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1. DISCOVER OSMAND

1.1. WHAT IS OsmAnd?

OsmAnd is an application for maps and navigation based on OpenStreetMap data. It allows to consult map and collect GPS points completely offline, which is really useful in the field. In this document, will we present you the app and its functionalities.

<table>
<thead>
<tr>
<th>Offline mapping app</th>
</tr>
</thead>
<tbody>
<tr>
<td>Follow yourself on the map, navigation</td>
</tr>
<tr>
<td>Record, categorize, share GPS Points</td>
</tr>
<tr>
<td>Record, categorize, share GPS Tracks as you move</td>
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<tr>
<td>Excellent in poorly mapped areas</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Android and IOS only</th>
</tr>
</thead>
<tbody>
<tr>
<td>Offline mapping requires Internet at start</td>
</tr>
<tr>
<td>Uses OSM data not MSF data</td>
</tr>
<tr>
<td>Suitable only for GPS light mapping, not for structured data collection</td>
</tr>
</tbody>
</table>

1.2. DOWNLOADING AND INSTALLING OsmAnd

You can install OSMAND like any other app from Android’s Play Store.


You can install the free version, no need to buy the paying one. The free version has full features unlocked, and its only limitation is that you can only store up to 7 countries offline at the same time. This is not a major issue: as offline countries use extensive phone storage space, you’ll rarely use more than 1 or 2.
1.3. Interface Presentation

2. Preparation: Take Maps Offline

In OSMand, you can use background maps completely offline, without internet/Wifi/4G. You just need to download maps on the phone before, when you have a good internet connection.

To download background maps, click on the Configuration Panel button and go to Download Maps.

To download a map, just choose the continent, country and then region (if necessary), then click on the download icon. Be careful to have enough storage space on your smartphone as maps or massive regions can be quite heavy.

In the Local tab, you can see maps downloaded on your phone. If green, the map is up to date, if orange, you can download an update for this area. The application allows you to download only predefined background maps (by country or region) and only 7 maps for free.
3. COLLECT AND MANAGE GPS POINTS

3.1. Why take GPS Points on OsmAnd?

OsmAnd allow fast, easy recording of GPS locations called GPS points (or “Favorites” in OsmAnd). They can be easily displayed on the map, to be then saved and shared with another user or to your computer. Additionally, OsmAnd also allows you to take these GPS locations by clicking on the map: you can therefore record a location where you are not located physically, unlike older/other GPS devices, that would require you to go on site to collect a GPS point.

Caution: OsmAnd is an application designed for light mapping and collection of a few GPS tracks and Points Of Interest. However, OsmAnd is not suitable for regular, structured data collection. If you need to either record GPS points in surveys with lots of questions/descriptions, or regular monitoring of information, we recommend to rather use dedicated tools such as Kobo or ESRI Field Maps.

3.2. Add a point to your favourites

Creating a point in OsmAnd is quite easy. Just wait to get the GPS signal, allowing the app to find your location, it will be shown as a blue dot. To create a point at your location, press for a while on the blue dot and an orange pin will appear. To save this location as a waypoint and add it to your favourites, click on the star.

Long-press on the map to add the point to your favourites

Add the name (following the naming convention described in the procedures below)

Select the right category to put your point in

Fill the description (according to procedures) and click on Save to record the point
Your point is then added to the map. You can consult its information by clicking on it on the map. A popup opens below and allows you to edit information, share it or other option.

Move the point location with log-press on it and move:
You can take a picture using the same location with a swipe down.

3.3. Manage your Points

3.3.1. Create a New Category

By default, there is only one category for your GPS Points (favorites). You can add more if needed. Creating category has several advantages as:

- Allows you to organize data in folders
- Allows you to display points with different colors on the map according to their category
- The category can be used as a TYPE field in GIS software

You can create a new category when adding a point or editing an existing one.
Click on the category, then click on Add new.

A popup opens where you can fill in the category name and change the color (this color will be used to display point on the map).
Click on Save.
To consult all your favorites points, click on the Configuration Panel button and go to My Places. You can find in this folder all information you’ve recorded, points in My Favourites, tracks in My Tracks and pictures in Notes.

L Points are sorted by categories.
You can deploy a category (by clicking on the small arrow on the right) to see points that are in it.
If you click on a point, the map will pan to the selected point.

### 3.3.2. DELETE POINTS / CATEGORIES

**Step 1**

[Image: My Places panel with points listed.]

**Step 2**

[Image: My Places panel with points selected.]

Caution: If you select a category to delete, all points in this category will also be deleted.

Tick points and categories to delete then click again on the bin
3.3.3. **Edit Categories**

Click on the 3 dots on the right of a category to access options. From here you can change the category name, its color, choose to display it on the map, ...

---

4. **TRACKS**

Like a GPS device, **OSMand allows you to record a track while you move (thus instead of saving one location as a point, it will record your movement as a line on the map)**. However, this option is not available by default in the App: you have to enable it. Click on the **Configuration Panel** button and go to **Plugins**.

---

4.1.1. **Record a Track**

To record a track, make sure the location is activated on your phone and follow these steps:

- Go in the Plugins menu (Greffons in French)
- Enable the Trip recording plugin
- Go back to the map, you now have a GPX button on the top right
Once your trip is done, click again on the GPX recording button and use the following options to save it:

1) Use **Save current GPX track** to save the current trace and give it a name
2) Then, use option **Stop GPX logging**, otherwise the tracking will continue.

For more information on trip recording, see here:
https://test.osmand.net/docs/user/plugins/trip-recording/
### 4.1.2. Manage Your Tracks

To consult all your tracks, click on the main Menu button and go to My Places. To see our tracks we have to go in the second tab, called *My Tracks*.

Tracks can also be organized in folders. By default, they are stored in a REC folder. You can deploy it to see your recorder tracks.

Click on the 3 dots to access track options:

- By default, OSMAND will give to your tracks an automatic name based on its date & time, such as: **2021-05-02 06:55 Sun**
- You can, if you want, rename it into a more convenient name such as **2021-05-02 Road from XXX to YYY**.

When clicking on a track, you access several information:

- **See your track**: Click on it and the map will pan on its location.
- **Dashboard**: Gives you information on distance, elevation, speed, start and end time.
- **Share your track**: Share your track with others.
- **Tick to show the track on the map**: Check to show the track on the map.
- **Change the color of the track**: Change the color of the track.
5. SHARE YOUR DATA

5.1. SHARE OSMAND POINTS AND TRACKS BETWEEN PHONES

One useful option in OSMand is the ability to share data very easily using different applications. You can choose which data you want to share. You can share a single point (this will send message with a link or coordinates to open in another application), a whole category or all your data (this will send a .gpx file). Just like .xls is an Excel File, and .doc a Word File, .GPX files are a format containing GPS points/tracks. You can open these files in another OSMAND, in Google Earth, and in various GIS software.

To share a single point

- Select the point you want to share, then click on the share icon and select send.

To share a category

- Click on the 3 dots of the category you want to share, then click on the share icon.

To share all your data

- On My Places page, click on the share icon.

Choose with which App you want to share your data (depends on what is installed on your phone).

5.2. EXPORT YOUR POINT AND TRACKS TO YOUR COMPUTER

Si vous utilisez un téléphone sans carte SIM, sans compte sur mail / WhatsApp / ... vous devrez peut-être exporter vos données d’une manière différente.

5.2.1. USING BLUETOOTH

Partagez vos points en utilisant le processus expliqué ci-dessus, et utilisez Bluetooth pour partager le fichier avec votre ordinateur.

5.2.2. THROUGH USB CONNECTION

You can also export the .gpx file directly from the phone using an USB Cable, going to the OSMand file folder. Connect your phone to your computer and go to this folder: Android\data\net.osmand\files
All your points are stored in the “favourites” gpx file.

To access your tracks, go to the tracks folder.

Sometimes, this method doesn’t work, and the gpx file might look corrupted. If you are not able to open your gpx file in Google Earth or any GIS software, it’s probably due to micro-cut while exporting your file through USB cable. Open the gpx file in a text editor (Notepad for example) and you will see at the end that the code is cut off.

**Advanced workaround:** To avoid this issue, you can use an App like Wifi File Explorer which allows you to access your phone directory using wifi connection.

### 6. IMPORTING EXTERNAL DATA

As explained above, just like .xls is an Excel File, and .doc a Word File, .GPX files are a format containing GPS points/tracks. As you can open these files in another OSMAND, in Google Earth, and in various GIS software it is easy to import points in OSMAND, as long as they are in GPX format.

#### 6.1.1. Import from the App

To import a gpx file, click on the *Configuration Panel* button and go to *My Places*. Click on the + to browse on your device and find the gpx file you want to open. You can import waypoints and tracks.
**6.1.2. Import through your computer**

Another way to import gpx files is to **connect your phone to your computer and drop the gpx file in the correct folder.**

It can be useful when compiling data coming from several sources.

Connect your phone to your computer. Drop the .gpx file to the folder: `\\Android\\data\\net.osmand\\files`

**7. OSMAND advanced use**

**Warning**: The tips and tricks below bring you further in advanced features of OSMAND. They are mostly used by GIS Specialists and tech-savvy MSF staff already familiar with OSMAND. Some of them might also require specific software installed on your computer, or pre-existing knowledge of GIS Concept. While we include them in this manual, we strongly recommend you to not engage into them without a solid experience of this app!

**7.1. Enabling custom basemap in OSMAND using satellite/drone imagery**

Provided you have a Satellite Imagery in your possession, you can prepare and load this imagery as an Offline Basemap in OSMAND.

Preparatory Steps:

- Acquire Satellite imagery
- Using QGIS, ArcMap, ArcGIS pro or equivalent, crop the image to AOI
- Use Raster Processing to replace black background to transparent background
- Export in .tiff format
7.1.1. Generate tiles in QGIS

- Menu Plugins > Manage and Install Plugins > search and install the Qtiles plugin
- Open the satellite imagery and set in the map view the extent you want
- Create tiles of raster using the plugin following this settings (change directory name and tileset name accordingly): Menu Plugins > QTiles

The result will be a folder containing the tiles, a preview and a metadata json file:

```
Zone_DD  02/02/2018 5:32 PM  File folder
Zone_DDjson  02/02/2018 5:32 PM  JSON File  1 KB
Zone_DD  02/02/2018 5:32 PM  PNG File  16 KB
```

7.1.2. Install MOBAC and prepare custom XML

Download MOBAC here:

Open a Notepad document and copy paste the following code. Change the red values according to your dataset:

```xml
<?xml version="1.0" encoding="UTF-8"?>
<localTileFiles>
  <name>test</name>
  <sourceType>DIR_ZOOM_X_Y</sourceType>
  <sourceFolder>\Users\leoma\Desktop\test_osmand\test_osmand</sourceFolder>
  <invertYCoordinate>false</invertYCoordinate> <!-- facultatif -->
  <backgroundColor>#000000</backgroundColor>
</localTileFiles>
```

Save this file in Mobile Atlas Creator 2.0.0\mapsources as an .xml file:

![Save As dialog](image)

7.1.3. **Generate Atlas and Osmand Tiles in MOBAC**

Open Mobile Atlas Creator, give a name to the new atlas and choose the desired atlas format.
On the top-left menu, select your custom basemap and zoom in 'till you see your image. Draw a square around your image and check all the zoom levels on the left menu “Zoom Levels”. You will see how many tiles it represents:

Click on the Atlas in “Atlas Content” and click “Add selection”. You should see all your zoom levels:
Click on Create Atlas

![Create Atlas](image)

Once finished, click on Open Atlas Folder to see your sqlite file:

![Atlas creation finished successfully](image)

After downloading the OsmAnd on your phone, connect it to your PC and copy the sqlite file created previously in the following folder:

- `This PC\Galaxy J2 Prime\Phone\Android\data\net.osmand\files\tiles`

**Note:** you might have to adapt this standard location if you installed OSMAND in a different location in your smartphone.

### 7.2. Download OsmAnd data using BBBIKE

The format used in OSMand is .obf. We can have this format using bbike platform: https://extract.bbbike.org/

Choose the format OSMAnd (obf)
Enter your email address
Give a name to your AOI

Click here to draw your AOI
Finally click on Extract. When the extraction is done, you will receive an email with a link to download the file in .obf.

Connect your phone to your computer. Drop the .obf file to the folder:
\Android\data\net.osmand\files

### 7.3. Creating pictures, audio and video notes

With OSMand you can take notes as pictures, video or audio file. You just need to install a plugin.

To take a geolocated picture, just click on the camera icon, then select which type of note you want to take.

Icons appear on the map where you have taken video or pictures.
To consult all your notes, click on the Configuration Panel button and go to My Places. To see our notes we have to go in the third tab Notes.

To import geolocated pictures in GIS software, follow this tutorials:

7.4. Color tracks

One trick interesting with OsmAnd, easy to do, is that if you add a gpx file with waypoints in the folder "track" in OsmaAd, the points display by default in red. So to improve some reading, before "save as" your shp in gpx file, you can create a column "color" to define the color of points. You have just to write the HTML code color needed. For example "#7496da" You can find all HTML code in the ramp color of Qgis or on online sources.

In OsmAnd when you create favorites, the default points color is yellow, but it's link to the code "#000000" standardly black. But if you add just a 1 like that, "#000001", you have Black point in OSMAnd.

7.5. Trip logging minimal displacement

Trip logging minimum displacement is a filter which avoids duplicate points being recorded where too little actual motion may have occurred, makes a nicer spatial appearance of tracks not post-processed later.

7.6. Using Offroad

Offroad : https://sourceforge.net/p/offroadosm/wiki/Home/

Displays OSMAnd on computer. Display is not really good, however on can download the latest country map in .obf for OSMAnd format, without limit. This could be used as a workaround to overcome OSMAND free version 7-countries limit. Also, contour map in OSMAnd can be download from the srtm country .obf file to be imported in OSMAnd, bypassing free version restriction.

Note : Source : SV 14/09/2018
8. OSMAND ONLINE DOCUMENTATION

Need more information on OSMAND? Consult these resources:

Free online help and community:  http://osmand.net/help-online