



WEND Introduction

- ❑ **Chair:** Mr. **Jens Schröder-Fürstenberg** (Germany).
- ❑ **Vice-Chair:** Mr. **Jason Scholey** (UK).
- ❑ **IHO Secretariat:** Radm Luigi SINAPI, Mr. Yves Guillam (secretary).
- ❑ **Members:** Representatives of Regional Hydrographic Commissions, representatives of IHO Member States, RENCs.





WENDWG14, Norfolk, USA, 20 - 22 February 2024





WENDWG14- Discussed topics

- ▶ S-100 Implementation and coordination
 - WENDWG survey 2023
 - WEND IGIF Matrix
- ▶ WEND-100 Principles and S-1xx Implementation Guidelines, S-11 Part C
- ▶ INTToGIS III and S-128
- ▶ RENC cooperation and support
- ▶ Stakeholders forum



WENDWG14

S-100 Implementation and coordination

- ▶ WEND reports S-100 readiness to IRCC annually (SPI 1.3.1).
- ▶ Two Readiness evaluation methods:
 - ▶ WEND IGIF-matrix
 - ▶ Readiness Status of RHCs for the provision of S_{ixx} datasets by 2026 (WENDWG CLs)
- ▶ Reports received from RHC's show varying levels of the S-100 readiness and coordination:

- BSHC (very good)
- USCHC (very good inc. S-411, S-412)
- EAtHC (good)
- HCA (intermediate inc. S-411)
- SAIHC (low)
- SWAtHC (intermediate)
- MBSHC (low)
- EAHC (low)
- MACHC (intermediate)
- SWPHC (low)
- ARHC (low)
- NSHC (low)
- NIOHC (low)
- SEPRHC (no information)
- RSAHC (no information)



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S-100 Implementation and coordination

- ▶ Readiness Status of RHCs for the provision of S-1xx datasets by 2026 in the Baltic Sea.
- ▶ (WENDWG CI1/2023, BSHC28 actions 16 and 17). The survey was made in November 2023 and answered by 7/9 of the Baltic Sea Member States.

Product	Priority 1	Priority 2	Other Priority	2025	2026	2027	2028	2029	2030	No exact data (tbd)
S-101	DE, DK, EE, FI, LT, LV, SE			DK	DE, FI, LT, LV, SE					EE
S-102	DE, DK, EE, FI, SE	LT, LV		DK, EE (2024)	DE, FI, LT, LV, SE					
S-104	FI	DE, EE, SE			DE, FI	SE				DK, EE, LV
S-111	FI	DE, EE			DE, FI		SE			DK, EE, LV
S-124	EE, FI	LT, SE			LT, FI, LV	SE				DE, DK, EE
S-128	DK, FI, SE			DE, DK	FI, SE					
S-129										DK
Other										
S-121			FI		FI					
S-122			SE					SE		
S-123			FI, SE		FI				SE	
S-125			FI		FI					
S-127			FI, SE		FI				SE	
S-131			SE						SE (2032)	
S-201			FI		FI					



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READINESS STATUS OF RHCS FOR THE PROVISION OF S-1XX DATASETS BY 2026 (WENDWG CL1/2023)

The survey was answered by 7/9 of Member States.

International
Hydrographic
Organization

- **Is your organisation following an S-1xx implementation plan (timeline, products)**
 - **YES** (6/7 member states)
- **Is your organisation developing an S-1XX plan (timeline, products)?**
 - **YES** (5/7 member states)
- **Do you need support for S-100 production?**
 - **NO** (4/7 member states)
 - **YES** or maybe (for S-101 (3), S-102 (2), S-104 (3), S-111 (3), S-124 (3))
- **Do you have S-100 trial products that you share or wish to share for testing purposes?**
 - **YES** 2 (S-101, S-102, S-128)
 - **NO** 3
- **Would you like support in sharing S-100 trial products?**
 - **YES** 2
 - **NO** 3



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S-100 Implementation and coordination

Increased since last year
 Decreased since last year

	S-101										S-102									
	SE	DE	DK	FI	LT	LV	PL	EE	BSHC	SE	DE	DK	FI	LT	LV	PL	EE	BSHC		
Governance and Institutions	11,1	11,1	11,1	11,1	3	8,4	8,4	8,4	8,4	5,7	8,4	8,4	11,1	3	5,7	8,4	8,4	8,4		
Policy and Legal	11,1	11,1	8,4	11,1	3	8,4	8,4	8,4	8,4	3	8,4	3	11,1	3	3	3	5,7	3		
Data	3	11,1	3	3	3	3	3	3	3	3	8,4	3	3	3	3	3	8,4	3		
Financial	11,1	11,1	11,1	11,1	3	5,7	3	5,7	11,1	3	8,4	3	5,7	3	3	3	5,7	3		
Innovation	5,7	0	3	5,7	3	5,7	5,7	3	5,7	11,1	5,7	5,7	5,7	3	3	5,7	5,7	5,7		
Standards	5,7	0	11,1	5,7	3	5,7	5,7	5,7	5,7	5,7	5,7	11,1	5,7	3	5,7	5,7	11,1	5,7		
Partnerships	3	0	3	3	5,7	3	3	5,7	3	3	5,7	3	3	5,7	3	3	5,7	3		
Capacity and Education	11,1	0	3	8,4	3	5,7	5,7	3	5,7	3	3	3	8,4	3	5,7	5,7	3	3		
Communication and Engagement	11,1	0	3	8,4	3	5,7	11,1	3	8,4	8,4	8,4	3	8,4	3	3	11,1	3	5,7		
	S-122										S-124									
	SE	DE	DK	FI	LT	LV	PL	EE	BSHC	SE	DE	DK	FI	LT	LV	PL	EE	BSHC		
Governance and Institutions	3	11,1	3	3	0	3	5,7	3	3	11,1	11,1	8,4	11,1	0	3	5,7	3	11,1		
Policy and Legal	3	8,4	3	3	0	3	5,7	3	3	3	11,1	5,7	11,1	3	3	3	3	3		
Data	3	8,4	3	3	0	3	5,7	3	3	3	0	5,7	3	0	3	3	3	3		
Financial	3	3	3	3	0	3	0	3	3	3	0	5,7	5,7	0	3	3	3	3		
Innovation	3	11,1	3	3	0	3	0	3	3	3	0	3	3	0	3	3	3	3		
Standards	3	11,1	3	3	0	3	0	3	3	5,7	0	8,4	5,7	0	3	5,7	3	5,7		
Partnerships	3	8,4	3	3	0	3	0	3	3	5,7	0	3	5,7	0	3	3	3	3		
Capacity and Education	3	8,4	3	3	0	3	0	3	3	3	0	3	3	0	3	3	3	3		
Communication and Engagement	3	11,1	3	3	0	3	8,4	3	3	3	0	3	8,4	0	3	11,1	3	3		



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S-100 Implementation and coordination

► WEND-100 IGIF Matrix (Status Nov 2023) (BSHC28 actions 16 and 17)

■ Increased since last year
 ■ Decreased since last year

	S-104										S-111									
	SE	DE	DK	FI	LT	LV	PL	EE	BSHC	SE	DE	DK	FI	LT	LV	PL	EE	BSHC		
Governance and Institutions	3	8,4	5,7	11,1	0	3	5,7	3	5,7	3	8,4	5,7	11,1	0	3	5,7	3	5,7		
Policy and Legal	3	8,4	3	11,1	0	3	5,7	3	3	3	8,4	3	11,1	0	3	5,7	3	3		
Data	3	3	3	3	0	3	0	3	3	3	3	3	3	0	3	0	3	3		
Financial	3	3	3	5,7	0	3	0	3	3	3	3	3	5,7	0	3	0	3	3		
Innovation	3	5,7	3	3	0	3	0	3	3	3	5,7	3	3	0	3	0	3	3		
Standards	3	5,7	3	5,7	0	3	0	3	3	3	5,7	3	5,7	0	3	0	3	3		
Partnerships	3	3	3	3	0	3	0	3	3	3	3	3	3	0	3	0	3	3		
Capacity and Education	3	3	3	5,7	0	3	0	3	3	3	5,7	3	5,7	0	3	0	3	3		
Communication and Engagement	3	11,1	3	8,4	0	3	8,4	3	8,4	3	11,1	3	8,4	0	3	8,4	3	8,4		
	S-128										MSDI									
	SE	DE	DK	FI	LT	LV	PL	EE	BSHC	SE	DE	DK	FI	LT	LV	PL	EE	BSHC		
Governance and Institutions	5,7	11,1	5,7	8,4	0	5,7	8,4	3	5,7	8,4	11,1	8,4	8,4	0	5,7	8,4	8,4	8,4		
Policy and Legal	5,7	11,1	3	8,4	0	5,7	5,7	3	5,7	11,1	11,1	8,4	11,1	0	5,7	8,4	8,4	8,4		
Data	3	3	3	3	0	3	0	3	3	5,7	11,1	8,4	5,7	0	5,7	8,4	5,7	5,7		
Financial	5,7	5,7	3	5,7	0	3	5,7	3	5,7	8,4	11,1	5,7	8,4	0	5,7	3	5,7	5,7		
Innovation	3	11,1	3	5,7	0	5,7	3	3	3	3	11,1	8,4	8,4	0	3	5,7	8,4	8,4		
Standards	3	5,7	3	5,7	0	5,7	0	3	3	3	3	8,4	3	0	3	3	5,7	3		
Partnerships	3	5,7	3	5,7	0	5,7	0	3	3	5,7	3	5,7	5,7	0	3	3	3	5,7		
Capacity and Education	3	3	3	3	0	3	0	3	3	3	11,1	11,1	5,7	0	3	11,1	3	8,4		
Communication and Engagement	3	5,7	3	5,7	0	5,7	8,4	3	5,7	3	11,1	8,4	8,4	0	3	3	8,4	8,4		

S-100 implementation and Coordination



Ref WENDWG eCL 2/2024

13 September 2024

HOs

Regional S-100 Coordinators

Status of preparations to provide S-1xx datasets by 2026

- ▶ Follow-up survey on the readiness level;
WENDWG letter 2/2024 (DL 31 October 2024)
- ▶ WEND100-IGIF matrix-
annual update is optional

Readiness check to determine IHO SPI 1.3.1 (S-100 readiness) at national level

Line	Question	Answer	
1	Member State		
2	Organisation		
3	E-Mail Address		
4	S-100 Products	Production planned (YES/NO)	Planned year of starting production
	S-101 ENC		
	S-102 Bathymetric Surface		
	S-104 Water Level Information for Surface Navigation		
	S-111 Surface Currents		
	S-122 Marine Protected Areas		
	S-123 Marine Radio Services		
	S-124 Navigational Warnings		
	S-125 Marine Aids to Navigation		
	S-127 Marine Traffic Management		
	S-128 Catalogue of Nautical Products		



WENDWG14

WEND-100 Principles and S-1xx Implementation Guidelines, S-11 Part C

- ▶ Ad hoc drafting group for preparing amendments to the Guidelines on the **Implementation of the WEND100 Principles and the IHO Strategic Plan** (CA, DK, FR, GR, LV, NO, SE, SR, US, TR, UK, IC-ENC)
- ▶ Another ad hoc drafting group; (AU, BR, DE, FI, GR, TR, IHO Secretariat) **to develop** a proposed Edition 1.0.0 of **S-11 Part C** (expect S-101)
 - ▶ including term ENDS (Electronic Navigational Data Service)
 - ▶ IRCC16 tasked WENDWG to clarify the understanding on the meaning of the term ENDS (post meeting comment).

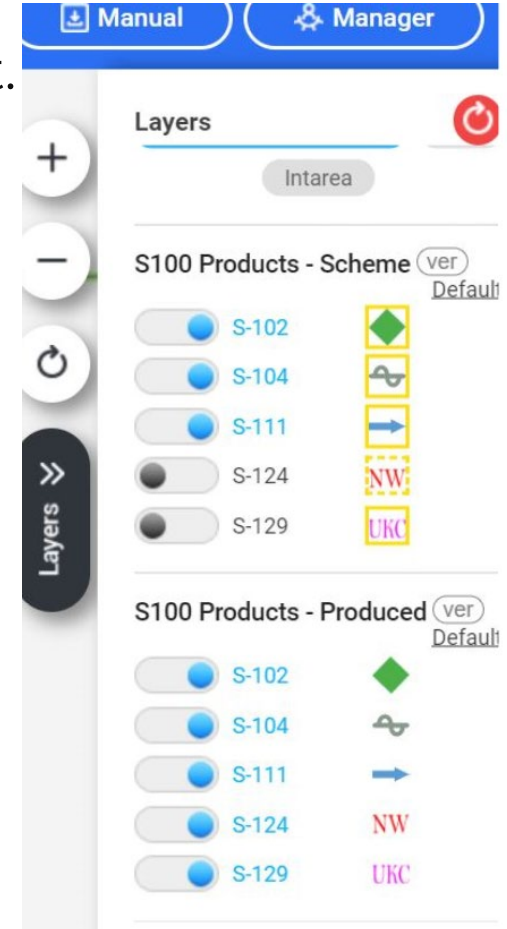
[Link to ENDS definition](#)





INToGIS III and S-128

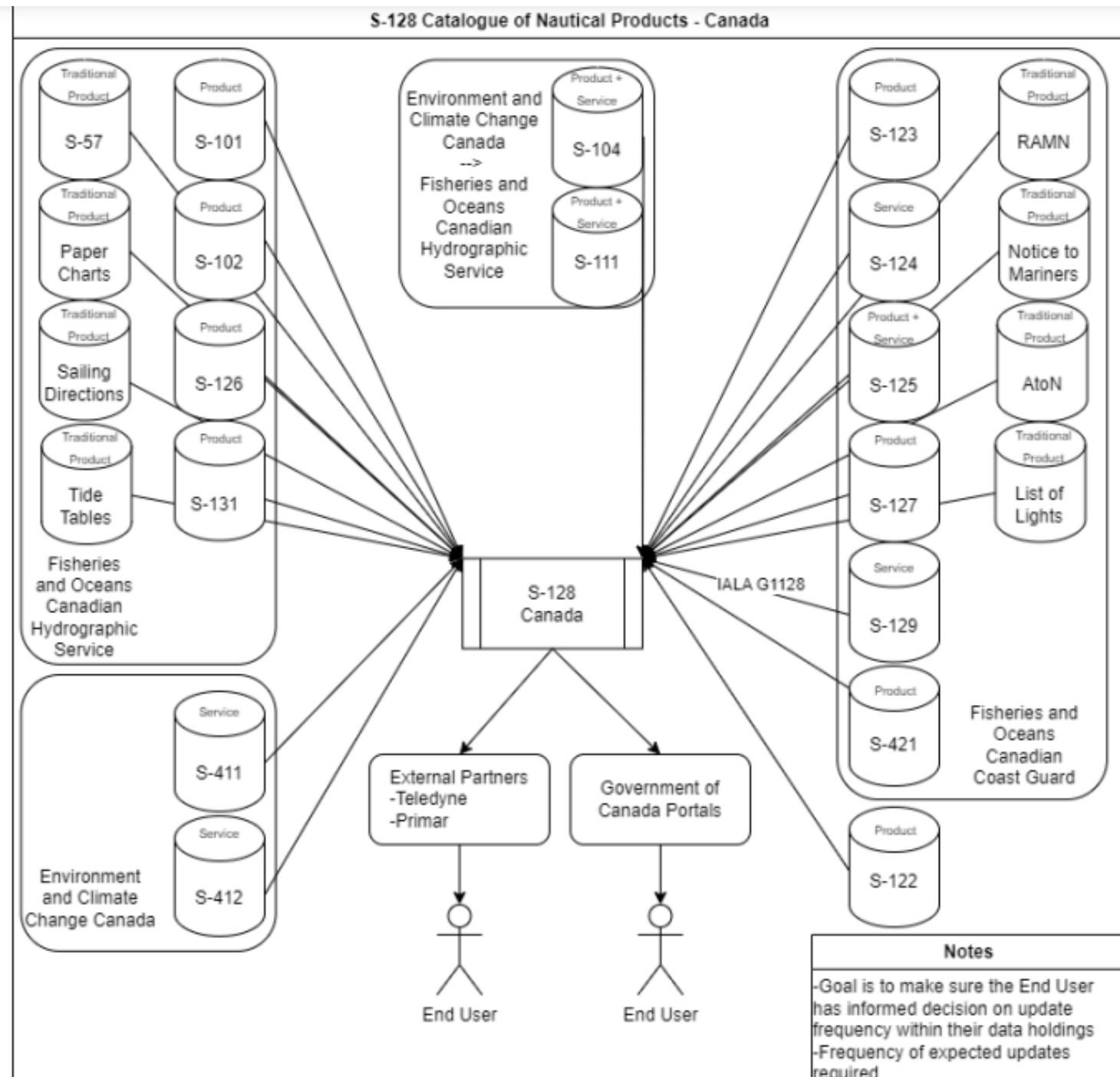
- ▶ **INToGIS III** was delayed during the meeting. After that, fast development.
 - ▶ Testing in process
- ▶ INToGIS III is a key IHO component of the S100 Implementation Roadmap.
- ▶ The expected coverage of the full Phase I spectrum of S100 based products in January 2026 and onwards,
 - ▶ **S-128**; NIPWG's responsibility.
 - ▶ S-128 content is important for automated INToGIS III updates in the future.
 - ▶ WENDWG noted Canada's vision for an integrated national S-128 catalogue.





S-128

- ▶ Canada's vision for a national S-128 catalogue



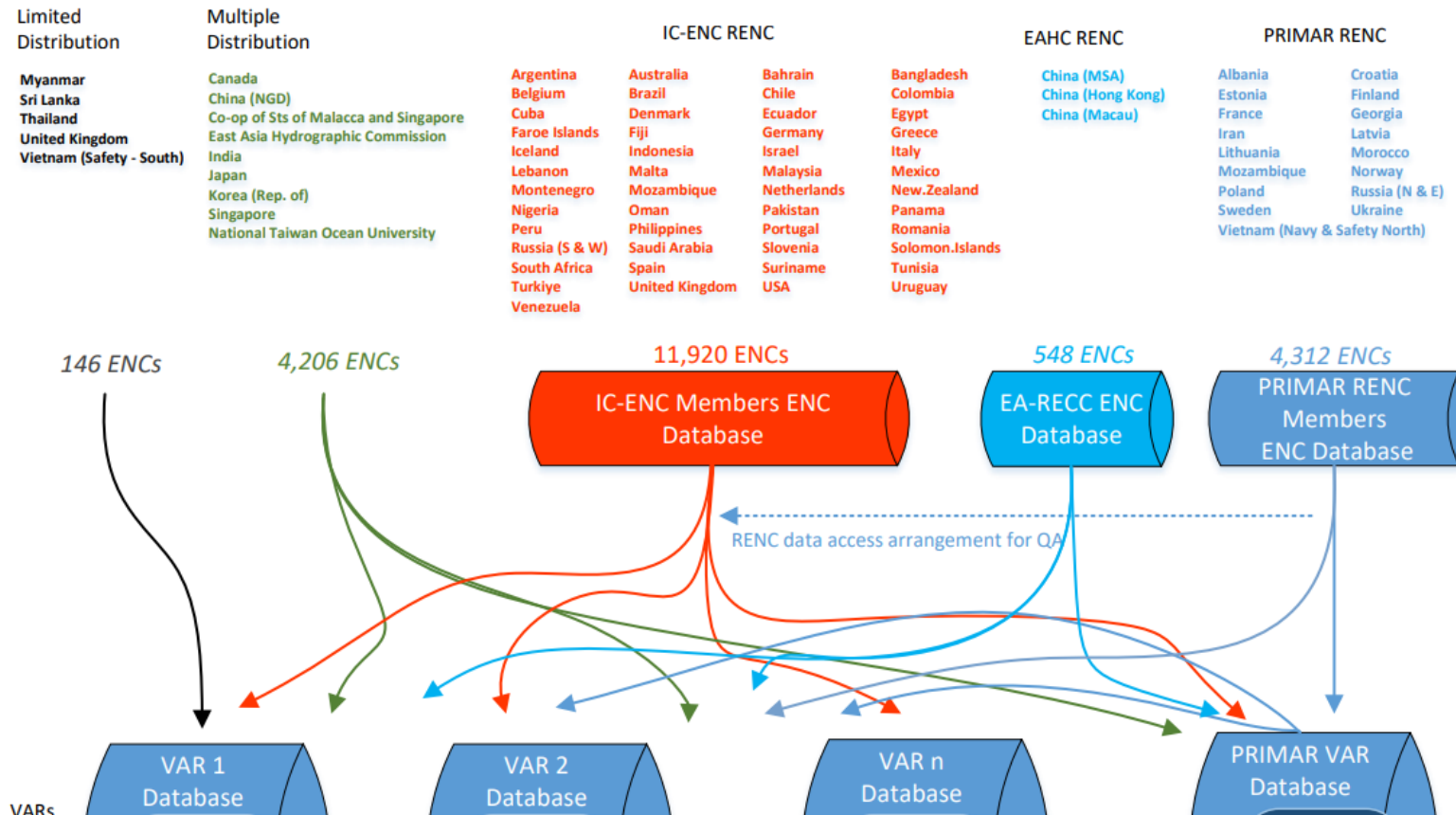


RENC Co-ordination and support

- ▶ RENCS are well in line with the S-100 roadmap
- ▶ The WENDWG invited the RENCs/RECC to report at the next meeting on the outcome of their joint effort on the development of a **new dynamic S-100 Products and Electronic Navigational Data Services (ENDS) Data Flow Diagram.**

ENC Data flow

Version 10 – 06 Feb 2024





Stakeholders forum

- ▶ Meeting included a short Stakeholders' Session on the "Expectations from Mariners and End-User Service Providers on ENDS.
- ▶ Furuno and ChartWorld
- ▶ **S-100 concept should be attractive to the end-users!**
- ▶ Objective should not only be to complete the S-101 ENC coverage equivalent to the S-57 ENC's one, but to engage the IHO into the development of a new cyber secure distribution model such as a "**one-stop-shop for all S-100 data services along a given route**"
- ▶ Digital signature; Stakeholders preferred, that it should be done only by HOs.
- ▶ Mariners are not interested of amount of ENCs, they are interested of coverage.

Next WENDWG Meeting: Australia, Wollongong, 18-20 February 2025.

Actions for the 29th BSHC Conference

- ▶ Note this report.
- ▶ Agree how to answer WENDWG CL 2/2024 (Status of preparations to provide S-1xx datasets by 2026) DL 31.10.2024.
- ▶ To discuss whether the WEND100-IGIF Matrix will be updated this year.
- ▶ Give further guidance to BSHC WENDWG representative.

Thank you!
Questions?

