

Paper for Consideration by IRCC

WEND report on the S-1XX Implementation Guidelines

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Executive Summary:	Now that IHO resolution 1/2021: "Principles of the WEND for S-1xx products (WEND-100 Principles)" has been approved, the complementary 'Guidelines on the implementation of the WEND-100 Principles' need to be developed. These Guidelines are a deliverable of the Roadmap for the S-100 Implementation Decade (2020-20230). The WENDWG had finalised a first iteration of the 'Guidelines on the implementation of the WEND-100 principles' for endorsement by the IRCC. The aim is for this first iteration is to create a baseline for the S-100 Roadmap to progress.
Related Documents:	IHO resolution 1/2021: "Principles of the WEND for S-1XX Products (WEND-100 Principles)"
Related Projects:	

Introduction/background

The framework for the WEND-100 principles is provided by the IHO resolution 1/2021: "Principles of the WEND for S-1xx products (WEND-100 Principles)". Complementary 'Guidelines on the implementation of the WEND-100 Principles' aim to detail further the applicability of WEND-100 Principles for S-100 based products (or S-1XX products) other than S-101 ENC's. They are iterative in nature and may evolve over time.

Attached is draft version 1.0 of the "Guidelines on the Implementation of the WEND-100 Principles". This draft is the product of 'Guidelines drafting group' and endorsed by the WENDWG. It builds on deliberations during WENDWG11 and WENDWG12.

Analyses/Discussion

The first iteration of Guidelines is limited 'to need to have' items within the context of (the timeliness of) the Roadmap for the S-100 Implementation Decade (2020-20130). In particular S-102 (Bathymetric Surface), S-104 (Water Level Information for Surface Navigation), S-111 (Surface Currents), S-124 (Navigational Warnings), S-128 (Catalogue of Nautical Products) and S-129 (Under Keel Clearance Management) products are planned to be ready for implementation and dissemination before or concurrent with S-101 ENCs. Therefore, the Guidelines will address those Route Monitoring Mode S-1XX products first.

The Guidelines are deliberately kept as compact and simple as possible. More depth and nuances can be added in the next iterations of the Guidelines when the experience with the WEND-100 Principles vis-a-vis the S-1XX products grows. For now the aim is to have a 'starting' baselines for the S-100 Roadmap Decade to progress.

Within the context of these Guidelines on implementation of the WEND-100 Principles, it is important to distinguish between S-1XX products and data sets used for the S-1XX products (S-1XX data sets).

- a) A S-1XX product is an official nautical and hydrographic S-100 based product issued by or on authority of a Member State meeting SOLAS V Regulation 2 (Definitions) and 9 (Hydrographic services) and delivered through integrated dissemination services to end-users. These S-1XX products are made available on a worldwide basis to meet the carriage requirements as described in SOLAS V Regulation 19 as it evolves under IMO regulations. Production and dissemination of these products are governed by the WEND-100 Principles.
- b) S-1XX data sets may be used for the development of products for non-SOLAS navigation or other maritime purposes. These products should be developed according to the UN-GGIM Integrated Geospatial Information Framework (IGIF) and possibly other generic frameworks. It is up to each

State to define the frameworks and regulations for the development of these products and the uses concerned.

The first iteration of the Guidelines will focus on the official S-1XX products for use under SOLAS V, in particular ECDIS, and on how the WEND-100 Principles apply in this use case.

Conclusion

The draft of a first iteration of the 'Guidelines on the implementation of the WEND-100 principles' is now offered for consideration to IRRC14.

Recommendation

Decide on the draft version 1.0 of the Guidelines and/or provide guidance necessary to draft a next iteration of the Guidelines on the implementation of the WEND-100 principles.

Justifications and impacts

A first IRCC-draft of the Guidelines on the implementation of the WEND-100 principles is necessary to meet the amended Roadmap for the S-100 Implementation Decade (2020-2030). It currently includes in paragraph 7 the "S-1XX Implementation Guidelines" as a deliverable per decision C5/21.

Moreover, the timely completion of a first IRCC-draft of the Guidelines is in line with the Target 1.1¹ and SPI 1.1.2² of the IHO Strategic plan for 2021-2026.

Action required of IRCC

The IRCC is invited to:

- a. Note the report of the WENDWG on the 'Guidelines on the implementation of the WEND-100 principles'.
- b. Endorse the first iteration of the 'Guidelines on the implementation of the WEND-100 principles' (Annex A) as version 1.0 whilst recognized that more depth and nuances can be added in the next iterations of the Guidelines when the experience with the WEND-100 Principles vis-a-vis the S-1XX products grows.
- c. Add these Guidelines as an appendix to Annex 3 of the Roadmap for the S100 Implementation Decade (2020-2030).
- d. Consider forwarding 'Guidelines on the implementation of the WEND-100 principles' as version 1.0 to the Council for endorsement.
- e. Provide guidance for the next iteration of the Guidelines on the implementation of the WEND-100 principles if so required.
- f. Take any other action as considered appropriate.

¹ Target 1.1. Deliver standards for hydrographic data and specifications of hydrographic products; support their regular production; and coordinate regional and global services for their provision.

² SPI 1.1.2. Number of hydrographic data products and services based on Universal Hydrographic Data Model that cater for the new requirements: autonomous shipping, reduction of emission.

Annex A**GUIDELINES ON THE IMPLEMENTATION OF THE WEND-100 PRINCIPLES**

As endorsed by CL ...

1. Introduction

1.1. The framework for the WEND-100 Principles is provided by the IHO resolution 1/2021: “Principles of the WEND for S-1XX products (WEND-100 Principles)”. These ‘Guidelines on the implementation of the WEND-100 Principles’ aim to detail the applicability of WEND-100 Principles for the official nautical and hydrographic S-100 based products (S-1XX products)” further. They are iterative in nature and may evolve over time.

1.2. The Roadmap for the S-100 Implementation Decade (2020-2030)³ indicates that S-102 (Bathymetric Surface), S-104 (Water Level Information for Surface Navigation), S-111 (Surface Currents), S-124 (Navigational Warnings), S-128 (Catalogue of Nautical Products) and S-129 (Under Keel Clearance Management) products will be ready for implementation and dissemination before or concurrent with S-101 ENC. Therefore, these Guidelines will address those Route Monitoring Mode S-1XX products first.

1.3. Within the context of these Guidelines on implementation of the WEND-100 Principles, it is important to distinguish between S-1XX products and data sets used for the S-1XX products (hereafter S-1XX data sets).

- c) A S-1XX product is an official nautical and hydrographic S-100 based product issued by or on authority of a Member State meeting SOLAS V Regulation 2 (Definitions) and 9 (Hydrographic services)⁴ and delivered through integrated dissemination services to end-users. These S-1XX products are made available on a worldwide basis to meet the carriage requirements as described in SOLAS V Regulation 19 as it evolves under IMO regulations⁵. Production and dissemination of these products are governed by the WEND-100 Principles.
- d) S-1XX data sets may be used for the development of products for non-SOLAS navigation⁶ or other maritime purposes. These products should be developed according to the UN-GGIM Integrated Geospatial Information Framework (IGIF) and possibly other generic frameworks. It is up to each State to define the frameworks and regulations for the development of these products and the uses concerned.

The figure in Annex A illustrates this schematically, whilst quoting the overarching article 1.1 of the WEND-100 Principles.

1.4. These Guidelines will focus on the official S-1XX products for use under SOLAS V, in particular ECDIS, and on how the WEND-100 Principles apply in this use case.

2. S-102, S-104 and S-111 products

2.1. S-102, S-104 and S-111 products contain information that is in nature also available in concurrent S-101 ENCs in ECDIS.

2.2. S-98 deals with the interoperability of a ‘chained’ navigation package consisting of S-101, S-102, S-104 and S-111 products when displayed in an ECDIS. S-98 addresses various ‘interoperability levels’

³ These guidelines are included in paragraph 7 of the Roadmap for the S-100 implementation decade as a deliverable.

⁴ Regulation 2, article .2 and Regulation 9 articles 2.2 and 2.4. in particular.

⁵ For instance S-1XX products are intended to support the future Electronic Navigation Data Service (ENDS) in accordance with the DRAFT AMENDMENT PROPOSAL OF THE REVISED PERFORMANCE STANDARDS FOR ELECTRONIC CHART DISPLAY AND INFORMATION SYSTEMS (ECDIS) (resolution MSC.232(82)).

⁶ At their discretion, Member States HOs can disseminate their S-1XX products or the data within them also for navigational purposes outside the remit of SOLAS V and use the same integrated dissemination services for this (see ANNEX A).

between different S-1XX products. At the current stage⁷, however, it does not address interoperability-related processing of the data within the S-1XX products by producers or between various producers. As such, S-98 is complementary to the WEND-100 Principles, not a substitute for it.

2.3. For the SOLAS V use case, in particular ECDIS, therefore, the full extent of the WEND-100 Principles applies to the production and the dissemination of S-102, S-104 and S-111 products as they do to S-101 ENC. Consequently, in order to ensure consistency between the products, the S-102, S-104 and S-111 products should be produced and disseminated by or on behalf of the same producer State/authority as the S-101 ENC they are combined with.

2.4. However, at small chart scales for oceanic use, overlapping or concurrent data for S-111 products does not necessarily impede safe navigation in ECDIS. In this case, the end user has the flexibility to choose between the various oceanographic S-111 products that may exist for voyage optimization.

3. S-124 product

3.1. There is a comprehensive set of arrangements in place for the dissemination of Maritime Safety Information. IHO S-53 Manual on MSI is a joint IHO/IMO/WMO publication and will need updating to accommodate S-124 products depending on developments around their production and dissemination. Moreover, the WEND-100 Principles themselves refer to SOLAS V Regulation 9 and specifically to Maritime Service 11 (Nautical charts service) and 12 (nautical publications service), and not to Maritime Service 5 (MSI service), which includes navigational warnings such as S-124 products.

3.2. Therefore, no specific guidelines on how the WEND-100 Principles apply to S-124 products as SOLAS V carriage requirement arrangements are needed at this time.

4. S-128 product

4.1. S-128 products provide mariners with product meta information of the S-1XX products intended to meet SOLAS carriage requirements for safe navigation such as the availability of nautical products, coverage, issue date, status and producing agency. S-128 allows management to ensure up-to-date content of S-1XX products and supports Port State Control. Producing States of the S-1XX products are responsible for the production and dissemination of the corresponding S-128 products. S-128 products are made available for end users either directly or through a value chain. RENCs may collate them, whereas service providers may build bespoke packages for the end-user as part of their integrated dissemination services. In all cases, the integrity of the S-128 products should be ensured through the IHO Data Protection Scheme (S-100 part 15).

4.2. No additional guidelines on how the WEND-100 Principles apply to S-128 products are identified at this time.

5. S-129 product

5.1. Dynamic Under Keel Clearance Management (UKCM) systems that deliver S-129 products are operated by Member States or a range of organizations designated by Member States, such as port authorities. S-129 UKCM information will be exchanged directly between UKCM system operators and vessels.

5.2. No specific guidelines on how the WEND-100 Principles apply to S-129 products are identified at this time.

⁷Only Level 0 (Overlays) and Level 1 (Interleaving) are currently in place.

Annex A: to the Guidelines on the implementation of the WEND-100 Principles.

