17th Conference of the EAtHC /
17ème Conférence de la CHAtO

HSSC 14 Report
Hydrographic Services and Standards Committee

Agenda Item EAtHC17-02.3A

28 to 30 September 2022 / 28 au 30 septembre 2022 - Mindelo, Cabo Verde

UPDATE ITEMS TO BE REPORTED

- Implementation of the IHO Strategic Plan (SPIs)
- S-100 Product Specifications :
  - advancement,
  - priorities & timeline
  - Focus on S-98 Interoperability
- Dual Fuel Concept for S-100 ECDIS Governance Document
- Revision of ECDIS Performance Standards
- Other achievements or progress

IMPLEMENTATION OF THE IHO STRATEGIC PLAN
STRATEGIC PERFORMANCE INDICATORS ALLOCATED TO HSSC

International Hydrographic Organization

	Goal 1 : Evolving the hydrographic support for safety and efficiency of maritime navigation			*Goal 2 : Increasing the use of hydrographic data for the benefit of society*
	1.1 DELIVER STANDARDS FOR HYDROGRAPHIC DATA AND SPECIFICATIONS OF HYDROGRAPHIC PRODUCTS		1.2 DEVELOP STANDARDS & SPECIFICATIONS	2.2 PROMOTE NEW TOOLS AND METHODS
	1.1.1 Member States produce & deliver products based on S-100	1.1.2 Number of hydrographic data products and services based on S-100	1.2.1 Percentage of Hydrographic data product and services based on S-100	2.2.2 Number of new applications of the new version of Standards for Hydrographic Survey (S-44)
Target	2026 : 60% of MS distribute at least 1 product*	2026 : 10** S1xx Product Specifications are operational (Edition 2.0.0)	2026 : 100% of PS** includes cyber security and data quality assessment	Number of downloads of S-44 Edition 6.0.0 and following ones
Value 31/12/2021	**0% of MS distribute official products** *Several MS distribute S-102 & S-111 compliant with current editions of PS*	**0/10** *S-100 Edition 5.0.0 endorsed at HSSC 14*	**0%** *No PS in Edition 2.0.0*	**59**

** Based on that 62 of 94 IHO MS produce S-57 ENCs (March 2021)*
*** S-101, S-102, S-104, S-111, S-122, S-124, S-127, S-128, S-129, S-131*

PROGRESS IN THE DEVELOPMENT OF S-1XX PS

- Endorsement of new Editions at HSSC14

	Edition	Expected MS Approval
S-100 Universal Hydrographic Data Model	5.0.0	CL35 released "call for approval of edition 5.0.0 of IHO publication S-100 universal hydrographic data model" – deadline : 30 November 2022
S-99 Operational Procedures for the Organisation and Management of the S-100 GI Registry	2.0.0	30/09/2022 (CL 24/2022)
S-102 Bathymetric surface New scope towards navigation	2.1.0	20/09/2022 (CL 21/2022)

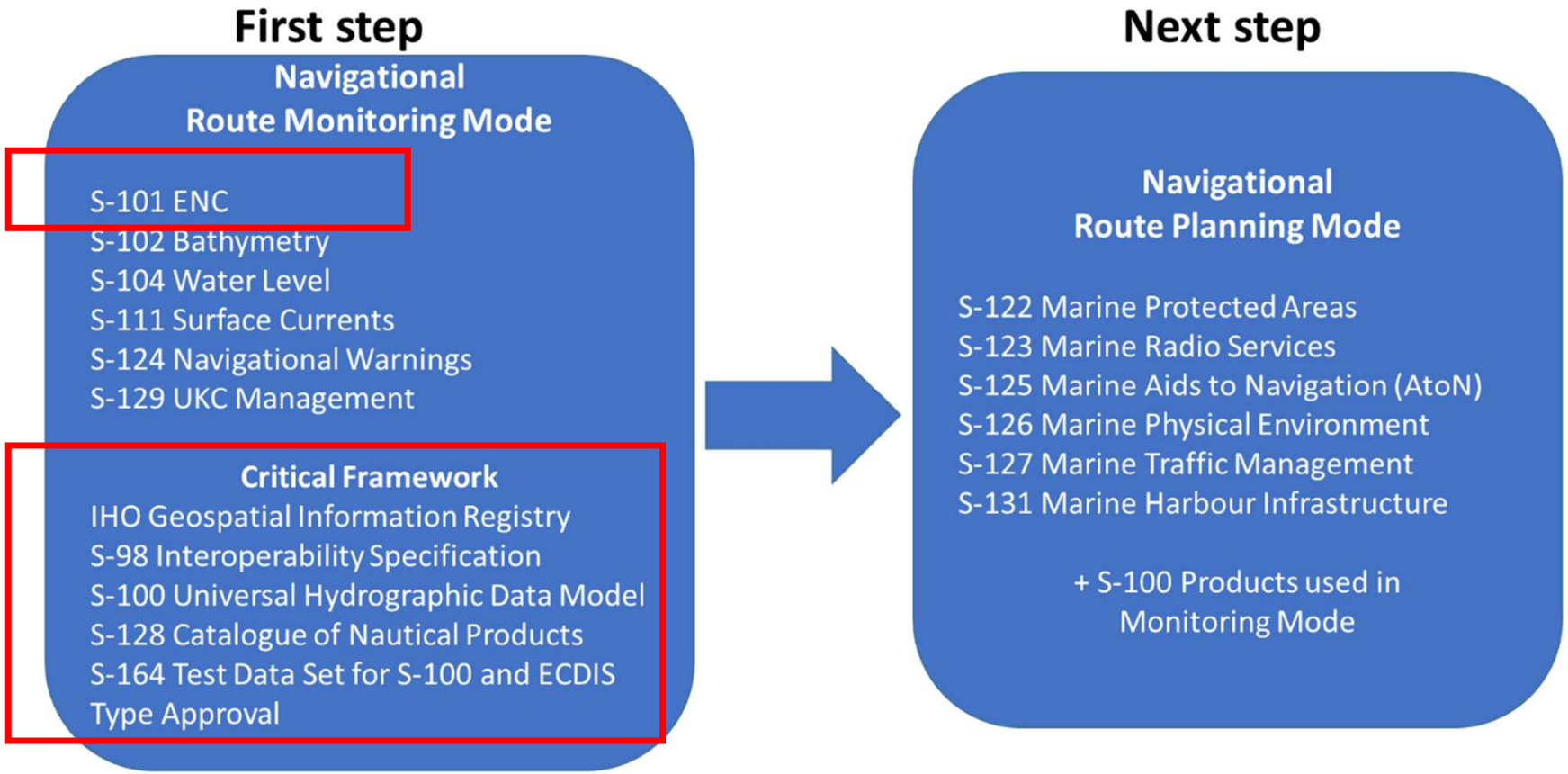
- Approval of first Editions (1.0.0) for implementation and testing
  - ✓S-98 Interoperability
  - ✓S-104 Water Level
  - ✓S-128 Catalogue of Nautical Products

International Hydrographic Organization

S-100 IMPLEMENTATION PRIORITIES

Top priorities

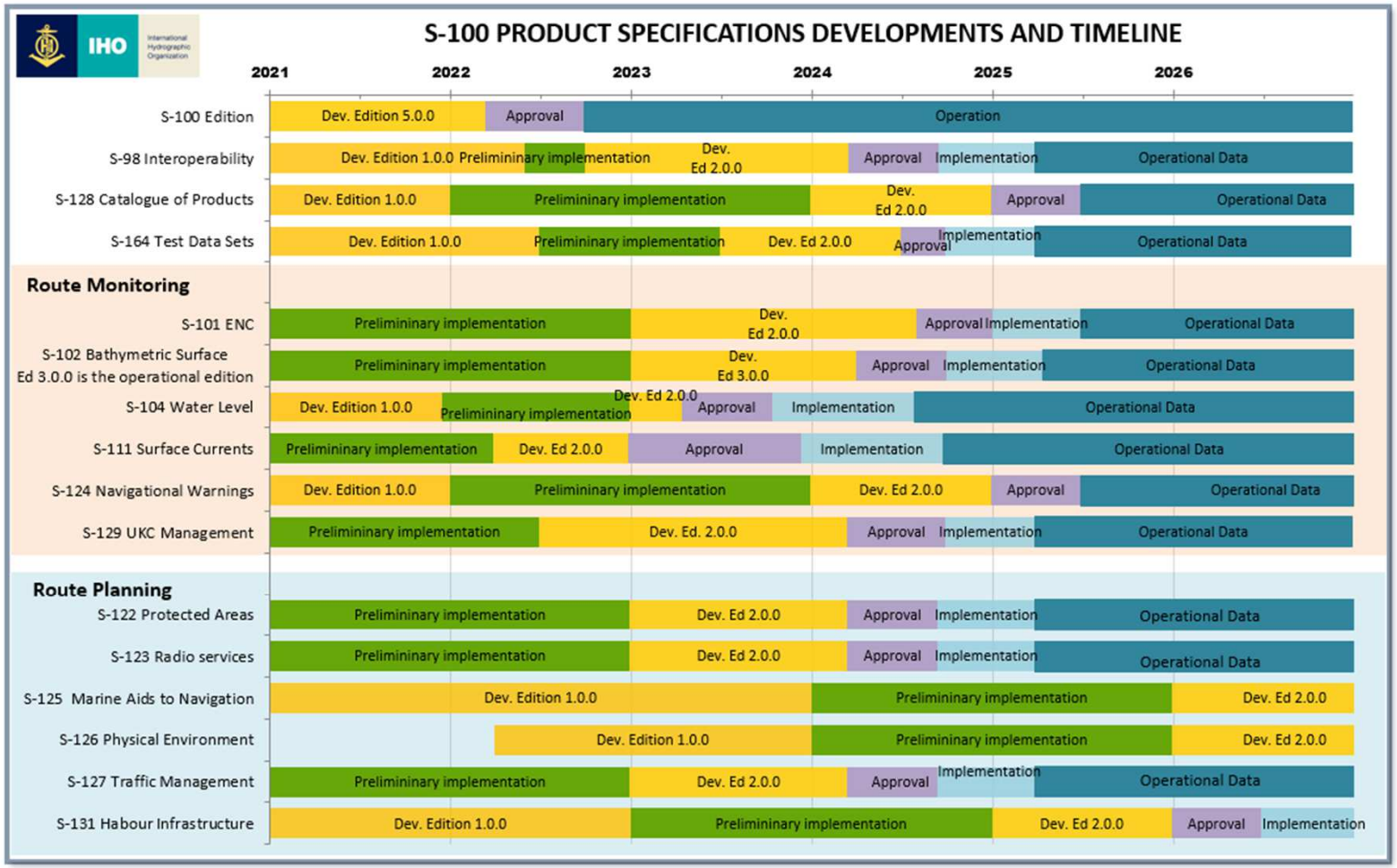
Mandatory to revise ECDIS PS



IHO

International Hydrographic Organization

S-100 TIMELINE



This S-100 timeline is updated: 12 July, 2022.

S-98 : A CORE COMPONENT OF S-100

International Hydrographic Organization

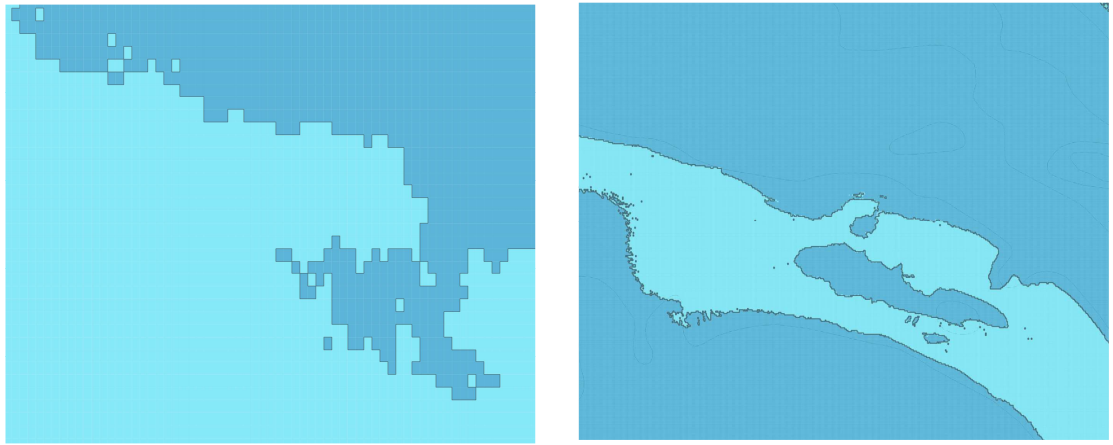
- The single layer ENC S-57 will be replaced by multiple interacting layers of navigational products in S-100 ECDIS
- S-98 defines how multiple layers interact & how they are portrayed

Exemple : High density bathymetry (S-102) replaces soundings in the ENC. Depth contours are re-computed based on S-102.

S-102 contains a grid of depth values with no predefined contours

S-102 supresses S-101 Depth Areas.

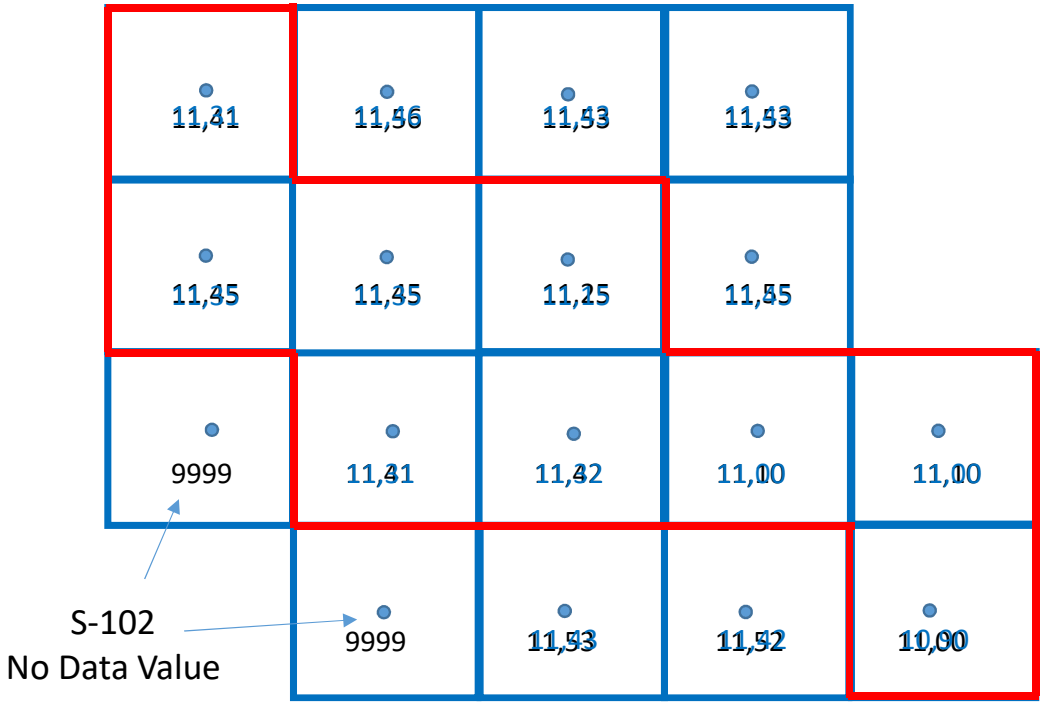
S-98 defines how to draw a safety contour on a grid of S-102 depths



S-98 : A CORE COMPONENT OF S-100

International Hydrographic Organization

Exemple 2 : S-98 defines how to adjust all depth values according to S-104



S-104 Depth Value = 0,1 m

S-104 Water Level is used to adjust the S-102 depth values

A safety contour is drawn based on adjusted depth values

DUAL FUEL CONCEPT FOR S-100 ECDIS GOVERNANCE DOCUMENT
FROM PRODUCTION, PACKAGING AND USE

International Hydrographic Organization

The governance document provide a central view of how S-100 ECDIS works, in particular with S-57 and S-101 ENC (DF-Concept) during the transition period

Data Co-Production Distribution

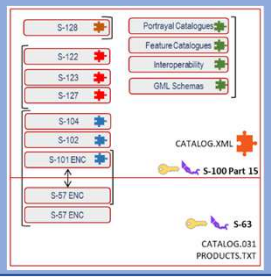
Hybrid Exchange Set

Use on ECDIS

✓Production strategy : Conversion S-57 ↔ S-101 / Co-production of S-57 & S-101 from superset model

✓ENC scheming and scales

✓ Packaging



✓ Import data
✓ Loading Strategy : vertical & horizontal priorities
✓ Display & use in a single User Interface

https://iho.int/uploads/user/About%20IHO/Council/council6/C6_2022_04.1A_HSSC_Report%20Annex%20C-ver1.0.pdf

REVISION OF ECDIS PERFORMANCE STANDARDS

International Hydrographic Organization

- **IMO MSC104 agreed** in October 2021, **to revise the resolution on ECDIS Performance Standards** (IMO MSC.232(82)) **to include support for S-100**

➔**IHO** organized and chaired a drafting group (HSSC Chair group, CIRM, IEC, INTERTANKO and a few other relevant stakeholders) to **submit a redline version of a proposed ECDIS PS resolution to the IMO NCSR9 meeting, held in June 2022.**

- In addition to the inclusion of S-100, the proposal also included editorial changes and based on user experience, some functional changes aimed to improve safety. The proposal also introduced a mandatory support for standardized route exchange.

➔NCSR9 considered the inclusion of route exchange outside the scope of the existing output,

➔All other proposed changes were endorsed by NCSR9.

➔**NCSR9 endorsed an implementation phase for the new resolution, including S-100 : a transition period was agreed upon :**

- ➔**S-100 ECDIS will be legal to use after 1 January 2026 and**
- ➔**from 1 January 2029 new systems must comply with the new IMO Resolution on ECDIS PS.**

OTHER ACHIEVEMENTS OR PROGRESS DURING HSSC14

- Endorsement of recommended revisions of IHO Resolutions to introduce S-100
- Approval of a «S-57 ENC to S-101 Conversion Guidance» (S-65 Ed 1.0.0) for implementation and testing
- Introduction of a new task in ENCWG work plan for the development of an encoding guidance for the backward conversion (S-101 to S-57)
- Establishment of a sub-WG of NCWG to develop a Baseline Symbology to support automated production of paper charts from S-101 date (BSPT)
- Progress on IHO-Singapore Lab projects : S-57 to S-101 conversion and database for Marine Harbour Information (S-131)
- New revision of the UOC (S-57 Annex A) and new edition of the ENC Validation Checks (S-58 Ed 7.0.0)
- Endorsement of the Hydrographic Survey Standard S-44 draft Edition 6.1.0

- Note the vacancy of DQWG chair and secretary and consider among MS the nomination of office bearers

TOP CHALLENGES FOR THE NEXT 2-3 YEARS

- The inclusion of S-100 in the IMO regulatory framework is a major success for IHO

➔ IHO and its Member States clearly need to meet the deadlines setup in the S-100 timeline :

1. **to achieve operational status on the prioritized S-100 PS**
2. **and for Member States to achieve substantial coverage of S-101 until 2026.**

HSSC RECOMMENDATIONS FOR EATHC16

1. Note the HSSC 14 report
2. Note the important challenges on the S-100 implementation and the commitments towards IMO and IEC
3. Encourage MS to actively support the development of priority PS

4. Take any action as appropriate