Mobile SVGT WMS Client
User Manual

Version 1.03

1 Introduction

1.1 Feature

The Mobile SVGT WMS Client has following features:

- n The Client conform to OGC WMS 1.1.0 / 1.1.1 specifications

- n Connecting to any WMS given the server URL in form GetCapabilities

- n Inputting coordinate of any selected points

- n Selecting Coordinate Reference System and Layers supported by WMS

- n Selecting image format supported by WMS

- n Display SVGT/SVGB/SVG vector image format or PNG raster image format map

- n Zoom, pan and Original view functions

- n Server list management, add new, edit and delete the server URL

- n Runs on any Java(MIDP 2.0/CLDC 1.1) embedded mobile device

1.2 Web Map Service

Web Map Service (WMS) is an International Standard which defines a "map" to be a portrayal of geographic information as a digital image file suitable for display on a computer screen. WMS is a specification that produces maps of spatially referenced data dynamically from geographic information. WMS-produced maps are generally rendered in a pictorial format such as PNG, GIF or JPEG, or occasionally as vector-based graphical elements in Scalable Vector Graphics (SVG).

1.3 Scalable Vector Graphics Tiny

Vector image formats are newly implemented into geographic mapping and becoming more and more popular. They're actual vectors of data stored in mathematical formats rather than bits of colored dots. This formatting falls into a lot of proprietary formats, formats made for specific programs. CorelDraw (CDR), Hewlett-Packard Graphics Language (HGL), Windows Metafiles

(EMF) and SVG (Scalable Vector Graphic).

Because of industry demand, two mobile profiles were introduced with SVG 1.1: *SVG Tiny* (SVGT) and *SVG Basic* (SVGB). These are subsets of the full SVG standard, mainly intended for user agents with limited capabilities. In particular, SVG Tiny was defined for highly restricted mobile devices such as cellphones, and SVG Basic was defined for higher level mobile devices, such as PDAs. Hence, it was decided that SVG Tiny would be a strict subset of SVG Basic, itself a strict subset of SVG Full.

The client uses Tinyline SVGT SDK [1]© Andrew Girow as SVGT Viewer.

2 Installation

2.1 Devices

Mobile devices which conform to the J2ME MIDP 2.0 and CLDC 1.1 can install this client. This client was released as two editions: Mobile SVGT WMS Client for Nokia Series 60 and Mobile SVGT WMS Client for J2ME.

Mobile SVGT WMS Client for Nokia Series 60 is for Nokia Series 60 phones like Nokia 3600, 3620, 3650, 3660, 6600, 6630 and others. And it can also run on some Nokia Series 40 phones like 6230i.

Mobile SVGT WMS Client for J2ME is for the Simulator on the PC and MIDP 2.0/CLDC 1.1 mobile devices.

---

[1] http://www.tinyline.com

2.2 Requirement

The Client can run on any mobile phone, smartphone or PDA (Momently no time for the further testing) which are compatible with MIDP 2.0/CLDC 1.1. Additionally the device should have ability to connect to the WMS servers. For example GPRS, UMTS or WLAN.

2.3 Manual Installation

The Client could be installed via USB cable, Bluetooth or IRDA to the device. The Client is in the file Moblie_WMSClient1.02S60.jar or Moblie_WMSClient1.02.jar. Some devices also need the archive description which is in the additional file Moblie_WMSClient1.02S60.jad or Moblie_WMSClient1.02.jad. You had better download both of the files.

3. Usage

3.1 Server List management

You can add new, edit or delete WMS server URL with the management easily. The WMS server URL must be set in form of GetCapabilities request URL, just like this:

http://www.wms_url.com/wms/getmapcap.php?VERSION=1.1.1&SERVICE= WMS&REQUEST=GetCapabilities

You can test the GetCapabilities request URL in any internet browser, and you will get one XML document from the WMS.

3.2 Operation

Please connect to the WMS at first, input the North/East X/Y coordinate of the interesting point,

and choose the map scale. If the WMS support the raster image format (PNG), please select Raster Image Coordinate, and send the request. But some raster image based WMS also use North/East X/Y Coordinate system, so please try to select one small scale

Once the client receives the XML document, it will parse it and pick the parameters for the Getmap request URL. kXML Parser[2] © Stefan Haustein is used for this XML parsing.

This will take several seconds and the Spatial Reference System and layers will be displayed. Select the SRS and corresponding layers, then select the image format. For raster image format based WMS, please select PNG format. At last send request.

Depending on the image format, different image viewer will be displayed. For SVGT/SVGB/SVG format, Tinyline will be loaded; for PNG image format, raster image viewer will be loaded.

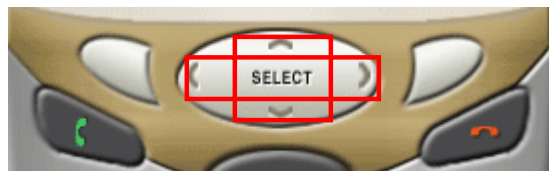---

[2] http://kxml.sourceforge.net/

3.3 Navigation

For Tinyline viewer, you can choose Pan, Zoom and Orig View and Quality for map navigation.

For raster image viewer, you can choose Pan, Zoom and Orig View for map navigation.
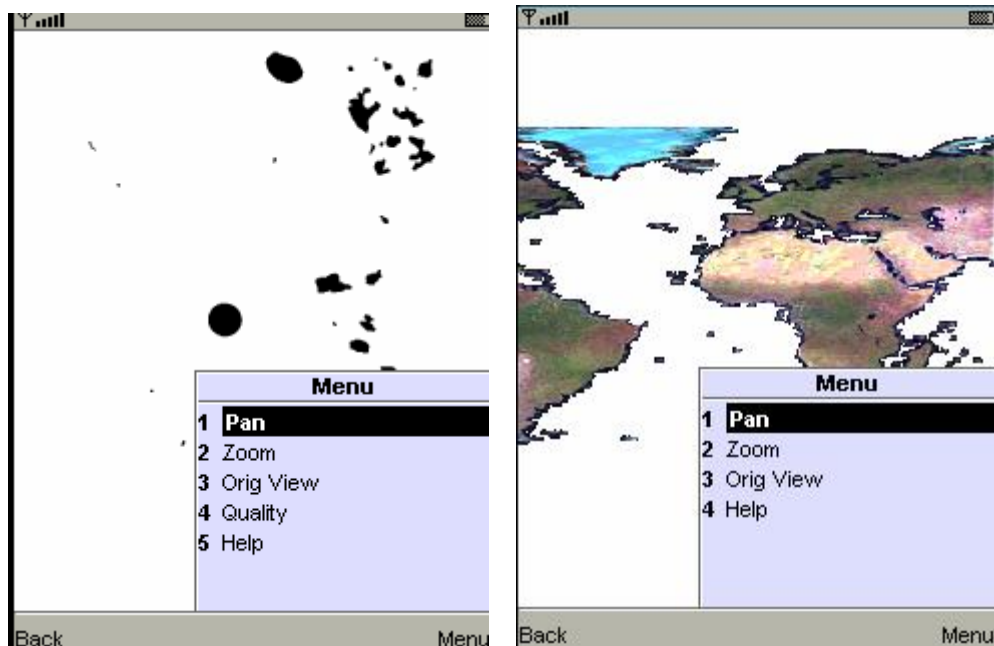
Please use Arrow UP, DOWN, LEFT, RIGHT to move or zoom in/out the map.

4 Troubleshooting

4.1 Restrictions of the Client

Because of the limitations of the memory and process speed and connection bandwidth, there maybe some problems when parse the GetCapabilities request XML document and display the Getmap responding map, for example, the user could wait so long time but WMS still doesn't

response the request.

At the moment the client can support most of the WMS that conform to the OGC WMS certification, but even the WMS follow the certification, it can use its own XML structure. So the client could not parse those GetCapabilities request XML document with different XML structure.

The client can only support PNG raster image format.

Most of the WMS do not optimize the output for mobile client, if the client runs on a mobile device with a very low resolution, the WMS may deny the request to create a map in a low resolution.

4.2 Possible error messages

Exception:…END_TAG.expected(position:START_TAG<Name>@...injava.io.InputStreamReader@...

The WMS use one different structure of the GetCapabilities request XML document, which can not be parsed correctly. The server can not be used.

Exception: layer not specified. Please insert Layer names!

At least one layer should be selected.

Exception: layerNotDefined.layer aaaa with SRS bbbb not found, Please check your Layer name and /or SRS. The layers supported by this bbbb are.

The layers that selected can not be supported by the SRS that has been selected. The layers must use same SRS.

Exception: The image format is not PNG but is: image/aaa

The client can only display PNG raster image format.

Exception: Bounding box has an invalid area

Please reset the XY coordinate, it should be set inside the bounding box.

Exception: Image can not be created.

Because of the restriction of the connection bandwidth, this error maybe occurs. Please try to send request again.

5 License

The Mobile SVGT WMS Client is designed as a technology demonstration and is free for non commercial use. If you want to use the software for any other purpose pleas write to leeglanz@hotmail.com