Paper for Consideration by TSMAD

S-100 Route Exchange Specification

Submitted by:	UK
Executive Summary:	This paper outlines a requirement for S-100 ECDIS to support a common format for route exchange. It outlines a possible approach and invites TSMAD to take this forward as part of the wider S-100 'project'.
Related Documents:	1. S-100
Related Projects:	1. S-100

Introduction / Background

1. The UK has received user feedback that a standard format for the exchange of basic route information between ECDIS systems is required. Currently systems provide proprietary formats for the exchange of route information, but with a variety of systems on the market it can be difficult to exchange routes and mariners object information.

Analysis/Discussion

2.   The UK has prepared a draft 'data' specification which reflects that this is an ad hoc data exchange and not a traditional 'product' as with ENC. This is based closely on the existing mariner's objects features and attributes as currently included in S-52. The UK notes that the remaining mariners objects items such as own vessel, electronic bearing line etc should also be specified as a 'data' specification which would be internal to ECDIS . This approach would allow for future changes in particular as E-Navigation develops. The proposed data model is presented in figure 1below and the full draft Product Specification accompanies this paper.
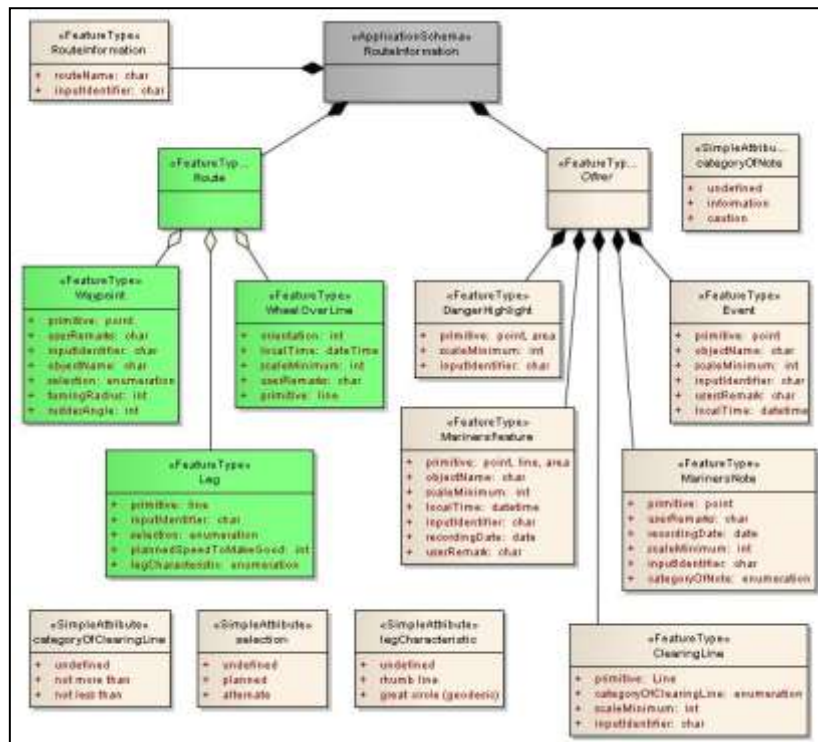

Figure 1- Proposed data model for Route Information

3.   One dependency for this specification would be the addition of an XML encoding to S-100 as proposed in the accompanying UK paper. It is clear that such a lightweight encapsulation is required for products such as this and more are likely to come along as S-100 is used more widely in support of E-navigation. XML is a sensible solution for this requirement as it can be easily integrated into other software and even edited manually by the user if required.

4.   One advantage of taking a product specification approach is the ability to control display in ECDIS. A draft portrayal catalogue based on current work in script language form also accompanies this paper. In addition an application schema and sample dataset is also provided. The display is currently based on existing S-52 but this provides a good example of how S-100 portrayal will work in a small manageable example.

5.   The vision for S-100 ECDIS would be that all ECDIS systems must support import and export of data in this format. Manufacturers could go further and provide expanded versions which can be exchanged between their systems or other systems. Data exported in these forms would work in all systems but would only have the functionality provided in this specification. It is clear that a common structure needs to be provided to ensure consistency across ECDIS systems whilst meeting the user need to exchange this information.

Conclusion

6.   This work stems from a clear user need and would add to the perceived benefits of S-100 ECDIS. More development work is required and testing in any S-100 viewer would be required. However the UK feels that this solution provides the best balance of standardisation whilst allowing systems to go further and expand this in their proprietary formats.

Action Required of TSMAD

- To consider the draft Product Specification submitted for inclusion as a TSMAD work item for further development.

Attachments

- Route Information Data Specification

- Route Information draft Portrayal Catalogue

- Route Information Application Schema

- Example dataset