

Paper for Consideration by DIPWG

S-100 Portrayal Development

Submitted by:	DIPWG Chair and Portrayal sub-WG Chair
Executive Summary:	This paper outlines the work that has been done on the S-100 portrayal model.
Related Documents:	TSMAD24/DIPWG4-09.1A TSMAD24/DIPWG4-09.1B TSMAD24/DIPWG4-09.1C
Related Projects:	S-100

Introduction / Background

In January 2010, S-100 was published by the IHO as the Universal Hydrographic Data Model. While S-100 should be considered a complete framework to create a multitude of different product specifications, it is still missing a critical component – Portrayal.

While there are numerous reasons that portrayal was missing from the 2010 edition, DIPWG with the help of TSMAD have moved this endeavour forward. At DIPWG 3 in Seoul a sub-WG was formed to continue the portrayal development. The work was led by the UKHO and the sub-WG membership consisted of the following participants: Caris, Furuno, IIC, Jeppesen Marine, SevenCs, and Transas.

After initial discussions in a breakout meeting in Seoul the sub-WG held two meetings in Taunton and Hamburg and a further breakout meeting during TSMAD 23 in Wellington to progress the S-100 portrayal model and to develop a method for creating a machine readable portrayal catalogue. The result of this work is a draft S-100 portrayal model with an informative annex outlining a bespoke script language which could be used to process the catalogue data.

Analysis/Discussion

During the period of development some key factors were discussed and agreed to at the sub-WG level. Firstly, it was agreed that the discussions would be limited to that of developing a generic portrayal solution for S-100. Secondly, it was also agreed that a portrayal catalogue based on the model should be machine readable, but that there should not be any content attempting to provide a solution for processing the portrayal catalogue in any system using it. Thus, it is up for discussion whether the script language, which is currently informative, should be retained or not.

The draft S-100 Portrayal document outlines the general portrayal model that was agreed to by the sub-WG. During this process various options were studied including the World Wide Web Consortium's (W3C) XSLT, and the Open Geospatial Consortium's (OGC) Symbology Encoding and Filter Encoding. Due to the complex nature of the IHO portrayal requirement it was considered that all these options required significant extensions which nullified any expectation of interoperability.

The model consists of three main packages – Graphics, Presentation, Expressions and Statements. The graphics package mostly follows common practice as prescribed by ISO 19117.

Recommendations

Some things to consider while weighing the pros and cons of the individual elements of the sub-WG's efforts and the various alternative approaches presented include the following:

1. Which portions of the model can be accepted without further debate and which parts require further consideration?
2. Will the Portrayal Catalogue be 100% machine readable?
3. Will all requirements of the IMO ECDIS Performance Standards be fulfilled with the approach?

4. Are there mechanisms to support representing the complex logic in all of the existing Conditional Symbology Procedures (CSPs), including soundings, safety contour, lights, etc?
5. Are there mechanisms to support concepts such as colour tokens, edge replacement, centered symbols, etc?

Action Required of DIPWG

The DIPWG is invited to:

Consider the relative strengths and weaknesses of the results of the sub-WG efforts while considering the alternative solutions provided by CARIS and Jeppesen Marine.