How legacy ECDIS systems could benefit from S-124

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SUMMARY

Executive Summary: By the time that S-100 ECDIS Performance Standard enters into force, operational specifications of S-100 Phase 1 (Route Monitoring) products must be available. This includes an operational edition of S-124 product specification. However, at that point in time the great majority of vessels will be using legacy ECDIS that will not be able to benefit from S-124 data. This paper introduces an approach stating how S-124 could be converted to also supply legacy ECDIS with S-124 information.

Action to be taken: see below

Related documents: none

Introduction and Background

Today navigational warnings are sent using methods such as Navtex, Safetynet, or IP-based solutions. Often they do not directly feed into onboard ECDIS, and manual integration of navigational warnings is a cumbersome process.

S-124 will help to efficiently integrate navigational warnings into future ECDIS. The aim is to assist the mariner with proper route planning and voyage monitoring, without manual interaction. Currently, some service providers are already working on solutions for disseminating S-124 information. Ideally the entire process, from creating S-124 data to taking that data into ECDIS, should be automated as much as possible.

Like all other S-100 Phase 1 products, S-124 will comply both with the relevant operational product specifications and with the S-100 framework. This guarantees a smooth integration of the data into S-100 ECDIS. However, the vast majority of ECDIS units (legacy ECDIS) will not be able to benefit from S-100 data directly.

Analysis/Discussion

The S-124 product specification has been designed to comply with all the standards relevant to the forthcoming introduction of S-100 ECDIS. However, at the time the S-100 ECDIS Performance Standard enters into force (01 Jan. 2029) and S-124 distribution services are in place, the vast majority of SOLAS vessels will still be using legacy ECDIS that will not be capable of consuming any of the S-100 data layers. This means that, for an unforeseeable period, there will be hardly any ECDIS users that can benefit from S-124 information.

This problem could be overcome if the S-124 data would be available in formats that legacy ECDIS systems can read and display without the need to update the old systems.

One option would be to extend the Admiralty Information Overlay (AIO) service, to also include navigational warnings derived from S-124. Today AIO provides information about Admiralty charts, T&P notices and other supplementary information, but provides no navigational warning. However, even if UKHO (as the owner of the service) would agree, ECDIS systems would have to be extended and updated first, to read AIO-based navigational warnings with more intuitive presentation.

Already years ago industry introduced services that provide legacy ECDIS with detailed and up-to-date navigational warnings and nautical publications in digital form. The source data is collected from various official sources, processed, and provided as geospatial information layers in various ECDIS proprietary overlay formats. Existing established distribution methods are used. Once loaded into ECDIS, the information layers are visualized as overlays in the same manner as mariners' notes are displayed[1].

In the future – when available - S-124 data could be processed and converted into such proprietary ECDIS overlay formats, in the same way as described above, and distributed to legacy ECDIS Systems using established distribution methods. It is assumed that approximately 70 percent of the legacy ECDIS installations could be reached with this approach.

Conclusions

The introduction of S-124 services on a global scale will be the future method of supplying vessels (equipped with S-100 ECDIS) with navigational warning information. However, the vast majority of vessels (those with legacy ECDIS) will not be able to benefit from this information until their ECDIS is updated to support S-100.

S-124 data can be converted into a format that legacy ECDIS systems are able to read. There is no need to modify legacy ECDIS systems. Existing IP-based distribution channels for ENC distribution can be used.

Recommendations

Acknowledge complementary services that are derived from S-124 and that will provide navigational warning information in ECDIS proprietary formats, to vessels that have legacy ECDIS. Such services could be delivered both by governmental authorities and by data-service providers. ECDIS OEMs should be encouraged to 'open' their user-chart formats for those services.

Justifications

All mariners can benefit from S-124 data services as soon as they are established.

[1] Every ECDIS provides editing functions to let the mariners create their own overlay with individual notes.

Actions to be taken

WWNWS invited to

- note this paper
- encourage OEMs of legacy ECDIS to 'open' their proprietary formats for the data-service providers, in order to be able to let as many mariners as possible participate in the proposed service
- provide interfaces for automatic retrieval of digital nav warning information (S-124 or other) from authorities to service providers
- acknowledge the proposed service as a complementary means of dissemination of S-124 for legacy ECDIS