SMS_STYLES_DXF Customizations
SMS_STYLES_DXF_Customization.doc
Status: Draft
Author: Nautilus-HSV

HEXAGON

SMS_STYLES_DXF Customizations

September 29th, 2017

© 2024 Hexagon ALI and/or its subsidiaries and affiliates. All rights reserved.

The content of this document is proprietary work of Hexagon ALI, or relevant third parties, and is protected by copyright law and international treaty. Any use, duplication, distribution or disclosure of such, other than as specified herein, is unauthorized and in violation of applicable copyright law and international treaty. All rights in content or materials bearing copyright notice or other attribution of third party rights are reserved to the relevant third party. United States Government license rights are limited to those mandatory rights identified in DFARS 252.227-7015(b).

Hexagon ALI may make improvements and/or changes in the products and/or the programs described in this publication at any time without notice.

Any content or materials supplied hereunder are provided "as is," without warranty of any kind, either expressed or implied, including, but not limited to, any implied warranties of merchantability, fitness for a particular purpose, or against infringement. In no event shall Hexagon ALI be liable for any damages arising out of, or in connection with the downloading, viewing, use, duplication, distribution or disclosure of any content or material published by Hexagon ALI, including but not limited to any direct, indirect, incidental, special, punitive or consequential damages, or loss or corruption of data.

Some jurisdictions do not allow the exclusions or limitations set forth above, so the above may not apply to you. The exclusions or limitations shall apply in all jurisdictions to the maximum extent allowed by law.

HEXAGON

Contents

Revision #	Date Revised	Revised By	Description
0.1	2016-12-12	Bruce	Created.

Introduction

SMS_STYLES_DXF.xml was introduced for user to customize the style of output dxf easily.
This document explains the customization of the SMS_STYLES_DXF.xml to change the style of dxf output.

References

- AutoCAD color index chart

  http://sub-atomic.com/~moses/acadcolors.html

Setup

In order to apply SMS_STYLES_DXF xml data, catalog entry needs to be added/modified by bulkloading.

Bulkload

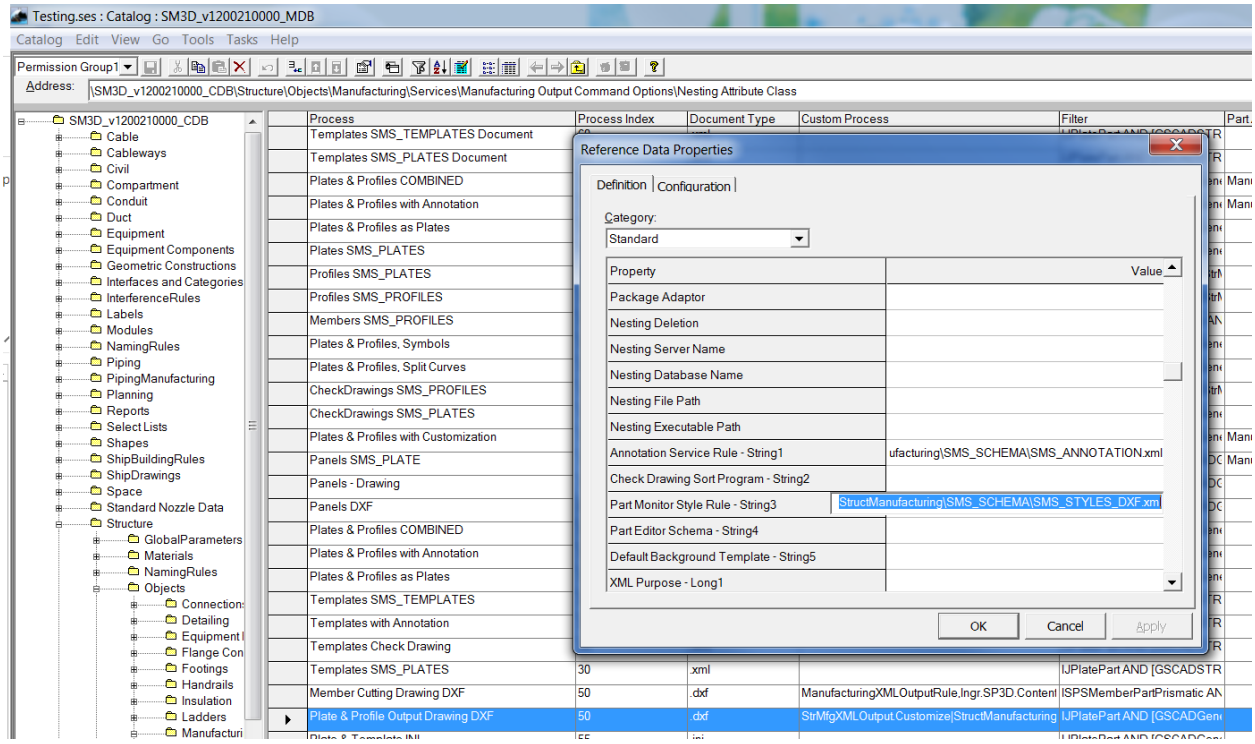
The MfgOutputCommand sheet on the delivered ShipCatalogData\BulkLoad\DataFiles\StructManufacturing\StructMfgSettings.xls contains the output format that needs to be bulkloaded.

Example)

To generate dxf output for plate with style xml, check IJMfgOutputOption::String3. If there is no SMS_STYLES_DXF.xml in this entry, bulkload this line in AMD mode with the line set to add (‘M), and set the correct path of style xml.

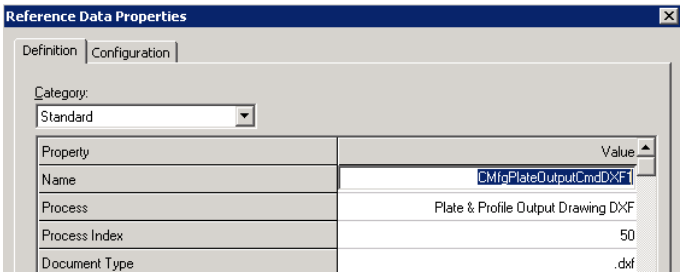
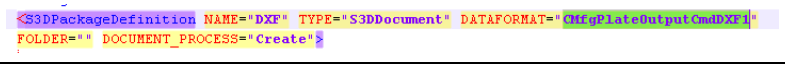
	A	B	C	D	R
			IJMfgOutputOption::Process	IJMfgOutputOption::Processindex	IJMfgOutputOption::String3
1	**Head**	**Name**			
2	**Start**				
3		CMfgPlateOutputCmdDXF1	Plate & Profile Output Drawing DXF	50	StructManufacturing\SMS_SCHEMA\SMS_STYLES_DXF.xml

You can also check this file in the Catalog Task in S3D.

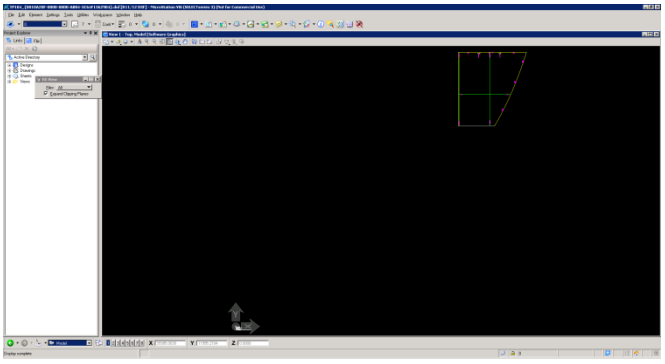
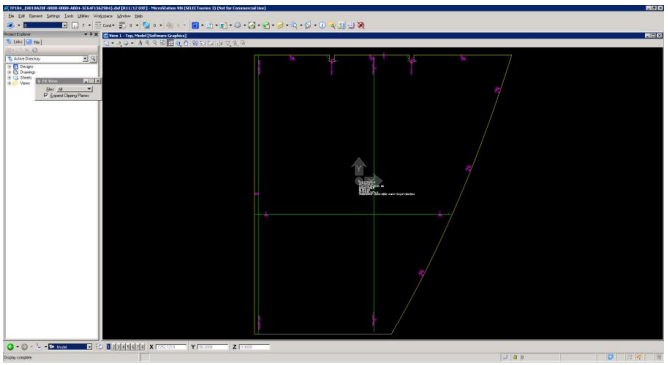


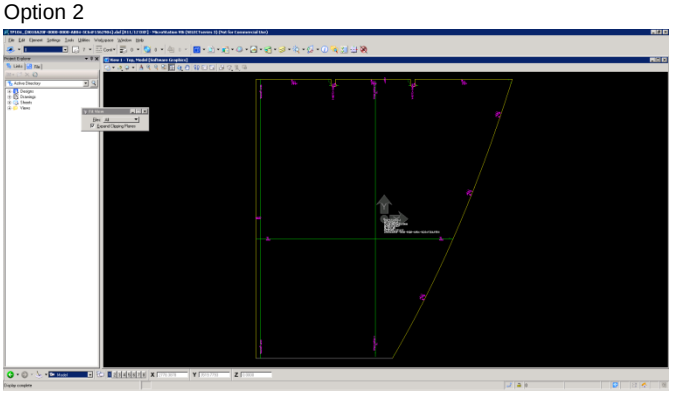
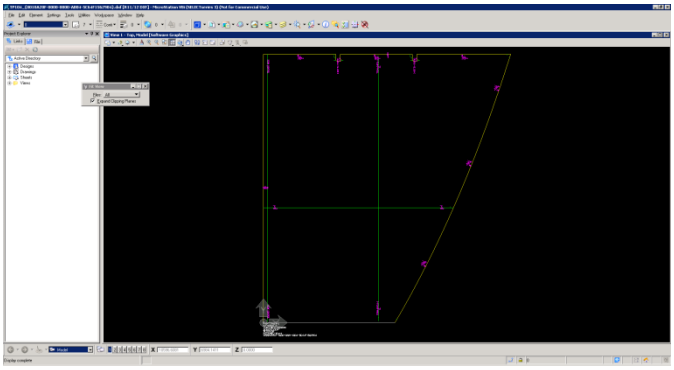
Catalog

Following table explains the attribute which affects XML which is input to OutputDocument rule for dxf output.

Attribute	Description/Example	Customizable by User
Name	This name should match with DATAFORMAT of S3DPackageDefinition in configuration xml. Catalog  Configuration 	Yes

Process	The user name of the process. This will be shown on the ribbon bar or both the Part Monitor and the Output commands	Yes
ProcessIndex	The value 50~90 is reserved for Output Document types. Especially Template DXF value should be 60. This value is used in the system to distinguish template and others. It should not be changed. - Template in DXF : 60 We recommend user to keep following values for the types. But they can be different value in the range of 50~90 - PanelPlate, Plate, and Profile(Member) in DXF : 50 - Plate(Template as Plate) in INI : 55 - Weld Geometry in XML : 70	No but user can change the value except Template DXF.
DocumentType	User can set the different file extension for specific output format.	Yes
CustomProcess	User can customize XML which is input to the OutputDocument rule. DXF needs this Custom Process because Size of PartInformation Label depends on MiN_BOX_LENGTJH or MIN_BOX_WIDTH	Yes
Filter	This filter can be used for Export to Nesting command later	Yes
PartAdaptor	Not used. But if user wants to modify XML which is input to OutputDocument rule, user can set it.	Yes, XML will not be modified if missing
CustomPartViewer	Not used, Required only for Part Monitor	No, not used
PackageAdaptor	Not used	No, default will be used if missing
NestingDeletion	Not used	No, default will be used if missing
NestingServerName, **NestingDBName**, **NestingFilePath**, **NestingExecutablePart**	Not used	No. Values can be used within package adaptor. Required if using default adaptor.
String1 (Annotation Service Rule)	Required if annotations are needed in XML which is input to OutputDocument rule to generate DXF.	Required if annotations are needed in XML output
String2 (Check Drawing Sort Program)	Not used. Required only for check drawings	No
String3 (Part Monitor Style Rule)	Required if user want to customize DXF styles(Layer, Color, Font Size) StructManufacturing\SMS_SCHEMA\SMS_STYLES_DXF.xml	Yes, Default style will be used if missing
String4 (Part Editor Schema)	Not used	No
String5	Not used	No

(Default Background Template)		
Long1 **(XML Purpose)**	Required to change output XML which is input to OutputDocument Rule. No AntiMarking is 128.	Yes
Long2 **(Annotation Control)**	Not used	No
Long3 **(Symbol Control)**	Not used	No
Long4 **(Nesting Control)**	Not used	No
Long5 **(View Option)**	Default value is 16. This entry will not be shown in PartMonitor, PartEditor, Annotation Editor, nor Output Command.	No
String6	OutputDocumet Rule ProgID Example) FT_MfOutputDocument.DXF	Yes
String7~String10	Not used	No
Display Sequence	Not used	No
Cross Section Format	Not used	No
Transformation Information	Required to transformation of output location of DXF.Default is 1. Option 0  Option 1 	Yes

	Option 2  Option 3 	
Long6 ~ Long10	Not used	No

Customization

The SMS_STYLES_DXF.xml specifies the customization that occurs when the dxf output is generated by system. Each element describe the customization items user can modify.

User can change Style like Color, Layer, and Text Height.

SMS_TEXT_HEIGHTS

This is lookup table for size of Part Information label. User can customize value for specific size.

- MIN_BOX_LENTH and MIN_BOX_WIDTH
  They are in the Part output xml. They are added by Custom Process rule. Using these attributes, user can adjust text size of part label information according to size of part.
- If user set the text height value like '70', this value will be set in the output dxf.
- If user doesn't specify any size, default value is '150'.

```
<SMS_SMS SHIP_NUMBER="6256" SHIP_NAME="6256" PROJECT_DB_SERVER_NAME="nautsql2k14" PROJECT_DB_NAME="Fin_6256">
    <SMS_PLATES>
        <SMS_PLATE THICKNESS="18.00000" THICKNESS_DIR="in">
            <SMS_PROD_INFO BLOCK_NAME="W004" ASSEMBLY_NAME="FC04C" BLOCK_BOARDSIDE="C" BLOCK_FACILITY="FC" BLOCK_
                <SMS_CUSTOM_PROPERTIES INTERFACE_NAME="IJUAPartNaming">
                    <SMS_CUSTOM_PROPERTY NAME="Naming Index" VALUE="290" UNIT_TYPE="string" PRIMARY_UNIT="undefir
                    <SMS_CUSTOM_PROPERTY NAME="Naming Group" VALUE="1" UNIT_TYPE="string" PRIMARY_UNIT="undefined
                </SMS_CUSTOM_PROPERTIES>
                <SMS_PART_INFO PART_GUID="0010F002-0000-0000-BC13-2099DB577004" NEST_GUID="0010F023-0000-0000-7A0
                MIN_BOX_LENGTH="118.163" MIN_BOX_WIDTH="115.000">
                    <SMS_COMMON_PART_INFO PART_BLOCK="" PART_GUID="" COMMON_PART_NAME="" QUANTITY_PORT="0" QUANTI
                    </SMS_COMMON_PART_INFO>
                    <SMS_ROUTING WORKCENTER="" STAGE_CODE="">
                        <SMS_ACTION TYPE="FlowCode" CODE="NE" MACHINE="" SEQUENCE="1"/>
                        <SMS_ACTION TYPE="PART_CATEGORY" CODE="Diam" MACHINE="" SEQUENCE="2"/>
                        <SMS_ACTION TYPE="PART_CATEGORY Description" CODE="Diamante" MACHINE="NA" SEQUENCE="3"/>
                    </SMS_ROUTING>
                    <SMS_NESTDATA LOT_NUMBER="" NESTING_DATE="1/1/1900"/>
                </SMS_PART_INFO>
```

```
<SMS_TEXT_HEIGHTS>
  <!-- MIN_BOX_WIDTH -->
  <!-- Use 50 when range is less than 500 mm -->
  <SMS_TEXT_HEIGHT MIN_BOX_WIDTH="500" VALUE ="50"/>
  <!-- Use 75 when range is less than 1000 mm -->
  <SMS_TEXT_HEIGHT MIN_BOX_WIDTH="1000" VALUE ="75"/>
  <!-- Use 100 when range is less than 2000 mm -->
  <SMS_TEXT_HEIGHT MIN_BOX_WIDTH="2000" VALUE ="100"/>
  <!-- Use 150 when range is less than 100000 mm -->
  <SMS_TEXT_HEIGHT MIN_BOX_WIDTH="100000" VALUE ="150"/>

  <!-- MIN_BOX_LENGTH -->
  <!-- Use 50 when range is less than 1000 mm -->
  <SMS_TEXT_HEIGHT MIN_BOX_LENGTH="500" VALUE ="50"/>
  <!-- Use 75 when range is less than 1000 mm -->
  <SMS_TEXT_HEIGHT MIN_BOX_LENGTH="1000" VALUE ="75"/>
  <!-- Use 100 when range is less than 2000 mm -->
  <SMS_TEXT_HEIGHT MIN_BOX_LENGTH="2000" VALUE ="100"/>
  <!-- Use 150 when range is less than 100000 mm -->
  <SMS_TEXT_HEIGHT MIN_BOX_LENGTH="100000" VALUE ="150"/>
</SMS_TEXT_HEIGHTS>
```

```
<SMS_PLATE>
  <SMS_PARTINFO NAME ="PARTNAME" FORMAT ="%s - %s"
ARGUMENTS="SMS_PART_INFO||MODEL_PART_NAME,SMS_PART_INFO||PART_BOARDSIDE_PROCESSED">
    <SMS_STYLE>
      <LAYER>PartInfo</LAYER>
      <COLOR>Black</COLOR>
      <FONT>Arial</FONT>
      <TEXT_HEIGHT>MIN_BOX_LENGTH</TEXT_HEIGHT>
      <TEXT_JUSTIFY>left</TEXT_JUSTIFY>
      <TEXT_ANGLE>0</TEXT_ANGLE>
```

```
    </SMS_STYLE>
  </SMS_PARTINFO>
  <SMS_PARTINFO NAME ="THICKNESS" FORMAT ="%0.1f - %s"
ARGUMENTS="SMS_PLATE||THICKNESS,SMS_PART_INFO||MATERIAL_GRADE">
    <SMS_STYLE>
      <LAYER>PartInfo</LAYER>
      <COLOR>Black</COLOR>
      <FONT>Arial</FONT>
      <TEXT_HEIGHT>MIN_BOX_LENGTH</TEXT_HEIGHT>
      <TEXT_JUSTIFY>left</TEXT_JUSTIFY>
      <TEXT_ANGLE>0</TEXT_ANGLE>
    </SMS_STYLE>
  </SMS_PARTINFO>
  <SMS_PARTINFO NAME ="CONSTRUCTIONNAME" FORMAT ="%s - %s - %s"
ARGUMENTS="SMS_SMS||SHIP_NUMBER,SMS_PROD_INFO||BLOCK_NAME,SMS_PROD_INFO||ASSEMBLY_NAME">
    <SMS_STYLE>
      <LAYER>PartInfo</LAYER>
      <COLOR>Black</COLOR>
      <FONT>Arial</FONT>
      <TEXT_HEIGHT>MIN_BOX_LENGTH</TEXT_HEIGHT>
      <TEXT_JUSTIFY>left</TEXT_JUSTIFY>
      <TEXT_ANGLE>0</TEXT_ANGLE>
    </SMS_STYLE>
  </SMS_PARTINFO>
</SMS_PLATE>
```

SMS_LAYERS

This is lookup table for Layers defined in DXF. User can now add/modify the layers.

```
  <SMS_LAYERS>
    <SMS_LAYER NAME="Default" PURPOSE="Default layer for all data"/>
    <SMS_LAYER NAME="Contour" PURPOSE="Layer for the contour geometry"/>
    <SMS_LAYER NAME="Openings" PURPOSE="Layer for the inner contour geometry"/>
    <SMS_LAYER NAME="Marking" PURPOSE="Layer for the marking geometry"/>
    <SMS_LAYER NAME="AntiMarking" PURPOSE="Layer for the anti-marking geometry"/>
    <SMS_LAYER NAME="PartInfo" PURPOSE="Layer for the part text information"/>
    <SMS_LAYER NAME="Annotation" PURPOSE="Layer for the Annotation"/>
  </SMS_LAYERS>
```

Layer name is used in the SMS_LAYERS by Style Service.

```
<SMS_STYLE>
  <LAYER>Contour</LAYER>
  <COLOR>Gray</COLOR>
  <LINEWEIGHT>Normal</LINEWEIGHT>
  <LINETYPE>Normal</LINETYPE>
</SMS_STYLE>
```

SMS_COLORS

This is lookup table for AutoCAD Color Index. User can customize value for specific color or can add user color. Reference to AutoCAD color index is in the References. You can also refer to AutoCAD web site.

```
  <SMS_COLORS>
    <!-- AUTOCAD DXF uses Color Index -->
    <SMS_COLOR NAME="Black" VALUE="0"/>
    <SMS_COLOR NAME="White" VALUE="7"/>
    <SMS_COLOR NAME="Blue" VALUE="5"/>
    <SMS_COLOR NAME="Green" VALUE="3"/>
    <SMS_COLOR NAME="Yellow" VALUE="2"/>
    <SMS_COLOR NAME="Cyan" VALUE="4"/>
    <SMS_COLOR NAME="Red" VALUE="1"/>
    <SMS_COLOR NAME="Magenta" VALUE="6"/>
    <SMS_COLOR NAME="Violet" VALUE="221"/>
    <SMS_COLOR NAME="Crimson" VALUE="242"/>
    <SMS_COLOR NAME="Lime" VALUE="90"/>
```

```
    <SMS_COLOR NAME="Olive" VALUE="86"/>
    <SMS_COLOR NAME="Purple" VALUE="212"/>
    <SMS_COLOR NAME="LightBlue" VALUE="141"/>
    <SMS_COLOR NAME="PeachPuff" VALUE="31"/>
    <SMS_COLOR NAME="Gray" VALUE="9"/>
    <SMS_COLOR NAME="Orange" VALUE="30"/>
    <SMS_COLOR NAME="Pink" VALUE="220"/>
    <SMS_COLOR NAME="Beige" VALUE="43"/>
    <SMS_COLOR NAME="LightOrange" VALUE="31"/>
</SMS_COLORS>
```

Color name in the SMS_STYLE is replaced with VALUE in the SMS_COLOR by Style Service.

```
<SMS_STYLE>
   <LAYER>PartInfo</LAYER>
   <COLOR>Black</COLOR>
   <FONT>Arial</FONT>
   <TEXT_HEIGHT>125</TEXT_HEIGHT>
   <TEXT_JUSTIFY>left</TEXT_JUSTIFY>
   <TEXT_ANGLE>0</TEXT_ANGLE>
</SMS_STYLE>
```

SMS_LINETYPES

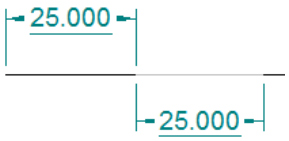
This is lookup table for LineType defined in DXF. User can now customize the scale of dashed line style now.

```
<SMS_LINETYPES>
   <SMS_LINETYPE NAME ="Normal" VALUE =""/>
   <SMS_LINETYPE NAME ="Dashed" VALUE ="2,Dashed;70,0;3,----------;72,65;73,2;40,50.0;49,25.0;49,-25.0;"/>
   <SMS_LINETYPE NAME ="DashDot" VALUE ="" />
   <SMS_LINETYPE NAME ="TwoDashDot" VALUE =""/>
   <SMS_LINETYPE NAME ="Dotted" VALUE =""/>
   <SMS_LINETYPE NAME ="Chain" VALUE =""/>
   <SMS_LINETYPE NAME ="Zig-Zag" VALUE =""/>
   <SMS_LINETYPE NAME ="DoubleArrow" VALUE =""/>
 </SMS_LINETYPES>
```

Example)

Solid line length + Space length shoud be same as total length.

```
40,50.0; Total Length is 50 unit length
49,25.0; Solid Line Length is 25 unit length
49,-25.0; Space length is 25 unit length
```



LINETYPE name in the SMS_STYLE is replaced with VALUE in the SMS_LINETYPE by StyleService.

```
<SMS_STYLE>
            <LAYER>AntiMarking</LAYER>
            <COLOR>Green</COLOR>
            <LINEWEIGHT>Normal</LINEWEIGHT>
            <LINETYPE>Dashed</LINETYPE>
</SMS_STYLE>
```

SMS_LINEWEIGHTS, SMS_FONTS

These are not supported now. Reserved for future customization

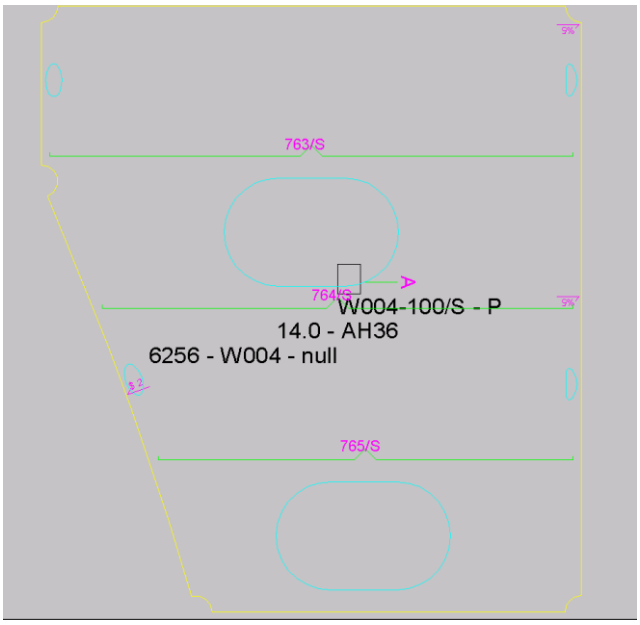
```
<SMS_LINEWEIGHTS>
    <SMS_LINEWEIGHT NAME ="Thin" VALUE ="0.0005"/>
    <SMS_LINEWEIGHT NAME ="Normal" VALUE ="0.001"/>
    <SMS_LINEWEIGHT NAME ="MediumThick" VALUE ="0.004"/>
    <SMS_LINEWEIGHT NAME ="Thick" VALUE ="0.01"/>
</SMS_LINEWEIGHTS>

<SMS_FONTS>
    <SMS_FONT NAME ="Arial" VALUE ="" />
</SMS_FONTS>
```

SMS_TEXT_JUSTIFICATIONS

This is lookup table for text justification.

```
  <SMS_TEXT_JUSTIFICATIONS>
    <SMS_TEXT_JUSTIFICATION NAME ="Left" VALUE ="0"/>
    <SMS_TEXT_JUSTIFICATION NAME ="Center" VALUE ="1"/>
    <SMS_TEXT_JUSTIFICATION NAME ="Right" VALUE ="2"/>
  </SMS_TEXT_JUSTIFICATIONS>
```



Left
Center
Right

TEXT_JUSTIFY in the SMS_STYLE is replaced with VALUE in the SMS_TEXT_JUSTIFICATION by Style Service.

```
<SMS_STYLE>
   <LAYER>PartInfo</LAYER>
   <COLOR>Black</COLOR>
   <FONT>Arial</FONT>
   <TEXT_HEIGHT>125</TEXT_HEIGHT>
   <TEXT_JUSTIFY>left</TEXT_JUSTIFY>
   <TEXT_ANGLE>0</TEXT_ANGLE>
</SMS_STYLE>
```

Example

```
<SMS_PLATE>
    <SMS_PARTINFO NAME ="PARTNAME" FORMAT ="%s-%s" ARGUMENTS="SMS_PART_INFO||PART_NA
        <SMS_STYLE>
            <LAYER>PartInfo</LAYER>
            <COLOR>Red</COLOR>
            <FONT>Arial</FONT>
            <TEXT_HEIGHT>10</TEXT_HEIGHT>
            <TEXT_JUSTIFY>Left</TEXT_JUSTIFY>
            <TEXT_ANGLE>0</TEXT_ANGLE>
        </SMS_STYLE>
    </SMS_PARTINFO>
    <SMS_PARTINFO NAME ="THICKNESS" FORMAT ="%0.1f(%s)-%s"
        ARGUMENTS="SMS_PLATE||THICKNESS,SMS_PLATE||THICKNESS_DIR,SMS_PART_INFO||MA
        <SMS_STYLE>
            <LAYER>PartInfo</LAYER>
            <COLOR>Blue</COLOR>
            <FONT>Arial</FONT>
            <TEXT_HEIGHT>20</TEXT_HEIGHT>
            <TEXT_JUSTIFY>Left</TEXT_JUSTIFY>
            <TEXT_ANGLE>0</TEXT_ANGLE>
        </SMS_STYLE>
    </SMS_PARTINFO>
    <SMS_PARTINFO NAME ="CONSTRUCTIONNAME" FORMAT ="%s-%s-%s" ARGUMENTS="SMS_SMS||SM
        <SMS_STYLE>
            <LAYER>PartInfo</LAYER>
            <COLOR>Orange</COLOR>
            <FONT>Arial</FONT>
            <TEXT_HEIGHT>30</TEXT_HEIGHT>
            <TEXT_JUSTIFY>Right</TEXT_JUSTIFY>
            <TEXT_ANGLE>0</TEXT_ANGLE>
        </SMS_STYLE>
    </SMS_PARTINFO>
```