☐ ====== Mapc2mapc ======

Mapc2mapc is not a product of Asamm Software so we do not take any responsibility for changes in its usage. This article is for general information only.

How create a sqlitedb file with Mapc2mapc

Basic information

- Locus Map currently supports a wide range of map formats (see more here >>). But most common formats are not yet covered. If you want to convert your maps to some format usable by Locus Map, have a look at MAPC2MAPC software.
- Firstly we recommend to test the demo version if this fits your needs. Here are instructions of the MAPC2MAPC author.
- In case you are satisfied we suggest to buy the full version
- **MAPC2MAPC:** http://www.the-thorns.org.uk/mapping/

Additional manual chapters

- Converting IMG maps to a Locus supported sqlitedb map
- Converting pictures to a Locus supported sqlitedb map

Additional forum information

http://forum.locusmap.eu/viewtopic.php?f=10&t=413&p=1876&hilit=MAPC2MAPC#p1876
http://forum.locusmap.eu/viewtopic.php?f=21&t=4&p=4874&hilit=MAPC2MAPC#p4874
http://forum.locusmap.eu/viewtopic.php?f=44&t=899&p=5043&hilit=MAPC2MAPC#p5043
http://forum.locusmap.eu/viewtopic.php?f=21&t=3&p=6142&hilit=MAPC2MAPC#p6142
http://forum.locusmap.eu/viewtopic.php?f=21&t=3&p=12802&hilit=MAPC2MAPC#p12802

Various

How to convert Netherlands Top25raster

The Netherlands kartographic service PDOK offers topographic map Top25raster for free. These maps are provided in geotiff format in local coordinate system. Locus Map is not able to handle geotiff

format, therefore it is necessary to convert these data manually.

This tutorial is prepared for Windows system but especially GDAL utilities work a little bit better on Linux systems.

Download data

- Whole Netherland is divided into sections – download a section which is suitable for you
- Download page: https://www.pdok.nl/nl/producten/pdok-downloads/basis-registratie-topografie/topraster/topraster-actueel/top25raster and other scales

Use GDAL for transformation

Install GDAL

- For purpose of this tutorial download gdal http://www.gisinternals.com/sdk/PackageList.aspx?file=release-1600-gdal-1-10-0-mapserver-6-2-1.zip
- Download gdal-110-1600-core.msi installer

Transform downloaded geotiff

- Open command line (CMD) and go to the GDAL installation folder (in our case C:\Program Files (x86)\GDAL)
- Transform downloaded geotiff into WGS84 system

```
set GDAL_DATA=.\gdal-data
gdalwarp -t_srs EPSG:4326 44a-top25raster-2010.tif  44a-
top25raster-2010-4326.tif
```

Use Mapc2Mapc to generate map in a Locus-supported format

- Download and install Mapc2Mapc http://www.the-thorns.org.uk/mapping/down.html
- Start Mapc2mapc and set the location of gdal_translate
  - Edit > Locate > GDAL_translate (choose path to the installation folder of gdal)
- Open transformed geotiff
  - File > Load Calibrated map
- Export file for Locus
  - File > Write map for Mobile devices
  - Choose Locus/RMAPS sqlitedb
  - Set zoom levels

    - optional: check Make tile margins transparent
    - Press OK and confirm all zoom levels which will be generated

Import map into Locus Map

- Copy generated sqlitedb map into your device folder Locus/maps
- Start Locus Map

Red crosses

- The demo version of Mapc2mapc will add random red crosses over the map. This is limitation of free/demo version

44a-top25raster-2010-4326.zip

How To Convert Shp File For Locus

- Locus type: <html>Free/Pro</html>, **2.3.0+**
- Last updated manual: **2.3.0**

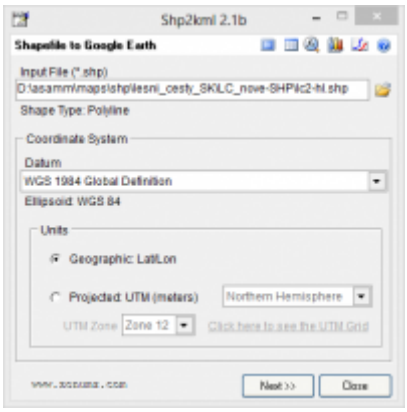
Basic information

Locus basically does not support SHP file at this moment. On the other hand there are some possibilities how to covert SHP to the different format that is possible to import into Locus.

Convert SHP file to KML

Probably the easiest way is convert SHP file into KMZ file which is fully supported by Locus. Unfortunately there is a limitation in size of KML file. The **limit** for Locus is about **5000 – 10000 points** depends on your device.

- Download free tool Shp2kml http://www.zonums.com/files/Shp2kml.zip
- Unzip and run shp2kml.exe
- On the first screen select file for convert



- Define color for lines/polygons

- Skip balloon definition screen
- On the last screen define name of layers and description

- Create KML file
- Copy created KML file into Locus/mapItems
- Run Locus and go to the Data manager > tab Items

Convert SHP to Mapsforge format

In this example we expect that shp file for converting is very simple. Unfortunately converting is little bit tricky and requires a specific approach for particular SHP files. So it is not possible to say that this example could be used for every SHP file.

For this example we use free shp data (Czech Republic boundaries) download-able at http://gadm.org/data/shp/CZE_adm.zip.

SHP file to OSM format

There are lots of possibilities how to do it - see http://wiki.openstreetmap.org/wiki/Shapefiles. In this example we use Merkaartor SW.

- Download Merkaartor http://merkaartor.be/wiki/merkaartor/Download
- Run it and open SHP file for converting
- Export OSM: File > Export > OSM (XML)
- Note: Merkaartor place <bound> tag in the end of osm.xml file. You need move it and place whole tag before first geometry element

cze_adm.osm

```
<?xml version="1.0"?>
<osm generator="Merkaartor 0.17" version="0.6">
   <bound box="48.540841,12.085860,51.054381,18.862533"
origin="http://www.openstreetmap.org/api/0.6"/>
  <node version="0" lon="14.4138160" lat="49.2553340"
timestamp="2013-04-28T10:55:33Z" user="" id="-1" actor="0"/>
...
...
```

```
...
```

Mapsforge map writer plugin

Osmosis

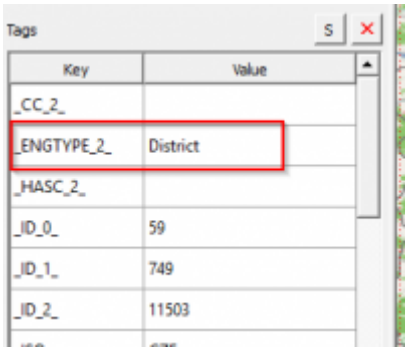
- Download and install osmosis 0.40.1 http://bretth.dev.openstreetmap.org/osmosis-build/osmosis-0.41.zip
- Note: there are newest version of osmosis but Map writer plugin does not work properly with them
- More details about osmosis http://wiki.openstreetmap.org/wiki/Osmosis/Installation

Map writer plugin

- Download Mapwriter plugin mapsforge-map-writer-0.5.0-jar
- Copy downloaded plugin into osmosis folder osmosis/plugins .
- More about installing Map writer plugin: https://github.com/mapsforge/mapsforge/blob/master/docs/Getting-Started-Map-Writer.md#plugin-installation

Define custom tags for generation of map file

- Map writer plugin uses a XML file(tag-mapping.xml) which contains pairs of known tags for generation. This xml define which OSM element will be included in the map file.
- Use Merkaartor or arbitrary GIS/DBF viewer and decide which SHP attributes you want to export to the map file.
- For this example we create `tag-mapping-shp.xml` file based on tag _ENGTYPE_2_



tag-mapping-shp.xml

```
<?xml version="1.0" encoding="UTF-8"?>
<tag-mapping xmlns="http://mapsforge.org/tag-mapping"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="http://mapsforge.org/tag-mapping
```

```
../resources/tag-mapping.xsd" default-zoom-appear="16"
  profile-name="default-profile">

    <!-- CZE_ADM_2 -->
    <ways>
        <osm-tag key="_ENGTYPE_2_" value="District" zoom-appear="4"
force-polygon-line="true" />
            <osm-tag key="_ENGTYPE_2_" value="Statutory city" zoom-
appear="4" force-polygon-line="true"/>
    </ways>
</tag-mapping>
```

Generate map file

- Run generation

```
bin\osmosis.bat --read-xml cze_adm.osm --mapfile-writer file=cze_adm.osm.map
type=ram tag-conf-file=tag-mapping-shp.xml bbox-enlargement=0
```

- More information about generation and Mapwriter plugin https://github.com/mapsforge/mapsforge/blob/master/docs/Getting-Started-Map-Writer.md

Create vector theme for rendering

- We've generated vector map and in next step we need to define appearance of geometry. Appearance is defined via theme XML.
- You can edit any free theme for Locus or create new one which will be created especially for your SHP file.
- Create theme xml (in our case `cze_adm_theme.xml`)

cze_adm_theme.xml

```
<?xml version="1.0" encoding="UTF-8"?>
<rendertheme xmlns="http://mapsforge.org/renderTheme"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="http://mapsforge.org/renderTheme
../renderTheme.xsd"
  locus-extended="1" fill-sea-areas="0" version="1" map-
background="#00FFFFFF">

    <!-- Render Boundaries -->
    <rule e="way" k="*" v="*">
        <rule e="way" k="_ENGTYPE_2_" v="District" >
                        <line stroke="#FF3E96" stroke-width="4" />
        </rule>
        <rule e="way" k="_ENGTYPE_2_" v="Statutory city">
            <line stroke="#B56904" stroke-width="4" />
        </rule>
```

```
    </rule>
</rendertheme>
```

Copy map and theme to the device

- Copy vector map file `cze_adm.osm.map` into folder `Locus/mapsVector`
- Copy theme xml into folder `Locus/mapsVector/_themes`