Paper for Consideration by TSMAD and DIPWG

# S-57 to S-101 open source data translator

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| *Submitted by:* | S-101 Work Item Leader |
| *Executive Summary:* | This paper will report on the work done by ESRI regarding the S-57 to S-101 open source data translator |
| *Related Documents:* | N/A |
| *Related Projects:* | |

## Introduction / Background

In the past year it has come to light that there is a need for an open source translator for S-57 data to S-101 data. This stand-alone translator will enable hydrographic offices, software manufacturers and ECDIS manufactures to read in S-57 data and translate it into S-101 data. In developing this translator it will enable a smooth transition to S-101, by allowing current S-57 data to be converted to S-101 data that can be read in an S-101 enabled ECDIS. In addition, it will be able to provide S-101 test data for development use.

## Analysis/Discussion

In order to progress this work, NOAA contracted ESRI to provide an open source S-57 to S-101 translator to be turned over to the IHO when completed. This work is an important step forward in providing initial test data for S-101, but also enabling the IHO to have a proper phase in date for S-101 as there will be a period of time where there will be S-57 and S-101 based ECDIS systems in operation. The overall project requirements are as follows:

1. The translator will become open source and the property of NOAA
2. The programming language used should be a maintainable language such as Visual Basic, C++, or C Sharp
3. The translator should be a standalone application and not require additional add ons
4. The translator should read existing S-57 8211 and convert the data into S-101 8211 and produce an S-101 base cell.
5. An investigation of the feasibility to produce updates via this translator and a recommendation for the way forward.
6. The S-101 output should utilize the new feature types and complex attributes that are defined in the S-101 Feature Catalogue.
7. The translator should map the existing S-57 features to their S-101 equivalents. These mappings will take into account the use of complex attributes and information types in S-101. The following are some examples but not an exhaustive list:
    a. In S-57 each sector is encoded as a separate light, however, in S-101 the sector light will be one light with many sectors encoded as complex attributes.
8. In Sea Bed areas the NATSUR and NATQUA set of attributes will be encoded as a complex attribute.

At TSMAD 21, the membership revised the S-100 8211 and the S-101 8211 in order for this work to progress. ESRI delivered the prototype to NOAA in March and it's functionality will be demonstrated at this meeting.

## Conclusions

The convertor is only a small part of the S-101 project and it is hoped that it will feed into the S-101 test bed process. However, as noted in the paper on the S-101 project update there is still a need for an S-101 viewer and editor to ensure proper testing of the entire process has occurred prior to finalization.

## Action Required of [HSSC] [Relevant HSSC WG]

The TSMAD and DIPWG is invited to:

- endorse the S-57 to S-101 open source translator
- discuss the way forward for a full S-101 testbed