S-101PT12-06.16: Identification in S-101 for equivalent S-57 ENCs

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| IC-ENC S-57 and S-101 Dual Fuel Validation Service | Member HO S-57 and S-101 (FTP) | Ingest and Registration Checks | Main Data Validation | Exchange Set Creation | Data Output | VARs receive data S-57 and S-101 |
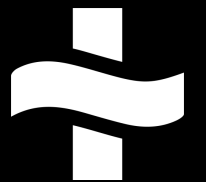
Introduction/Background

The IHO S-100 Implementation Strategy states:

*In order to maintain ECDIS devices already installed on SOLAS vessels which are technically not ready nor required to be upgraded to S-101 ENC process capability and to be in line with the applicable IMO regulations pertaining to existing navigation equipment, **identical coverage has to be provided for S-57 ENCs and S-101 ENCs for a transition period** until the end of the decade.*
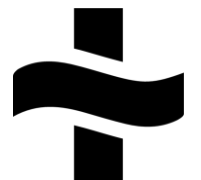
- Members providing both S-57 and S-101 ENCs during DF transition period.

- For IC-ENC, essential to identify equivalent S-57 ENCs in S-101 ENCs to ensure consistent coverage and provide optimised validation for Members to support the dual fuel transition.
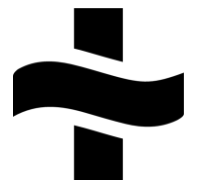
Analysis/Discussion

- RENCs receiving both S-57 and S-101 ENCs from Members during DF transition period.

- Identification is therefore imperative to ensure consistent validation of S-57 and S-101 in the RENCs.

- IC-ENC has explored how to identify equivalent S-57 ENCs in S-101 and provides 4 options to achieve this with recommendation.

- No mechanism for Data Producers to provide information on the corresponding S-57 ENCs during DF production.

- Number of options are available within S-101 and S-128 to enable the identification of equivalent S-57 ENCs.
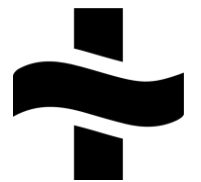
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Option a)

S-101 file naming convention: 8th to 15th characters in the dataset file name could be utilised to contain the equivalent S-57 ENC, as shown in the example below:

- S-57 - GB100100.000

- S-101 - 101GB00GB100100.000

Data producers may decide to do this, however, this method is not considered desirable, as it introduces over specification. Therefore, only the first seven characters of a dataset name and the extension are standardised in S-100.

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Option b)

Extension of S100_DatasetDiscoveryMetadata for S-101, to include new attribute to identify corresponding S-57 ENC, such as:
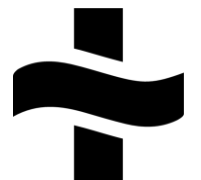
Name	Description	Mult	Type	Remarks
equivalentS57ENC	Cell name	1	CharacterString	Corresponding S-57 ENC

Noting the IHO requirement for identical coverage of S-57 and S-101 ENCs, this attribute would be mandatory (1..*) during the dual fuel transition period. No change to S-100 Part 17 is needed, as this is only required in S-101. This attribute is necessary for identification of equivalent S-57 ENCs, required by RENCs to ensure consistent coverage of S-57 and S-101 ENCs and optimised validation, and S-128 generation.

To note: RENCs will generate S-128 datasets on behalf of Members at the release stage. Reference: WENDWG13-06.3A.

S-128 datasets will contain (currently a gap in S-128) corresponding S-57 ENC dataset names for the S-101 ENCs to provide the necessary information to the VARs and ECDIS.

To note: As discussed at the NIPWG S-128 VTC meeting, equivalence in S-128, will provide what is available at input for the ECDIS not what is available in the ECDIS, and is therefore not relevant to ECDIS loading strategies. S-98 Annex C may require updating to read the S-128.
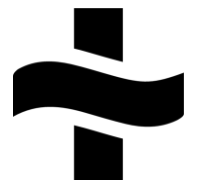
Option c)

S-101 datasets: use of the Dataset metadata in ISO format (S100_ResourcePurpose) to provide information required to identify equivalent S-57 ENCs.

Role Name	Name	Description	Code	Remarks
Value	ISO Metadata	Dataset metadata in ISO format	11*	

This information can then be mapped across to populate the relevant metadata field in the S-128 datasets (development required in S-128) generated by the RENCs.

The S-100 Exchange Set model provides a mechanism for including ISO compliant metadata records for each dataset in an Exchange Set. These optional supporting resources can be included and referenced using the individual ISOMetadataFile records. They are not intended to be used on ECDIS, but may be optionally included to support wider interoperability with other user communities or to fulfil ISO metadata requirements where needed.

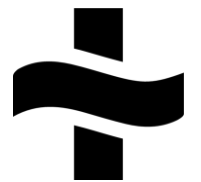*To note: S-101 Edition 1.2.0 (redline) shows Code has changed from 11 to 2.

![IC-ENC logo]

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Option d)

On upload of ENCs to RENCs, Members provide S-128 datasets which contain information to identify equivalent S-57 ENCs (development required in S-128).

This is not considered desirable, as the responsibility would be on all Members to produce S-128 datasets when uploading ENC data to RENCs, in order to identify equivalent S-57 ENCs (Reference to WENDWG paper in option b).

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Conclusions

IC-ENC has considered the four options above and provides a conclusion for each option.

Option a: S-101 file naming convention

Naming convention was discussed at S-100WG7, with the conclusion that it introduces over specification, and therefore, this option is not considered desirable.

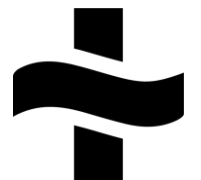## Option b: new equivalentS57ENC attribute

Provides the optimum solution as it could be automated through the production tooling. Also provides a route for non-RENC Data Producers. This is also useful for Data Producers to track their migration from S-57 to S-101 ENCs.

Option c: ISO metadata

This could be utilised, however, for consistency Option B is preferable, as it provides a dedicated attribute for equivalent S-57 ENCs.

Option d: S-128

Noting the joint RENC paper to WENDWG (13-06.3A), the RENCs will generate S-128 datasets on behalf of their Members, and therefore reduce their burden during the dual fuel transition period.

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Recommendations

Based on the conclusions, IC-ENC proposes that the S-101PT consider implementing **Option b)** as the optimum solution for identifying equivalent S-57 ENCs in S-101.

Option b) to extend the S100_DatasetDiscoveryMetadata to include a new attribute **equivalentS57ENC**

Justification and Impacts

- Option b) provides the optimum solution for the identification of S-57 ENCs in S-101 to ensure consistent coverage and provide optimised validation.

- Useful for Data Producers to track their migration from S-57 to S-101 ENCs without additional resource as it could be automated through their production tooling. This also provides a route for non-RENC Data Producers.

- Negates requirement for Members to produce S-128 datasets for S-101 to provide equivalent S-57 ENC information, and for RENCs to ingest S-128 datasets to retrieve equivalent ENC information.

- Supports the provision of both S-57 and S-101 datasets and then S-128 shows which one should be used, but also allows VARs to create coherent services themselves at S-101 level; having both options is preferred at this stage.
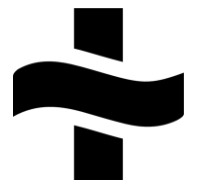
Action Required of S-101PT

The S-101PT is invited to:

Discuss and agree on this proposal.