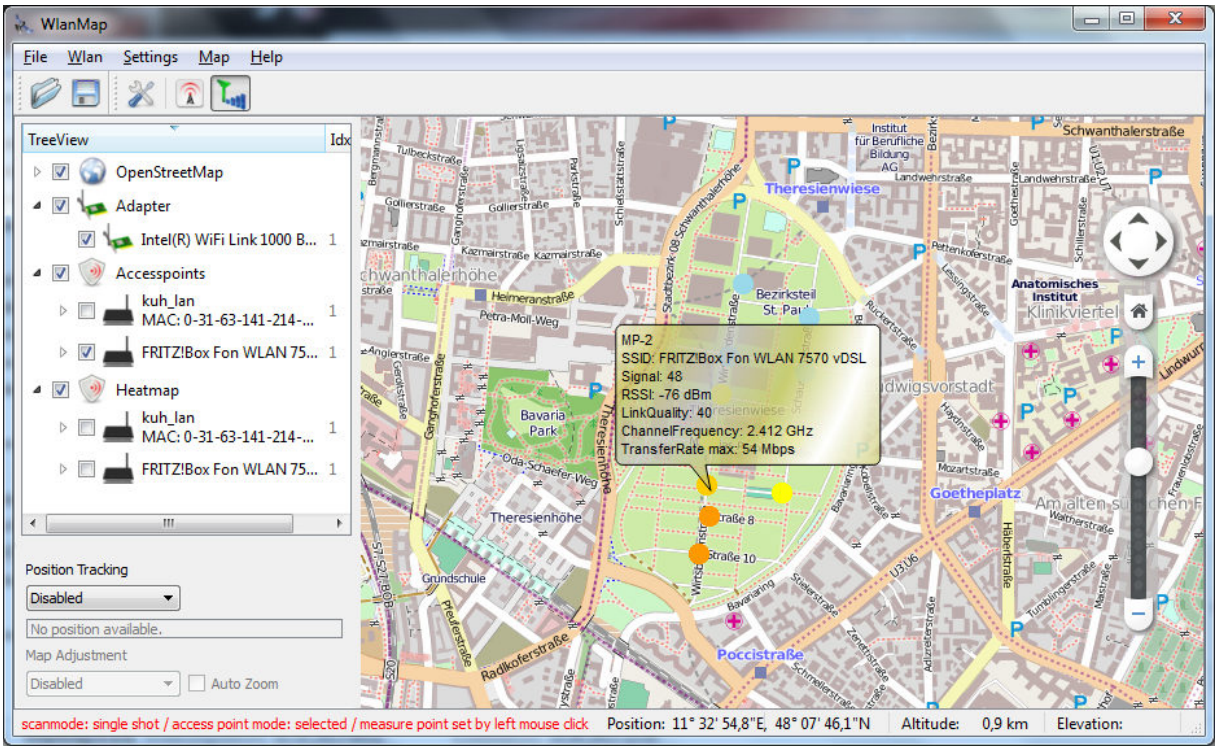
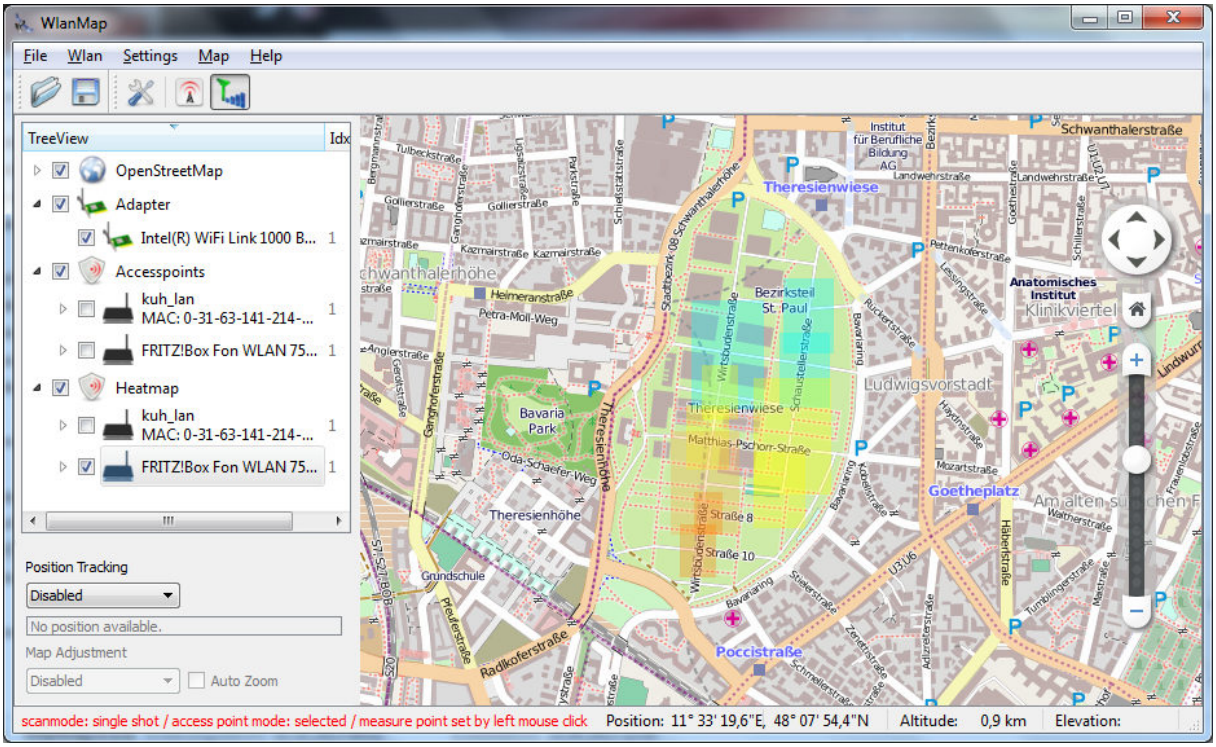
WlanMap 0.9

WlanMap is designed to scan WLAN access points and displaying their signal strength on a map



Additional it is possible to create a heatmap from mesasurements.



General

WlanMap is an opensource project, based on other opensource libraries.

WlanMap is developed in part by using a modified version of the opensource library :

Marblewidget (http://edu.kde.org/marble/).

License:
MarbleWidget is licensed under the terms of the GNU LGPL Version 2.1 (including later versions).
http://www.gnu.org/licenses/lgpl.html

WlanMap is developed in part by using the opensource library :

GDAL/OGR 1.8 (http://www.gdal.org/)

License:
GDAL/OGR library is distributed under the terms of X11/ MIT License.

WlanMap is developed in part by using the opensource library :

Proj4 (http://proj.osgeo.org/)

License:
PROJ.4 has been placed under an MIT license
http://trac.osgeo.org/proj/wiki/WikiStart#License

For wlan scanning a modified version of wlanapi is used
https://github.com/maurice2k/wlanapi

Some icons of this GPL icon package are used
http://openiconlibrary.sourceforge.net/downloads.html

Maps

If internet connection is available, detailed map tiles are downloaded automatically,
accordingly to current zoom level

WlanMap supports OpenStreetMap,
a free and editable world map (http://wiki.openstreetmap.org/wiki/Main_Page

The street map tiles used in WlanMap via download are provided by the OpenStreetMap Project ("OSM"). OSM is an open community which creates free editable maps.

License:

OpenStreetMap data can be used freely under the terms of the

Creative Commons Attribution-ShareAlike 2.0 license.

WlanMap supports Google satellite map

License:

http://www.google.com/intl/en_en/help/terms_maps.html

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Note: After closing WlanMap, all GoogleSatellite cached map tiles are deleted.

WlanMap installation

WlanMap is build on microsoft VisualStudio 2005 and Qt 4.8.4

Step 1. Extract the *WlanMap* zip to a folder, for example C:\WlanMap
Step 2. Extract the *mapdata* zip to a folder, for example C:\mapdata

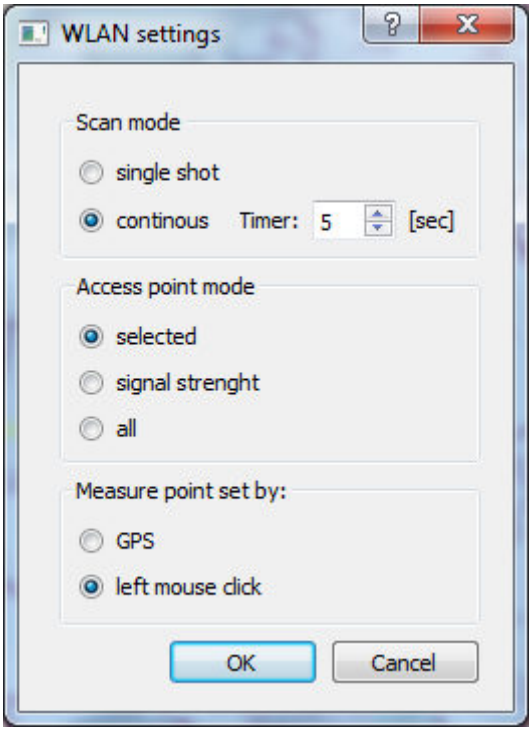
Start WlanMap.exe from ..\WlanMap folder (step1), first time starting WlanMap you will be prompted to set your ..\mapdata folder, select the folder you have used in step 2.

If WlanMap does not start , maybe some mfc system Dll's are missing. In that case, download and install the VS2005 redistributable package.

http://www.microsoft.com/en-us/download/details.aspx?id=3387

WlanMap UserManual

WlanMap settings



Scan mode settings

single shot: for every left mouse button click, a measurement is calculated. The measure point position depends on mouse position while you click on the map.
This mode is usefull for indoor scanning where no GPS signals are available

continues: depending on timer settings, every n seconds a measurement is calculated. The measure point positions are depending on position received by GPS signal.

Access point mode settings

selected: Measurements are only calculated for the access point selected from tree node. For example, only accesspoint *fritzbox* will be used for WLAN scanning.

signal strength: all accesspoint are used by the WLAN scanner but only for the strongest signal a measurement is calculated and a measure point is set.

all: for all available accespoints a measurement is calculated an measure points are set .

Measure point set by

GPS: measure point positions are set by received GPS signal

Left mouse click: measure point positions are set by left mouse button click

WlanMap toolbar

1 2 3 4 5 6

1: Open open a Wlan measurement file (Google kml format)

2: Save save a complete Wlan measurement to file (Google kml format)
all measurement points from all accesspoints entries are saved

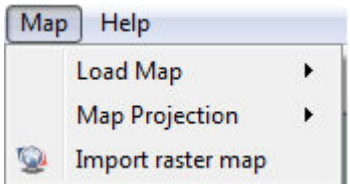
3: Settings open the Wlan settings dialog

4: Wlan detection start WLAN scanning, all onboard WLAN adapter and all available accesspoints are inserted into WLAN tree

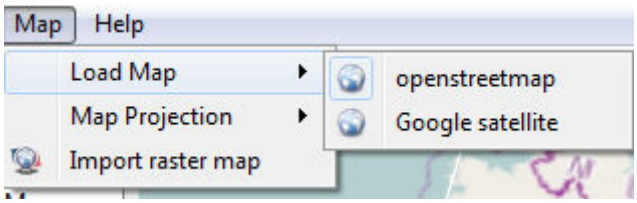
5: Wlan signal: start measurement. If *Access point mode* is set to *selected*, click on the map for creating a measurement. If *Access point mode* is set to *continues*, measurements are created automatically every n seconds. If a GPS device is connected, the GPS position are used for measure point position. If no GPS device is available, click on the map to set a positions.

6: Heatmap create a heatmap from measurements. The heatmap is only created for the accesspoint selected in WLAN tree.

Map menu



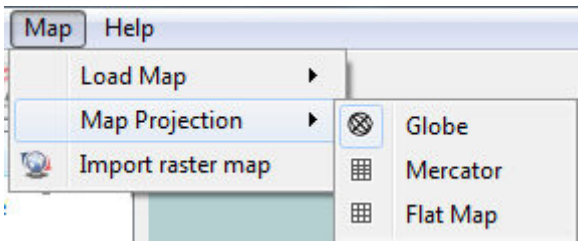
Map menu – Load map



openstreetmap: loads the openstreetmap. If an internet connection is available, detailed zoom levels are downloaded and cached permanently.

Google satellite: loads the GoogleSatellite map. If an internet connection is available, detailed zoom levels are downloaded and cached. After closing WlanMap, this cache is completely deleted.

Map menu – Map projection

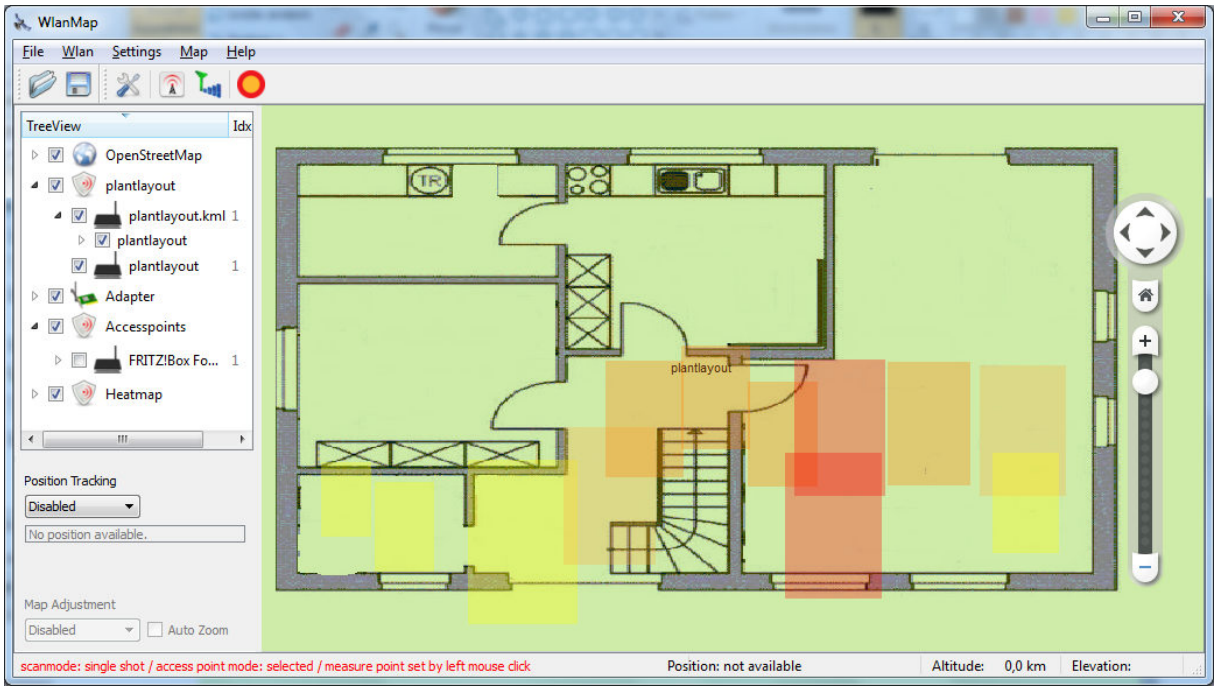


Globe: switch the map to spherical mercator projection

Mercator: switch the map to mercator projection

Globe: switch the map to equirectangular projection

Map menu – Import raster map



WlanMap supports loading georeferenced images. This could be use full for indoor WLAN scanning.

Supported formats are:

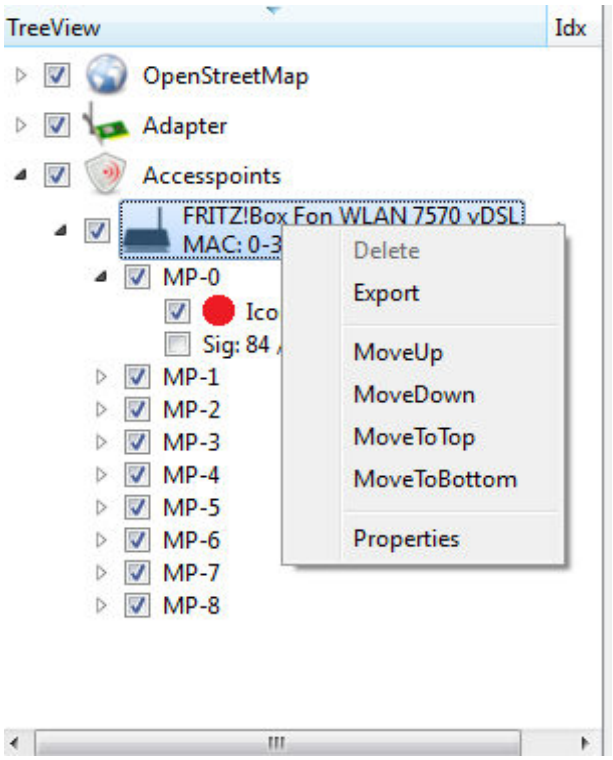
- Image files (png, jpg, tif, bmp, gif,…) along with corresponding ESRI world file
  ESRI world file description: http://www.kralidis.ca/gis/worldfile.htm

- MapInfo TAB file

- GeoTiff

Note: Images could also be imported by loading a Google Kml file with GroundOverlay tag specified. A sample could be found in: WlanMap\UserManual\plantlayout.kml

WlanMap TreeView context menu



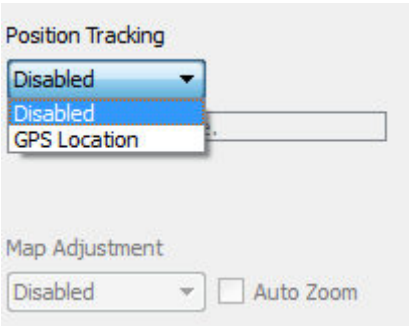
Use right mouse button to open the TreeView context menu for a selected tree entry

Delete:	delete this tree node
Export:	export this tree node to file (Google Kml). In opposite to *Save* button, only this node and it's child nodes are exported.
MoveUp:	increment the Zorder of this tree node.
MoveDown:	decrement the Zorder of this tree node.
MoveToTop:	set the Zorder of selected tree node to highest value of all
MoveToBottom:	set the Zorder of selected tree node to lowest of all

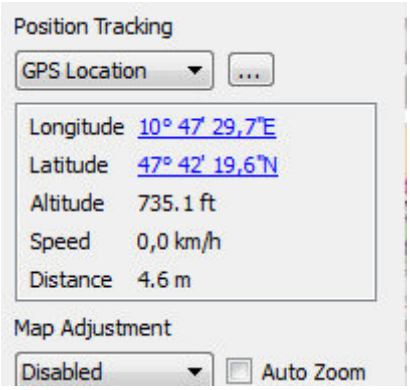
Note: the tree node with Zorder set to two will be drawn on top of a tree node with Zorder one !

WlanMap – GPS support

To activate GPS navigation select the *GPS Location* entry from the *Position Tracking* list box

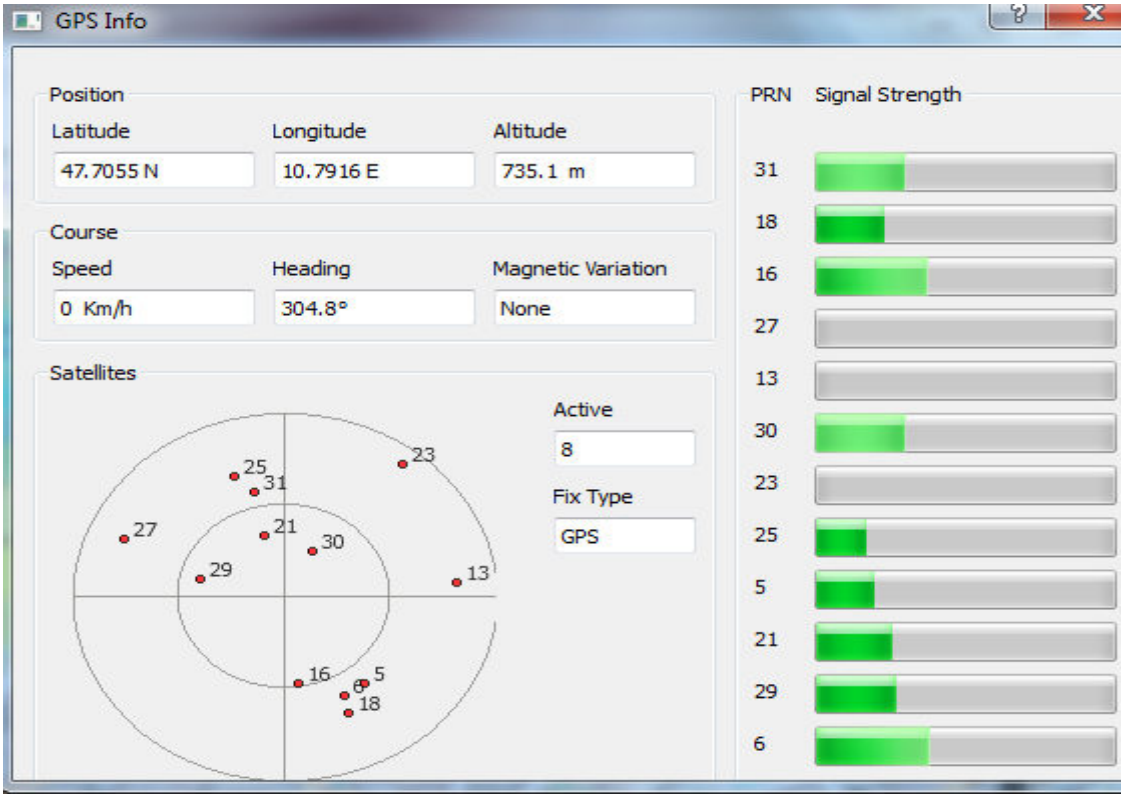


If a GPS device is connected it should take 5 – 20 seconds until the first valid position is detected. In that case the position is displayed within the *Position Tracking* window.



Click the *longitude* or *latitude* value to center the map to this position.

To get detailed information about received GPS signal, open the *GPS Info* dialog by click the *"..."* button right to the *GPS Location* list box.



If WlanMap fails to detect a connected GPS device, in most cases this is related to GPS driver issue or invalid COM port settings.

GPS driver:
We have good experience by using this USB PL2303 driver:
http://www.gps2003.com/driver-gps-map-download.html

COM Port:
by default, WlanMap scans port 3 to 9 to detect a connected GPS device, following settings are used:
38400,8,n,1

To change settings copy the gps.txt file from ..\WlanMap\UserManual\ into ..\WlanMap\ folder and edit the entries the way that it matches the needs of your GPS device.

WlanMap outdoor operation

If you are using WlanMap to scan an outdoor area it is possible that some accesspoints detected at start position are out of scope while moving. In opposite, some new accesspoint may be detected at new positions.
This is automatically identified by WlanMap.