

# IRCC Workshop on the IHO Strategic Plan

Shom – National approach to GOAL 1 –  
Transitioning to S-100

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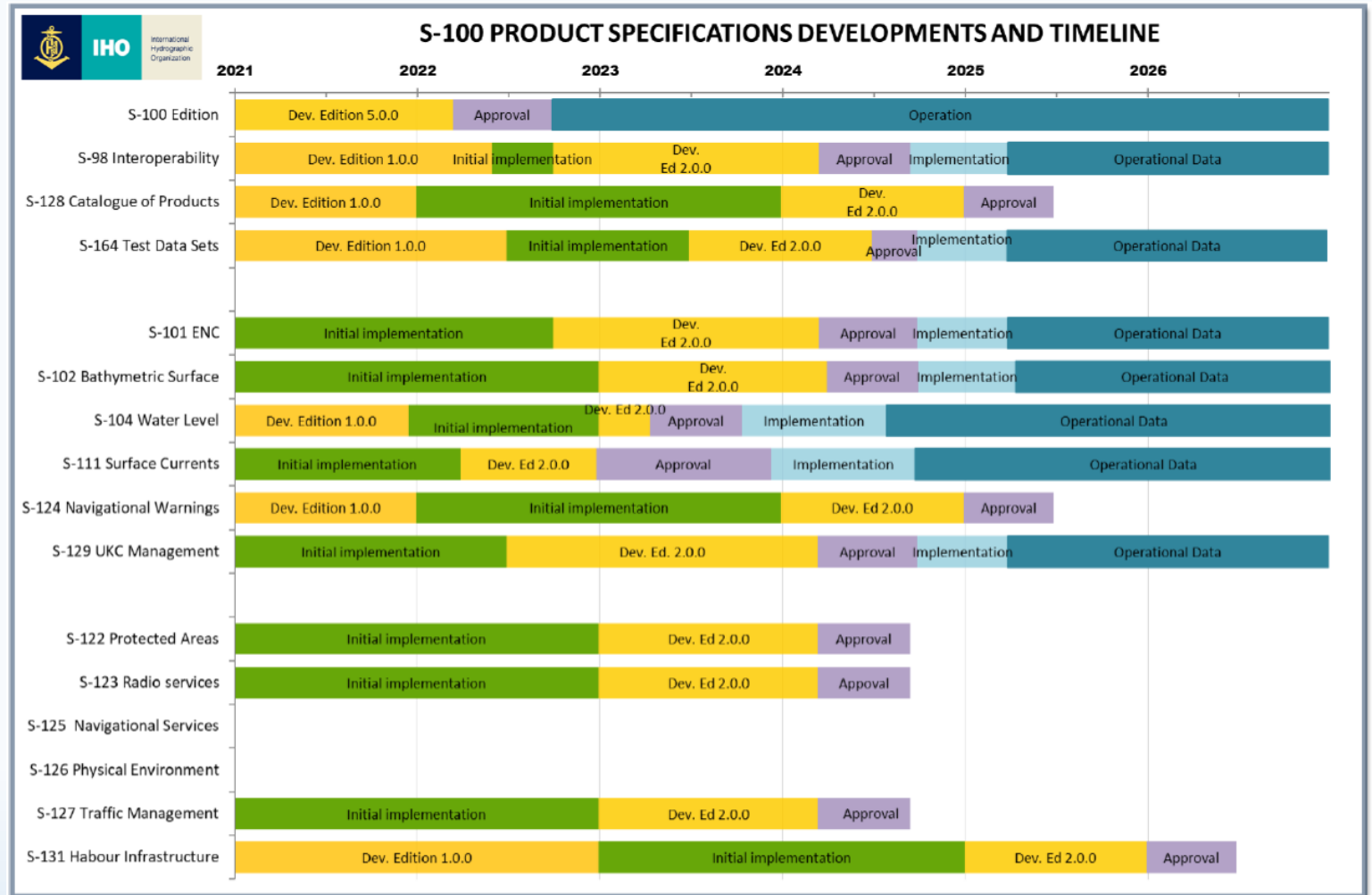
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# GOAL 1 gap analysis : SWPHC common issues

| GOAL 1  | Target   | Current State   | Gap   | Actions  |
|---|--|---|---|--|
| Evolving the hydrographic support for safety and <b>efficiency</b> of maritime navigation, undergoing profound transformation | <ul style="list-style-type: none"> <li>• Deliver standards for hydrographic data and specifications of hydrographic products; support their regular production; and coordinate regional and global services for their provision</li> <li>• Develop standards, specifications and guidelines in the areas of data assurance, including cyber security and data quality assessment</li> <li>• Use capacity building and training to develop and increase the ability of Member States to support safety and efficiency of maritime navigation</li> </ul> | <ul style="list-style-type: none"> <li>• Some SWPHC members involved in relevant IHO committees, WGs and PTs related to S-100 (HSSC, S-100WG, S1xx-PT, ENCWG, WENDWG...) <i>[AU, FR, ID, NZ, UK, US]</i></li> <li>• Some SWPHC HOs setting up S-100 implementation roadmaps</li> <li>• Some joint reflection with national bodies involved in navigation matters through governmental initiatives : e-navigation strategy and supply of digital products and services</li> <li>• Good coordination at national scale of data governance by including international standards</li> </ul> | <ul style="list-style-type: none"> <li>• No operationalized production and distribution of S-100 data products and services yet</li> <li>• No operational standards for most of S-1XX products</li> <li>• Need for additional capacity to manage the transition from existing products to S-1xx products</li> </ul> | <ul style="list-style-type: none"> <li>• Share and develop S-100 implementation strategy iteratively, in line with user demand and needs, and taking into account IHO/IMO timeline,</li> <li>• Carry out studies, experimentations, with partners and the hydrographic community to prepare the production of S-1xx</li> <li>• Engage with national relevant bodies to define e-navigation strategy and distribution of electronic data, products and services</li> <li>• Develop SWPHC MSDI WG in line with the UN SDG based on UN-GGIM IGIF</li> </ul> |

# IHO S-100 Roadmap – Update proposed to C5

- S-101 and S-98 on interoperability ready for operational data in 2025
- Implementation priorities to Route Monitoring S-1xx Products



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# S-101 added value compared to S-57

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- **The foundation layer interoperable with other S-100 products**  
e-navigation route planning and route monitoring
- **Machine readable (additional objects, attributes, symbols,...)**
- **Reinforced cybersecurity and data integrity**  
in the context of reinforced consideration by IMO for cybersecurity
- **Technical improvements (better text positioning, remove of overuse of caution areas, new objects such AIS, highlight of updates, lights description...)**  
Hopes for the automated paper chart production



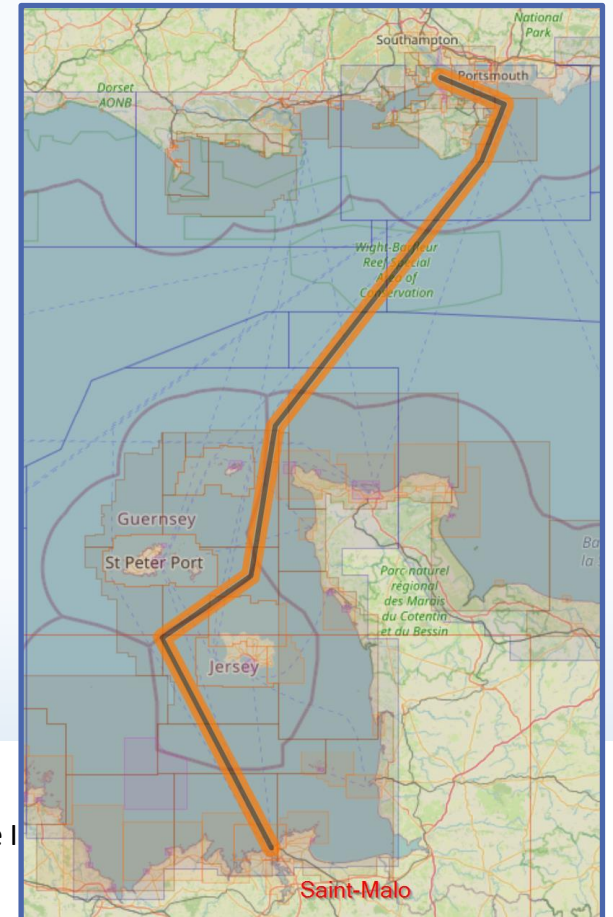
# Transitioning to S-100 in Shom – S-100 ECDIS

- **The conversion in Shom will be driven by the IMO S-100 ECDIS transition schedule**

No significant use of S-100 based products without S-100 ECDIS under SOLAS and IMO carriage requirements

## Actions:

- Shom supports HSSC for the revision of the IMO ECDIS Guidance & ECDIS Performance standard (resolution MSC.232(82)) with participation of CIRM, IEC, Intertanko
- UKHO-Shom ECDIS Project in the Channel (dual fuel, schemes)
- Shom S-1xx experiments



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# Transitioning to S-100 in Shom – S-100 ECDIS



**lab activities**

- Monitoring & forecasting of civil and military needs and of AI and Big Data technologies
- Building an ecosystem of public-private-defence innovation.
- Development & support of innovation projects - from idea to incubation:
  - Co-construction workshop to develop an idea;
  - Prototyping;
  - Preparation of scaling-up
- Communication and outreach.
- Development of internal skills.

**Methods and workspaces to encourage collaboration**




## Innovate


a strategic objective of COP\* 2021 - 2024




**Modernize the processes for acquiring, processing, modeling and disseminating data, products and services and anticipate future capacity requirements.**



**Launch experiments: key drivers = artificial intelligence, big data, new opportunities, etc.**



**Design new products and services to meet users needs.**




**Federate initiatives by ensuring the coordination and coherence of innovation in Shom.**



**Encourage agents and support their innovation initiatives.**

## Focus



**Artificial intelligence**  
improve the efficiency of data processing by exploiting the potential of new technologies.



**S-100**  
Universal hydrographic data model: renew the range of products and services to increase the Shom users panel.  
A framework for the development of digital products and services for hydrographic, maritime and GIS communities.

#hydrospatial





\* Objective and Performance Contract

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# Transitioning to S-100 in Shom – S-101

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- **The conversion to S-101 will be voluntaristic and limited in time**

Around FR 850 S-57 cells to convert

FR S-101 ENC's will become

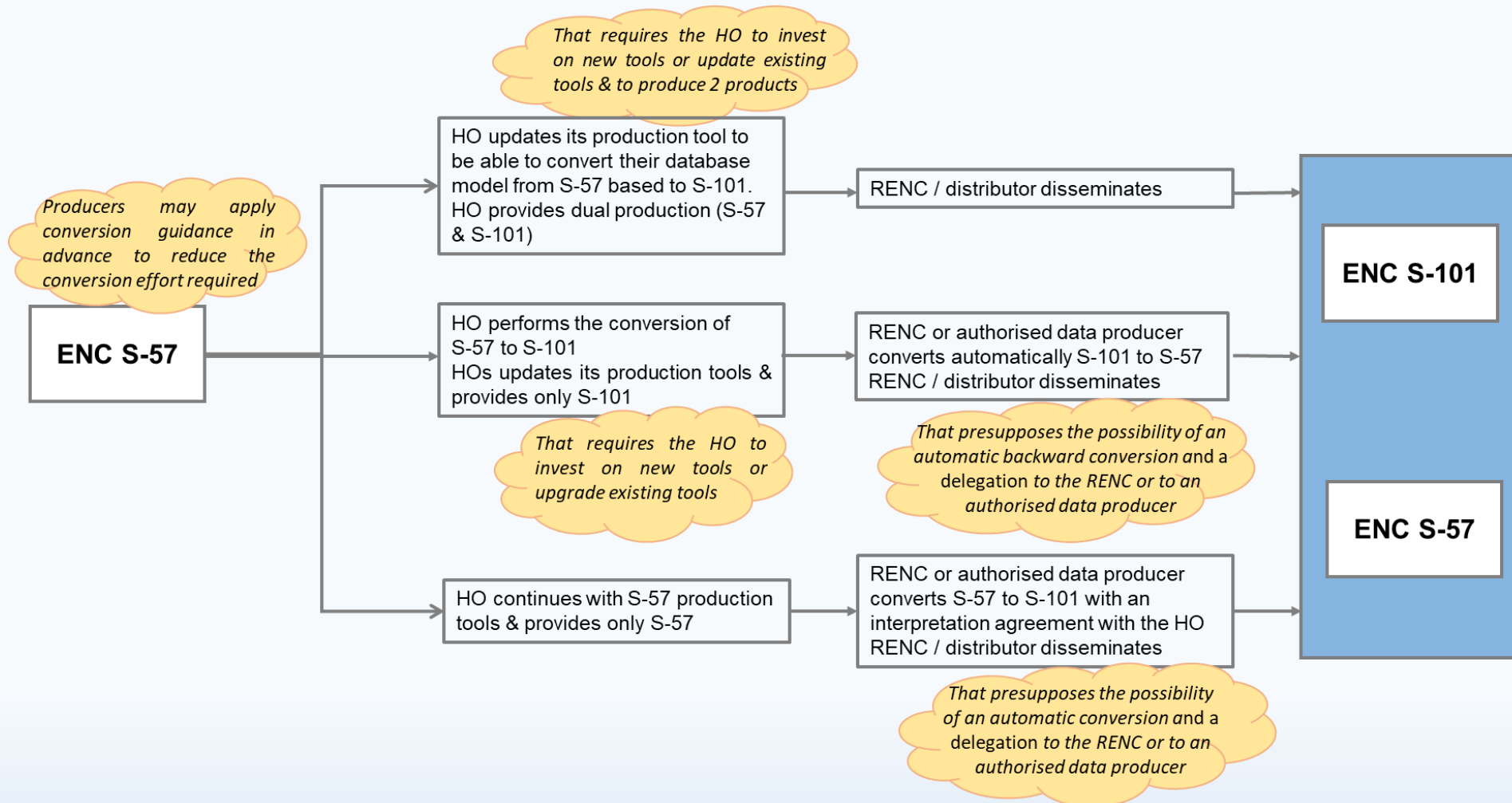
- the reference coverage (and no longer the FR S-57 ENC's)
- the foundation layer for other S-1xx products (S-98 on interoperability)
- The source for paper chart

## **Actions :**

- First version of the Shom roadmap S-100 approved in July 2021
- Dedicated Shom team for the transition to S-101
- Contribution to the international effort (IHO WGs, IHO Singapore Lab, RENC PRIMAR, industry, etc.)



# Transitioning to S-100 - Dual Fuel – Ways for HOs





# Transitioning to S-100 in Shom - Dual Fuel

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- **Mastering the conversions S-57 to S-101 and vice versa : a key factor of success**
- **Shom intends to delegate to a third party (RENC PRIMAR) the availability of the FR S-57 ENC**
  - When the S-101 ENC coverage is complete, FR S-57 will become a “by-product”
  - PRIMAR would produce and maintain the FR S-57 ENC

## Actions:

- International effort (HSSC, industry)
- PRIMAR Development Project on conversions (S-57 to S-101 and vice versa) with the participation of Shom



# Transitioning to S-101 in Shom in summary

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- **Dual Fuel**

Shom only produces S-101 ENC (and ER)

PRIMAR converts S-101 ENC (and ER) to S-57 ENC (and release S-57 ENC without HO interaction)

=> Shom contributes to the international efforts to develop automatic converters

- **Paper chart production**

Use of tools from S-101 ENC (choice to place toponymy, etc)

Simplify paper chart (use of symbols, rules, mapping, etc)

=> Automatization of paper chart production from S-101 ENC



# Transitioning to S-100 in Shom – Security

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**The Cyber issue is essential in today's world and for Shom the SENC delivery option has no reason to exist today**

S-100 induces progress in data integrity and security with the IHO Data Protection Scheme (S-100 Part 15)

The limitations of ECDIS machines are no longer an issue

Let's not diminish the scope of S-100 by keeping the SENC delivery option

**Action:**

- HSS13 discussed the SENC delivery issue for the sake of cyber security and a work is handled by the S100 WG



# Transitioning to S-100 in Shom - Cooperation

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- **Mastering the 2 ways conversion S-57 S-100: a key factor success for the HOs**

Shom proposes that the IHO Singapore Laboratory work on the automated conversions s-101 to S-57 and vice versa

- **Shom promotes capacity building**

At the RHC level, organisation of S-100 seminars (with participation of RENCs as instance PRIMAR)

Training courses set up by the RENCs specific to the subject S-100/S-101

Opportunity to develop distant training on S-100 issues via the establishment of IHO E-learning platform by the ROK (to be operational in 2022)



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**THANK YOU !**

