of the presentation of the updated manual for the WWNWS-SC approval. The adjustments were scrutinised and the interim BDMSS manual was approved.

**Decision 1. Interim BDMSS Manual Approved.**

1. International Maritime Bureau Piracy Centre update

Cyrus Mody gave an update on the IMB PRC. He explained the structure of ICC and how the Commercial Crime Services team fit in to identify and prevent any type of Maritime Crime and fraud. He noted that their broadcast certificates only permit them to broadcast Piracy warnings, as opposed to all security concerns/warnings. He went through the changes to the way they undertake their broadcasts. In terms of S-124 they, noted the need to digitise, the need for ECDIS capability and standardisation.

INMARSAT noted the absence of daily Sitreps and the drop in number of warnings sent out. The response was that they only receive information from credible sources and do not scrape anything from the internet. A discussion was had regarding the nature of information that the IMB can broadcast under their existing certificate. The notion of private actors wishing to secure an EGC certificate was also discussed.

**Action 2. IMO EGC Panel to lead discussion and consideration regarding whether the type of information that the IMB can broadcast should be expanded, and whether outside providers can apply for an EGC certificate to broadcast similar information.**

 .5 Developments in the WWNWS

1. Modernization of Terrestrial systems of the GMDSS

Chair of the NAVTEX panel in their capacity as a member of the UK delegation, presented a discussion paper on the background to considering how new technologies are brought on-line within the GMDSS. He noted the decision by the IMO that there should be no formal recognition process for terrestrial broadcast systems. However, the value of a roadmap for the onboarding of new systems was discussed (NCSR 11/WP.8, Annex 5). It was acknowledged that this issue affects METAREAs as well. He made a number of suggestions for consideration/observations by the group:

* Support for the change of the name to the panel to something more general was supported;
* He suggested that the WWNWS needs to do better at informing the IMO of the potential impacts of the implementation of new technologies earlier;
* He suggested that a new framework that allows the assessment of potential new systems to understand how it links in with existing systems would be beneficial;

A discussion ensued and a number of solutions were proposed for how to take this issue forward. It was decided that new technologies should be a regular discussion topic at WWNWS meetings, and that an informal group could be created to further discussions intersessionally. Canada, Sweden, UK and the Chair of the NAVTEX Coordinating Panel volunteered to form this group.

**Action 3. Make new technologies a standing agenda item**

**Action 4. Create a new advisory group to continue discussions intersessionally, with a hope that the group can articulate these considerations and articulate what steps the WWNWS-SC considers that need to be taken when implementing a new terrestrial system**

1. EGC navigational warnings visualization (Inmarsat)

Inmarsat introduced Corey Ranslem, who gave a demonstration of Dryad Global’s Automated Risk Management Solution (ARMS) – Presentation.

1. EGC navigational warnings visualization (Iridium)

Iridium gave an update on their visualisation developments. He provided a demonstration of their Nautoshark real time display of MSI, and sought feedback from the participants as to whether this type of tool would be needed to assist with MSI creation and validation. The general response was that the market would determine whether tools such as this were required, but when it comes to the generation of S-124 products a geographical interface will be required.

1. Dissemination method options and timelines for S-124 navigational warnings

US presented a paper on the future vision for S-124 dissemination - [Report](https://iho.int/uploads/user/Inter-Regional%20Coordination/WWNWS/WWNWS16/WWNWS16_2024_3.5.4_EN_S-124%20provision.pdf)

The paper was framed around a number of fundamental questions including whether a S-124 dataset is considered maritime safety information that is subject to the procedures as laid out in IMO and ITU documentation, and noting the impacts, including cost, to information providers and to seafarers, how does the WWNWS-SC ensure global S-124 coverage? A number of options were presented including a hybrid option that allows for a phased approach where S-124 Navigational warnings exist for a time alongside traditional MSI.

Australia and New Zealand presented a paper on their S-100 paper for MSC109 - [Report](https://iho.int/uploads/user/Inter-Regional%20Coordination/WWNWS/WWNWS16/WWNWS16_2024_3.5.4.1_EN_MSC%20109-19-Y%20-%20S-100%20full%20potential%20-%20FINAL.docx)

The paper to MSC109 proposes a new work output for NCSR 12 and 13 for the development of guidance to establish a framework for data distribution and global IP-based connectivity that realizes the full potential of the S-100 capable ECDIS. It was reported that the proposed output would address the following aspects:

* Develop new guidance to establish a framework for data distribution and global IP-based connectivity between shore-based facilities and ships. This would address the interfaces and requirements for data exchange between ship and shore, including connectivity and cybersecurity, and any requirements for exchanging S-100 products;
* Two amendments to the ECDIS performance standard (resolution MSC.530(106)/Rev.1) to:
	+ support requirements for the real-time exchange of S-100 products beyond S-421 via SECOM (paragraph 26), and;
	+ ensure interfaces (addressing connectivity and cybersecurity) with the equipment described in paragraph 58.1 are supported, and;
* Development of guidance, including possible amendments to existing guidance, for the promulgation of internationally and nationally coordinated information using the S-100 product specifications which are necessary for safe navigation.

The question over whether S-124 products and theservice would be considered MSI in the formal sense of the term generated much debate. Positions and further questions posed included the potential risks of providing safety information in an unregulated/protected environment, the time it would take to adjust the various IMO instruments to accommodate S-124 in the GMDSS, the feasibility of using existing means of transmission to promulgate S-124 products and the potential challenges of backwards compatibility with S-57 ECDIS.

Following the discussion the Chair summarised the views that had been presented. He suggested that there was general support from the WWNWS-SC that in time, S-124 products and services should be considered MSI, but that a phased approach where both S-124 and traditional MSI were available through the GMDSS would be likely. In light of this, the notion of a roadmap for S-124 adoption and implementation was discussed. It was noted that whilst the question as to whether S-124 is/isn’t or should/shouldn’t be classed as MSI is valid, trying to answer it now will only stifle development of S-124 products before mariners have had a chance to judge the potential benefits.

**Action 5. In consultation with WMO, MS5 to be updated by Chair and Vice Chair for WWNWS17 and add to work plan**

1. Update on Space Activity

NAVAREA IV/XII (US) and XIV (NZ) presented their paper on the work of the group - [Presentation](https://iho.int/uploads/user/Inter-Regional%20Coordination/WWNWS/WWNWS16/WWNWS16_2024_3.5_EN_Space%20Activity%20Advisory%20Group%20Presentation.pdf)

NAVAREA XIV provided a summary and background on the work of the group, highlighting that this topic was established as a standing agenda item. The group is tasked with providing general updates on relevant space activity and conducting a specific investigation into how seafarers respond to such information. They reviewed the optional template designed for formatting and structuring space activity information from space operators and noted the benefits of its continued use.

NAVAREA IV/XII presented an update on their investigation into how space operators are working with Maritime Safety Information (MSI). The discussion also covered the South Pacific Ocean Uninhabited Area (SPOUA), with initial findings indicating that vessel operators are more likely to alter their courses to avoid small, targeted hazard areas, whereas very large hazard zones present challenges for mariners with limited avoidance options. The group recommended reminding MSI providers of the existence of the space activity worksheet template.

**Action 6. NAVAREA coordinators to promote the use of the optional template amongst coastal states in their region**

**Action 7. Invite SAAG to hold another meeting with Space operators.**

1. Space Weather Navigational Warnings - [Paper](https://iho.int/uploads/user/Inter-Regional%20Coordination/WWNWS/WWNWS16/WWNWS16_2024_3.5.6_EN_Space%20Weather%20Navigational%20Warnings.pdf)

NAVAREA I provided an update, highlighting a significant space weather event that occurred in May 2024, which posed risks to radio communications and navigational instruments. They presented information from the UK Met Office on potential space weather impacts on maritime capability, as well as the NOAA space weather scales used by the UK Met Office. A key issue raised was the lack of clear guidance on when NAVAREAs should communicate space weather information to mariners.

The following recommendations were made:

* Invite WWNWS-SC to work jointly with AG-WWMIWS to determine how space weather information can best be shared and coordinated.
* WWNWS-SC to consider giving clearer guidance on the promulgation of Space Weather warnings in a standardised manner.
* Invite the WWNWS-SC Space Activity Advisory Group to provide proposed guidance to the relevant bodies on changes to MSI documentation.

In discussing the recommendations, it was recognised that there was a need for the WWNWS-SC to work more closely with their METAREA colleagues on Space Weather, with a view to developing clearer guidance to MSI providers. It was noted that as this work progresses, adjustments to relevant MSI documentation may need revising.

**Action 8. WWMIWS Vice Chair to engage wider group on how to work with space weather experts and report back to WWNWS17 on outcomes of initial investigations to questions posed.**

 .6 Development and Testing of S-124 Navigational Warnings

1. S-124 Development update - Presentation

The chair of the S-124 PT provided an update the work done on S-124 since the last meeting. The report covered interactions with key IHO bodies, key outcomes from the task teams established at WWNWS15, working groups, and ongoing product specification developments.

The S-124 project team engaged with several IHO bodies, including the S-100 Working Group (S-100WG) and the Hydrographic Services and Standards Committee (HSSC). Discussions at S-100WG8 led to clarifications on dataset handling, specifically recommending metadata, service, and S-128 options for the S-124 In-force list. Additionally, the link between S-124 and S-125 was explored. The S-100TSM8 meeting established the method of operation for S-158.

HSSC16 saw the submission of an S-124 progress report and an impact study. A paper from Germany raised questions about S-124 dissemination, prompting consideration of informing the IMO and ITU regarding potential regulatory gaps in MSI provision under ITU Radio Regulations and SOLAS chapters IV and V. Additionally, concerns were raised about the impact on S-104 and S-111 in relation to real-time hydrographic and environmental information services.

As a result, HSSC tasked the NIPWG and S-100WG, in coordination with WWNWS, to address the open issues raised by Germany. NIPWG presented the ENDS Tree to illustrate the connections between IMO Maritime Services, SOLAS chapter V, and S-100 Product Specifications.

Reflecting on discussions had earlier in the meeting, it was noted that the approval of the revised ECDIS Performance Standard at MSC108 incorporated IEC 63173-2 (SECOM) for route exchange. Building on the insights offered in the paper to MSC109 from Aus/NZ, the S-124 PT Chair demonstrated an S-124 service compatible with SECOM and MCP.

It was noted that France had proposed adding 14 new details to the NAVWARN attribute, particularly regarding temporary removal and re-establishment of Aids to Navigation (AtoN). The proposal was validated and accepted, ensuring consistency in NAVWARN messaging, and passed to the S-124 Project Team to and to its work plan

In terms of development of S-124 itself, significant work was reported on S-124 Edition 1.5 and the upcoming Edition 2.0. Canada led updates to the Feature Catalog (FC), Portrayal Catalog (PC), and schema, while the UK supported an in-depth review of Edition 1.0. This review led to extensive feedback, including recommendations to reference S-100 rather than duplicating details. Germany submitted portrayal components to the GI Registry, and a formal review took place from June 28 to July 26.

For Edition 2.0, all comments on Edition 1.5 were adjudicated, with France suggesting mandatory metadata bounding boxes. This change would impact various message types, including in-force bulletins. Aligning the data model with the GI Registry remains a challenge due to the registry's limitations in tracking all product specifications. However, improvements are expected with increased use of the Feature Catalogue Builder. The completion of the feature catalogue, portrayal catalogue, and GML schema work depends on resolving CamelCase issues and GI Registry processing. CamelCase is a way to separate the words in a phrase by making the first letter of each word capitalized and not using spaces. HSSC aims to receive the Product Specification (PS) in early September, raising the question of whether WWNWS-SC can endorse it in its unfinished state.

During the ensuing discussion, it was suggested that the Data Classification and Encoding Guide (DCEG) could be separated and included as a separate annex. It was noted that this would be a departure from how this has been handled with other Product Specifications, but that it should be explored in order to not delay the publication of Ed.2.0.0.

The meeting also considered whether the S-124 Project Team remains necessary given the progress towards S-124 Edition 2.0.0 and the involvement of additional working groups.

**Action 9. Investigate in-force warning bulletin utility going forward**

**Action 10. Seek solution for separating the DCEG annex from the PS through engagement with GI Registry and S-100WG**

China MSA presented a [paper](https://iho.int/uploads/user/Inter-Regional%20Coordination/WWNWS/WWNWS16/WWNWS16_2024_3.6.4.5_EN_The%20Report%20on%20Production%20and%20Application%20of%20S-124%20Data%20in%20China.pdf) on the work undertaken in the practice of S-124 product production, including software development, data production, developments of e-Navigation technical services, and the applications in the APP and shipborne ECS. A number of recommendations were tabled, including the inclusion of a human readable version of the feature catalogue as an annex.

**Action 11. Modify the China MSA recommendations of including a human readable version of the feature catalogue as Appendix B.1 to link it with the machine-readable feature catalogue**

Following the presentations and discussions, the IHO Sec. reflected on the earlier discussion regarding the need for a S-124 implementation roadmap, as well as suggesting the obvious complexity of developing the S-124 Product Specification would be helped by updating the S-124 PT Workplan. This would allow for the required tasks to be effectively assigned and any challenges with future resourcing to be identified ahead of time. The S-124 PT Chair, together with volunteers from the WWNWS-SC, undertook this task and completed it overnight.

**Action 12. Develop S-124 implementation Roadmap**

1. Feature Catalogue Developments

Item included in 3.6.1

1. Portrayal Catalogue Development

Item included in 3.6.1

1. S-124 Trial and Testing
	* 1. Unfortunately, due to time constraints, the Chair decided that all S-124 demonstrations would be provided virtually vit Microsoft Teams at the S-124 Candidate for Edition 2.0 WWNWS approval meeting to be held in November 2024.
		2. Ping system - [Paper](https://iho.int/uploads/user/Inter-Regional%20Coordination/WWNWS/WWNWS16/WWNWS16_2024_3.6.2_EN_FR_S124_PING%20update.pptx)

France presented an update on PING recalling that the system serves as a centralized system for drafting and transmitting nautical information, including notices to mariners, coastal warnings, and NAVAREA warnings.

A key development was PING's alignment with S-124 following the publication of Edition 1.0.0 in July 2023. This ensures greater compatibility and standardization in the dissemination of navigational warnings. As part of this modernization effort, PING’s source code has been made open-source, allowing hydrographic offices and maritime organizations worldwide to collaborate and adopt the system. In April 2024, a public portal for PING became operational in mainland France, granting mariners and stakeholders real-time access to critical navigational warnings and related information.

To facilitate the transition and implementation of these improvements, training sessions were conducted throughout 2024 for operators responsible for NAVAREA II and French regional authorities. As a result, most maritime safety information is now transmitted through PING, significantly improving the efficiency and consistency of information dissemination.

* + 1. USA-124 update - [Paper](https://iho.int/uploads/user/Inter-Regional%20Coordination/WWNWS/WWNWS16/WWNWS16_2024_3.6.3_EN_USA_S124_SMAPS_update.pdf)

The United States provided an update on its Source Maritime Automated Processing System (SMAPS). Initially presented at WWNWS14, SMAPS is a cloud-based application that leverages machine learning and natural language processing to automate aspects of S-53 navigational warning production.

Operational since 2022, SMAPS was designed without S-124 capability. Recognizing the importance of aligning with the S-124 standard, development efforts commenced in 2023 and 2024 to integrate this functionality. A key focus has been enabling the system to both create and ingest S-124 datasets. This dual capability ensures that SMAPS can process incoming S-124 data, whether manually uploaded via an Amazon Web Services Simple Storage Solution (AWS S3) bucket or through the SMAPS Application Programming Interface (API).

To accommodate a transitional period where both S-53 and S-124 datasets are in use, the SMAPS data model has been expanded. Developers have added an XML column to each warning within the AWS Aurora relational database, facilitating parallel promulgation of both formats. This approach ensures consistency and accuracy during the dual-fuel phase.

Looking ahead, NAVAREA IV/XII aims to meet the International Hydrographic Organization's (IHO) timeline for Phase 1 of S-100 implementation by 2026, which includes S-124. Current efforts involve creating and validating S-124 datasets, refining the data model and user interface to fully utilize the product specification, and enhancing automation processes. The WWNWS-SC is invited to note this progress and encourage NAVAREA and National Coordinators to share datasets for testing purposes.

1. S-124 Guidance Documentation - [Paper](https://iho.int/uploads/user/Inter-Regional%20Coordination/WWNWS/WWNWS16/WWNWS16_2024_3.6.5.1_EN_Proposal%20on%20Adding%20an%20Appendix%20for%20Enumeration%20Codes%20and%20Definitions%20List%20in%20S-124.pdf)

China presented a proposal concerning the S-124 product specification. The proposal highlights challenges encountered in identifying attribute enumerations within S-124 Edition 1.0.0, released in May 2023. Specifically, China noted that the concise naming of enumerations—totalling 378 across the various attributes can lead to ambiguities, especially for non-native English speakers. Currently, definitions for these enumerations are located in the S-124 GML Schemas file, which may not be easily accessible to all users. To address this, China proposes adding an appendix to the S-124 specification that provides clear definitions for each enumeration, thereby enhancing clarity and usability for a broader audience.

1. Validation Developments – [Paper](https://iho.int/uploads/user/Inter-Regional%20Coordination/WWNWS/WWNWS16/WWNWS16_2024_6.6_EN_S-158_S-124%20validation%20checks.pdf)

The S-124 PT Chair reported on the management of validation checks for the S-124 Product Specification. He highlighted discussions from the S-100TS8, which addressed the relationship between S-158 and validation checks specific to individual product specifications.

He recounted that historically, S-57 included validation checks within its ENC product specification. However, after the freezing of S-57 Edition 3.1, updating these checks became challenging, leading to their migration into a separate standard, S-58. To prevent similar issues with S-100-based product specifications, it was proposed that all validation checks be consolidated into S-158. This approach allows for independent updates to validation checks without necessitating version changes to the entire product specification.

He noted that under this structure, each product specification, including S-124, will have its own section within S-158, managed independently by the respective working groups or project teams. The S-100 Working Group, particularly its Data Validation Sub-Group, will oversee the overall management of S-158.

He recommended that WWNWS endorse this management approach for S-124 validation checks, submit them to the S-100 Working Group, and establish a dedicated working group to oversee these checks, including the appointment of a lead.

1. S-124 Next Steps

Based upon the work undertaken out of session, the S-124 PT Chair went through the update workplan and associated milestones. The S-124 WP is included at Annex A.

1. How legacy ECDIS systems could benefit from S-124 – [Paper](https://iho.int/uploads/user/Inter-Regional%20Coordination/WWNWS/WWNWS16/WWNWS16_2024_3.6.8_EN_S124ForLegacyECDIS.pdf) - [Presentation](https://iho.int/uploads/user/Inter-Regional%20Coordination/WWNWS/WWNWS16/WWNWS16_2024_3.6.8_EN_S124ForLegacyECDIS_presentation.pdf)

SevenCs presented a paper addressing the integration of S-124 navigational warnings into legacy ECDIS. It was contended that whilst the S-124 standard aims to facilitate the seamless incorporation of navigational warnings into future S-100-compliant ECDIS, enhancing route planning and voyage monitoring, a significant number of existing ECDIS units will lack the capability to process S-100 data.

To bridge this gap, it was proposed to convert S-124 data into formats compatible with legacy ECDIS systems, enabling mariners to access updated navigational warnings without the need for system upgrades. It was suggested that this approach leverages existing distribution channels and proposes the development of complementary services by governmental authorities and data-service providers. It was further suggested that this would aid the uptake of S-124 through greater exposure.

A discussion ensued where the practicalities of such a system, together with the technical and regulatory challenges were highlighted. The prevailing concern was that if it was successful, it could slow the development and implementation of S-124. Finally, it was noted that this may be an example of a value added service that the private sector is best placed to pursue development of.

1. GMDSS relationship to S-124

This conversation was summarised an incorporated into 3.5.4.

1. Toolset to create S-124

Ed Kuwalek presented developments from IIC technologies in developing tools for producing S-100 products, including S-124. He explained the background to the Nautilus Cloud and the dedicated S-124 tools. He gave a demonstration of the technology and offered to provide further support to anyone who was interested.

1. **REVIEW OF GUIDANCE DOCUMENTS AND OTHER RELATED DOCUMENTATION**
2. Document Review Status Report - [Report](https://iho.int/uploads/user/Inter-Regional%20Coordination/WWNWS/WWNWS16/WWNWS16_2024_4.1b_DRWG22_v1.0_draft.pdf)

The Chair of the DRWG presented the report from DRWG22 along with the document review schedule. He went through the actions and decisions noting that a key focus was the BDMSS SafetyLink Manual and the Joint IMO/IHO/WMO MSI Manual. Key actions included adding the BDMSS SafetyLink Manual to the document review schedule, revising various IMO resolutions (A.705, A.706, and A.1051) for better clarity, and making structural updates to improve navigational warning dissemination, particularly for Maritime Autonomous Surface Ships (MASS) and Search and Rescue (SAR) information.

He sought approval for the current work schedule which was approved. He presented the proposed dates for DRWG23 – 11-13 March 2025.

IMO noted the discussion at NCSR12 regarding management of its workload and the implications that this might have on document submission. It was agreed that this should be borne in mind.

**Decision 3. Work schedule approved**

**Action 13. Add DRWG23 to calendar and web page**

1. IMO Resolutions A.705(17) as amended and A.706(17) as amended (MSC.1/Circ.1287 and MSC.1/Circ.1288 respectively)

The Chair went through the redline version of A.705 and the key changes proposed. It was noted that 3.4 still was still in square brackets and that this should be reviewed by DRWG23.

The Chair sought approval of changes to A.705.

**Decision 4. Changes to A.705 approved by WWNWS-SC subject to changes submitted to DRWG23**

The Chair went through the redline version of A.706 and the key changes proposed. Norway proposed that 5.3 should be adjusted to include costal warnings and NAVTEX. It was also noted that 5.6 and 5.8 were still highlighted as the reference still needs to be updated.

The Chair sought approval of changes to A.706.

**Decision 5. Changes to A.706 approved by WWNWS-SC subject to changes submitted to DRWG23**

1. Joint IMO/IHO/WMO Manual on MSI (MSC.1/Circ.1310) and IHO Publication S-53

The redline version was presented by the chair and approved for submission by the WWNWS-SC.

**Decision 6. Changes to Joint IMO/IHO/WMO Manual on MSI (MSC.1/Circ.1310) and IHO Publication S-53 approved.**

**Action 14. Participants of WWNWS to engage their IMO representatives on this matter to ensure that they are aware**

1. Relations between NAVAREA Coordinators and Rescue Coordination Centres (COMSAR/Circ.3)

NZ explained that COMSAR/Circ.3 on Relations between NAVAREA Coordinators and Rescue Coordination Centres (annexed) provides guidance to Rescue Coordination Centres (RCCs) and NAVAREA Coordinators in the event an RCC requests the broadcast of a NAVAREA warning regarding search operations that have been unsuccessful. However, it was noted that this potentially no longer aligns with resolution A.706(17), as amended. It was agreed that this should be reviewed in detail and appropriate action taken.

**Action 15. Review COMSAR/Circ.3 for alignment with A.706(17)**

1. MSI element of IHO Publication C-55 – “Status of Hydrography and Nautical Cartography World-Wide”.

The Chair recapped his update provided in 1.6, noting the work undertaken to update C-55 and showcased the GIS database that shows the status of MSI provision that will be made available on the IHO website in due course.

1. Maritime Services in the context of e-Navigation

See Action 5.

1. Terms of Reference for the WWNWS Sub Committee Annual check and review (IHO Circular Letter 46/2009) (Chair/Secretary)

The Chair went through the Terms of Reference (ToRs) and Rules of Procedure (RoPs) by paragraph. The following observations/changes were recorded:

**ToRs**

* Dates on the ToRs need to be updated
* Adjust paragraph 4 to update the content to reflect the modern remit of the guidance provided by the WWNWS-SC
* Adjust paragraph 6 to reflect deadlines set down my IMO bodies
* Add reference to the need to report to HSSC as well as IRCC

**RoPs**

* Adjust paragraph 7 to reword the 2nd sentence to strengthen the need to attend meetings and add a period of non-engagement that results in termination of membership
* Adjust paragraph 10 to remove ‘Jan – Mar’

**Action 16. Revise ToRs for suggestions and gender neutral language**

1. Modernization of MSI documentation: plan, timeline, approval process

Covered in item 4.1.

1. Interim BDMSS SafetyLink Services Manual

China presented the proposal concerning the BDMSS SafetyLink Service Manual. The proposal follows the WWNWS-SC approval in September 2023 to initiate a review of the Draft Interim BDMSS SafetyLink Service Manual, which was subsequently referred to the DRWG for detailed examination.

DRWG22 conducted a comprehensive technical review of the draft manual and provided actionable feedback to the BDMSS service provider. In response, the service provider revised the manual under the guidance of the IMO EGC Coordinating Panel.

The work is now complete and the WWNWS-SC was invited to review and approve the revised draft interim manual and, upon approval, forward it to the WMO for further consideration.

**Decision 7. Interim BDMSS Manual approved and forwarded to the WMO for its consideration.**

1. Terms of Reference of the Document Review Working Group

Review of the DRWG ToRs referred to DRWG23.

1. **WWNWS REPRESENTATION AT REGIONAL HYDROGRAPHIC COMMISSIONS AND OTHER CONFERENCES**
2. WWNWS member attendance at RHCs and reports - [Paper](https://iho.int/uploads/user/Inter-Regional%20Coordination/WWNWS/WWNWS16/WWNWS16_2024_5.1_EN_RHC_v1.1.pdf)

The Chair presented his report on the participation of NAVAREA and Sub-area Coordinators in RHC meetings during 2023-2024. He emphasized the critical role of RHCs in coordinating hydrographic activities and fostering regional cooperation.

He highlighted that active engagement of NAVAREA Coordinators in RHC meetings and how it enhances coordination, cooperation, and capacity building. He contended that despite our connected world, in-person participation offers valuable opportunities for direct collaboration. The report also suggested the establishment of Maritime Safety Information Working Groups (MSIWGs) within RHCs to further support the modernization efforts of the World-Wide Navigational Warning Service, especially concerning the transition to S-100 standards.

A review of attendance records revealed that while many NAVAREA Coordinators actively participated in their respective RHC meetings, there were instances where reports or presentations were absent or unclear. The Chair encouraged all NAVAREA Coordinators to consistently attend RHC meetings and contribute to MSI Working Groups to strengthen regional maritime safety initiatives.

1. Reports from RHC MSI Working Groups
	1. Report from BSHC MSIWG

NAVAREA 1b gave a brief on the work of the BSHC MSIWG, noting that it was 20 years old. He gave an overview of the MaDaMe project and noted the work that was being done on S-124 and S-125. He explained that the project aims to develop and pilot a range of tools for services to ships.

**Action 16. Report back on progress of the MaDaMe project to next meeting (WWNWS17), especially on the VDES capability elements and provide ademonstration if practical.**

* 1. Report from NSHC MSIWG - [Paper](https://iho.int/uploads/user/Inter-Regional%20Coordination/WWNWS/WWNWS16/WWNWS16_2024_5.2.2_EN_NSMSIWG_Report.pptx)

NAVAREA I presented an update on the work of the NSHC MSIWG. He noted that two meetings had been held since the WWNWS15. He emphasized the continued efforts to enhance MSI dissemination across the Nordic and Sub-Arctic regions through strengthened coordination and collaboration among member states.

The report highlighted recent training initiatives aimed at improving the skills of personnel involved in MSI processes, ensuring compliance with international standards. He discussed the integration of new technologies designed to enhance the efficiency and reach of MSI broadcasts, particularly in remote and challenging environments. Addressing regional challenges, such as severe weather conditions and limited communication infrastructure, he outlined potential solutions to mitigate these issues.

Related to S-124, he posed a number of question to the WWNWS-SC, specifically whether a digital signature would be required to ensure authenticity, and the nature of any future connectivity platform that would be utilised.

These questions were discussed at length but it was recognised that further work was required to arrive at definitive answers.

**Action 17. Consider with WWNWS and S-124 PT as to whether a ‘digital signature’ can identify and restrict what type of warning can be broadcast and by whom?**

**Action 18. Develop clarification from IMO/WWNWS on why a connectivity platform is required and establish what MSI providers responsibilities are in the provision of an S-124 service.**

* 1. Report from MACHC MSIWG - [Paper](https://iho.int/uploads/user/Inter-Regional%20Coordination/WWNWS/WWNWS16/WWNWS16_2024_5.2.3_EN_NAVAREA_SA_MACHC_MSI_WG.pptx)

NAVAREA IV & XII gave an update on the activity of the MACHC MSIWG. The report emphasized the ongoing efforts to enhance the dissemination of maritime safety information (MSI) within the MACHC region.

NAVAREA IV & XII reported that they had held one in-person meeting prior to MACHC 24 in Suriname in December 2023, where key topics included a presentation on the CARIBE WAVE Tsunami Exercise, endorsement of the 2024 work plan, an update on S-124 developments, and the election of the Chair. Additionally, a virtual meeting was held in June 2024, covering developments within the WWNWS Sub-Committee, outcomes from DRWG22 and IMO NCSR 11, discussions on the Saildrone action item, a review of the S-124 questionnaire, and the election of the Vice Chair.

In terms of S-124, the group has begun identifying which administrations in the region are interested in producing S-124 data. Efforts are also underway to define the current S-53 International Navigational Warning Service operating posture within the MACHC. Additionally, the group is collaborating with the MACHC S-100 Coordinator to develop a detailed plan for implementing S-124 in the region.

In terms of Capacity Building, NAVAREA IV & XII reported that the group plans to make virtual capacity-building sessions a regular focus, including refresher training on MSI basics as taught in the MSI course. Future sessions may also cover more advanced MSI topics. These virtual trainings aim to reinforce the knowledge gained in in-person courses and enhance overall competency in maritime safety information dissemination.

1. Capacity Building MSI Training Course Developments - [Paper](https://iho.int/uploads/user/Inter-Regional%20Coordination/WWNWS/WWNWS16/WWNWS16_2024_5.3_EN_MSI_Course_E-Learning_v1.0.pdf)

The Chair presented a report on the development of the MSI CB Course. The course aims to enhance the availability of MSI within Regional Hydrographic Commission areas by training participants to effectively manage and disseminate navigational warnings. Since its inception in 2003, the course has been delivered in person, educating 453 students from 136 countries. He reported that with the establishment of the IHO E-Learning Centre, there is an opportunity to expand the course's reach by making materials available online and developing a supplemental e-learning version. It was recommended that all course materials should be passed to the E-Learning Centre.

**Action 19. Investigate passing the course material on to the e-learning centre.**

* 1. Report from MSI Course – Oman - [Presentation](https://iho.int/uploads/user/Inter-Regional%20Coordination/WWNWS/WWNWS16/WWNWS16_2024_5.3.1_EN_2023%20MSI%20Course%20Oman%20Report_final.docx)

NAVAREA I delivered an update on the MSI Course delivered in Oman.

* 1. Report from MSI Course – Türkiye - [Presentation](https://iho.int/uploads/user/Inter-Regional%20Coordination/WWNWS/WWNWS16/WWNWS16_2024_5.3.2_EN_2023%20MSI%20Course%20T%C3%BCrkiye_final.docx)

NAVAREA IV & XII delivered an update on the MSI Course delivered in Türkiye

* 1. Capacity building matrix and connection with the IMO IMSAS audit scheme - [Presentation](https://iho.int/uploads/user/Inter-Regional%20Coordination/WWNWS/WWNWS16/WWNWS16_2024_CB%20Matrix%20EN_ppt-Template.pdf)

The IHO Sec. presented a paper on the potential connection between the IMSAS audit process, the current approach to CB (including the current IHO SPI) and how data is captured in C-55. He noted that at present, the current SPI could be criticised for being misleading or misrepresenting the actual state of MSI provision globally. At the same time, the IMSAS audit is producing some peculiar outcomes and driving potentially unhelpful remedial action. He proposed how the process could be adjusted to connect the assessment, C-55, SPI recording, IMSAS audits and the designing of targeted CB interventions.

Following a discussion, it was decided that there was merit in reviewing the concept further and a small group could investigate what a potential future SPI could look like. Further, it was agreed that the WWNWS-SC should be proactive in engaging the IMSAS team as they prepare for the second round of audits.

The IMO reminded participants of the IMO auditors manual that the IHO and IALA had both provided information to.

**Action 19. Chair to lead a group to investigate further the revision of the Self Assessment, the refinement of how to measure MSI capacity and the validity of the SPI.**

**Action 20. Raise the issue of IMSAS support to IRCC including the development/refinement of guidance to auditors/auditees**

China presented their paper proposing that a checklist be developed to assist IHO member States prepare for the IMSAS audit - [Paper](https://iho.int/uploads/user/Inter-Regional%20Coordination/WWNWS/WWNWS16/WWNWS16_2024_5.3.4_EN_Proposal%20for%20facilitating%20IHO%20Member%20State%20preparing%20the%20IMSAS%20On%20navigational%20warning.pdf)

They introduced the concept based upon their experience and presented the draft checklist that they had produced.

In general, the feedback from the participants was positive and it was agreed that preparation ahead of the IMSAS audits would allow member states to get the most from the process. However, the group stopped short of agreeing to work on the checklist, given the work that it would take to refine such a tool and noting the other competing priorities.

1. **NEXT MEETING**
2. Dates and venue for WWNWS17

The Chair proposed that WWNWS17 would be held in Washington DC, USA from 8 – 12 September 2025. The proposal was agreed.

1. Draft Agenda for WWNWS17

The draft agenda for WWNWS17 will be circulated in due course.

1. **Review of Action Items from WWNWS16**

The actions were presented to the group by the IHO Sec. The list of actions were agreed.

1. **ANY OTHER BUSINESS**

.1 Saildrone operations and WWNWS support

Brian Connon, VP Ocean Mapping for Saildrone, Inc., provided a presentation on the different types of vessels Saildrone uses along with a detailed explanation of each vessels navigation and safety features and how they interact with other manned vessels to avoid creating any hazardous situations.

Saildrone presented at WWNWS16 to address concerns raised at both WWNWS14 and 15. The WWNWS-SC received questions from NAVAREA Coordinators concerning whether or not an event involving maritime autonomous, uncrewed surface vehicles warranted a navigational warning. There were specific references to Saildrone vehicles operating in NAVAERA IX (Pakistan). The group had a substantive discussion and there remained uncertainty with how to address such events.

The discussions and questions that followed led the WWNWS to agree that a navigational warning was not required for Saildrone vessels. However, the Chair reminded all NAVAREA Coordinators that the final decision to promulgate or not promulgate a navigational warning rested with them based on their expert knowledge.

1. **CLOSURE OF THE MEETING**