

# EAtHC-ICCWG S-100 Workshop

23 November 2023

## National implementation strategy of regional producers Production Plans and Challenges

PORTUGAL - IHPT

# AGENDA



- IHPT
- IHPT S-100 IMPLEMENTATION PLAN
- IHPT S-101 ENC PRODUCTION PLANS
- CHALLENGES



# IHPT

**Production of DATA, PRODUCTS AND SERVICES** within the scope of **HYDROGRAPHY**, in accordance with **STANDARDS**



## DATA

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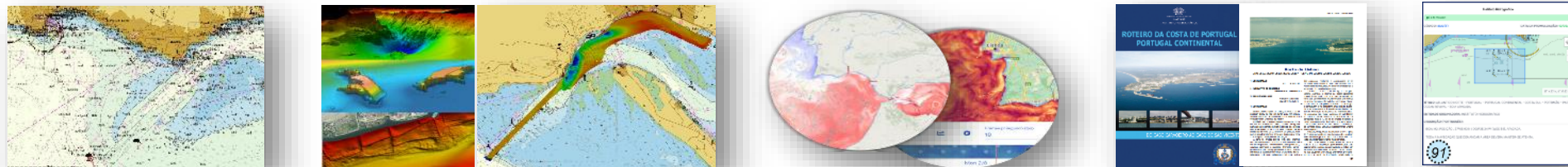
Surveys	Tide and sea mean level	Surface currents and waves	Waves and surface Temperature climatic characterization	Geology	Chemistry

...



## MARINE KNOWLEDGE

## PRODUCTS and SERVICES



# IHPT – Concerns in General

Resources: Human; Technology; Financial

Production Systems/Human Resources-Competences

Balance: Time/Costs/Specification Maturity

Production Processes versus Parallel Production

Data Owners

Roadmap for the S-100 Implementation Decade (2020 – 2030)

Annex 2

S-100 Timelines

Version 3.0 Dated: 19 October 2023

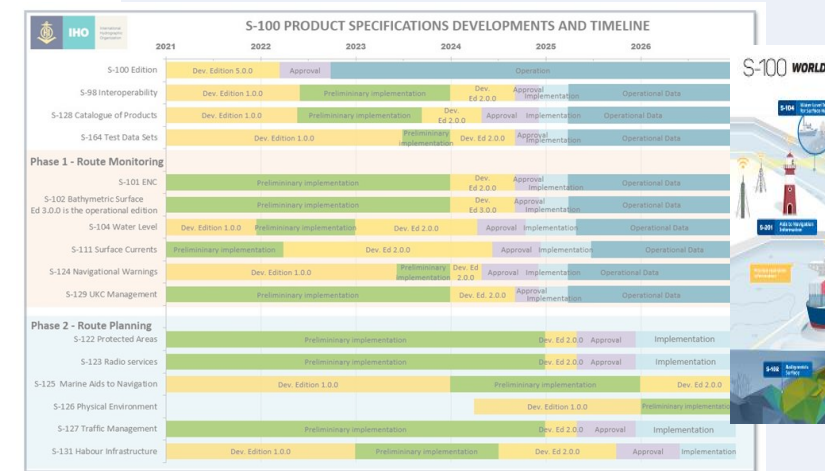


Figure 3 - S-100 Timeline for the prioritized IHO Product Specifications

<https://iho.int/en/s-100-implementation-strategy>

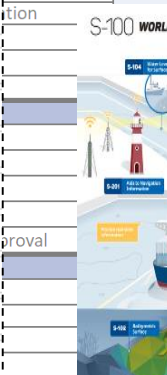
# IHPT PLAN

1st TRIM 2024 – Complete Plan ready

Roadmap for the S-100 Implementation Decade (2020 – 2030)  
Annex 2  
S-100 Timelines  
Version 3.0 Dated: 19 October 2023

Table A – IHO list of S-100 products with special focus

IHO	INITIAL PHASE					RESOURCES					DATA/SYSTEMS					PROCESSES					
	IHPT WG	IHPT AREAS	PRIORITIES	POC	Needs	HARDWARE	SOFTWARE/LICENCES	RENC	HR	HR FORMATION	DATA EVALUATION	MODEL CONVERSION	MODEL PARALLEL PRODUCTION	DATA READINESS	CONVERSION	CQ pos CONVERSION	TESTS	VALIDATION PROCEDURES	PRODUCTION PROCEDURES	PRODUCTION PROCESS	
PHASE 1 Route Monitoring	S-101	Electronic Navigational Chart (ENC)	IH-S-100GT	HI/HC	1st																
	S-102	Bathymetric Surface		HI/HB	3th																
	S-104	Water Level		OC/CDT	4th																
	S-111	Surface Currents		OC/CDT	4th																
	S-124	Navigational Warnings		NV/CDT	2nd																
	S-129	Under Keel Clearance Management		-	-																
CRITICAL	S-100	IHO Universal Hydrographic Data Model	-	-																	
	S-98	Interoperability	-	-																	
	S-128	Catalogue of Nautical Products	CDT	3th																	
	S-164	Test Data Sets	-	-																	



S-422 (WMO) Weather and wave hazards

Figure 1 The S-100 Implementation Priorities. Phase 1 is product specifications for Route Monitoring which must be supported by the Critical S-100 Framework. Product specifications for Route Planning will be developed as the phase 2.

<https://iho.int/en/s-100-implementation-strategy>

2023 – Complete Plan S-101 ready

# IHPT PLAN

STANDARDS		IHO		INITIAL PHASE			POC Needs	
		IHO		IHPT WG	IHPT AREAS	PRIORITIES	POC	Needs
STANDARDS	PHASE 1 Route Monitoring	S-101	Electronic Navigational Chart (ENC)	IH-S-100GT	HI/HC	1st	Green	Green
		S-102	Bathymetric Surface		HI/HC	3th	Green	Yellow
		S-104	Water Level		HI/HC	4th	Green	Red
		S-111	Surface Currents		OC/CDT	4th	Green	Red
		S-124	Navigational Warnings		OC/CDT	4th	Green	Yellow
		S-129	Under Keel Clearance Management		NV/CDT	2nd	Green	Yellow
		S-129	Under Keel Clearance Management		-	-	Red	Red
	CRITICAL	S-100	IHO Universal Hydrographic Data Model		-	-	White	White
		S-98	Interoperability		-	-	White	White
		S-128	Catalogue of Nautical Products		CDT	3th	Green	Orange
		S-164	Test Data Sets		-	-	White	White
					-	-	White	White
					-	-	White	White

Done
Identified - some done
Identified - none done
Not Identified

HI – Hydrographic Division    HI/HC – Hydrographic Division/Cartographic Production Sector    HI/HB – Hydrographic Division/Bathymetric Data Sector  
 OC – Oceanography Division    NV – Safety of Navigation Division    CDT – Technical Data Centre Division

## Roadmap for the S-100 Implementation Decade (2020 – 2030) Annex 2 S-100 Timelines Version 3.0 Dated: 19 October 2023

Table A – IHO list of S-100 products with special focus	
Phase 1 / Route monitoring	
S-101	Electronic Navigational Chart (ENC)
S-102	Bathymetric Surface
S-104	Water Level Information for Surface Navigation
S-111	Surface Currents
S-124	Navigational Warnings
S-129	Under Keel Clearance 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 Navigational (AtoN)
S-126	Marine Physical Environment
S-127	Marine Traffic Management
S-131	Marine Harbour Infrastructure
S-411 (WMO)	Ice Information
S-412 (WMO)	Weather and Wave Hazards

Figure 1 The S-100 Implementation Priorities. Phase 1 is product specifications for Route Monitoring which must be supported by the Critical S-100 Framework. Product specifications for Route Planning will be developed as the phase 2.

<https://iho.int/en/s-100-implementation-strategy>

# IHPT PLAN S-1xx Phase 1

INITIAL PHASE

PHASE 1: Cover Needs  
Hardware, Software; HR

PHASE 2: DATA/SYSTEMS

PHASE 3: PRODUCTION

Roadmap for the S-100 Implementation Decade (2020 – 2030)

Annex 2

S-100 Timelines

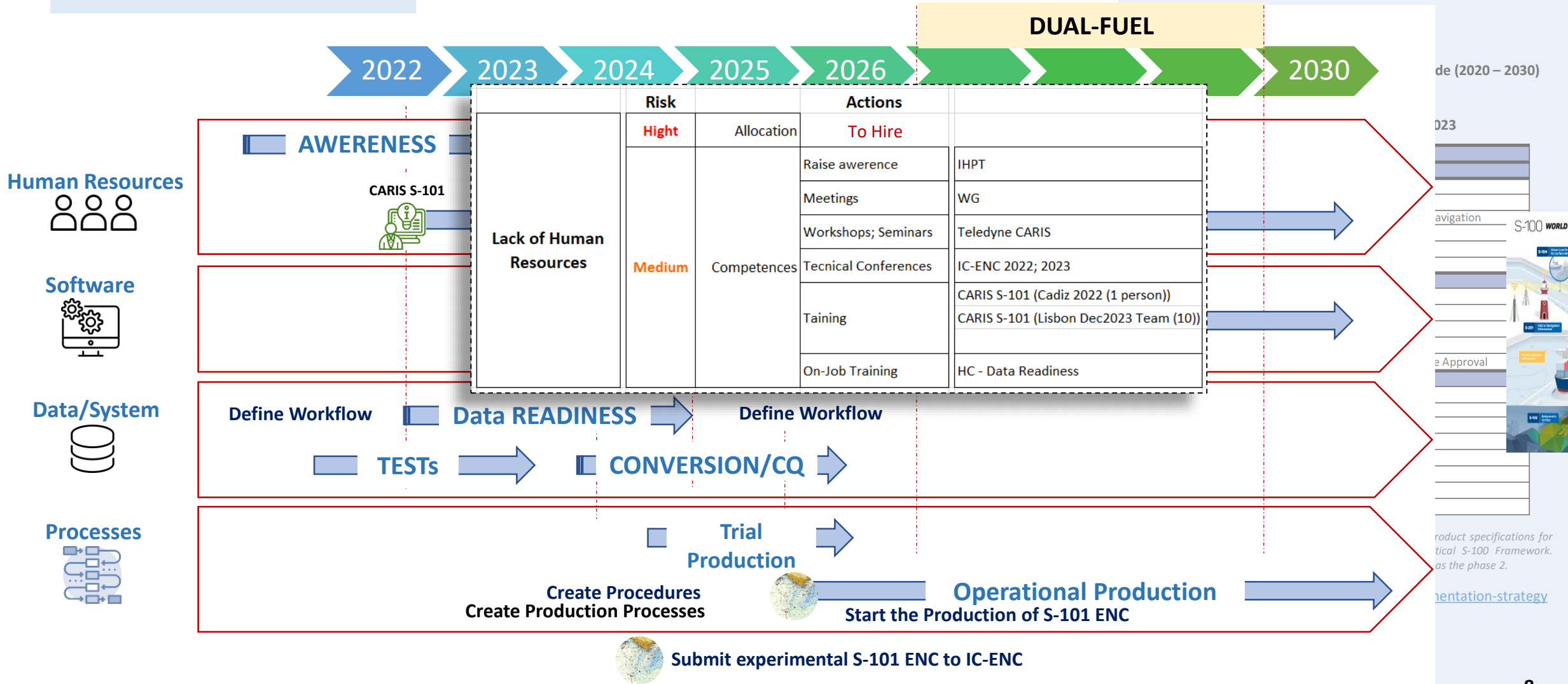
Version 3.0 Dated: 19 October 2023

	2022	2023	2024	2025	2026	2027
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S-101	Situation; Needs	PoC	Priority; Needs			
S-102		PoC	Situation; Priority; Needs			
S-104		PoC	Situation; Priority; Needs			
S-111		PoC	Situation; Priority; Needs			
S-124		PoC	Situation; Priority; Needs			
S-129						
S-128		PoC	Situation; Priority; Needs			

OBS: S-125 AtoN S-201 AtoN Information

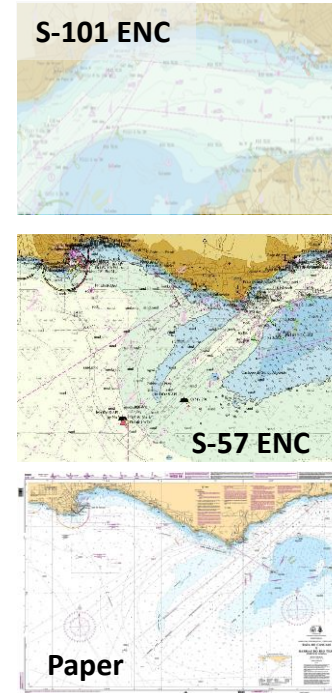
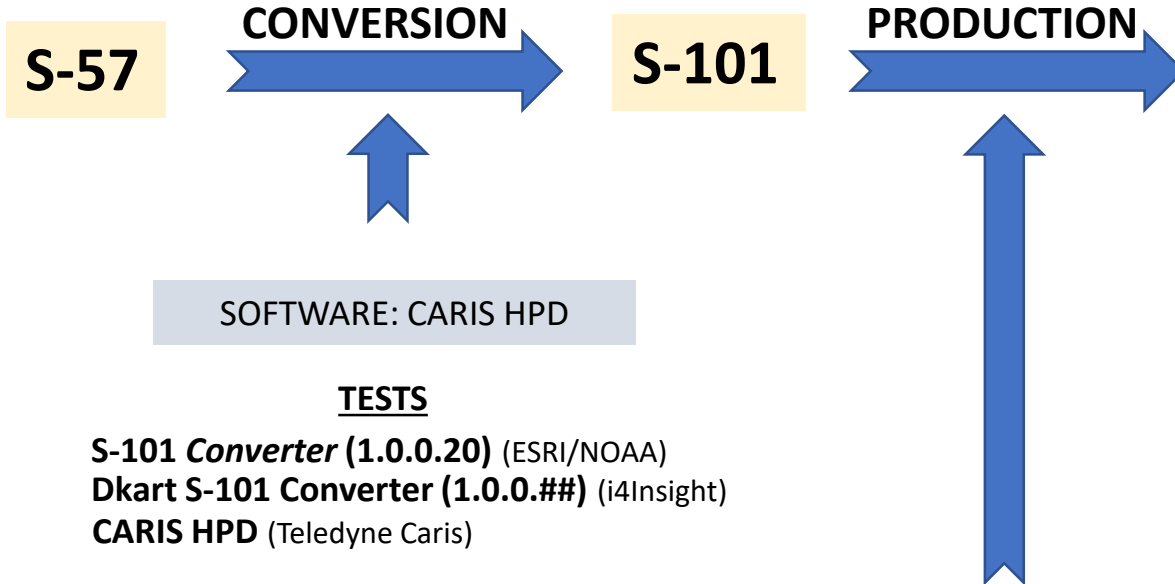
# IHPT S-101 PLAN





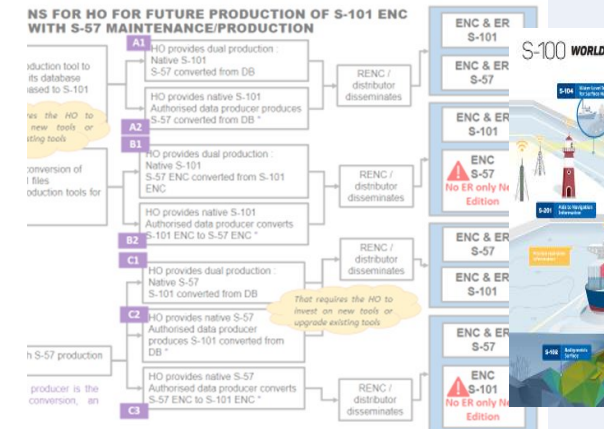
# IHPT S-101 PLAN

## DUAL-FUEL



PRODUCTION SOFTWARE: CARIS HPD / MODULE S-100;  
 VALIDATION/QUALITY CONTROL: CARIS HPD; 7Cs; dKart  
 VALIDATION/DISTRIBUTION: IC-ENC

Plan for the S-100 Implementation Decade (2020 – 2030)  
 Annex 2  
 S-100 Timelines  
 Version 3.0 Dated: 19 October 2023



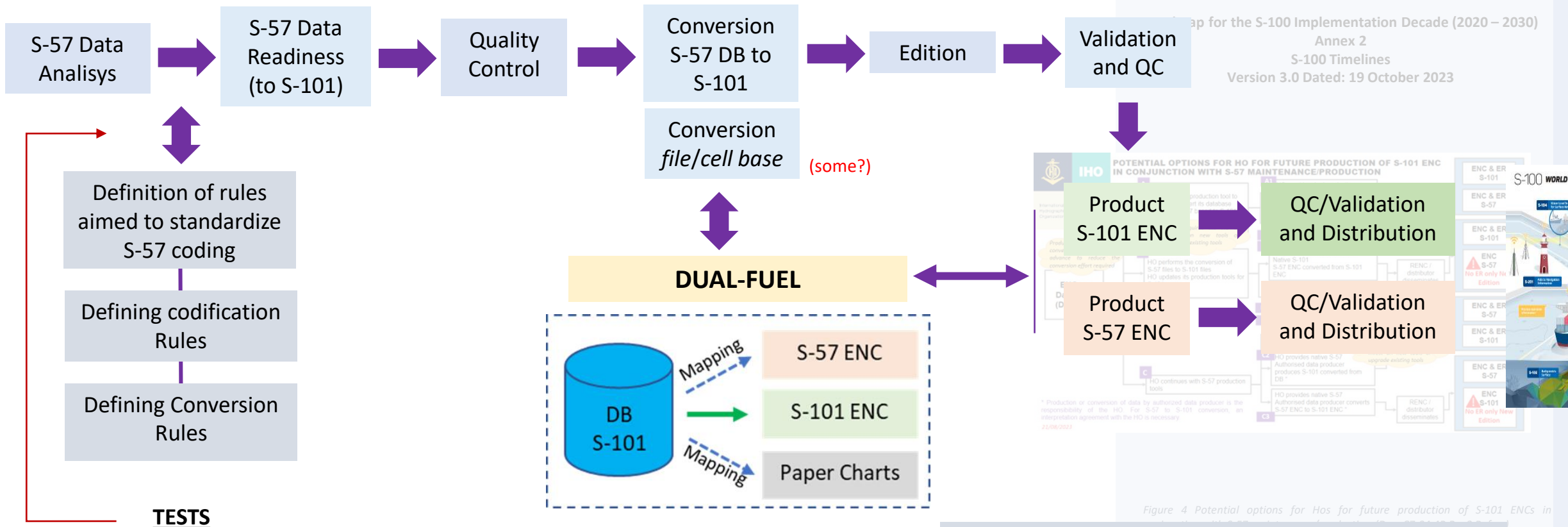
Potential options for Hos for future production of S-101 ENCs in line with S-57 maintenance/production (Doc. C7-04.4B Rev2 Refers).

<https://iho.int/en/s-100-implementation-strategy>

# IHPT S-101 PLAN

## DUAL-FUEL

## CARTOGRAPHIC PROCESS – PRODUCTION PROCESS



PRODUCTION SOFTWARE: CARIS HPD / MODULE S-100;  
 VALIDATION/QUALITY CONTROL: CARIS HPD; 7Cs; dKart  
 VALIDATION/DISTRIBUTION: IC-ENC

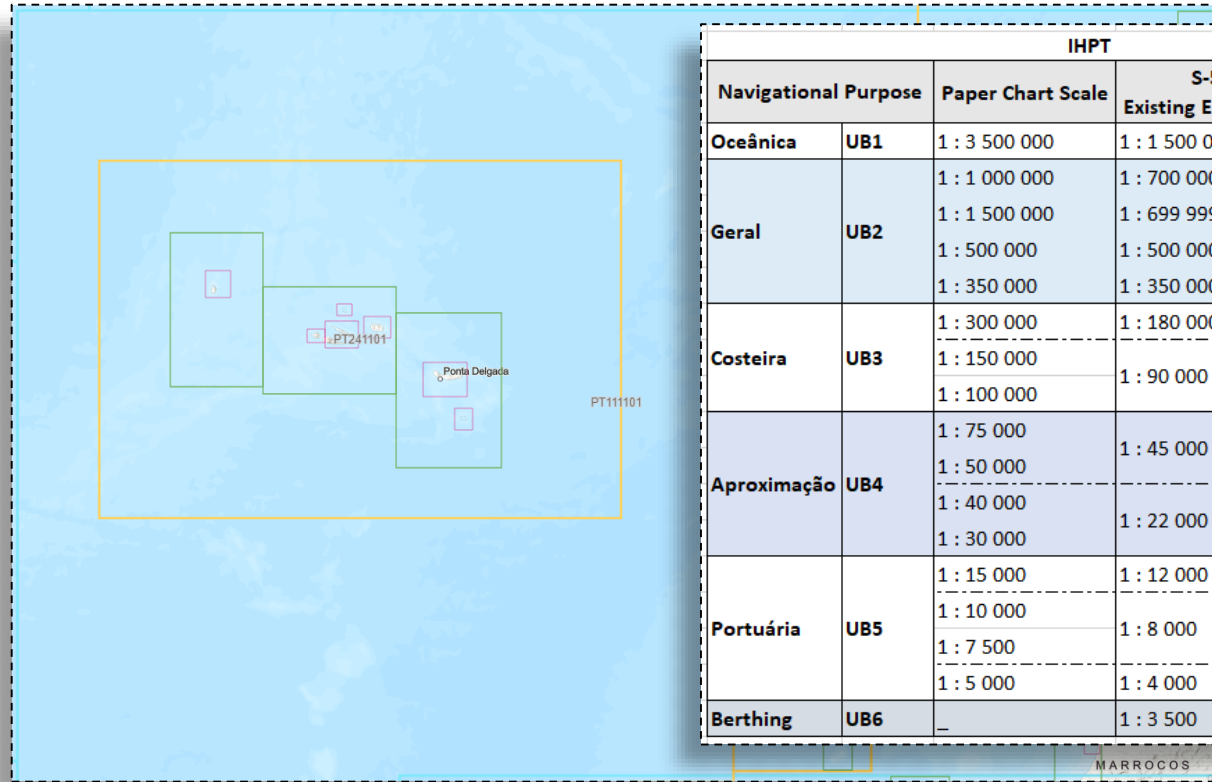
# IHPT S-101 PLAN

DUAL-FUEL

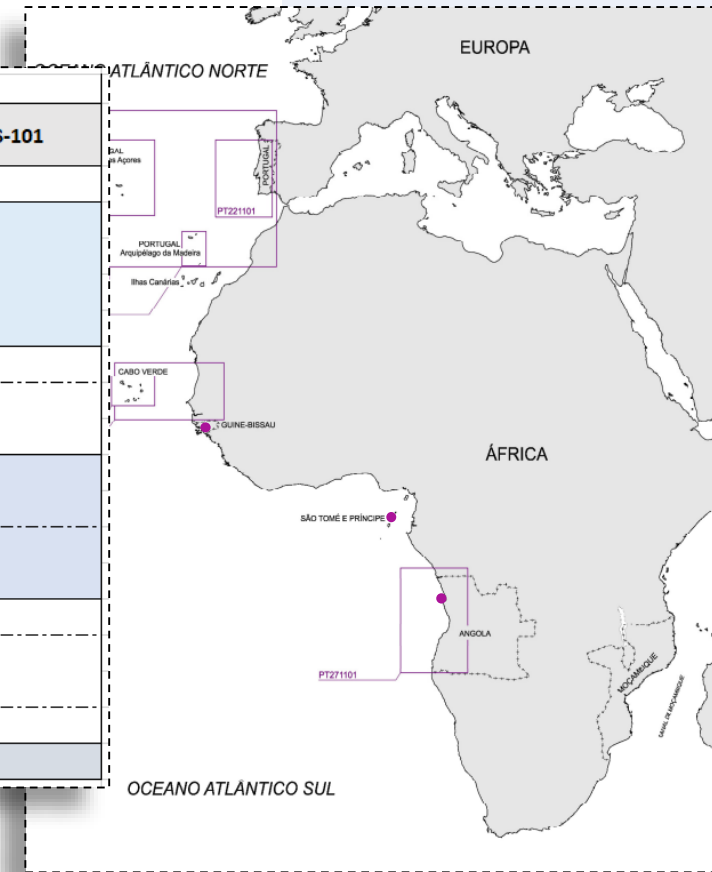
S-101 Scheme

No Gridding Scheme

## S-57 Scheme



		IHPT		
Navigational Purpose		Paper Chart Scale	S-57 Existing ENC scales	S-101
Oceânica	UB1	1 : 3 500 000	1 : 1 500 000	
		1 : 1 000 000	1 : 700 000	
Geral	UB2	1 : 1 500 000	1 : 699 999	
		1 : 500 000	1 : 500 000	
		1 : 350 000	1 : 350 000	
Costeira	UB3	1 : 300 000	1 : 180 000	
		1 : 150 000	1 : 90 000	
		1 : 100 000	1 : 90 000	
Aproximação	UB4	1 : 75 000	1 : 45 000	
		1 : 50 000	1 : 45 000	
		1 : 40 000	1 : 22 000	
		1 : 30 000	1 : 22 000	
Portuária	UB5	1 : 15 000	1 : 12 000	
		1 : 10 000	1 : 8 000	
		1 : 7 500	1 : 8 000	
		1 : 5 000	1 : 4 000	
Berthing	UB6	-	1 : 3 500	



# IHPT S-101 PLAN

**Scheme S-101 ENC's = Scheme S-57 ENC's**

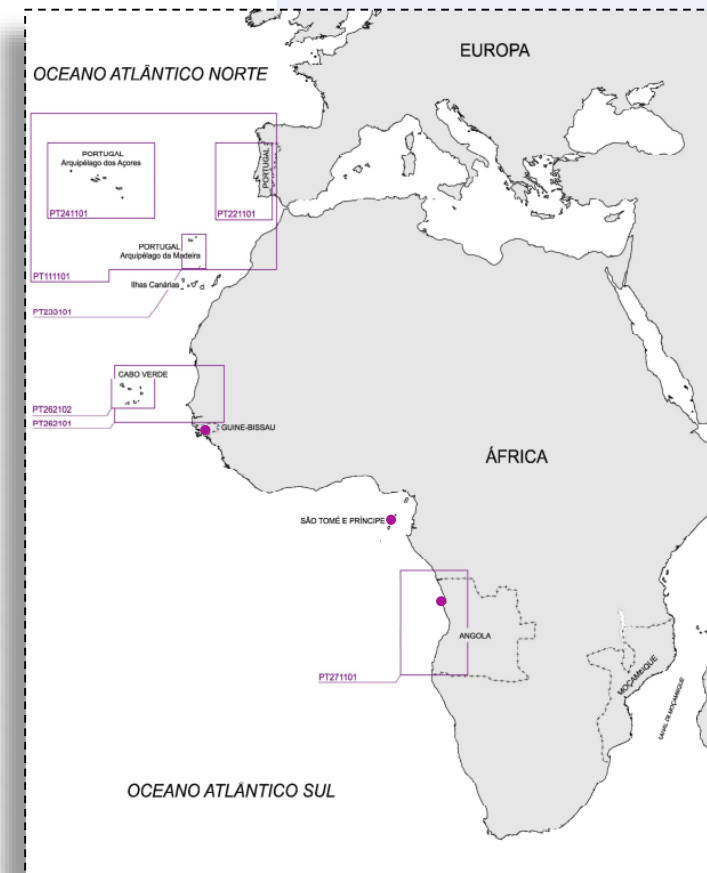
**No Gridding Scheme at least during Dual-Fuel**

**Future Gridding – under evaluation**

**Scales – not decided yet**

**1st S-101 ENC “Entrance Tagus River”**

**Next S-101 ENC's – final decision beginning 2024**





Coastal Warnings

Search  Clear filters Hide filters

Originating entity Station Year

Portuguese (400 KHz) English (518 KHz) NAVAREA Warning 5

Sort by Default Open Warnings Map Geographical search

PROMULGADO CANCELADO ALL

Showing 1 to 32 of 7 results

RA53 CINCOMAR ESTADAL UTC RAU 33	RA52 CINCOMAR ESTADAL UTC RAU 33	RA51 CINCOMAR ESTADAL UTC RAU 33
1508/23	1507/23	1506/23
NORTH ATLANTIC - PORTUGAL-CONTINENTAL PORTUGAL-SOUTH COAST NEW DANGERS. KILLER WHALES WERE SPOTTED IN POSITION 36-52'BN 00-05-20W AT 01:00Z AT THIS LOCAL TIME, WITHOUT INTERACTIONS WITH SHIPS IN THE AREA. IT IS ADVISABLE FOR ALL NAVIGATORS TO KEEP A CLOSEWATCH, AND REP...	NORTH ATLANTIC - PORTUGAL-CONTINENTAL PORTUGAL-WEST COAST SPECIAL OPERATIONS: NAVAL EXERCISES, MISSILE FIRINGS, SPACE MISSIONS, DUMPING ZONES, NUCLEAR TEST, ETC. OGAZ03 FROM 0800 TO 1400 UTC. OPERATIONAL TRAINING SCOPE. IMMEDIATE ENVIRONMENT, WITH WHITE SMOKE SIGNAL IN POSITIONS 38-00.00N 009-50.00W. BERTH REQUESTED.	NORTH ATLANTIC - PORTUGAL-CONTINENTAL PORTUGAL-WEST COAST - LISBOA MARITIME SECURITY LEVEL INFORMATION - OTHER OPERATIONS WITH SUBMERSIBLES FROM 02AUG23. DURING DAYLIGHT PERIOD, DIVING OPERATIONS TAKE PLACE AT PACO DE ARCOS GEISER. WIDE BERTH REQUESTED.
Promulgation date 02 Aug 2023	Promulgation date 02 Aug 2023	Promulgation date 02 Aug 2023

IPMA

EM VIGOR

ZCZC  
WWP060 LPMG  
NAVTEX ROUTINE  
RE91  
CENCOMAR  
071454 UTC MAI 22  
INSTITUTO PORTUGUES DO MAR E DA ATMOSFERA  
WEATHER BULLETIN FOR SHIPPING FOR THE ATLANTIC ZONES LIMITED BY MERIDIANS 22W-07W AND BY PARALLELS 35N-45N.  
TEST  
NNNN

CENCOMAR

EM VIGOR

ZCZC  
NAVTEX ROUTINE  
RA14  
CENCOMAR  
061720 UTC MAI 22  
NORTH ATLANTIC - PORTUGAL-CONTINENTAL PORTUGAL-WEST COAST - LISBON HARBOUR  
ESTABLISHMENT OF OFFSHORE STRUCTURES IN OR NEAR SHIPPING LANES  
NAV WARNING NR 1014/22 FROM 26APR TO 28APR22, UNDERWATER WORKS ON PACO DE ARCOS GEISER WIDE BERTH REQUESTED.  
NNNN

Capitania do Porto de Angra do Heroísmo & Graciosa

EM VIGOR

AVISO LOCAL Nº 3/22 DATA DA PROMULGAÇÃO: 25/04/2022

DE: 24 FEV 2022 ATE: 30 ABR 2022

LOCAL: PORTO DA PRAIA NA ILHA GRACIOSA

ASSUNTO: REMOÇÃO DE BOIA CARDEAL NO PORTO DA PRAIA NA ILHA GRACIOSA

ENTIDADE ORIGINADORA: CAPITANIA DO PORTO DE ANGRA DO HEROÍSMO & GRACIOSA

DESCRIÇÃO: FICOU RESTRITA PARA MANUTENÇÃO A BOIA CARDEAL LESTE (POSIÇÃO: 39° 03,02'N 27° 57,80'W) DO PORTO DA PRAIA NA ILHA GRACIOSA.

DATA DO CANCELAMENTO: 30 ABR 2022

Instituto Hidrográfico

EM VIGOR

CÓDIGO: 412211 DATA DA PROMULGAÇÃO: 10/03/2022

TÍTULO: ATLANTICO NORTE - PORTUGAL - PORTUGAL CONTINENTAL - COSTA SUL - PORTAÑO - PARQUE OCEAN RESERVA - BOIA ARAGADA

ENTIDADE ORIGINADORA: INSTITUTO HIDROGRAFICO

DESCRIÇÃO (PORTUGUÊS): BOIA M2, POSIÇÃO : 37°05,93'N / 008°35,34'W (WGS 84), ARAGADA. TODA A NAVEGAÇÃO QUE DEMANDAR A ÁREA DEVERÁ MANTER-SE ATENTA.

91

Capitania do Porto de Aveiro

EM VIGOR

AVISO LOCAL Nº 70/22 DATA DA PROMULGAÇÃO: 01/07/2022

DE: 04 JUL 2022 ATE: 30 SET 2022

LOCAL: RIA DE AVEIRO

ASSUNTO: LEVANTAMENTOS BATIMÉTRICOS

ENTIDADE ORIGINADORA: CAPITANIA DO PORTO DE AVEIRO

DESCRIÇÃO: 1. REALIZAÇÃO DE LEVANTAMENTOS BATIMÉTRICOS NA RIA DE AVEIRO (VÁRIOS ENFIAMENTOS DA BARRA ATE AO TERMINAL SUL), NO PERÍODO DE 04 DE JULHO A 30 DE SETEMBRO DE 2022. 2. REFERIDOS LEVANTAMENTOS SERÃO EXECUTADOS COM O APOIO DAS EMBARCAÇÕES "ATLANTICLAND F" - A-2767-AL E "INDOMAR" - A-2737-AL. 3. TODA A NAVEGAÇÃO DEVERÁ GUARDAR RESGUARDO.

DATA DO CANCELAMENTO: 30 SET 2022

ANEXOS: AVISO\_073\_LEVANTAMENTOS\_BATIMÉTRICOS\_1.04.22.PDF

Capitania do Porto de Aveiro

EM VIGOR

AVISO LOCAL Nº 22/22 DATA DA PROMULGAÇÃO: 25/04/2022

DE: 23 ABR 2022 ATE: N/A

LOCAL: PORTO DE AVEIRO

ASSUNTO: ESTADO DA BARRA

ENTIDADE ORIGINADORA: CAPITANIA DO PORTO DE AVEIRO

DESCRIÇÃO: BARRA DO PORTO DE AVEIRO ABERTA A TODA A NAVEGAÇÃO A PARTIR DAS 15:00 HORAS DO DIA 23 DE ABRIL DE 2022.

## Roadmap for the S-100 Implementation Decade (2020 – 2030) Annex 2 S-100 Timelines Version 3.0 Dated: 19 October 2023

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S-411 (WMO)	Ice Information
S-412 (WMO)	Weather and Wave Hazards

Figure 1 The S-100 Implementation Priorities. Phase 1 is product specifications for Route Monitoring which must be supported by the Critical S-100 Framework. Product specifications for Route Planning will be developed as the phase 2.

<https://iho.int/en/s-100-implementation-strategy>

Notice to Mariners

Coastal Warnings

Local Warnings

Meteorological Warnings

# CHALLENGES

Among various challenges faced by IHPT is:

- The establishment of an **feasible** implementation plan;
- The methodology for converting S-57 into S-101;
- Parallel production** “S-101 ENC”/”S-57 ENC”/”Paper Charts”;
- Resources: **Human**; Technologic; **Financial**;
- Production Processes – **adequacy**/integration/new processes/optimization existent processes

Balance: Time/Costs/Specification Maturity



OBRIGADA

