

Paper for Consideration by TSMAD/ DIPWG

S-101 Portrayal Catalogue

<i>Submitted by:</i>	UK
<i>Executive Summary:</i>	This paper reports on the development of the S-101 Portrayal Catalogue and the development of a Portrayal Catalogue Builder Application to support its development. It poses questions which have come out of this development so far. It also outlines a plan for further progress to enable the production of a draft S-101 Portrayal Catalogue.
<i>Related Documents:</i>	1. N/A
<i>Related Projects:</i>	1. S-101

Introduction / Background

1. Following discussion at the last TSMAD/DIPWG joint meeting in Rostock the UK took on an action to Take forward the development of the S-101 Portrayal Catalogue based on the work of CARIS and Geomod. This was based on the following assumptions;

- The Portrayal Catalogue would consist of rules contained in an XSLT file and symbols in an accompanying XML document.
- The updating of the Portrayal Catalogue would be a two stage process where OEMs would implement the IHO produced XSLT and XML files so that users could update their systems.
- The Portrayal Catalogue content would be based on the existing S-52 look up tables/symbols for its initial development.

This paper reports on the progress of this work and poses some questions regarding the development. It goes on to propose a plan to progress this work with the aim of producing an S-101 Portrayal Catalogue to support further S-101 development.

Analysis/Discussion

2. The Portrayal Catalogue consists of two parts; Display Rules in XSLT and Symbology Specifications in XML. The display rules read the values from an ENC dataset and based on the logic in the XSLT assign symbols and display parameters accordingly. In most cases this is a simple translation of the content of the look up tables, for CSPs this is more complex and may require external files to contain loops and more complex logic. The Symbol Specifications contain all details of the symbols which may be required.

Display Rules Structure

The Display Rules XSL consists of a number of XSL Templates each Feature has a template and within this template a number of Choose statements determine the symbol(s) and display parameters to be written. Then the XSL Templates which write the XML output take these parameters and write an XML output file which contains the symbology instructions and display parameters for each feature.

```

<xsl:template name="SymbRecord4">
<xsl:template name="SymbRecord5">
<xsl:template match="RTPBCN"> <xsl:template name="SymbRecord3">
<xsl:template name="RTPBCN00">
  <xsl:choose>
    <xsl:when test="type='point'">
      <xsl:call-template name="SymbRecord1">
        <xsl:with-param name="syminst" select="SY(RTPBCN02)"/>
        <xsl:with-param name="dismode" select="STANDARD"/>
        <xsl:with-param name="dispri" select="6"/>
        <xsl:with-param name="radar" select="0"/>
        <xsl:with-param name="disgrup" select="27210"/>
      </xsl:call-template>
    </xsl:when>
    <xsl:otherwise>
  </xsl:otherwise>
</xsl:choose>
</xsl:template>
<xsl:template match="BCNCAR">

```

Figure 1 – Simple Display Rule for a feature type with a single symbol instruction and a single geometry type.

```

<xsl:template name="BERTHS00">
<xsl:template match="BOYCAR">
<xsl:template name="BOYCAR00">
  <xsl:choose>
    <xsl:when test="type='point'">
      <xsl:choose>
        <xsl:when test="BOYSHP=5 or BOYSHP=8">
          <xsl:call-template name="SymbRecord2">
            <xsl:with-param name="syminst" select="SY(BOYSPR01)"/>
            <xsl:with-param name="prefix" select=""/>
            <xsl:with-param name="hjust" select="2"/>
            <xsl:with-param name="vjust" select="1"/>
            <xsl:with-param name="space" select="2"/>
            <xsl:with-param name="chars" select="15110"/>
            <xsl:with-param name="offsetx" select="-1"/>
            <xsl:with-param name="offsety" select="-1"/>
            <xsl:with-param name="colour" select="CHBLK"/>
            <xsl:with-param name="display" select="21"/>
            <xsl:with-param name="dismode" select="STANDARD"/>
            <xsl:with-param name="dispri" select="8"/>
            <xsl:with-param name="radar" select="0"/>
            <xsl:with-param name="disgrup" select="27010"/>
          </xsl:call-template>
        </xsl:when>
        <xsl:when test="BOYSHP=3">
          <xsl:call-template name="SymbRecord2">
            <xsl:with-param name="syminst" select="SY(BOYSPH01)"/>
            <xsl:with-param name="prefix" select=""/>
            <xsl:with-param name="hjust" select="2"/>
            <xsl:with-param name="vjust" select="1"/>

```

Figure 2 –More complex Display Rule for a feature type with multiple symbol instructions based on attribute values and a single geometry type.

```

<?xml version="1.0" encoding="iso-8859-1"?>
<xsl:transform version="1.0" xmlns:xsl="http://www.w3.org/1999/XSL/Transform" xm
<xsl:output method="xml" encoding="UTF-8" indent="yes" omit-xml-declaration="
<xsl:template name="SymbRecord1">
  <xsl:param name="syminst">SY(quesmark)</xsl:param>
  <xsl:param name="dismode">MODE</xsl:param>
  <xsl:param name="dispri"/>
  <xsl:param name="disgrup"/>
  <xsl:param name="radar"/>
  <xsl:element name="Symbolization">
    <xsl:element name="FOID">
      <xsl:value-of select="FOID"/>
    </xsl:element>
    <xsl:element name="SYMINST">
      <xsl:value-of select="$syminst"/>
    </xsl:element>
    <xsl:element name="DISMODE">
      <xsl:value-of select="$dismode"/>
    </xsl:element>
    <xsl:element name="DISPRI">
      <xsl:value-of select="$dispri"/>
    </xsl:element>
    <xsl:element name="RADAR">
      <xsl:value-of select="$radar"/>
    </xsl:element>
    <xsl:element name="DISGRUP">
      <xsl:value-of select="$disgrup"/>
    </xsl:element>
  </xsl:element>
</xsl:template>

```

Figure 3 – XSL Template which reads in the parameters from the display Rules and writes the output as XML.

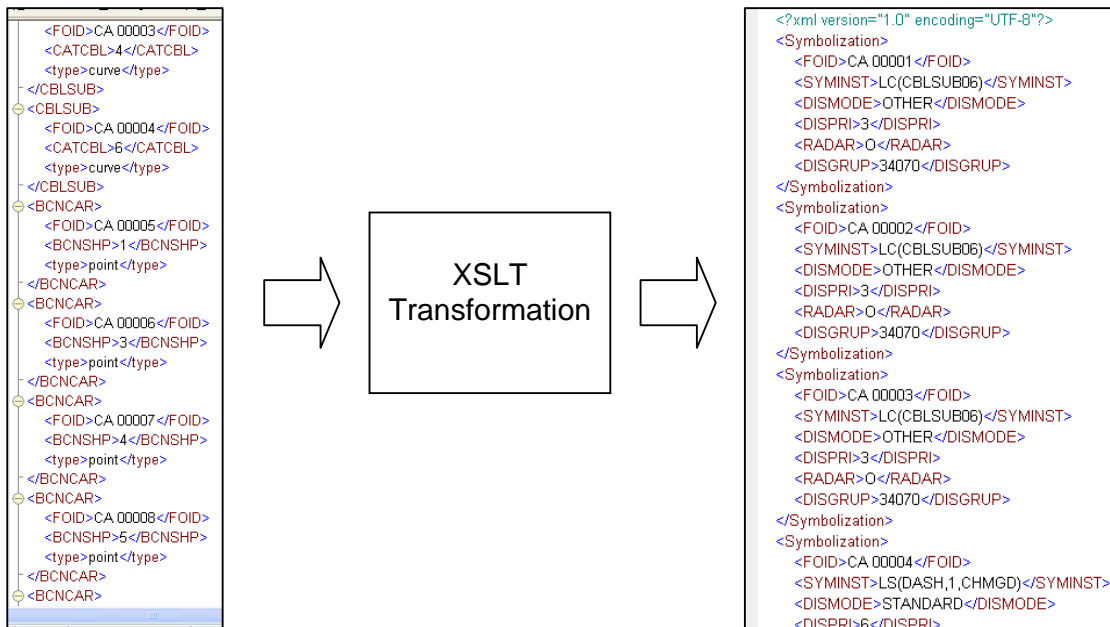


Figure 4 – XML input file and XML output file showing how the FOID is carried through and the display parameters are created based on the feature/attribute combination.

An XSLT file accompanies this paper with example Display Rules for a selection of ENC features.

Symbol Specifications Structure

The symbol Specification structure follows the work of Geomod and symbols added to the Portrayal Catalogue are selected from the Portrayal Registry and output as XML.

3. This work poses some significant questions for DIPWG and TSMAD which will shape the development of the Portrayal Catalogue.

1) Display Modes

Are existing display modes appropriate should additional modes be added? e.g. seabed operations
Is Display Base still required?

2) Temporal/Scale Attributes

Should these attributes be carried in the display output file in order to drive display?

These would be;

DATSTA, DATEND, PERSTA, PEREND, SCAMIN, SCAMAX

3) Text

How do we wish text to be carried in the Portrayal Catalogue? currently it follows S-52 but the TX/TE instructions have been broken down into parameters. Is there a better approach?

4) Feature Catalogue

How we will resolve cases where changes to the Feature Catalogue would simplify Portrayal?

4. The S-100 Portrayal Catalogue Builder is a Java web application which draws on various databases to construct an S-100 Portrayal Catalogue. Primarily the builder draws on a specific Feature Catalogue and the Portrayal Registry and allows the user to build Portrayal Rules and add symbology for each Feature in the Feature Catalogue. Upon completion XSL display rules and XML symbol specifications can be output.

5. In order to progress this work and produce a draft S-101 Portrayal Catalogue the following elements need to be completed;

- a. Finalise the Portrayal Catalogue Structure
- b. Finalise the Portrayal Catalogue Builder Application
- c. Define how each Conditional Symbology Procedure will be incorporated considering changes to the Feature Catalogue where appropriate
- d. Development of the Portrayal Registry
- e. Population of the Portrayal Registry
- f. Production of a draft Portrayal Catalogue for S-101
- g. Test/Develop Catalogue

Conclusions

6. The development of the S-101 Portrayal Catalogue is a key element of S-101 and a dependency for any Viewer. This work has begun the process of defining the structure and content of the Portrayal Catalogue but some significant questions remain and the production of a draft S-101 Portrayal Catalogue based on S-52 will be a considerable task.

Action Required of TSMAD and DIPWG

The TSMAD and DIPWG is invited to:

- a. Note the progress reported in this paper
- b. Discuss the questions posed as part of this development
- c. Discuss the plan to progress this work