

| <b>MDS MAPS FORMAT DESCRIPTION</b> |                   |
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## TABLE OF CONTENTS

|          |  |          |
|----------|--|----------|
| <b>1</b> | <b>GPL</b> .....                               | <b>4</b> |
| <b>2</b> | <b>GENERAL PRESENTATION</b> .....              | <b>4</b> |
| 2.1      | INTRODUCTION.....                              | 4        |
| 2.2      | GRAPHIC ELEMENTS AND TAGS.....                 | 4        |
| 2.2.1    | Tags .....                                     | 4        |
| 2.2.2    | Bitmap definition for BS_PATTERN setting ..... | 6        |
| 2.2.3    | Graphic Elements .....                         | 7        |
| 2.3      | MDS FORMAT .....                               | 8        |

## TABLE OF TABLES

|          |  |   |
|----------|--|---|
| Table 1: | TAGS Definition .....                    | 6 |
| Table 2: | Graphic Elements & associated TAGs ..... | 7 |

## 1 GPL

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## 2 GENERAL PRESENTATION

### 2.1 Introduction

All maps are described within ASCII files in specific SkySoft-ATM MDS format (\*.mds). Before describing the map files and the MDS format, a summary description of the Basic Graphic elements and Tags is given bellow.

### 2.2 Graphic Elements and Tags

#### 2.2.1 Tags

Tags are stickers that identify graphics components and associated properties. Each tag defined in the MDS format has its own meaning and value range. The following Table presents all MDS format tags used for map definition. Each tag may have predefined possible values (i.e. in the right column).

| TAG               | Use  | Possible Values  |
|-------------------|--|--|
| <Brushstyle=ENUM> | Specifies the hatch style of the brush used for surface filling. | <b>BS_SOLID</b> for a solid brush<br><b>BS_PATTERN</b> for a custom patterned brush. It must be followed by the brush's bitmap pattern definition (see 2.2.2Bitmap definition for BS_PATTERN setting for details).<br><b>BS_HATCHED</b> for an hatched brush style; can be |

|                                 |  |   |
|---------------------------------|--|---|
|                                 |  | <p>completed by one of the following attributes:</p> <ul style="list-style-type: none"> <li>▪ <b>HS_HORIZONTAL</b> for a simple Horizontal hatch</li> <li>▪ <b>HS_VERTICAL</b> for a simple Vertical hatch</li> <li>▪ <b>HS_FDIAGONAL</b> for an upward hatch (left to right) at 45 degrees</li> <li>▪ <b>HS_BDIAGONAL</b> for a Downward hatch (left to right) at 45 degrees</li> <li>▪ <b>HS_CROSS</b> for an Horizontal and vertical crosshatch</li> <li>▪ <b>HS_DIAGCROSS</b> for a Crosshatch at 45 degrees</li> </ul> |
| <Color=XXXXXX>                  | Defines the item color.  | <b>RGB (Red Green Blue)</b> hexadecimal value, from 000000 to FFFFFFFF.   |
| <Color2=XXXXXX>                 | Defines surfaces filling color.  | <b>RGB (Red Green Blue)</b> hexadecimal value, from 000000 to FFFFFFFF.   |
| <Font="FontName">               | Defines the font to be used for the text item.                                   | A font name, must be installed on the local machine where the map will be used (located under C:\WINNT\Fonts for W2K)   |
| <Info="DisplayedText">          | Defines the text to be displayed on special application request (like B3 click). | Any text (*).   |
| <Item=ENUM>                     | Defines the kind of record. First item of a record.                              | A value among the enumerate: <b>Title, Vectors, Beacon, Text, Surface.</b>  |
| <Mode=ENUM>                     | Defines the initial display mode.  | <Mode=Manual Off> <Mode=Auto On>  |
| <Penstyle=ENUM>                 | Defines the appearance of the graphic elements lines.                            | <b>PS_SOLID</b> for a solid line.<br><b>PS_DASH</b> for a dashed line.<br><b>PS_DOT</b> for a dotted line.<br><b>PS_DASHDOT</b> for a dashed and dotted line.<br><b>PS_DASHDOTDOT</b> for dashed followed by two dots line.<br><b>PS_USERSTYLE</b> for a custom user style. Must be followed by the pen size: xxyy. (e.g. 0505).  |
| <Pos=(X,Y)>                     | Defines the display position of the item.  | (X, Y) co-ordinates (**).   |
| <Postable=n (X1, Y1).. (Xn,Yn)> | Defines the display positions of all   | <u>For a Polygon:</u>   |

|              |  |   |
|--------------|--|---|
|              | constituting points of the item.   | “n” is the number of points, at least 2.<br><u>For an arc:</u><br>“n” is an integer value, at least 4, followed by the starting point coordinates, followed by the couple (ARC, diameter value), followed by the center coordinates, followed by the ending point coordinates (**). |
| <Prio=XX>    | Defines the display priority of the map.   | From 0 to 31. The lowest the value, the highest is the priority.  |
| <Size=XXX>   | Defines the font size.   | From 80 to 720.   |
| <Text=" ">   | Defines the text or the symbol to be displayed.  | Any text (*) or any ASCII value defined in Symbol.ini file (for beacons items).   |
| <Beacon=" "> | Defines the text to be displayed in a label while pointing a heading vector on a beacon. | Any text (*).   |

(\*): Use ‘\’ control character for multiple text lines.

(\*\*): (X, Y) couple definition points are integer values expressed in 1/32 of Nautical miles, local system centered (0,0).

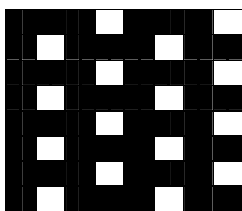
**Table 1: TAGS Definition**

### 2.2.2 Bitmap definition for BS\_PATTERN setting

The BS\_PATTERN bitmap definition must be seen as an 8x8 pixels square graphic. For all pixels of the bitmap (64), display state must be set to activated (0) or not (1). A classic bitmap definition format is to consider an 8x8 matrix, in which each cell corresponds to a pixel (cell values being 0 or 1). The MDS bitmap format definition can be seen as a concatenation of all rows of a classical definition matrix.

**Example:**

❶ - Brush pattern to use



❷ - Corresponding Bitmap definition matrix

```
00010001
01000100
00010001
01000100
00010001
01000100
00010001
01000100
```

❸ - The corresponding MDS Bitmap format is (row1 + row2 + row 3 + ... + row 8):

<Brushstyle=BS\_PATTERN 00010001010001000001000101000100000100010100010000010001010001000001000101000100>

### 2.2.3 Graphic Elements

The following table presents all map graphic elements and their associated tags. Except beacon tag, all tags checked for a given graphic elements are mandatory: for a complete definition of the graphic elements, all associated tags must be defined.

**Important:**

- All graphic elements with incomplete TAG definition will not be processed nor interpreted by SkySoft-ATM applications.

|              | Beacon | Text | Title | Surfaces | Vector |
|--------------|--------|------|-------|----------|--------|
| <Brushstyle> |        |      |       | ✓        |        |
| <Color>      | ✓      | ✓    |       | ✓        | ✓      |
| <Color2 >    |        |      |       | ✓        |        |
| <Font>       | ✓      | ✓    |       |          |        |
| <Info>       | ✓      | ✓    |       | ✓        | ✓      |
| <Item >      | ✓      | ✓    | ✓     | ✓        | ✓      |
| <Mode >      |        |      | ✓     |          |        |
| <Penstyle>   |        |      |       | ✓        | ✓      |
| <Pos>        | ✓      | ✓    |       |          |        |
| <Postable>   |        |      |       | ✓        | ✓      |
| <Prio >      | ✓      | ✓    |       | ✓        | ✓      |
| <Size >      | ✓      | ✓    |       |          |        |
| <Text>       | *✓     |      | ✓     |          |        |
| <Beacon>     | **✓    |      |       |          |        |

\* The <Text> tag of the beacon record definition identifies the symbol to be displayed (mapped to the corresponding symbol value of Symbol.ini file).

\*\* Used if defined (optional tag).

**Table 2: Graphic Elements & associated TAGs**

## 2.3 MDS FORMAT

A map definition in the MDS format is composed of records of basic graphic elements. All components of a map are described in a single MDS file. In this file, all general and specific properties for all components can be found. In SkySoft-ATM products, all map files are usually stored under the same disk directory. Naming of map files is completely free, but file extension must be “.mds”. In following examples, for readability the graphic records are split on several lines. However, in an “.mds” files, a graphic record definition must stand on a single line.

All “.mds” file definition starts with the following record:

```
<Item=Title> <Text="MAP\submenu1\...\SubmenuN\NameOfTheMap"> <Mode=Manual Off><Info="InfoToBeDisplayed">
```

Details of the record:

- **<Item=Title>**: designates the kind of the record. Title value is used to initiate a map.
- **<Text="MAP\submenu1\...\SubmenuN\NameOfTheMap">**: specifies in which software menu and submenus the map name “NameOfTheMap” will be shown and will be available for display activation. The root menu name is always MAP.
- **<Mode=Manual Off>**: specifies the way the map will be displayed at application startup. The value “Manual Off” sets the display mode of the map to manual. A value “Auto On” would automatically force the display of the map at the application startup. This feature could mainly be used to display restricted areas maps. In most of SkySoft-ATM applications, the “Auto On” value is not interpreted, as restricted map management is done through a distinct and separate process.
- **<Info=" InfoToBeDisplayed ">**: see TAGs definition (chapter 2.2.1).

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