

Paper for Consideration by the HSSC-11

IEC Activities affecting HSSC

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Executive Summary:	This paper is about concerns of IEC about cyber security, guidance from IEC about future inclusion of S-100 into IEC 61174 ECDIS standard, information about IEC activities related to IHO and finally some feedback from stakeholders forum.
Related Documents:	HSSC10-07.4A_IEC_Activities_affecting_HSSC_2018
Related Projects:	N/A

Data cyber security requirements

Introduction / Background / Analysis / Discussion

IEC raised this issue for the first time at HSSC-10, May 2018. The background information and analysis are still the same as the year before. Also, the conclusion of IEC – the authentication of data from IHO sources should be overarching i.e. including all auxiliary files. See HSSC10-07.4A_IEC_Activities_affecting_HSSC_2018.

IEC has noted progress by IHO

- For S-100 compliant products IHO published a new edition 4.0.0 of S-100 in Dec 2018. This new edition adequately addresses the concern of IEC about cyber security
- For S-57 ENC charts IEC has noted that work is still going on by IHO ENCWG. The issue was discussed at ENCWG meeting 2018 and tasks were set to both draft solution for the issue (i.e. edition 1.3.0 of S-63) and to seek approval of industry for the solution. IEC understands that international organizations need time to develop and agree standards. Therefore, currently IEC is pleased to follow up the progress by IHO ENCWG.

Action Required of HSSC

The HSSC is invited to:

1. Note that IEC is pleased about the solution published for S-100 (edition 4.0.0 December 2018)
2. Note that IEC follows the progress about the solution (edition 1.3.0 for S-63) for S-57 ENC charts

Data quality – Compliance with set rules for S-100 based products

Introduction / Background / Analysis / Discussion

IEC raised this issue for the first time at HSSC-10, May 2018, see HSSC10-07.4A_IEC_Activities_affecting_HSSC_2018. The issue is about S-58 equivalent checks for S-100 based products to be performed by the producer before the start of distribution chain towards ECDIS onboard IMO SOLAS compliant vessels.

IEC has noted progress by S-100WG on this issue. Current understanding of IEC is that the data quality – compliance with set rules will be solved by IHO.

Action Required of HSSC

The HSSC is invited to:

1. Note that IEC follows the progress about the solution for Data quality – compliance with set rules

What is needed for IEC 61174 to include S-101, S-102, etc. into a future edition

Introduction / Background / Analysis / Discussion

IEC raised this issue for the first time at HSSC-10, May 2018, see HSSC10-07.4A_IEC_Activities_affecting_HSSC_2018. The issue is about what should be required as minimum mandatory for IMO compliant Product Specification based on S-100 baseline.

IEC has noted progress by S-100WG on this issue. Last S-100WG, March 2019, had input papers about specifying "S-100 Compliancy Levels" and "S-100 Readiness Levels". Further the meeting set a task to draft specification of IMO compliance for the 2020 meeting of the S-100. IEC volunteered to participate in this task.

Action Required of HSSC

The HSSC is invited to:

1. Note that IEC participates within S-100WG the task to draft requirement for IMO compliance

IEC TC80 plans about S-10x Product Specifications

Introduction / Background / Analysis / Discussion

IEC TC80 has established WG17 to address CMDS (Common Maritime Data Structure). The workgroup was created in October 2015. Convenor is Dr. Kwangil Lee (KMOU, Korea). Within IEC TC80 all CMDS works related with shipborne system will be handled in this workgroup. IEC TC80 applied and was granted S-100 domain ownership in December 2016

Short-term work plan covers years from 2018 to 2020. The plan is to draft S-421 Route Plan Exchange (also known as IEC 63173). The base is already published Route Exchange, IEC 61174 Ed4 ECDIS, Annex S, extended by ideas from Testbeds, especially STM validation and SMART navigation. Timeline is:

- Drafting by the workgroup until the end of October 2019
- IEC approval process consisting of CDV and FDIS comments & votings will use the year 2020 and the publication of IEC 63173 is assumed by April 2021

IEC TC80 plan later to contribute to the development of the S-100 framework for non-GI information, but today the ideas within WG17 are not mature enough.

Action Required of HSSC

The HSSC is invited to:

1. Note the information provided

A New Work Proposal in IEC TC80 to create a standard for a part of transfer chain of S-100 compliant data sets

Introduction / Background / Analysis / Discussion

STM validation project has been funded by the European Union and project managed by Swedish Maritime Administration. STM validation is a true testbed of some features of IMO e-Navigation. The project has engaged several ECDIS manufactures, VTS center manufacturers, ship owners, VTS centers, etc. Around 200 real vessels sailing have got STM validation compliant ECDIS and data transfer facilities.

STM validation project has been testing, for example, Route Plan exchange between shore actors and vessel and distribution of Navigational Warnings from shore actors to vessels. Obviously as S-421 from IEC and S-124 from IHO has not been completed the formats used has been "just XML encoded data files". But if the formats had been

the future to be published S-421 and S-124, the STM validation project would have tested real usability of some S-100 based Product Specifications.

The STM validation project has proven in practice that the included aspects of e-Navigation really work in practice. All testbed projects end one day and so the STM validation project will end by summer 2019. Out of technologies tested in the project one can see that Route Exchange will mature as S-421 and Navigational warnings as S-124. The Swedish project management of STM validation project has seen the value of a secure bi-directional transfer method between the shore and vessels. Therefore, they seek a way to develop it as an international standard by IEC TC80. Sweden submitted a New Work Item Proposal "**Secure online transfer of S-100 based products applied on S-421 Route Plan**" to IEC TC80. The proposal is under approval voting until 26th April 2019. If approved to be developed, the target of publication will be summer 2022.

Action Required of HSSC

The HSSC is invited to:

1. Note the information provided

Stakeholder forum

I recently attended IHO NIPWG-6, January 2019, which included one day stakeholder session. Several shipowner organizations attended the forum.

I would like to point out one detail spoken out by shipowners. If an ECDIS using S-100 based products is simple to operate, they do not care if S-100 products are internally complex, or correct management and handling of S-100 based products are complex to manage within an ECDIS. This means that the S-100 as a whole should facilitate machine-based management and handling. This means that management and handling instructions should be in machine-readable format instead of being only in printed format (i.e. as a printed standard).

Action Required of HSSC

The HSSC is invited to:

1. Note the information provided