

21st Meeting of the South West Pacific Hydrographic Commission

S-100 Implementation Progress

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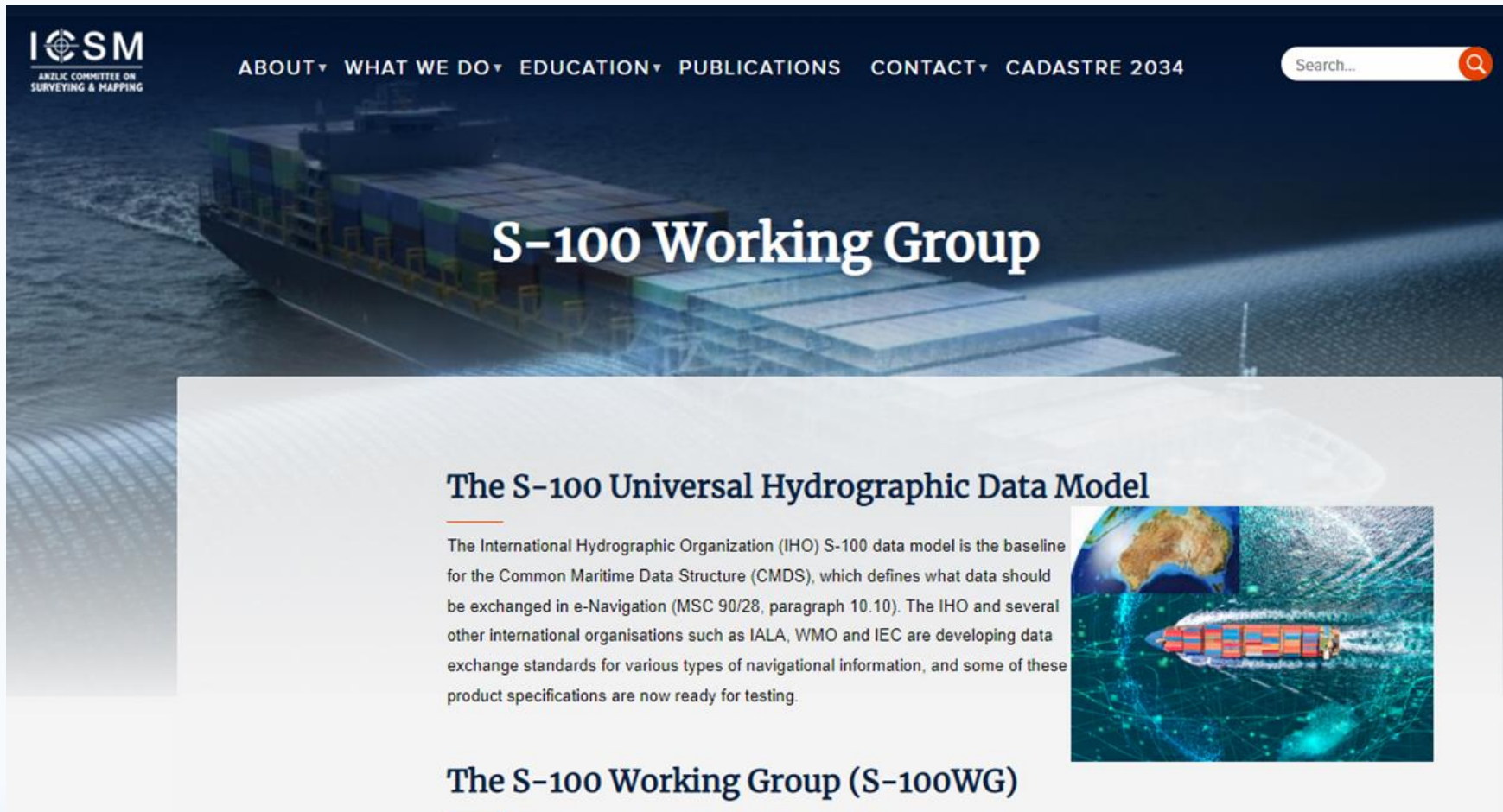
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South West Pacific Hydrographic Commission



Stakeholder Groups – Australia - NZ approaches



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S-100 Working Group

The S-100 Universal Hydrographic Data Model

The International Hydrographic Organization (IHO) S-100 data model is the baseline for the Common Maritime Data Structure (CMDS), which defines what data should be exchanged in e-Navigation (MSC 90/28, paragraph 10.10). The IHO and several other international organisations such as IALA, WMO and IEC are developing data exchange standards for various types of navigational information, and some of these product specifications are now ready for testing.



The S-100 Working Group (S-100WG)

[S-100 Working Group | Intergovernmental Committee on Surveying and Mapping \(icsm.gov.au\)](https://www.icsm.gov.au)



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S-100 Working Group

- ❑ The S-100WG is a working group under Intergovernmental Committee on Surveying and Mapping (ICSM) and is responsible for coordinating and managing the timely and effective implementation of a broad range of S-100 products and services in Australia and New Zealand.
- ❑ The S-100WG inaugural meeting was hosted by Australian Hydrographic Office (AHO) on Wednesday the 2nd of November 2022 (VTC).
- ❑ The meeting was attended by almost 50 representatives from a diverse number of federal, state and private organisations.
- ❑ The Working Group membership is drawn from organisations involved in maritime domain and impacted by the introduction of some of the S-100 based products and services (governmental and/or non-governmental organisations)
- ❑ The S-100WG members meet three times a year; two virtual meetings and one face-to-face meeting.
- ❑ Next meeting is scheduled for 26th March 2024 (VTC).



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S-100 Working Group members

Government Agencies .

- ❑ Australian Hydrographic Office (AHO)
- ❑ Land Information New Zealand (LINZ)
- ❑ Australian Antarctic Division (AAD)
- ❑ Australian Maritime Safety Authority (AMSA)
- ❑ Australian Fisheries Management Authority (AFMA)
- ❑ Bureau of Meteorology (BOM)
- ❑ Department of Climate Change, Energy, the Environment and Water (DCCEEW)
- ❑ Department of Agriculture, Fisheries and Forestry (DAFF)
- ❑ Geosciences Australia (GA)
- ❑ Great Barrier Reef Marine Park Authority (GBRMPA)
- ❑ Port of Brisbane – Harbour Master
- ❑ Port of Gladstone – Harbour Master
- ❑ Parks Australia
- ❑ Port Authority NSW (PANSW)
- ❑ Port of Melbourne
- ❑ Ports Victoria

Industry.

- ❑ Bathy Pty Ltd
- ❑ DHI Group
- ❑ Flinders Port
- ❑ Flinders Ports - Hydro Survey
- ❑ Southern Ports
- ❑ OMC
- ❑ Ports Australia
- ❑ Gladstone Ports Corporation Ltd
- ❑ Seaport OPX
- ❑ Svitzer Australia
- ❑ Navigate Hydrographic



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S-100 Working Group

- ❑ **Role of the Members:**
 - ❑ Participate in meaningful discussions and consultations to drive the harmonized implementation and maintenance of S-100 based services;
 - ❑ Facilitate and coordinate S-100 products' generation, their quality and usage; ensuring the alignment of these products with the S100WG goals set in the S100WG Work Plan;
 - ❑ Work collaboratively to ensure that product management activities are in alignment with the established priorities of the affected organisations to enable sound decision making;
 - ❑ Facilitate cooperation in international engagement with S-100 relevant international bodies and provide a forum for evaluation of international work and its impact on Australia.
- ❑ **S-100WG Roadmap**
- ❑ **S-100 Work Plan 2024 -2026**



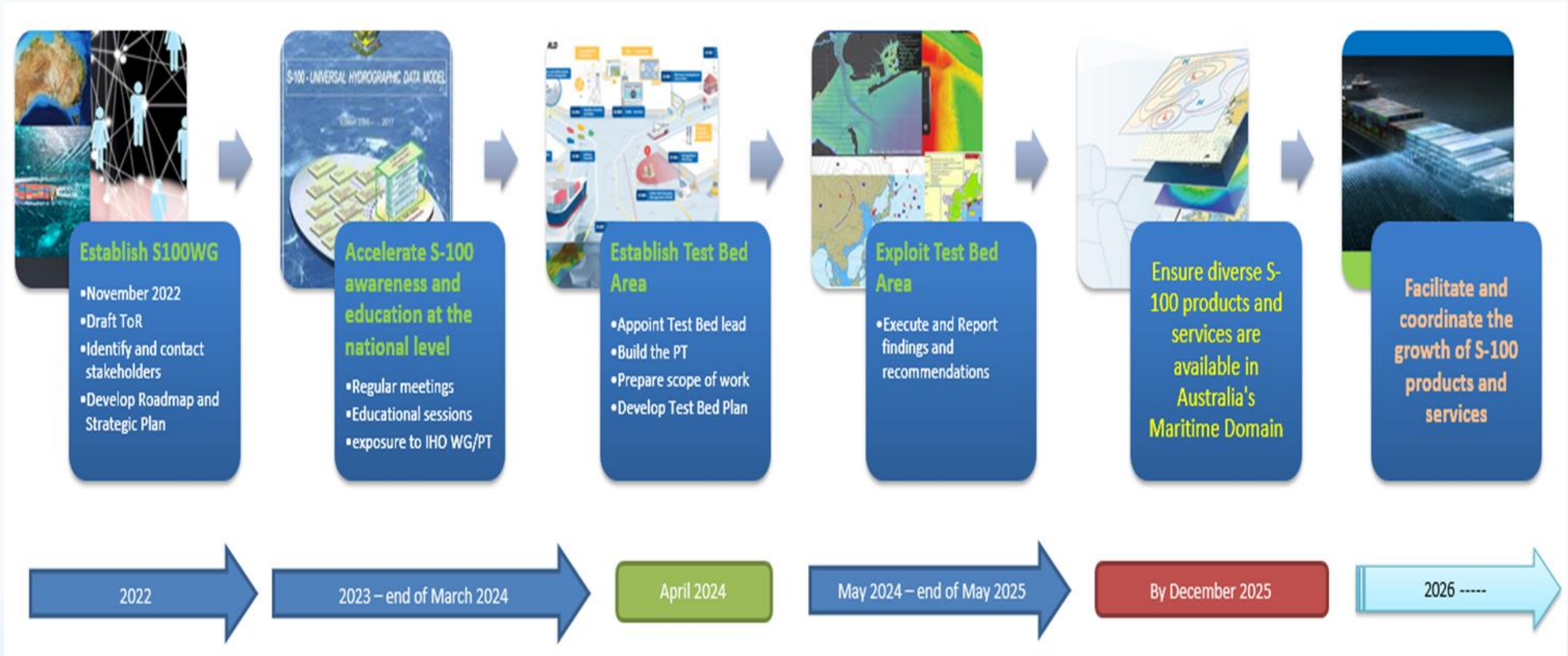
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S-100 Working Group Roadmap

Planning our route for an efficient navigation



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S-100 Testbed Focus Group

- ❑ **S-100 Testbed Focus Group (TBFG) was established in October 2023 under S-100WG; team's main objective is creating a national testbed to enable the development and testing of different S-100 product prototypes to support IHO S-100 Implementation Priorities, Phase 1 – Route Monitoring.**
- ❑ **S-100 TBFG members: AHO, Flinders Ports, AMSA, PANSW, OMC International, Port of Melbourne, LINZ.**
- ❑ **S-100 TBFG last met on the 6th February 2024.**
- ❑ **Priorities for Q1 2024:**
 - ❑ **Terms of Reference**
 - ❑ **Project scope**
 - ❑ **Data and products available to support the testbed**
 - ❑ **Geographical location(s)**
 - ❑ **Requirements, user stories and budget**
 - ❑ **Capability (platform, software packages, development support)**



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AHO Strategic Plan

Key Initiatives:

- *Dual Fuel - ENC Production from 2025*
- *Production of S-102, S-104 & S-111 from 2026*
- *Coordinate a national approach to S-100 and e-Navigation (S100WG under ICSM)*

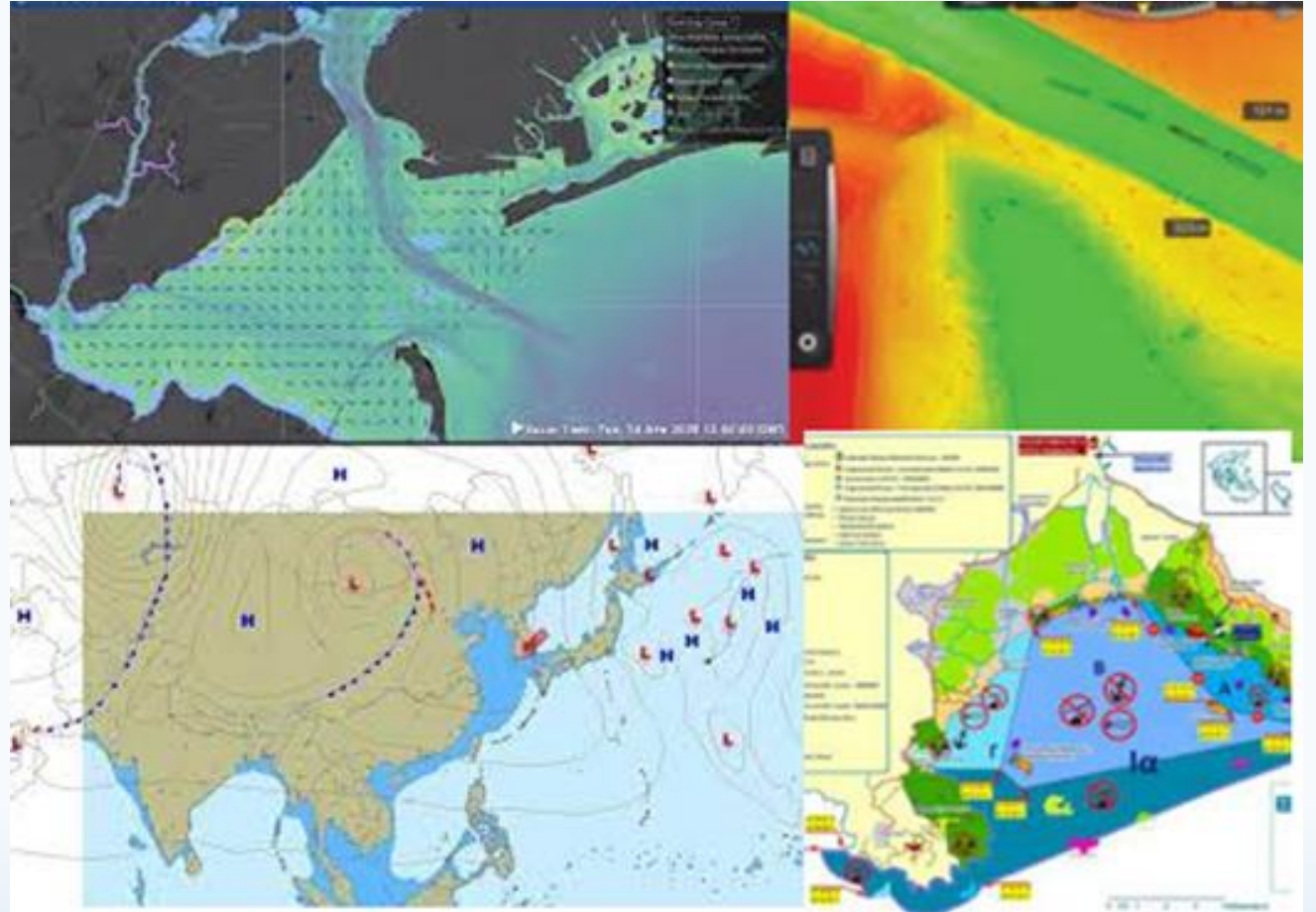


Table A – IHO list of S-100 products with special focus	
Phase 1 / Route monitoring	
S-101	Electronic Navigational Chart (ENC)
S-102	Bathymetric Surface
S-104	Water Level Information for Surface Navigation
S-111	Surface Currents
S-124	Navigational Warnings
S-129	Under Keel Clearance Management
Critical 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



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AHO S-100 Focus

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



Phase 2 / Route Planning

Phase 2 Route Planning Mode

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

IHO Roadmap for the S-100 Implementation Decade (2020-2030) Annex2



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SWPHC S-100 Workshop

- ❑ The third SWPHC S-100 Workshop was conducted online on 22nd November. Presentations and recording of the workshop can be found at [Events & recordings | IHO](#)

South West Pacific Hydrographic Commission

S-100 Workshop #3

22nd Nov 2023

S-102 Sea Trial

- Conducted with the Port of London using SEAiQ Portable Pilot Unit (PPU).
- Understand how S-102 data can support safety of navigation in live environment.
- High resolution gridded bathymetry provided for trial.
- Findings help to understand S-102 development and feedback to IHO Working Groups.

AHO S-100 Journey
SWPHC S-100 Workshop – November 2023
Gabriela Batis
Assistant Director S-100 Coordinator

Product Development & Testing Licence (PDT)

- Provides companies with access to IC-ENC Members' S-1XX datasets for innovation and testing purposes
- 5 PDT releases to date
- 27 out of 50 Members have "opted in" so far – thank you!
- Recently extended to Members so they can access other Members' datasets for internal R&D purposes

Product Type	Datasets Released	Member
S-101	48	BE, ES, GR, IT, NL
S-102	308	ES, GR, NL, US
S-104	18	NL, US
S-111	593	NL, US
S-122	3	NL
S-123	1	NL
S-128	3	IC-ENC, NL
Total	1,062	



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SWPHC Coordination – S-100 Co-ordinator role

Context

- IHO resolution 1/2021- WEND S-100 principles
- WEND S-1XX implementation guideline
 - Need for coordination
- IRCC14 WEND working group report
- For SWPHC - International Chart Coordination Working Group



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SWPHC Coordination – S-100 Co-ordinator role

Questionnaire

- Which country are you representing?
- Who is currently responsible for creating and maintaining your charts?
- What, in your view, should be the core responsibilities of an S-100 Coordinator in our region?
- How do you envision this role contributing to the SWPHC hydrographic community?
- What methods do you believe are most effective for promoting knowledge sharing in our community?
- What unique challenges (if any) do you foresee for our region?
- Can you suggest potential solutions or strategies for our region in delivering the S-100 roadmap?
- How can we best facilitate collaboration and coordination between SWPHC HOs (Maritime Administrations) and Primary Charting Authorities (PCAs)?
- What is the one thing that the SWPHC S-100 coordinator should do in 2024

13 replies from
12 nations



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SWPHC Coordination – S-100 Co-ordinator role

There was a diverse viewpoint of the core responsibilities of an S-100 Coordinator in our region.

- Central point of information, collating knowledge, identifying gaps, prioritizing needs, facilitating collaboration -

The responses highlight several unique challenges for the region.

- Geographic diversity
- Varying capability and capacity
- Regional coordination
- Resource constraints
- Technological and internet access
- Language and cultural diversity
- Risk of countries being left behind
- Coordination and participation
- Timelines



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SWPHC Coordination – S-100 Co-ordinator role

Potential solutions and strategies for delivering the roadmap:

- Building regional awareness,
- Developing stakeholder connections
- Assessing roadmap suitability
- Promoting collaboration and knowledge sharing
- Increasing capacity building activities,
- Facilitating coordination and communication.

All suggested strategies emphasize the importance of communication, engagement and active participation, such as workshops, meetings and working groups.

Suggested actions were focused on understanding the progress and priorities



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SWPHC Coordination – S-100 Co-ordinator role

Conclusion of the overall survey

- strategic planning,
- collaboration,
- assessment,
- support and
- communication



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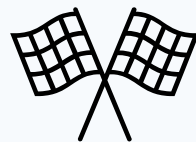
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SWPHC Coordination – S-100 Co-ordinator role



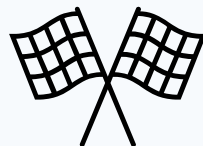
Seeking insights from other RHCs



Virtual conference?



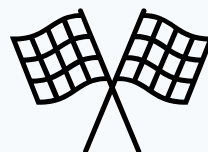
ICCWG Terms and Reference



Capacity building workshop?



Questionnaire



Reporting on the current state



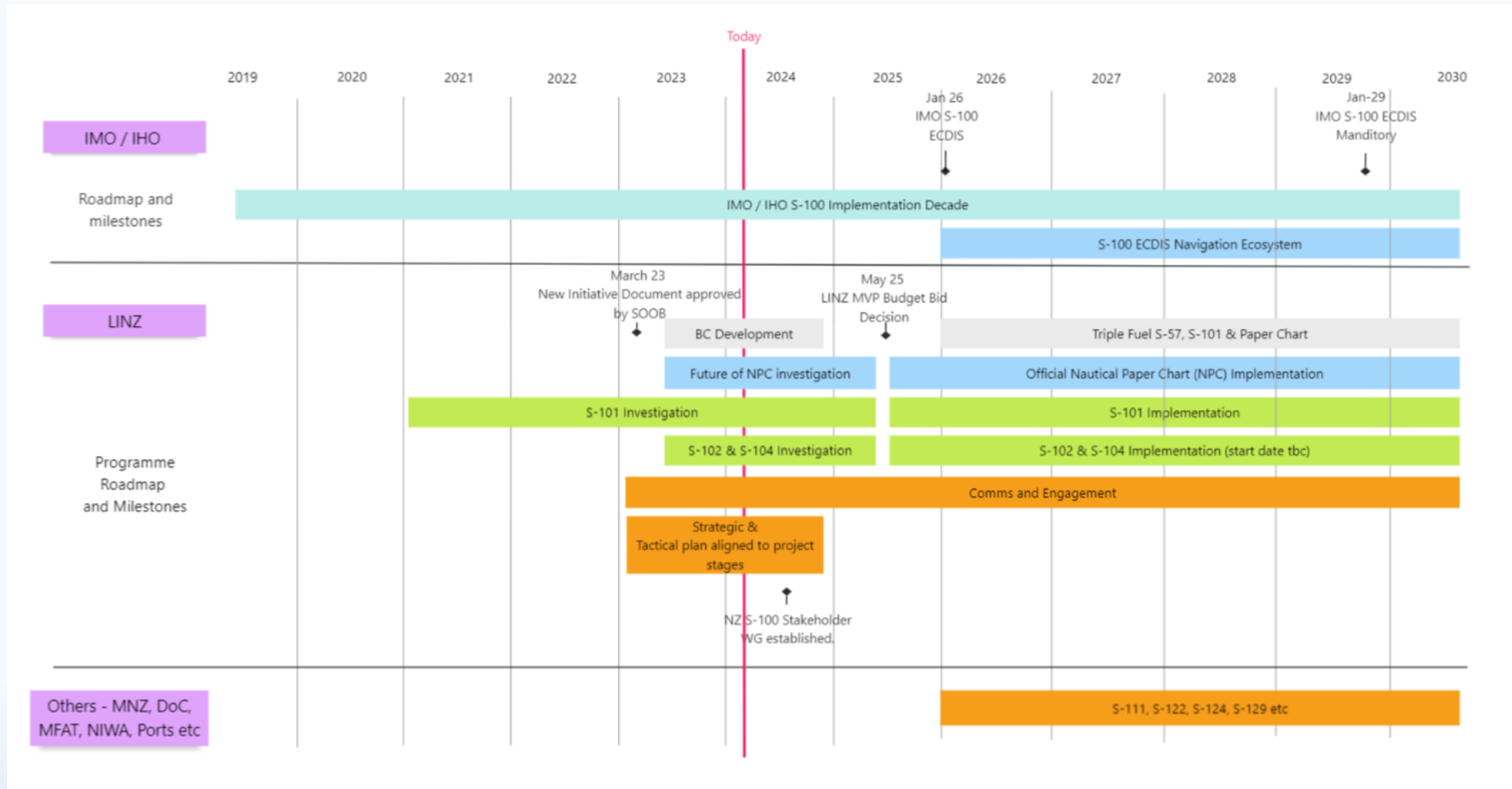
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PCA Engagement & Commitments

S-100 Update – LINZ



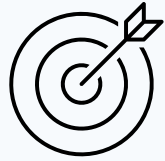
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PCA Engagement & Commitments

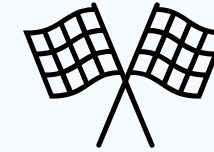
S-100 Update – LINZ



- Governance Board
- Resource plan
- MDT Business Case in progress
- Strategic planning complete.
- Product rationalization finalized
- Promotional Video for MDT has been produced
- Technical investigation is ongoing
- High level Design (HLD) for S-102 in progress
- High Level Design (HLD) for S-104 in progress

Challenges

- Securing funding for additional resources to deliver to the S-100 implementation roadmap.
- Buy-in from other government agencies to MDT.



- National S-100 Test Working Group
- Detailed implementation plan for the transition from S-57 to S-101.
- Submitting Business Case for Budget Bid



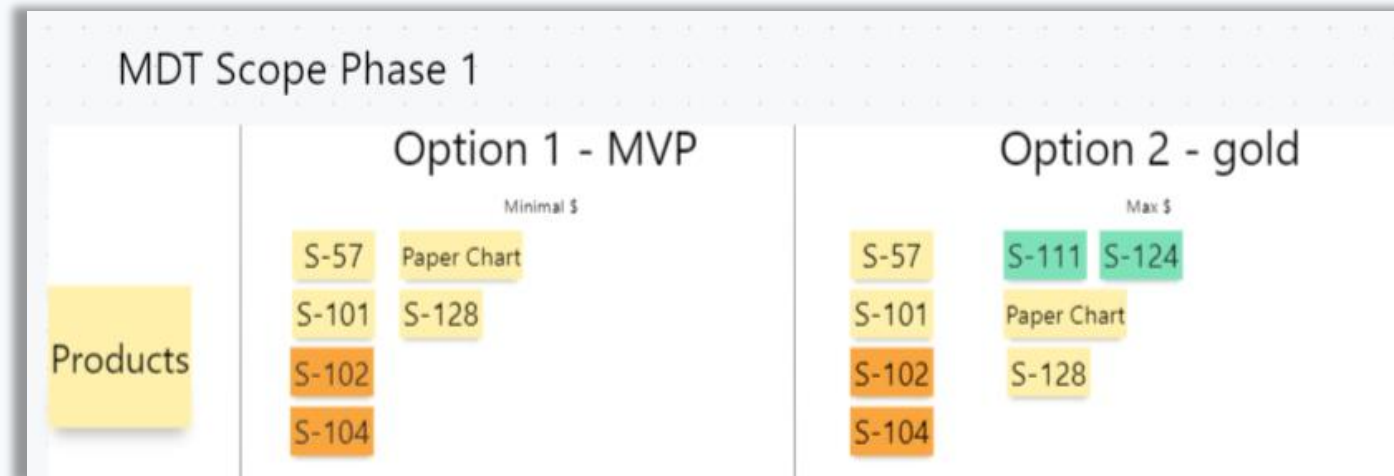
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PCA Engagement & Commitments

S-100 Update – LINZ



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S-100 Update

Thank You

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