

Information Paper for Consideration by IHO Council 7

Updated proposal on options for the future production of S-101 ENC in conjunction with S-57 ENC during the dual fuel period

Submitted by:	France
Executive Summary:	This paper presents an updated proposal on the options available to HOs for the production of S-101 ENC and S-57 ENC during the dual fuel period, considering the recent developments in charting software capabilities and the implications for ER production. The paper seeks the Council's feedback and guidance on the proposed options. The paper also informs the Council of the French HO's strategy for the dual fuel period.
Related Documents:	1-Roadmap for the S-100 Implementation Decade (2020 – 2030) – Annex 2: S-100 Timelines, version 2.0, July 2022 https://iho.int/en/s-100-implementation-strategy 2- HSSC 13 Report to Council 5
Related Projects:	S-100WG

Introduction / Background

1. The Assembly, through Action A2/33, requested the Council to oversee the development of a strategy for the dual fuel production of S-101 ENC and S-57 ENC by HOs. The Council, in turn, tasked the HSSC to prepare a synoptic summary report on the various options available to HOs for this purpose (C4/11).
2. The HSSC produced a synoptic diagram that illustrated several options for dual fuel production, based on different charting production systems and conversion methods.

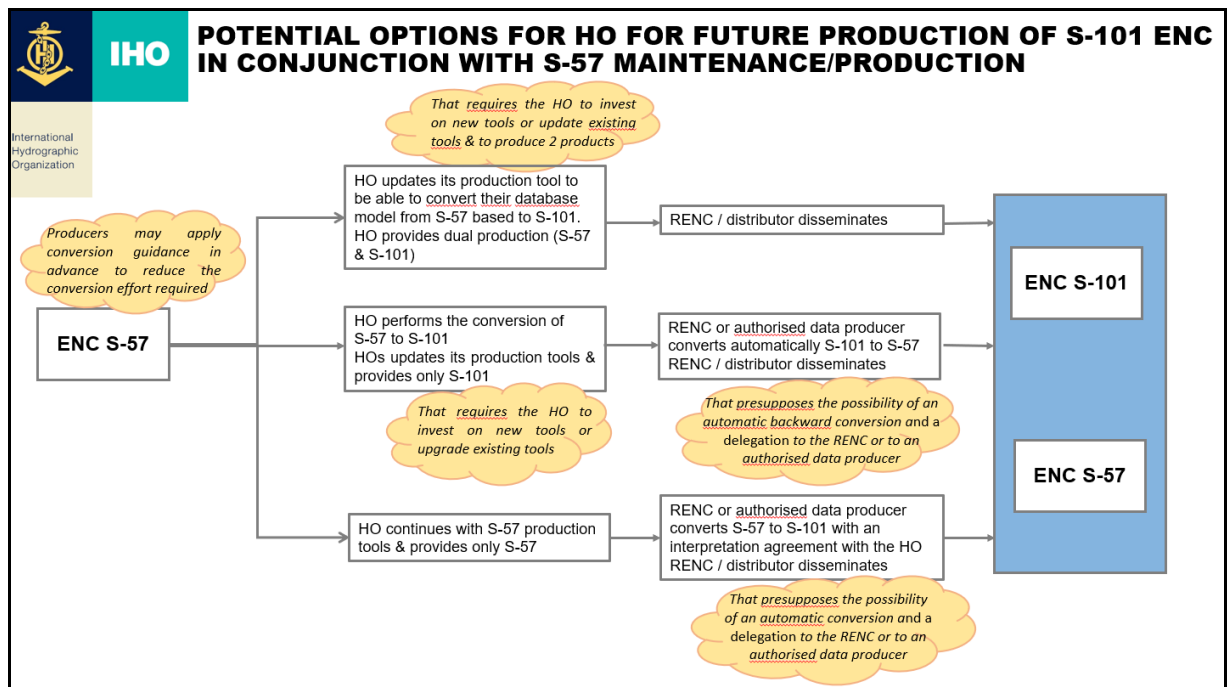


Figure 1: Synoptic diagram included in Ref 1.

This diagram was incorporated in the proposed Annex 2 to the S-100 Implementation Roadmap as submitted to C5 which approved it.

3. The HSSC 13 concluded that the preferred option for HO would be to produce their ENC's from a single database driven production system that supports both S-57 and S-101 output formats. This option would ensure consistency and efficiency in the ENC production and maintenance processes. It is expected that production systems software companies will include support for dual ENC production (S-57 and S-101) when using a database driven system.
4. Since then, charting production systems have advanced in their capabilities to handle S-101 data and conversions, and more attention has been paid to the implications of dual fuel production for ER generation.

Update of dual-fuel production diagram

5. In light of:
 - a. **The recent developments in charting software capabilities for S-101** (such as database conversion to S-101, database capacities to produce S-101 and S-57 ENC and ER, converters, etc.), and
 - b. the need to consider **how ENC's maintenance will be performed** for the different options,

a new diagram (below) is proposed that complements the dual fuel production options with an ENC's maintenance perspective. This diagram also enables a comparison of the different options for ENC revisions (ER).

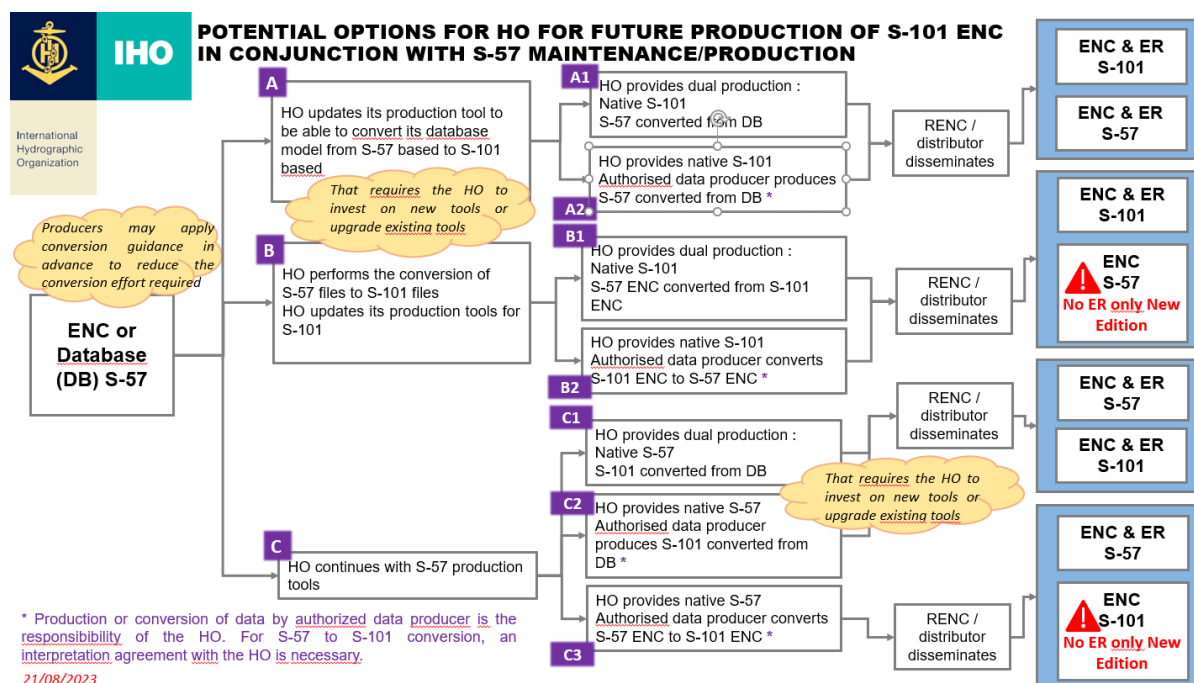


Figure 2: Synoptic diagram proposed

6. The first column shows three options for charting production systems:
 - a. **(A) HO works in S-101** with a cartographic database: this option should be the most prevalent option, given the software capabilities offered by software companies,
 - b. **(B) HO works in S-101** with no database: this option could be suitable for HO's with a small number of ENC's,
 - c. **(C) HO works in S-57** (with or without a database): this option is necessarily a temporary option until the HO has the ability to convert its charting production system to S-101 (options A or B).
7. The second column describes the dual production options. For each charting production system, it indicates how ENC and ER are produced and, as sub-options, by whom:
 - a. As a rule, the HO always produces ENC's and ER's in the format of its production system,

- b. Production in the other format can be achieved using:
 - i. **(A1 - A2 - C1 - C2) Capabilities of databases** developed by software companies: this option allows working **by edition and by ER**,
 - ii. **(B1 - B2 - C3) Converters** (to be configured for S-57 / S-101 conversion): this option allows working **only by edition and not by ER** (the object IDs are not preserved in the conversion process).
 - c. Production in the other format can be carried out by:
 - i. **(A1 - B1 - C1) The HO itself** (using converters or databases capabilities),
 - ii. **(A2 - B2 - C2 - C3) An authorized data producer** under the responsibility of the HO.
8. Some situations are not considered in the diagram because they are either impractical or undesirable for various reasons:
- a. The situation where a HO converts its database to S-101 model **(A)** and performs the S-101 to S-57 conversion from S-101 products (instead of the S-101 database): this would prevent the production of S-57 ERs,
 - b. The situation where a HO keeps its production system with a S-57 model **(C)** and performs the S-57 to S-101 conversion itself from products: if a HO has the capabilities to operate a S-57 to S-101 converter, it would be better to update its production system for native S-101 production **(A or B)**,
 - c. The situation where a HO maintains two independent databases (with S-57 and S-101 models) for separate parallel productions: this would be costly and cumbersome, as the HO would have to duplicate data entry, consistency checks, validation procedures, etc.

Shom's approach

9. Considering the recent advances in charting software, the universality of S-101 to S-57 conversion (whereas the S-57 to S-101 conversion is specific to each HO) and the need to ensure ENC updating through ER, Shom has chosen option **A** as its preferred option for the dual fuel production. Shom will decide later whether to use option **A1** or **A2**, depending on the availability and suitability of the authorized data producers.

Action Required of Council

The IHO council is invited to

- a) Review, approve or modify the proposed diagram,
- b) Invite HSSC to update Annex 2 of the Roadmap,
- c) Acknowledge the French strategy for the dual fuel period,
- d) Take any other action as appropriate.