IHO File No. S3/8151/S-100

CIRCULAR LETTER 03/2025
17 January 2025

ADOPTION OF IHO PUBLICATIONS

S-100-BASED PRODUCT SPECIFICATIONS
PHASE 1 – S-101, S-102, S-104, S-111, S-129

References:

A. IHO Resolution 2/2007 - Procedures for making changes to IHO Technical Standards and Specifications.
B. IHO CL 39/2024 dated 28 October 2024 – Call for the approval of S-100-Based Product Specifications (Phase 1) – S-101, S-102, S-104, S-111, S-129

Dear Hydrographer,

1. In accordance with reference A, the adoption of new Editions of S-100-Based Product Specifications (Phase 1) - S-101, S-102, S-104, S-111 and S-129 was proposed through the Circular Letter in Reference B.

2. The IHO Secretariat thanks the fifty-two Member States who responded to Reference B: Algeria, Australia, Belgium, Brazil, Canada, Chile, China, Colombia, Cyprus, Denmark, Estonia, Fiji, Finland, France, Georgia, Germany, Ghana, Greece, India, Indonesia, Iran (Islamic Republic of), Ireland, Italy, Jamaica, Japan, Kenya, Latvia, Morocco, Netherlands, New Zealand, Nigeria, Norway, Peru, Philippines, Poland, Portugal, Republic of Korea, Romania, Russian Federation, Singapore, Slovenia, South Africa, Spain, Sri Lanka, Suriname, Sweden, Thailand, Türkiye, Ukraine, United Kingdom, United States of America and Venezuela.

3. Fifty-one Member States supported the adoption of the proposed S-102, S-104 and S-111 Product Specifications; and fifty member States supported the adoption of the proposed S-129 Product Specification. Six Member States submitted comments in addition to their vote. One Member State objected on some of the proposed Editions, with comments in support of its vote. As for the proposed S-101 Product Specification, Fifty Member States supported its adoption; eight of them submitted comments in addition to their vote. Objections from two Member States were received, with comments in support of their votes. All comments received are provided in Annex A to this Circular Letter with responses from the relevant Working Group and Project Team Chairs, the HSSC Chair and IHO Secretariat.

4. When the Reference was issued, there were 100 Member States of the IHO with two States suspended. In accordance with the provisions of the Convention on the IHO as amended, the minimum number of affirmative votes required is 33. As a result, the abovementioned proposed Product Specifications have been adopted and are now available (English versions only) on the IHO S-100 GI Registry > GI Registers > Product Specification Register. A link to the Product Specifications has also been placed on the IHO website > Publications > Standards and Specifications.

5. The IHO Secretariat and the HSSC Chair would like to congratulate and thank all those involved in achieving this significant milestone in S-100 implementation. The approval and

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publication of the first operational editions of the Phase 1 Product Specifications S-101, S-102, S-104, S-111 and S-129 is a remarkable achievement of the IHO; and credit must be given to the IHO Working Groups and Project Teams, in particular the IHO Member States and expert contributors for providing the resources to these groups required to achieve this milestone in line with the timelines as included in the IHO Roadmap for the S-100 Implementation Decade (2020-2030).

6. Member States are also invited to note that the final two Product Specifications intended for Phase 1 implementation – S-124 *Navigational Warnings* and S-128 *Catalogue of Nautical Products* – have been issued for HSSC endorsement and, depending on the outcome, an additional IHO Circular Letter for 124 and 128 approval is planned in February 2025.

On behalf of the Secretary-General
Yours sincerely,

John NYBERG
Director

Annex:

A. Responses to Member States' comments to IHO CL 39/2024 from the relevant Working Group and Project Team Chairs, the HSSC Chair and IHO Secretariat (in English only)

MEMBER STATES' RESPONSES TO IHO CL 39/2024 AND COMMENTS FROM THE WORKING GROUP and PROJECT TEAM CHAIRS, IHO SECRETARIAT

S-101, Ed. 2.0.0	Operational Product Specification

AUSTRALIA (Vote for adoption = YES)

Australia recommends the following 3 amendments are included in Edition 2.0.0:

1) For Clause 13.10.1 Marine farms (see S-4 - B-447.4 and B-447.6) remove the Remarks bullet point 2 as it refers to encoding of default clearance depth attribution, which is now removed as allowable for this feature.

2) DCEG - Amend clause 30.4 to add a new Remarks bullet point as follows:

*For features that fall entirely within an **Unsurveyed Area** feature, **surrounding depth** must be populated with value 0. If an area feature falls partly within **Unsurveyed Area** and partly within **Depth Area** or **Dredged Area** features, **surrounding depth** must be populated in accordance with the first bullet above.*

3) Product Specification - Add the attached Diagram to the end of Section 4.7.2 as a new Figure 4.10 and amend 2nd paragraph to read 'Figures 4-7 to 4-10 below are ...'.

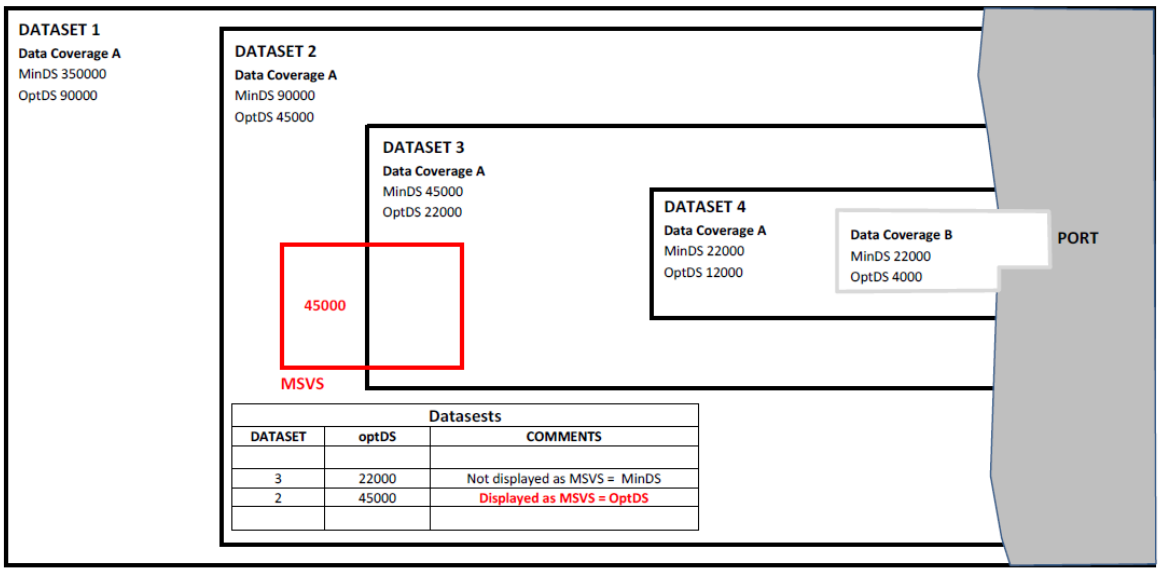

Figure 4-10 – Dataset loading – scenario 4

Please note that all other Figures in the PS will have to increase their number by one.

Comment by the S-101PT Chair and IHO Secretariat:

The S-101PT Chair and IHO Secretariat thank Australia for their comments.

These proposed changes have been agreed for correction (point 1) and clarification (points 2 and 3) as they enhance the guidance already included. The proposed new Figure 4-10 for the S-101 Main document has been included as Figure 4-9 as this is a better fit within the order of the Figures 4-7 to 4-10 in regard to Mariners' Selected Viewing Scale (MSVS). The changes have been applied for the final operational Edition 2.0.0 of S-101.

CANADA (Vote for adoption = YES)

General comment: Canada is happy to see these specs advancing to allow IHO community to enter the testing phase. Canada sees upcoming sea trials as an avenue to stress-test these standards. While further adjustments or patches may be needed as we operationalize, these specs are a step towards the IHO being ready for 2026.

Comments by the PT/WG Chairs and IHO Secretariat:

The PT/WG Chairs and IHO Secretariat thank Canada for their comment.

COLOMBIA (Vote for adoption = YES)

[Translated from the original Spanish text]

The Version 2.0.0 of the S-101 standard represents a significant upgrade that optimizes the exchange and use of ENC. This edition introduces improvements to the data model, with the aim of enhancing interoperability and ease of use in maritime navigation systems.

Comments by the PT/WG Chairs and IHO Secretariat:

The S-101PT Chair and IHO Secretariat thank Colombia for their comment.

GEORGIA (Vote for adoption = YES)

We need to approve the draft proposed Edition 2.0.0 of S-101 to ensure it aligns with the evolving S-100 framework, enhances ENC functionality, improves interoperability with other maritime standards, and supports the transition from S-57. This approval is critical for advancing navigation safety, usability, and global standardization.

Comments by the S-101PT Chair and IHO Secretariat:

The S-101PT Chair and IHO Secretariat thank Georgia for their comment.

GHANA (Vote for adoption = YES)

It is a useful guide for Hydrographic Offices. Thank you for the initiative.

Comments by the S-101PT Chair and IHO Secretariat:

The S-101PT Chair and IHO Secretariat thank Ghana for their comment.

GREECE (Vote for adoption = NO)

Greece remains firm in its decision regarding the specific wording in Annex A, paragraph 2.5.5 of the S-101 as follows:

In areas which include neighbouring producer nations, Hydrographic Offices should ensure no data overlap within Navigational Purposes. Where the elimination of overlapping ENC data cannot be resolved and its continued existence presents a demonstrable risk to the safety of navigation, the procedures described in IHO Resolution 1/2018 as well as in section 1.7 of the Guidelines for the Implementation of the WEND Principles should be applied.

Given the following:

A) The S-57 standard, referenced by the S-100 WG Chair and the IHO Secretariat, is fading and will be replaced by the newer S-100.

B) Greece's opposition to S-57 at the IHO level, as clearly stated in IHO CL 30/2024.

C) The inconsistency of adhering to S-57 by the S-100WG Chair, HSSC Chair, and Secretariat when IHO Resolution 1/2018 and the Guidelines for the Implementation of the WEND Principles explicitly address it in the manner raised by Greece,

Greece stands by its decision to vote No on S-101.

Comments by the PT/WG Chairs and IHO Secretariat:

The S-101PT and HSSC Chairs and IHO Secretariat thank Greece for their comment.
As determined for this comment as submitted in response to the HSSC Circular letter seeking endorsement of S-101 Edition 2.0.0, the comment from Greece is noted, however after further discussion within the S-101PT, HSSC Chair Groups and the IHO Secretariat, it has been determined that this change will not be applied for S-101 Edition 2.0.0.

NIGERIA (Vote for adoption = YES)

The Draft copy gives clear guidance on S-101 encoding.

Comments by the S-101PT Chair and IHO Secretariat:

The S-101PT Chair and IHO Secretariat thank Nigeria for their comment.

SWEDEN (Vote for adoption = YES)

General comment: Sweden would like to congratulate all parties involved who have contributed to this remarkable success. These new operational editions will form the basis for the implementation of S-100. A milestone for the introduction of e-navigation as such and a success story for IHO.

Comments by the PT/WG Chairs and IHO Secretariat:

The PT/WG Chairs and IHO Secretariat thank Sweden for their comment.

TÜRKIYE (Vote for adoption = NO)

First of all, we would like to thank IHO and Member States that put effort to prepare those documents. We have some comments/remarks regarding the proposed document.

Türkiye does not agree that safety of navigation requires having no overlapping charts in complex and disputed seas. For the sake of the safety of navigation, the Member States should allow the mutual use of their up-to-date data, enable the harmonization of overlapping charts/products and preserve the integrity of data in complex and disputed waters as a temporary solution until the agreement is reached.

Türkiye clearly reiterated many times in the past years that "*Standards should be set for ECDIS manufacturers to display overlapping data and overlapping data should not be afraid of. Because it is believed that in most cases conducting a technical activity like aligning data can reduce the impact/risk of overlapping data*".

After we reconsider and analyze the proposed text for Boolean attribute then it was realized and understood that maritime jurisdiction area (in this proposal) will not be able to be presented accurately on ECDIS.

In the light of all the points made above, Türkiye suggests making changes as pointed out below:

S101 – Draft for Edition 2.0.0- Annex A

2.5.5. Seamless ENC coverage

In areas which include neighbouring Producer Nations, Hydrographic Offices should co-operate to agree on dataset boundaries and ensure no data overlap within scale ranges, or disparate drawing indices. ~~Where datasets are intended to provide a seamless presentation at national boundaries and a common minimum display scale cannot be agreed, a common drawing index should be agreed.~~ Where possible, adjoining nations should agree on common data boundaries within a technical arrangement based on cartographic convenience and benefit to the Mariner. Suitable communications between neighbouring nations should be put in place to ensure data consistency across dataset boundaries. These should include exchange mechanisms to allow access to each other's ENCs. If there is no agreement between neighbouring Producer Nations, overlap should be allowed as a temporary solution until agreement is reached. Neighbouring Producer Nations should make sure that overlapping charts provide the same content as much as possible.

16.2.1 Maritime jurisdiction areas in dispute

~~In accordance with Article 55 of the United Nations Convention on the Law of the Sea (UNCLOS – 10 December 1982), a Coastal State's Territorial Sea Area and Exclusive Economic Zone must not overlap. Occasionally, small~~ **Some** areas at the boundary of two or more Coastal States may be in dispute regarding the establishment of maritime jurisdiction, which may result in ~~a small section of Territorial Sea~~ overlapping a ~~EEZ~~**/maritime jurisdiction area** in the disputed area.

Where issues of maritime jurisdiction between two or more Coastal States are in dispute, the proposed **maritime jurisdiction area** ~~Territorial Sea (Territorial Sea Area)~~ of one Coastal State may overlap **maritime jurisdiction area** ~~the proposed EEZ (Exclusive Economic Zone)~~ of another Coastal State. ~~In this case, the disputed area should be encoded with separate Territorial Sea Area and Exclusive Economic Zone features, with Boolean attribute in dispute set to True and the mandatory attribute nationality populated with the country codes (conforming to ISO 3166) of the disputing states (see clause 27.135).~~

Comments by the S-101PT Chair and HSSC Chair/IHO Secretariat:

The S-101PT and HSSC Chairs and IHO Secretariat thank Türkiye for their comment.
As determined for this comment as submitted in response to the HSSC Circular letter seeking endorsement of S-101 Edition 2.0.0, the comment from Türkiye is noted, however after further

discussion within the S-101PT, HSSC Chair Groups and the IHO Secretariat, it has been determined that this change will not be applied for S-101 Edition 2.0.0.

UNITED KINGDOM (Vote for adoption = YES)

The UK would like to thank all those who have contributed to the development of these standards so far and in particular the expert contributors who have been an important factor in this progress.

The UK notes that within the draft S-101 Portrayal Catalogue when a feature references multiple Spatial Association fields the portrayal logic does not currently consider all referenced spatial components. This may affect the display of some features, in particular when certain data quality related attributes are present.

We consider that these are valid encodings and would be valid in S-57 ENCs, therefore we would propose that the final S-101 2.0.0 Portrayal Catalogue is modified so that all spatial components are considered fully.

In addition, the S-101 Product Specification should be clarified to constrain features to one type of geometry only, this is a well-known convention but is not explicitly stated and could complicate the solution to this issue.

Comments by the S-101PT Chair and IHO Secretariat:

The S-101PT and HSSC Chairs and IHO Secretariat thank the United Kingdom for their comment. These proposed changes have been agreed for clarification as they enhance the guidance already included. Changes have been applied to the S-101 Portrayal Catalogue accordingly; and the following clarifying text has been included at clause 4.8.1 of the S-101 Main document:

A feature may reference multiple geometries but must only reference geometries of a single geometric primitive (point, pointset, curve or surface).

S-102 Ed. 3.0.0	Operational Product Specification

AUSTRALIA (Vote for adoption = YES)

Australia would like to see S-102 'For Navigation' datasets to be loaded and rendered in ECDIS as if they were 'Charts' (refer to S-98 Annex C). Australia would like S-102 PS to mandate the encoding of Maximum, Optimum & Minimum Display Scales for when a producer would like their datasets to be automatically loaded and rendered in ECDIS according to those parameters. Otherwise, when the display scales are left unpopulated, ECDIS is to treat S-102 datasets as Overlays. This means they would only be loaded and displayed at mariner's request.

Comments by the S-102PT Chair and IHO Secretariat:

The S-102PT Chair and IHO Secretariat thank Australia for their comments.
The Maximum, Optimum & Minimum Display Scales suggested by Australia (as included in S-101) have not been included in the final operational Edition 3.0.0 of S-102. Display of S-102 data in ECDIS as part of the Electronic Navigational Data Service (ENDS) is intended to be in accordance with a pre-defined minimum set of Mariner's selectable scales as defined in S-98 Annex C. However, this process is yet to be fully developed and tested in an operational environment. Noting the comment submitted by Australia, full testing of the performance of S-102 as part of the ENDS will include the performance of the S-102 data at varying scales; and further refinement of the S-102 Product Specification may be required for the next Edition.

CANADA (Vote for adoption = YES)

See general comment from Canada and response for S-101.

GEORGIA (Vote for adoption = YES)

We need to approve the draft proposed Edition 3.0.0 of S-102 to improve the accuracy, resolution, and interoperability of bathymetric surface data, ensuring better support for navigation, safety, and emerging technologies within the S-100 framework.

Comments by the S-102PT Chair and IHO Secretariat:

The S-102PT Chair and IHO Secretariat thank Georgia for their comment.

GHANA (Vote for adoption = YES)

The publication is helpful in broadening knowledge in the area.

Comments by the S-102PT Chair and IHO Secretariat:

The S-102PT Chair and IHO Secretariat thank Ghana for their comment.

NIGERIA (Vote for adoption = YES)

The Draft copy provides the required framework for rendering high-resolution bathymetric data that will improve maritime navigation.

Comments by the S-102PT Chair and IHO Secretariat:

The S-102PT Chair and IHO Secretariat thank Nigeria for their comment.

SWEDEN (Vote for adoption = YES)

See general comment from Sweden and response for S-101.

TÜRKIYE (Vote for adoption = NO)

First of all, we would like to thank IHO and Member States that put effort to prepare those documents. We have some comments/remarks regarding the proposed document.

When the waters of national jurisdiction are identified and agreed on to the extent of EEZs, it is certainly possible to share the survey responsibilities between the neighbouring countries. When that is not the case, alternatively, agreeing on cartographic boundaries or having an exchange of data agreement can also play a similar role. If none of these two options is taken, for the sake of the safety of navigation, the Member States should allow the mutual use of their up-to-date data, enable the harmonization of overlapping charts/products and preserve the integrity of data in complex and disputed waters as a temporary solution until agreement is reached.

For the complex and disputed waters, the focus should go in making sure that overlapping charts provide the same content as much as possible, which is the key to maintain unambiguous service. Türkiye prioritizes making the most up-to-date data available to the sailors over the effort to build a scheme with no overlaps however Türkiye also kindly reminds that, providing up-to-date information to the sailors is an obligation to be observed, yet having a scheme without ~~any overlap in complex and~~ disputed waters may not be possible. We suggest making changes as pointed out below:

S-102 Bathymetric Surface Product Specification

4.6 Dataset rules

Each S-102 dataset ~~must~~ should only have a single extent as it is a coverage feature. There should be no overlapping data of the same maximum display scale, except at the agreed adjoining limits. Where it is difficult to achieve a perfect join, a buffer to be agreed upon by the producing agencies may be used. If there is no agreement between neighbouring Producer Nations, overlap should be allowed as a temporary solution until agreement is reached. Neighbouring Producer Nations should make sure that overlapping charts provide the same content as much as possible.

Comment by the S-102PT Chair and IHO Secretariat:

The S-102PT Chair and IHO Secretariat thank Türkiye for their comment.
The comment from Türkiye is noted, however after discussion within the S-102PT, HSSC Chair Groups and the IHO Secretariat, it has been determined that this change will not be applied for S-102 Edition 3.0.0.

S-104 Ed. 2.0.0	Operational Product Specification

CANADA (Vote for adoption = YES)

See general comment from Canada and response for S-101.

GEORGIA (Vote for adoption = YES)

We need to approve the draft proposed Edition 2.0.0 of S-104 to enhance the delivery of water level data, ensure interoperability within the S-100 framework, and support safer navigation through real-time and accurate information integration. This ensures the standard remains reliable and future-ready.

Comments by the TWCWG Chair and IHO Secretariat:

The TWCWG Chair and IHO Secretariat thank Georgia for their comment.

GHANA (Vote for adoption = YES)

Definitive guide to help meet expectations.

Comments by the TWCWG Chair and IHO Secretariat:

The TWCWG Chair and IHO Secretariat thank Ghana for their comment.

NIGERIA (Vote for adoption = YES)

The National Hydrographic Agency (NHA) approves of this draft copy pending the USA proposal elucidating in detail, the need for the amendment.

Comments by the TWCWG Chair and IHO Secretariat:

The TWCWG Chair and IHO Secretariat thank Nigeria for their comment.

SPAIN (Vote for adoption = YES)

It is noted that this edition eliminates the possibility of integrating tidal data in real-time.

Comments by the TWCWG Chair and IHO Secretariat:

The TWCWG Chair and IHO Secretariat thank Spain for their comment.
It is hoped that integration of real-time tidal data will be included in a future edition of S-104.

SWEDEN (Vote for adoption = YES)

See general comment from Sweden and response for S-101.

TÜRKIYE (Vote for adoption = NO)

First of all, we would like to thank IHO and Member States that put effort to prepare those documents. We have some comments/remarks regarding the proposed document.

The most important thing herein for data is the accuracy of the data. If the data is accurate temporally & spatially, then data overlap should not be a problem. That is why we think this article shown below should be revised/reconsidered. We suggest making changes as pointed out below:

S-104 Water Level Information for Surface Navigation Product Specification

7.7.3 Requirements for water level adjustment

There must be no spatial overlap between S-104 datasets created by the same producer, with the exception of datasets in the same temporal series, which must have the same spatial extent. It is possible that water level datasets can overlap not only spatially but also temporally for different data providers.

Comment by the TWCWG Chair and IHO Secretariat:

The TWCWG Chair and IHO Secretariat thank Türkiye for their comment.
The comment from Türkiye is noted, however after discussion within the S-101PT, HSSC Chair Groups and the IHO Secretariat, it has been determined that text as currently included in the product Specification is sufficient, therefore this change will not be applied for S-104 Edition 2.0.0.

S-111 Ed. 2.0.0	Operational Product Specification

CANADA (Vote for adoption = YES)

See general comment from Canada and response for S-101.

GEORGIA (Vote for adoption = YES)

We need to approve the draft proposed Edition 2.0.0 of S-111 to enhance the accuracy and real-time delivery of surface current data, ensuring better navigation safety and interoperability within the S-100 framework for modern maritime operations.

Comments by the TWCWG Chair and IHO Secretariat:

The TWCWG Chair and IHO Secretariat thank Georgia for their comment.

GHANA (Vote for adoption = YES)

These publications are shaping our understanding of the new standards. Thank you.

Comments by the TWCWG Chair and IHO Secretariat:

The TWCWG Chair and IHO Secretariat thank Ghana for their comment.

SWEDEN (Vote for adoption = YES)

See general comment from Sweden and response for S-101.

TÜRKIYE (Vote for adoption = NO)

First of all, we would like to thank IHO and Member States that put effort to prepare those documents. We have some comments/remarks regarding the proposed document.

It is critical to remember that surface current forecast datasets are the data produced by models so that those data may overlap both spatially and temporally depending on the areas of responsibility of data providers, accuracy & resolution of datasets.

The most important thing herein for data is the accuracy of the data. If the data is accurate temporally & spatially, then data overlap should not be a problem. That is why we think this article shown below should be revised/reconsidered. We suggest making changes as pointed out below:

S-111 Surface Currents Product Specification

7.7.2 Requirements for harmonised user experience

There must be no spatial overlap between S-111 datasets created by the same producer. It is possible that surface current datasets can overlap not only spatially but also temporally for different data providers since those datasets include forecast information.

Comment by the TWCWG Chair and IHO Secretariat:

The TWCWG Chair and IHO Secretariat thank Türkiye for their comment.
The comment from Türkiye is noted, however after discussion within the S-101PT, HSSC Chair Groups and the IHO Secretariat, it has been determined that text as currently included in the product Specification is sufficient, therefore this change will not be applied for S-111 Edition 2.0.0.

S-129 Ed. 2.0.0	Operational Product Specification

AUSTRALIA (Vote for adoption = YES)

It is acknowledged that route information corresponding to an S-129 dataset is to be provided through an S-421 dataset, if possible, or through other methods such as RTZ route plan exchange format.

However, an S-421 dataset file or RTZ file does not necessarily have to be provided as a support file to an S-129 dataset. Instead, they can be provided alongside an S-129 dataset as part of the same exchange set, which end user systems can consume.

Clause 18.4 ("Support Files") therefore appears unnecessary, and it is thus recommended to be removed from the S-129 Product Specification to avoid confusion.

It is also noted that Clause 18.4 currently contains the following errors/deficiencies:

- IEC 63173-1 is used as reference for RTZ, not S-421, in Table 18-1
- No file extension is specified for S-421 datasets
- Subclause 18.4.1 ("Support File Naming") instructs the support file names to start with "129". This appears erroneous, and seemingly a copy of text under Subclause 18.2.3 ("Dataset file naming")
- Subclause 18.4.1 also instructs the fourth to seventh characters of the support file name to indicate the issuing agency, although route plans are not necessarily issued by agencies (e.g. route plans could be derived from end user input). This text also appears to have been possibly copied from Subclause 18.2.3.

Thus, it is observed that the removal of Clause 18.4 would also provide the additional benefit of removing this inaccurate information.

Comments by the S-129PT Chair and IHO Secretariat:

The S-129PT Chair and IHO Secretariat thank Australia for their comments.
After discussion with the S-129PT Chair, the comments from Australia are considered to be valid. Clause 18.4 will be removed for the final operational Edition 2.0.0 of S-129.

CANADA (Vote for adoption = YES)

See general comment from Canada and response for S-101.

GEORGIA (Vote for adoption = YES)

We need to approve the draft proposed Edition 2.0.0 of S-129 to improve under-keel clearance management, enhance real-time data integration, and ensure safer navigation, while maintaining interoperability within the S-100 framework.

Comments by the S-129 Chair and IHO Secretariat:

The S-129 Chair and IHO Secretariat thank Georgia for their comment.

GHANA (Vote for adoption = YES)

Thank you to the team for draft publications.

Comments by the S-129PT Chair and IHO Secretariat:

The S-129PT Chair and IHO Secretariat thank Ghana for their comment.

NETHERLANDS (Vote for adoption = YES)

Please note the ambiguity between 17.1 ("Values of latitude and longitude must be expressed with a precision of 9 decimal places") and 17.1.1 ("Values should be coded as decimal numbers with 7 or fewer digits after the decimal").

Comments by the S-129PT Chair and IHO Secretariat:

The S-129PT Chair and IHO Secretariat thank Netherlands for their comment.
This inconsistency is noted. Clause 17.1 has been amended to specify a precision of 7 decimal places for the final operational Edition 2.0.0 of S-129.

NIGERIA (Vote for adoption = YES)

NHA agrees with this proposed draft edition as it encapsulates the interoperability of S-129 with other product specifications such as S-111, S-102, and S-104.

Comments by the S-129PT Chair and IHO Secretariat:

The S-129PT Chair and IHO Secretariat thank Nigeria for their comment.

SWEDEN (Vote for adoption = YES)

See general comment from Sweden and response for S-101.