



16th Meeting of the Hydrographic Services and Standards Committee

Report of the S-100 Working Group

Julia Powell (Chair)

Agenda Item 5.1

HSSC-16, Tokyo, Japan, 28-30 May 2024



IHO

PRINCIPAL ACTIVITIES AND ACHIEVEMENTS

International
Hydrographic
Organization

- **Membership**
23 member states, 15+ industry members
- **Meetings**
 - S100WG8 (Singapore) – 13-17 Nov, 2023
 - Test Strategy Meeting 10 (Monaco) -12-15 March 2023
- **Chair**
 - Ms. Julia Powell (US-NOAA) **Re-elected**
- **Vice Chair(s)**
 - Ms. Elizabeth Hahessy (DK) **Re-elected**
 - Mr. Benjamin Hell (SE) **New**

S-100TSM10, Monaco Mar. 2024



S-100WG8, Singapore Nov. 2023

Machine readable nautical information
(Facilitate IMO MASS)



S-100 WORLD



- Phase 1**
- Route Monitoring**
- 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**
- 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

S-97	Guidelines for Creating S-100 Product Specifications	S-98	Data Product Interoperability in S-100 Navigational System	S-99	Operational Procedures for the Organization and Management of the IHO GI registry	S-100	IHO Universal Hydrographic Data Model	S-164	Test Data Set for S-100 and ECDIS Type Approval	S-101 to S-199	International Hydrographic Organization (IHO)
S-101 to S-199	International Association of Marine Aids to Navigation and Lighthouse (IALA)	de S-301 to S-399	Intergovernmental Oceanographic Commission (IOC)	S-401 to S-402	Inland ENC Harmonization Group (IEHG)	S-411 to S414	WMO Service Commission (SERCOM)	S-421 to S-430	International Electrotechnical Commission - TC80 (IEC-TC80)	S-501 to 525	NATO Geospatial Maritime Working Group (GMWG) for Additional Military Layers (AML)



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PRINCIPAL ACTIVITIES AND ACHIEVEMENTS

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- Structure of S-100 Working Group (as of 8 April 2024)

Name	Description (Main Tasks)	Remark
S-100WG	Develop/maintain S-100 and supports S-100 based PS development	
S-98/S-164 Task Group	Develop/maintain S-98/S-164	Lead by Jonathan Prichard (IIC)
S-158(Validation) Task Group	Develop/maintain S-158	Lead by Elizabeth Hahessy (Denmark)
Test Strategy Group	Support technical implementation of S-100 and its related services	Lead by Julia Powell (USA)
S100P Project Team	Support S-100 Test Bed to accelerate wider adoption of S-100	Lead by (Vacant)
S-101 Project Team	Develop S-101 Edition 2.x.x (Operation version)	Lead by Thomas Richardson(UKHO)
S-102 Project Team	Develop S-102 Edition 3.x.x (Operation version)	Lead by Lawrence Haselmaier (USA)
S-121 Project Team	Developed S-121 Edition 1.0.0	Dormant
S-129 Project Team	Develop S-129 Edition 2.x.x (Operation version)	Lead by Jason Rhee (OMC - Australia)



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PRINCIPAL ACTIVITIES AND ACHIEVEMENTS

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- S-100 Edition 5.1.0 → Edition 5.2.0
- Progress towards operational editions of
 - S-101
 - S-102
 - S-129
- S-98, S-164 and S-158



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HSSC 15 ACTIONS

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5.1A	SENC	HSSC15/20 (former HSSC14/25, HSSC13/27)	S-100WG to consider the SENC delivery issues raised by France, add this work item in its work plan (as part of testing activities and the development of S-164) to address and demonstrate, through a security risk analysis on the application of S-100 Part 15, whether the need for SENC distribution is still justified in the S-100 world.	HSSC-16	In progress as part of development of S-164
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- Recommend closing this action as WEND 14/23 indicated that Primar will not support SENC/System Database distribution of S-100/S-101 data due to the loss of the digital signature file in the process. This represents a large amount of coverage of the of the worldwide S-101 ENC suite that would not be part of any SENC delivery process.



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MAINTAIN AND EXTEND S-100 [A.1]

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- S-100 Edition 5.1.0 was published on October 31, 2023
- At S100WG8 there were a number of proposals to continue to clarify and correct (revision) for S-100 operational implementation from key stakeholders
 - The most notable revision was to the standards for digital signatures and the associated algorithm to accommodate longer key lengths
- This triggered S-100 Edition 5.2.0 and the need for all Phase 1 product specifications to baseline to S-100 Edition 5.2.0



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MAINTAIN AND EXTEND S-100 [A.1]

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- Recognizing that IHO approval timelines could pose a risk to the operational editions of Phase 1 products and in consultation with the HSSC chair and IHO Director a plan was put in place to endorse S-100 Edition 5.2.0 via HSSC CL
- IHO CL 18/2024 calls for MS approval of S-100 Edition 5.2.0
 - Voting is due May 31st



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MAINTAIN AND EXTEND S-100 [A.1]

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- S-100 WG will start collecting proposals for Ed.6.0.0
 - Outstanding task to include ITRF 2020 for improved datum control
- Will put together a plan for HSSC 17 regarding the development and dependencies timeline
 - Targeting 2027/2028 for potential publication
- If the changes are needed for the ECDIS community, then we will have to conduct an impact study.

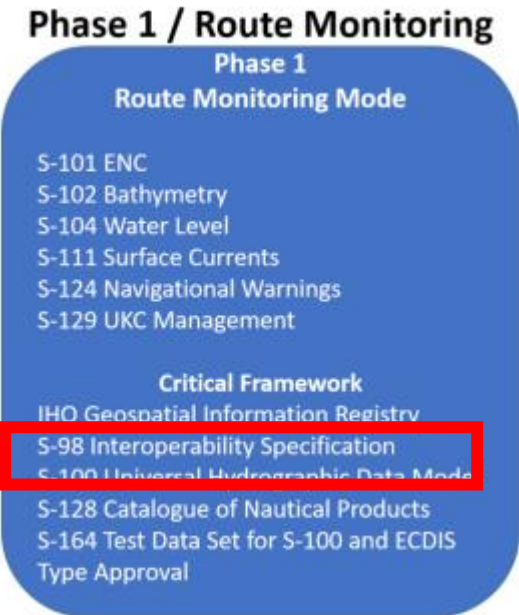


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S-98 DATA PRODUCT INTEROPERABILITY IN S-100 NAVIGATION SYSTEMS [A.2]

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- Part of the Critical Framework for S-100 ECDIS
- The S-98 subWG has merged with the S-164 subwg
- The specifications are closely tied together
- IHO is providing project management support via contract
- **High Risk** to not meeting 2024 Edition 2.0.0 publication date





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S-98 DATA PRODUCT INTEROPERABILITY IN S-100 NAVIGATION SYSTEMS [A.2]

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- S-100WG recognized that S-98 had multiple dependencies on Phase 1 product specifications, thus slack needed to be built into the schedule for those products to move towards [Ed.2.0.0](#) so that S-98 can baseline against those.
- Agreed to inform HSSC that Edition 2.0.0 will be published in 2025
- Leveraged the IC-ENC Special Activity Fund to continue project management support to finalize S-98 Edition 2.0.
- **Medium Risk** based on new target date – HSSC 17, 2025



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S-98 DATA PRODUCT INTEROPERABILITY IN S-100 NAVIGATION SYSTEMS [A.2]

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- **ITEM TO NOTE on S-98**
 - Hydrographic Offices are under the impression that an S-100 ECDIS would “express a preference” for S-101 ENC’s over S-57 ENC’s
 - Determined by the OEMs that this is not founded on sound technical grounds
 - Difficulties encountered
 - The preference would have to be done at data loading and require S-101 to be automatically installed and the corresponding S-57 to be deleted
 - Almost impossible if the HO is using two different schemes
 - Clipping S-101 to the boundaries of S-57 is complicated especially if hazards and safety contours are involved and leads to complex geoprocessing
 - The preference is essentially “right of substitution” for end users
 - IMO does not recognize nor prefer S-101 over S-57



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S-98 DATA PRODUCT INTEROPERABILITY IN S-100 NAVIGATION SYSTEMS [A.2]

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Previous Wording

C-18.1 Display of data available in both new and legacy formats

In general, systems should give newer formats priority over the older formats, and utilise data from the older format only when there is no coverage of the new format data at an appropriate scale (that is, when the display scale is out of the scale bounds in dataset metadata).

S-101 ENC data should always be given priority over S-57 ENC data when both S-101 and S-57 ENCs provide data coverage at the Mariner's set display scale.

The question of handling simultaneous display of data in old and new formats is still to be addressed by the IHO at the time this document is being written. In the interim, systems should:

- 1) Indicate when the screen is displaying older-format data.
- 2) Indicate the boundary between new and old-format datasets if both new and old formats are being simultaneously displayed (one part of the screen is displaying new-format data and another old-format data).
- 3) Anticipate that the portrayal of newer formats aligns with the portrayal of the older formats during the transition period, so that dual-fuel capable systems will not show significant differences in portrayal of what is essentially the same data in different formats or between different regions where S-100 adoptions are occurring at different paces.

Revised Wording

Display of data available in both new and legacy formats

The question of whether (and how) systems handling simultaneous display of data can give newer formats priority over the older formats is still to be addressed by the IHO at the time this document is being written.



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S-98 DATA PRODUCT INTEROPERABILITY IN S-100 NAVIGATION SYSTEMS [A.2]

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- HSSC16 is requested to note the new timeline for Edition 2.0.0 of S-98



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S-164 TEST DATA SETS FOR S-100 AND ECDIS TYPE APPROVAL [A.5]

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- S-164 continues to remain on the critical path
 - Edition 1.0.0 provides the framework, but the actual test data needs to be built
 - S-101 specific TDS is handled via the S-101PT
 - Other TDS's are part of in-kind support from ROK-KHOA/US-NOAA
- **High Risk** to not meeting 2024 Edition 2.0.0 publication date

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



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S-164 AND SENC/ENDS DISTRIBUTION

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- Currently this is not in S-164
- Feedback was requested on the existing S-64 SENC test datasets
 - Several OEMs noted that they don't intend to implement it
 - But other than that no feedback has been received.
- As it stands it will not be in Edition 2.0.0 and will not be tested under type approval
- In addition, it has been shown that the digital signature is not preserved through the SENC (ENDS) distribution process



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S-164 TEST DATA SETS FOR S-100 AND ECDIS TYPE APPROVAL [A.5]

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- S-100WG recognized that S-164 had multiple dependencies on Phase 1 product specifications, thus slack needed to be built into the schedule for those products to move towards Ed.2.0.0 so that S-164 can baseline against those.
- Agreed to inform HSSC that Edition 2.0.0 will be published in 2025
- Leveraged the IC-ENC Special Activity Fund to continue project management support to finalize S-164 Edition 2.0.0
- **Medium Risk** based on new target date – HSSC 17, 2025



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S-164 TEST DATA SETS FOR S-100 AND ECDIS TYPE APPROVAL [A.5]

International Hydrographic Organization

Examples – Part 3 Chart Display.

Test Reference	DisplayStandard	IHO Reference	S-98 C-9.5.3
Test Description			
The purpose of the test is to verify by observation that ECDIS correctly displays all S-101 ENC features included in the IMO Standard Display category. The test is performed by loading to ECDIS a test S-101 dataset and checking the display against graphical plots.			
The test ENC dataset 10100AA_STNDR.000 contains depth and land areas from Display Base plus all S-101 ENC features belonging to Standard Display according to the S-101 Portrayal Catalogue. The features belonging to Standard Display are to be shown if Standard Display is selected in ECDIS HMI and should disappear in the Display Base mode.			
Loaded Data			
Exchange Set Name			
DisplayStandard			
Display Mode		Independent Mariner's Selections (default=On)	
Standard		Accuracy	
Context Parameters		Contour label	
Four Shades	Off	Highlight date dependent	
Full Light Lines	Off	Highlight document	
Ignore Scale minimum	Off	Highlight info	
Plain Boundaries	On	Shallow Pattern	
Radar Overlay	Off	Unknown	
Shallow Contour	-	Update Review	
Shallow Water Dangers	On	Text Groups	
Simplified Symbols	On	Chart Text	
Safety Contour	10m	Important text	
Safety Depth	10m	Other Text	
Deep Contour	-	Names	
Palette		Light description	
Day		All other chart text	
Date Dependent Objects		Initial Display	
Start Date		Centre	10.09180N 010.0899E
End Date		Scale	1:70,000
		Orientation	
Viewing Groups			
Standard Display		Other	
Drying lines		Spot soundings	
Buoys, Beacons, aids to navigation		Submarine cables and pipelines	
Buoys, beacons, structures		All isolated dangers	
Lights		Magnetic variation	
Boundaries and limits		Depth contours	
Prohibited and restricted areas		Seabed	
Chart scale boundaries		Tidal	
Cautionary notes		Miscellaneous (Other)	
Ships' routing systems and ferry routes			
Archipelagic sea lanes			
Miscellaneous (Standard)			
Chart (Standard)			
Alert Highlights (Standard)			
Additional			
Setup			

Load the exchange set **DisplayStandard** (10100AA_STNDR.000) with the settings provided.

Action

Check ENC symbols shown in ECDIS against graphical plot

Results

- Confirm that depth and land areas from Display Base are shown
- The ENC in the ECDIS should be shown as in the picture below



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S-164 TEST DATA SETS FOR S-100 AND ECDIS TYPE APPROVAL [A.5]

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- HSSC16 is requested to note the new timeline for Edition 2.0.0 of S-164



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S-100 VALIDATION WORK [A.6]

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- S100WG8 agreed on the assignment of S-158 for S-100 validation
 - This includes validation checks against S-100 itself as well as
 - S-98 Validation (including cross product)
 - Annexes for validation checks for individual S-100 product specifications
 - However if this was bundled all under S-158 as a whole, HSSC would be continuously approving S-158 Editions
 - Eg – approving a new edition of S-158 due to an addition of an S-102 check even though the rest of the checks remain unchanged



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S-100 VALIDATION WORK [A.6]

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- Proposed S-158 Structure
 - Split into individual parts that are managed as separate specifications
 - S-158 Introduction and Structure
 - S-158:100 ed 1.0
 - S-158:98 ed 1.0.
 - S-158:101 ed 1.0
 - S-158:102 ed 1.0
 - Etc
- Each part will be managed by their respective working groups/PTs and will have its own HSSC/IHO MS endorsement/approval process
- It was noted that only the first two numbers of the product specification needed to match S-158 (extensions and revisions)



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S-100 VALIDATION WORK [A.6]

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- Expected target for initial S-158 parts will be HSSC17
- **Medium** to **High Risk** of not meeting this deadline
- Mitigating the risk by putting together an IC-ENC Special Activity Fund proposal to create the documentation and help develop some of the more specialized checks
- This is a critical dependency to be able to provide validated Phase 1 operational datasets.



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S-100 VALIDATION WORK [A.6]

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- HSSC16 is requested to approve the proposed structure for S-158



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DUAL FUEL CONCEPT FOR S-100 ECDIS

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- S100WG invited the WG members and members of NIPWG, TWLWG and WEND to provide comments to update the Dual Fuel Concept
- S100WG is working to consolidate comments to provide an updated draft.



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S-100 INFRASTRUCTURE [C.1,2,3]

Status of S-100 Infrastructure system development

Updated: 24 April 2024

International Hydrographic Organization

Category	Item	Description	Priority	Due Date	Status	Remark
GI Registry	Manager	add a search function on the history	Low	30/05/2024	Planned	
	Lists of Domain/ Submitting organization	populate a list of domains and submitting organizations under "Help&Guidance"	Low	30/09/2024	Planned	
	Concept register	Filtering option	Low	30/05/2024		
Data Dictionary Register	UOM	migrate the content of UnitOfMeasure from the old registry to DDR	High	30/06/2024	Planned	UOM in the old register should be thoroughly reviewed before proceeding migration.
Portrayal Register	S-100 Ed.5.2	Investigation to the portrayal register, gaps or missing for S-100 Ed.5.2.0	High	30/05/2024	In progress	
	colourValue/ AlertPriority	add items for colour value and alert priority based on S-100Part2b	High	30/05/2024	Planned	
	CSS, Color Profile	remove Cascading Style Sheet (CSS) and Color Profile	High	30/05/2024	In progress	Infra Github#1
	xmlID	change the type to numeric + character string	Middle	19/04/2024	In progress	Infra Github#2
			to discuss how to update the current xmlID if requested. The guidance should be defined.	Middle		
	Deadline process	Improve to allow RM approval for unresolved proposal after the deadline	High	30/05/2024	Planned	
FC Builder	S-100 Ed.5.2	Development of function for attribute visibility added in S-100 Ed.5.2	High	03/05/2024	In progress	
	association	Enhance the functionality of manager to associate feature/informations	High	10/05/2024	In progress	
	API	Change the API for integrating the IHO GI Registry, switching from the Bluemap version to the GB version.	Middle	24/05/2024	Planned	Depends on API schedules
	GML Schema	Embedding a FC to GML Schema converter(C#) into the FCB.	Low	31/05/2024	Planned	
	Multilingual	Develop the functionality for generating multilingual style sheets.	Low	23/08/2024	Planned	
PC Builder	Alert Catalogue	Develop the functionality for editing Alert Catalogue	Middle	24/05/2024	Planned	
	Color Profile	Develop the functionality for editing Color Profile and converting to CSS	High	10/05/2024	Planned	
	GI Registry	Develop the functionality to compare the local DB and GI Registry	Middle	31/05/2024	Planned	Depends on API schedules
DCEG composer	AsciiDoc	Support for exporting DCEG as AsciiDoc for Metanorma.	Low	27/09/2024	Planned	
Symbol Editor	Load S-100 Ed.5.2	Support Loading and Viewing the S-100 Ed.5.2 SVG	High	17/05/2024	Planned	
	Save S-100 SVG as S-100 Ed.5.2	Support Editing and Exporting the S-100 Ed.5.2 SVG	High	27/09/2024	Planned	
IC Builder	ProtoType	Supports S-98 IC Level 1&2	Middle	31/05/2024	Planned	
	Advanced Version	Supports S-98 IC Level 3&4	Low	25/10/2024	Planned	
FCtoDoc	Enhance Performances.	Enhance the performance for large FC files by simplified format of ouput.	Low	12/07/2024	Planned	



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S-102 PROJECT TEAM UPDATE [D.6]

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- S-102 is working to align Edition 3.0.0 with S-100 5.2.0
 - Estimated completion of draft Edition 3.0.0 is May 2024
 - Submission for IHO/Member State approval expected July 2024
- **Low Risk** to not meeting 2024 Edition 3.0.0 publication date



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NAVIGATION V. NON-NAVIGATION

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- Non-Navigation would have a separate number
 - Work is deferred until after S-102 E3.0.0 is out for implementation in order to support January 2026 directive
 - S-102 for non-navigation usage – users can continue to make use of S-102 Edition 2.0.0, which continues to be a valid product specification
 - Accepted by the S-100WG in November 2023

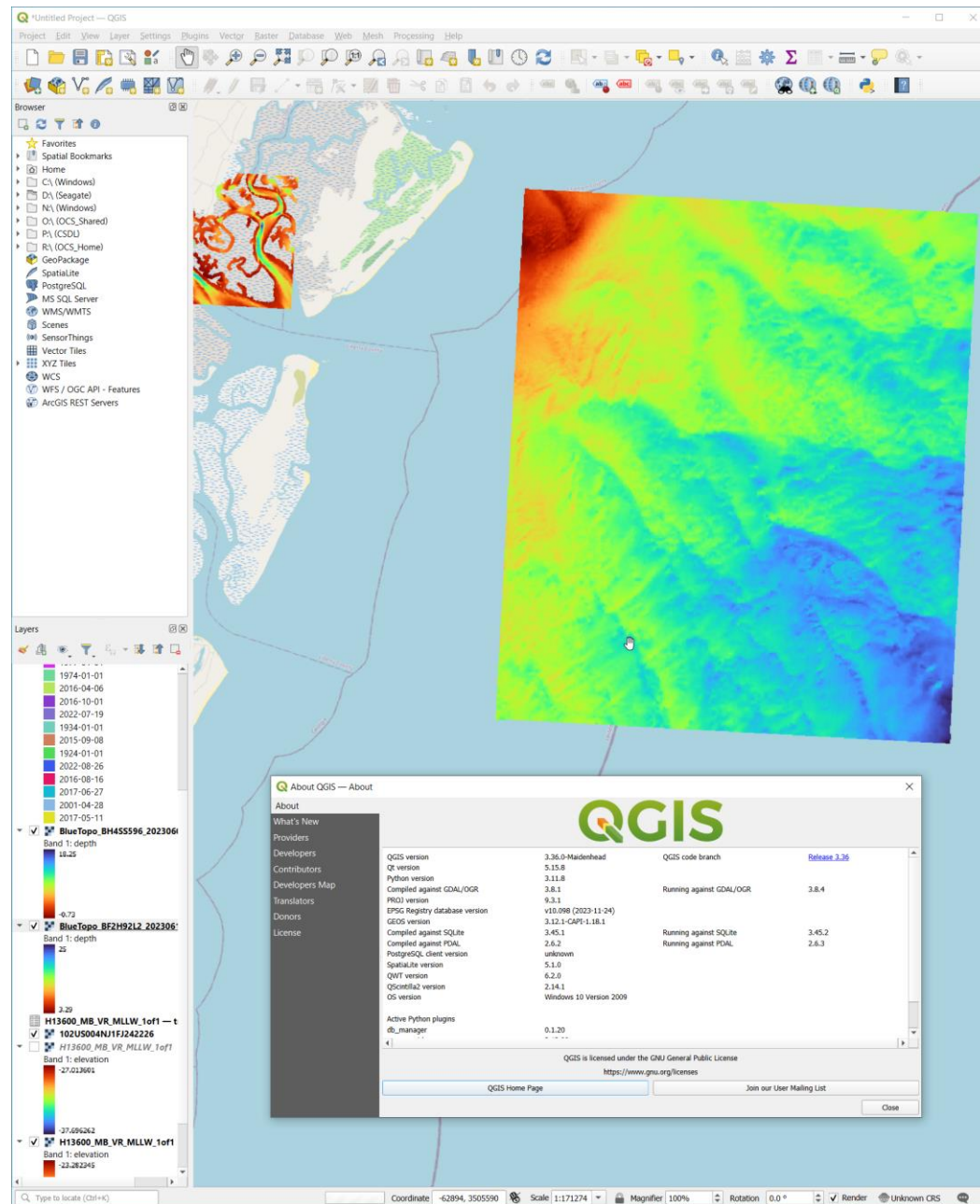


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S-102 PROJECT TEAM UPDATE [D.6]

International Hydrographic Organization

- S-102 Visualization in QGIS using GDAL 3.8+
- GDAL 3.9 will support the reading of the feature attribute table
- Allows S-102 to be more accessible





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S-102 PROJECT TEAM UPDATE [D.6]

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- HSSC16 to note the progress of S-102 towards an operational edition 3.0.0 and the deferral of S-102 for non-navigational usages until after 2026



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S-129

D.7



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MEETINGS HELD DURING REPORTING PERIODS

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1. Meetings held since S-100WG7:
 - i. PT06 (December 2022, Monaco)
 - ii. PT07 (March 2023, VTC)
 - iii. PT08 (July 2023, VTC)

2. Meetings held since S-100WG8:
 - i. PT09 (November 2023, Singapore)
 - ii. PT10 (February 2024, VTC)

3. Additional discussions/correspondence
 - i. “*UnderKeelClearancePlan*” area boundary portrayal
 - ii. Other portrayal changes
 - iii. DataCoverage feature
 - iv. S-164 test datasets



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PROGRESS DURING REPORTING PERIODS

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1. PS Ed. 1.1.0
2. Renaming of attributes submitted and approved in GI Registry
3. PS Annex E (validation checks) reviewed
 - i. S-129 specific checks identified
4. Set up GitHub repository
 - i. <https://github.com/iho-ohi/S-129-Product-Specification>
5. Drafting paper for S-129 portrayal change proposals, for NCWG review



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REMAINING WORK

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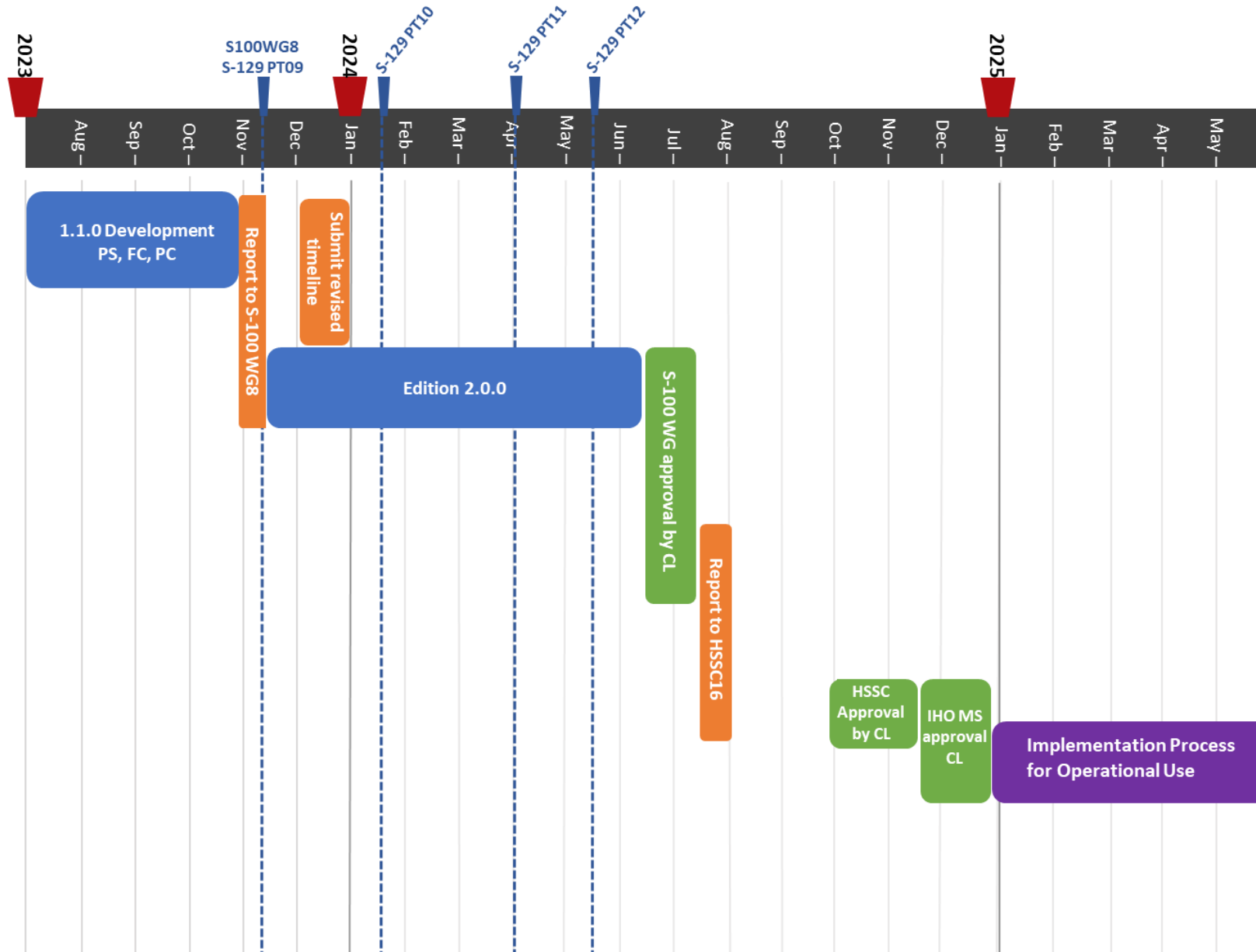
1. Submit portrayal change proposals for NCWG approval
2. Update PC, based on (1)
3. TDS
4. Continue reviewing and updating PS as necessary



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S-129 ED. 2.0.0 TIMELINE

International Hydrographic Organization





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CHALLENGES / RISKS

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- Availability of active contributors
- Test capacity
- Dependencies on changes/updates to S-100 Infra-system, e.g.:
 - GI Registry
 - S-100 Toolkit
 - S-100 Viewer
- **Medium Risk** to not meeting 2024 Edition 2.0.0 publication date



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S-129 UNDER KEEL CLEARANCE MANAGEMENT – PROGRESS TO DATE [D.7]

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- HSSC16 to note the progress of S-129 towards an operational edition 2.0.0



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IMPACT STUDY FOR S-101, S-102 AND S-129

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- Prior to submission for HSSC endorsement for S-101, S-102 and S-129 operational editions IHO Resolution 2/2007 requires an impact study
- On the advice of the HSSC chair a “lite” impact study will be conducted surveying the wider community regarding their awareness of their readiness for an operational edition of these product specifications
- **HSSC 16 to note the need for a “lite impact” study for S-101, S-102 and S-129**



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S-121 MARITIME LIMITS AND BOUNDARIES

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- Published Edition 1.0.0 October 2019
- Needs to be brought up to date in line with S-100 5.2.0
- UN DOALOS needs an operational edition

- HSSC16 note that S-121 should start progressing to an operational edition



Matters Arising



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FUTURE OF S100WG PROJECT TEAMS AFTER EDITION 2.0.0

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- Project Teams were established to develop specific S-100 based product specifications from inception to operations
- While we may have reached an operational edition the products are not operational.
- It was understood that S-101 would migrate to the ENCWG but where would S-102 and S-129 go.
- Recommend that the project teams still remain in effect until 2026 when we have an operational ECDIS and then HSSC consider a future home for the maintenance of these specifications
- **HSSC16 note the recommendation that S-101 and S-102 and S-129 remain as S100WG project teams until 2026**



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SECURITY SCHEME GOVERNANCE

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- S100WG noted that there is a gap between the S-100 Technical Specifications related to the IHO Security Scheme and how the scheme is governed.
- This was raised to the SSPT in March 2024 that there needed to be consideration for a governance document
 - Identify who does the technical support versus the administrative support



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FEATURE AND PORTRAYAL CATALOGUE VERSIONING

International Hydrographic Organization

- S100WG has had several in-depth discussions regarding how to version the individual pieces of a product specification.
- After careful consideration it was decided that the first two numbers must always be in sync.
- It was also pointed out there maybe a need to issue an update to the machine readable portion of the specification to quickly correct an error and that 2/2007 should be reviewed to ensure that is possible.

Ref.	Type of change	Example	DPS	DCEG	FC	PC	Validation
1	Major change includes an S-100 version change	New concept in S-100 used by S-101	✗.0.0	✗.0.0	✗.0.0	✗.0.0	✗.0.0
2, 3	New content	Attribute value / Feature added or removed,	A.✗.0	A.✗.0	A.✗.0	A.✗.0	A.✗.0
4, 8	PC change or correction	Add a symbol, correct a rule, change a color	A.B.-	A.B.-	A.B.-	A.B.✗	A.B.-
5	Validation change (possibly resulting from ref. 6)	Additional check non critical	A.B.-	A.B.-	A.B.-	A.B.-	A.B.✗
6	Encoding change	Change of guidance to cover new real world concept consistently, editorial change	A.B.-	A.B.✗	A.B.-	A.B.-	A.B.-
7	FC correction, no content or portrayal impact	Correct attribute which is not evaluated by PC	A.B.-	A.B.-	A.B.✗	A.B.-	A.B.-
9	DPS correction/clarifications	Editorial change	A.B.✗	A.B.-	A.B.-	A.B.-	A.B.-



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S-97 UPDATES AND A POTENTIAL S-165

International
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Organization

- S100WG understands the need to update S-97 – Guidance on building S-100 product specifications
 - Due to resource constraints this is a low priority item
- HSSC16 consider investigating if there is a need to extend S-65 (or make a S-165) to provide hydrographic offices guidance on production, maintenance and distribution for multiple S-1XX products.



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S-100 WORKING GROUP PRIORITY LIST – 2024-2025

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1. S-164 Edition 2.0.0
2. S-98 Edition 2.0.0
3. S-158 multipart validation
4. Monitoring the operational implementation of S-100 Edition 5.2.0, S-101, S-102 and S-129



IHO

ACTIONS REQUESTED OF HSSC16

International
Hydrographic
Organization

- Action: HSSC 15/20
- Recommend closing this action as WEND 14/23 indicated that Primar will not support SENC/System Database distribution of S-100/S-101 data due to the loss of the digital signature file in the process. This represents a large amount of coverage of the of the worldwide S-101 ENC suite that would not be part of any SENC delivery process.



IHO

ACTIONS REQUESTED OF HSSC16

International
Hydrographic
Organization

- HSSC16 is requested to note the new timeline for Edition 2.0.0 of S-98
- HSSC16 is requested to note the new timeline for Edition 2.0.0 of S-164
- HSSC16 is requested to approve the proposed structure for S-158
- HSSC16 to note the progress of S-102 towards an operational edition 3.0.0 and the deferral of S-102 for non-navigational usages until after 2026
- HSSC16 to note the progress of S-129 towards an operational edition 2.0.0



IHO

ACTIONS REQUESTED OF HSSC16

International
Hydrographic
Organization

- HSSC 16 to note the need for a “lite impact” study for S-101, S-102 and S-129
- HSSC16 note that S-121 should start progressing to an operational edition
- HSSC16 note the recommendation that S-101 and S-102 and S-129 remain as S100WG project teams until 2026
- HSSC16 consider investigating if there is a need to extend S-65 (or make a S-165) to provide hydrographic offices guidance on production, maintenance and distribution for multiple S-1XX products.



Thank You!