



User Manual  
OruxMaps v.9.0

## **COLLABORATE WITH ORUXMAPS!**

We can freely contribute to the project:

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## **DEVELOPING THE MANUAL**

**It will be a simple task for everyone.**

**IMPORTANT! OruxMaps needs some special permissions, which we can deny if we don't want to use these capabilities (as of android 6.0):**

- **Send SMS messages**, for the new function that allows we to send an SOS message if we don't move.
- **Access to contacts**, to quickly add friends and be able to use our avatar.
- **Access to our accounts**, to make a secure login on the OruxMaps servers.
- **Access to GPS**, to position yourself on the map.
- **Storage access**, to save the app data in the accessible directories.
- Other minor permits.

**For many of the new functions it is necessary to login to the OruxMaps servers. The multitracking function uses the new server, all users must be using version 6.5.0 or higher !!!**

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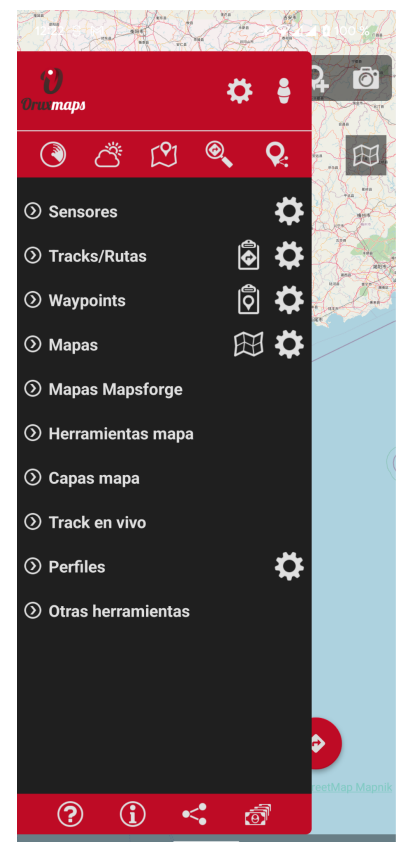
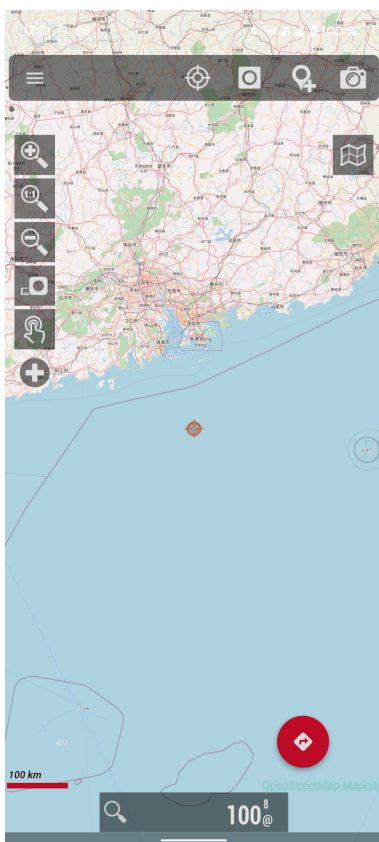
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## WHAT'S NEW 9.x VERSION

### Unified Interface.

Since version 9, the interface that appears by default in the map viewer is the unified one. BUT for those who are used to the old interface, you can go back to it: Map viewer, top button bar, leftmost button; in the action panel, at the top, a cogwheel-shaped button (which takes us to the global settings). On the first screen of the configuration unclick 'unified interface'. With this we will see the old interface and button layout again. The main changes in this interface are:

- Upper button bar without submenus. All actions are performed from the side panel.
- Structure of actions in the side panel with new distribution and format.



### App storage.

Here there is an important change. Since this version OruxMaps is FORCED (it is not its own decision) by Android to use the private folders of the app, it can NO LONGER directly use the root of the internal storage or an SD card.

If you update from a previous version of OruxMaps, the app gives you the option not to migrate the data to the app's private folders, so you can use the previous system.

If the phone has an Android version lower than Android 10, the previous storage system is also still used.

BUT if this version is installed for the first time, the app is FORCED to use the private storage folders in the path `Android/data/com.orux.oruxmapsDonate/files/oruxmaps/` and save everything there.

In case the app uses private storage, in global settings→app storage there are two useful tools:

→Import resources: Used to bring individual resources (maps, routes,...) from any phone directory to the app's private folders.

→Recover old installation: Used to copy everything from an old installation of OruxMaps (maps, routes,...) to the private folders of OruxMaps.

### **Another change in ver. 9.0:**

—>Mapforge library update to 0.17.

—>Adaptation to Android Scoped Storage.

—>Patterns with Waypoint names.

—>Colorized night maps.

—>Support for garmin extension (base camp routes) in gpx files.

—>New text to speech fields (altitude up/down).

—>Import geotagged pictures to your waypoints list.

—>Support dynamic kml files.

—>Strava integration, added a new button in the Strava activities to see starred segments.

—>Added (long press the map) an option to search images in WikiMedia databases.

—>Added icons to mapforge searches (some categories).

—>New sensor, network status.

—>New menu options when pressing a Track.

—>Routes searched with brouer, added the option to include data of road type, surface, etc.

—>Edit the properties (name, description, color, fill, ...) of each segment of a Track.

—>Added no-go points to brouer search engine.

—>New feature: Group waypoints if they overlap.

—>Range selection in waypoints/tracks lists.

—>Massive track properties modification.

—>Support for files in geojson format (tracks, polygons,...).

—>Secondary directory for maps.

—>Georeference map images and use them as maps or overlays (pdf, tiff, jpg,...).

—>Bug correction.

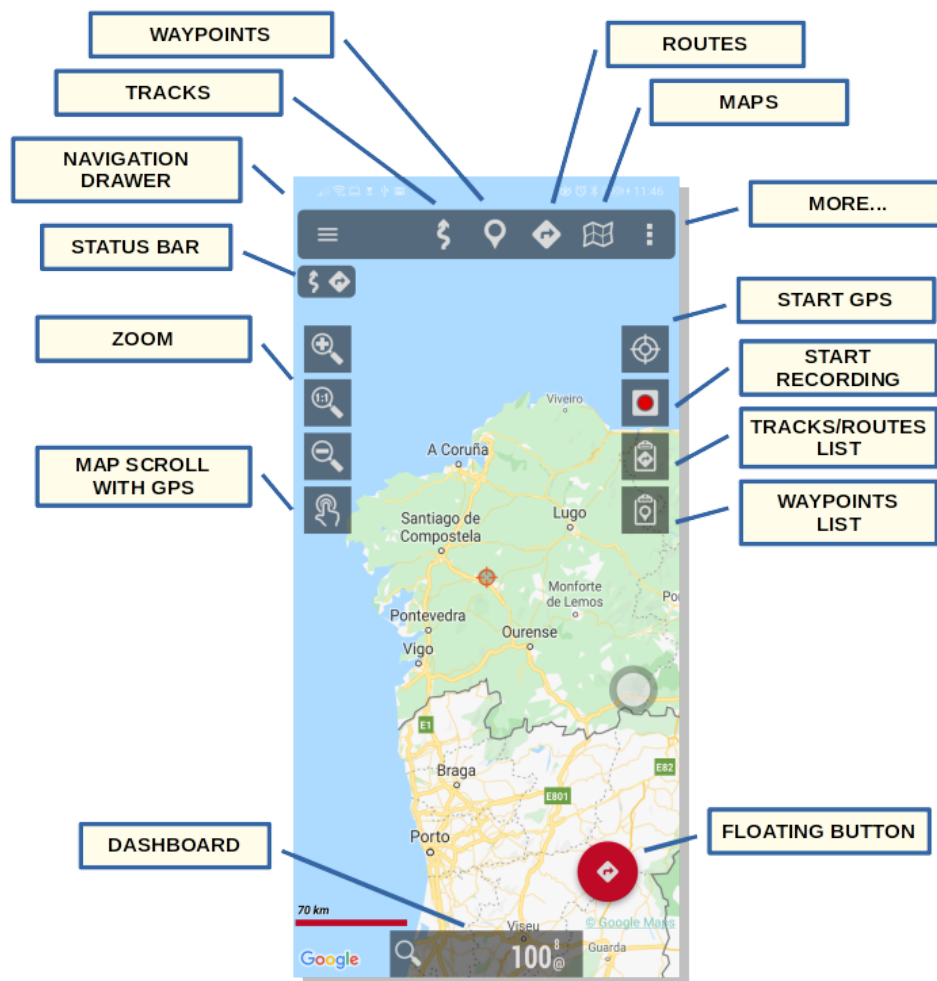
## QUICK START

The first time we run **OruxMaps**, a directory will be created in the terminal memory (internal memory or SD card) called *oruxmaps/*.

IMPORTANT !!!: If we have installed on our phone some storage optimizer, own phone or external, such as Clean Master, ES Explorer or similar, we must configure them so that they do not delete any file inside the *oruxmaps/* folder.

The first time it is opened one of the **online maps will be displayed (which uses Internet data)**. The app only brings a very simple offline map (without data use) of the sample world, but we can download many more detailed ones from the app itself.

We will be seeing OpenStreetMap (online). If we want the GPS to move the map, **button 'Start GPS'**, or **'Tracks' - 'Start Gps'**. Once a first positioning is received, the map is centered on our current position.

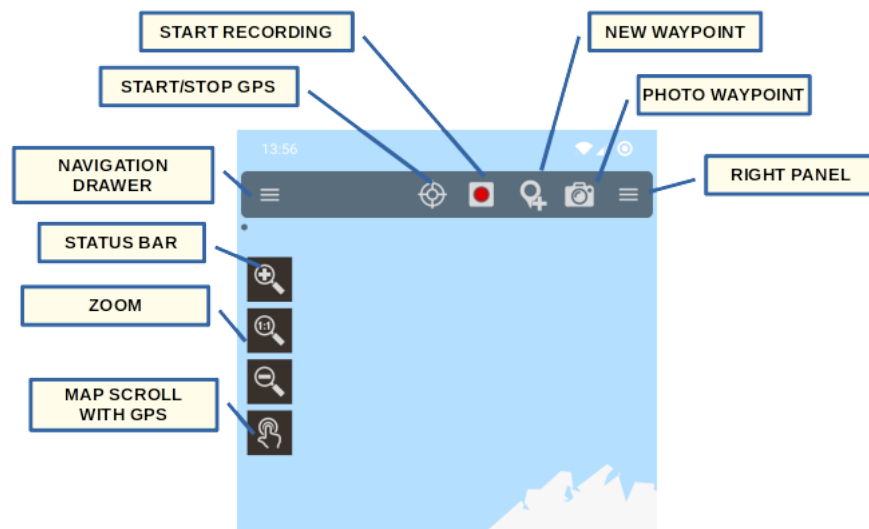


**Map Viewer (ADVANCED version)**

Do we want to zoom? Well, we have three ways to choose; fully configurable in the program settings:

- With the buttons on the button bar.
- Using the multi-touch screen (pinch).
- Using the volume buttons: By default only digital zoom, without changing layers.





**Map Viewer (LITE version)**

**All the images that we download online, are saved in an internal database, for later offline use,** much faster than if we have to go look for them again at the respective server, or when we run out of coverage.

Do we want to start recording a Track (that remains stored in the app's database)? Well we use the **menu button 'Tracks' - 'Start recording' or 'Start recording' button**. From this moment on, much more information is shown in the dashboard. What is shown to us and how, we can change it in the configuration. If we move, our route will be painted in red on the map. This tour is a **Track**.

Do we want to add a Waypoint? Press the **menu button 'Waypoints' - 'Create'** And give the Point a name and type. When we accept, it appears on the screen. If we want to see its details, click on it on the screen.

Have we finished the Track? Again we click on the **button 'Tracks' - 'Stop recording'** and the Track will be kept in an internal database.

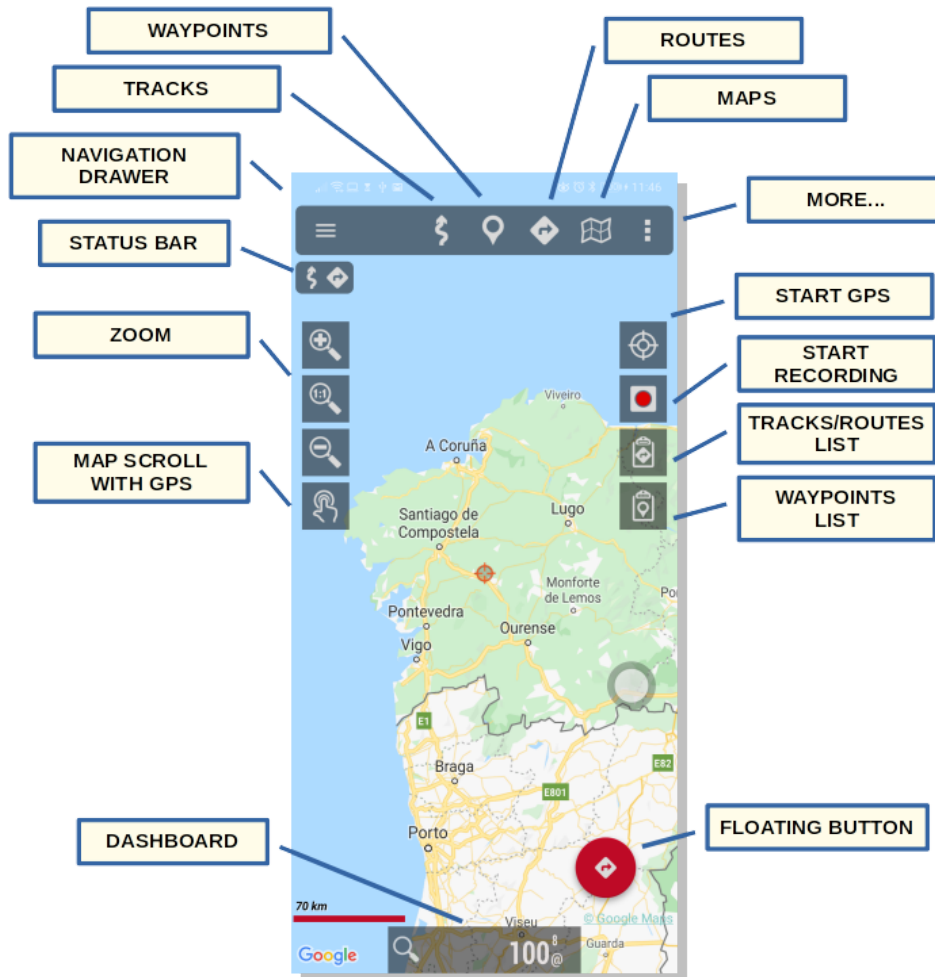
Do we want to see the statistics of our Track? **button 'Tracks' - 'Statistics'**.

From here, it's time to study the manual. OruxMaps does many things, it has many settings, menu options.... It is not possible to explain everything on one page.

## MAP VIEWER

The map viewer is the main screen of the app. It is highly configurable. We can hide/show most of its components, to make visible the main thing, the map along with what is painted on it.

Its main components:



### Top button bar

From it, we can control the entire app. They are drop-down menus, **entries (buttons) are shown depending on the current state** (whether or not the GPS is on, if there is a loaded route, ...). We can make this bar automatically hide (click on the top of the screen to be seen again), or always be hidden, and use the side panel of controls and the side buttons to operate the app.

There are five accesses:

1. Tracks:
  - a. Start/stop the GPS.
  - b. Start an external Bluetooth GPS (if one is configured).
  - c. Start/stop recording a Track.
  - d. Delete track from screen (if one is visible).
  - e. View Track statistics (if one is visible).
  - f. Enable/disable SOS function (if configured).

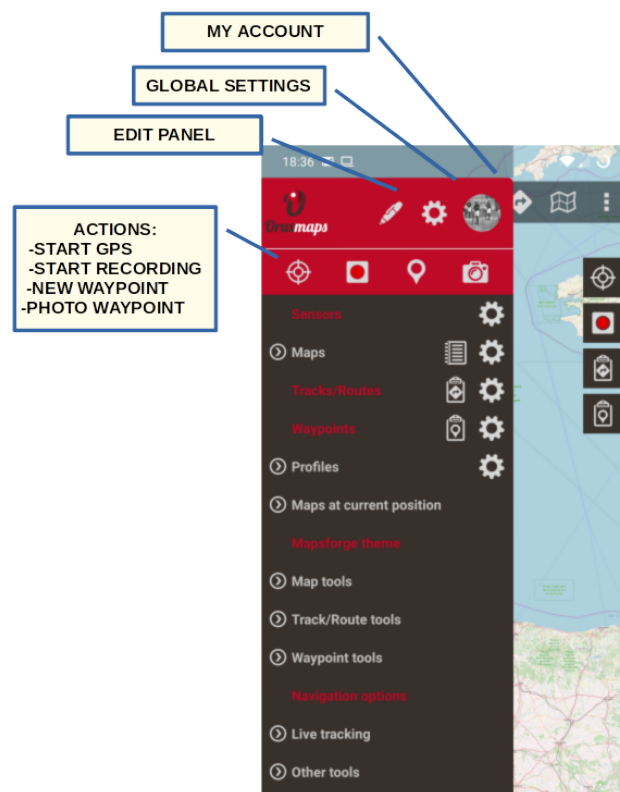
- g. Sensors (the ones we have configured):
    - i. AIS
    - ii. APRS
    - iii. Vario
    - iv. Heart rate monitor (Bluetooth)
    - v. ANT + (pulse, cadence, speed, power, temperature)
    - vi. Bike speed/cadence sensor (Bluetooth)
    - vii. BT bike power sensor.
    - viii. Pressure sensor/temperature/humidity Tempo Disc
    - ix. BT pressure/temperature sensors
  - h. Tracklive (if configured):
    - i. Multitracking
    - ii. OkMap
    - iii. mapmytracks.com live
    - iv. GPSSGate
  - i. Calibrate barometer (if the phone includes one or we have configured one).
  - j. Quick GPS settings.
  - k. Sensor settings.
2. Waypoints:
- a. Create Waypoint.
  - b. Waypoint photo.
  - c. List Waypoints of the current Track.
  - d. List Waypoints of the active Route.
  - e. Geocoding (online).
  - f. Map search (offline, if a mapsforge database is configured).
  - g. Search in the layers (if any layer contains Waypoints).
  - h. Geocaches.
  - i. Waypoints list.
  - j. Waypoints configuration.
3. Routes:
- a. Clean screen (if we have loaded any in the map).
  - b. Statistics of Active route.
  - c. Route tools:
    - i. Load GPX/KML/KMZ from file
    - ii. Search Route (offline with BRoute, online with Graphhopper)
    - iii. Create Route by hand
    - iv. Measure distances along a route
  - d. Navigation options:
    - i. Activate/deactivate route tracking.
    - ii. Enable/disable waypoint navigation.
    - iii. Activate/deactivate alarms to be far from the path and/or approach to Waypoints.
    - iv. Turn back, and reverse the Route.
  - e. List of Tracks/Routes.
  - f. Routes configuration.
4. Map:
- a. Open map
  - b. Open map offline at the current position
  - c. Center map
  - d. Options Layer
    - i. Draw Layer
    - ii. Load layer KML/SHP
    - iii. Adjust layers on the map

- iv. Download layer (online)
  - v. Show/Hide shadows
  - vi. Show/Hide Grid
  - vii. Show/Hide Grid UTM
5. More ...:
- a. Configuration global.
  - b. Profiles.
  - c. Manage my account.
  - d. Various tools:
    - i. Measure distances on the map.
    - ii. Measure areas.
    - iii. Access to trip computer view.
    - iv. GPS Status.
    - v. Laya.
  - e. Help.
  - f. About.

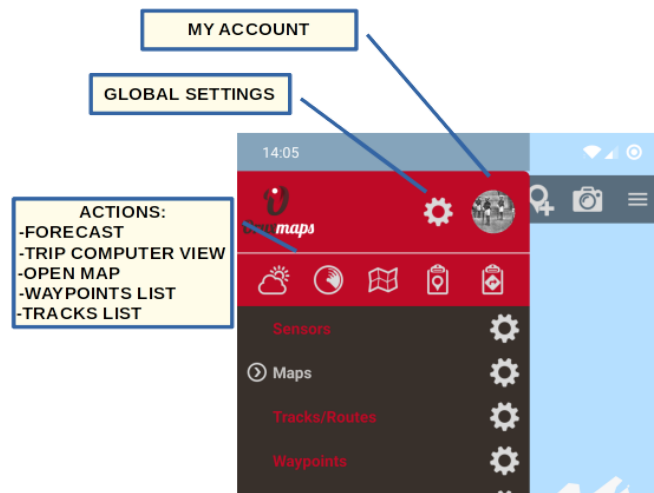
### Side Control Panel

Accessed from the button shown on the left in the top bar of the viewer, or by sliding our finger from the left side of the screen to the center. This panel is an alternative (or complement) to the top button bar, as it is easier to operate by holding the phone in one hand with our thumb. The entire app can also be operated from this panel.

It is a panel with direct actions, which can be edited and hidden options.



### Advanced version



**Lite version**

Below the 'Actions' there is a set of drop-down menus, which replicate the actions found on the top button bar.

## Location cursors

There are two cursors:

1. The position on the map (GPS). Only visible if the GPS is active and has received a valid signal.
2. The one in the center of the map viewer. Not visible by default. It will become visible if the GPS is active and we move the map with our finger. We can make it always visible in **'Global settings' - 'Visuals' - 'Cursors' - 'Show viewer center'**.

This second cursor can be moved to the bottom of the screen, very useful when using map modes (see below what map modes are) 'compass-oriented map' or 'direction up'. It is activated in **'Global settings' - 'User Interface' - 'Cursors' - 'Cursor below'**.

Also, we can use different icons. There are a few by default. And if we want to use others, just copy to the application folder **oruxmaps/cursors/** any image .png and it can be used as a cursor.

## Dashboard

It shows us the information we want, depending on the mode in which we are. The possible elements to display are coordinates, zoom level, height and a long etcetera ... Controls that do not have useful information are hidden. For example, in map viewer mode (GPS is off), the GPS controls (speed, heading, ...) are not displayed.

Currently there are two types; depending on whether we want large or small controls. In turn, the large size allows us to play with the black/white background colors and red/white/black letter colors. Configurable from **'Global settings' - 'User Interface' - 'Dashboard'**.

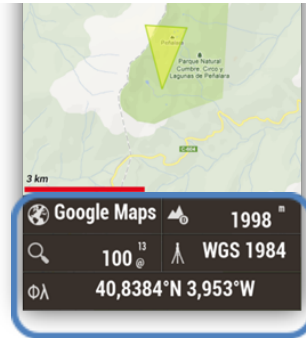
It is managed from **'Global settings' - 'User Interface' - 'Dashboard' - 'User Interface'**. Here the components to be viewed are selected, depending on the status of OruxMaps (GPS on, recording a Track, Live Track ...). We can also order them as we like. The data is stacked from left to right, from bottom to top according to the order in which we place them in **'Global settings' - 'User Interface' - 'Dashboard' - 'User Interface'**

We can make it automatically hidden from 15 seconds in '**Global settings**' - '**User Interface**' - '**Control panel**' - '**Hide Control panel**'. Click on the lower part of the screen to make it appear again. We can also make it show/hide with a click on the Dashboard itself or the place it occupied before disappearing.

Some controls have additional functionality if we long press on them. For example:






- Coordinates: toggles between different coordinate formats.
- Tilt/Side Tilt: Zeroes the value. It is used to calibrate this sensor, once we put the phone on a support in our vehicle, for example.

A second dashboard can be displayed at the top of the viewer. It allows three elements to be included in it. It is configured in: '**Global settings**' - '**User Interface**' - '**Dashboard**'— [CONTROLS UP]



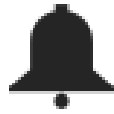
### Status bar

Indicates the status of the app (if the GPS is on/off, there is a Tracks loaded on the screen, ..). The icons that can be displayed are the following:

Icon	Meaning
	Compass; rotates indicating magnetic North.
	Active GPS.
	Active GPS, economizer mode.
	Active GPS, fast mode.
	Recording a Track.



Active BT heart rate monitor.



Route/Waypoint alarm active.



Geocaching.



Following a route.



KML/KMZ layers loaded on the map.



Active variometer.



Waypoint navigation.



MultiTracking active.



Active live track.



Route loaded in viewer.



ANT + sensor active.

---



Track loaded in viewer.



Automatic scrolling of the map by disabled GPS.

---

**SOS**

SOS function active.



Security perimeter or active exclusion zone.



Active BT cadence/speed sensor



AIS active.



Active barometer



Active APRS



UTM grid



Grid



Active BT cadence/speed sensor

---





Temperature

---












**A long press on the Status bar takes a screenshot.** This image is saved in the folder *oruxmaps*.

## Side buttons

These bars contain direct actions. They can be configured to be hidden automatically. They contain a series of default actions, but we can add/remove others, from the global settings of the app.

We can therefore combine the top button bar, the side panel of controls, and the side button bars, to configure the viewer to our preferences.

We can add or remove the buttons on the side bars from '**Global settings**' - '**User Interface**' - '**Buttons**' - '**Button builder**'.

Icon	Meaning
	Quick GPS configuration: <ul style="list-style-type: none"><li>• Default: according to the settings we have in preferences.</li><li>• Fast: Save a GPS point every 5 meters, keeping the GPS always active. Useful for short activities in time.</li><li>• Energy saving: Save a signal every 80 meters and 30 seconds. For when we are very bad on battery.</li></ul>
	Delete the current Track from the screen (not from the database).
	View the current Track/Route Waypoints.
	Open and load a KML/KMZ/GPX into the viewer.
	Enter the general settings of OruxMaps.
	Create a Track by hand.
	Create a Waypoint. <b>Long press;</b> open the camera for a photo-wpt.
	Statistics of the current Track.
	Start/stop the GPS. When it receives a signal, the GPS will control the map and position us on it. If we scrolling with the finger, the positioning is disabled for XX seconds (see application settings). <b>Long press;</b> If an external GPS is configured, activate it.
	Open GPS status.
	Zoom - <b>Long press;</b> jump from 5 to 5 layers.



Reset digital zoom to zero.



Zoom +

**Long press;** jump from 5 to 5 layers.



Relief view.



Start recording a Track.



Open the trip computer view.



Open *layar* if we have it installed.



Search by *Geocoding*.



Manual/automatic movement of the map with the GPS



Measure distances.



Create offline map from an online map.



Select and open a new online/offline map.



Select a new map at the current position.



Show index map.



Change map mode.









Move the map to ...

**Long press;** If GPS is active, move the map to the last GPS position.



Next Waypoint in Waypoint Navigation.

	Previous waypoint in Waypoint Navigation.
	Show or hide the Side Dashboard.
	Share current position.
	Share screenshot.
	Starts a new segment, when a track is being recorded.
	Open the application on our wearable.
	... And many other shortcuts that we can see on the button selection screen.

### Side Dashboard

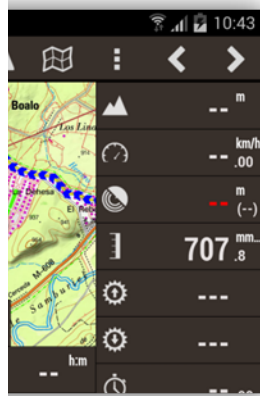
Activated from '*Global settings*' - '*User Interface*' - '*Various UI*' - '*Side Dashboard*' and will be displayed when **the terminal is horizontal**. This Dashboard is capable of displaying a multitude of information as configured and we can go from one mode to another by selecting the upper arrows.

**Statistics:** Shows the statistics of the current Track or Route with the data of *Altitude*, *Heartbeat*, *Speed* and/or *Slope*. Button '*1º*' for the first statistic, button '*2º*' for the second.

**IMPORTANT:** If we are following a route, we can see our position on the height profile of the route we are following, for this, in one of the two graphs select **'Route', and only 'Altitude'. Our position will appear as a vertical green line.**



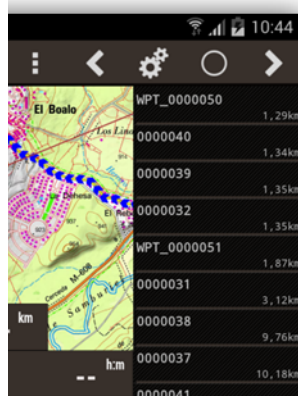
Dashboard: Shows information. To change the data to be displayed, press and hold one of the information boxes until all the available options appear.



**Compass:** From this mode, we access a compass that has an artificial horizon level inside. It also includes informative boxes that can be modified by long pressing on them.



**Waypoints List:** Shows a list of Waypoints. Two new buttons appear in the upper bar to configure this navigation. Pressing 'W' we can select between the *closest* or the *Waypoints of the Route*. Pressing 'O', we select the radius in km of search for the closest. If we select a Waypoint, we can choose between '**View on the map**' and '**Navigate to**'.



**Navigation view:** This mode offers a compass that has a speedometer on the left and a vertical speedometer on the right. In addition, if we are navigating to a Waypoint, it shows us an arrow indicating the destination direction. To the left-up of the compass the icon of the next waypoint to which we are navigating is painted.

At the bottom it includes informative boxes that can be modified by long pressing on them.



### Angle of vision (View area)

It is a yellowish triangle (we can change its color) and it shows us on the map what we are currently seeing, rather, what is in front of our terminal according to its current orientation. To activate it we need to activate two options:

- Compass: **'Global settings' - 'User Interface' - 'Various UI' - 'View compass'**.
- View area: **'Global settings' - 'User Interface' - 'Cursors' - 'View area'**.

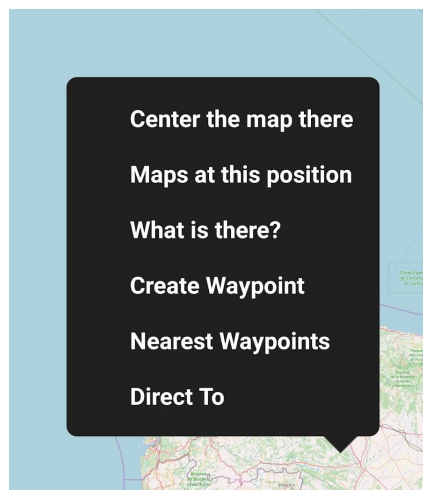
### Map modes

We can make the map rotate automatically, depending on the sensors (GPS or compass). From the map viewer, button **'Maps' - 'Map settings' - 'Map mode'**:

- Normal: According to the tiles, the image is not rotated.
- Compass and Oriented Map; keep it oriented with the compass.
- Up direction; requires the GPS to be turned on.
- North Up - Useful if maps are rotated.

### Context menu

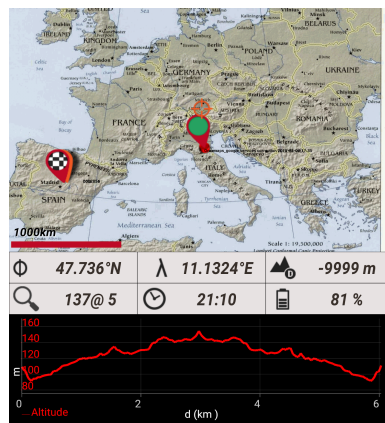
It is obtained by long pressing on a point on the map. It allows us certain actions on that point.



- **Center map here:** move the map to the clicked position.
- **Maps in this position:** search offline maps for those containing that point.
- **What's in here** search geocoding services (online) which points of interest are close to that point.
- **Create Waypoint.**
- **Nearby waypoints:** search in the list of our Waypoints those that are relatively close to the clicked point.
- **Direct to:** Allows we to start 'Waypoint Navigation', creating a Waypoint at the designated point, and starting the aforementioned navigation, or searching for a route, to follow it, using Graphhopper online services, or Graphhopper or Brouter offline services. See later how to configure these services.

### Graph in lower panel

We can see the Route we are following (there must be a loaded route in the viewer, therefore) at the bottom of the screen, showing our position during monitoring: **'Global settings → Visual elements → Control panel → Altitude graph display'**



### CONFIGURATION OF THE APP

From the configuration menu, map viewer, button **'More' -'Global settings'** we access the following options (highlighted in yellow the important points):

#### Lite version

Now we can use the app in two modes:

- **LITE** : Simplified, with most of the functionality used by users.
- **ADVANCED**: Includes more adjustments, use of complex sensors, ... Useful only for advanced users.

#### Configurator

A help to configure the most important parts of the app in a direct way.

## App Storage

To define the folders where the app will save/manage files, databases, ... DON'T CHANGE THEM IF we DON'T KNOW WHAT we DO!

- **Maps directory.** Where the maps are located, we can organize our maps in directories here.
- **DEM files directory.** Save our DEM files here for OruxMaps to use and to know the height of any point without the need for GPS.
- **Routes, Tracks directory** Directory where the Tracks and logs are. Starting with version 2.0, Tracks are stored in a sqlite3 database, named *oruxmapstracks.db*. This file is located in the *oruxmaps/Tracklogs/* folder
- **GeoCaches Directory.** Directory where they are located and must be saved *geocaches* (files *.loc* or *.gpx*).
- **Custom types.** Directory of custom waypoints types.
- **Pictures directory.** Folder in which photos are saved when creating a photo-waypoint.
- **KML/KMZ overlays directory.** Folder where we must save the KML/KMZ that we want to use as *overlays*.
- **Mapsforge themes.** Where we can copy the themes that will be applied to the mapsforge maps.
- **Cursors Directory.** Where the cursors are located. **Any .png image can be used as a cursor;** simply place our cursors in this directory and they will appear as selectable.
- **Migrate to Ext. SD.** Move maps, tracks, DEM files and map styles to an external storage.

## User Interface

- **User Interface wizard:**

We access a wizard that allows us to configure the main visual aspects.
- **Buttons**
  - **Navigation floating button.** It shows in the map viewer a floating button at the bottom right, with all the options related to navigation (route tracking, waypoint navigation, alarms, ...). Useful if we use the app frequently to follow routes.
  - **Buttons bar.** Allows us to select which buttons and in which bars (right or left) the buttons are to be seen, in the map viewer, side bars.
  - **Large buttons mode.** It features a larger set of buttons, making it easier to use if we are visually impaired.
  - **Vibration.** Vibrate the terminal when using the buttons.
  - **Hide buttons.** Hide buttons after 10 seconds to leave more map visible; click instead to view again.
  - **Hide slider buttons.** When button bars are hidden, it shows/hides tabs that, when pressed, display the buttons.
  - **Hide upper buttons.** Hide the top bar to leave a larger map; click in its place to view again.



- **Transparent buttons bar.** Makes the top button bar transparent.
- **Dashboard**
  - **Dashboard controls:** What components and how we will see them in the map viewer. Select here the elements that will be seen in the dashboard of the viewer. They are seen or hidden depending on the state we are in; for example, controls in 'Active GPS Mode' are only seen if OruxMaps GPS is activated. In this list we can order, from left to right, bottom to top, the order in which they are seen on the screen.
  - **Show altitude graph:** In the map viewer, at the bottom of the screen, we will see the route we are following, above the altitude profile, and our position on the route as a green dot.
  - **Hide Dashboard.** If we activate this box, the Dashboard will hide after 15 seconds. In order to view them again, we will touch the scroll button.
  - **Dashboard hide/wake up.** This option allows us to hide/show the dashboard with a click on it, or the place it occupies.
  - **Large Dashboard.** We select the large dashboard. There are two types of controls, to choose from, the one with larger controls (by default) and the other with smaller controls, so that we can see more of the map on the screen.
  - **Dashboard text size:** Slightly increases/decreases the size of the text inside the dashboard (with its limitations, some values may not be visible in full).
  - **Next waypoint indicator.** It shows in the map viewer, upper right corner a red box with directions to the next waypoint when in 'following route/waypoint navigation' mode.
  - **Display the top Dashboard:** Displays the control box at the top of the screen (below the top buttons, a maximum of three items), with the data we select in the following settings.
- **Cursors**
  - **GPS Cursor icon.** Select the icon to indicate the GPS position on the map. If we have put images in the folder indicated in the previous setting, we can select it here.
  - **Circle GPS precision.** The GPS precision distance is displayed around the GPS cursor.
  - **Map center icon.** Select the icon to be used to indicate the center of the map viewer.
  - **Map viewer center.** Select when the icon in the center of the map viewer is displayed:
    - **Normal.** Visible only if the GPS is active and we scroll the map with our finger.
    - **Always.**
    - **Never.**
  - **Cursor to bottom.** Place the cursor at the bottom of the screen, useful for when we have the map oriented, and we want to see more map in the direction we are going.
  - **View angle.** When the compass is activated, it shows a triangle indicating where we are looking on the map.

- **GPS position, indicator circles.** Draw circles around the position, at different measures, to see the distance to different objects/entities on the map.
- **Colors** of the strokes, letters and thickness of the strokes. We can select the font size used with the Waypoints.
  - **Application theme.** We can select between a dark theme, a light theme and the default red one.
  - **Dashboard colors.** Change the color of the dashboard according to the theme of the application.
  - **Dashboard texts color.** The color of the letters in the dashboard.
  - **Dashboard/buttons color.** This is the background color for the map viewer dashboard and side buttons.
  - **Custom color background color.**
  - **Track color.** From the path we are recording.
  - **Route color.** Of the route we are following.
  - **Secondary routes.** More than one route can be loaded into the viewer (one route is active, the others are only displayed).
  - **Waypoints text color.** If the name of the Wpts is shown. on the map they are shown in this color.
  - **Graphics background.** The graphs of the statistics are seen with this background color.
  - **TMG line color.** Color of the 'Track Made Good' line. It is a line that indicates the direction of our march.
  - **View angle color.** The triangle that indicates the area seen.
  - **GPS position, indicator circles.** The color of the circles around the GPS position indicating distance.
  - **Target Waypoint indicator circles.** The color of the circles around the Wpt. target indicating distance.
- **Tracks, lines, letter sizes, ...**
  - **Track stroke width.** Of the Track we are recording.
  - **Route line width.** The width of the main route path. Remember that on screen we can load multiple routes, but only one is the active (main) one.
  - **Secondary routes width.** The width of non-active routes.
  - **Track path effect.** The path is shown with directional arrows, rather than a line.
  - **Route path effect.** It shows the routes as dashed lines, in the form of an arrow, which allows us to see the direction of the route at each point on it.

- **Colored path with slope.** Shows the active route by coloring the slope (if the route has height information).
  - **Slope colors Legend.**
  - **Draw distance indicators.** Draw points on the active route, indicating the kilometers from the beginning.
  - **TMG line.** Show a line in the direction we are going.
  - **TMG line.** Thickness of the TMG line.
  - **Line to the last Position.** Scrolling the map, with GPS active, displays a line from the GPS cursor to the center of the map cursor.
  - **Letter size.** From the text shown on the map, with the name of the Wpt.
  - **Max. points per Track.** If the Tracks/Routes have many points, in order to paint the map correctly and that there are no delays when moving the map, the number of points painted is limited. If we have a powerful phone, we can increase this value.
  - **Target Waypoint, indicator circles.** Draw circles around the Wpt. objective, indicating distances.
  - **Circles stroke.** It is the thickness of the circles indicated in the previous setting, and for the GPS cursor distance indicators.
- **Miscellaneous UI**
    - **Immersive mode.** Hide all possible elements of the phone (android status bar, navigation buttons, ...) to give greater visibility to the map.
    - **Force immersive layout.** In some phone models, with buttons at the bottom of the screen, the immersive mode does not work well, the app does not receive information about when the virtual buttons are visible. Select this checkbox if we have that problem.
    - **Status bar.** Hide the top status bar of Android.
    - **Semi-transparent status bar.**
    - **No action bar.** Hide the top button bar permanently. If we just want to see the side panel of controls, and control the app from the menus/submenus of that bar.
    - **No navigation drawer.** If we don't want this panel to be displayed, and control the app from the top button bar.
    - **Scale.** Shown in the map viewer, bottom left.
    - **Compass always visible.** The compass is always displayed in the status panel of the map viewer.
    - **Lateral dashboard.** It shows a side table, when the device is landscape, with various selectable information (statistical graphs, compass, heights, speedometer ...).
    - **Maximum speed.** For the speedometer of the control panel TC-4, (For example, if we use a vehicle, set this value to 160, if we ride a bike 60, walk 20 ...).

- **Show Waypoints in graphics.** In the statistics of the routes, in the graphs the Wpts are painted.
- **Show Waypoints name in graphics.** In the graphs of the previous adjustment.

## Application

- **Select language.** Force a language.
- **Geocoding service.** What service is consulted when the app searches for points of interest.
- **Led in EcoMode.** It uses a flashing LED to notify us that we are inmode 'Recording Track', when the screen is off.
- **Screen always on.** It does not turn off the screen when we are inmode 'Recording Track'. Watch out for the battery!
- **Display brightness.** Regarding 'always on', the screen brightness can be maintained or decreased.
- **Unlock screen automatically.** The screen automatically turns on, when receiving alarms from OruxMaps, while recording a track.
- **Automatic rotation.** It prevents the screen from rotating when we rotate the terminal.
- **Sun set/rise time.** The type of sunrise or sunset that will be displayed on the sunrise/sunset controls.
- **Trackball Scroll.** Activates deactivates the movement of the map with the Trackball.
- **Vibrate with alarms.**
- **Send anonymous bugs report.** If the application is forcibly closed, the next time it is opened it will be able to send an *log* error to the developer.
- **Online elevation service.** To correct Tracks/Waypoints heights. By default *MapQuest* is used, but we can use another one, for example Google:
  - **Coordinates per request:** 48
  - **URL Pattern:** `http://maps.googleapis.com/maps/api/elevation/xml?locations=$$coord}&sensor=true`
  - **Coordinates separator:** %7C
  - **Tag to search:** Element name to search for each elevation value: elevation

## Manage account

To login/register OruxMaps, and manage our profile.

## Profiles

See/manage our profiles.

## Maps

- **WIFI downloads:** Maps are not downloaded if not using WIFI.
- **Apply hillshading.**

Paints a background shading, which improves the relief display. Use DEM files. Keep in mind that the drawing of the map will be slower.

- **Map orientation.** Default map mode.
  - **Normal:** According to the images.
  - **Compass and Oriented Map:** Keep it oriented with the compass.
  - **Up Direction:** Requires GPS to be turned on.
  - **North Up:** Useful if maps are rotated.
- **Fling gesture, friction.**
- **Autoscroll delay (sec.).** When we are in mode 'GPS on' (the GPS moves the map) if we move the map with our finger, the automatic movement by the GPS of the map is deactivated during the seconds that we configure here.
- **Load maps automatically.** Load a new map when leaving the current or the most detailed one at each point:
  - **Always.** In each movement, either with our finger or with GPS positioning, look for the most detailed map (larger scale).
  - **When leaving map.** It will load the map with a scale similar to the current one if the cursor leaves the current map.
  - **Never.** It does not change maps.
- **Skip map check.** Starts the app faster as it does not check to see if maps have been added by hand in the map folders.
- **Reset custom datums.** If we have added maps *.rmap* and matched *.rmap Datums*, but we have made a mistake, pressing this selector *deletes the paired Datums rmap-OruxMaps*.
- **Reset online cache.** Allows we to delete *tiles* from the Online map cache. Useful when an online map has updated its maps and we want to force re-download.
- **Reset raster cache.** Vector maps (img, mapsforge) are cached, to avoid having to always render tiles. From this setting the cache of these maps is cleared.
- **Add empty map.** Add a white map to the offline map list, with all zoom levels.
- **Add X margin:** Useful for overlapping maps, avoid areas without map.
- **Add Y margin:** Useful for overlapping maps, avoid areas without map.
- **Android PDF engine.**
- **Featured Mapbox Maps.** It allows different settings, if we are subscribed to featured maps.
- **Online maps.** Online image cache size management.

When browsing online maps, the maps are stored in a database located in the directory *oruxmaps/mapfiles/named OruxMapsCacheImages.db*.

This file is important because it will grow as we browse online. we have to set a maximum size limit for the database (512MB by default). When it exceeds this value, a message will appear on the initial screen of OruxMaps indicating that the file must be compacted.

This means that the database has exceeded the upper threshold. If we accept, the process of deleting the oldest images begins, until the database reaches a size equal to the lower threshold.

IMPORTANT: THIS MAY BE A VERY LONG PROCESS; 1 MINUTE APPROX. FOR EACH 10MB, ACCORDING TO THE LATEST TESTS, AND CANNOT BE INTERRUPTED.

If we postpone the operation nothing happens, it will continue to warn us every time OruxMaps starts.

- **Upper threshold.** Value in Mb from which, when the database of cached images exceeds this value, warns that the database must be reduced.
- **Lower threshold.** Size of the database when we agree to reduce its size.
- **DEM-based maps.**
  - **Relief map.** Add a map showing the relief based on the height DEM files (if these files are available).
  - **Slope map.**
  - **Shadow map.**
  - **Minimum zoom level.** To which DEM-based maps will be displayed.
  - **Maximum zoom level.** To which DEM-based maps will be displayed.
  - **Relief map.** Relief resolution (modifies performance).
  - **Complex algorithm.**
  - **Maximum altitude relief map.** Sets the maximum elevation for the relief map that the DEM files use (if available).
- **KML layer settings KML**
  - **Keep KML overlays:** Restore KML layers when restarting the application.
  - **Overlay path text.** Shows the name (when using KML/KMZ as *overlays*) of the line on it.
  - **Scale icon bitmaps.**
  - **Waypoints icon size.**
  - **Delete KML cache.**
- **Zoom settings Zoom**
  - **Bug with zoom.** On some phone versions, a forced shutdown may occur when zooming. If it occurs, click this option.
  - **Default zoom level.** Load the maps with a previous level of digital zoom.
  - **Zoom autoloading.** Search for a new map when raising/lowering layers in the current map and there is no next layer.
  - **Go to the map centre.** It can happen in a layered map, that a lower or upper layer does not contain the current point from which we zoom. If this box is checked, it moves the map to its center; otherwise, it will zoom digitally.
  - **Rotation gesture.** Allow the map to be rotated with our fingers.
  - **Volume keys.** Type of zoom that the volume buttons of the terminal do.
  - **Screen buttons.** Type of zoom that the buttons on the button bar do.

- **Finalize pinch to zoom.** Zoom type using the multi-touch screen.
- **Zoom with volume.** Use the physical buttons on the phone to zoom, losing its volume control function.
- **Multimaps, limit zoom levels** to only the layers available in all the maps that make up the multimap.
- **3D settings.** They are different settings for when we want to view the map in 3D. They will affect the position of the point of view, and performance.
  - **Camera altitude (mts).**
  - **Altitude scale factor.**
  - **Textures complexity.**
  - **Texture size.**
  - **Filter textures.**
- **Mapsforge maps settings.**
  - **Default language.** If the map is multilanguage, select the default language.
  - **Mapsforge text size.** Sets the size of the letters in the *.map mapsforge* maps.
  - **Symbols scale factor.** Increase/decrease the size of POI icons, s. Use values close to 1 (0.5 2, 3, ...)
  - **Apply hillshading.**
  - **Default offline POI database.** Select a *.poi mapsforge* database to be able to always search in it, regardless of the loaded map.
  - **Search POIs, tap gesture.**
  - **Single rendered thread.**
- **Garmin map settings.** Allows we to modify the waymaps are viewed *.img* Garmin format.
  - **Use antialiasing.** Disable if there is poor performance.
  - **Decrease the level of detail.** Activate it to increase performance by painting the maps.
  - **Mercator projection.** After selecting this option, the offline map list must be refreshed.
  - **Show Wpts tags.**
  - **Show polygon labels.**
  - **Show line labels.**
  - **Wpts label background.**
  - **Polygons labels background.**
  - **Background labels lines.**
  - **Letter size.**
  - **Cache Size (Mb).** The images are saved in a file, to improve performance.

## Tracks/Routes

- **KML Settings**
  - **Clamp to ground KML.** It uses the 'clamptground' tag instead of 'absolute' in KML, which renders the track always rendered in the field. An example; If we record a track in a plane, the sensible thing to do is to use 'absolute' heights, but for 'clamptground' walking routes.
  - **Compress KMZ photos.** Compress the photos that are incorporated into the KMZ (those that are attached to the wpts., To make the file smaller.

- **Include path folder.** In the KML/KMZ, the traces are added as Linestring elements. It is useful for compatibility with old kml/kmz formats
- **Include Track folder.** In the KML/KMZ the Track is added as a gx element: Track It is useful for compatibility with modern kml/kmz formats
- **Max KMZ photo dim** Maximum width/height of the photos that are compressed in the KMZ.
- **Auto Segment.**
  - **Auto-Segment Distance.** Sets the interval km for the automatic creation of segments. In this way, we start Track automatically in segments every X kilometers.
  - **Auto Segment altitude.** Create a new segment based on the gap reached.
  - **Auto-segment Time.** Set the minutes interval for automatic creation of segments. in this way we left the track into segments automatically every X minutes.
  - **Auto segment not move.** forces OruxMaps to start a new segment if we stop for X seconds.
- **Graphhopper offline. Set up offline route search here.**
- **Keep routes in the mapviewer.**
- **Load Routes action.**
- **Export Tracks on completion.**
- **Automatic save.** Every X minutes the application records the Track in the database. Here we set the minutes; it can be a decimal value (for example, 30 seconds is 0.5).
- **Tracks automatic Backup.** To avoid losing the Tracks database, due to data corruption or similar, a backup is made every X days. This file is called *oruxmapstracks.db.backup*. And so that there are no problems, it alternates with another backup, named *oruxmapstracks.db.backup2*. **IF THE MAIN DATABASE IS CORRUPTED, THE FIRST THING WE HAVE TO DO IS A BACKUP OF THESE FILES AND REPLACE SOME BY THE ORIGINAL !!!!!**
- **Use average speed.** For certain activities (for example flight) ETA and ETE are sometimes calculated based on a fixed value, instead of the current average speed, which is what OruxMaps does by default. That option is set here.
- **Average speed.** The fixed value to be used to calculate ETA/ETE.
- **Introduce Track information.** Whenask **starting** a Track,for its name, type ...
- **Introduce Track information.** Ask at the **end of** a Track for its name, type ...
- **Default Track Type.** Track type used by default when creating one.
- **First point Route.** Create a Waypoint at the first point of the Route that is loaded in the viewer, indicating the statistics of the Route if they are available.
- **Shows partner.** When we are '*Following a Route*', it indicates on it the position in which the creator of the Route we are following would be in if it had started at the same time as us. It is a way of '*competing against the creator of the Route*'.
- **Append date to file names.**
- **Show Max./Min. indicators.**

## Waypoints

- **Default Waypoints sort.** How Waypoints are ordered by default when we go to the list of Waypoints.



- **Create Wpts. automatic.** When creating a Waypoint it does not ask us for the name or any other type of data. Create a Waypoint directly with the name of WAYPOINT ooX.
- **Do not use icons.** It shows a point instead of the pin where the Waypoint is.
- **Shows Waypoint name.**
- **Minimum Waypoints zoom level.**
- **Create first/last Waypoint.** Create a Start/End Waypoint when starting/stopping to record a Track.
- **Simplified list Wpts.** If there are many thousands of Wpts., When accessing the list of Wpts., The load can be very slow. This setting is accessed in another way, although different sorting and filtering possibilities are lost.
- **Links in description.**
- **New waypoints allocation mode.**
- **Where to add the new Waypoints.**

## SENSORS

### GPS

- **Minimum time.** Seconds that will elapse between two GPS measurements. Android can disconnect the chip from the GPS while, so it will save battery. EYE! Some terminals have problems if this value is not zero; it may take a long time to restart the GPS once it has stopped.
- **Minimal distance.** The same, but regarding distance. OruxMaps tries to meet both criteria: It does not save a point if it has not moved X meters and thehas passed '*Minimum time*'.
- **Minimum GPS precision.** They are the meters below which the GPS precision must be for the Point to be saved as a Track Point. It should be given the value of 50 meters. when we have selected in '*Minimum time*' the value of 30 seconds or that of 2 minutes, so that it only stores precise log points.
- **Geoid altitude.** Activate the altitude correction on the Geoid.
- **Activate GPS at startup.**
- **PROVIDER LOCATIONS MERGED.** Use Google services to get the positions. What Google does is merge the positions that come from the GPS, networks, Wi-Fi, ... **IMPORTANT: Some phones force we to use this type of positioning to prevent the app from being stopped when it is in the background.**
- **Replace GPS time.**
- **External GPS tool.**
- **External GPS.** Use an external bluetooth GPS. Steps:
  - Pair our GPS with Android, using for this the configuration menus of our Android.
  - From OruxMaps, select in this option the GPS among the BT devices paired with our terminal.
  - To use the external GPS instead of the internal one, click on the button that activates the external GPS: '**Tracks**' - '**Ext. GPS**' from the map viewer.
- **Retry connection:** If the external GPS is disconnected, instead of activating the internal one, it tries to reconnect every 30 seconds.
- **Barometer for altitude.** Use the barometer (if available) to calculate the altitude of each point.
- **Auto calibration barometer.**

- **Barometer self-calibration method.** Every hour it performs a recalibration of the barometer, using either the GPS or DEM files.
- **DEM altitude.** Use the DEM files (if available) instead of the GPS altitude.
- **Interpolate DEM altitude.** It improves altitude results, but requires more calculations.
- **Automatically start sensors.**
- **Record the steps.**

### **ANT +**

Configure different parameters to use OruxMaps with ANT + sensors.

Manually enter the IDs of each sensor if OruxMaps cannot do it automatically (use the application 'IpSensorMan' to find the ID of our device).

- **Heart rate monitor ID.**
- **Pedometer ID.**
- **Bike Cadence ID.**
- **Bike speed ID.**
- **Bike Cadence/Speed ID.**
- **ID temperature**
- **ID power.**
- **Wheel perimeter (in meters).** Set the perimeter of our wheel to do the necessary calculations.
- **Interval cadence T1**
- **IntervalT2**

### **Heart rate monitor**

- **Uses Bluetooth 4.0.** When we use a heart rate monitor with this technology.
- **Select the Bluetooth 4.0 heart rate monitor** Here we have to select the device in the list of BT 4.0 devices
- **Select the Bluetooth 2.0 heart rate monitor. When we use an old heart rate monitor, which does not support BT 4.0**
- **Pulsations from the smartwatch.** When we use an Android wearable watch, which has a heart rate monitor, we can make OruxMaps obtain the heart rate from the watch, by selecting this checkbox.

### **Cadence/Speed BT 4.0**

- **Cadence/Speed BT 4.0.** Here we select the BT cadence/speed sensor that is a BT 4.0 or smart.
- **Wheel circumference (in meters)** for this sensor.

### **Cycle Power BT 4.0**

- **Bike power BT 4.0 bike power.** Here we select the BT power sensor that is a BT 4.0 or smart.
- **Wheel circumference (in meters)** for this sensor.

### Variometer

Sets the variometer (requires barometer).

- **Reading rate (HZ).** Times per second the barometer is read.
- **Altitude filter.** The altitude will be set as the average of the reading of n barometer measurements.
- **Vertical speed filter.** The higher this value, the more stable the vertical speed will be, reacting less to changes in value.
- **Vertical half speed.** The vertical speed is provided in two values, instantaneous and average. The average is calculated every n seconds, which are set here.
- **Sound alarm.** A sound is used, the frequency of which changes according to the rate of ascent/descent.
- **Drop rate.**
- **Max. Speed.** Maximum speed value, useful for the control panel and to define the frequency with which the alarm will be heard.

### AIS (nautical)

- **Activates AIS.** Show this device in the sensors menu.
- **GPS-AIS-NMEA.** Select the data source, AIS Bluetooth device.
- **GPS position from IP/BT/USB.** Positioning data is not obtained from the internal GPS.
- **AIS BT,** select the device.
- **AIS over USB.** Adjust USB data ..
- **AIS IP address.** AIS URL service.

### APRS

- **Activate APRS.** Show this device in the sensors menu.
- **APRS connection configuration data ...**

### Tempo Disc Sensor

- **It is an external BT 4.0 sensor,** which can contain a Barometer, Thermometer and Humidity sensor:

<https://bluemaestro.com/products/product-details/bluetooth-environmental-monitor-and-logger>

### Barometer Thermometer BT 4.0 nRF5xxxx

- **It is an external BT 4.0 sensor,** which may contain Barometer, Thermometer.

### Units

Metric units to use

- **Speed.**

- **Vertical speed.**
- **Altitude.**
- **Distance.**
- **Coordinates.**
- **Custom grid.**
- **Force UTM zone.**
- **Weight.**
- **Course.**
- **Atmospheric pressure.**
- **UTC time.** Use the UTC time instead of the local time, in the controls related to Waypoint navigation.
- **UTC diff.** Time difference used if local time is not used.
- **24 hour time format.** It shows the time in 24h format, in the controls related to waypoint navigation.

### Text to Speech/Sounds

- **Maximize volume.** Maximize ringtones/alarms/voices.
- **Volume buttons, voice commands.** Start voice recognition to receive voice commands.
- **Available voice controls:**
  - start recording
  - stop recording
  - new segment
  - statistics
  - go back
  - new waypoint [name...] [description...] [type...]
  - delete waypoint
  - edit waypoint [name...] [description...] [type...]
- **Waypoints**
  - **Proximity alarm Wpt.** Activate this alarm by default when starting to follow a route, or navigation through Wpts.
  - **Say Wpt voice message.** Activate voice messages, if the type of the Wpts. Includes some.
  - **Pronounce Waypoint name.** Say the name of the Wpt. at the beginning of the message.
  - **Pronounce Waypoint description.**
  - **Plays Audio Waypoint extensions.** Play sound files attached to the Wpt. As an extension (if available). Voice messages take precedence.
  - **Proximity alarm wpt.** Default sound used for proximity alarm, if the above settings are disabled.
  - **Max. Wpt notices. Alarm.** Maximum number of times the alarm will sound.
  - **Alarm distance wpt.** Vibrate + Sound if we are near the wpt. And the wpt alarm. it's activated.

- **Tracks/Routes**
  - **Activate TTS.** Activate voice messages with speed, distance ... every XX units of distance/time.
  - **Messages to pronounce.** Select the messages we want to hear every XX units of time/distance.
  - **Distance for voice prompts.** xDistance in distance units.
  - **Time between messages.** Alerts will be activated every xx minutes.
  - **From the beginning of the Track.** Warnings are measured (time and distance) from the start of the Track, not from the start of the current segment.
  - **Alarm far route.** Activate this alarm by default when starting to follow a route.
  - **Voice or tone.** Use a voice message instead of a tone.
  - **Alarm far route.** Use this tone to alarm far route.
  - **Route alarm distance.** Vibrate + sound if the alarm is activated and we move further away from the route than this distance.
  - **Distance turn off alarm.** Distance to stop the route departure alarm.
- **GPS**
  - **External alarm:** Warning with this tone if a Bluetooth connection is lost.
  - **Warning 1st GPS signal:** Warns (sound + vibrates) with the first recorded point.
  - **Sound 1st signal warning:** Ringtone for the warning.
  - **GPS failure warning:** Warns (sound + vibrates) if there is no GPS signal x4 times minimum time.
  - **Sound GPS fault warning.** Ringtone for GPS failure (sound + vibrates).
- **Heart rate monitor**
  - **Change training zone.** It warns if the Karvonen zone is changed using the heart rate monitor.
  - **Activate min/max alarm.** Activate alarm if above/below max/min pulsations.
  - **Minimum pulsations.**
  - **Maximum pulsations.**
  - **Heart rate sound.** Warning for max/min pulsation alarm.
- **Perimeter and exclusion zones**
  - **Perimeter sound.** Alarm that is activated if we leave an alarm perimeter.
  - **Sound exclusion zone.** Alarm activated if we enter an exclusion zone.

## Integration

- **Upload automatically.** So that, once a Track is finished, the app uploads the tour directly to a server.

- **Email address.** To use when sending the tour to an email.

To upload and download routes from various sites, or send our Tracks by email.

- **OruxMaps**
- **Strava**
- **GPSies.**
- **MapMyTracks.** we can use our own URL, to do live Tracking on our own server.
- **Trainingstagebuch.**
- **OpenStreetMap.**
- **Wikirutas.**
- **VeloHero**
- **OkMap client.** It is a program for Windows. We can connect our terminal with our PC if we use this program through the network.
  - Configure the connection (IP and port of our PC) in OruxMaps.
  - Open the same port (if necessary) in the firewall of our PC and the Router. Since our terminal is the one that calls our PC, these ports will normally be closed.
  - Start recording a Track. A new option will appear on the **'Track' - 'Live OkMap' button.**
  - Run OkMap on our PC, *'Remote data'*, *'Receive OkMap Tracks'*. Then we should start to see the Track we are creating in OkMap.
- **GpsGate.com.**
- **Email address.**
- **Layar.** If we have *layar* defined, enter them here separated by commas. Then we can open them directly from OruxMaps.

### Multitracking

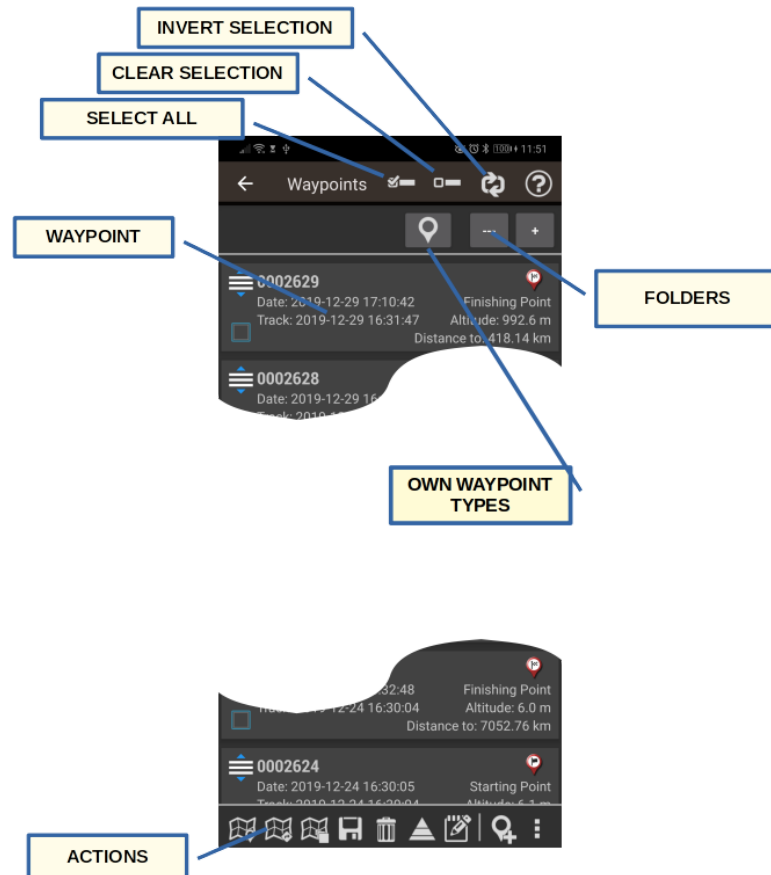
- **Manage users.** we access the screen from which the users with whom we want to share our position are added/removed.
- **Time between requests.** Every xx minutes the data is sent to the server. It is used to control data spending.
- **Proximity alarm.** Alerts us if a friend approaches us.
- **Friends proximity alarm tone.**
- **Show our friends.** Draw the friends' route on the screen.
- **Keep going friends.** Create a Track in the database with the friends' route.

### SOS messages

- **Time not movement.** It is the one that determines the time in which it is calculated if there has been movement.
- **Message to send.** Here we can change the message that will be sent.
- **Start automatically.** When a Track is recorded, the alarm starts automatically.
- **Use sensors.** Use the motion sensors to cancel the alarms.
- **Send a link.** Add a link to google maps with the GPS position.
- **SOS phones.** To whom the phone will be sent.
- **Try SOS SMS.** Send a test text to the old phones.

- **How to configure Gmail. Instructions to follow. See section of the manual that explains how to configure the sending of SOS messages by email.**
- **Gmail account.**
- **Password account Gmail.**
- **SOS message emails.**
- **Check SOS by email.**

## WAYPOINTS LIST



There are direct actions in the lower bar, which **are applied to the selected Waypoints (checkbox to the left of each marked Waypoint)**:

- **Show.** Load Waypoints **on the current route**, if one is **active**. If there is no active route, create one that contains the selected Waypoints.
- **Create route.** Create a Route with the Waypoints and visualize them on the map.
- **Show as layer.** Show selected Waypoints as a map layer.
- **Export/save.** Save the selected Waypoints, with all their properties, as GPX/KML/KMZ/CSV or as Track.
- **Remove.** Delete from the database.
- **Modify the altitude** of the Wpts. It allows correcting the height of the Waypoint using DEM files or obtaining it from Online sources. For Online sources see the section '**BUTTON BY BUTTON, MENU BY MENU**'—'*Configure*'—'*Application*'—'**[ELEVATIONS ONLINE SERVICE]**' of this manual.
- **Massive modification** of those Wpts. To change characteristics of several Waypoints at the same time, for example the '*Type*' or associate a Waypoint with other Tracks. An interesting option is to add the same sound to several Waypoints (*extension*).

In the bottom bar, actions independent of the wpts.:

- **Import Wpts.** from files, different formats (GPX, KML, KMZ, CSV, ...).

More actions in the bottom bar:

- **Sort.** Sort the list according to the selected criteria.
- **Look for.** Lets search by name and description. Enter a whole or incomplete word.



- **Filter.** Useful when we have many wpts in our database, and we want to operate with them, we limit the number of wpts that are seen on the screen to work with them comfortably. Allows us to select a subset of Waypoints from those found in the list, and then take them to the map, delete them, ... If we press 'Filter' we have a screen on which we must select a checkbox with the filter criteria/s that we want to apply :
  - **Restart Filter:** The list returns to show all the wpts.
  - **Invert selection:** If we already had a filter applied to the list, it hides the wpts that were being shown in the list, and shows those that were hidden.
  - **Selected items:** Leave only the wpts that had their checkbox selected on the screen.
  - **Track:** Select one or several tracks by name, if we apply this filter, only wpts that belong to those tracks will remain on the screen.
  - **Type:** Selects only wpts of certain types on the screen.
  - **Distance:** Select the wpts that are at a distance of XX km from the current central point of the map.
  - **Date:** Select the wpts created between date A and date B.

In the upper bar we have:

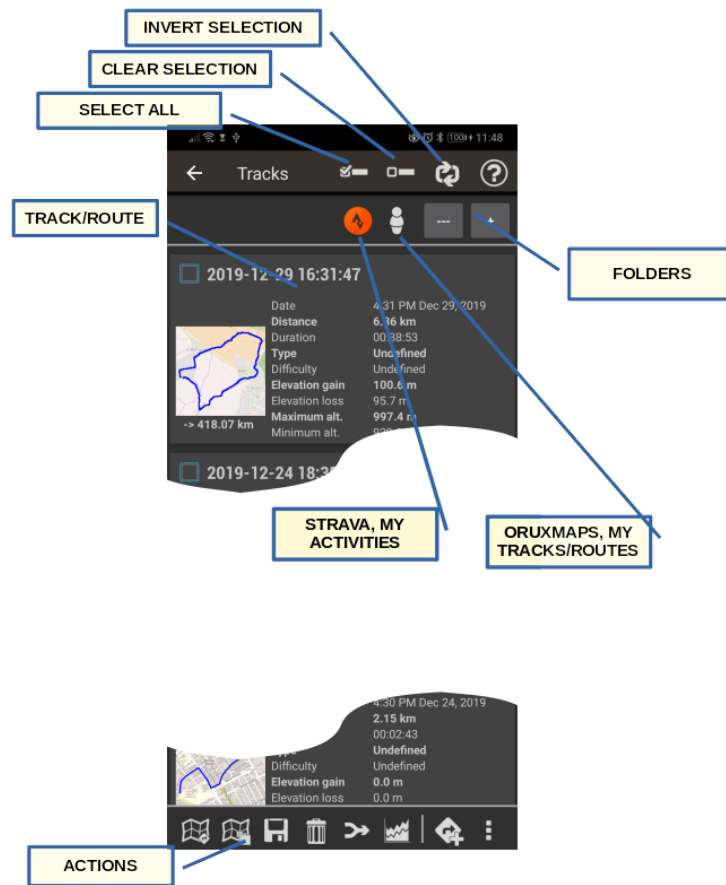
- **Select all.** Activate the selector of all Waypoints.
- **Remove selection.** Deactivate the selector of all Waypoints.
- **Invert selection.** Invert the selection of Waypoints.
- **Help.**

By selecting (clicking on it) a Waypoint, we have access to more options that will be executed on that specific Waypoint:

- **Details.** It shows the complete data of the Waypoint. If we have an attached image, clicking on it opens the image viewer.
- **Edit properties.** It allows us to change the name, type, description and the photo associated with the Waypoint, in addition to other properties.
- **Add to current active route.** Loads the Waypoint into the map viewer, and centers it on its position.
- **Navigate to wpt.** Load the Waypoint on the map, activate the mode by recording Track and activating navigation to that Waypoint.

**By clicking on the scroll icon of each Waypoint they can be ordered in the list.** Useful if we want to create a Route from Waypoints, and we want them in a specific order, quickly.

## TRACKS/ROUTES LIST

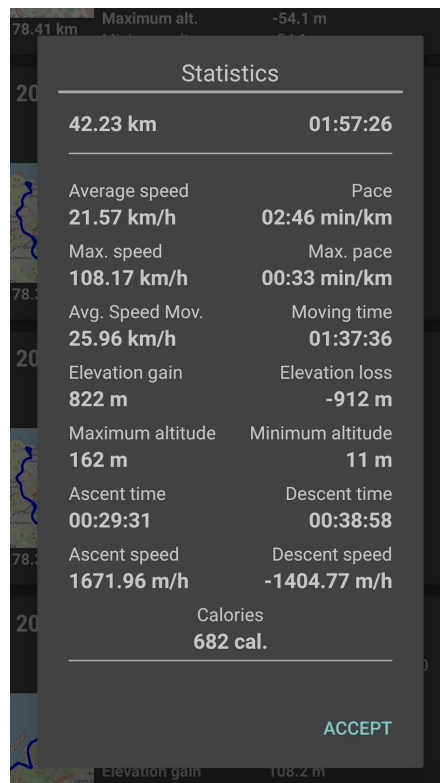


On the top bar:

- **Select all.** Activate the selector for all Tracks.
- **Remove selection.** Deactivate the selector of all Tracks.
- **Invert selection.** Invert the selection of Tracks.

There are four direct actions that are applied to the selected Tracks (checkbox of each Track):

- **See on the map.** Load the Track into the Map Viewer.
- **View on map, loaded as map layer.**
- **Export as GPX/KML/KMZ, ...** Exporting it to KML allows we to export the included photos, videos, and/or audios.
- **Remove.** Delete the Track from the database.
- **Link.** Join the Tracks into one, creating segments for each original Track.
- **Accumulated statistics.** Select a group of Tracks (or all) to see the total of the kilometers, time, ...



The following are independent of the selected Tracks:

- **Import/download a track.** It allows importing to the database of tracks that we have in gpx/kml/kmz/tcx format, ...; It also allows us to download database tracks from the websites:
  - **OruxMaps**
  - **Gpsies.com**

we have thousands of public routes on these sites at our disposal!
- **More options:**
  - **Order.** Sort the list according to a selected criteria.
  - **Look for.** Lets search by name. Enter a whole or incomplete word.
  - **Filter.** Allows we to select a subset of Tracks from those found in the list. Each of the selectors must be selected, so that the criterion is applied.

When selecting a Track, we have access to more options that will be executed on that Track:

- **Properties.** It allows changing the name, type and description of the Track, ...
- **Continue recording the Track.** Load the Track in the map viewer allowing we to continue it (adding new segments and Waypoints).
- **Follow/see as Route.** Bring the Track to the viewer as a Route, allowing we to follow it.
- **Load as layer on the map.** The Track is displayed on the map, but loaded as a layer, not to follow it.

## GEOCACHES LIST

To access the list, press the button '**Waypoints**' from the map viewer and then '**Geocaches**'. Management is very similar to that of Waypoints. There are three direct actions that are applied to the selected Geocaches:

- **Show.** Load the Geocaches into the map viewer.
- **Export/save.** Save as GPX/KML/KMZ.
- **Remove.** Delete from the database.

In order to use a Geocache, we first have to import it into the OruxMaps database. To do this, press the menu button on our terminal and select '**Import Caches**'.

Geocaches have special information:

- They may or may not have a location date.
- we can add some notes.
- we can mark them as '*Found*' by editing their properties.

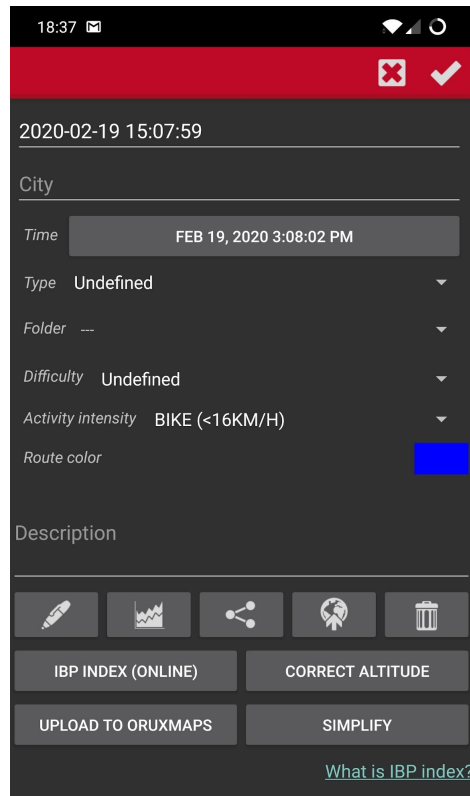
we can download Geocaches using our current position. In the list of Geocaches, select the menu button of our terminal and select '**Open Geocaching.com**'. The web browser opens showing the Geocaches that have been registered and close to our GPS position.

Once the Geocaches are shown in the viewer, button '**Route**' the options are activated on the:

- **Delete Geocaches.** Remove Geocaches from the screen.
- **Stop Geocaching.** If Geocaching mode has been activated on one of those shown, deactivate this mode.

## TRACK PROPERTIES

The properties of a Track include all the attributes that we can save of a Track.



To share a capture of our routes, with all the information on social networks. (List of Tracks — select one, option **Properties** of that Track, we will find the button **share**, if we select **Map and statistics** we can send an image like the one we see below).



## TRACKS/ROUTE STATISTICS

From the Tracks list, select a Track, Properties option, then Statistics button.



Three options in the upper bar:

- It is able to analyze the entire route or the segments separately, selecting the button (cogwheel, only visible if the Track is divided into segments) '**Segments**' in the upper bar.
- If we click on '**Export**', we save the statistics informat *HTML*. With this option, a folder and a *.zip* are created in *oruxmaps/tracklogs* that we can view with any browser.
- If we press '**Share**', we can send a capture of the data in image format to whoever we want.

Options below:

- Clicking on '**Partials**' displays a table with the partial data for each kilometer, or the 'distance per lap' that we determine.
- With the '**View Graph**' button, OruxMaps generates a graph of the entire route or the selected segment based on time. we can zoom more or less with the buttons of the magnifying glasses or with our fingers, pinching on the screen.

**IMPORTANT:** The GPS is not very accurate in the measurement of heights, so these data will be approximate. It is possible that when moving in a flat section it could appear on the graph as a slightly undulating terrain but we can always correct the height with Online services or with DEM files.



Statistics

### 3D VIEW

We can see the map in 3D if we have files with the heights in our terminal. The height files contain the data of the altitude of an area. OruxMaps can read two types of altitude files, SRTM-DTED and GTOPO30/SRTM30.

- *.hgt*
- *.dem + .hdr* (only if they use Datum WGS84 geographic coordinates)

These files can be obtained in two ways:

- Directly from OruxMaps by clicking on the '**3D Map**' button. The necessary files of the area to be viewed in 3D with 3 "of arc will be downloaded.
- From the map viewer, button '**Maps - Map tools - Download terrain model**'.
- They can also be downloaded from the '**High Altitude**' application or from the following links:

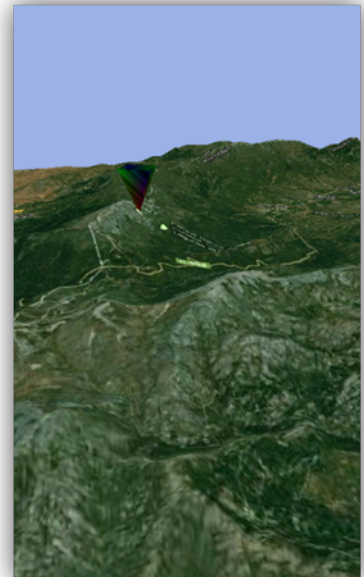
<http://www.viewfinderpanoramas.org/dem3.html>

[http://www.ipellejero.es/radiomobile/RM\\_o3.html](http://www.ipellejero.es/radiomobile/RM_o3.html)

Once the files are in the folder *oruxmaps/dem /*, press the button '**Maps**' - '**Map tools**' - '**3D Map**' and we will see the relief map. Also if we have GPS positioning, it will show us the position where we are.

Gestures:

- Move around the map: scroll with one finger.
- Zoom In: Pinch with two fingers.
- Increase/decrease the angle of the horizon: slide two fingers vertically.
- Turn: Rotate two fingers on the screen.





## TRAVEL COMPUTER VIEW

To access this functionality, click on the menu button of our terminal from the map viewer and select the **'More' - 'Tools' - 'Radar' button**. It has six tabs.

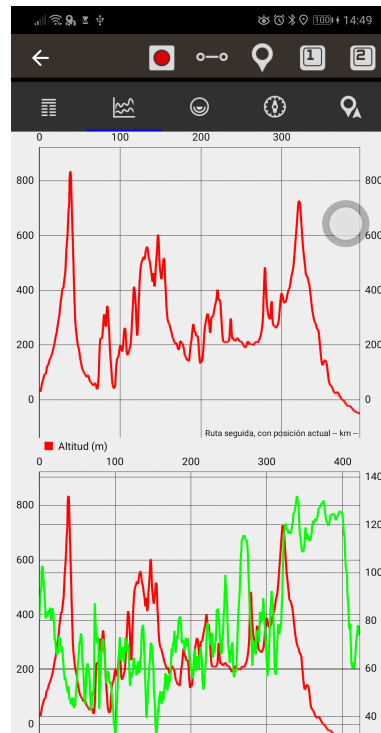
If we are habitual of this tool, we can put a direct access in any of the two lateral bars of buttons of the map viewer, from **'Global configuration - Visual elements - Buttons - Keypad builder'**.

All views offer a top toolbar from which we can **'Start/Stop Track recording'** or **'Create a Waypoint'**.

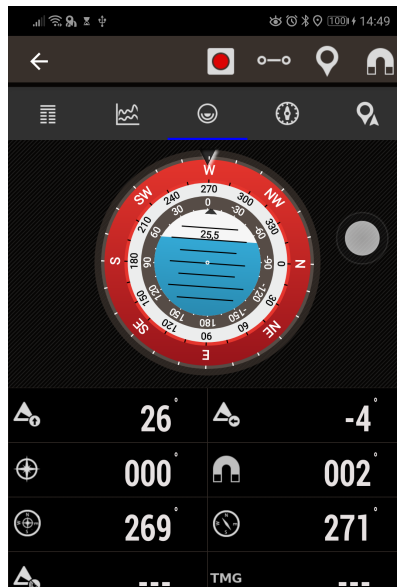
**(Data):** Shows a multitude of information. **To change the data to be displayed**, press and hold one of the information boxes until all the available options appear.



**(Statistics):** Shows the statistics of the current Track or Route with the data of *Altitude*, *Heartbeat*, *Speed* and/or *Slope*. Button **'1'** for the first statistic, button **'2'** for the second.

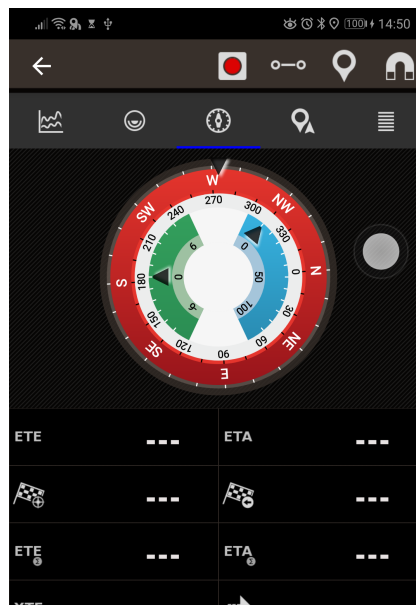


**(Compass):** From this mode, we access a compass that has an artificial horizon level inside. It also includes informative tables that can be modified by long pressing on them. **To zero the artificial horizon, click on it. Long press to reset.**



**(Navigation view):** This mode offers a compass that has a speedometer on the right, and a vertical speedometer on the left (it only works if the variometer is active). In addition, if we are following a Waypoint, it **shows us an arrow indicating the destination address, and at the top left it shows the icon of the type of wpt. objective.**

At the bottom it includes informative tables that can be modified by long pressing on them.



**(Travel Plan):** Shows the list of waypoints when using Waypoint navigation. Clicking on any of the wpts. We have several options on them, in case we want to see on the map, or navigate directly to it. We can also reorder them by dragging up/down.

**NAME:** Name of the Waypoint.

**RB M./RB V .:heading** Real/magnetic with respect to the last positioning record.

**TOT/SKIP:**

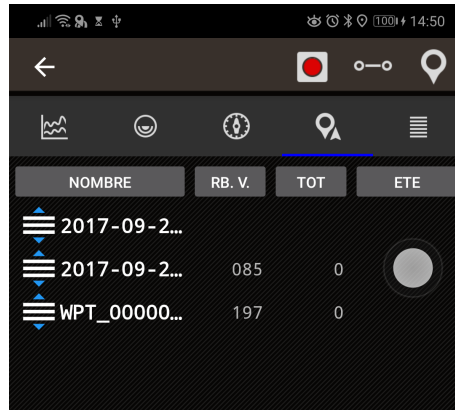
**SKIP:** Distance from the previous waypoint. If it is the target waypoint (towards which we are heading), distance from the current GPS point; if it is another waypoint, distance from one waypoint to the next.

**TOT:** Distance from the current point to that waypoint, passing through all the waypoints on the route.

**ETE/ETA:**

**ETA:** Arrival time at the waypoint.

**ETE:** Estimated time until arrival at the waypoint.

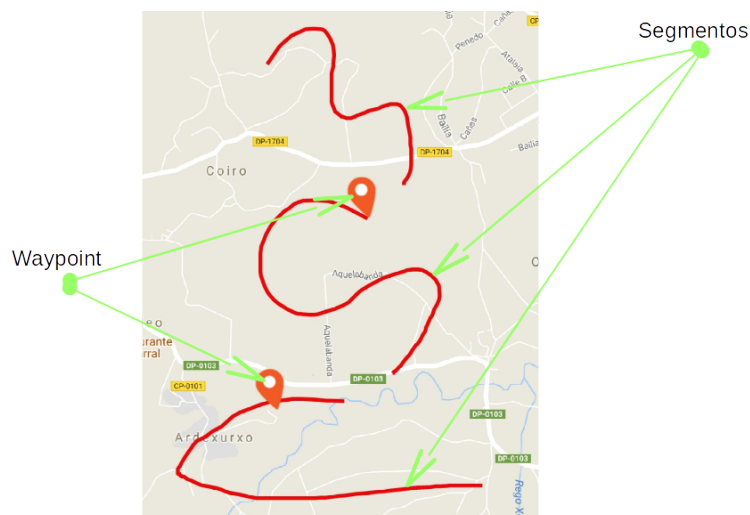


**(Data):** To one column. Remember that we can change which control is shown with a long press on each of them.



## TRACKS/ROUTES

A **Track** is made up of Track points (represented by a colored line connecting the points) and **Waypoints** (represented by a pushpin or other type of icon). A Waypoint has coordinates, a type, a description and can have attachments, which can be images, videos, audios and texts. In turn, a Track can be divided into **Segments**, which are a set of consecutive Track points, creating a line.



At OruxMaps we handle two concepts: TRACKS and ROUTES. In the map viewer we can be simultaneously treating a Track and several Routes.

For OruxMaps a **TRACK** is something alive, open in the viewer in mode that can be **'edit'** changed (add more Track points, add/remove Waypoints). It is what we record when we make a tour, also adding Waypoints.

OruxMaps allows creating a Track with **GPS signals**: when starting the mode **'Recording Track'**. Using the **button 'Tracks' - 'Start Recording'** starts recording the Track. As we have said, a Track can be broken down into SEGMENTS. Thus, when we want stop (a break, restart the next day a Track, ...) simply use the **button 'Tracks' - 'Stop Recording'** to stop and when restart the fly, using the same button, we asked whether:

- Start a Track from scratch, a new Track. Delete the current screen, along with its Waypoints (But not from the database! The Track will be found in the list of our Tracks).
- Start a new SEGMENT, but belonging to the current Track (it is recommended).
- Continue with the last segment of the current Track. Personally I do not recommend doing this, it is better to break the Track into logical units, segments, each with its own statistics. This option is only useful if we temporarily stop a Track, for example to eat, or tie our boots.

A **ROUTE** is something static, which we load in the viewer to see it or follow it while creating a new TRACK. **OruxMaps also allows us to open a Track that we have previously created or imported, see it in the viewer and use it as a guide for our journey (as the ROUTE to follow).**

The routes can be loaded into the viewer in several ways:

- Directly starting from a GPX/KML/KMZ/TCX/file and other compatible formats. If we use the button, '**Routes**' - '**Track/Route Tools**' - '**Open GPX/KML**' opens the file selector. From the floating button, '**Load route/waypoints**'
- Starting from a previously existing or imported Track, in the application database: From the map viewer, button '**Routes**' - '**Manage Tracks/Routes**', click on a Track, 'Follow/see as route'.
- Starting from a set of Waypoints. From the map viewer, button '**Waypoints**' - '**Manage Waypoints**', from the list of Waypoints we filter and/or order, select the checkbox and click on the button that loads the Waypoints as a route.
- **With the Tracks creator:** When we are viewing a map, press the viewer button '**Routes**' - '**Route tools**' - '**Create Route**'. Buttons appear on the screen; it is about moving the map with our finger, and creating Track Points/Waypoints using the button **+** to add or the button **-** to delete the last one. we can also create Track points by clicking successively on the map. To exit accepting press on **✓** or canceling on **✗**. The newly created Track will appear on the screen and in the Tracks list, the '**Routes**' - '**Manage**' button, being the first in the list. Track segments can be created using the corresponding button.
- Using the route finder, from '**Routes**' - '**Track/Route Tools**' - '**Search Route**', which allows we to search routes offline if we have the Broute app installed, or GraphHopper Routes offline if we configure this service in the '**Global Settings-- Tracks/Routes - Graphhopper offline**'; or on the GraphHopper server (Donate version only, because this service has a limit and cannot be offered to all users).

Once we have a route in the viewer, in addition to seeing it, we can '*follow*' it. This is done from the button '**Routes**' - '**Navigation options**' - '**Follow Route**'. we need to have GPS active for this mode to be really useful. If we activate the route departure alarm, it will warn us audibly if we move more than X meters from the followed route. In the dashboard, if we have them activated, we will see information about:

- The distance we lack to the end.
- The% completed.
- ETA, ETE (arrival time, or its equivalent, route time).
- Delay with respect to the original route. If the route points have timestamps, we have a reference of how we are going with respect to the times of the one that originally created the route. Positive if I delay, negative if I advance.
- Much more data.

And if we want to make a route the other way around, simply use the button '**Routes**' - '**Navigation options**' - '**Invert**'

If what interests us is going from Waypoint to Waypoint of the route and not above the road (for example , by sea), we can activate the mode '**Waypoints Navigation**'. In this mode the orientations in the control panel (distance to the target, ETA, ETE) are relative to the next Waypoint.

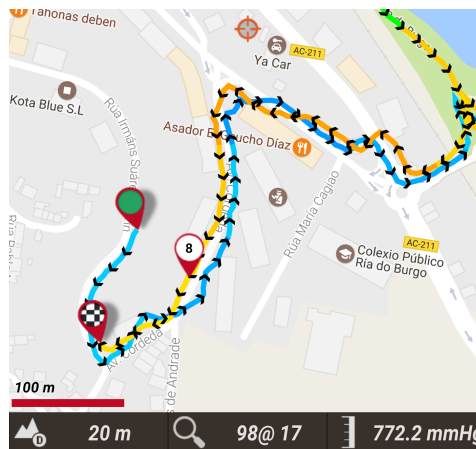
**ALARMS:** When we are inmode, '**Follow Route**' an alarm can be activated that warns us if we move away from the route more than X meters. The activation is done in thebutton '**Route alarm**'. we can configure the departure distance from which the alarm stops sounding. '**Settings**' - '**Voice/Sounds Alerts**'.

Multiple routes can be loaded at once in the map viewer. **But only one can be active for Waypoint tracking/navigation**. Each route will have a Waypoint. at the first point of the route. To activate a route, click on the start flag of the route that we want to be the active route, select '**Activate**'. If we want to delete a route from the screen, click on the green flag, '**Delete**'.

By default, the active route will be seen with arrows indicating direction.

Distance indicators (per km.) Can be added in '**Global settings**' - '**Visual elements — Tracks, lines, ...**' - '**km indicator**'.

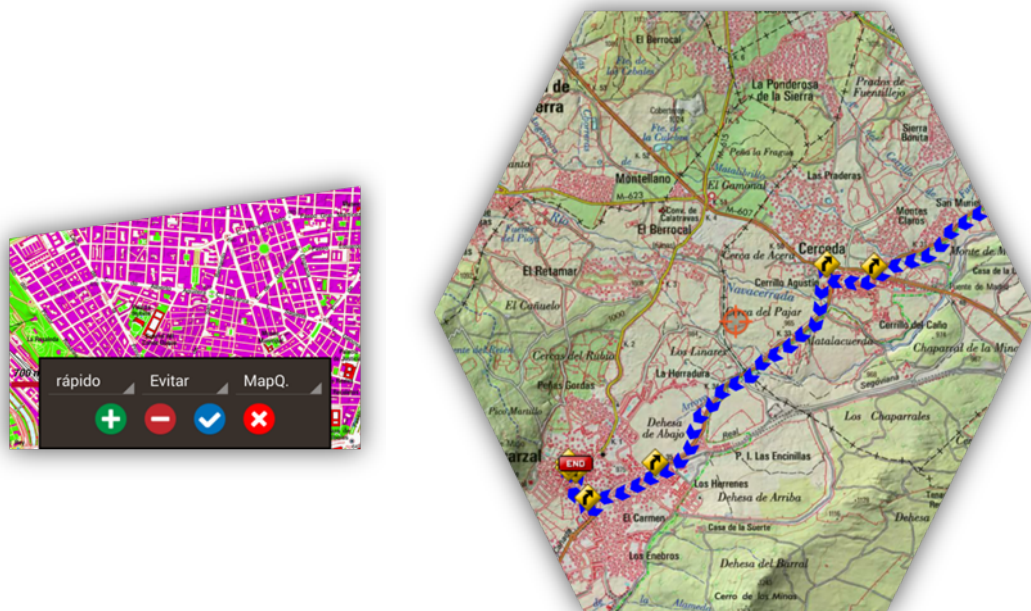
paint the route using colors indicating the slope (activate it in "**Global settings**' - '**Visual elements — Tracks, lines, ...**').



### Search for Routes between two points, by road

To search for a Route between two points, using roads, button '**Routes**' - '**Route tools**' - '**Search Route**'. Select the travel mode and click on the map to indicate the starting point, crossing points (optional) and the arrival point.

OruxMaps will search for the best route and will indicate the waypoints on the map. Remember that **OruxMaps is NOT an ON-Road browser**. What we get is a Route, which includes voice messages, but do not expect wonders, there is still much to improve.



By clicking on the first **Waypoint of the route**, we access different options that apply to the route:

- Activate. If there are several loaded routes on the map, we make the current one the main one, for the purposes of alarms, statistical tracking data, etc.
- Delete. Delete that route
- Center Map from the map.

- Browser.
- Export to file. Create a file *.gpx* in the folder *tracklogs* to be able to use it later from '**Routes**' - '**Load GPX/KML**'

### Where do I get GPX/KML/KMZ?

There are hundreds of different formats in which Tracks can be saved. Every software builder has his own. OruxMaps supports the two most standard: KML/KMZ and GPX. If we have them in another format, we can always convert them to KML/GPX using the application **gpsbabel**.

There are many sites on the Internet from which we can download GPX/KML, to use in OruxMaps:

[www.gpsies.com](http://www.gpsies.com)
[www.everytrail.com](http://www.everytrail.com)  
[www.mapmyTracks.com](http://www.mapmyTracks.com)
[www.wikiloc.com](http://www.wikiloc.com)

From OruxMaps we can directly import/export Tracks/Routes to/from some of these sites; see below, in the '**Integration**' section.

~~One of the options we have (only in the Donate version, it is impossible to offer this service to everyone, because the servers cost a kidney) is to upload our routes to the OruxMaps server. For this, it is a prerequisite to be registered (**Settings** - '**Manage my account**).~~

we can see our routes uploaded to the server, from the list of tracks, there is a button in the bottom bar that takes us to the Tracks of our profile:




If we click on one of them, we can access that Track on the server, including the possibility to see the comments made by other users and their evaluation.

**2015-01-02 13:08**  
jose

Date	2015-01-02
Type	Undefined
Difficulty	Undefined
Distance	0.55 km
Duration	03:33 h:m
Waypoints	4
Elevation gain	85 m
Elevation Loss	-65 m
Maximum alt.	1016 m
Minimum alt.	953 m
Loop	yes
Rate	0.0

Manzanares el Real



Hide comments    Comment

★★★★★ 0 com.

jose  
2015-01-02  
muy buena

★★★★★

we can also send a link of our routes to other users. From the list of Tracks, click on one that we have uploaded to the OruxMaps server, select **'Properties'**. Then, share button, **'Link to Track'**. If we email the mail to a friend, and that friend has OruxMaps, they can open the route directly from the app.



## RECORDING OUR ROUTES

The moment the GPS is activated, button **'Tracks' - 'Start GPS'** the cursor will mark our position. If we move the map with our finger, this function is deactivated for a time (configurable) and after a while, the GPS tracking of the map is restarted. **When the GPS is activated, but a Track is not being recorded, if we leave OruxMaps, the GPS turns off, in this way we do not drain the battery.**

The next state, using the **'Tracks' - 'Start Recording' button** is to **start/stop recording a Track**. we can press directly and the GPS starts as well. When we are creating a Track, the GPS does not disconnect even if we leave OruxMaps, so we must be careful, since it uses a lot of battery.

When it receives the GPS signal, the Track that we are making will be painted on the map and in the control panel we will see the information associated with the current Track.

If there is no Track started, one starts automatically. If one was already loaded on the screen, it asks us if we want to continue it (the new points will be added to the last segment of that Track) if we want to start a new segment, or if we want to start a new Track.

In the GPS configuration we play with three parameters:

- Minimum time between GPS measurements.
- Minimum distance between measurements.
- Maximum precision to record the received position.

The most suitable to save battery is the first, since Android can turn off the GPS chip in the meantime, with considerable battery savings.

Although in configuration these parameters can be adjusted as fine as we want, there is a button *from the Android menu* **'Settings' - 'GPS'** that allows quick selection of three modes:

- Normal; it will use the values that appear in the configuration.
- Quick; It takes a lot of measurements and uses a lot of battery.
- Energy saving; puts 30 seconds and 80 meters. the GPS values, with which we will considerably prolong the life of the terminal battery.

If we want to stop recording, we press the button **'Tracks' - 'For Recording'** again and Track recording stops. To continue, we use the same button and three options will appear:

- Start a Track from scratch, a new Track (see details of what a Track/segment is below).
- Start a new SEGMENT (it is recommended).
- Continue with the last segment of the current Track. Personally I do not recommend doing this, it is better to break the Track into logical units, segments, each with its own statistics.

Every time we finish, the Track is recorded in the internal database. We can see the Tracks of the database from the **'Routes' - 'Manage' button**. The one above is the most current. Then we will see what we can do with a Track from this list.

If we have a Track on the screen, an icon appears in the Status Bar that warns us about it. To clean the screen and delete the Track (from the screen, not from the database) there is the button **'Tracks' - 'Delete'**

And if we want to continue a Track (for example one that includes several days of trekking, one segment per day) we can go to **'Routes'—' Manage '**, we select the one that we want and we give **' Continue the Track '**. It will be loaded on the screen so that when starting the recording of Track it asks us if we want to follow it, add a segment, etc. etc.

**Automatic segment creation:** For some activities it is interesting to have statistical data every X kilometers or every X minutes. Also every XXX meters of vertical difference overcome. For this there is this functionality that is configured in '**Global settings**' - '**Tracks/Routes**'.

If this option is combined with *Automatic creation of start and last Waypoints*, we will have added to the description of the last Waypoint the statistical data of that segment.

Another option offered is to automatically create new segments when we stop to rest for a time (configurable). In this way, breaks are not counted in the global statistics of the Track.

By default (it can be changed) when a recording is finished, the screen opens that allows we to enter different Track properties, view statistics, upload it to different servers, view its properties in ibpindex, etc.

On the 'Properties' screen of one of our Tracks, in addition to the properties (name, description, date, type, difficulty, intensity, ...) there are a series of actions:

- Edit. Access to the screen that allows us to delete/move Track points (useful for example, if the GPS has gone crazy, and has created impossible Track points).
- See Track statistics
- Share it (in different formats, or an image with the main data)
- Upload it to a server
- Delete it from the database (permanently!)
- IBP INDEX: is an online service that provides very interesting information about the Track, analyzing it and extracting a lot of information
- Correct altitude GPS is very bad at calculating altitude measurement error is usually significant This greatly affects altitude gain/loss calculation
- Upload to OruxMaps
- Simplify Reduce Track size Eliminate Track midpoints without reducing quality

## WAYPOINTS

### Creation

From map viewer , use the button '**Waypoints**' - '**Create Waypoint**' and it will be created at the current position where the cursor is. If we want to create a Waypoint at another point on the map, '**long press**' on that point on the map.

Waypoint Creation

Properties

WayPoint name

Time APR 7, 2020 6:39:39 PM

Type WAYPOINT +

Folder --- +

Zoom levels between which will be displayed 0 25

Description

COORDINATES  
43.37525°N 8.42878°W 54.00 M  
MAG. DECLINATION: -2.12 °

Projection

Geocoding

Extensions  
(tap the extension path to see it)

It proposes the coordinates of the central point of the map, but we can change them. **Next to the coordinates there is a button that refers us to a tool that allows us to change the coordinate system.** A Waypoint can be generated from the central point of the map, knowing a bearing and a distance, is what we call '**Projection**'. Or add additional information using the capabilities *Geocoding* offered by Google, this is done in the 'Geocoding' section.

In addition, we can associate images/videos/audios/texts to the Waypoint, it is what we call '*extensions*'. Then, when we visualize a Waypoint, we will be able to consult these associated data.

### Other ways to create Waypoints

- **Photo Waypoint** .: Open the camera or gallery allowing we to select an image. The photographs are saved in *oruxmaps/pictures*.
- **Automatic waypoint creation:** If we want to assign a generic name to the Waypoint and then edit it later, we can do it by pressing the button '**Waypoints**' - '**Create**' the Waypoint is created without asking us for more information. Select this option from the map viewer, button '**Waypoints**' - '**Configure Waypoints**' - '**Create wpts. automatic**'.

- **Automatic start/end waypoint creation:** Create a waypoint when starting/stopping the mode *'Recording a Track'*. The highlight is that the segment's statistics will be shown in the description of the final Waypoint. And if this is combined with the attic of segments (by time or by distance) then the created Waypoint automatically saves in its description the characteristics of the created Track. Select this option from the map viewer, button *'Waypoints' - 'Configure Waypoints' - 'Create first/last. wpt.'*

### Moving a Waypoint on the map

To move a Waypoint on the map to change its location, we only have to press it for a few seconds, the Waypoint will be unlocked and therefore, we can change its location on the map.

### How to use Waypoints

**Create a route from the list of Waypoints:** Access the list of Waypoints from the *'Waypoints' - 'Manage' button*. We select the set of Waypoints that we are going to use. we can search for Waypoints using the menu option *'Filter'*, showing the Waypoints according to the available filter criteria. We order the Waypoints as we want, it is done by a long press on the scroll icon on the left and then we move them up or down. Once we have the selected Waypoints in the list that we want to use as a Route, click on the *'Create Route' button*.

**View it/s on the map:** Waypoints are added to the current route on the screen without deleting it. In this way we can add to the current route those Waypoints that interest us, in addition to those of the route. *'Button Waypoints' - 'Manage'*; then we filter/sort, finally click on *'Show'*. If we want to take the Waypoints one by one, we select their name and choose *'View on map'*.

**Navigating to a Waypoint:** Activating navigation to a Waypoint allows us to have information such as distance to the target, VMG, ETA, ETE ... Click on a Waypoint that is already in the map viewer and select the option *'Navigate to'*.

**Waypoint navigation:** If we have several Waypoints loaded in the viewer to form a route, we can navigate from Waypoint to Waypoint. From the button map viewer, *'Routes' - 'Navigation Options' - 'Wpt Navigation.'* The application will show us the information until the next Waypoint, jumping from one to another when we are close enough to each one of them. In this mode we have a special TC-5 table in the **trip computer view**, which informs us of the trip plan and provides information on the course (true/magnetic) the distance (total from the current position, or between every two points passing) and the ETA/ETE to that point.

**Create a Track from a group of Waypoints and save it in the sdcard:** In the Waypoints list, select several Waypoints. Press the *'Export/save' button*. Option *'Save as Track'*. A Track is created from the selected Waypoints.

**Navigator:** If we have loaded a Waypoint in the map viewer, we can select it and click on it in Navigator. In this way, we can open *Navigation* or *Sygyic* to direct us to the Waypoint. This is very useful when the Waypoint is on a road, street, or the like, typical of the Waypoint at the beginning of a route. If the Waypoint is in the middle of the mountain, rest assured that an ON-Road navigator will not take us to it.

**Route/Track Waypoints:** In the button bar we have the button *'Waypoints' - 'Wpts. Path'* or *'Wpts. Track'* that shows us (if there is a Track/Route loaded) a list of Waypoints of the current Track/route. From here we have several options, depending on whether it is a Waypoint of a route (Navigate to, Center map, or if it is from the current Track, edit it, delete it ...). These options are also displayed when clicking on a Waypoint icon in the map viewer.

### Alarms

We can activate a proximity alarm that will sound when approaching the Waypoint. If audio files are associated with the Waypoint, instead of a 'beep', the associated audios will sound, one after the other. The Waypoint alarm will sound a maximum of four repetitions per Waypoint but can be changed from the menu '**Global settings**' - '**Voice/sound prompts**' - '**[WAYPOINTS] Max. Wpt notices. alarm**' .

If the type of the Waypoint has an associated message (see below '*our own types of Waypoints ...*') then it will notify us by means of a voice message with the text associated with the type. To activate it, '**Global settings**' - '**Voice prompts/sounds**' - '**Voice message Wpts.**' .

## Massive modification of Waypoints

It is possible to:

- Assign the same Waypoint to several routes
- One image/sound to several Waypoints
- Change the description to a group of Waypoints

In the list of Waypoints, button '**Waypoints**' - '**Manage**', select the Waypoints we want to modify massively. Press the menu button of our Android terminal, and select '**Mass modification**' .

## our own types of Waypoint, with our icons, and audio messages

If we want to create new types of Waypoints, there are two ways:

1.-From '**Waypoints**' - '**Manage**', the top button in the shape of Waypoint, takes us to the Manager of Waypoint types, from where we can create our own types, associate an icon, a voice message, and **even a data collection form**. These forms are useful if we want to collect information on the spot when creating Waypoints.

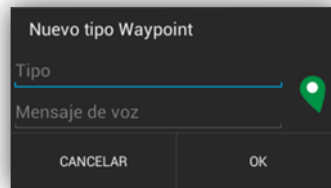
2.-**Editing the text file** *customwpts.txt* :

1. Edit the file *customwpts.txt* that is in the folder *orruxmaps/customwpts/*
2. Add a new line for each type, with the name of the type to add.  
Ahem: right\_turn  
right\_turn
3. If we want to use my own icon, put in the same folder an image *.png*, with the same name plus the extension *.png* (example '*right\_turn*' and file '*right\_turn.png*'). Recommended sizes *png* are in the comments in the file *customwpts.txt*. Lines beginning with the character '#' are comments and will be ignored by OruxMaps.
4. If we want to associate an audio message with it, add the separator '|' and the message to use. Remember to activate: '**Global settings**' - '**Voice prompts/sounds**' - '**Voice message Wpts.**' .  
Ahem: turn\_right|Turn right  
turn\_left|Turn left

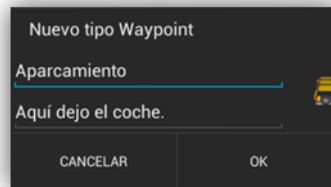
## Manage Waypoint types

To manage types, from the map viewer, click on the '**Waypoints**' - '**Manage**' button. In this window, click on the button *shaped Wpt.* to select the option '**Waypoint type manager**' .

The first time we access it, it will show us an empty list. To add new types, click on the button to create new types, and a configuration window will appear:



In it, we can put the name of the type of the Waypoint, a descriptive message that will be the voice message if we have it configured and an icon that we previously had to have copied to the folder */oruxmaps/customwpts*.

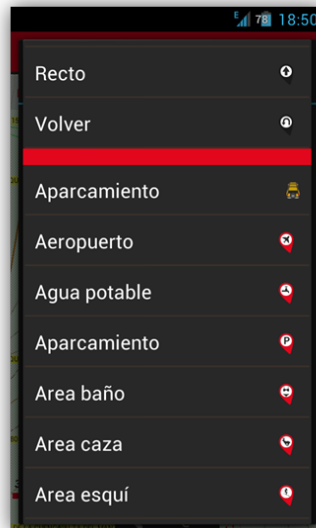


When we accept the new type, it shows us the list of types of Waypoints. If in the list of custom types we click on one, we get the options to:

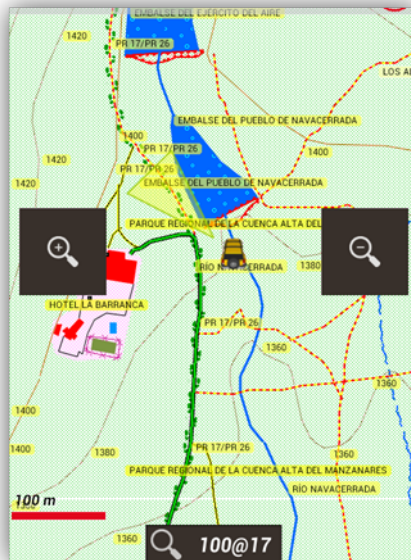
1. Edit it
2. Create a form associated with that type
3. Delete



Now, to be able to use them, when we are going to create a Waypoint on a route we will click, as other times, on the button **'Waypoints' - 'Create'**, fill in the necessary data and click on the button that says **'Waypoint'**, we will search for the type of Waypoint we are creating. As we can see, there are already many types configured.



We select it and when we finish creating the Waypoint, we will see it on the map with our icon already configured.



## Forms

They are useful for collecting field information, and adding that information to Waypoints. Forms are a quick way to enter data of preset types (numbers, selection, dates, yes/no, ...).

To create forms and collect data, we must:

1. Create a custom Waypoint type. Map viewer: **'Waypoints' button - 'Manage Wpts.'** In the Wpts list view, click on the button that accesses the Wpts type manager.
2. We create a new type of Wpt. and we add a name, icon and voice message (not necessary).
3. Once that new type has been created, click on it in the list, and select the 'Create form' option. From the form creation screen, go through the steps:
  1. Select the type of data field.
  2. Depending on the type of field selected, enter the default value.
  3. Enter the name of the field.

4. Add it to the listing.
5. Finally create the form or test it, and exit.
4. Finally create the form or test it, and exit.

18:40

←

1.- Select field type

Text  Large text  Date

Checkbox  List

2.- Text options

Text  Number  Decimal

Default value

3.- Common parameters

Field name

4.- ADD FIELD

5.- TEST FORM

6.- CREATE FORM

### To use the form:

From the map viewer, we create a Waypoint. When selecting the type of wpt., If that type has a form associated, a new button appears that takes us to the form to be filled.

The data entered in the form is transferred to Wpt. in the form of a text extension.

### **Waypoint searches on the map**

Points of interest can be searched on the map in several ways:

1. Long press on a point on the map. A contextual dialog appears. Select 'what's here'. Search Google's servers which points of interest are next to the pressed point. we can change the



service we are looking for, to use the IGN (Spain) or DAUM (Korea); in 'global configuration - application - geocoding service'.

2. Map viewer, button **'Waypoints' - 'Geocoding (online)'**. The option to enter text to search opens in the upper bar. If points of interest are found, they will be shown in a list.
3. Map viewer, button **'Waypoints' - 'Search on map (offline)'**. This option searches within '.poi' databases of type mapsforge. Where do i get these databases? for example in openandromaps.org

We have two ways to configure this search:

- a. if we load a mapsforge map (.map) and in the same folder we have the database (.poi) with the same name as the map (example Spain.map and Spain.poi) then the app offers we directly the search in the database associated with the loaded map. If we load the map Morocco.map and there is the file Morocco.poi, when loading the map of Morocco the search occurs in the database of Morocco.
  - b. if we want it to always be searched in a database, regardless of the map we have loaded (either mapsforge or not). 'global settings - maps - maps settings mapsforge - default offline POI database'. Select here the .poi file that we want to always use.
1. Map viewer, button **'Waypoints' - 'Search in the layers (offline)'**. If we have Waypoints loaded on the map as layers, this button will appear and allow we to search through the layers. For example, if we always have the KMZ with all the runways in Spain loaded in the map viewer, this search allows we to find a specific one.

## THE MAPS

### Online Maps

Maps are configured in an XML file, **onlinemapsources.xml**, which is located in the maps folder. This file can be modified with a text editor (delete fonts that don't interest you, add or modify others). In turn, the CAPAS folder may contain subfolders, according to the suffix in parentheses that appears in the name of the map (by default, organized by country) **<name>Topo 4umaps (EU)</name>** will appear in the folder (EU) , and so on. Maps whose names are not suffixed in parentheses will appear in the WORLD folder. **To delete maps from this list** that we do not want to see, with a long press on the map name it is removed from the list. If we want to recover all the maps again, press the 'Reset list' button.

If we have our own online maps configured, create a separate onlinemapsources.xml file and copy it to the new folder, oruxmaps/mapfiles/customonlinemaps/. **This file is not updated or deleted by the app.**

Each map within the onlinemapsources.xml file has the following structure:

```
<onlinemapsource uid="0" <!--uid es un valor entero único para cada mapa-->
<name>Google Maps</name> <!--nombre del mapa-->
<url><![CDATA[http://mt{ss}.google.com/vt/lyrs=m@121&hl={l}&x={x}&y={y}&z={z}]]></url>
<!-- la url donde están los mapas.
{ss} servidor, valor reemplazado por las cadenas que se indican en la etiqueta <servers>
{l} reemplazado con la local, por ejemplo 'es_ES', {x} x de la imagen,
{y} y de la imagen, {z} nivel de zoom , {q} quad encoded valor, obtenido de x,y,z
A x,y,z,q se le pueden aplicar operaciones previamente a ser reemplazadas -->
<website><![CDATA[<a href="http://url.to.website">web site link</a>]]></website>
<minzoom>0</minzoom> <!--minimo nivel de zoom-->
<maxzoom>19</maxzoom> <!--maximo nivel de zoom-->
<projection>MERCATORESFERICA</projection>
<!--permitido: MERCATORESFERICA, MERCATORELIPSOIDAL, MERCATORESFERICAx512,
MERCATORESFERICAx768, MERCATORESFERICAx1024-->
<servers>0,1,2,3</servers> <!--servidores a invocar, separados por comas-->
<httpparam name=""></httpparam><!--si se quieren añadir parámetros al header http-->
<urlparam name=""></urlparam><!--si se quieren añadir parámetros a la url-->
<transparency>1.0</transparency><!-- valor de transparencia del mapa, entre 0.0 y 1.0-->
<cacheable>0</cacheable> <!--si se guardan las imágenes en la cache interna valores 0 (no se guardan)
1 (se guardan)-->
<downloadable>0</downloadable><!-- si está permitido crear mapas offline de esta fuente 0 (no
permitido) 1 (permitido)-->
<maxtilesday>0</maxtilesday><!--máximo número de teselas que se pueden descargar por día -->
<maxthreads>0</maxthreads> <!--número máximo de hilos simultáneos-->
<xop></xop> <!-- operación a aplicar ax antes de reemplazarlo. Permitido: 1 -->
<yop></yop> <!-- operación a aplicar ay antes de reemplazarlo. Permitido: 0, 1 -->
<zop></zop> <!-- operación a aplicar az antes de reemplazarlo. Permitido: 1 -->
<qop></qop> <!-- operación a aplicar aq antes de reemplazarlo. Permitido: 2 -->
<sop></sop> <!-- operación a aplicar as antes de reemplazarlo. Permitido: 3 -->
<!-- Operaciones existentes:
0: inverso de y: (2^z - 1 - y)
1: mas uno: (val + 1)
```

```
2: añadir '/' cada 6 caracteres
3: (x + y) mod num_servers
posible el uso de operaciones tipo SQLite como por ejemplo:<yop>((1<&lt;&lt;$z)-1-$y)</yop>
-->
</onlinemapsource>
```

The app supports maps of tiles of sizes 256, 512, 768 and 1024 pixels. The tile size is defined in the <projection> tag, depending on the selected value:

MERCATORESFERICA, MERCATORESFERICAx512, MERCATORESFERICAx768, MERCATORESFERICAx1024

The use of SQLite-type operations is possible, for example:

```
<onlinemapsource uid="77">
<name>Mapa XXXX</name>
<url><![CDATA[http://url_map?{$x},{y},{z}&hl=ru]]></url>
<!-- hl=en doesnt work -->
<minzoom>3</minzoom> <!-- seems zoom 0,1,2 are buggy -->
<maxzoom>17</maxzoom>
<projection>MERCATORESFERICA</projection>
<servers>1,2,3</servers>
<httpparam name=""></httpparam>
<cacheable>1</cacheable>
<downloadable>1</downloadable>
<maxtilesday>0</maxtilesday>
<maxthreads>0</maxthreads>
<xop>substr('00000000' || $x, -8, 8)</xop>
<yop>substr('00000000' || ((1<<$z)-1-$y), -8, 8)</yop>
<zop>substr('00' || $z, -2, 2)</zop>
<qop></qop>
<sop></sop>
</onlinemapsource>
```

## WMS (Web Map Service)

OruxMaps gives basic support to this type of **ONLINE source**. New WMS sources can be added, there are thousands around the world.

More about WMS:

[Wikipedia](#)

[WMS in Spain](#)

[WMS in the world](#)

[Configure WMS from OruxMaps](#)

On the map selection screen, **button '+' -> Create WMS**.

that allows, from the URL of a WMS, to create maps.

WMS Creator

1.-Enter WMS URL

http:// Url

https

Basic HTTP authentication (if needed)

User

Password

2.-Select layers

3.-Enter WMS properties

Tile size 256px

CRS:

1.- Enter the URL (examples):

[http://wms.pcn.minambiente.it/cgi-bin/mapserv.exe?map=/ms\\_ogc/service/igm25\\_f32.map](http://wms.pcn.minambiente.it/cgi-bin/mapserv.exe?map=/ms_ogc/service/igm25_f32.map) (Italy)

<http://www.geosignal.org/cgi-bin/wmsmap> (France)

<http://www.ideo.es/wms/PNOA/PNOA> (Spain)

By clicking on OK, OruxMaps will search for the capabilities, and will show the available layers.

2.- **We** select the layers that we want to see on the map.

3.- We can test what will be seen (optional), knowing a latitude, a longitude and a zoom level.

4.- Enter the WMS parameters:

- Map name
- Maximum zoom level (If we are not clear, we put the maximum value, 20)
- Minimum zoom level (If we are not clear, minimum value, 0)
- Size of the tiles. Select its value depending on the type of screen we have, for high resolution screens, recommended 512 or 768 px.
- Additional parameters (optional). In this field, if we want to later compose maps with this WMS and the WMS supports transparency, put in this field: **& transparent = true**
- If the images are added to the cache, that is, they are temporarily stored to avoid unnecessary connections to the Internet.
- If the map will be downloadable (offline maps can be created).

5.- Finally, create the map; it will be added to the online map sources, its name will start with WMS:[Map name]

we can create a new WMS map based on a pre-existing one, or edit an already created one. **To do this, in the WMS list, long press on one of them**, and several options will appear.

Examples Spain:

Camino de Santiago <http://www.ign.es/wms-inspire/camino-santiago>

Raster mapping <http://www.ign.es/wms-inspire/mapa-raster>

Copernicus Land Monitoring Service <http://servicios.idee.es/wms/copernicus-landservice-spain>

Cartographic grids <http://www.ign.es/wms-inspire/cuadriculas>

Addresses and Postal Codes <http://www.cartociudad.es/wms-inspire/direcciones-ccpp>

Photo library <http://fototeca.cnig.es/wms/fototeca.dll>

Hydrography - Geographical Reference Information <http://servicios.idee.es/wms-inspire/hidrografia>

Kilometric leaves (Madrid - 1860) <http://www.ign.es/wms/hojas-kilometricas>

Seismic and volcanic information <http://www.ign.es/wms-inspire/geofisica>

Basemap <http://www.ign.es/wms-inspire/ign-base>

Digital Terrain Models <http://servicios.idee.es/wms-inspire/mdt>

Geographical Names <http://www.ign.es/wms-inspire/ngbe>

Land occupation <http://servicios.idee.es/wms-inspire/ocupacion-suelo>

Historic land occupation <http://servicios.idee.es/wms-inspire/ocupacion-suelo-historico>

Historical orthophotos <http://www.ign.es/wms/pnoa-historico>

Topical orthophotos of the PNOA <http://www.ign.es/wms-inspire/pnoa-ma>

Planimetries <http://www.ign.es/wms/minutas-cartograficas>

Plans of Madrid (1622 - 1960) <http://www.ign.es/wms/planos>

First edition of the National Topographic Maps <http://www.ign.es/wms/primer-edicion-mtn>

ELF Spain Project <http://elf.ign.es/wms/basemap>

Transportation Network - Geographical Reference Information  
<http://servicios.idee.es/wms-inspire/transportes>

Geodetic networks <http://www.ign.es/wms-inspire/redes-geodesicas>

Administrative units <http://www.ign.es/wms-inspire/unidades-administrativas>

### Configure WMS manually

we can add new WMS in the *oruxmaps/mapfiles/wms\_services.xml* file by editing it and adding new WMS.

we need to know:

- The base URL of the WMS.
- Put a unique UID on it.
- Determine the zoom levels to consult.
- The layers of the WMS we want to consult.
- The image format to request.

We start from the URL where the WMS is located; in this case the SIGPAC:  
<http://wms.marm.es/wms/wms.aspx?>

There are online viewers that allow us to test and see the layers that a WMS presents. Here's a good one: [WMS in Spain](#)

We downloaded the WMS descriptor file, adding;

'request = GetCapabilities & service = WMS' to the WMS URL, being like this:

<http://wms.marm.es/wms/wms.aspx?request=GetCapabilities&service=WMS>

What we have is a file with a structure XML with the WMS description. It is a long file, we can open it, for example with the Notepad or the browser (Firefox, IE ...) for viewing.

We look at:

```
<GetMap>
  <Format>image/jpeg</Format>
  <Format>image/png</Format>
  <DCPType>
    <HTTP>
      <Get>
        <OnlineResource xlink:href="http://wms.marm.es/wms/wms.aspx"/>
      </Get>
    </HTTP>
  </DCPType>
</GetMap>
```

From here we have the URL to put in the configuration file;

(WE ADD A '?' TO THE END): `http://wms.marm.es/wms/wms.aspx?`

And the type of images that we can request: `image/png` or `image/jpeg`.

Below we find the *layers*. They are the layers that are available in the WMS.

We look at:

```
<SRS>
  EPSG:4326 EPSG:32627 EPSG:32628 EPSG:32629 EPSG:32630 EPSG:32631 EPSG:4258 EPSG:25827
  EPSG:25828 EPSG:25829 EPSG:25830 EPSG:25831 EPSG:4230 EPSG:23029 EPSG:23030
  EPSG:23031
</SRS>
```

Here we have to see: **EPSG: 4326**. The WMS allows we to be prompted for maps indicating the corners in longitude/latitude format. If this data does not appear among the types of maps, it will not work in OruxMaps. It is the recommended EPSG, although the app supports other coordinate systems. Try others if EPSG: 4326 is not available.

We also look at:

```
<LatLonBoundingBox SRS="EPSG:4326" minx="-18.1705" miny="27.6374" maxx="4.3169"
maxy="43.7722"/>
```

This indicates the coordinates for which the WMS serves maps. It is not used.

We look at each of the layers(layers):

```
<Layer queryable="1" opaque="0" noSubsets="0">
<Name>RECINTO</Name>
<Title>Recintos</Title>
...
```

Hence the important thing is:

- The tag `<Name>` contains the name of the layer to put in the file OruxMaps.
- The attribute `opaque="0"` indicates that this layer is transparent (it can be painted on other layers). `opaque="1"` would mean that it is opaque, it serves as a background image, it cannot be painted on top of others.
- 

We already have everything necessary; We take the following template and fill:

```
<wms>
<name>EXAMPLE</name>
<uid>2222</uid><!-- unique identifier in our database cache; >1000 -->
<desc>IGN(ES)</desc>
<credits><![CDATA[<a href="http://www.example.com">Credits</a>]]></credits>
<url>http://url_to_wms_service?</url>
<minzoomlevel>0</minzoomlevel><!-- 0 to 20 -->
<maxzoomlevel>20</maxzoomlevel><!-- 0 to 20 -->
<version>1.1.1</version><!-- do not change -->
<layers>example1,example2</layers>
<coordinatesystem>EPSG:4326</coordinatesystem>
<format>image/jpeg</format>
<cache>1</cache>
<tilesize>512</tilesize><!-- 256, 512, 768, 1024 -->
<boundingbox minx="-180.0" miny="-85.0" maxx="180.0" maxy="85.0"/><!-- bounding box in
coordinatesystem units -->
<httpparam name=""></httpparam><!-- add headers, like Authorization, User-Agent,... -->
</wms>
```

**Example:**

1. `<name>SIGPAC</name>`

Here the name of the map, will be what we are in the list of maps.

two. `<uid>2001</uid>`

An integer value, unique for each map in the file.

3. `<desc>SIGPAC Web Map Service</desc>`

Description; Currently not displayed anywhere

4. `<url><![CDATA[http://wms.marm.es/wms/wms.aspx?]]></url>`

Is the URL; it is placed inside the brackets.

5. `<minzoomlevel>4</minzoomlevel>`

6. `<maxzoomlevel>18</maxzoomlevel>`

The zoom levels; empirical values to be tested.

7. `<layers>PLOT, ORTOPHOTOS</layers>`

The layers we want to see on this map; in order from top to bottom, the last must therefore be the opaque layer, separated by commas.

8. `<format>image/png</format>`

The type of image to request.

We already have the WMS:

```
<wms>
  <name>SIGPAC</name>
  <uid>2001</uid>
  <desc>SIGPAC Web Map Service</desc>
  <url><![CDATA[http://wms.marm.es/wms/wms.aspx?]]></url>
  <minzoomlevel>4</minzoomlevel>
  <maxzoomlevel>18</maxzoomlevel>
  <version>1.1.1</version>
  <layers>PARCELA,ORTOFOTOS</layers>
  <coordinatesystem>EPSG:4326</coordinatesystem>
  <format>image/png</format>
  <cache>1</cache>
  <tilesize>512</tilesize>
</wms>
```

We copy it into the file `wms_services.xml`, respecting the beginning and end tags, checking again that the UID is unique.

```
<?xml version="1.0" encoding="utf-8"?>
<wms_services>
  <wms>
    <name>SIGPAC</name>
    <uid>2001</uid>
    <desc>SIGPAC Web Map Service</desc>
    <url><![CDATA[http://wms.marm.es/wms/wms.aspx?]]></url>
    <minzoomlevel>4</minzoomlevel>
    <maxzoomlevel>18</maxzoomlevel>
    <version>1.1.1</version>
    <layers>PARCELA,ORTOFOTOS</layers>
```

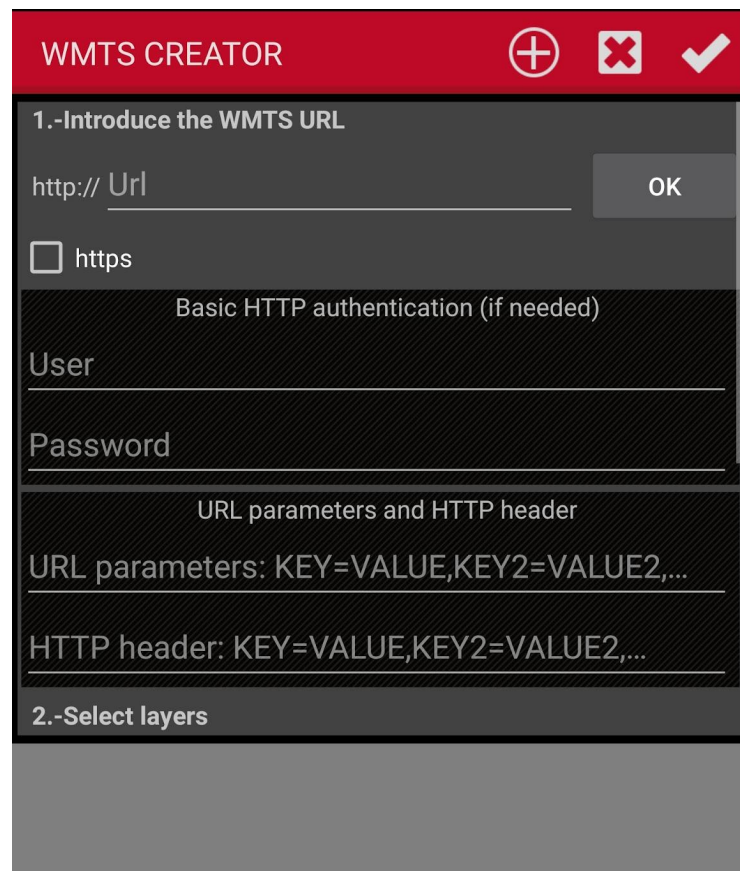


```
<coordinatesystem>EPSG:4326</coordinatesystem>  
<format>image/png</format>  
<cache>1</cache>  
<tilesize>512</tilesize>  
</wms>  
</wms_services>
```

Now in OruxMaps, we go to maps 'Online' and we give the button 'Restart list Maps'. And to try.

## WMTS

Similar to WMS, but much faster, because tiles are already created. In WMS images are created every time they are requested.



WMTS CREATOR

1.-Introduce the WMTS URL

http://

https

Basic HTTP authentication (if needed)

User

Password

URL parameters and HTTP header

URL parameters: KEY=VALUE,KEY2=VALUE2,...

HTTP header: KEY=VALUE,KEY2=VALUE2,...

2.-Select layers

- 1.-Enter the URL,
- 2.-If User and Password are required, if the WMTS requires basic http authentication
- 3.-If additional parameters are required in the URL, or in the header, enter them.
- 4.-Select the layers to display.
- 5.-If there are different coordinate systems supported, select one of them.**
- 6.-The same with the styles available.**
- 7.-Define whether cacheable (images are saved for offline use) and downloadable (offline maps can be created from this map)
- 8.-Put a name and finish.

Examples in Spain:

Raster mapping <http://www.ign.es/wmts/mapa-raster>

Basemap <http://www.ign.es/wmts/ign-base>

LiDAR Map <http://wmts-mapa-lidar.idee.es/lidar>

Digital Model of Elevations in Spain <http://servicios.idee.es/wmts/mdt>

Land occupation <http://servicios.idee.es/wmts/ocupacion-suelo>

Topical orthophotos of the PNOA <http://www.ign.es/wmts/pnoa-ma>

Plans of Madrid (1622 - 1960) <http://www.ign.es/wmts/planos>

1st edition of the National Topographic Maps <http://www.ign.es/wmts/primer-edicion-mtn>

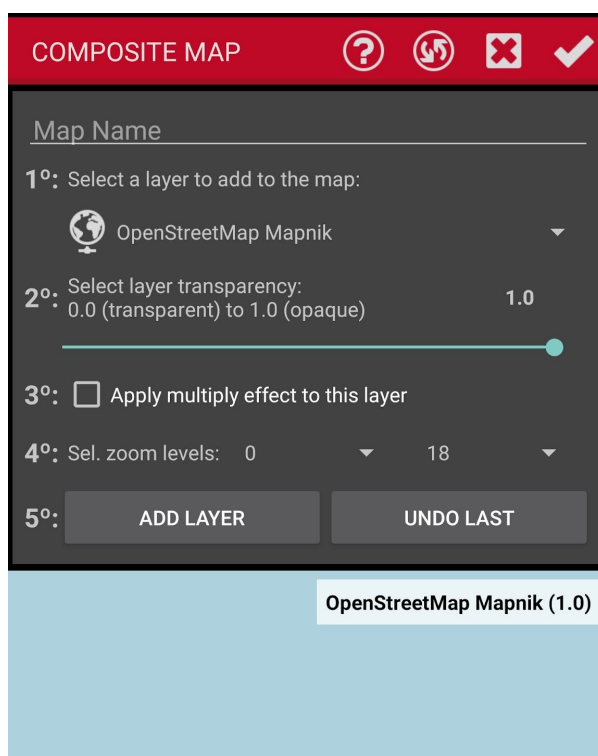
## Composite Maps

OruxMaps allows the creation of maps from different map sources by overlapping their layers. **NOT all online/offline maps are compatible to create composite maps, they have to use the same projection and tile size.**

Another necessary requirement is that the upper layers are transparent, or we apply a level of transparency, if they are opaque. Examples:

OpenStreetMaps + OpenSeaMaps (transparent)

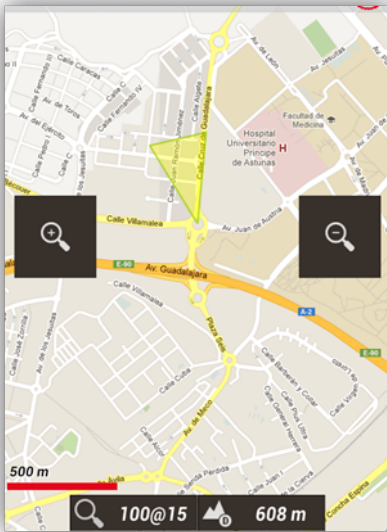
OpenStreetMaps + WMS: Cadastre (transparent)



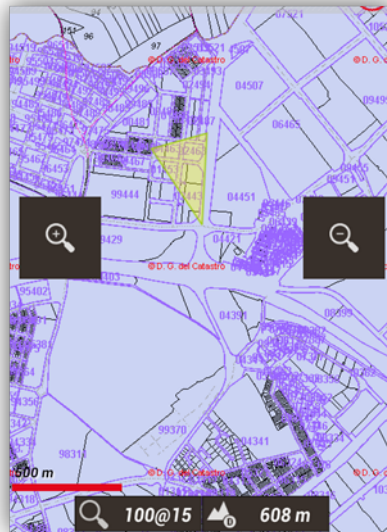
If we use a WMS as a top layer, it is **very important** that in step 4, *Additional parameters*, it is set as parameter `'&TRANSPARENT=true'` since this will be the map with the upper layers.

Once the correct operation of this new map has been configured and verified, select the option *'Compose Map'*. In this window we have to:

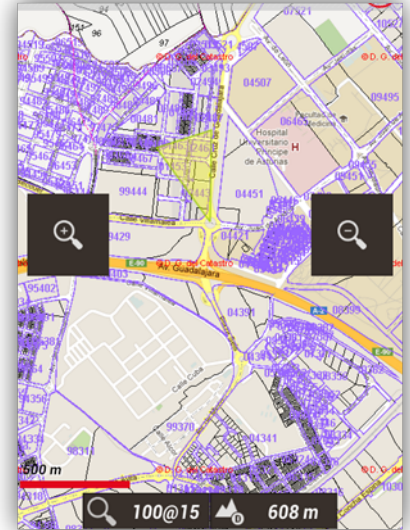
1. First select the base map, the one that is not transparent, for example OpenStreetMaps and click on *'Add'*.
2. Then select the maps that will make up the upper layers; if they are not transparent layers, select a transparency level for that layer, or apply the multiplier effect.
3. Select the zoom levels at which that layer will be seen.
4. Finally, name the new map and click on *'Ok'*.



OpenStreetMaps



Spanish Cadastre



OpenStreetMaps + Spanish Cadastre

Now, in the list of maps, the map created from the composition will appear.

**To delete a compound map**, long press on it in the map list.

### Offline Maps

In the configuration we have to define a parent directory for all the maps (don't worry, it is automatically created the first time in the phone's default storage directory, either SD card or internal memory: **oruxmaps/mapfiles/**).

Within this parent folder, subdirectories can be created, and within these, other subdirectories. The objective is to organize the maps in folders, by families, scales, sources ... whatever we want. In this way it is easy to **activate/deactivate folders** entire so that OruxMaps takes into account (when zooming, when jumping from one map to another, when displaying the lists ...) or ignore those folders. This is done from the map selection screen; **a long press** on a folder activates/deactivates that folder and all included within it.

If for example, we have the maps downloaded from Google Maps in one folder and another family of maps in another and we do not want the zoom, or the automatic loading of maps to select maps of that family, we simply deactivate it.

If the map is made up of different files and when moving, it is necessary to load one of these files, it will be loaded automatically without asking us, as long as these files are within the same subdirectory.

Theoretically when maps are added/removed from folders, OruxMaps updates their internal databases; but there are times when it doesn't find out (for example, if we change a map for another of the same name). For these cases there is the button **'Reset map listing'** on the map selection screen, to force the updating of the available map listings. Use it if any of the maps is missing/left over. If after using it we are still missing a map that we have copied to the maps folder, that map has a problem.

### OruxMaps format OruxMaps

uses its own map format. This is due to the limitations of a mobile device in handling large images.

A map with its own format OruxMaps is a folder with the name of the map, it contains:

- Always, a file with extension .otrk2.xml, with the calibration data.
- A file with an extension .db or a series of folders, with the map images.

**What we have to copy in the OruxMaps map folders is the folder underlined, not just copy the files .db and .otrk2.xml.**

For the creation of the maps we need to be viewing an On-Line map in the Map Viewer. Now, in the 'button **Maps**' we have the option '**Map creator**' which will be the one that we will have to press in order to enter the Map Creator settings.

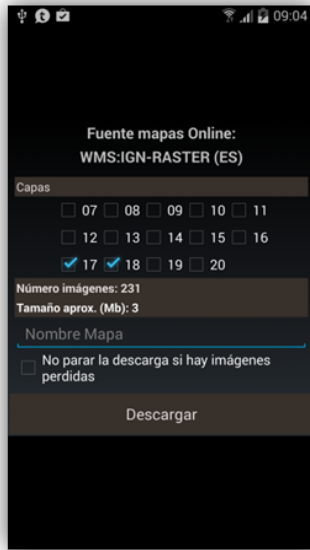
The Map Viewer will be shown again, but this time we will have to select two points, with which a rectangle will be drawn indicating which area will be the one we want to download.



We have 3 options:

- ➖ - Delete the marked points.
- ✖ - Cancel map creation.
- ✔ - Follow the creation of the map.

Once the area to download is marked, click on ✔ to continue with the creation.



Layers:

It indicates the zoom level of the layer to download. Layers with high numbers mean more zoom level and therefore more images to download.

Map:

Name that we want to give it.

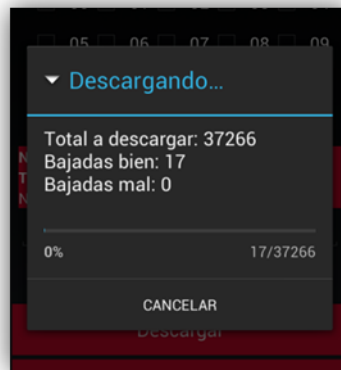
Not for download if there are lost images:

Certain images may not be available at the time of download. If this occurs, the download continues without asking what to do.

Download:

Button to start the download.

Once the download has started, we can see its process until completion.



**IMPORTANT: Not all online maps can be downloaded. In addition there is a size limit of 1gb, so as not to download giant maps that collapse the servers.**

At the end of the download, the Offline map list is automatically updated to show the new map created and ready for use.

To OruxMaps format maps, margins can be added to favor not seeing areas without a map when the limits of the map in use are reached, if automatic map loading is activated when exiting the current map.

*Maps need to be slightly overlapping for it to work properly.*

The process to activate this functionality consists of editing the specific map configuration file, in the case of the previous example, the file would be *Peñalara.otrk2.xml* that will be located in *oruxmaps/mapfiles/Peñalara/* adding the attributes *xmargin = " XX pixels right/left "* and *ymargin = " YY pixels up/down "*.

Thus, we originally have:

```
<MapBounds minLat="40.58058466412762" maxLat="41.244772343082076"  
  minLon="-4.21875" maxLon="-3.515625" />
```

And once edited, we will leave it like this:

```
<MapBounds minLat="40.58058466412762" maxLat="41.244772343082076"  
  minLon="-4.21875" maxLon="-3.515625" xmargin="256" ymargin="256" />
```

When we finish editing the file, remember to update the list of Offline maps from the button with a circular arrow, top right, in the list of Offline maps.

This functionality can be applied to all offline map formats from under '**Settings**' - '**Maps**' - '**Add margin X**'/'**Add margin Y**'. All maps will change upon reaching the limit indicated by another map suitable for that position.

### **Other supported map formats**

#### **.rmap format Free(NOT ALL FORMATS, NOR PROJECTIONS).**

1. Wethe *copy.rmap* in a folder inside the maps folder.
2. Press '**Reset map source**' on the map selection screen. If any of the maps, our DATUM is unknown to OruxMaps, a screen appears for us to indicate the DATUM of the map. For each DATUM, select the OruxMaps DATUM. Then we click on *Next*. When finished, button *Exit*. If we make a mistake, in '**Settings**' - '**Maps**' there is an option to delete the saved DATUMS.

#### **OpenStreetMapformat .map** → <http://code.google.com/p/mapsforge/>

They are maps that take up very little. **The best!** Their loading is a little slower, but they are very efficient in terms of storage.

Rendering themes can be added for these maps. These themes will have to be saved in the folder *oruxmaps/mapstyles* and we can download them for example from <http://www.openandromaps.org/> or design them yourself.

If we use the browser on our phone. on the website <http://www.openandromaps.org/> and click to download a map, OruxMaps will capture that event, offer to download the map and install it directly in our map folder, as well as the themes.



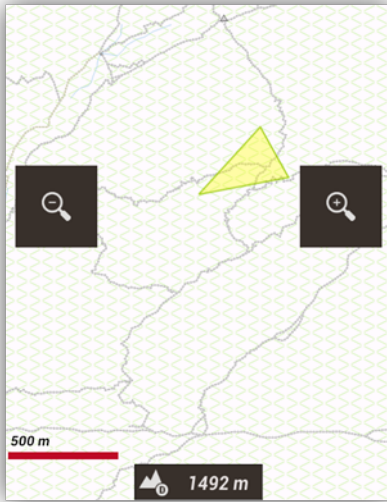
**For web developers, if we want to offer maps download for OM**

OruxMaps it will capture the links with the 'orux-map' scheme that point to a .zip file, download it and install it in the maps folder. And 'orux-mf-theme' for .zip files containing mapsforge themes. Examples of web link:

`<a href="orux-map://oruxmaps.com/Azores.zip"> Azores map </a>`

`<a href="orux-mf-theme://oruxmaps.com/themes.zip"> Theme example </a>`

The theme will be chosen from the menu button, **'Maps' - 'Maps settings' - 'Mapsforge theme'**



Original



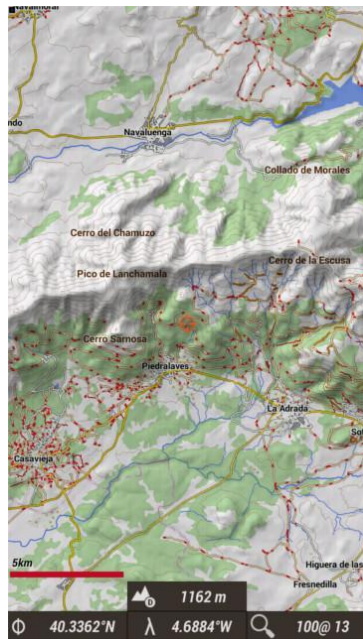
theme Theme with elevations, colors and icons

Additionally we can change the size of the letters/icons of the Points of Interest, from **'Settings' - 'Maps' - 'Settings Mapsforge' maps**.

With mapsforge maps, if we have downloaded DEM height files, we can view them with relief shading.

**HELP:** To download the DEM files of an area, place the center of the map on that point, then click on the button **'3D view'**. If we don't have the files downloaded, it will ask we to download them. If they are already downloaded, the 3D view will be shown directly.

To activate the shading, we have to do it in **'Settings — Maps — Mapsforge settings'**.



Map with shading



Map without shadows

### Maps in format Garmin .img that are not locked.

They are vector maps. In '**Settings**' - '**Maps**' - '**Garmin map settings**' we can change some settings (see labels, decrease detail, font size ...).

### Maps in format .MBTiles.

It is a format *raster*, the images are stored in a SQLite database.

### Maps in format .ozf2.

Copy the files *.map* and *.ozf2* into the folder *oruxmaps/mapfiles*. Both files must have the same name. we can use *Img2oz* (for example version 2.08) to convert OZI Maps to *ozf2* format.

### Maps in .tiff format.

The app allows loading maps in *tiff* format. Simply copy them into the maps folder of the app.

### Maps in .pdf format.

They are *pdf*, s that incorporate information on georeferencing. They are called *GeoPDF*. There are multiple sources of maps in this format, for example the American *USGS*.

From here, find the sources that interest we the most.

***Be careful with the licenses of use of each map! we have to respect them.***

## Online Maps Cache

Note that OruxMaps uses an internal cache to store the images of the used online maps. Everything that is browsed online is then available offline. If an image is available in the cache, it does not go to the Internet to search for it.

This cache is not eternal and is managed in the following way:

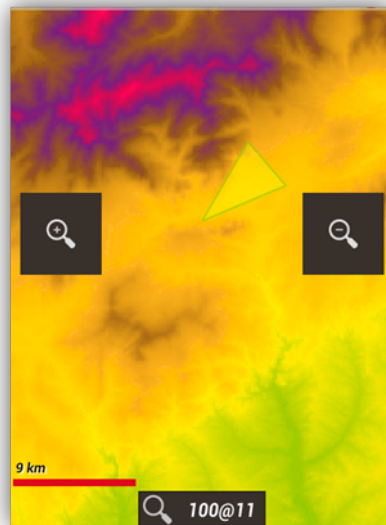
From the main OruxMaps screen, **'Settings' - 'Maps' - 'Restart Cache Maps'** allows us to remove maps from one (or all) of the cache. This is useful for those maps that expire from a date.

*IF WE DON'T ERASE THEM FROM THE CACHE, WE WILL ALWAYS BE SEEING THOSE WHO DOWNLOAD USED FOR THE FIRST TIME.*

Automatic deletion: Upon exceeding a certain limit of the cache size, by default 512mb, there is an automatic deletion of the first downloaded images (the oldest) until the cache is reduced to a predetermined size of 256mb. These values are configurable from **'Settings' - 'Maps' - 'Online Maps'**.

## Relief map

This map uses the DEM height files downloaded in the terminal to show the terrain. Activate it from **'Settings' - 'Maps'— 'Reliefmap'**.

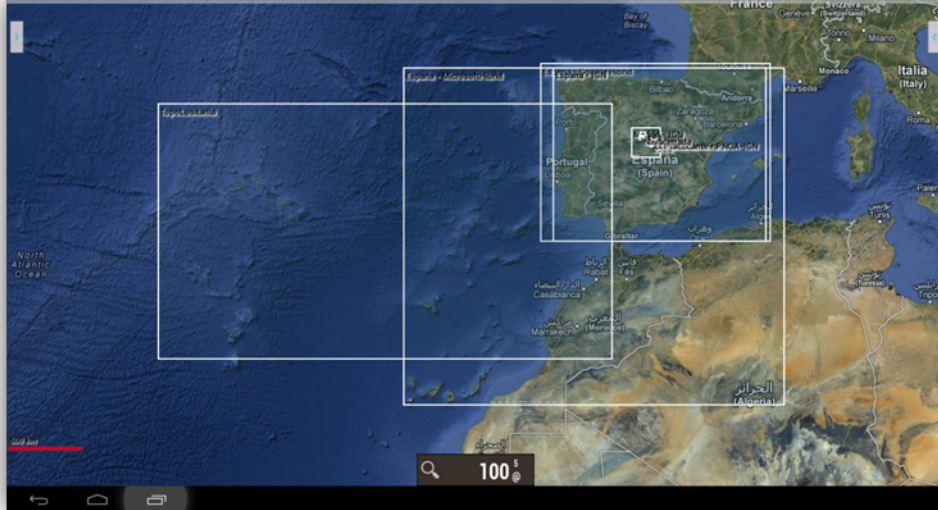


Once activated, we can access it from the button **'Maps' - 'Open map here' - 'Reliefmap'**.

## Index map

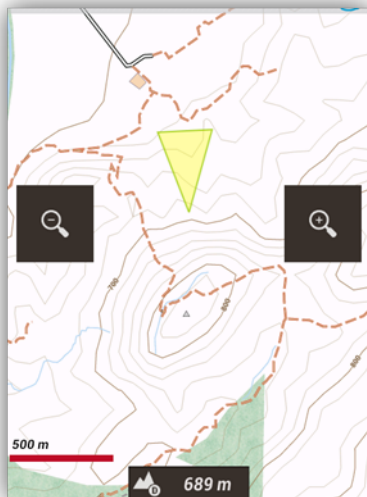
It is a system with which we can know what maps we have on our list and to which region it belongs.

In order to see this index, we will go to the button **"Maps"** - **"Map tools"** - **"Index map"**.

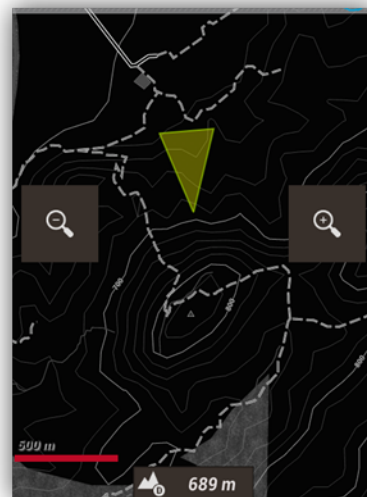


## Night mode map

From the menu button of our terminal, **'Maps'** - **'Map settings'** - **'Night mode'** It is possible to activate a high contrast total filter of any map so that it is not annoying the view of it.



Normal



mode Night mode

## LAYERS ON THE MAP

We can superimpose on the maps different layers that we have in KML/KMZ/SHP format. All geometric shapes (polygons, lines, points) are supported but not georeferenced images. we can also use ESRI .shp files (shapefiles) although not all the capabilities of these files will be available.

An alternative is to load our tracks on the map as layers on the map, to view them **not** in mode following route/waypoint navigation.

we have to copy the files into the *oruxmaps/overlays/directory* and select the layer we want to see on the map in the button on the top bar **'Maps' - 'Layer options' - 'Load KML layer'**

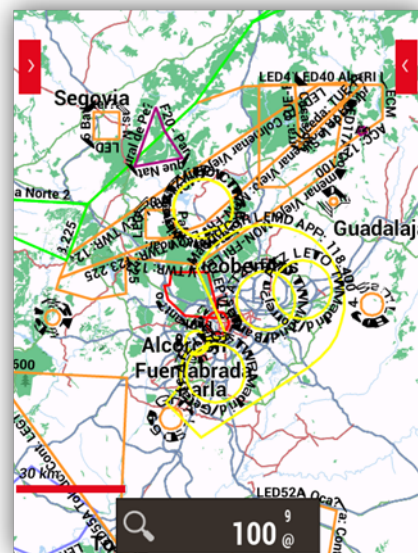
we can adjust the components to display If they are organized in 'folders' within the KML/KMZ, we do this from **'Maps' - 'Layer Options' - 'Adjust KML layer'**.

Also, by checking the option **'Settings' - 'Maps' - 'KML layers configuration' - 'Keep KML layers'**, when we run OruxMaps again, the layers we left in the last execution will be loaded automatically.

If we click inside closed polygons, we will get a window with the information (description) of that polygon, if it has one.



Set of landing points

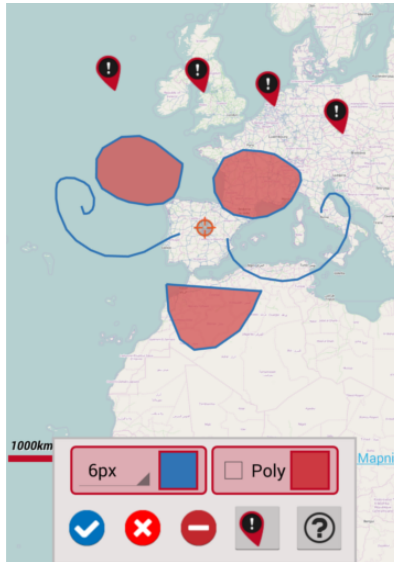


Spanish airspace

If the layer we load contains polygons, new options appear on the polygons we have loaded:

- Exclusion zone: if it is active, and we have the GPS working, if we enter an exclusion zone it will warn we with an alarm. It is useful, for example, to signal hunting grounds, ...
- Security perimeter: it is the inverse to the previous one. If we define security perimeters, and we have GPS active, it will alert we if we leave a security zone.

On-screen drawing tool (button **'Maps' - 'Layer Options'— 'draw layer'**). With this new tool we can generate lines, polygons or wpts of different colors, transparency, ... And these polygons can be used, for example, as **exclusion zones or security perimeters**, when they are loaded on the map.



## VOICE COMMANDS

You can give certain commands to the app using voice recognition. In 'global settings - Voice / sound prompts' you can configure them. If you activate 'Volume buttons, voice commands', the app will initiate command recognition when you press those keys. An alternative way is to include a new button in the map viewer button sidebars, which starts voice recognition.

- **Available voice controls are:**
  - start recording
  - stop recording
  - new segment
  - statistics
  - go back
  - new waypoint [name...] [description...] [type...]
  - delete waypoint
  - edit waypoint [name...] [description...] [type...]

Examples of commands 'new waypoint':

- new waypoint name 'mandatory point' type 'bridge '
- new waypoint type 'bridge '

new waypoint name 'mandatory point' type 'bridge' description 'care when passing '

## CREATING MAPS

Four basic ways to achieve them:

- **MOBAC:**

Excellent application to create Offline maps from countless sources. Here is all the information: [MOBAC](#)

IMPORTANT: Preferably use the format '*OruxMaps Sqlite*'. In MOBAC settings, set the maximum map size to its highest value; leaving the default value and creating large maps will cause an error in displaying that map in OruxMaps.

What we have to copy on our terminal card is THE FOLDER that has the name of the map we have created.

- If we have already calibrated maps for Ozi, .kap, .tfw, or just an image, use user *OruxMapsDesktop* (see manual at [www.oruxmaps.com](http://www.oruxmaps.com)).
- **OkMap:** [www.okmap.org](http://www.okmap.org) is an excellent program that allows us to convert maps of different formats to the OruxMaps format.
- Download them from the different providers that provide them (see some at [www.oruxmaps.com](http://www.oruxmaps.com)).
- From the list of maps, '+' button, we access a collection of map providers.
- **Directly from OruxMaps:** Explained in this manual in the **Maps - Offline Maps - OruxMaps Format** section.

## SENSORS

### External GPS

We can use an external bluetooth GPS, for this we have to configure it in '**Global settings**' - '**GPS**' - '**External GPS**'. When configuring an external GPS, a new option appears in the menu '**Tracks**'—'**Start Ext. Gps**'.

There are external BT antennas that can provide measurements at 10 Hz (10 positions per second). Interesting for certain sports activities. Example the qstarz 818XT 10 Hz:

<http://www.qstarz.com/download/BT-Q818XT-Quick%20Guide-print.pdf>

IMPORTANT: If OruxMaps loses contact with the external GPS and we are recording a Track, it will try to start the GPS internal, so that we do not lose the Track that is being recorded.

If we have problems connecting the external GPS directly to OruxMaps, we can always use intermediate applications, such as:

<https://play.google.com/store/apps/details?id=googoo.android.btgps>

### Pulsometers

Currently OruxMaps is compatible with Bluetooth heart rate monitor from Zephyr brand, with Bluetooth Polar heart rate monitor, with SportsTracker and Heart Rate Monitors with Bluetooth Smart or Bluetooth 4.0 technology, which enables lower battery consumption. An example of is the Polar H7.

Once configured from '**Global settings**' - '**Sensors**' - '**Heart Rate Monitor**', a new option appears in the '**Track**' - '**Start Heart Rate Monitor**' button.

If we have appropriately configured the control panel, we can view the current, maximum, minimum, average pulsations and the state of the heart rate battery.

When the Track is saved, the keystroke log is saved as well. And if we upload the Track to *MapMyTracks.com*, for example, we can see the log of keystrokes.

When exporting the Track in GPX format, the heart rate records are also exported.

### ANT + sensors

OruxMaps can be used with different sensors ANT +. If the Android terminal supports ANT +, the option appears '**Start ANT +**' under the menu '**Tracks**'

- Heart rate monitor.
- Pedometer.
- Cadence sensor (bike).
- Speed sensor (bike).
- Combined cadence-speed sensor (bike).
- Temperature sensor.
- Power sensor.



## **BT 4.0 (Smart) Cadence and Speed**

Sensors Bluetooth Smart Cadence Speed Sensors can be used, if configured for use with OruxMaps.

## **Bicycle Power Sensor BT 4.0 (Smart)**

IMPORTANT: Once the sensor has been configured, to view data in the dashboards, it must be added in '**global configuration - visual elements - dashboard - dashboard elements**'.

## **APRS**

The app allows us to connect to APRS servers, for example: <https://aprs.fi> that allows us to position stations that follow this format on the map. For the option to activate this service to appear, we have to configure it in '**global settings**' - '**sensors**' - '**APRS**'

## **VARIO**

Requires that the phone has a barometer. It is a useful tool for sports in which there is significant height variation (paragliding). **ATTENTION: ORUXMAPS IS NOT A SPECIFIC APPLICATION FOR THIS TYPE OF SPORTS. DO NOT USE ORUXMAPS AS THE SOLE TOOL OR MAIN TOOL IN THESE ACTIVITIES.**

## **AIS**

support *Experimental* AIS (Automatic Identification System).

Type 1, 2 and 3: Position Report Class A for AIVDM statements.

### **Bluetooth**

If we have an external GPS that receives AIVDM messages in addition to the positioning messages, we can configure it in '**Settings**'—'**GPS**' - '**External GPS**'.

When starting external GPS, OruxMaps will automatically display AIS information.

If the NMEA position statements are not received with the AIS messages, select the MAC AIS of our bluetooth device in '**Settings**'—'**GPS**' - '**AIS**' - '**AIS BT device**'.

### **Data connection**

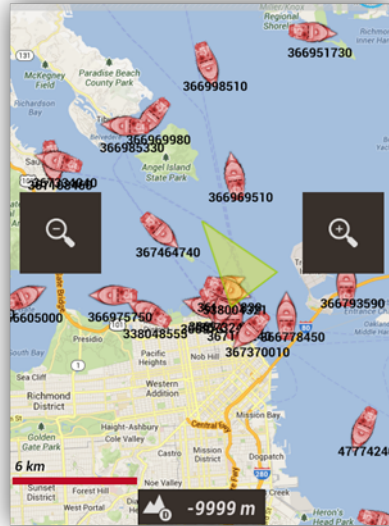
If we want to use AIS under IP, we must have a URL that provides the necessary information for the area we want to consult.

Once obtained, check the option '**Configuration**'—'**GPS**' - '**AIS**' - '**AIS over IP**' and put the URL in '**Settings**'- '**GPS**' - '**AIS**' - '**AIS IP address**'.

To test AIS under IP, the URL is provided to obtain the information of the port of San Francisco, California (USA).

## USB

Conectando an AIS device to the USB port of the device, through a a-to-Serial USB cable  
To start receiving messages, click on the button **'Tracks'** on the Viewer the Map and select **'Start AIS'**.



## Tempo Disc barometric/temperature/humidity

sensor This sensor can be connected with the app, to obtain these sensor data:

<https://bluemaestro.com/products/product-details/bluetooth-environmental-monitor-and-logger>

## Barometer Thermometer BT 4.0 nRF5xxxx

It is an external BT 4.0 sensor, which may contain Barometer, Thermometer.

<https://es.aliexpress.com/item/32808111676.html>

## LIVE TRACK

**Live Tracking:** If we have an account on the site [www.mapmytracks.com](http://www.mapmytracks.com), we can send the signal of our Track directly to that website, and that other people see what we are doing. THIS OPTION ONLY APPEARS WHEN WE ARE RECORDING A TRACK, go to the Tracks button, **'Live Tracking'**. But first of all, it is necessary to configure our account *MapMyTracks.com* from the menu in 'Global settings' - **'Integration'** - **'MapMyTracks'**.

**Live Tracking with OkMap:** We can directly connect OruxMaps with the OkMap client on our PC and see the Track we are recording live. Configuration from 'Global settings' - **'Integration'** - **'OKMap Client'**.

More information at [www.okmap.org](http://www.okmap.org)



**Live Tracking with Gpsgate.com:** OruxMaps supports the format of [www.gpsgate.com](http://www.gpsgate.com) to send the position live to servers with this protocol. we have to configure the URL in 'Global settings' - **'Integration'** - **'Gpsgate.com'**

## Multitracking

**Share position with colleagues.** It can be positioned on the map while we Track friends/colleagues. Or if we make a route and we want someone to be aware of our position, they can do it if we allow it (and they have a terminal with OruxMaps).

Data connection required.

we must be registered in OruxMaps (**'Global settings'** - **'Manage my account'**). Then, from **'Global settings'** - **'Multitracking'** - **'Manage users'**:

1. Register the friends with whom we want to share our position and the friends with whom we want to know their position by clicking on , and to delete a colleague on .
2. When exiting, the data will be synchronized with the server.

**IMPORTANT:** The server only sends us the positions of the people who have authorized us to see them.

3. Return to the map viewer. Activate the GPS and a new option appears **'Track'** - **'Live Share'** - **'MultiTrack'**.
4. We will see a new indicator in the status box and our colleagues on the map.

## USE CASES

Once the entire operation of OruxMaps has been explained, practical use cases are proposed.

### Prerequisites

Having the voice/sound settings properly configured in '**Global settings**' - '**Voice/sound prompts**':

- **Max. Wpt notices. alarm:** It is the MAXIMUM number of times that the warning to be near a Waypoints will sound.
- **Alarm wpt, audio:** If the Waypoints has an audio extension (anfile *.mp3*, *.ogg*...) associated with a message, instead of the warning tone, OruxMaps will play the audio. For more information see the section dedicated to Waypoints in this manual.
- **Alarm distance wpt .:** Distance at which the warnings of proximity of a Waypoints will begin to sound.
- **Proximity alarm wpt .:** It is the tone that OruxMaps will use to warn we that we are close to the Waypoints If the previous parameter is activated '**Alarm wpt, audio**' and the Waypoints has an associated audio file, then the audio sounds, not this tone.
- **Route alarm distance:** Distance from which OruxMaps will start to warn we if we move that distance away from the route layout. A small value can lead to 'false alarms' due to possible GPS errors.
- **Distance to turn off alarm:** Distance from which the route departure alarm stops sounding. MUST BE A VALUE GREATER THAN THE ABOVE. If 160 meters is configured here, and the '**Route alarm distance**' is set to 80 meters, then the alarm will sound while we are between 80 and 160 meters away from the route.
- **Route away alarm:** Tone to be used as a warning for the route departure alarm.

### Case Studies

1. **Starting from a track that we have downloaded in a GPX file, that contains Waypoints, we want to follow it, that warns us if we stray from the path. We also want we to warn with a sound (a tone) when approaching each of the Waypoints.**

It is the simplest case.

- a) From the map viewer, button '**Routes**' - '**Delete Routes/Wpts from the map**'. With this we erase from the viewer all the previous routes that we have.
- b) From the map viewer, button '**Routes**' - '**Track/Route Tools**' - '**Load GPX/KML**'. The file manager opens, we search for the *GPX/KML/KMZ* with our path and select it.
- c) A dialogue opens asking us what we want to do with the route. We select the options:
  - **Follow** (we want OM to take us on the route)
    - **Route alarm** (we want OM to warn us if we stray from the route)
    - **Wpt alarm.** (We want OM to warn us when we reach each Wpt.)
  - **Start a new Track** (we want OM to start recording our journey while we are on the route). **IMPORTANT:** The route departure or waypoint approach alarms only work if we are recording the Track or the GPS is active.

2. **Starting from a Track that we have previously recorded (it is in the OM database) we want to follow it, to warn us if we stray from the path. We also want we to warn with a sound (a tone) as we approach each of the Wpts.**

It is also simple.

- a) From the map viewer, button '**Routes**' - '**Delete Routes/Wpts from the map**'. With this we erase from the viewer all the previous routes that we have.
- b) From the map viewer, button '**Routes**' - '**Manage**'. The list of Tracks that we have in our database opens. Click on the one that interests us, we choose the option '**Load as Route**'.
- c) We are in the same step as section c) of the first case.

**NOTE:** When we have the Route in a KML/KMZ/GPX file and we are interested in manipulating it (add/remove wpts, add voice messages to the wpts ...) then we need to **IMPORT** the Route to the OM database and then 'play with she':

- a) From the map viewer, button '**Routes**' - '**Manage**'.
- b) Menu button on our terminal, we select the option '**Import Track**'. We select '**GPX/KML file**'. The file manager opens. We select the file that we want to import and in a while it will be in the Tracks list (at the bottom).

3. **Starting from a Track that we have in the OM database or in a GPX/KML file that is in the terminal storage. The Track contains Wpts. and we want to go from Wpt. in Wpt., 'cross country'; We do not want to go over the Track, we do not want the 'route departure' alarm to sound, we are not interested if we do not go exactly above the route.**

The quick solution is to follow the steps of cases 1 or 2, but DO NOT ACTIVATE THE ROUTE ALARM.

**Alternative:** As we are not interested in the Track, the most suitable is to use the '**Wpts Navigation**.' in which the important thing is to go through each Wpt, no matter the route. OM will worry that when we get to a Wpt., Take the following wpt as a reference. and indicate in the control panel the corresponding information (distance, expected time of arrival ...) to that Wpt. For this assumption, we replace step c) of cases 1 and 2 above with:

- c) A dialog opens that asks us what we want to do with the route. We select the options:
  - ~~Follow~~ (we want OM to take us on the route)
  - Navigation Wpt. (we want OM to take us from Wpt. in Wpt.)**
    - ~~Route alarm~~ (we want OM to warn us if we move away from the route)
    - Wpt alarm.** (we want OM to warn us when we get to each Wpt.)
  - Start new Track** (we want OM to start recording our route while we are on the route.

**NOTE:** When we navigate from Wpt. to Wpt., if we are interested in skipping one of the Wpts. or OM has not detected the passage by one of them, we must do it manually.

4. **we have no path or track or planned a Route directly on OM. We also want we to warn with a sound (a tone) when approaching each of the Wpts.**

In this case, what we need is first to build a Route on OM that contains Wpts, we save it in the database and then we open it as indicated in case 3.

To create the Route by hand:

From the map viewer, button **'Tracks' - 'Track/Routes Tools' - 'Create'**. A box opens at the bottom that allows us to add Track points manually (and simultaneously create a Wpt if the selector **'Create Waypoint'** is active). To do this we move the map with our finger, we place the central cursor where we want to put the Wpt. and press the button **+**. If we make a mistake, to delete the last Wpt. created, the button **-**. To finish the button **✓** and to leave without doing anything **✗**.

We already have the Track created by hand and saved in the database. So we delete it from the screen (From the map viewer, button **'Tracks' - 'Delete'**) and we start at the beginning of case 3.

**5. We have a Track in our database, but it does not contain Wpts, only the trace. We are interested in adding Wpts. by the way, for example at critical junctions, so as not to mislead us.**

What we have to do is *'edit'* the Track, add the Wpts to it. and then use any of the above cases.

To edit a Track, we have to:

- a) From the map viewer, button **'Tracks'—' Delete Routes/Wpts from the map'**. With this we erase from the viewer the previous Track that we could have loaded in the viewer.
- b) From the map viewer, button **'Tracks' - 'Manage'**. The list of Tracks that we have in our database opens. Click on the one that interests us, choose the option **'Continue Track'**. The Track is loaded into the map viewer. We look at the route and we are creating Wpts (button **'Wpts.'—' Create '**) where we are interested. Those Wpts. are being added to the Track.
- c) When finished, from the map viewer, button **'Tracks' - 'Delete'**. With this we delete the Track that we have generated from the viewer. We are already in cases 2 or 3 previous.

**6. We have in our Wpts database. lots of Wpts. and we want to make a Route uniting several of them.**

- a) From the map viewer, button **'Routes'—'Delete Routes/Wpts from the map'**. With this we erase from the viewer all the previous routes that we have.
- b) From the map viewer, button **'Wpts' - 'Manage'**. We are in front of the list of all the Wpts. that we have in the database. From here our expertise plays, what we have to achieve is that only Wpts remain on the screen. that interest us for the Route that we are going to do. Multiple possibilities:
  1. Scroll through the entire list, selecting the selector to the left of the Wpts. that interest us. Once we have selected all of them, menu button on our terminal, select **'Filter'** and in the dialog that appears, select the option **'Selected items'**. When clicking on **'OK'**, only the Wpts should appear in the list. that interest us.
  2. Filter for some quality of the Wpts. that we are going to use (they belong to the same Track, they are of the same type, they are at a known distance or we know the creation date).
- c) When we only have the Wpts. that we are really interested in building the route, we can go up/down/and reorder them; for this we keep pressed on the icon on the left of all of each Wpt, which allows us to drag and drop the Wpt up/down.
- d) When the order of the Wpt. is the correct one we press the second button to the left of the upper button bar. This causes the Wpts. appear in the linked map viewer forming a route. We will be again in step c) of case 1.

7. **We have a Track in our database but it does not contain Wpts, only the trace. We are interested in adding Wpts. by the way, for example at critical junctions, so as not to mislead us. To avoid having to see the screen, we want that, when approaching the wpts, it gives us a voice prompt 'turn to the right' or 'turn to the left' or 'keep going'.**

Similar to case 5. To add voice prompts to Wpts, we have two options:

- a) Create a **custom Wpt type**, which includes the appropriate message; then at each Wpt. when creating it, we assign it the specific type, so that OruxMaps reads the message to us when we approach it.

The types of wpt. are configured by modifying the text file *oruxmaps/customwpts/customwpts.txt*. we have to add in that file one line for each type of custom wpt that we want. If we also want it to have its own icon, we must add the image in format *.png* in the same directory (*oruxmaps/customwpts/*) For example, to create the custom type **'right\_turn'** that will read the message **'Turn right on the following crossing'** and that uses the icon ***right\_root.png*** (*notice* that the name of the icon exactly matches the name of the custom type) we have to:

- a. Edit the file *customwpts.txt* and add the following line at the end:  
**Right\_turn | right at next junction**
- b. Copy image *right\_draw.png* to directory.

This option requires that we have selected the option of **'Global settings' - 'Voice/sound alerts' - 'Voice message Wpts.'**

- b) Do the same as indicated in case 5, but to each Wpt., When creating it, we associate in **extensions an audio file** in which we have recorded, with our voice, the voice message that we want. We can create the message with the Android voice recording application.

This option requires that we have selected the option **'Configuration' - 'Voice/sound prompts' - 'Alarm wpt, audio'**

**NOTE:** Sometimes it is useful to modify many wpts simultaneously, to add an audio extension to all of them, for example, or to change all the type of Wpt., and associate it with the Wpt. a custom type that includes a voice message. How?

1. From the map viewer, button **'Wpts' - 'Manage'**.
2. We select the selector to the left of the wpts. that we want to modify massively.
3. Press the menu button of our terminal, select **'Mass Modification'**, which allows us (depending on the selector that is selected):
  1. Associate the Wpts. to more than one Track.
  2. Change the type of the Wpts. (assign, for example, a custom type with voicemail)
  3. Put the same description on several Wpts.
  4. Attach to multiple Wpts. the same audio file.

## SOS ALARM SOS

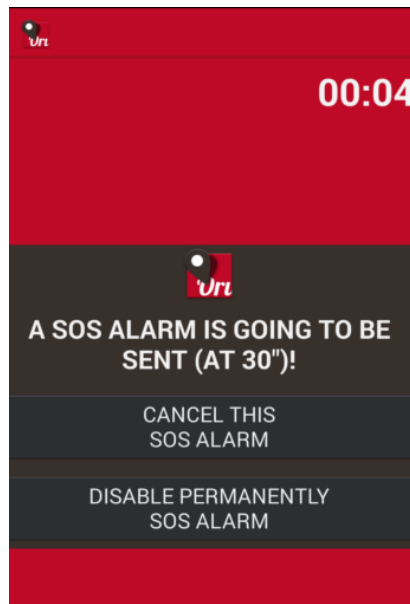
Alarm, if there is no movement for XX minutes. Try carefully !!

Set up one or more phone numbers. (**Global settings—SOS**). Select the time that has to pass without movement and start automatically, or activate it from the map screen, tracks button, start SOS alarm.

- we can try sending the message from the configuration.
- position sensors can be used to cancel the alarm sending, but be careful !! the vibration of the phone. it could cancel the alarm too.
- If the SMS is sent the app stops recording the route, to save battery power.
- if it can't send the message, it tries every so often, spacing out the attempt.
- if it fails a third time, the app goes into economy mode, turning off the screen, to save energy.

we can stop/start this alarm in the map viewer, tracks button → start/stop SOS alarm.

- It only works in 'recording track' mode.
- Requires that at least one GPS position has been received.
- Please test several times before using it !!!



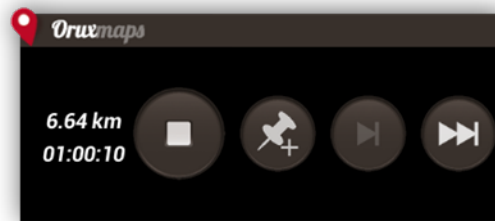
Now we can also use sending emails, instead of SMS. To configure it properly we have to:

1. Open a gmail account only for this purpose. It is important not to use our usual account, because we must leave the account with limited security, so that the app can send messages for you.
2. Once we have created the account, we go to: <https://myaccount.google.com/lesssecureapps?pli=1> and allow that account to be accessed in an unsafe way by the applications we authorize.
3. we go to 'global settings — SOS' and enter the Gmail account, the password of that account and the emails to which we want the alert message to be sent.
4. Test before use!



## WIDGET

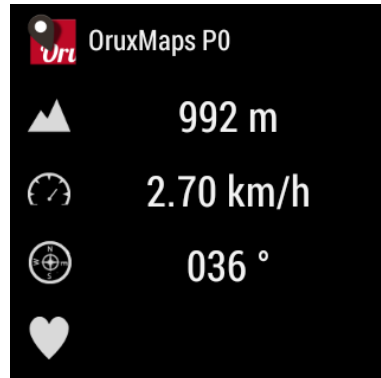
we can put on our desktop the widget from which we can control the basic functions of Oruxmaps: Start/Stop recording, create a wpt., Resume recording and start a new segment on the current track.



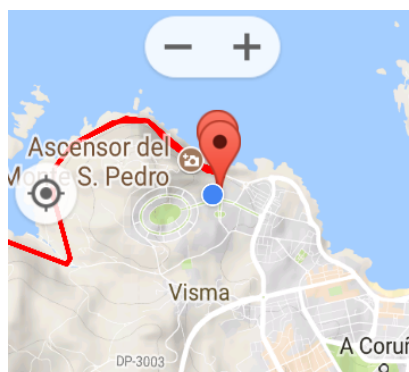
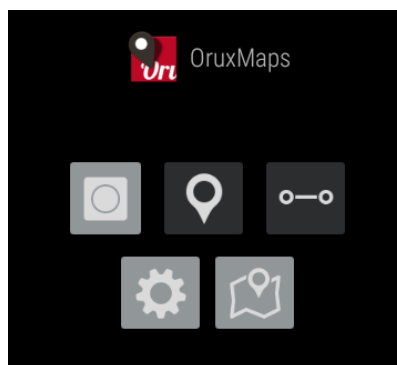
## SMARTWATCH APP

OruxMaps installs an Android Wear app, which allows us to view the basic information of the app, and control it:

There are three data screens (scroll vertically to see them):



And a screen with buttons (scroll horizontally) with the functions start/stop recording, create Wpt., start new segment, configuration and view map:



## DEVELOPERS

### Integrating with OruxMaps

OruxMaps can be called to open GPX/KML/KMZ files:

```
Intent i = new Intent (Intent.ACTION_VIEW);
i.setDataAndType (Uri.fromFile(new File ("/mnt/sdcard/test.gpx")), "text/xml");
startActivity (i);
```

Or that shows a route made up of a set of points and/or Waypoints:

```
// Offline map in current position
// Intent i = new Intent ("com.oruxmaps.VIEW_MAP_OFFLINE");

// Online map:
Intent i = new Intent("com.oruxmaps.VIEW_MAP_ONLINE");

// Waypoints of the route
double[] targetLat = {33.4,8.3,22.2};
double [] targetLon = {33.4,8.3,22.3};
String [] targetNames = {"point alpha","point beta"};
i.putExtra("targetLat", targetLat);
i.putExtra("targetLon", targetLon);
i.putExtra("targetName", targetNames);
i.putExtra ("navigatetoindex", 1); // index of the wpt. on which to start browsing wpts.

// Track points, points of the route to draw
double[] targetLatPoints = {33.43,8.32,22.24};
double [] targetLonPoints = {33.44,8.35,22.37};
i.putExtra("targetLatPoints", targetLatPoints);
i.putExtra("targetLonPoints", targetLonPoints);

startActivity(i);
```

Also, we can invoke it to do the following *intents* (replace `com.oruxmaps` with `com.oruxmapsDonate` for the Donate version):

- Start recording a new Track:
  - `com.oruxmaps.INTENT_START_RECORD_NEWTRACK`
- Start recording a new segment:
  - `com.oruxmaps .INTENT_START_RECORD_NEWSEGMENT`
- Start recording by continuing the current Track:
  - `com.oruxmaps.INTENT_START_RECORD_CONTINUE`

- For recording:
  - com.oruxmaps.INTENT\_STOP\_RECORD
- Create a new Waypoint:
  - com.oruxmaps.INTENT\_NEW\_WAYPOINT
- Start heart rate BT:
  - com.INTENT\_START\_BT\_HR\_MONITOR
- Stop BT heart rate monitor:
  - com.oruxmaps.INTENT\_STOP\_BT\_HR\_MONITOR
- Start the ANT + heart rate monitor:
  - com.oruxmaps.INTENT\_START\_ANT\_HR\_MONITOR
- Start the ANT + bike cadence sensor:
  - com.oruxmaps.INTENT\_START\_ANT\_BIKE\_CADENCE
- Start the ANT + bike speed sensor:
  - com.oruxmaps.INTENT\_START\_ANT\_BIKE\_SPEED
- Start the ANT + bike speed/cadence sensor:
  - com.oruxmaps.INTENT\_START\_ANT\_BIKE\_CADENCE\_SPEED
- Start the ANT + temperature sensor:
  - com.oruxmaps.INTENT\_START\_ANT\_TEMP
- Start the ANT + pedometer sensor:
  - com.oruxmaps.INTENT\_START\_ANT\_PEDOMETER
- Start the ANT + bike power sensor:
  - com.oruxmaps.INTENT\_START\_ANT\_BIKPOWER
- Stop ANT + sensors:
  - com.oruxmaps.INTENT\_STOP\_ANT