

Information Paper for Consideration by IHO Council 5

UKHO & Shom S-100 ECDIS Collaboration

Submitted by:	UK & France
Executive Summary:	Information paper outlining the intentions of UKHO and Shom to collaborate on a joint project conducting trials and testing of S-57 & S-101 datasets in an S-100 ECDIS.
Related Documents:	<ul style="list-style-type: none"> - Roadmap for the S-100 Implementation Decade (2020–2030); - A2. PRO- 2.2 China, Risk assessment on the “Dual Fuel” mode of ECDIS.

Introduction

To support improved understanding of the challenges regarding production, distribution and display of S-57 & S-101 datasets in S-100 ECDIS, the French Hydrographic Office (Shom) and the United Kingdom Hydrographic Office have agreed to collaborate on a joint S-100 project. The high-level project aims are aligned with the S-100 Roadmap detailed below:

1. Develop deeper understanding and learning around each of the identified phases of production, distribution and display;
2. Risk assessment of S-100 ECDIS: Build evidence for safety case to support IMO approval of the S-100 ECDIS systems that also support the display of S-57 data for navigation;
3. Develop RENC capability to manage S-100 services;
4. Support industry to build and test S-100 ECDIS;
5. Build a testing framework that can be used for similar S-100 ECDIS testbed projects anywhere in the world.

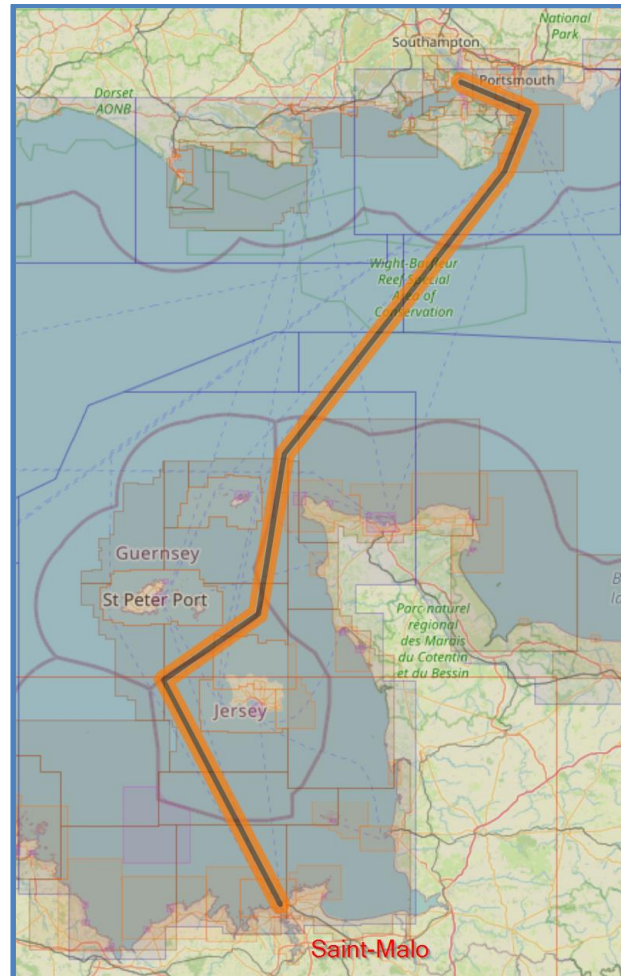
A key delivery of the project will be to provide evidence to the IHO community for the proposed risk assessment suggested by China (see related documents) that navigational safety in ECDIS is ensured with the introduction of S-101 ENCs. It is envisaged that this evidence can then also be used by IHO when reporting to IMO in support of the introduction of S-100 ECDIS.

Analysis/Discussion

The project will be based on a route between Southampton/Portsmouth (UK) and Saint-Malo (France).

The route has been selected for the following reasons:

- UKHO S-10x test area;
- Complex navigational area;
- Around 12 ENC for each HO across 3 S-57 Usage Bands;
- Regular ferry route.



The project will cover three distinct phases (data production, distribution and display) and will help to build our collective technical understanding and learning of how to develop S-100 services and bring them through each phase of the delivery pipeline to the vessels' ECDIS.

Phase 1: Data Production

- S-57 to S-101 conversion and native S-101 creation;
- Cell Updating;
- ENC scheming (based on paper charts versus gridding);
- Auxiliary file;
- ENC validation testing.

Phase 2: Distribution

- HO to RENC data delivery, digitally signed in accordance with S-100 part 15;
- RENC Validation (Shom – Primar) (UKHO – IC-ENC);
- RENC delivery to VAR;
- Cybersecurity: encryption, digital signatures, licencing, compression;
- Distribution chain testing Producer, RENC, VAR, Distributor, Mariner.

Phase 3: Display

- Involve OEM partners developing S-100 ECDIS;
- S-100 ECDIS sea trials – Tests to ensure correct functionality and simultaneous display of S-57 and S-101;
- Sea trial results, validation of assumptions;
- IHO/IMO S-100 ECDIS safety case.

Action Required of Council

The IHO Council is invited to note the activities of Shom and UKHO.