

Paper for Consideration by S100TSM9**Release Notes for S-164 edition 1.0.0**

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Executive Summary:	A draft of S-164 edition 1.0.0 has been compiled and submitted to S-100TSM9. Some explanatory notes are presented in order to understand the structure and content.
Related Documents:	IHO S-64
Related Projects:	IMO and S-100

Introduction / Background

An initial draft of S-164 has been submitted to S100WG TSM9. This presents a rewrite of the existing S-64 structured to support testing of S-100 ECDIS, including Dual Fuel mode. This paper documents some release notes, to be borne in mind whilst reviewing and contributing to the further development of the draft.

As a v1.0.0 S-164 exists for the purpose of testing. The object of such testing is to

1. Review the content present
2. Establish if it is complete and what needs to be added (and, in some cases, taken away)
3. Where any remaining gaps exist in IHO standards supporting ECDIS testing
4. If the requirements of the stakeholder communities are sufficiently served by S-164

Analysis/Discussion**Structure**

The draft uses a structure agreed by the S-164 subWG and derives much of its content from S-64 (which, in turn reflects the major components of the IMO/IEC standards). The structure of S-164 is:

1. Introductions, Preface etc..
2. S-100 tests
3. Testing of legacy S-57 operations (this is a reference to the existing, unchanged S-64 test datasets)
4. Testing of Dual Fuel mode.

Notes

1. The format, structure and much of the language mirrors the existing S-64. Some text has been left in and greyed out (“**greyed out**”). This should be ignored but is sometimes useful to understand where elements are not required under the S-164 regime.
2. All the language in S-164 (with a few minor exceptions) is now S-100 based and refers to exchange sets, datasets, features/attributes and ENC.
3. Brand new tests have a **blue** background, old tests and modified/enhanced tests are traditional S-64 **green**. For final publication these colours will be harmonised.
4. There are no new S-100 screenshots yet and many of the tests still have the existing S-64 screenshots in them. Currently neither the datasets nor the portrayal catalogues exist to produce these definitively. Some will be produced based on the existing data available but these will be normative until more development of the test datasets and final version of catalogues is complete. A reference implementation

of a Dual Fuel mode capable system will be required for tests requiring dual fuel mode. During the TSM9 meeting a number of candidate screenshots will be presented.

5. Tests are now named (using CamelCase) rather than numbered in the tables. This makes management of the document substantially easier as the cross references are named, rather than numbered. Some work has been done generating the final PDF from metanorma/asciidoc sources using Github which is eases shared development considerably (and the mapping to screenshots). Using metanorma all tables and sections numbering is automatic so the tables may well have names/numbers when the migration to metanorma is complete.
6. The tables still refer to S-52 in the reference section .As IEC61174 and S-98 are still under development the final references are not known in all cases. These are being compiled separately and will be updated in the draft when complete. A mapping of S-98 Annex C, S-100 Part 17 and S-100 Part 15 needs to be completed to ensure all new S-100 features are captured. Final checks of SSE codes from the S-63 ones to those tested in S-164 need to be done.
7. New coverage diagrams have been produced but a style and explanatory text needs to be defined. Additional coverage diagrams are required for the Dual Fuel mode section. The coverage of the S-164 test datasets is largely identical to the existing S-64 test datasets. Where supplementary datasets are required the existing S-101 test datasets scheming can be used and work with the S-101PT will help to achieve those. Dual fuel exchange sets will be schemed by including S-101 versions of the existing S-57 test datasets. Safety contour and alerts and indications duel fuel mode tests will be alongside the existing S-57 tests to allow routes to be drawn through features in each format without requiring multiple tests. Coverage of encrypted/service management tests will be unschemed (as they are in S-64).
8. All data loading is done from named exchange sets (the existing S-64 requires install of individual datasets from named exchange sets, this feature is no longer required in order to run the tests).
9. The concepts of “unofficial data” (determined by the producer code) and “no data coverage” do not exist in the S-100 world and those tests are no longer required.
10. There may be a better way of describing the individual portrayal settings for each test. Standardised language for these could be defined. This was always a
11. A number of tests are no longer required in the “encrypted” dataset section (under S-57 service revision was almost entirely done within S-63), reflecting the simpler approach to service provision under S-100 (i.e. no PRODUCTS.TXT, SERIAL.ENC, STATUS.LST or large media support). A number of other papers comment on how Part 17 functions and how service providers can implement services to ECDIS. As these discussions mature modifications may need to be made to S-164 tests.
12. The S-164 draft is supported by an extensive spreadsheet which maps the named tests to the exchanges sets required and notes the contents of these exchange sets (and their requirements). This gives an outline of dataset requirements for S-164 support.
13. SENC import requirements are greyed out. There is nothing, technically, to prohibit rewriting the SENC import tests in an S-100 language. This requires discussion within the S-100WG from a technical/standards perspective.

The following observations were raised during the drafting of S-164. These should be addressed in one or more of the TSM9 discussions.

Some S-164 questions.

The presentation of S-164 will go into more detail on the document structure, content, data scheming and dataset development required.. The following suggestions are proposed for focusing such discussions.

1. Service management tests – we don’t have a view on how ECDIS imports data, given an exchange set. It “should” import everything it has a permit for, which is unencrypted and which is S-100 (in preference to S-57) but there is no standard for this. This also includes the interaction with S-128 and its role in controlling service revision on the ECDIS. As S-128 matures these tests may need supplementing or changes and more clarification is needed to guide implementers.

2. The term “SENC” has been replaced by “System Database” – is this the correct term to refer to the internal database of the ECDIS? S-98 refers to SENC in many places (referring to MSC 232(82)
3. Are the Skin of the Earth tests also intended for S-100/S-101? They have not been migrated, although they could be. As they address an individual anomaly within the S-57 topology/data structure it could be argued there is little justification for their inclusion in a generic S-100 ECDIS but this requires discussion and agreement within the S-164 SubWG and S-100WG.
4. Is there a requirement for an S-100 ECDIS to load individual datasets, or just exchange sets? The S-164 tests show that it is possible to only refer to the loading of exchange sets. This isn't stated anywhere , possibly it should be added to S-98.
5. S-52 PL 8.5.1 (apparently) says OEMs can develop their own centred symbol algorithms. Where is this specified now?
6. There is a test of “complex portrayal” – this contained all the S-52 CSP features and exercised various aspects of them. Now the CSPs have been deleted from Part 9 is there a need to keep this test. It could hold tests of particularly complex portrayal (where Lua based processes are used, or where complex attribution determines portrayal behaviour). These should be discussed and agreed.
7. Where are mariner's features and the detailed requirement for their implementation described?
8. On S-57/S-63 ECDIS data which is digitally signed (and for which the CRC value in the CATALOG.031 is valid) but which can not be authenticated back to the SA is still installed but a permanent warning is shown to the user on import. Under S-100 there are no more CRC values so it should be decided whether data which can not be authenticated back to the SA should be imported (with similar error messages). Or, data can only be imported if it is digitally signed, unaltered and authenticated against the SA certificate on the system.
9. Is this section still required? As the portrayal mechanism is brand new it probably shouldn't, although it is possible we may need new specification of display parameters...

1.10 Notes on ECDIS screen samples (*still required?*)

The following notes may be applicable to the ECDIS screen samples within this document:

Light Descriptions

Between the light characteristics abbreviation and the colour attribute it is acceptable for the ECDIS to display the light description text with or without a space. There must be a space between the light colour and signal period, for example:

FI W 30s7m10M or ~~FIW~~ 30s7m10M are both acceptable options

Further details are given in S-52 Presentation Library edition 4.0.2 Part 1 10.6.3 Light Description Text Strings

Light Descriptions for Sectored Lights

The light description text string is normally not used for sector lights because it would cause clutter however OEMs are not prevented from doing so. Where OEMs have displayed the text strings in their ECDIS they must provide a method to select/deselect them from the ECDIS display. Further details are available in S-52 Presentation Library edition 4.0.2 Part 1 LIGHTS06 conditional symbology procedure.

Centred Symbols

There is no algorithm specified for OEMs to calculate the centre of an area. Therefore depending on the ECDIS there maybe instances where the centred symbol is not visible. If the centred symbol is not visible in the ECDIS display the zoom level should be increased until the symbol becomes visible

Conclusions

- A number of areas for review are noted in the draft of S-164 1.0.0 and these are highlighted to guide discussions at S-100WG TSM9. Additionally refinements, tests and recommendations for other standards will be

Action Required of S-100WG

The S-100WG is invited to:

Note the paper and discuss proposed changes