



7th Meeting of the IHO Council

Report and Proposals from HSSC

Agenda Item C7-04.1A and C7-04.4A



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DIFFICULTIES AND CHALLENGES – REMINDER FROM A-3



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- Coordination between the IHO S-100 timeline and IEC to meet the IMO time frame for S-100 ECDIS.
- IHO MS active support in the development of the first phase of S-100 product specifications:
 - Brings back needed knowledge to HOs in order to produce S-100 products
 - Decreased dependence of industry partners
- Need to increase development progression – more people with expertise and increased progress between WG meetings.
- A sustainable structure is needed to maintain the technical and administrative infrastructure around S-100.



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THE IMPLEMENTATION OF THE IHO STRATEGIC PLAN

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- HSSC has invited HSSC Chair Group to brainstorm in preparation of inputs to the future IHO Strategic Plan 2027-2032
- Draft inputs are planned to be considered at the next meeting HSSC-16, 2024
- Inputs to be submitted by HSSC to C-8
- SPIs allocated to IHO Sec, HSSC and IRCC will be reported by Secretary General, agenda item C7-06.1A

The Council is invited to note that HSSC has initiated an action for the preparation of the next IHO Strategic Plan. HSSC welcomes further instructions from Council-7 on this matter.

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S-100 INFRASTRUCTURE CENTRE

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- Following A-3 PRO 2.2 by ROK, HSSC15 established a S-100 Infrastructure Centre *Establishment* PT (S-100 ICE PT) in accordance with A-3 decision A3/14.
- PT Objectives: To develop the management documents and operating plan for the proposed S-100 Infrastructure Center taking into account the following and report its progress to the HSSC:
 - The role, scope, function and governance
 - The composition, financial considerations, and work procedures
 - The location
 - A preliminary work plan
 - The timeline for the establishment
 - Support the HSSC with the creation of documents required to submit the proposal to the IHO Council.
- Progress will be reported by HSSC to the Council. Proposal expected by the S-100 ICE PT to HSSC 16, 2024.

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SUSTAINABLE S-100 INFRASTRUCTURE

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- To secure firm and sustainable management of the administration and technology for S-100 it is likely that additional funding will be needed.
- A3 agreed to explore options for alternative fund generation to support capacity building and other IHO initiatives. IRCC to work on this task.
- It is important to recognize that additional funding resources should also be considered, if needed, for initiatives such as S-100 Infrastructure including S-100 standards development.
- Also note that A3 approved that Goal 1 of the IHO Strategic Plan shall have the highest priority 2024 -2026.

HSSC invites the Council to endorse the principle that additional funding resources (A3/20 and IRCC15 Decision 41) should be considered for the setup of a sustainable technical and administrative infrastructure around S-100 including standards development to meet the S-100 timeline.



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UPDATE ON IMO ACTIVITIES REGARDING ECDIS



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- NCSR10 in May 2023, endorsed the inclusion of a S-100/IEC standard, Route Plan S-421, for route exchange from ship to shore and from shore to ship into the IMO ECDIS Performance Standards.
- Also includes a standard for secure exchange of information between ship and shore, IEC SECOM. Note that SECOM would be relevant also for distribution of other applicable S-100 products.
- Inclusion of route exchange and SECOM follows the same transition plan as S-100 ECDIS (2026 – 2029).
- Final approval is expected at MSC 108 in May 2024.
- IMO has also requested IHO to provide a more detailed progress report against the S-100 implementation roadmap in future updates.



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S-100 SECURITY SCHEME

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- There are some challenges with the existing security scheme for S-57 ECDIS regarding the appointment and termination process.
- To secure an improved process for S-100, HSSC 15 decided to setup a S-100 Security Scheme PT to:
 - Develop the S-100 appointment and termination process
 - Analyse current IHO agreements. Ensure if they are legally binding.
 - Proposed process for new agreements within the S-100 Security Scheme
 - Propose a method to monitor agreements
 - Ensure S100 Security Scheme that the process is compatible with SECOM

The Council is invited to note the establishment of the S-100 Security Scheme PT under HSSC.



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SUB-ECDIS MARKET

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- A3 discussed a proposal from UK et al (PRO 2.3) regarding the future of digital charting, but no agreement was reached.
- UK and other MSs submitted a follow-up paper with a more limited scope for consideration to HSSC 15.
- Important stakeholders perspective at HSSC 15 to differentiate the sub-ECDIS market into at least three very different segments:

1) smaller SOLAS vessels (not included in the ECDIS carriage requirements)



2) commercial vessels (e.g. tug boats, smaller passenger ferries, fishing vessels) and yachts larger than 300 GT



3) leisure craft smaller than 300 GT



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ELECTRONIC CHART SYSTEM PROJECT TEAM

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- Discussion at HSSC15 included arguments for and against regulating the sub-ECDIS market, at which level IHO needs to be involved and if there are actually any implications for the IHO Standards.
- HSSC15 decided to establish an ECS PT under the ENCWG.
Objectives:
 - to identify and prioritize ECS navigation requirements
 - to analyse their impacts on current IHO hydrographic standards; and
 - to develop a set of recommendations/issues to be addressed by existing IHO bodies, external organisations, and member states.

The Council is invited to note the establishment of the ECS PT under HSSC, ENCWG.

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IMPLEMENTATION OF THE RECOMMENDATIONS ON THE FUTURE OF THE PAPER NAUTICAL CHART

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- HSSC is requested by the Council to report on the implementation of the recommendations given in the Future of the Paper Nautical Chart report (presented to A-2 and C-4 2020).
- HSSC NCWG has setup the Baseline Portrayal Project Team (BSPT) to support the automated production of paper charts from S-101 data, including a digital paper chart symbol library.
- BSPT is delayed and resources are needed from MS to speed up the work.
- No other status changes on the other recommendations since C-6.



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PROGRESS S-1XX PRODUCT SPECIFICATIONS

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- The updated S-100 timeline is found in Annex 2 to the S-100 Roadmap.
- MS can expect an IHO CL early in November 2024 with the request to approve the first package of the S-100 product specifications.
- Will be endorsed by HSSC before the IHO CL is provided.

Phase 1

Route Monitoring Mode

S-101 ENC
S-102 Bathymetry
S-104 Water Level
S-111 Surface Currents
S-124 Navigational Warnings
S-129 UKC Management

Critical Framework

IHO Geospatial Information Registry
S-98 Interoperability Specification
S-100 Universal Hydrographic Data Model
S-128 Catalogue of Nautical Products
S-164 Test Data Set for S-100 and ECDIS
Type Approval

The Council is invited to note that the Phase 1 S-100 product specifications are expected to be ready in an operational edition for IHO MS approval early November 2024.

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POLYGONAL DEMARCATIONS OF GLOBAL SEA AREAS, S-130

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- HSSC15 approved the product specification for Polygonal Demarcations of Global Sea Areas, S-130 edition 1.0.0.
- Edition 1.0.0 is for initial implementation, testing, evaluation and comprehensive evaluation by IHO MS.
- HSSC confirmed the importance of producing an authoritative S-130 IHO-approved dataset in accordance with decisions taken at A2 and confirmed by A3.
- However, first testing should be considered in one or two regions, based on S-23 (ed 3), prior to the publication of the operational version of S-130 edition 2.0.0 and official production of the IHO authoritative dataset.

The Council is invited to agree upon the proposed way forward to test S-130 in one or two regions before the publication of the operational version of S-130 edition 2.0.0 and official production of the single IHO authoritative dataset.

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OTHER HSSC HIGHLIGHTS

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- ENCWG and DQWG is working on a merge of S-67, Mariners Guide to Accuracy of Depth Information in ENC, and S-66, Facts about Electronic Charts and Carriage Requirements. Will also include a cyber security guidance. The number and name of S-66 will remain. S-67 withdrawn.
- Hydrographic Survey Working Group, HSWG, developed a new IHO Publication B-13, Ed. 1.0.0 - Guidance to Satellite-Derived Bathymetry, approved by HSSC 15.
- DQWG developed S-68, Ed. 1.0.0 - Guidelines and Recommendations for Hydrographic Offices for the allocation of CATZOC/QoBD Values from Survey Data, approved by HSSC 15.
- Hydrographic Dictionary Working Group (HDWG) will be reorganized to a HD Correspondence Group (HDCG).



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PROPOSED AMENDED HSSC ToRs

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- The RENCs have been invited to several HSSC meetings and their contribution have proven to be very valuable.
- HSSC 15 endorsed, that the HSSC Terms of Reference and Rules of Procedures should be amended to include the RENCs in the HSSC Membership.
- Also include Expert Contributors from industry on a case-by-case basis, by invitation of the Chair.
- Proposed amended version of the HSSC ToRs is attached in Annex B to the HSSC C7 report.

The Council is invited to approve the amended HSSC TORs and ROPs, including the RENCs in the HSSC Membership, as attached in Annex B to the HSSC C7 report.



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CHAMPION OF HYDROGRAPHY AWARD

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- Following a proposal from UK, HSSC 15 endorsed the proposal to consider the creation of a new award, more inclusive than the Medal of Prince Albert 1st.
- Recognising an annual champion of hydrography across HSSC and IRCC (WGs, SCs and PTs). Contribute to the motivation of active contributions within the IHO.
- The proposal has also been endorsed by IRCC 15.
- If endorsed by the Council HSSC propose that the Chairs of HSSC and IRCC, supported by the IHO Secretariat, prepare a draft IHO Resolution on this matter.
- Subsequently the draft resolution will be circulated to IHO MS for approval.

The Council is invited to endorse the proposal for an annual champion of hydrography award and agree upon the proposed way forward.

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MISCELLANEOUS

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- A Stakeholders' session was arranged embedded in HSSC 15. Some interesting messages from the industry was:
 - S-101 alone does not offer much benefits for end users.
 - It is not enough with the Product Specifications only. We need to achieve S-100 data service coverage.
 - A roadmap that sunsets S-57 allows increased investment in S-100 ECDIS.
- The Chair and Vice-Chair of HSSC were re-elected for a new 3-year mandate.
- HSSC 16 will take place in Tokyo, Japan 27 to 31 May 2024.
- New IHO Technical Director, Dr. John Nyberg. Welcome!





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ACTIONS REQUESTED FROM C-7

- Note the report
- To note that HSSC has initiated an action for the preparation of the next IHO Strategic Plan. HSSC welcomes further instructions from Council-7 on this matter.
- To endorse the principle that additional funding resources should be considered for the setup of a sustainable technical and administrative infrastructure around S-100 including standards development to meet the S-100 timeline.
- To note the establishment of the S-100 Security Scheme PT under HSSC and the establishment of the ECS PT under HSSC, ENCWG.
- To note that the Phase 1 S-100 product specifications are expected to be ready in an operational edition for IHO MS approval early November 2024.
- To agree upon the proposed way forward to test S-130 in one or two regions before the publication of the operational version of S-130 edition 2.0.0 and official production of the single IHO authoritative dataset.
- To approve the amended HSSC TORs and ROPs, including the RENCs in the HSSC Membership, as attached in Annex B to the HSSC C7 report.
- To endorse the proposal for an annual champion of hydrography award and agree upon the proposed way forward.
- Take any other action as it may consider appropriate



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HSSC SLIDES AGENDA ITEM C-7 04.4A

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- Proposed version v 3.0 of the Roadmap for the S-100 Implementation Decade – Main document.
- Proposed amendments to the S-100 Roadmap Annex 2
- To be noted: Following A-3 decision: The Dual Fuel Concept for S-100 ECDIS is now included as an Annex 4 to the S-100 Roadmap. Will be maintained by HSSC through S-100 WG.



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PROPOSED VERSION 3.0 OF THE S-100 ROADMAP

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- Redline version (working version) available at the IHO C-7 meeting site.
- Prepared by the IHO Secretariat, assisted by HSSC Chair.
- Reflecting the decision taken at A-3. Dual Fuel Concept as a new annex 4 and the establishment of a S-100 Infra Center.
- Also reflecting the IMO decisions taken regarding S-100 ECDIS. Transition period and the IMO request from IMO to keep IMO NCSR updated on the progress (standards and data coverage).
- Update on S-xxx product specifications developed by other international organizations.

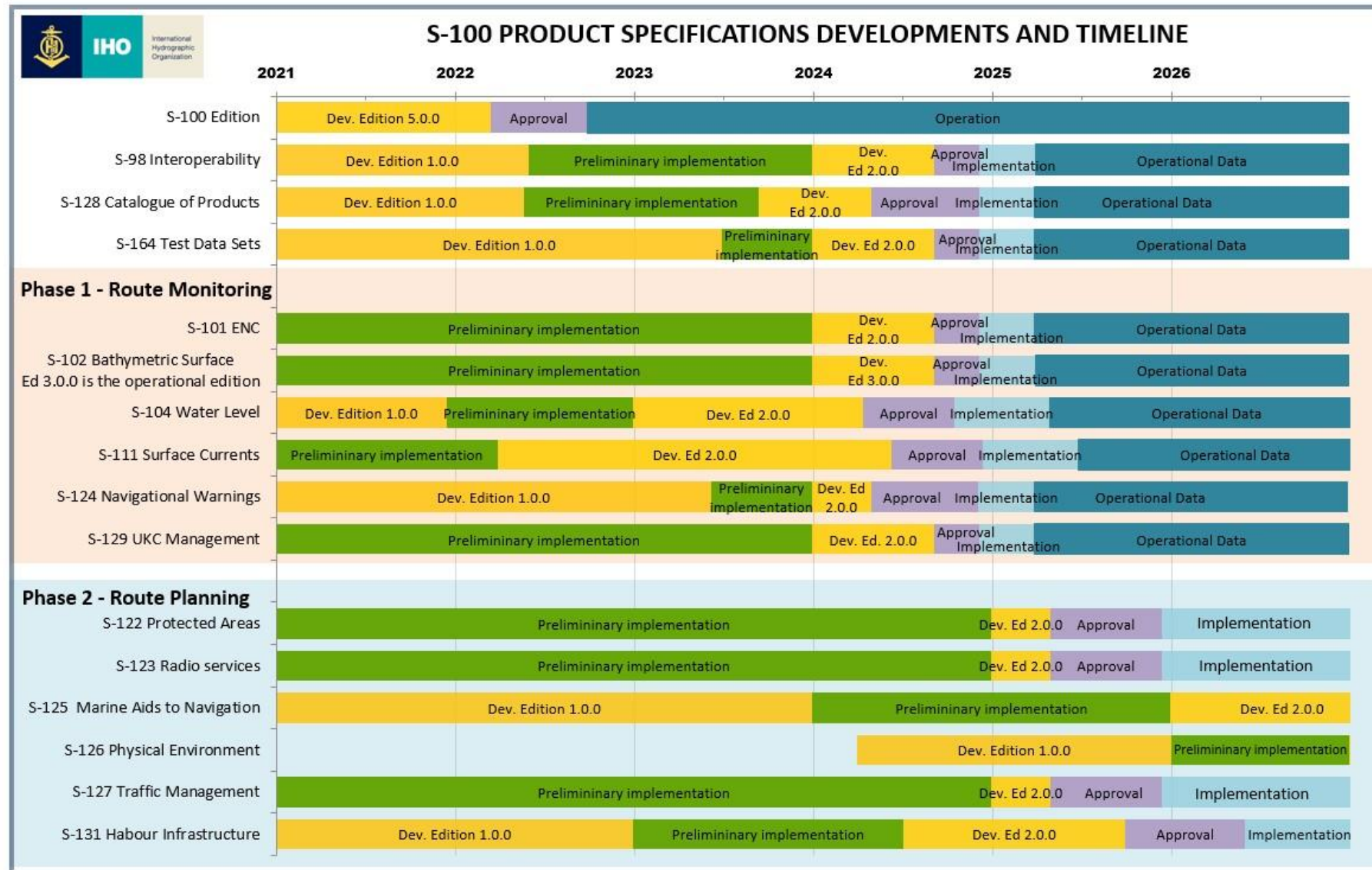
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UPDATED S-100 TIMELINE

International Hydrographic Organization



This S-100 timeline is updated: July 9th, 2023.

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S-128 CATALOGUE OF NAUTICAL PRODUCTS AND S-124 NAVIGATIONAL WARNINGS

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- At HSSC15 CIRM and IEC, raised the issue that the Catalogue of Nautical Products, S-128, should preferably be ready in an operational edition before the existing planned deadline.
- Essential for the development of the IEC ECDIS test standard.
- NIPWG, as the responsible WG, will now speed up the development of this standard as can be seen in the updated S-100 timeline. S-128 is on the critical path.
- Active contribution from the RENCs are welcomed.
- Also the development of S-124 Navigational Warnings is now planned to be ready for MS approval 2024.
- An updated S-100 timeline is available in Annex A to the HSSC C-7 report.

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INCLUSION OF S-411 AND S-412

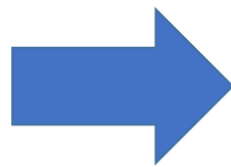
Phase 1 / Route Monitoring

Phase 1 Route Monitoring Mode

S-101 ENC
S-102 Bathymetry
S-104 Water Level
S-111 Surface Currents
S-124 Navigational Warnings
S-129 UKC Management

Critical Framework

IHO Geospatial Information Registry
S-98 Interoperability Specification
S-100 Universal Hydrographic Data Model
S-128 Catalogue of Nautical Products
S-164 Test Data Set for S-100 and ECDIS
Type Approval



Phase 2 / Route Planning

Phase 2 Route Planning Mode

S-122 Marine Protected Areas
S-123 Marine Radio Services
S-125 Marine Aids to Navigation (AtoN)
S-126 Marine Physical Environment
S-127 Marine Traffic Management
S-131 Marine Harbour Infrastructure
S-411 Ice Information (WMO)
S-412 Weather and Wave Hazards (WMO)

+ S-100 Products used in
Monitoring Mode

- Renaming to Phase 1 and Phase 2.
- HSSC endorsed that the product specifications for Ice Information, S-411, and Weather and Wave Hazards, S-412, should be included in Phase 2 Route Planning Mode. Developed by WMO as important S-100 metrology layers to be used in future S-100 ECDIS.

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ACTIONS REQUESTED FROM C-7

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- Mandate the IHO Secretariat to finalize version v 3.0 of the Roadmap for the S-100 Implementation Decade – Main document. Based on the provided redline version and the outcome of C-7.
- To approve the revised version of the S-100 Roadmap, Annex 2, as provided as an annex to the C-7 HSSC Report, [including new fig. 4 of Annex 2 proposed by FR, pending outcome of discussion on Doc. C7-04.4B]
 - Renaming to Phase 1 and Phase 2.
 - Including S-411, Ice information, and S-412, Weather and Wave Hazards, in Phase 2 / Route Planning.
 - The updated S-100 timeline.

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