**HSSC13-05.1xx**

**Paper for Consideration by HSSC13**

**FR comments on HSSC13-05.1A**

***Submitted by:*** France (Shom)

***Executive Summary:*** France considers that there is a need to further discuss the Dual-Fuel concept and, in the process, make it clear that SENC delivery will not be an option anymore for S-101 ENCs for the sake of cyber-security.

***Related Documents:*** doc. HSSC13-05.1A Report and Recommendations of S-100WG

 doc. IMO NCSR8-13-1 Report on monitoring of ECDIS issues by IHO

 doc. WENDWG11-04.1A Draft Proposal for a new IHO Resolution on

 WEND-100 Principles

 doc. IMO Resolution MSC.232(82)

***Related Projects:***

**Introduction / Background**

1. A draft content for a “Governance document on Dual-Fuel ECDIS” is presented in HSSC13-05.1A in response to Action HSSC12/18, in which there is a planned dedicated chapter dealing with ENC and SENC :
2. The term SENC is used quite extensively in the current IMO documentation, especially in its Resolution MSC.232(82) on the Adoption of the revised performance standards for ECDIS. For the record, SENC definition is given as “*System Electronic Navigational Chart (SENC) means a database, in the manufacturer’s internal ECDIS format, resulting from the lossless transformation of the entire ENC contents and its updates. It is this database that is accessed by ECDIS for the display generation and other navigational functions, and is equivalent to an up-to-date paper chart. The SENC may also contain information added by the mariner and information from other sources.*”
3. SENC delivery is introduced in §5.1 of the same resolution :

“*The ECDIS may also be capable of accepting a SENC resulting from conversion of ENC to SENC ashore, in accordance with IHO TR 3.11. This method of ENC supply is known as SENC delivery.”*

1. As emphasized in IHO report to IMO on monitoring of ECDIS issues (NSCR8-13-1) “*S-101 ENCs enjoy a modernized method of encryption to improve robustness against cyber threats*”.
2. The WEND-100 Principles draft (WENDWG11-04.1A), as endorsed by the Assembly (A-2) in November 2020 states that “*Member States should ensure the use of the IHO Data Protection Scheme (S-100 Part 15) for distribution to mariners, to secure data integrity, to safeguard national copyright in data, to protect the mariner from falsified products, and to ensure traceability*.”
3. France made a comment in its answer to Proposal 2.1 “S-100 Implementation Strategy” of Assembly Circular Letter ACL12/2019, and this comment was issued again during A-2 : “*France assumes that the delivery of SENC, which represents a security breach in the S-57 delivery, will not be an option in the S-101 delivery.*”

**Analysis/Discussion**

1. The proposed draft content of the Governance document on Dual-Fuel ECDIS is very thorough but seems to assume that some technical choices have already been made, including the use of SENC within the ECDIS.
2. However, the technical limitations in computers that, at the time, made SENC a necessary means for managing S57 ENCs within the ECDIS are deemed no longer present. Therefore, in a DF ECDIS, a SENC might be used for managing S57 ENCs, but S101 ENCs could well be managed directly ‘as is’, without the need to convert them into a SENC. It is a technical solution that should be left to ECDIS manufacturers and not taken as ‘the’ solution recommended by IHO.
3. More importantly, delivery of S101 ENCs in a SENC format produced ashore would raise cyber-security risks that S100 Part 15 - IHO Data Protection Scheme precisely endeavors to prevent. Indeed, it would mean that between the S101 ENC and the ECDIS used at sea, some major operations (conversion and distribution) would take place, outside the monitoring of Member States and thus in contradiction with the WEND100 Principles.

**Recommendations**

The mention of SENC in IHO documents (specifically the future ‘Governance document on Dual-Fuel ECDIS’) must not be taken as an endorsement of ‘SENC delivery’. Therefore ‘SENC’ should be used with care, if not avoided entirely in a S101 context.

More generally, due to the lack of a common understanding of MS of what is the “dual fuel” concept at this time, it should be made clear that the first redaction of the Governance document on Dual-Fuel ECDIS will be a working document and an opportunity to open the debate and in any case not a finalized description of what is a DF ECDIS.

**Action required of HSSC**

The HSSC is invited to:

1. note this paper
2. confirm that a clear position in regards to SENC delivery is needed
3. instruct S100WG accordingly.