

Paper for the Consideration of IRCC11

Submitted by the WENDWG Vice Chair

Proposal for Consideration by the WEND

Submitted by: United States/NOAA

Executive Summary:

In response to the action required of WEND from the Council, through IRCC, to consider the applicability of WEND-like principles to other hydrographic services provided using the S-100 series of standards, the WENDWG may choose to consider the following proposal for a more generalized set of WEND principles. In order to signal the change of scope, the principles are proposed to apply to “Worldwide Electronic Navigation Services (WENS).”

Related Documents: WEND Principles (https://www.iho.int/iho_pubs/misc/M3-E-AUGUST18.pdf#page66)

Introduction:

The IHO Council, at its second meeting in October, 2018, discussed the approach of the IHO to provision of S-100 based services, in the context of several standards reaching and nearing completion.

From C-2 Minutes:

Action C2/30: IRCC to instruct and provide guidance to the WENDWG in order to investigate the applicability of the WEND-like Principles to the production and dissemination of S-101 ENCs and the first generation of S-100 based products and to report back at C-3. (deadlines: Dec. 2018, C-3)

Action C2/31: Council, HSSC, IRCC Chairs and Secretary-General to draft an implementation strategy aiming to the regular and harmonized production and dissemination of S-100 based products for further discussion at A-2 and for the preparation of the 2021-2023 IHO Work Programme. (deadline C-3 in preparation for A-2)

The attached update of the WEND principles was prepared by the US, using the existing WEND principles as a template.

Discussion:

The proposed new document was prepared with the following considerations:

- 1) The scope should be applicable to ENCs (S-57 and S-101) and to other services needed for safe, legal, and efficient marine operations by all classes of vessels. While not explicit in the document, of the standards now under development, it would include those intended for front of bridge use, and being addressed in the interoperability standards (S-101, S-102, S-104, S-111, S-122 (MPAs), S-124 (navigation warnings), and S-412 (weather warnings).
- 2) The proposal envisions worldwide coordinated services, so that duplication of services (which could be inconsistent, inefficient, or confusing) is avoided.
- 3) The proposal envisions a worldwide integrated dissemination system, so that users can become aware of, and gain access to compatible services worldwide.
- 4) The proposal considers navigation use of these services, most of which are also expected to have some manifestation in national or regional MSDI efforts. The proposal is silent on the provision of this information in the MSDI context, though the same dissemination systems used for maritime navigation use may readily be extended for non-navigation use. MSDI also has standardization, coordination, and data access considerations, and scope beyond these specific services.
- 5) There is a mention of capacity building, which is intended to establish that CB efforts are needed to support these additional services.
- 6) It is recognized that this proposal expands the scope of navigation services to include some oceanographic and meteorological services that are critical for safe navigation. Given the opportunity for these services to be distributed together, there is an opportunity to consider them together here. If the IHO takes on this wider coordination role, it will necessarily also expand our circles of collaboration to those agencies expert in these services.

Proposal: WEND is invited to consider the WENS principles attached to this proposal and to forward as a working draft for discussion at IRCC and with the Council drafting group charged with consideration of an implementation plan (C2/31).

Other considerations: While not included in this proposal, a companion proposal might be to propose amendment of the WEND TOR to include the wider mandate for navigation services as envisioned in this proposal.

Worldwide Electronic Navigation Services (WENS) PRINCIPLES

(WEND WG working draft version, 26 February, 2019)

The purpose of WENS is to ensure that high-quality, updated official hydrographic services are available to mariners worldwide. These services support hydrographic carriage requirements of SOLAS Chapter V, and the requirements of the IMO Performance Standards for ECDIS. In addition, these same coordinated services can be used to coordinate services to mariners not subject to the provisions of ECDIS.

Applicability

SOLAS V, requires signatory states to provide hydrographic services to enhance safety of life at sea. At the time of the last full drafting, these services were provided in the form of paper charts, printed publications, printed notice to mariners, and radio services. Since then, maritime navigation has become primarily digital, taking advantage of GPS for positioning and the internet for dissemination. The IHO and partner IGOs have developed standards for digital hydrographic services that can functionally replace their analog predecessors. The principles below apply to all digital hydrographic services intended to meet a nation's obligations under SOLAS. As of 2019, these services are expected to be provided using the following standards: S-101 (ENCs), S-102 (gridded bathymetry), S-104 (water levels), S-111 (surface currents), S-122 (MPAs), S-124 (navigation warnings), S-411 (ice) and S-412 (weather warnings).

1. Service Provision

1.1 Member States will strive to ensure that mariners anywhere in the world can obtain up-to-date services for all shipping routes and ports around the world.

1.2 Member States are encouraged to distribute their services through compatible and coordinated network distribution systems to reduce distribution complexity and cost, and to ensure the greatest possible standardization, consistency, reliability and availability of services.

1.3 Source and authority of services should be preserved in the metadata and remain available to the end user.

1.4 Member States should use the IHO Data Protection Scheme (S-63) for distribution to end users, to ensure data integrity, to safeguard national copyright in data, to protect the mariner from falsified products, and to ensure traceability. When an encryption mechanism is employed to protect data, a failure of contractual obligations by the user should not result in a complete termination of the service. This is to assure that the safety of the vessel at sea is not compromised.

1.5. Noting that the content of many of these services are also valuable as part of a national or regional MSDI, the coordination and dissemination of these services may be coordinated through the same mechanisms as the services intended for maritime navigation.

2. Rights and Responsibilities

2.1 SOLAS Chapter V, Regulation 9, requires Contracting Governments to ensure that hydrographic products and services are available in a suitable manner in order to satisfy the needs of safe navigation. With mandatory carriage of ECDIS, there is a consequential requirement to ensure that such services, as agreed by IMO, are available in a form suitable for use in ECDIS, in current form and as subsequently updated.

2.2 To meet their national obligations under SOLAS, Member States may either:

a) Provide the necessary services, covering waters bounded by the seaward limit of their Exclusive Economic Zone, or

b) Agree with other States to provide the necessary service coverage on their behalf.

All states retain the right to provide the services within national jurisdictions.

2.3 Member States should recognize their potential exposure to legal liability for the quality of their hydrographic services.

2.4 The nation responsible for originating the data is also responsible for providing metadata on source, methods of collection, and data quality.

2.5 National entities are responsible for advising the issuing HO of available information and for advising the NAVAREA coordinator of Marine Safety Information in a timely manner.

2.6 In producing services, Member States are to take due account of the rights of the owners of source data and previously issued products, honoring any use restrictions or copyrights.

3. Coordination of Services

3.1. Service duplication should be avoided. A single producing authority should exist in any given area for each service, though the same authority need not provide all services.

3.2 When the limits of waters of national jurisdiction have not been established, or it is more convenient to establish boundaries other than established national boundaries, producing countries may define the boundaries for hydrographic service provision within a technical arrangement. These limits would be for convenience only and shall not be construed as having any significance or status regarding political or other jurisdictional boundaries.

3.3. In international waters, the applicable regional hydrographic commission may coordinate limits of services. In areas of national jurisdiction for which there is no agreed hydrographic service provider nation, the Regional Hydrographic Commission may designate the service provider nation. Services produced under such arrangements should be offered for transfer to the Coastal State in the event that the Coastal State subsequently develops the capacity to maintain the services. Such transfer should respect the rights of the Coastal State and the commercial rights of the producer nation.

4. Maintenance and Improvement of Services

4.1 Member States are encouraged to work together on data capture and data management. To the extent possible, data should be widely shared to support continual updates and improvements of hydrographic services.

4.2. Technically and economically effective solutions for updating services are to be established conforming to the relevant IHO standards. The updating of services should be at least as frequent as that provided by the nation for previous analog services.

5. Standards and Quality Management

5.1 A Quality Management System should be created and documented to assure high quality of hydrographic services. When implemented, this should be certified by a relevant body as conforming to a suitable recognised standard; typically this will be ISO 9001:2000.

5.2 Services provided shall be in conformance with all approved relevant IHO and IMO standards, when they are available.

6. Mutual Assistance and Training

6.1 Member States' HOs are requested to participate in capacity-building efforts developed nationally, regionally, and through the IHO, by providing subject matter experts, venues, training materials, and open-source applications. The goal of this capacity building is to increase the availability of high quality hydrographic services globally.