1 INTRODUCTION

CompeGPS dedicates all its experience and effort to enable you get the best out of your outdoor activities such as hiking, cycling, trail running, geocaching…

TwoNav offers directional assistance, both on-road and off-road activities, this assistance is invaluable in order to increase the safety of your itineraries. Despite this, under certain circumstances, you may be distracted by misuse of the application, in this case it may become a hazard either for you or the environment. Please, use TwoNav application with responsibility.

CompeGPS **TwoNav**

Even TwoNav offers you the possibility to use this application in any type of vehicle but it is very important to take into consideration a series of recommendations and regulations to properly use the application:

- **Fit TwoNav application correctly:** TwoNav should be fitted in a place where it will not obstruct your visibility. Moreover, it must be secured to ensure it cannot fall off easily and hinder driving. Plan all details regarding your itinerary before starting the navigation. Any change must be done with the vehicle stopped in a safe place (not on the road or kerbs).

- **Guided by sound indications:** TwoNav application will warn you with sound infications of upcoming manoeuvres and when to carry them out. A glance at the visual information displayed by TwoNav may be useful in order to know which path you should take, but you must resort to this visual information only if you can do it safely (vehicle stopped).

- **Front-seat passenger can easily help you:** The driver is always facing the road, so if you have a front-seat passenger, CompeGPS strongly recommends this person to be in charge of handling the TwoNav application.

- **Maps always contain errors:** Remember that it is impossible to have 100% updated information for all your maps. So, new streets, changes in street directions or road restrictions may invalidate partially the calculation of your itinerary. It is very important to be aware of these changes and to get adapted to the new situation.

- **Traffic regulations have always preference:** In order to fully comply the traffic regulations of each country.

All new developments are based on suggestions and feedback from users like you. If you would like to share your ideas and proposals with CompeGPS, feel free to do it at http://CompeGPS.uservoice.com

If you have any questions or problems regarding the use of our products, please contact the on-line technical support department of CompeGPS at http://Support.CompeGPS.com

2   START UP & MAINTENANCE

2.1   Care instructions

IMPORTANT: Never submerge the device into water, not even when all lids are sealed. Do not remove the device from the cradle when device is exposed to water, liquids must not get in contact with connectors. While the device is out of the cradle, make sure the rubber is dry and firmly seated into the connectors.

IMPORTANT: Avoid vibration or harsh movements on the device while USB port is connected, vibrations may damage USB port and thus void any warranty.

2.2   The device

PAGE ⟶   ⟵ ON/OFF

- *'ON/OFF'* key:
    - **Short press:** Shutdown/Block menu
    - **Long press:** Device on + Block/Unblock standby mode (turn off the screen and keys block)

- *'PAGE'* key:
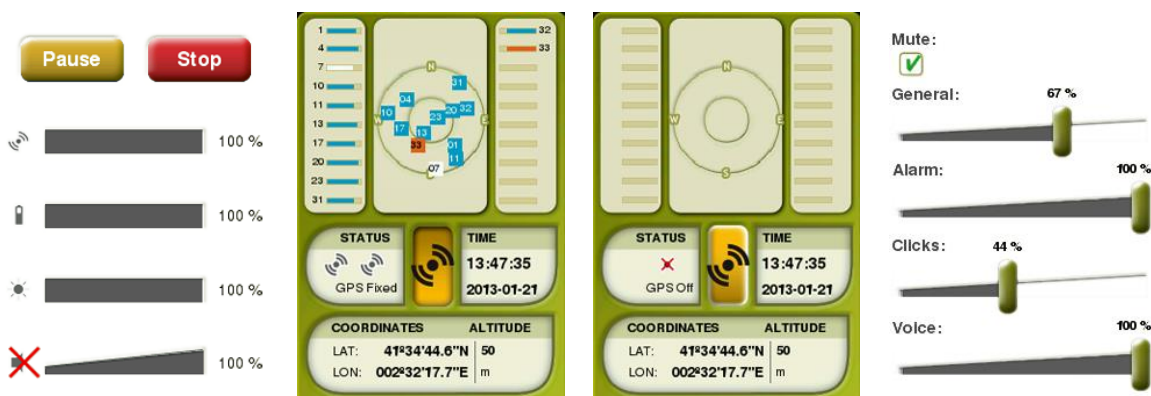   - **Short press:** Data pages
    - **Long press:** Main menu

2.3 Mounting

- **Device cradle:**
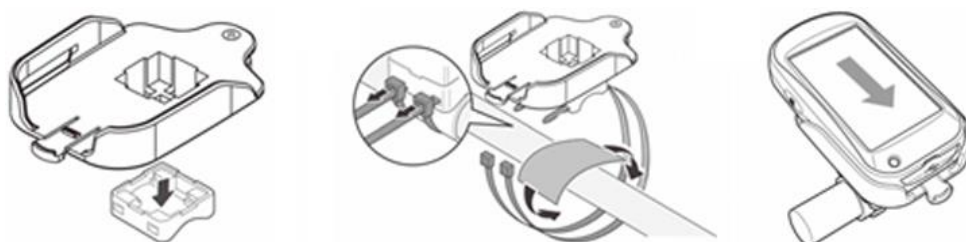
2.4 Application status

From *'Main menu > Status'* you can check the status of general functions of TwoNav application.

- *'Triplog'* **(recording of itinerary):** *'Triplog'* is the command allowing you to manage the recording of your itinerary, your itinerary will be recorded when *'Triplog'* is started.

- **Reception and position of satellites:** Check the number of satellites available as well as their distribution orbiting over the vault and their coverage.

  By default, when TwoNav is launched, it will try to connect to available satellites so that you can start working with GPS function. If GPS is disconnected, TwoNav will not receive any position signal and many application functions will stop working.

  Possible states for GPS function:

  ✖ Disconnected   • Connected (without position)

●	Connecting	📶	Connected (with position)
?	Error (not found)	📶R	Connected (with position) and
S	Simulating		recording track

Connect/Disconnect GPS function:
Press the central button to switch on/off the GPS of TwoNav.

NOTE: TwoNav will attempt to fix your current position, but if you are somewhere without GPS coverage (for example: inside a building), GPS status will turn into 'Connected (without position)'.

- **Battery level:** Check the current battery level for TwoNav application.

- **Screen brightness level:** Set the general brightness level for the screen.

- **Audio level:** Set the general audio and the volume of each audible element individually.

2.5 Recharging

Your GPS device may operate around a maximum of:

- **TwoNav Sportiva:**
  12 consecutive hours with no need of recharging

- **TwoNav Sportiva+:**
  10 consecutive hours with no need of recharging

- **TwoNav Sportiva2:**
  16 consecutive hours with no need of recharging

- **TwoNav Sportiva2+:**
  14 consecutive hours with no need of recharging

Basic tips to enlarge battery life a little bit longer:

- **Turn the screen off manually when not using the device**

- **Configure automatic shutdown screen function:** *'Main menu > Settings > Autonomy > Shutdown screen'*

- **Switch off screen backlight** (backlight function is reduced but screen still on)**:** *'Main menu > Settings > Autonomy > Shutdown backlight'*

- **Activate the standby mode** ('*Block'* function):

- **TwoNav Sportiva:**
  Long press on '*On/Off*' key

- **TwoNav Sportiva+:**
  Long press on '*On/Off*' key

- **TwoNav Sportiva2:**
  Long press on '*On/Off*' key

- **TwoNav Sportiva2+:**
  Long press on '*On/Off*' key

Additionally, you can also recharge the li-ion battery of the GPS device using several power sources:

- **Computer:** When connecting the device to a computer, besides allowing you to manage the data present in the memory, the battery is also charged.

- **Battery charger:** Designed to charge the battery out of the device. Charge the spare battery while you use the device with a different battery.

- **Wall charger:** Charge the battery using a wall power point.

- **Car charger**: Allows you to charge the battery during *'On-Road'* navigations.

NOTE: CompeGPS offers you a wide range of accessories in order to improve the battery life of your device, get to know more about these accessories at http://www.CompeGPS.com

2.6   Reset

It is recommended not to force the shutdown of the device unless it is necessary:

- **Force the device to switch off:** Press *'On/Off'* key for 10 seconds.

2.7   Update the firmware

TwoNav software is continually being improved in order to add new functionalities and polish errors. Your device has several software levels:

- **Eboot/Iboot:** Starting component which runs the operating system.

  - **TwoNav Sportiva:**
    How to update eboot?

  - **TwoNav Sportiva+:**
    How to update eboot?

  - **TwoNav Sportiva2:**
    How to update iboot?

  - **TwoNav Sportiva2+:**
    How to update iboot?

- **Operating system:** Executed under TwoNav and controling the more basic operations of the device.

- **TwoNav Sportiva:**
  How to update operating system?

- **TwoNav Sportiva+:**
  How to update operating system?

- **TwoNav Sportiva2:**
  How to update operating system?

- **TwoNav Sportiva2+:**
  How to update operating system?

- **Software:** Executed over the operating system and interacting with you.

  - **TwoNav application:**
    How to update TwoNav software?

Visit regularly http://www.CompeGPS.com in order to be informed about the latest version for your device and to get to know the steps to follow to update it.
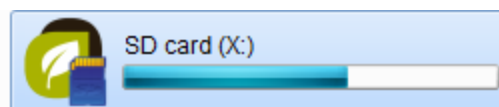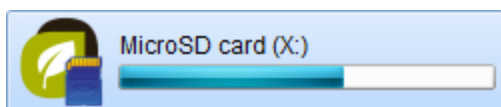
2.8   Connection to computer

When a TwoNav device is connected to computer by means of the USB wire, the device becomes a storage unit. New storage units will then be shown on your computer:

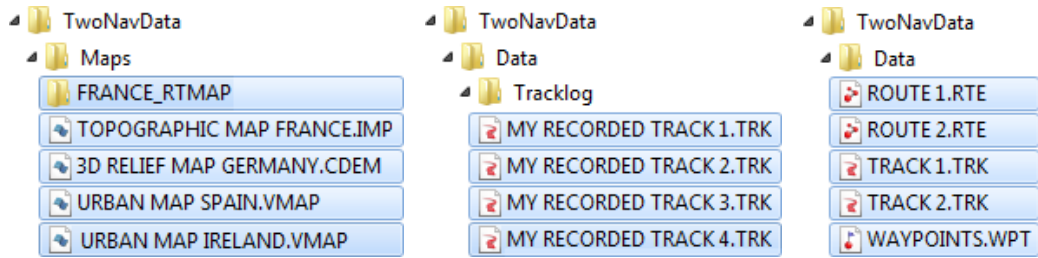- **GPS disk:** Inner memory of the device.
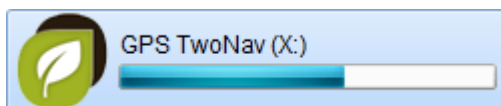
- **Removable disk:** Depending on the device, a microSD or SD card may be inserted.

Once detected, you will be able to transfer data from your computer to the device and vice versa. Please note that the folders in the memory card of the device to tranfer data are:

- **Default folder for maps:** *'TwoNavData/Maps'*

- **Default folder for your recorded tracks:** *'TwoNavData/Data/Tracklog'*

- **Default folder for tracks/waypoints/routes:** *'TwoNavData/Data'*

IMPORTANT: You can easily manage, transfer and analyse your own elements using Land/Air software (Windows/Mac), more information at http://www.CompeGPS.com
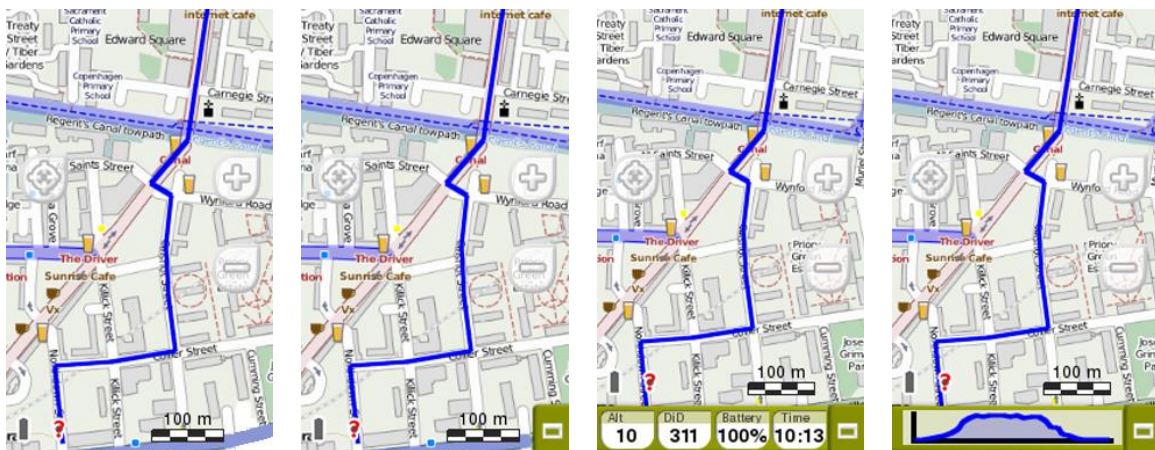
3 OPERATION

3.1 Map window

3.1.1 Data mode

By default, data bar shows a few relevant data fields. Additionally, when navigating a route/track, it has an extra state which shows altitude profile.

Press the button at the right side to switch between different status:

HIDDEN DATA BAR   *FIELDS BAR*   *GRAPH BAR*

The data fields contained in the data bar can be configured from *'Main menu > Settings > Fields & Buttons > Data fields'*. You can also change a concrete data field by opening the contextual menu on it.

NOTE: Access to the main menu directly by clicking on the data bar.

Additional functions on map window can be configured from *'Main menu > Settings > Fields & Buttons > Map page'*.

- **Info Current:** Information related to present position.

    - **Default:**

        - *'Off-Road'* **mode:** Compass

        - *'On-Road'* **mode:** Current street

    - **Inside waypoint radius:** Waypoint name (if waypoint has associated files, click the clip icon to reproduce them).

- **Next Event:** Information related to the next position (direction and distance). GOTO arrow shows direction of the following section of the track. This parameter is the distance to calculate tangent to give direction. Take the direction of this arrow as a reference to keep going your way.

- **Info Next:** Information related to next events (not shown if no destination is selected).

    - *'Off-Road'* **mode:** Name of the next waypoint (if waypoint has description, it will be shown after the name).

    - *'On-Road'* **mode:** Next street (some roads have information about signposts. If this information is available *'Info Next'* will show a reproduction of the real signpost).

'Info Next' can be displayed in several states:

1. One line

Turn RIGHT at the tower, take the main...

3. Text viewer (fully displayed)

2. Extended

Turn RIGHT at the tower, take the main track with white earth, ATTENTION !! don't take any side path.

3.1.2 Tool mode

In order to access to the *'Tool'* mode, do a short tap on any place of the map.

| *'DATA' MODE* | *'TOOL' MODE* | *HINT* | *ANCHOR* |

3.1.2.1 Tool bar

The toolbar allows a quick access to some functions:

- **Mark and edit waypoint:** Create a waypoint at current position and access to its properties to modify them.

- **2D/3D/3D+:** Switch between different map perspectives: *'2D > 3D > 3D+'*.

| *2D* | *3D FLAT* | *3D+* | *3D+ RELIEF* |

- **Move map (Panning/Rotate):** Move the map without changing its orientation or change the orientation of the map in a clock-wise, anti clock-wise sense or up/down.

- **Orient map (North up/Track up):** The map may be fixed on the north or rotate according to your movements.

Extra buttons are automatically added to tool bar in specific situations:

- **Simulating mode:** *'Pause'*, *'Stop'* and several functions to manage the speed of the simulation.

- **Navigating mode:** *'Next waypoint'* and *'Previous waypoint'* to jump to next waypoint or go back to the previous one.

- **Competing against the *'Virtual Coach'*:** *'Synchronize Virtual Coach'* to automatically place the *'Virtual Coach'* at your current position (only if *'Virtual Coach'* function is enabled).

- **Editing mode:** When the edition of tracks/routes is finished, press *'Close edition'* to close the editing mode.

NOTE: You can also include and remove the functions of the tool bar according to your needs from 'Main menu > Settings > Fields & Buttons > Tool bar'.

3.1.2.2   Bottom bar

Allows a quick access to some functions:

- **Main menu**
- **Page tools**
- **Start/Pause**

3.1.2.3   Hint

If *'Hint'* function is enabled (*'Main menu > Settings > Display > Hint'*), when clicking any point on the map window, TwoNav will show useful information of the specific point that you selected.

This function can be fully customized according to your will: add or exclude the data fields that later on will be displayed on the map window: map information, coordinates of this position, bearing to this position, distance to this position, altitude of this position...

3.1.2.4   Anchor

To anchor a virtual position somewhere is to virtually replace your current position for a new position in the map.

Once fixed, information displayed on proximity fields and *'Hint'* function will be based according to the new anchored position, and not on your real position. Moreover, if *'Anchor here'* is pinned, options such as *'Recenter'* map will be applied to the anchored waypoint instead of your current position.

In order to anchor a position reproduce any of these options:

- ***'Map window > Contextual menu > Anchor here'***

- ***'Main menu > Data > Item > Contextual menu of waypoint > Anchor here'***

In order to unpin the fixation and restore the current position as the default one, press: *'Contextual menu on the map > Unanchor'*.

3.2   Main menu

From the main menu, you can manage most of the system's functions by accessing the different sections. Press on menu elements in order to activate them or access their sub-menus.

3.3 Data lists
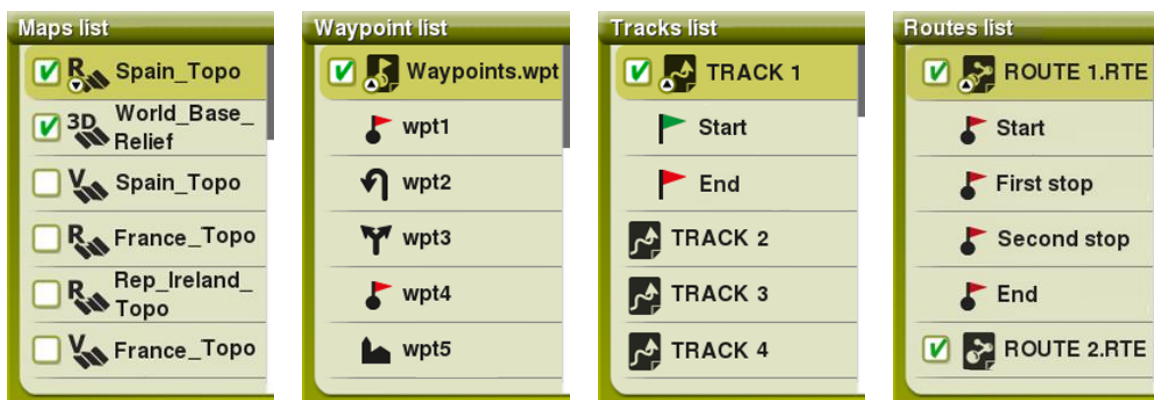
| MAPS | WAYPOINTS | TRACKS | ROUTES |

At *'Main menu > Data'*, you will be able to manage the available files on your device. Files to be taken into consideration on these lists are the files saved at:

- **Default folder for maps:** *'TwoNavData/Maps'*

- **Default folder for your recorded tracks:** *'TwoNavData/Data/Tracklog'*

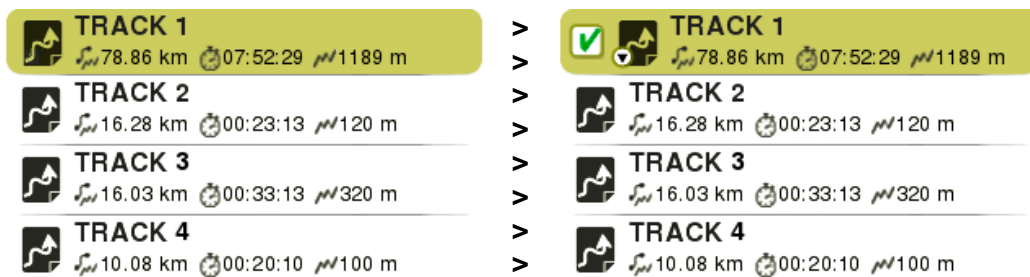- **Default folder for tracks/waypoints/routes:** *'TwoNavData/Data'*
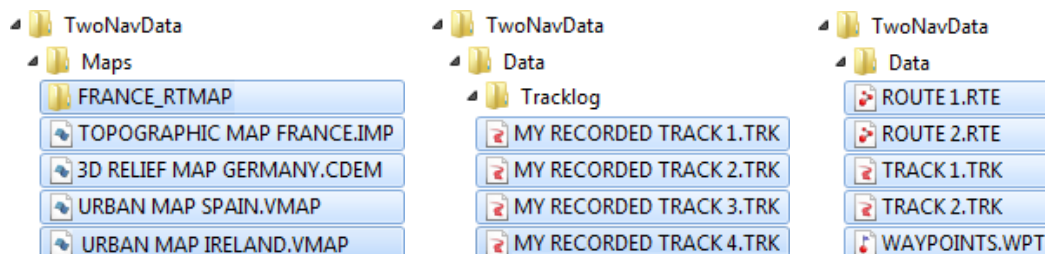
Although the management of elements is centralized at *'Main menu > Data'*, is also possible to carry out many other actions directly from the map window or using the contextual menu.

IMPORTANT: You can easily manage, transfer and analyse your own elements using Land/Air software (Windows/Mac), more information at http://www.CompeGPS.com

3.3.1 Management of elements

1. **General view:** Opened elements are placed at the top of the list with a ticked square.

2. **Open element:** Press the name of the element.

> TRACK 1 78.86 km 07:52:29 1189 m
> TRACK 2 16.28 km 00:23:13 120 m
> TRACK 3 16.03 km 00:33:13 320 m
> TRACK 4 10.08 km 00:20:10 100 m

> TRACK 1 78.86 km 07:52:29 1189 m
> TRACK 2 16.28 km 00:23:13 120 m
> TRACK 3 16.03 km 00:33:13 320 m
> TRACK 4 10.08 km 00:20:10 100 m

3. **Check the properties:** Press the name of the opened element. At properties window, you can check all the information related to the element and carry out several actions (available information will depend on selected element).

> ZOOM TO IT >
> GRAPH >
> NAVIGATE... >
> LEG ANALYSIS >

> 01:00:00 01:01:02 464 m
> 02:00:00 01:25:57 315 m
> 03:00:00 00:33:25 0 m
> 04:00:00 00:59:56 0 m
> 05:00:00 00:48:39 0 m
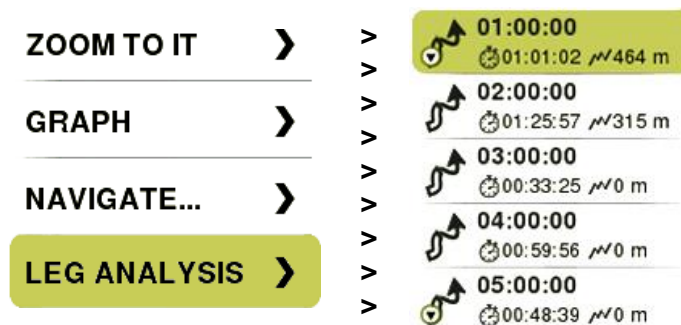
4. **Display subelements:** Some elements might have subelements (for example: waypoints or e-Roadbook points), in order to display them press the icon of the opened element. In order to hide them, press again the icon of the element.
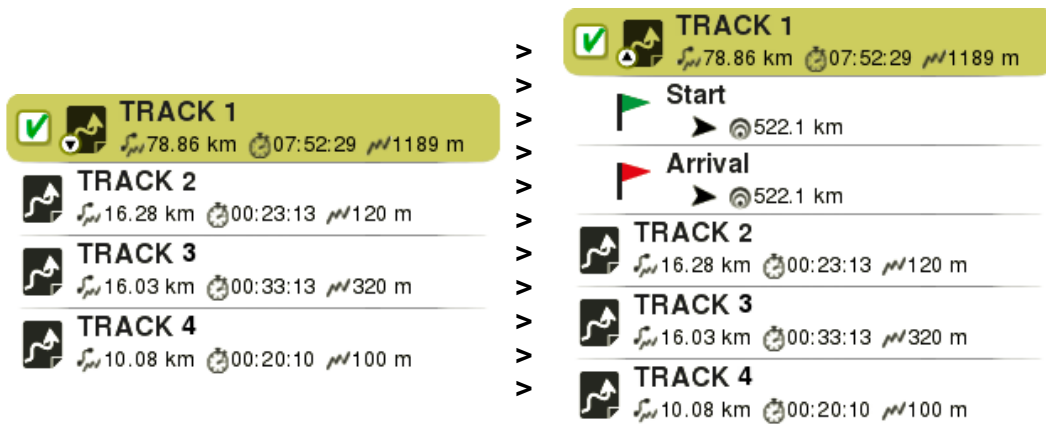
5. **Close element:** Press the ticked square of the element.
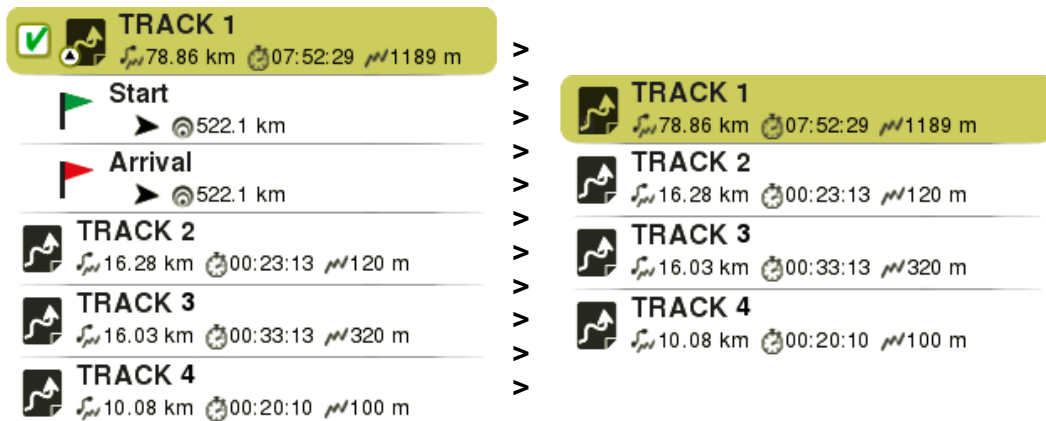
3.3.2   Actions on elements

In data lists you are able to carry out several actions on elements, available functions will depend on selected element:

- *'Accept'*

- *'Cancel'*

- *'Go back'* to the previous window.

- *'Add new item'* in a list of items.

- *'Delete item'* in a list of items.

- *'Refresh'*, refreshes a list of items.

- *'Rename item'* from a list of items.

- *'Map window',* main application window.

- *'Page tools'* allows you to open specific configuration tools of the section where you are working in at the moment.

- *'Navigate element'* shows a trip preview allowing to configure your personal alarms before starting the navigation.

- *'Zoom to it'* shows that element on map (preview window) allowing you to zoom to it directly.

- *Only for maps: 'Full list of maps'*, TwoNav lists all available maps. If not, it shows only the maps from your current area.

- *Only for waypoints: 'Create new waypoint'*

- *Only for routes: 'Create new route'*

- *'Graph representation'* of the selected element.

- *'Alarms'* configuration.

- *'Name filter',* elements which contain the entered combination of characters will be automatically shown.

- *'Default configuration'* returns to the default configuration.

NOTE: Remember that you can also open the contextual menu to use more functions on specific elements.

3.3.3   Order elements

Elements contained in any list can be ordered or filtered in different ways, press *'Page tools'*:

- **Name filter:** Elements which contain the entered combination of characters will be automatically shown.

Enter filter:

Pico

- **Sort by:** Set the rule to order the elements (by name, by proximity…).

WAYPOINTS NON SORTED
original list of waypoints

WAYPOINTS SORTED
BY PROXIMITY

3.3.4   2nd line data

TwoNav allows you the possibility to display more information for listed waypoints/tracks. Extra information will be presented in a 2nd line right after the name of the item with information such as date, distance, height, relative bearing arrow… Select the information that you want to display from *'Page tools > 2nd line data'*.

NOTE: Information contained in the 2nd line is only available for elements which have been saved using TwoNav 2.5 or Land/Air 7.3 software (or higher).

3.4 Data pages

During your navigation, TwoNav records many interesting data, this information (data fields) is usually very interesting to analyse and compare (speed, height, distances...). Open data pages from:

- *'Main menu > Discover > Data page'*

Data pages offer you an additional space to the data bar where a larger number of data fields are displayed. When opening a contextual menu on a data field, you will find the available functions associated to that field.

| *DATA PAGE* | *DESTINATION PAGE* | *COMPASS PAGE* | *GRAPH PAGE* |

Data fields are configurable to have a different set for *'On-Road'* or *'Off-Road'* modes. Changes made in one mode will not affect the other.

The data fields contained in the data pages can be configured from *'Main menu > Settings > Fields & Buttons > Data fields'*. You can also change a concrete data field by opening the contextual menu on it.

3.5 Contextual menu

TwoNav uses contextual menus to display the most appropriate functions for an element: to open the contextual menu of an element, press on it for one second.

Depending on the element on which you open the contextual menu, you may enter different functions. You can access to the contextual menu of:
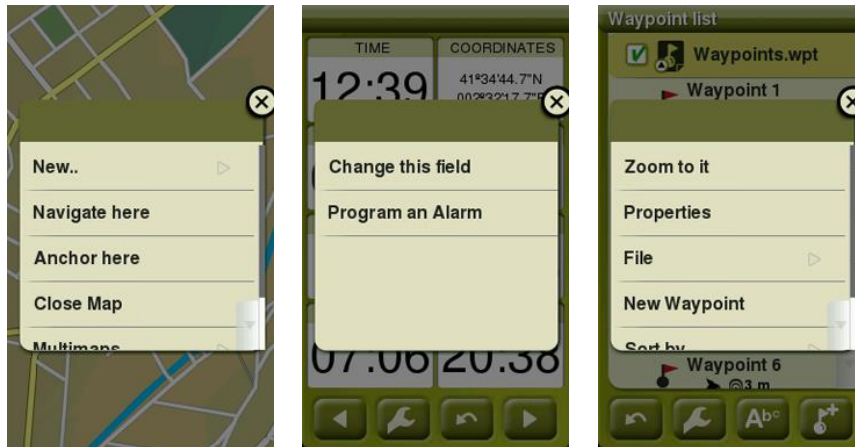
MAP WINDOW   **DATA FIELDS**   **DATA LISTS**

4   NAVIGATION

4.1   Modes

TwoNav has 2 navigation modes:

'On-Road' mode

Mode based on door to door navigation (street navigation). *'On-Road'* mode is adjusted to automatically calculate your route to destination. TwoNav will generate a planned itinerary according to your preferences.

NOTE: 'On-Road' mode can only be used when a road maps is loaded.

'Off-Road' mode

Mode based on free navigation (not necessary street navigation). *'Off-Road'*

mode is only based on the usage of references (waypoints/routes/tracks) to practise outdoor activities. The *'Off-Road'* mode does not automatically calculate your route to destination (a straight line will simply link your current position to destination with no itinerary calculation).

NOTE: 'Off-Road' mode can be used with any type map.

IMPORTANT: Before you start navigating, it is very important to set your vehicle so the system configuration and calculations will be adapted according to the selected vehicle ('Main menu > Settings > Vehicle').
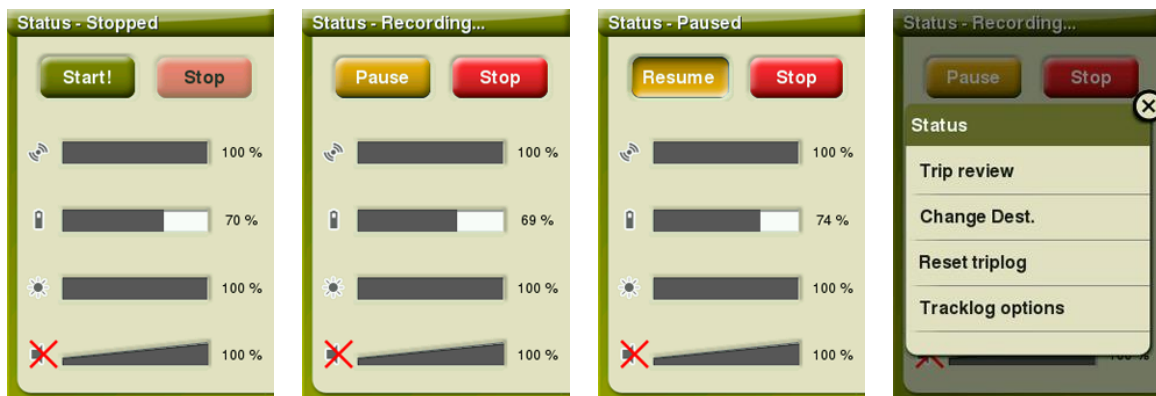

4.2 Triplog

'Status' window has several buttons to control the *'Triplog'* command during your outdoor activities, by default your itinerary will be recorded when *'Triplog'* is started:

- **Start!/Pause:** Press this button to start the trip (select destination), or to pause it at any moment (data fields, recorded track and other functions are synchronized, so you will pause all counters until the trip is resumed again).

NOTE: By default, 'Triplog' function is automatically started after TwoNav is launched.

- **Stop:** Press this button to finish the current trip and stop *'Triplog' function*.

The track of your trip is saved at *'Tracklog'* folder. But you can directly review your recorded tracks from the list of tracks (*'Main menu > Data > Tracks > Tracklog'*).

| *'TIPLOG':* | *'TRIPLOG':* | *'TRIPLOG':* | *PAGE TOOLS:* |
| *STOPPED* | *RECORDING* | *PAUSED* | *MORE OPTIONS* |

Once the trip is started, you can press *'Page tools'* to find out more commands to control the *'Triplog'*:

- **Trip review***:* Summary of your trip up to that moment, very useful to analyse all kind of relevant data recorded during your itinerary.

- **Change destination**: Define a new destination for your trip, keep recording the current *'Triplog'* or start a new one.

- **Reset *'Triplog'***: Start a brand new track at this point, data fields and recorded track will be restarted again.

- *'Tracklog'* **options**: Options to control *'Tracklog'* function.

A security system has been added to TwoNav in order to avoid losing tracks in case you forget to start *'Triplog'* function. If the option *'Save discarded Tracklog in trash'* is enabled, when options *'Pause'* or *'Finish trip'* are pressed, the following movements will be automatically recorded as backup track copy inside *'TwoNavData/Data/Tracklog/Trash'* folder.

NOTE: If you record more than one track at the same day, file's names will be distinguished by a number at the end of the file name. This number identifies the order in which the tracks were created (for example: '2008-12-15-01.TRK', '2008-12-15-02.TRK'…).

4.3   Select destination

Once you have pressed *'Start!',* select your destination:

- **Place** (waypoint/geocache/coordinates/…)

  - **Waypoint**: Select a waypoint among the waypoints loaded or created by you.

  - **Favourites**: Create your own list of favourite places. By doing this, you will be able to navigate to them quickly. In order to manage your favourite places, press *'Edit'* and create them.

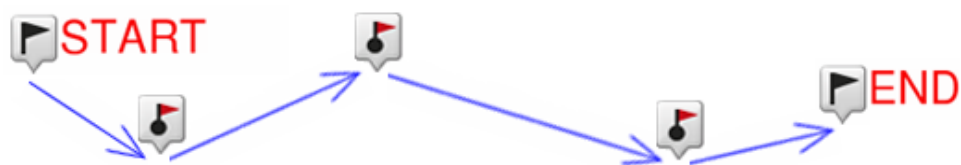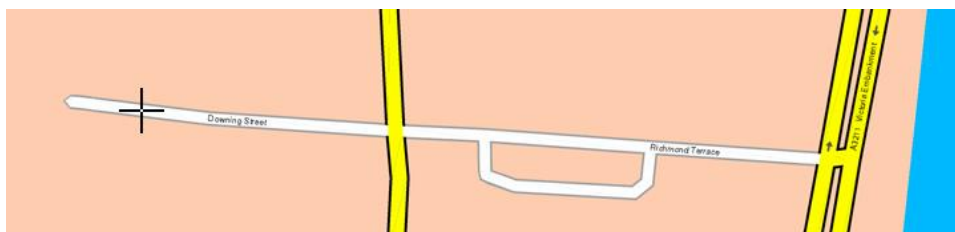 - **Route**: Select a route among the routes loaded or created by you.

- **Geocache:** Select a geocache among the geocaches loaded or created by you.

- **By map**: Select directly on the map the exact location where you want to navigate to.

- **Bearing**: The destination point will be determined by setting the bearing and the distance that you are about to navigate.

$$30 \text{ km} \rightarrow \text{ } 45º$$

- **Address** *(only available when road maps are loaded)*: Enter any address where you want to navigate to.

10 Downing Street, London, United Kingdom

- **POI**: Internet offers you an enormous database of points of interest (gas stations, hospitals, cash dispensers…) that can be downloaded and easily upload to TwoNav. Select the exact POI where you want to navigate to.

- **Coordinates**: Type the exact coordinates for your destination.

LAT: 51º 30' 12'' N
LON: 00º 07' 40'' W

- **Track** (select a track among the tracks loaded or created by you)

- **Training** (specially designed to improve your performance)

  - **Free:** No destination is determined, set your own movements with no restrictions.

1 h 15 m   30 km

  - **Time:** No destination is determined. Set the duration of your training by time and once your goal has been reached, TwoNav will show a warning message.

1 h 15 m

  - **Distance:** No destination is determined. Set the duration of your training by distance and once your goal has been reached, TwoNav will show a warning message.
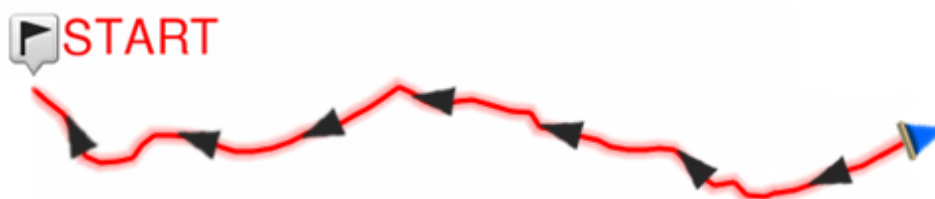
30 km

  - **Trackattack:** TwoNav can use a previous track as a reference to compare your current performance. Choose a track and start the navigation. A simulation of that track will be played at its original speed, so you can compete against it (*'Virtual Coach'*). Trackattack is based on two pointers: your current position and an additional pointer, the *'Virtual Coach'*. Try to improve your results by comparing your current and past performances on map or in graphs in real time.
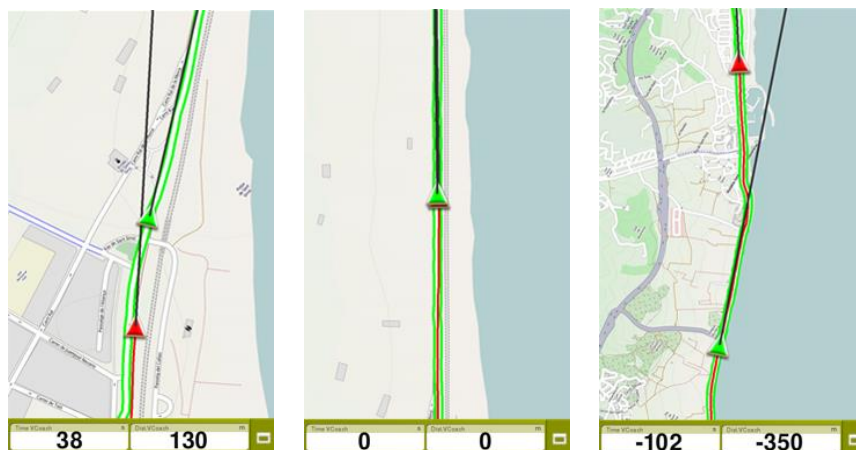
- **Go back** (return to start point or home)

    - **Start point:** Go to the starting point of the recorded track directly from your present position (straight line to the starting point).

    - **Trackback:** The currently recorded track up to this moment is inverted, so you can navigate it in reverse. Inverted track file is recorded with a different name: *'Trackback1', 'Trackback2'*... By pressing *'Trackback'* the recorded track is inaltered and TwoNav keeps recording it.

    - **Home**: Go home directly (you have to previously set your home address from favourites management).

- **Historic** (list of destinations recently selected)

- **Free** (no destination is determined, set your own movements with no restrictions)

~~1 h 15 m~~   ~~30 km~~

4.4 Set alarms

Before you start navigating, at *'Trip preview'* you can set your own alarms warnings for data fields such as deviation from route, speed, altitude, slope, heart rate…

Alarm warnings will be automatically displayed during the navigation in a pop up window according to the preferences that you previously set on data fields.

Access full alarm configuration from *'Main menu > Settings > Alarms'*.

4.5 Follow indications

'ON-ROAD' NAVIGATION	*WAYPOINT NAVIGATION*	*TRACK NAVIGATION*	*ROUTE NAVIGATION*

Depending on the navigation type chosen, you will receive different indications to reach your destination:
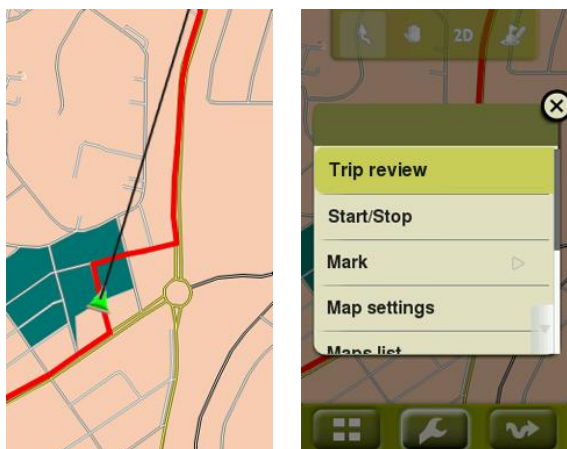
- **Place:** A guide line will be drawn pointing to destination.

- **Track:** The track to follow will be highlighted and TwoNav will alert you if deviating from track.

- **Training:** Data page with specific fields will be shown according to the selected training mode. Moreover, *'Trackattack'* mode will mark *'Virtual Coach'* position on the map.

- **Go back:** *'Start point'* and *'Home'* get the same indications as *'Place'* navigations while *'Trackback'* indications are the same as if you were navigating a track.

- **Historic:** Indications will be the corresponding ones depending on the navigation type (*'Place'*, *'Track'* or *'Training'*).

- **Free:** Without indications.

4.6 Trip review

This function is basically a summary of your trip. *'Trip review'* is very useful to analyse all kind of data recorded during your itinerary. Check *'Trip review'* from: *'Page tools > Trip review'*.

Among several categories of data, this page contains information such as distances, altitudes, elapsed times, speeds, track points, energy data...

'Trip review' also offers you the possibility to compare parts of your trip thanks to graphic representations and leg analysis (sections of the same track divided by time, distance…).

NOTE: You can review the 'Trip review' of the track you have done so far at any moment from 'Page tools > Trip review'.

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5 MAPS

By default, TwoNav opens the best map based on your current position automatically. If you prefer to manage your maps manually, disable the *'Auto-open maps'* function from *'Main menu > Settings > Map > Automap'*.

Raster maps

Maps digitally calibrated based on bitmap images (if map is scaled, there will be loss of clarity, the quality of the map will degrade).

Topographic: Maps containing information related to the relief of the terrain (elevation contour lines, pathways, national parks…).

Orthophoto: Maps containing aerial photographs with information related to all elements included in the landscape (fields, lakes, roads, buildings, national parks…).

Cadastre: Maps containing information related to limits of all terrain parcels (fields, roads, buildings…).

Marine chart: Maps containing nautical information related to the sea (depth data, ports, marine services, tides, currents, marine wrecks…).

Vectorial maps

Maps digitally calibrated based on vectors (if map is scaled, there will be no loss of clarity, the quality of the map will not degrade).


Urban: Maps containing information related to roads and streets (names of the streets, street directions, points of interest…).

Topographic: Maps containing information related to the relief of the terrain (elevation contour lines, pathways, national parks…).

3D relief maps

Maps digitally calibrated based on elevation reliefs containing information related to the altitude of the ground. With a relief map loaded you may display your maps in 3D+ mode.
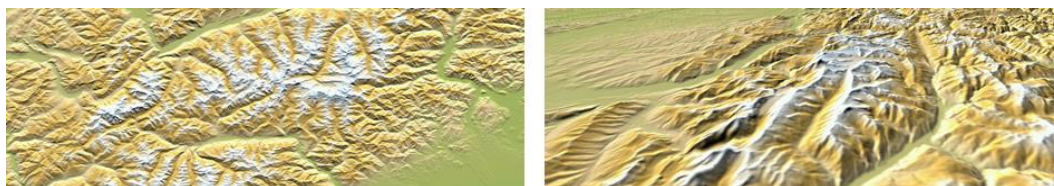
On-line maps

Remote maps only accessible if internet connection is provided.

Locked maps

Maps not activated. In order to start working with them, enter a license code.

NOTE: CompeGPS offers you a wide range of maps from all around the world to complement your cartography, just visit http://www.CompeGPS.com

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See your list of available maps from *'Main menu > Data > Maps'* (all maps available at *'TwoNavData/Maps'* folder for your present position). TwoNav can open the following map formats depending on the device:
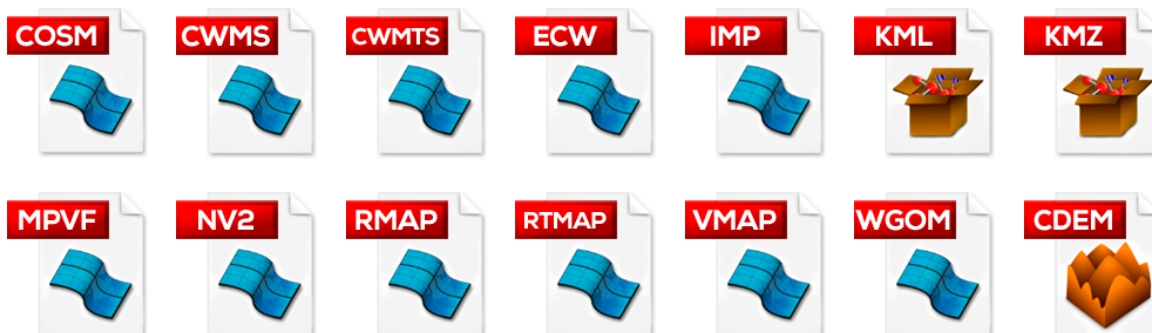
In addition to maps, you can also work with different position references for guidance: waypoints (separate points), routes (a sequence of waypoints), tracks (itinerary footprint)... You can get these references by creating them yourself or from other sources (friends, webs, meeting planners...).


IMPORTANT: More map formats can be easily imported and converted to supported formats using Land/Air software (Windows/Mac), more information at http://www.CompeGPS.com

5.1 Properties

Enter the properties of a map from: *'Main menu > Data > Maps > Press the name of any opened element'*:

- **Name:** Name of the map file.

- **Description:** Short description about the map by the provider.

- **Type:** Type of map.

- **Scale:** Ratio between the distance of two points represented on the map and their real distance on terrain.

- **Resolution:** Relation between the distance of the ground in meters and a pixel (meters/pixel). A fewer number will represent a more detailed map.

- **Primary:** In case of conflict between maps, if this field is marked, other maps will be adapted to this one.

- **Projection:** Projection used to calibrate the map. There are several types of cartographic projections classified depending on the areas they cover.

- **Extension:** Width and height of the area covered by the map.

- **Rows/Columns:** Number of rows/columns the landscape is made up of (altitude/width)

- **Datum:** Used to translate the positions of elements (waypoints/tracks/routes) to the exact position on the earth. Datum systems is needed because the earth is an imperfect ellipsoid.

- **Memory used:** RAM memory used by the uncompressed map.

- **Image:** Name and size of the image used to produce the resulting map as well as the color quality of the map.

- **Transparent:** Regulate the level of transparency of the map allowing you to work with several maps at the same time overlapping them in different layers.

- **Calibrating points:** Number of points used to calibrate the map.

- **Far/Near zoom:** Maximum and minimum zoom values between which the map is visible on the screen. These values allow to enlarge or decrease the size of the map up to the limitation of these settings.

- **Errors received:** Comments regarding the map.

5.2 Multimaps
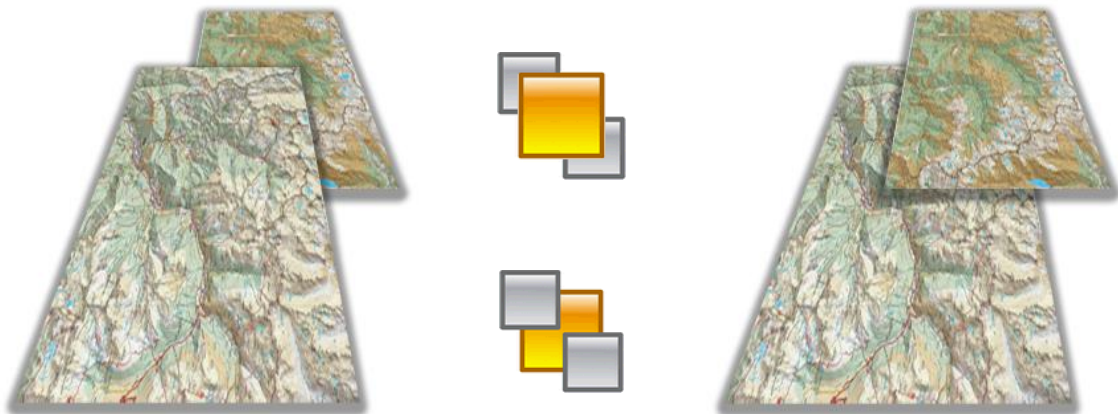
With TwoNav you can load more than one map at the same time. But if you have two maps for the same area displayed on the interface, one of them can be displayed at the top by superposition, select the map you wish to be placed at the top/bottom and press: *'Contextual menu on the map > Multimaps'.*

- **Bring to front**
- **Send to back**

6 WAYPOINTS/ROUTES/TRACKS

6.1 What is a waypoint?

The waypoint is a point defined by a geographical position, latitude and longitude coordinates and in most cases altitude, used by the GPS navigation tools. Waypoints are represented on screen as points with name or representative icon.

The waypoints are kept inside Waypoints Files (usually in *.WPT format), so a Waypoints File may contain one or more waypoints. You can have several waypoints files opened, but created waypoints will be always saved inside an Active Waypoints File (AWF).

By default, the Active Waypoints File is called *'Waypoints.WPT'*, but you can set as Active Waypoints File any other file (marked with an asterisk): select *'Set as active waypoint'* option. When a new waypoints file is created, it will be automatically set as active.

NOTE: Full customization of Active Waypoints Files can be check at: 'Main menu > Settings > Advanced > Active waypoints mode'.

See your list of available waypoints from *'Main menu > Data > Waypoints'* (all waypoints available at *'TwoNavData/Data'*). TwoNav can open the following waypoint formats:
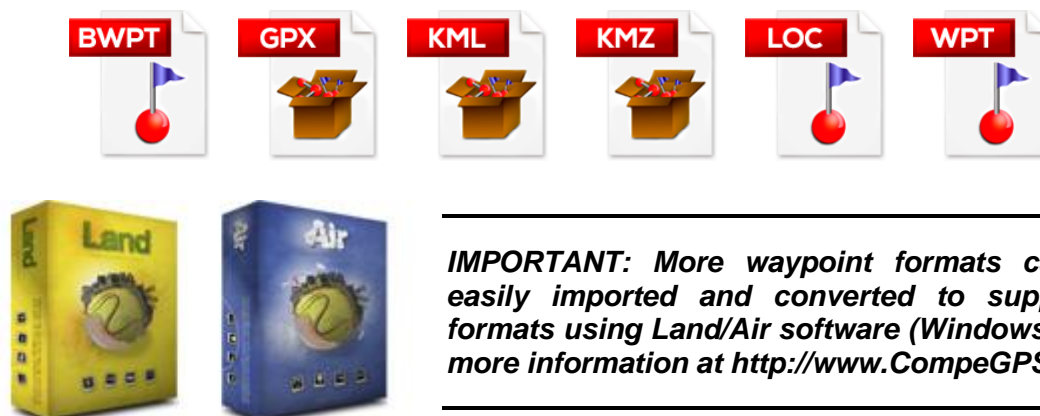
IMPORTANT: More waypoint formats can be easily imported and converted to supported formats using Land/Air software (Windows/Mac), more information at http://www.CompeGPS.com

6.1.1   Properties

Enter the properties of a waypoint/waypoint file from: *'Main menu > Data > Waypoints > Press the name of any opened element'*:

- **General:** General properties such as: name of the element, short name, element description…

- **Coordinates:** Geographical position of the waypoint.

- **Position:** Values such as: altitudes, bearing, proximity...

- **View:** Properties that are displayed on the map window such as: color, text, zoom level (element is displayed according to a scale value)...

- **Associated:** Attach image/sound/text/video files to this item. These files will be displayed during the navigation when reaching the element.

6.2 What is a route?
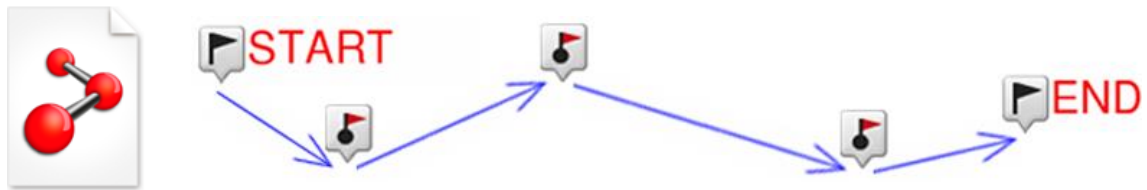
A route is a group of waypoints ordered in a predetermined way. It is a way of navigating that allows for planning a course from one place to another going through various waypoints. Routes are used when it is not possible to reach a place in a direct way (in straight line).

See your list of available routes from *'Main menu > Data > Routes'* (all routes available at *'TwoNavData/Data'*). TwoNav can open the following route formats:

IMPORTANT: More route formats can be easily imported and converted to supported formats using Land/Air software (Windows/Mac), more information at http://www.CompeGPS.com

6.2.1 Properties

Enter the properties of a route from: *'Main menu > Data > Routes > Press the name of any opened element'*:

- **General:** General properties such as: name of the element, short name, element description, covered area and distance, altitudes as well as properties that are displayed on the map window such as: color, text, type of line...

- **Associated:** Attach image/sound/text/video files to this item.

6.3 What is a track?

A track is a group of points ordered by time, where each point contains information on the position, time and date, coordinates and, in most cases, altitudes.

See your list of available tracks from *'Main menu > Data > Tracks'* (all tracks available at *'TwoNavData/Data'*). TwoNav can open the following track formats:

IMPORTANT: More track formats can be easily imported and converted to supported formats using Land/Air software (Windows/Mac), more information at http://www.CompeGPS.com

6.3.1 Properties

Enter the properties of a track from: *'Main menu > Data > Tracks > Press the name of any opened element'*:

- **General:** General properties such as: name of the element, short name, element description, classification…

- **Leg analysis:** Analyse sections of the same track divided by time, distance...

- **Distances:** Distance values recorded by GPS device such as: projected distance (distance covered horizontally), distance with altitudes (real distance covered outlining the orography of the ground), linear distance (straight line between first and last point of the track), covered area…

- **Altitudes:** Altitude values recorded by GPS device such as: maximum/minimum altitude, slope, accumulated climb/descent, height differences…

- **Speeds:** Speed values recorded by GPS device such as: maximum speed, mean speed, pace, vertical speed…

- **Date/Time:** General properties such as: date, departure/arrival time, duration, stopped/moving time…

- **View:** Properties that are displayed on the map window such as: color, text, type of line...

- **Track points:** Information related to the number of points contained in the track, the recording interval of points, extra data fields (additional track data)...

- **GPS:** Information related to the GPS device that recorded the track.

- **Energy:** Energy values recorded by GPS device such as: mass, age, gender, mean power, climbing mean power…

- **Sensors:** Information related to cadence, speed and heart rate recorded by the GPS device using external ANT+™ sensors.

- **Associated:** Attach image/sound/text/video files to this item. These files will be displayed during the navigation when reaching the element.

6.4 Basic operations: Waypoints/Routes/Tracks

Basic operations that can be perfomed either on waypoints, routes or tracks:

- **Creation of waypoints/routes/tracks:**

    1. On map window, do a long press at the exact location where you want to create the reference and open the contextual menu.

2. Select *'New'* and choose the type of item that you want to create (waypoint/route/track).

3. Fill in the basic information of the item.

4. If you create a route/track, click successively on the map in order to create the following points (waypoints are only based on single point with no union between them). Once finished press *'Close edition'* at the toolbar.
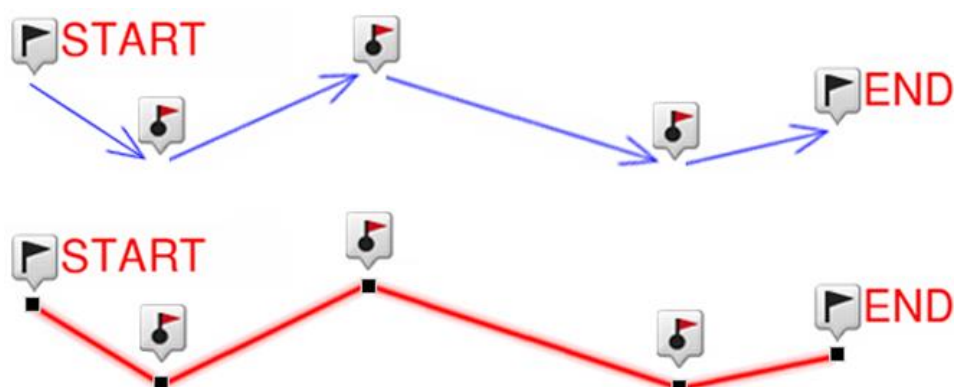
- **Move position of waypoints:**
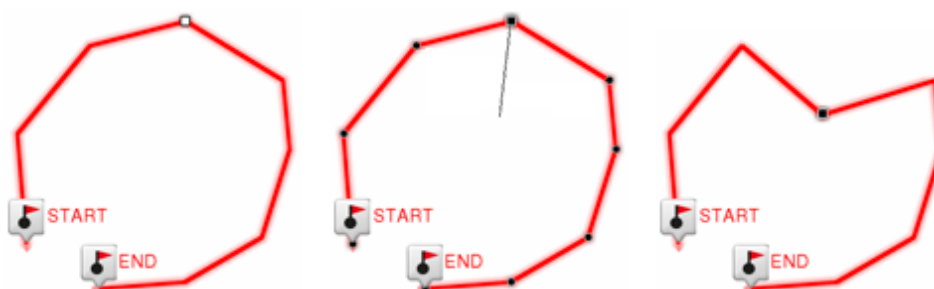
1. Open the contextual menu on the waypoint and select *'Edit'*.

2. Drag the waypoint to the exact point where you wish to place it.

3. Once finished press *'Close edition'* at the toolbar.

- **Add waypoints to a route/track:**
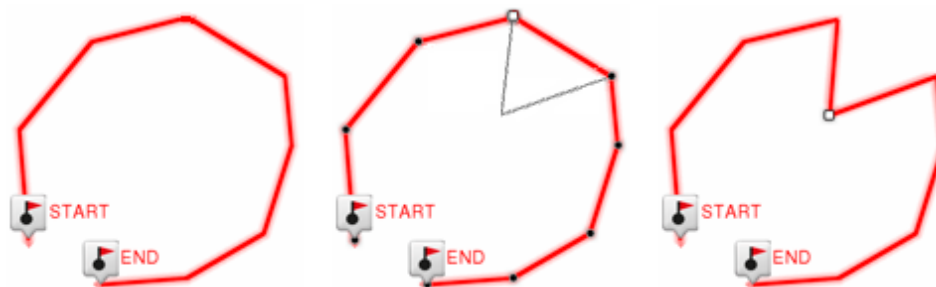
1. Open the contextual menu on the item and select *'Edit'*.

2. Select the waypoint after which you want to add a new waypoint doing a short click.

3. Press the exact point where you wish to create the new waypoint.

4. Once finished press *'Close edition'* at the toolbar.

- **Add associated files to waypoints/routes/tracks:** Your items can have associates files such as images, sounds, texts... Check the associated files of your elements from data lists (*'Main menu > Data'*).

Moreover, if individual waypoints have associated files, you will be able to reproduce their associated files:

- **Automatically:** When current GPS position is inside the radius of the waypoint. Automatic play can be configured from *'Main menu > Settings > Alarms > Waypoints'*.

- **Manually:** When current GPS position is inside the radius of a waypoint with associated file, *'Info Current'* will show a symbol. Associated file will be reproduced when clicking on it.

NOTE: Rich-formatted *.HTML texts can be associated and displayed on-screen using certain HTML tags (font size, font color, title levels, text in blod, text in italics, text underlined, background color, text alignment, attached images…).

- **Navigate to a waypoint/route/track:** You can navigate to any of your references from:

- *'Main menu > Start!'*

- **Data lists (*'Main menu > Data'*):** Select the item that you want to reach and press *'Navigate'*.

- **Map window:** Find the item that you want to reach, open its contextual and press *'Navigate'*.

'ON-ROAD' MODE   *'OFF-ROAD' MODE*
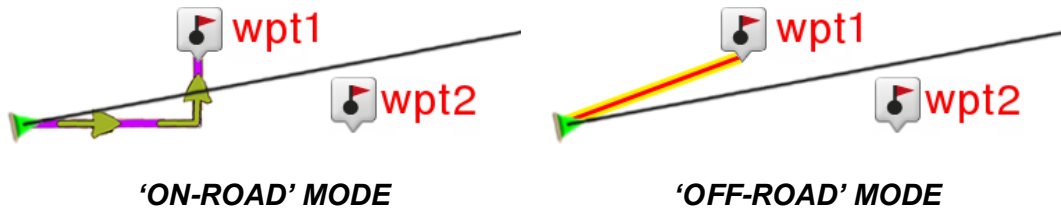
Navigation towards to the first waypoint will be activated from your current position. If navigating routes/tracks, once the first point has been reached, you will be guided to the second one, and so on.

- *'On-Road'* **mode:** TwoNav will try to automatically calculate a sub-route through the streets in order to orientate you in detail with sound indications.

- *'Off-Road'* **mode:** A straight line will be displayed from your current position to the next waypoint.

6.5 Advanced operations: Waypoints

Advanced operations that can be perfomed on waypoints:

- **Modifiy for all waypoints:** If any of these properties is modified, it will be applied for all waypoints at the same time.

- **Reset:** By pressing *'Reset'* at any Active Waypoints File (AWF), you will delete all the waypoints of that specific active file.
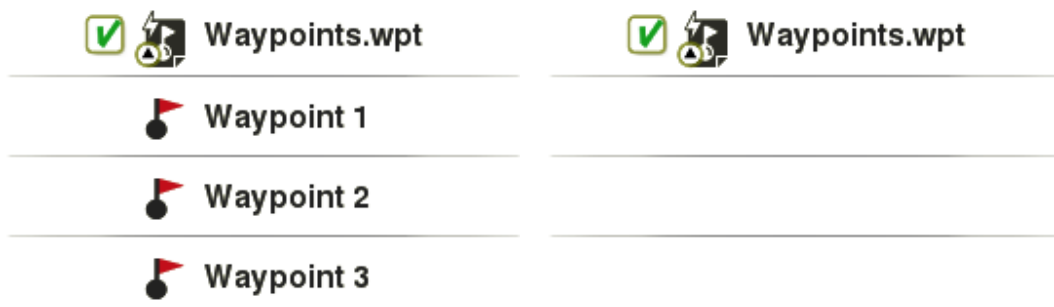
6.6 Advanced operations: Routes

Advanced operations that can be perfomed on routes:

- **Modifiy for all waypoints:** If any of these properties is modified, it will be applied for all waypoints at the same time.

- **Change the order of the waypoints in a route:** In order to change the order of the waypoints of a route, open the contextual menu on the waypoint that you want to move and select *'Move up'* or *'Move down'*.

- **Graph representation of routes:** Display a graph representation of your route, just enter the properties of the element and press the button *'Graph representation'*. These are the available functions on graphs:
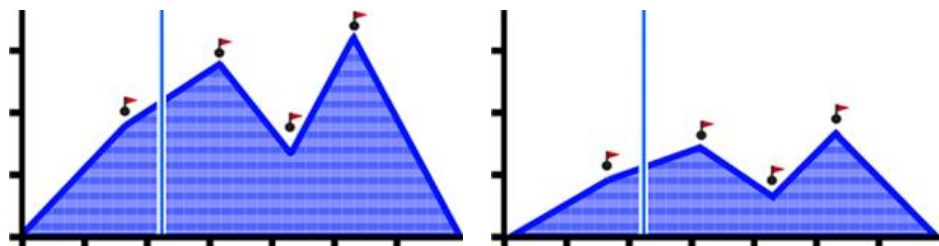
- **Guiding Y axis**: Bar serving as moving axis.

- **Moving graph**: Use *'Zoom'* buttons to sections of the graph with more detailed precision (graph scrolling can also be applied by dragging the graph up and down as well as laterally).

- **Automatic re-center**: Press *'Re-center'* button to automatically recenter the graph.

- **Invert a route:** In order to display a route in the opposite sense to the default one (the begining at the end and vicecersa), open the contextual menu of the route and select *'Tools > Invert the route'*.
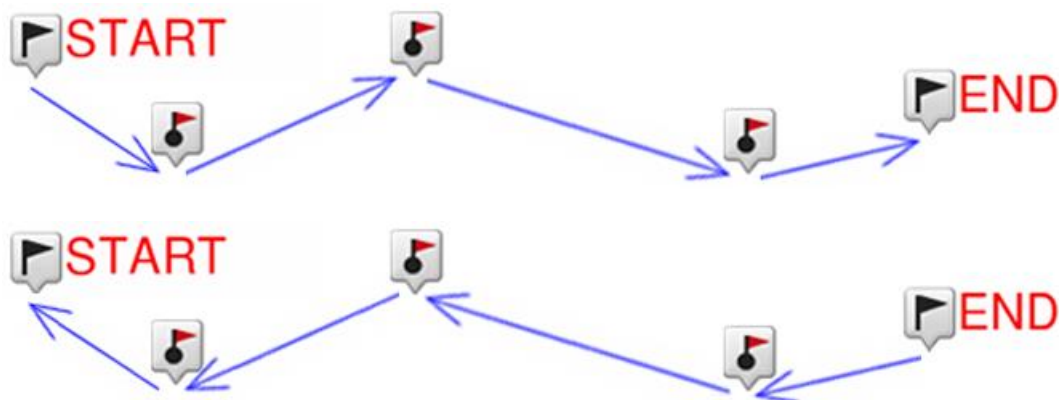
- **Convert a route into a track:** In order to change a route into a track, open the contextual menu of the route and press *'Tools > Change into a track'*.
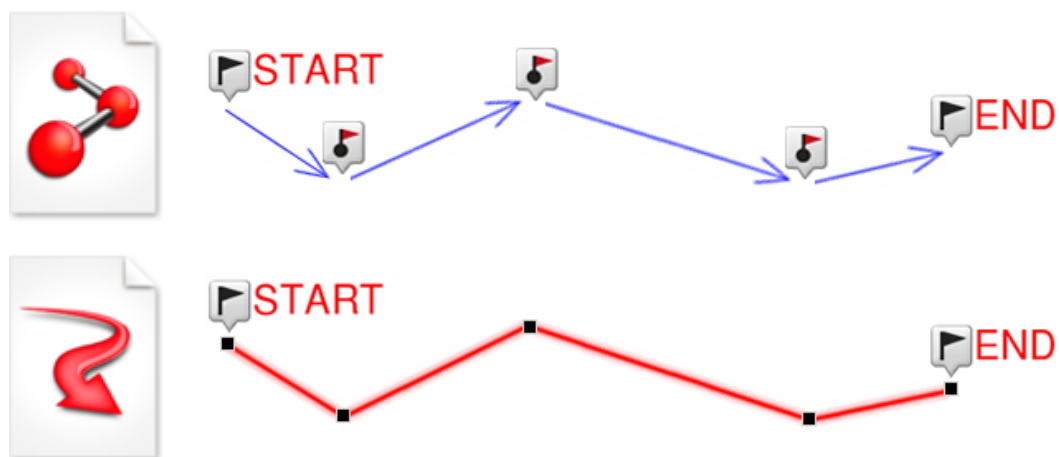
6.7 Advanced operations: Tracks

Advanced operations that can be perfomed on tracks:

- **Import altitudes:** If you have a 3D relief map loaded (*.CDEM file), TwoNav will assign to each point of the track its altitude considering the information of the loaded relief map.
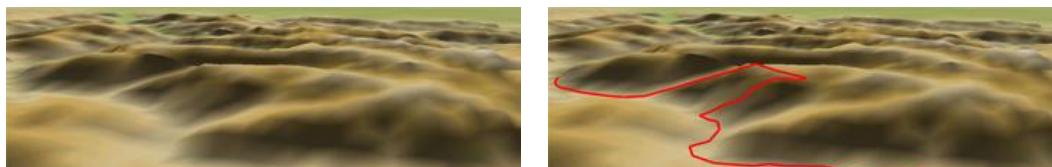
- **Delete stopped points start/end:** Track will omit the repetitive points from the beginning and the end where you stopped before and after making the track.
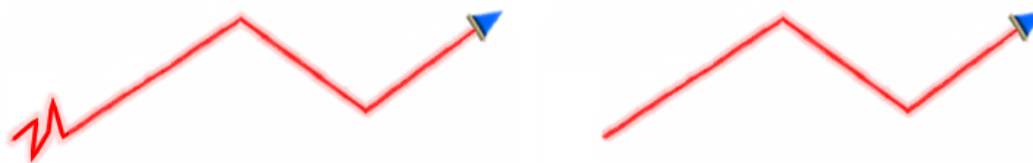
- **Reduce the number of points:** Track will be drawn by keeping the shape of the original track but according to the number of points that you introduce.
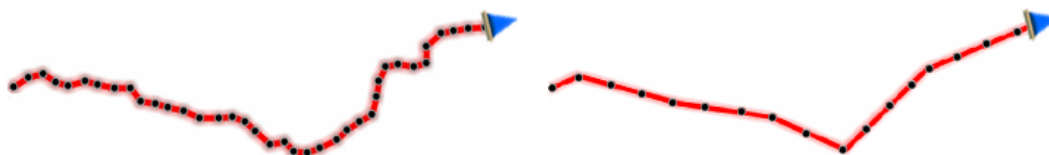
- **Assign time/speed:** Determine a time for departure and a constant speed so that TwoNav will calculate the estimated time of arrival for each point in the track.

09:30:15   50 km/h

- **Delete aberrant points:** Points deviating excessively from the track will be considered errors, and so deleted.
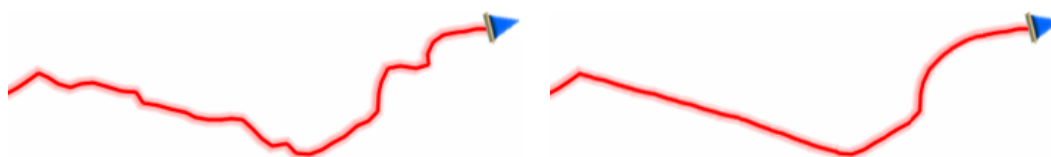
- **Graph representation of tracks:** Display a graph representation of your track, just enter the properties of the element and press the button *'Graph representation'*. These are the available functions on graphs:
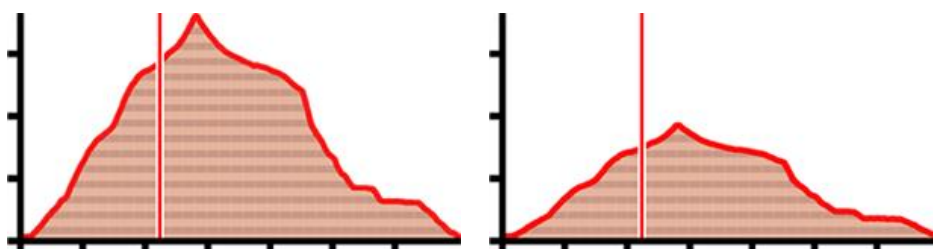
- **Guiding Y axis**: Bar serving as moving axis.

- **Moving graph**: Use *'Zoom'* buttons to sections of the graph with more detailed precision (graph scrolling can also be applied by dragging the graph up and down as well as laterally).

- **Automatic re-center**: Press *'Re-center'* button to automatically recenter the graph.

- **Invert track:** In order to display a track in the opposite sense to the default one (the begining at the end and vicecersa), open the contextual menu of the track and select *'Tools > Reverse the track'*.
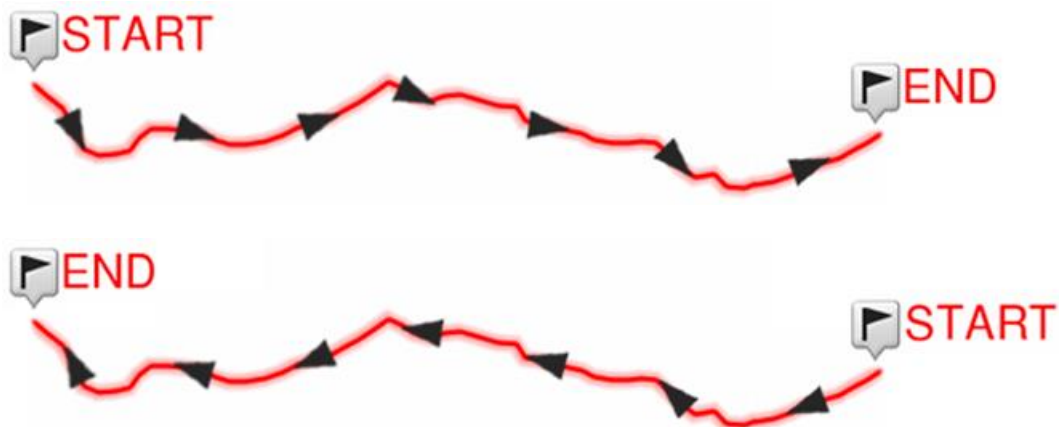
- **Convert a track into a route:** In order to change a track into a route, open the contextual menu of the track and press *'Tools > Change into a route'*.
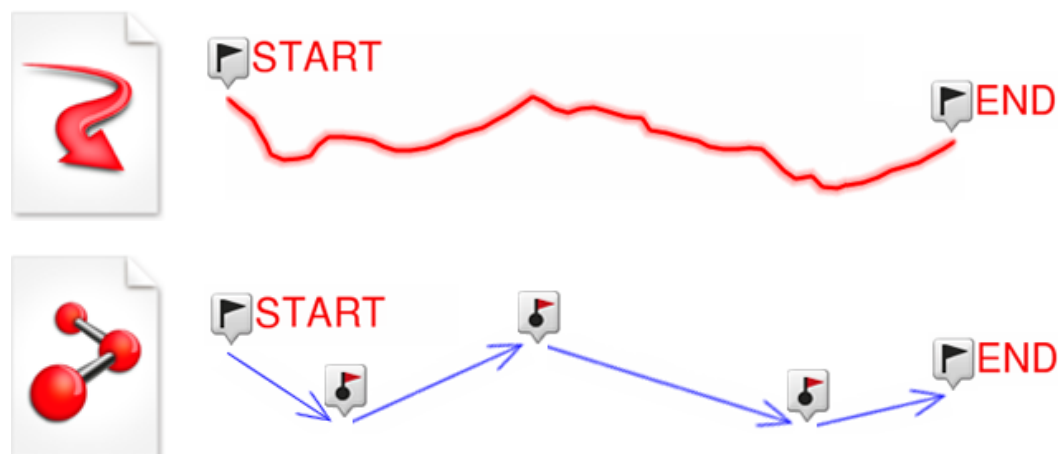
- **Create separate legs on an existing track:** You may split the track in several legs by opening the contextual menu on the point that divides the two selected legs *'Legs > Change leg here'*. At this moment, the leg closer to the end of the track will change color to highlight the difference between the two legs.
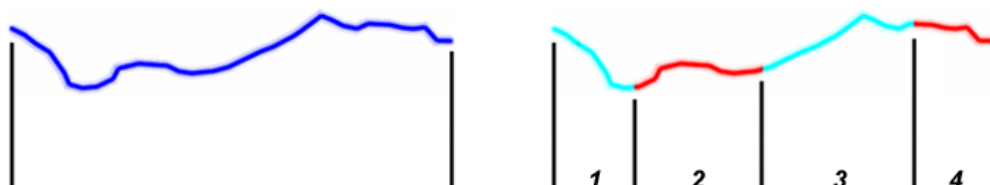
7 ADDITIONAL FEATURES

7.1 Simulate

See a representation of your itinerary before starting the navigation. Choose your type of simulation according to your needs:

- **A → B** *(only in 'On-Road' mode):* Proposed route will to go from point A to point B. From *'Main menu > Discover > Simulate'*, choose two points (waypoint/POI/address/favourites/…).

- **Reproduce track:** Animation of the itinerary will be displayed. During the animation, the simulated position will become the prevailing one instead of your current position, position will be centred on it and the statistics will be related to it. Do a track simulation from:

  - **List of tracks:** Open the contextual menu on the track that you want to simulate and press *'Play'*.

  - **Map window:** Find the track that you want to simulate, open its contextual and press *'Play'*.
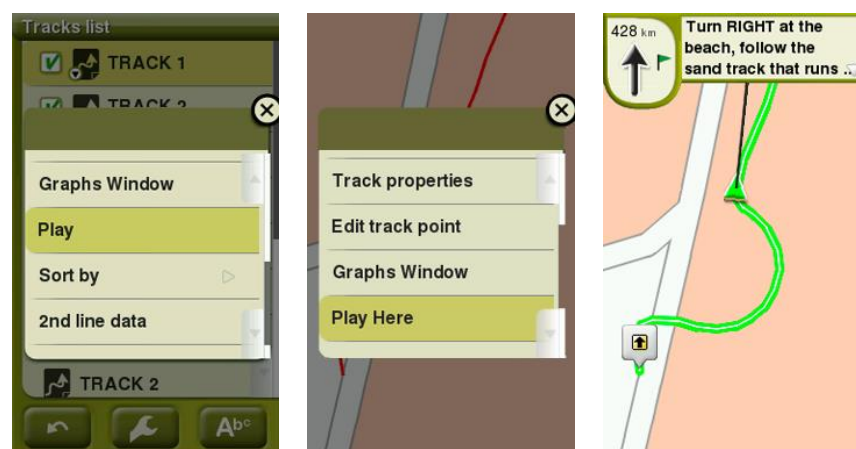
With the simulation on, the simulated position will be displayed with a different icon to distinguish it from your current position. At the same time, some tools to manage the simulation will appear at the tool bar:

- **Pause:** Pause function. Press it again to resume the simulation.

- **FF/RW:** Accelerate the simulation. Press it again to apply normal speed.

- **FF to next/RW to previous**: Jump to next/previous event.

- **Stop:** Stop the simulation (*'Main menu > Discover > Stop simulation'*).

7.2 Geocaching

Geocaching is an outdoor treasure hunting game that uses GPS devices. Participants navigate to a specific set of GPS coordinates (the geocache) and attempt to find a container hidden at that location. This container may include a reward for the participant. The result of this experience is to share your geocaching stories on-line and to have fun and enjoy the nature.

TwoNav provides you all the necessary tools to practice paperless geocaching. Geocaching tools are centralized at:

- *'Menu > Discover > Geocaching'*

Work with geocaching files like as any other waypoints file, although geocaches include extra information comparing to normal waypoints. Among information, you can check notes from other users (*logs*) or even create your own notes:

- **Geocache currently set as destination:** *'Main menu > Discover > Geocaching > Field notes'*.

- **Any geocache:** *'Main menu > Data > Waypoint > Properties > Field notes'*.

Fields notes are saved inside *'Geocache_visits.txt'*. This file allows you to easily upload your fields notes to any geocaching server from internet such as http://www.geocaching.com

Status:	Logs:
Didn't find it ▾	85494591
	2009-09-19 19:00:00
Comment:	Found it
It was totally impossible for me to find this geocache.	amazing-fox
	449014
Date:	oh what a street to the cache, be careful
2013-09-03 17:15:55	False

NOTE: From 'Main menu > Settings > Display > Geocaching > Hide found geocaches', you will be able to show/hide current geocaches. Geocaches which have been labelled as 'Found geocache', will not appear in the list. By doing this, there will be no need to see geocaches that were previously found.

In order to be fully compatible with paperless geocaching, waypoints' file must contain geocaching extensions providing information about the geocache (description, difficulty, terrain…). TwoNav can open the following geocaching formats:

BWPT   GPX   LOC   WPT

NOTE: *.LOC files will also be listed when choosing a geocaching destination, but these files cannot be considered as fully compatible with geocaching because they do not include geocaching extensions, so extra information as description or field notes will not be available.

7.2.1 Add associated files with Land/Air

IMPORTANT: Files can be easily associated using Land/Air software (Windows/Mac), more information at http://www.CompeGPS.com

Geocaches can have associates files such as images, sounds, texts... They can also be reproduced from *'Main menu > Discover > Geocaching'*, after setting geocache as destination. Follow next steps to associate files to a geocaching file using Land/Air software:

1. Install Land/Air in your computer (Windows/Mac platforms), more information at http://www.CompeGPS.com

2. Start Land/Air software and open geocaching files. Geocaches will appear at *'Waypoints'* section at the data tree.

3. Add files to geocache using one of these methods:

   - **Drag files from Windows/Mac explorer:** Keep the left mouse button pressed on the file and drag it to the waypoint.
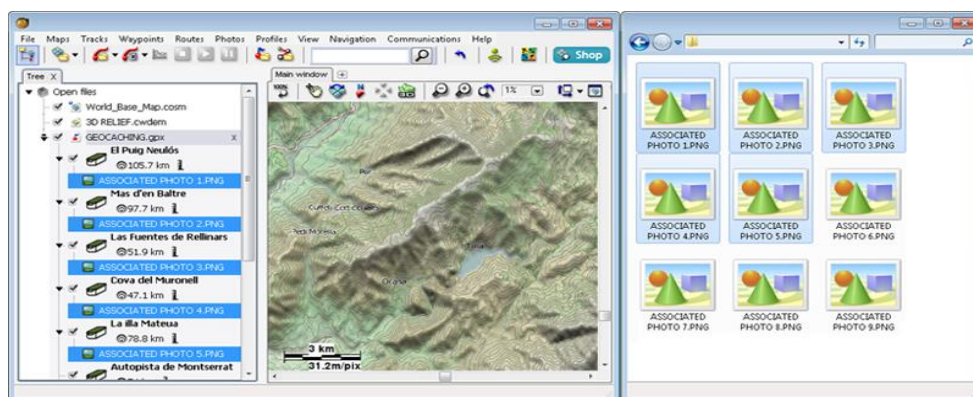
   - **Drag files from internet browser:** Drag them directly from browser. Just drag the image to waypoint at the data tree.
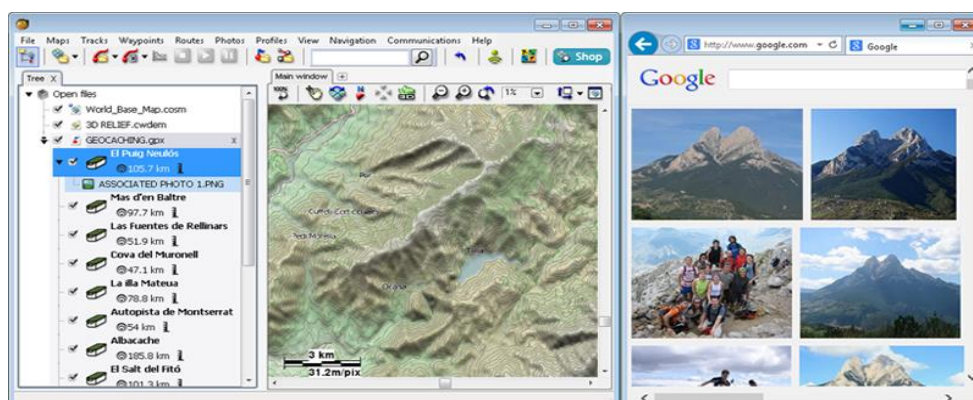
- **Add them manually:** From *'Associated'* section at waypoint properties.
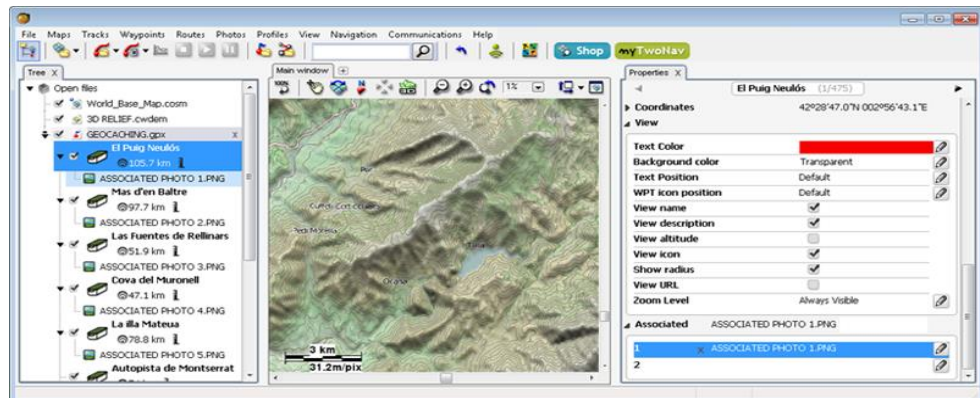
4. Save the resulting file in *.WPT format: Open contextual menu on the waypoints file and select *'Save'*.
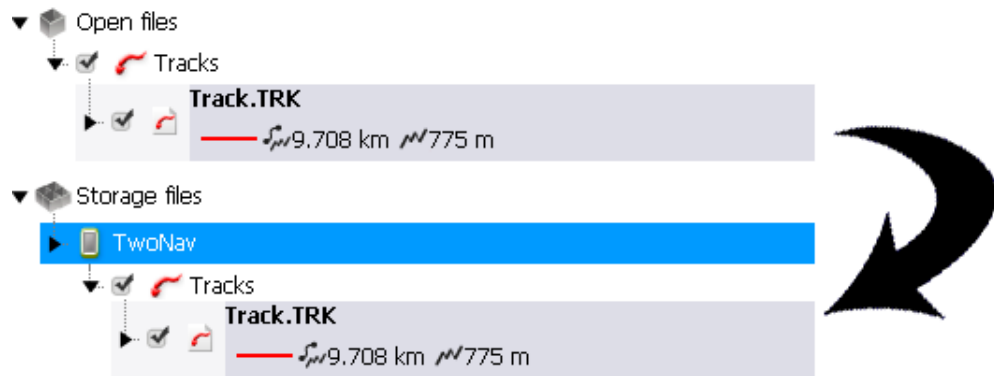
5. Send the resulting file to your TwoNav device: Use *'Send to'* function.

7.2.2 Navigate a geocache

'ON-ROAD' MODE   *'OFF-ROAD' MODE*

You can navigate to a geocache from:

- *'Main menu > Start!'*

- *'Main menu > Discover > Geocaching > Navigate'*

- **List of waypoints:** Select the geocache that you want to reach and press *'Navigate'* button.

- **Map window:** Find the geocache that you want to reach, open its contextual and press *'Navigate'* button.

7.3   e-Roadbook

CompeGPS has developed a new concept of navigation by providing you a brand new tool to have fun and enjoy the nature: e-Roadbooks.

A roadbook is a diagram tool commonly used by rally co-drivers and walkers that help them to navigate uncertain terrains. Traditional roadbooks contain several pages of information such as charts, GPS coordinates, written instructions, manoeuvres…

✅ 🌲 Natural Park of Las Salinas.BTRK

🏴 Start

↰ Turn LEFT towards the beach

↑ STRAIGHT without leaving the road

↰ Turn LEFT on the "Es Cavallet "beach

↱ Turn RIGHT at the parking

↑ STRAIGHT along the main track

↱ Turning to the RIGHT after the house

↑ STRAIGHT across Las Salinas beach
...

e-Roadbooks, contain all this information in digital format with no need to read indications in a book, TwoNav will display all manoeuvres on the screen. Convert your excursions into a big challenges, or even turn them into a funny game in harmony with nature...

TwoNav can open the following e-Roadbook formats:

7.3.1 Create an e-Roadbook with Land/Air

IMPORTANT: You can easily manage, transfer and analyse your own elements using Land/Air software (Windows/Mac), more information at http://www.CompeGPS.com

In order to create an e-Roadbook you need several essential tools:

- **A track**
- **The book where items are stored with the images and descriptions**
- **Land/Air software (Windows/Mac platforms)**

Follow next steps to create an e-Roadbook file using Land/Air software:

1. Install Land/Air in your computer (Windows/Mac platforms), more information at http://www.CompeGPS.com

2. Start Land/Air software and open the track file. Track will appear at *'Track'* section at the data tree.

3. Once opened, open its contextual menu and select *'Edit roadbook'*.
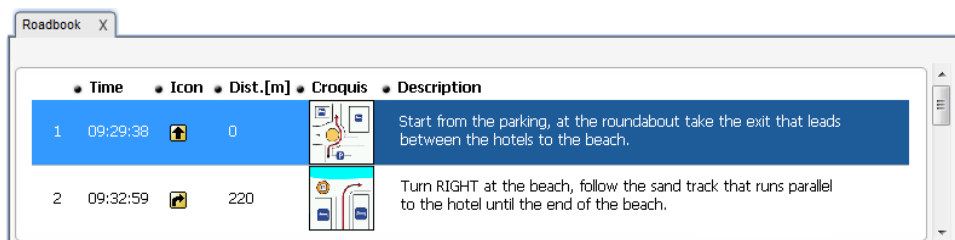
4. A new window will appear containing all waypoints of the track. Place the mouse at the exact location where there is something to highlight and open the contextual menu on that point, press *'Create a roadbook point here'*.

5. Now you can edit the e-Roadbook point with relevant information:

- **Description:** Write important manoeuvres, information about monuments, notable facts…

- **Croquis:** Associate image showing navigation signs for an easy orientation.

IMPORTANT: To associate images you should edit, cut and save them using a suitable format (*.BMP) and size (128x128 pix.), so that they can fit TwoNav interface. Search for the right image editor to edit pictures.

---

6. Repeat this action for each e-Roadbook point that you want to highlight.

7. If you wish, add files to the waypoints of the e-Roadbook using one of these methods:

- **Drag files from Windows/Mac explorer:** Keep the left mouse button pressed on the file and drag it to the waypoint.
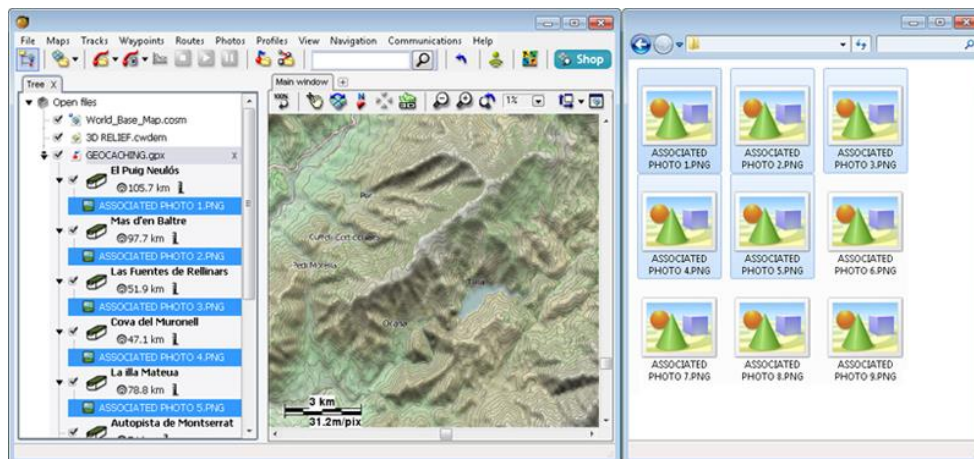
- **Drag files from internet browser:** Drag them directly from browser. Just drag the image to waypoint at the data tree.
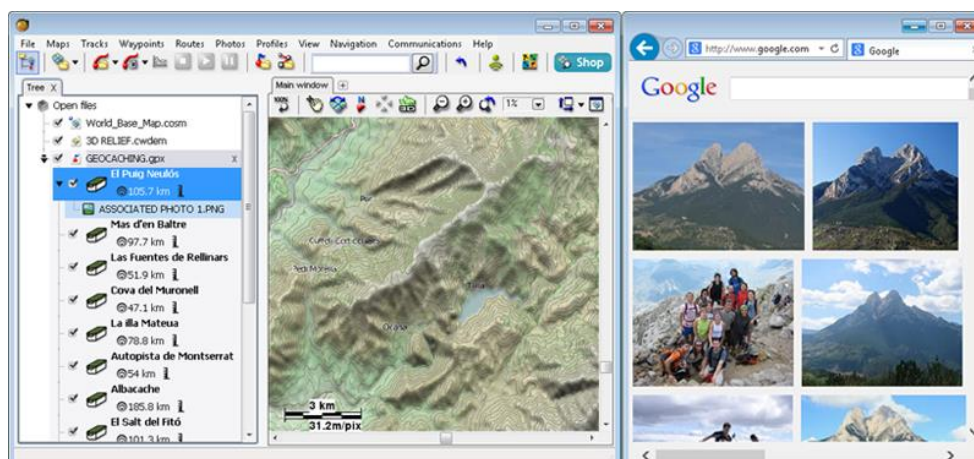
- **Add them manually:** From *'Associated'* section at waypoint properties.

---
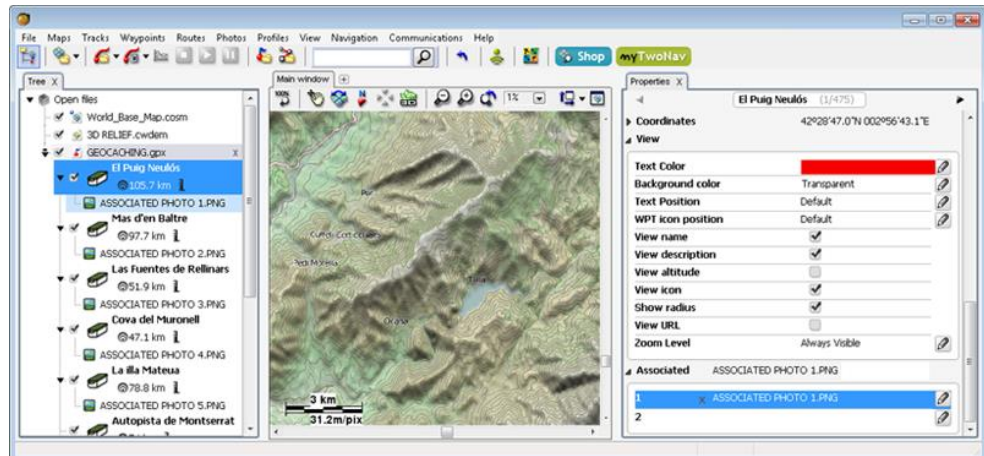
8. Save the resulting file in *.BTRK format: Open contextual menu on the track file and select *'Save'*.

9. Send the resulting file to your TwoNav device: Use *'Send to'* function.
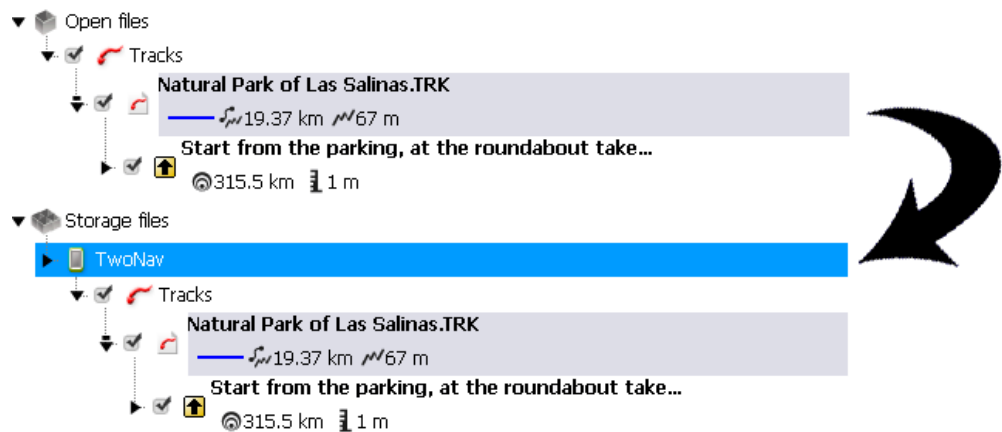
IMPORTANT: Do not delete the e-Roadbook in *.TRK format since the resulting *.BTRK is not editable. If you want to change any parameter, modify the *.TRK file and save it again in *.BTRK format.

7.3.2 Navigate an e-Roadbook

'ON-ROAD' MODE   *'OFF-ROAD' MODE*
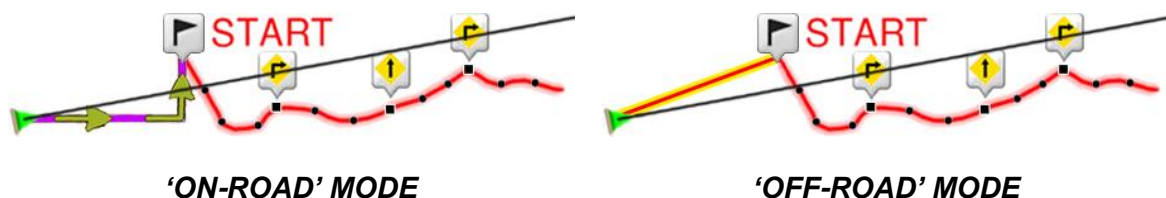
Like any other track, you can navigate an e-Roadbook from:

- *'Main menu > Start!'*

- **List of tracks:** Select the e-Roadbook that you want to reach and press *'Navigate'* button.

- **Map window:** Find the e-Roadbook that you want to reach, open its contextual and press *'Navigate'* button.

8 SETTINGS

8.1 System

8.1.1 Device

8.1.1.1 Default settings

IMPORTANT: Re-establish all the settable parameters to their initial status. All the options that have been manipulated will be modified and set as default.

8.1.1.2 Status report

When *'Status report'* is pressed, a *.ZIP file containing technical information of the current status of the application is created at *'TwoNavData/Data'*.
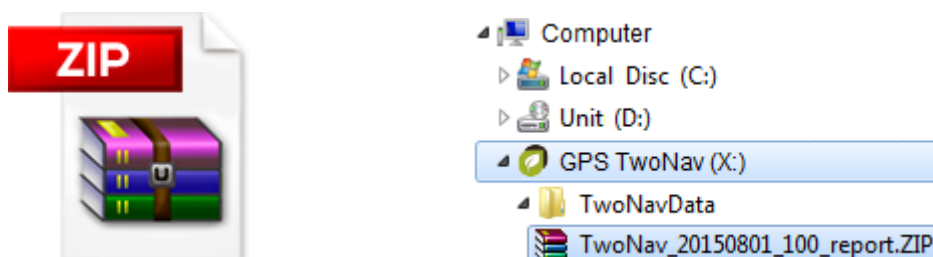
Create a *'Status report'* in order to help the technical support department to solve any problem of TwoNav application, please contact the on-line technical support department of CompeGPS at http://Support.CompeGPS.com

8.1.1.3 Update Operating System (OS)

You can update the operating system of your device by downloading the latest version from http://www.CompeGPS.com and place it at the root folder of TwoNav device.
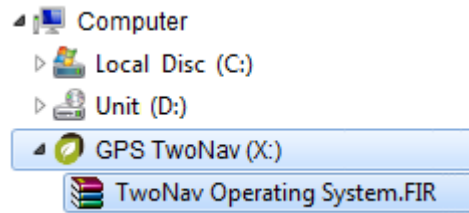
The operating system is executed under TwoNav and it controls the more basic operations of the device.

- **TwoNav Sportiva:**
  [How to update operating system?](#)

- **TwoNav Sportiva+:**
  [How to update operating system?](#)

- **TwoNav Sportiva2:**
  [How to update operating system?](#)

- **TwoNav Sportiva2+:**
  [How to update operating system?](#)

Once done, all you have to do to start updating the operating is press this button:

Update Operating System (OS)

8.1.1.4 About

Get to know the software versions running in the device (eboot/iboot and operating system information might not be available in all devices).

NOTE: In order to update the TwoNav software of your device, as well as solve any kind of problem with CompeGPS' technical team, it is very important to know the exact TwoNav version that you are using in your device.

8.1.1.5 Activation information

Get to know the registration status of TwoNav in the device.

- **Status:** TwoNav application registered/non-registered.

CompeGPS registered

- **User's name**: Registered user. If device has internet connection, you can enter here the registration code.

John Smith

- **Device ID:** Exclusive identifier for your device. This identifier is essential to activate TwoNav as well as any map in the device.

X-XXXXX-XXXXXX-XXXXX*XX

8.1.2 Language

Set the language of the application. Interface texts and indication voices will use the same language.

English	Español	Français	Italiano
Deutsch	Português	Polski	Català
Euskara	Chinese	Türkçe	Suomi
Hebrew	Galego	Magyar	Nederlands

8.1.3 Units

Set the type of measurement units to use in TwoNav:

- **Distance:**   km   ft, m, mi, nm

- **Altitude:**   m   ft

- **Speed:**   km/h   kt, min/km, mph

- **Short distance:**   m   ft, mi, nm

- **Acceleration:**   m/s^2 g, km/h/s

- **Vertical speed:**   m/min   ft/min, m/h, m/s

- **Area:**   m^2 hect., km^2

- **Energy:**   Kcal   cal, J, KJ, MJ, KWh

- **Depth:**   m   brazas, ft

8.1.4   Brightness

Regulate the amount of light of the screen and adjust it for each situation. If the percentage of brightness is high, application interface will be more highlighted.
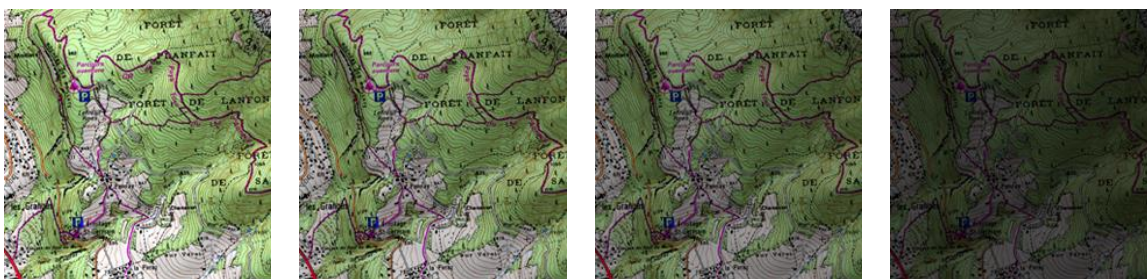
NOTE: In night mode, the brightness will be automatically reduced to avoid dazzling.

8.1.5   Audio

Graduate the audio level of TwoNav application and the volume of each audible element individually.

- **Mute:** Enable/Disable the general audio level of TwoNav application.

- **Voice:** Due the fact that this TwoNav device has no voice speaker, voice advices will be displayed as beeps.

- **Alarm:** Regulate the audio level for alarms and radar warnings.

- **Clicks:** Regulate the audio level for buttons pulses.

8.1.6 Folders

| MAPS | WAYPOINTS | TRACKS | ROUTES |
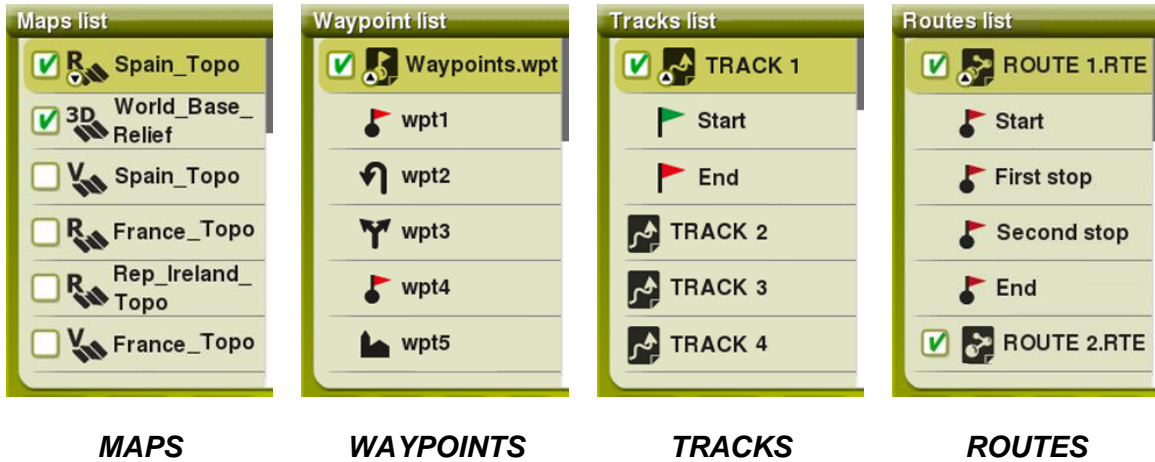
In order to show your elements (maps/waypoints/routes/tracks) in data lists (*'Main menu > Data'*), they have to be inside the right folder of the device. If not TwoNav will not detect these elements and they will not be accessible from data lists.

- **Default folder for maps:** *'TwoNavData/Maps'*

- **Default folder for your recorded tracks:** *'TwoNavData/Data/Tracklog'*

- **Default folder for tracks/waypoints/routes:** *'TwoNavData/Data'*
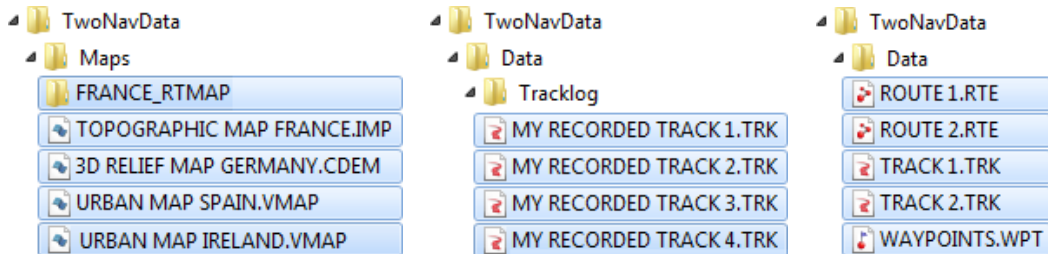
Additionally, if your elements are placed in different folders, you do not need to re-group them into one single folder: you can define the folders where you store each type of data manually. Then, data lists will contain in a single list all data from the different folders that you have set.
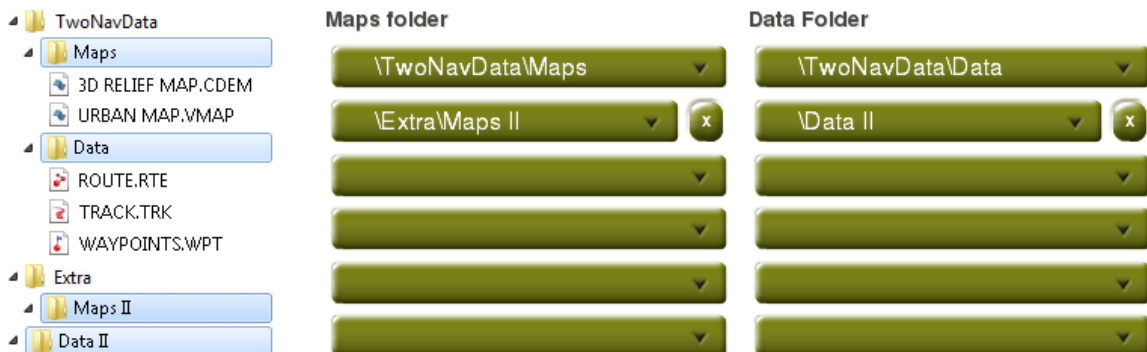
8.1.7 Time zone

Set the time that will appear by default in the application according to the Universal Time Coordinates (UTC). You may also set the summer time automatically.

NOTE: TwoNav keeps the time updated as long as the device receives a GPS signal. Usually, inside the buildings the signal from satellites is not received unless there is a repeater, so the time and night vision might be affected.

8.1.8 Coordinates

These settings will be used when introducing any coordinate into the application as well as creating any element (waypoints/routes/tracks):

- **Type of coordinates:** UTM, Latitude/Longitude, BGN…

- **Degree format:** Configure the order in which the degrees are displayed.

dd.dddddd ddºmm.mmm' ddºmm'ss.s

- **Datum:** Used to translate the positions of elements (waypoints/tracks/routes) to the exact position on the earth. Datum systems is needed because the earth is an imperfect ellipsoid.

8.2 Map

8.2.1 Automaps

The easiest way to use the most suitable map for each situation is to activate this function:

- **Auto-open maps:** Opens the most suitable map for each situation.

- **Auto-open reliefs (*.CDEM):** Opens the most suitable elevation map for each situation (enabled independently from *'Auto-open maps'*).

If these options are enabled, TwoNav will try to load the best map for each situation:

- *'On-Road'* **mode:** The urban map (*.VMAP) of the area will be loaded and the rest will be closed.

- *'Off-Road'* **mode:** The map with the best resolution (not an *.VMAP) will be loaded and any other urban map (*.VMAP) will be closed.

NOTE: It is highly recommended to have this option always on, specially on those situations in which you need to make a change in navigation mode. If you want to keep loaded maps when changing from one mode to another, deactivate this function.

8.2.2 Autozoom
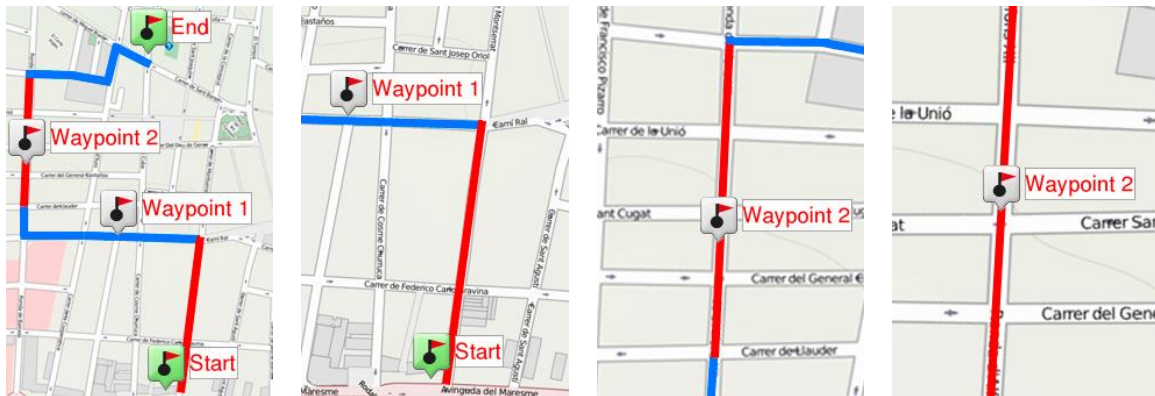
DESTINATION   *NEXT*   *ALL LEG*   *AUTOMATIC*

If this option is enabled, TwoNav will calculate the most suitable zoom for the present speed (the higher the speed, the further it will go):

- **No:** Function disabled.

- **Automatic:** Automatic zoom window.

- **See destination**: Zoom window including the current position and the destination.

- **See next**: Zoom window including the current position and the following route/waypoint/…

- **See all leg**: Zoom window including the current position and the present leg or full track.

- **Fixed scale**: Zoom window according to *'Fix scale'* value.

- **Map scale:** Zoom window according to the map scale.

If during the navigation *'Force 2D'* is enabled, 2D map view will be automatically displayed even other views are currently in use.

8.2.3   Re-center

While navigating you may move the map to see other parts of the grounds, and so losing the reference of your current position. In these cases, *'Re-center'* button is displayed on the screen, press it to re-center TwoNav to your current position.

- **Time to re-center:** TwoNav has an automatic re-centring function, so if map is not moved manually, it will be re-centred back to your current position according to the set value.

- **Smooth re-center:** Re-centring can be performed with a smooth movement or instantaneously.
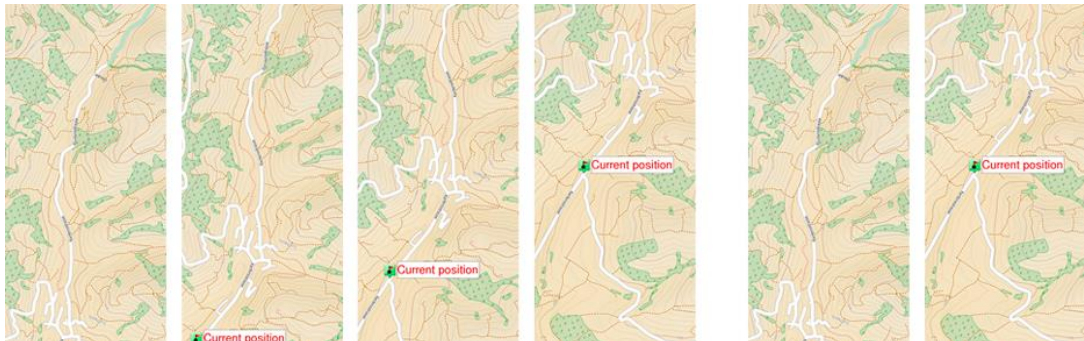
- **Re-center when editing:** Automatic window re-centering while editing or creating new points for routes/tracks. If disabled, map window will not be automatically refreshed, so you will need to move the map window manually.

NOTE: If the function 'Autozoom' is activated, when pressing 'Re-centrer', the zoom suitable for your present speed will also return, losing the variation of the zoom level you may have applied.

8.2.4   Orient map

Choose between two display modes to show the elements loaded on the map window:

- **Track up:** Orient map towards your course, map will rotate to be adapted to your present course. Perspective in front of you will be displayed on the screen.

- **North up:** Map is not oriented, your position will be marked with the pointer in the centre of the screen and the pointer will rotate to show your present course. The map will not rotate and the north will always be upwards.

NOTE: You can modify this option from the tool bar.

8.2.5   CDEM reliefs

TwoNav may use elevation maps (grids with height information) to assign altitude data on maps/tracks/waypoints/routes and then be able to display then dimensionally.

- **Draw relief:** Enable/Disable this function.

- **2D shaded relief**: 2D maps can display relief shadows.

- **Relief colors**: Select between different hypsometric colors to display your maps: high contrast colors, low contrast colors, default palette of colors…

- **Draw landscape with shadow:** This visual option makes the relief drawing more attractive.
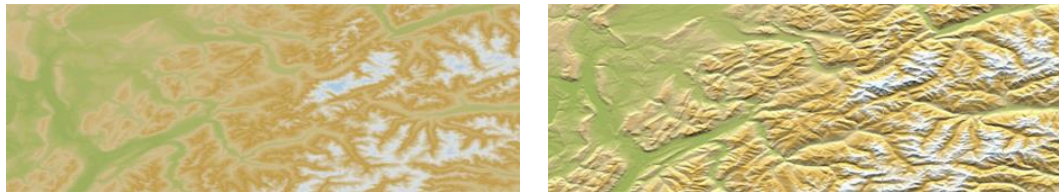
- **Flat color steps:** Instead of using a fading color, just one plain color for each height interval will be used.

- **Draw level lines:** Altitude lines are drawn.

8.2.6   3D

| **2D** | **3D FLAT** | **3D+** | **3D+ RELIEF** |

TwoNav offers three visualizing modes so you have the most adequate perspective in each moment.

- **'2D' mode:** Zenith plan.

- **'3D' mode:** Trimensional flat image with a perspective.

- **'3D+' mode:** Holography of the terrain in real 3D (vectorial maps will not be displayed in 3D+). This mode can only be displayed if you load:

  - 3D relief map (*.CDEM)
  - Raster map (normally *.RMAP or *.ECW)

IMPORTANT: Press '2D > 3D > 3D+' button at the tool bar to switch between viewing modes.

- **'3D' mode:** Choose the sequence for *'2D > 3D > 3D+'* button:

  - **'2D > 3D+' (if raster map):** 2 positions (2D > 3D flat/3D+). TwoNav will try to show 3D+. If not possible, 3D flat will be shown.

  - **'2D > 3D > 3D+':** 3 positions (2D > 3D flat > 3D+)

- **Altitude exaggeration:** Multiplies the altitude of the relief to make a clearer effect in 3D+.
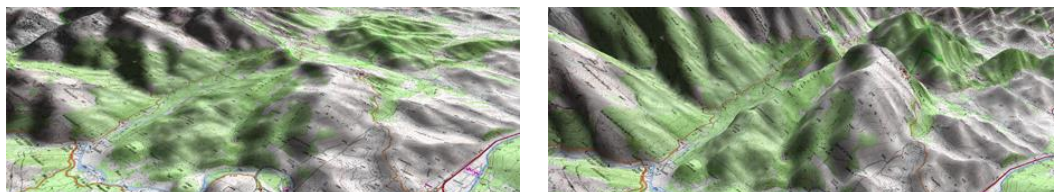
- **Shading:** Relief will be displayed in a clearer and attractive way, as it features shadow simulations enhancing thus the variations of the ground. This option is only effective on the 3D+.
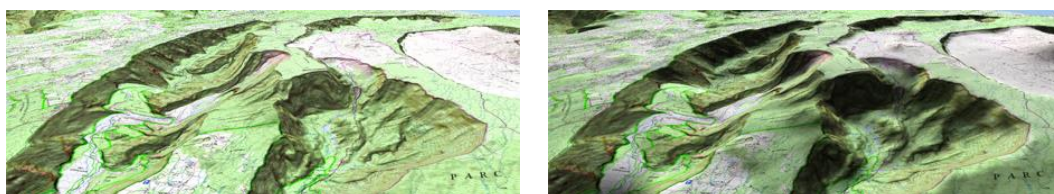
- **Field of vision:** Determines the angle from which the map will be seen. When introducing angles over 60º, it will simulate a camera with wide lenses.
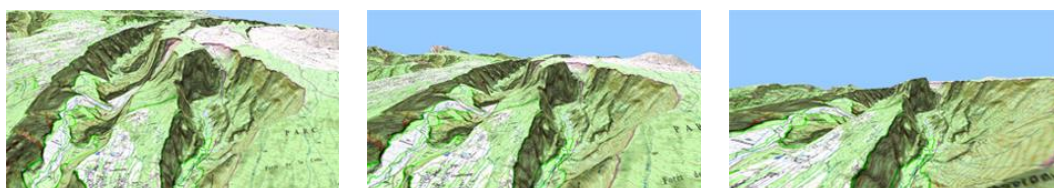
- **Automatic inclination:** Map perspective will change in real time depending on device's inclination. In order to use this function, 3D+ has to be enabled.

- **Foggy horizon:** The furthest part to the perspective becomes faded, creating a misty effect between the sky and the map that helps to distinguish them more clearly.

- **3D quality:** Customize the depth of the 3D quality from a list of different degrees.
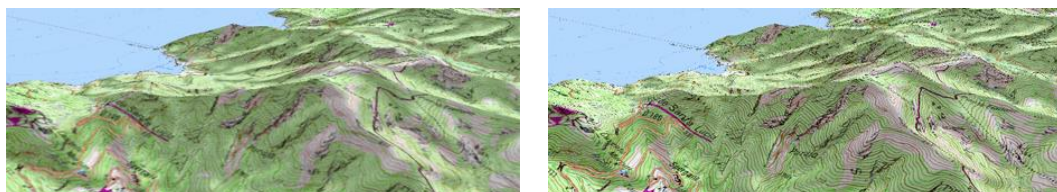
- **Maximum tiles to show:** Set the maximum number of map tiles to display (the higher number of tiles displayed, the slower will load).

- **Sea level:** Fix the current value of the sea level to represent situations where the height is under the sea level.

8.3 Display

8.3.1 Tracks

Tracks displayed at map window can be fully customized according to your needs:

- **Draw arrows over the track:** To easily know its direction.

- **Track variable color:** Track can be represented using variable colors representing all along the itinerary the variability of a specific track data field (altitude, speed, slope, time, heart rate frequency...). Degradation colors are related to different levels of the same field.

- **Navigating track:**

  - **Highlight navigating track:** When navigating a track (active track) you might see it highlighted from the rest of the tracks.

  - **Color navigating track:** The active track has a different color line from the rest of the tracks.

  - **Double line navigating track:** The active track has a specific double line to easily highlighted from the rest of the tracks.

8.3.2   Hint

If *'Hint'* function is enabled, when clicking any point on the map window, TwoNav will show useful information of the specific point that you selected.

This function can be fully customized according to your will: add or exclude the data fields that later on will be displayed on the map window: map information, coordinates of this position, bearing to this position, distance to this position, altitude of this position...

8.3.3 Rotate screen

Get a landscape view of your device. Rotate the screen in the various angles to adapt it to your preferences.
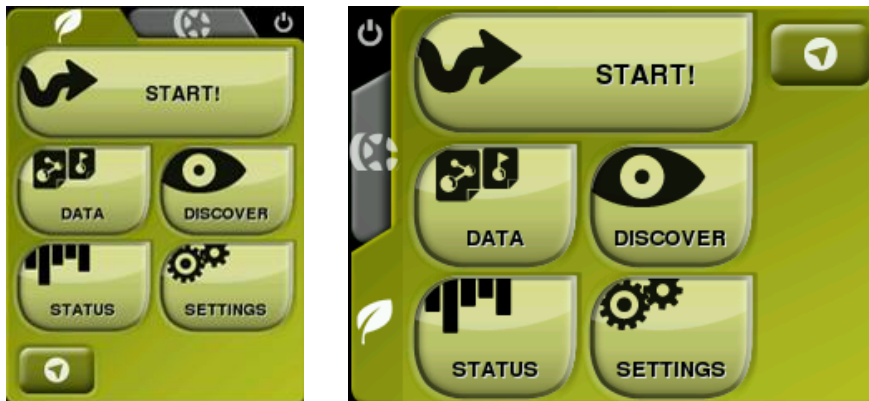
8.3.4 Night view
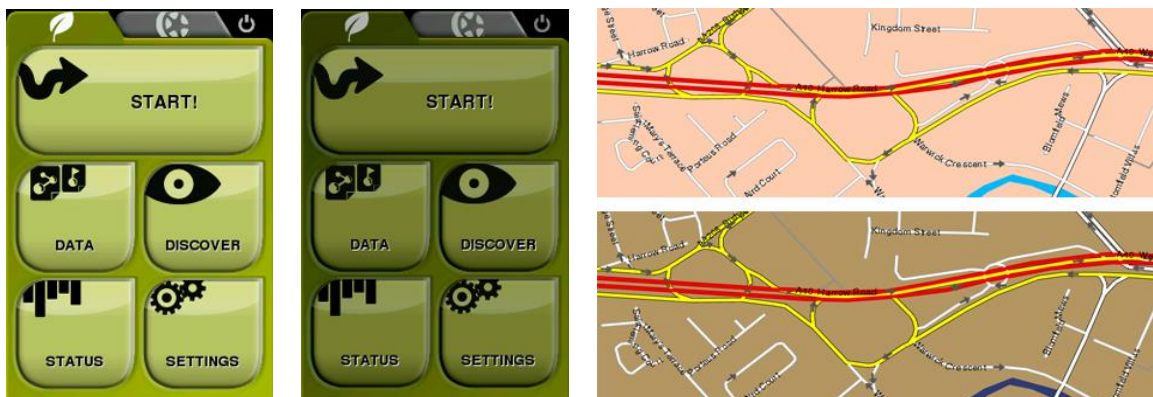
In low light conditions, the colors and brightness of TwoNav may dazzle. This function reduces the brightness of the application and displays an interface with darker tones.

- **At night and tunnels:** TwoNav changes automatically to night mode at night and inside tunnels.

- **At night:** Only at night (not for tunnels).

- **Not automatic:** You will be able to set manually when you wish to have the night mode on.

NOTE: TwoNav keeps the time updated as long as the device receives a GPS signal. Usually, inside the buildings the signal from satellites is not received unless there is a repeater, so the time and night vision might be affected.

8.3.5 Pointer

Icon displayed at map window (your current position) can be fully customized according to your needs:

- **Pointer/Animation pointer:** Icon that displays your current position on the map.

- **Fixed ring and parallels:** A circumference encircling your position will be drawn.

- **Fixed ring radius:** It determines the size of the circumference surrounding your position.
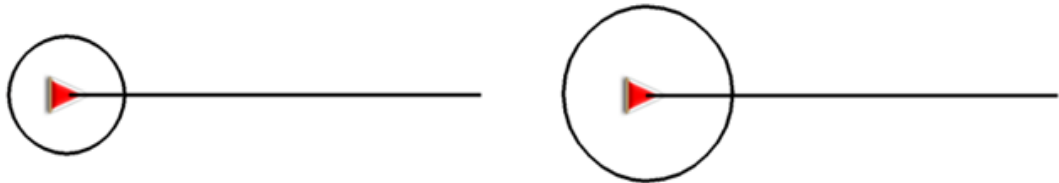
- **Draw prow lines parallels:** Draw parallel lines to the prow line (guideline indicating the direction of your movement).
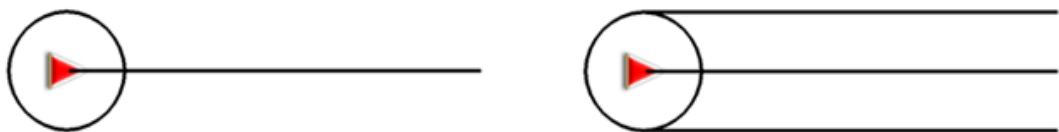
- **Variable ring:** Add more rings around your position. Define the radius of the inner ring and the number of successive rings which will be equidistant from the first inner ring.
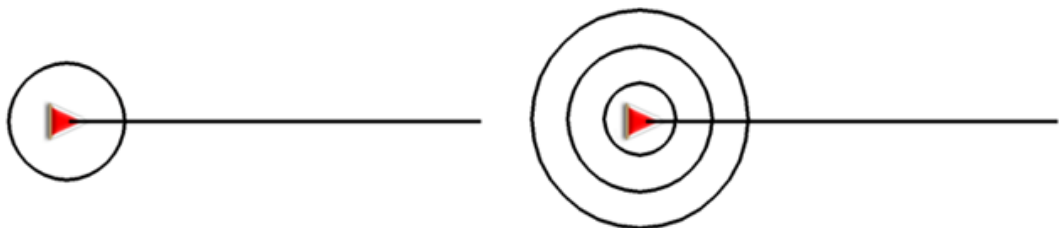
- **View turning radius:** When turning, the radius corresponding to the circumference described will be displayed.

- **View direction line:** Set the length of the prow line that will be displayed on the map.

  - **Disabled:** No prow line will be displayed.

  - **Pixels:** Set the length of the prow line in pixels.

  - **Real distance:** Prow line will be displayed on the map at real scale.

  - **Expected distance in time:** TwoNav will calculate the estimated distance to be covered in that time at current speed.

  - **Infinite:** The length of the prow line will be infinite.

- **Extra elements:** Extra elements can also be displayed according to customized parameters.

NOTE: These properties depend on the selected vehicle.

8.3.6 Themes

Select among different colors the skin of TwoNav's interface.

8.3.7 Labels

Labels displayed at map window can be fully customized according to your needs:

- **Font size for all labels:** Font size for all waypoints.

- **Label color for new waypoints:** Default label color for new waypoints (waypoints already created will keep their original color).

- **Background color for new waypoints:** Background color for waypoints.
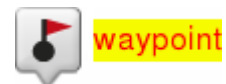
- **Background transparent for new waypoints:** Background can be transparent.

- **Show radius:** Define in which situations waypoint's radius will be displayed.

- **Waypoint icon position:**

- **Radius color:** Default radius color for waypoints that display their radius.

- **Radius thickness:** Default radius thickness for waypoints that display their radius.

8.3.8   POI (Points Of Interest)

POIs (Points Of Interest) are waypoints grouped into categories of different types of services that may be useful during outdoor navigations (hotels, restaurants, campsites, fuel stations, transports, stores…).

POIs are represented on map window using different icons symbolizing the available services. Most POIs contain a description of the service, coordinates of the waypoint, contact information...

POIs displayed at map window can be fully customized according to your needs:

- **Active POIs:** Show/Hide POI categories on map window, these POIs are generally provided by some vectorial maps (*.VMAP).

- **Active personal POIs:** Show/Hide your personal POI on map window, these POIs are created by you and must be placed at *'TwoNavData/POI'* folder.

NOTE: By default, this type of waypoints will not be displayed in waypoints list, but they will be drawn on the map.

8.3.9   Geocaching

Geocaches which have been labelled as *'Found geocache'*, will not appear in the waypoints list nor in the map window. By doing this, there will be no need to see geocaches that were previously found.

8.4 Fields & Buttons

8.4.1 Data fields

Data bar and data pages can be configured to fit your preferences, customize TwoNav displaying the data fields that you really need.

- **Add data fields:** By activating the ticked square.

- **Remove data fields:** By deactivating the ticked square.

- **Order the data fields:** By using *'Up'/'Down'* buttons.

- **Add/Remove pages to the default ones:** By using *'+'* and *'-'* buttons.

NOTE: You can also change just one field by opening the contextual menu on it (select 'Change this field').

IMPORTANT: Get to know more about data fields in Appendix.

8.4.2 Tool bar

Tool bar can be configured to fit your specific preferences, customize TwoNav according to your needs by displaying the tools that you really need.

- **Add tools:** By activating the ticked square.

- **Remove tools:** By deactivating the ticked square.

- **Order the tools:** By using *'Up'/'Down'* buttons.

IMPORTANT: Get to know more about tool bar functions in Appendix.

8.4.3 Map page
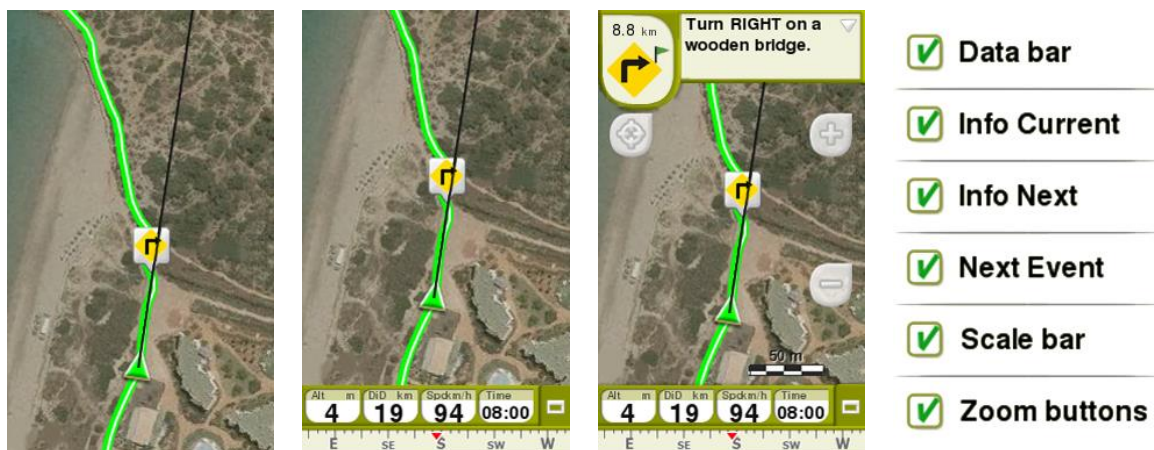
Show/Hide the functions accessible from the map window.

8.4.4 Keys

Each device button has a double command: short press and long press. Both of them can be personalized for different usages.

- **Key I:**
  - **Short press:** ?
  - **Long press:** ?
- **Key II:**
  - **Short press:** ?
  - **Long press:** ?

8.5 Alarms

8.5.1 Data fields

During your navigation, TwoNav may alert you when exceeding certain limits defined by you.

Alarms for data fields can be fixed according to your preferences, all you have to do is set a maximum or/and a minimum value for each field. In case you do not fix any value, the alarm will be deactivated with no effects during the navigation.

Alarm warnings will be automatically displayed during the navigation in a pop up window according to the preferences that you previously set on data fields.

- **Alarm warning in red:** If you are exceeding the maximum value.

- **Alarm warning in blue:** If you do not reach the minimum value.

Fix also a repetition interval for each alarm. In order to make the pop up window disappear, do is a simple click on any part of the screen outside the warning window.

Configure additional settings of the pop up window from *'Main menu > Settings > Advanced'*.

8.5.2 Tracks
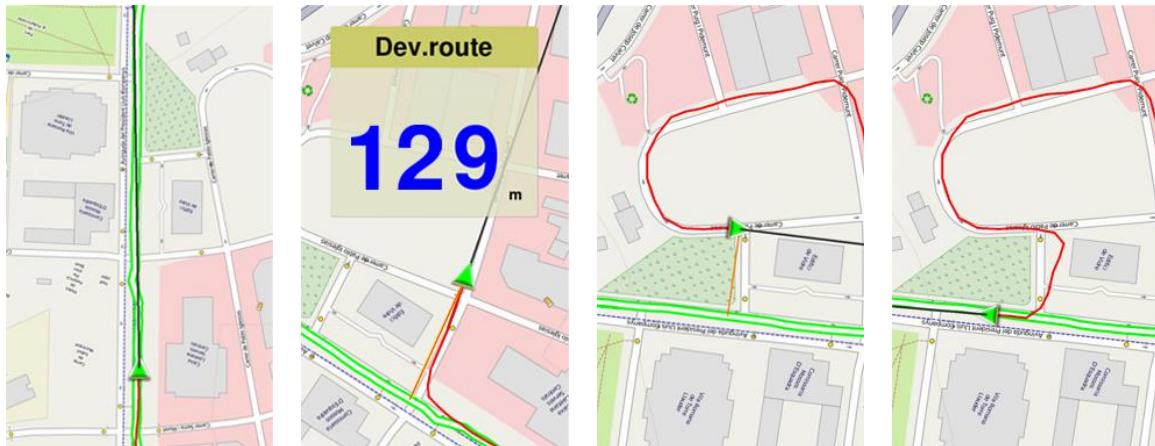
During your navigation, TwoNav may alert you when exceeding certain limits defined by you.

When you are getting away from the original track you can set an alarm to warn you: activate *'Deviation from route'* and set a maximum or/and minimum deviation distance. Fix also a warning sound and a repetition interval.

8.5.3 Leg change

| *NO DIVISION:* | *LEGS DIVISION:* | *LEGS DIVISION:* |
| *ORIGINAL LEGS* | *BY DISTANCE* | *BY TIME* |

During your navigation, TwoNav may alert you when getting close or reaching certain points.

TwoNav can display audio and visual pop up alarms at every leg change (every kilometer, every hour... or according to your needs). Legs are equal divisions of the track split based on a default interval set by you.

IMPORTANT: Leg alarms during your navigation will only work if automatic legs are enabled.
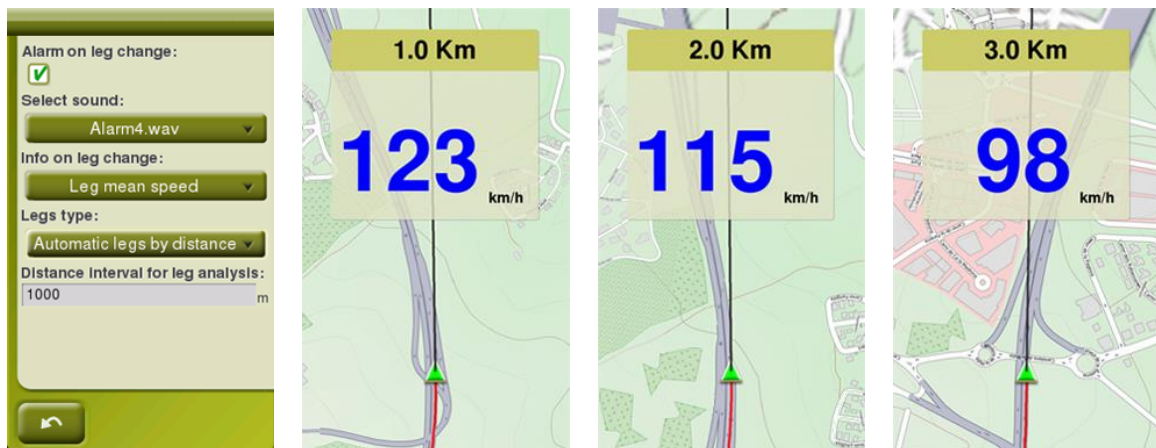
During your trip you will get a periodic report about your performance with relevant information (pace, mean speed, climb, descent...). The division of the track in equal legs is very useful to analyse all kinds of information and achieve a better performance leg after leg (mainly designed for training purposes):

- **Leg type:** Enable/Disable the division of the track in equal legs portions (either by distance, time or aerial conditions).

- **Interval for leg analysis:** Set the default value to create the division of the track in legs. Once you have reached the default value, a brand new leg will start lasting the same as the interval value.

- **Alarm on leg change:** TwoNav can display a visual warning (pop up window) each time you complete a leg.

- **Information on leg change:** If *'Alarm on leg change'* is enabled, define which data field you want to displayed at the pop up window. This value has been recorded during that specific leg.

- **Autolegs on map:** Define if you want to display automatic division of track in legs using a uniform color or alternate colors.

NOTE: You can also start a brand new leg at any moment pressing 'Change leg' at the tool bar.

8.5.4   Waypoints
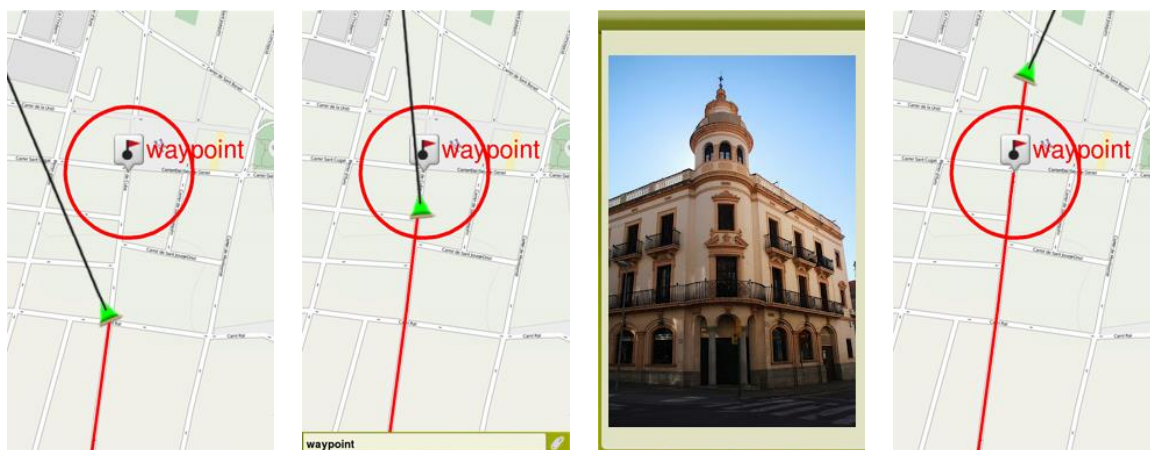
During your navigation, TwoNav may alert you when getting close or reaching certain points.

Set an alarm to warn you when you are about to enter to any waypoint.

- **Default radius for waypoints:** Waypoint alarm will be displayed when you are entering into the radius of any waypoint. Set that radius according to your preferences.

- **Audible alarm at waypoints:** Fix also a warning sound.

- **Start screen at waypoints:** The screen of your device will be turned on when entering into the radius of any waypoint.

- **Auto-play associated images/sounds/text/videos:** Associated files can be automatically displayed when you are entering into the radius of any waypoint.

IMPORTANT: You may also be alerted by the Points Of Interest (POIs) that you store at 'TwoNavData/POI'. If you want to be alerted when reaching one of these POIs, each one of them will have to be associated to a image/sound/text/video file.

8.5.5   Speedcams
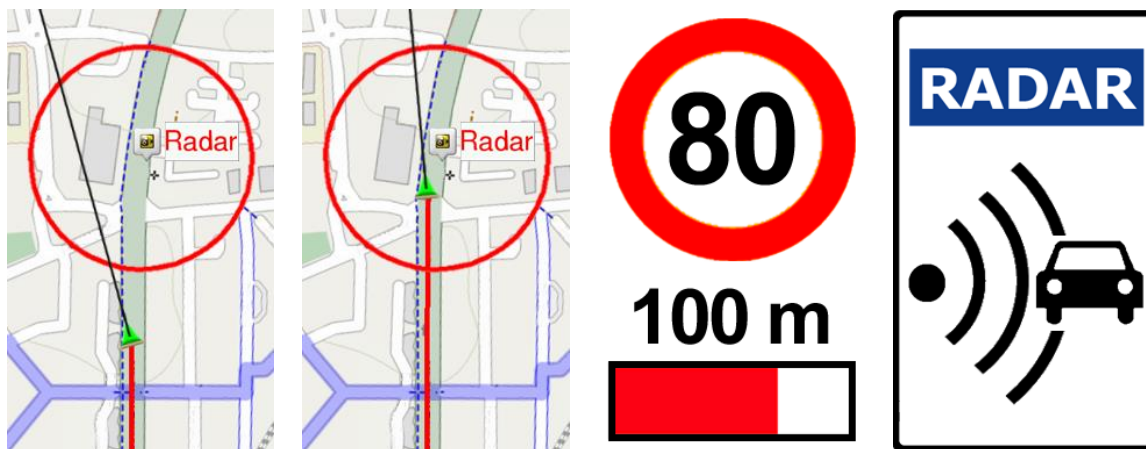
During your navigation, TwoNav may alert you when getting close or reaching certain points.

TwoNav will consider files at *'TwoNavData/Radars'* folder as speedcams. So when you are getting close to any traffic speedcam you can set an alarm to warn you (an updated file with current speedcams is required).

- **Speedcam camera alarm:** Enable/Disable this function.

- **Speed camera alarm distance:** Set the minimum distance to warn you.

- **Show speedcams on the map**: Show/Hide speedcams on map window.

- **Speed to alarm about radars:** Set speed limitation to warn you about near radars.

IMPORTANT: Update of radar files can be easily done from Land/Air software (Windows/Mac), more information at http://www.CompeGPS.com

8.5.6 Speed limit

During your navigation, TwoNav may alert you when exceeding certain limits defined by you.

Set an alarm to warn you when reaching certain speed.

- **Set speed limit:** Speed limit of each particular road will be considered by default, but you can set a fix speed limit to warn you disregards the limit of each road.

- **Speed alarm:** When driving over the established speed limit a warning display will be shown. Choose among different alarm displays.

- **Speed to block interface**: User interface will be blocked when exceeding this value. You will not be able to manipulate the application. Configure this function according to laws of each country.

8.5.7 Depth
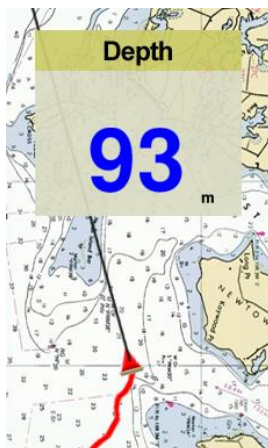
| *DEPTH* | *CURRENT* | *NEXT WPT* | *PROW LINE* |

During your navigation, TwoNav may alert you when exceeding certain limits defined by you.

Before you enable/disable depth alarm, you must set the default value for maximum draft (*'Draft': Only for 'Boat', depth to which a vessel is immersed*).

- **Current**
- **Next waypoint**
- **Prow line**

8.6 Training

NO DIVISION:
ORIGINAL LEGS

LEGS DIVISION:
BY DISTANCE

LEGS DIVISION:
BY TIME
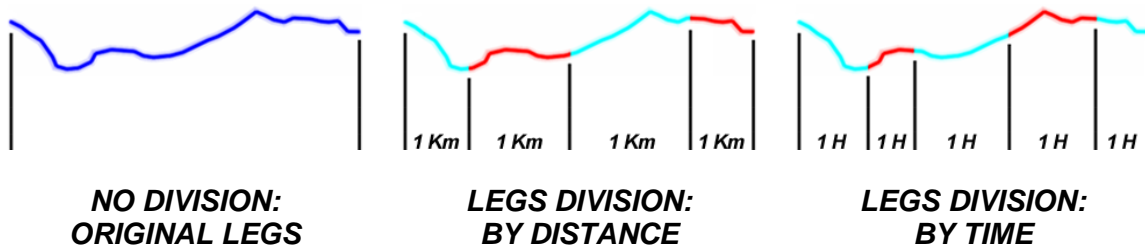
Fix the training tools of TwoNav to your own needs:

- **Legs type:** Detailed analysis of the track by *'virtually'* dividing it in different legs (portions of the track) either by distance, time or aerial conditions. Analyse the legs of the track from its propierties, click on a leg to get more information about it.

- **Interval for leg analysis:** Set the default value to create the division of the track in legs. Once you have reached the default value, a brand new leg will start lasting the same as the interval value.

- **Autolegs on map:** Define if you want to display automatic division of track in legs using a uniform color or alternate colors.

- **Alarm on leg change:** TwoNav can display a visual warning (pop up window) each time you complete a leg.

- **Information on leg change:** If *'Alarm on leg change'* is enabled, define which data field you want to displayed at the pop up window. This value has been recorded during that specific leg.

- **Energy calculation method:** According to your preferences.

- **Gender/Weight/Age:** Information used to calculate other data.

- *Only ANT+™ devices:* **Resting Heart Rate:** Information used to calculate other data.

- *Only ANT+™ devices:* **Maximum heart beat:** Information used to calculate other data. If not enabled, the maximum heart rate is calculated using Tanaka formula.

8.7 Vehicle

Before you start navigating, it is very important to set your vehicle so the system configuration and calculations will be adapted according to the selected vehicle:

PEDESTRIAN   BIKE   CAR   BOAT

By setting your vehicle, some parameters as well as aspects of the navigation may vary: restrictions on route calculation, street directions, cruise speed, expected average speed, minimum moving speed, content of function *'Hint'*…

The color of the icon indicating your current position will change according to the selected vehicle. Change pointer settings from *'Main menu > Settings > Display > Pointer'*.

IMPORTANT: Since marine navigation has special needs comparing to terrestrial navigation, when 'Boat' vehicle is selected some special changes (in addition to normal changes related to vehicle) will take place: different interface theme, marine units, specific menu to select the final destination, specific data fields in data bar and data pages, specific tool bar, function 'Man Over board' available from the tool bar, marine charts are loaded if present (only if 'Automaps' function is enabled)… 'On-Road' navigation has no sense in 'Boat', so 'Off-Road' mode will be automatically enabled when 'Boat' is selected.

8.8 Navigation

TwoNav has 2 navigation modes:

'On-Road' **mode**

Mode based on door to door navigation (street navigation). *'On-Road'* mode is adjusted to automatically calculate your route to destination. TwoNav will generate a planned itinerary according to your preferences.

NOTE: 'On-Road' mode can only be used when a road maps is loaded.

'Off-Road' mode

Mode based on free navigation (not necessary street navigation). *'Off-Road'* mode is only based on the usage of references (waypoints/routes/tracks) to practise outdoor activities. The *'Off-Road'* mode does not automatically calculate your route to destination (a straight line will simply link your current position to destination with no itinerary calculation).

NOTE: 'Off-Road' mode can be used with any type map.

IMPORTANT: Before you start navigating, it is very important to set your vehicle so the system configuration and calculations will be adapted according to the selected vehicle ('Main menu > Settings > Vehicle').

- **Resume navigation at start:** TwoNav proposes you the same destination which was set last time application was closed.

8.8.1   Autoroute

8.8.1.1   Restrictions

Before you start navigating, it is very important to choose if the planned route that you are about to navigate will be performed only on certain types of roads:

- **Unpaved roads**

- **Highways**
- **Tolls**

8.8.1.2 Recalculate
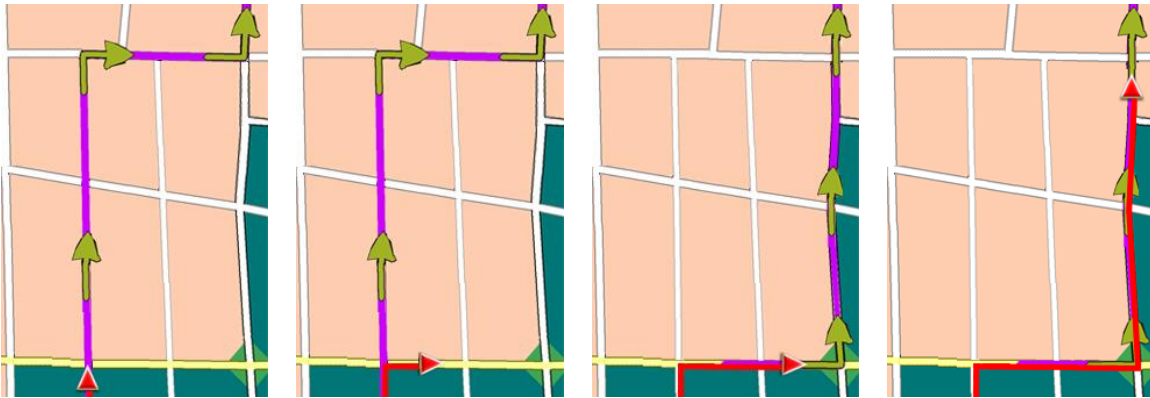
Before you start navigating your planned route, you must consider that during the navigation you might get away from the planned route due to multiple facts. In this case, TwoNav allows you to set values to recalculate your original route and get on track again.

8.8.1.3 Calculation method

Before you start navigating, it is very important to choose if the planned route that you are about to navigate will be automatically calculated by:

- **The shortest way**
- **The fastest way**

8.8.2 Next waypoint

When navigating a route, you can select a required event to validate a waypoint and switch to the following one:

- **Radius of the next waypoint:** Enter inside the radius of the next waypoint (only that one).

- **Radius of any next waypoint:** Enter inside the radius of any of the next waypoints (next one and any of the succeeding waypoints).

- **e-Roadbook mode:** When entering the radius of any waypoint, it will be set as next. When going out of it, next one will be activated. When following an e-roadbook it is required to show the information of the current waypoint while in its surroundings. This way, instructions for each point can be followed correctly.

- **Bisector inside next waypoint:** Enter inside the radius of next waypoint and cross the bisector that is formed with the previous and next waypoint.

- **Bisector inside next waypoint or 10% of any waypoint:** Same as the previous, but if any waypoint is quite near (10% of its radius) it will be validated and the next one will be activated.

- **Only buttons bar:** Never change to next waypoint automatically, only manually when *'Next waypoint' or 'Previous waypoint'* buttons are pressed.

A default radius can be assigned for route waypoints, this value will be taken when this information is not available. If radius for a concrete waypoint of the route is defined, it will be respected. But in case that waypoint does not have a specific radius, the default one will be used instead.

8.8.3 Estimated times

Configure the preferences to automatically calculate the estimated time of destination arrival:

- **Use V-Map's routing speed** *(only in 'On-Road' mode)***:** Calculates the estimated time of arrival taking into consideration the speed of the route.

- **Use navigated track time** *(only in 'Off-Road' mode)***:** Calculates the estimated time of arrival taking into consideration the time of the track.

- **Interval for partial mean speed:** Calculates the estimated time of arrival taking into consideration the partial mean speed of the selected interval of time.

- **Cruise speed:** Expected mean speed according to the selected vehicle. Default *'Cruise speed'* value for each vehicle:

  - **Pedestrian:**   3 km/h
  - **Bike:**   15 km/h
  - **Car:**   80 km/h
  - **Boat:**   20 km/h

NOTE: If no 'Routing speed' or 'Track time' are available, 'Mean Speed' will be used to calculate the estimated time of arrival.

8.8.4   Slope

In order to get slope data, TwoNav requires you to set the distance values to calculate the following data:

- **Slope calculation distance:** Used to calculate current *'Slope'* data field.

- **Next slope distance:** Used to calculate *'Next slope'* data field.

8.9   Tracklog

Configure the type of track that TwoNav will generate from your navigation:

- **Start *'Triplog'* at power on:** TwoNav will automatically record by default all your movements when you start using the application. This function is very useful for users who forget to record the itinerary.

8.9.1   File

Set the type of file that will be generated from your navigation:

- **File format:** Set the track format of the resulting file.

- **Recording interval:**

- **By time:** Set the time to create every new track point.

- **By distance:** Set the distance to create every new track point.

    - **Automatic:** Track points will be automatically recorded when changing course and depending on the speed.

- **Weak signal filter:** If GPS signal is not reliable, points are ignored while recording track. This prevents the recording of non reliable data.

- **Save discard *'Tracklog'* in trash:** If enabled, when options *'Pause'* or *'Finish trip'* are pressed, your following movements will be automatically recorded as backup track copy inside *'TwoNavData/Data/Tracklog/Trash'* folder. This is a security system in order to avoid losing tracks in case you forget to start *'Triplog'* function.
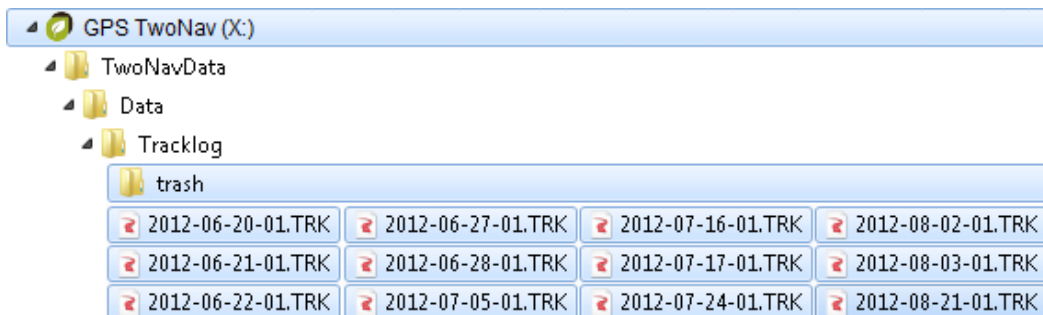
- **Recovery time:** When TwoNav is suddenly switch off, if you turn the device on during the established interval, the previous data is recovered and displayed again.

8.9.2   Display

Configure how do you want to display the track of your navigation:

- **Show current *'Tracklog'* on map:** If enabled, the track that is being recorded will be shown on the map window.
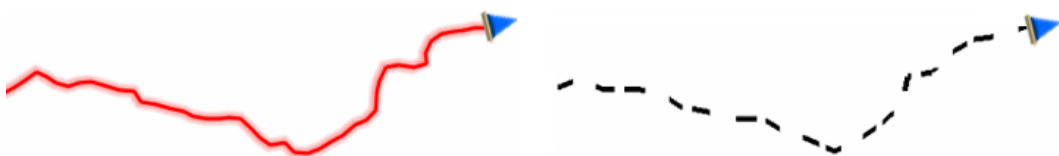
- **Show current *'Tracklog'* in list:** If enabled, the track that is being recorded will be listed in track list marked with *'*'* (*'Main menu > Data > Tracks'*).

- **Track color:** Set the color for the generated track.

- **Thickness:** Set the thickness for the generated track.
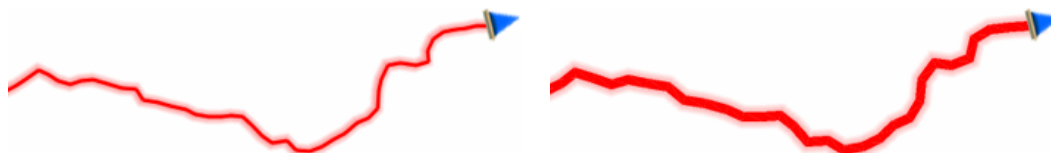
- **Points shown without reduction:** Recorded track is visible on map window, but only the latest points of the track are shown as they are recorded (with no reduction of points). Set how long this section is.

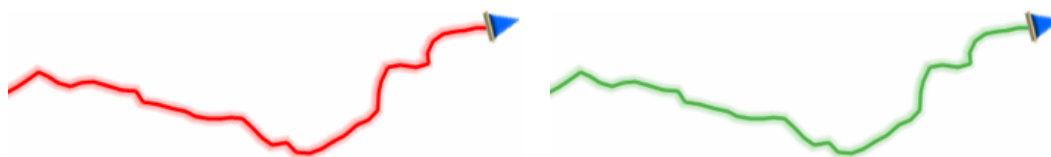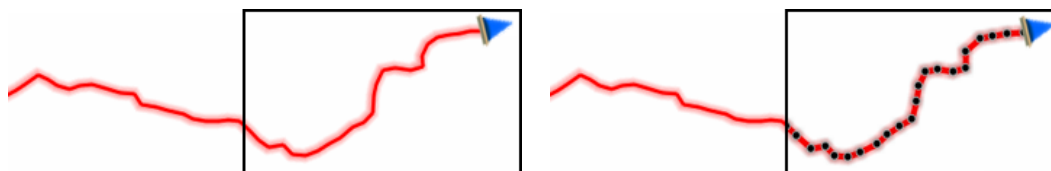- **Reduction for previous points:** It is highly recommended to make a reduction of the rest of the displayed track as well. Set a reduction to display the previous points of the recorded track (all except the latest points).
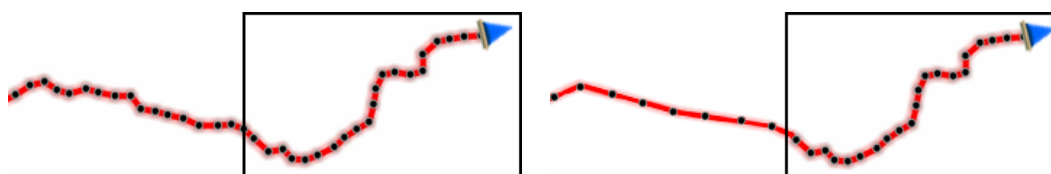
IMPORTANT: These reductions does not affect the resulting track file (it will keep all points). These functions only concern the track being displayed on screen in order to save memory.

8.9.3 Synchronization with navigation

TwoNav synchronizes at the same time the recorded track, the recorded data fields and navigation (destination) to simplify the general use of the application, but in some cases, you may prefer that some synchronization points are disabled. Define how *'Triplog'* must be run according to your preferences:

- **Select navigation when start recording *'Triplog'*:** When *'Triplog > Start!'* is pressed, destination can be chosen from several options.

- **Force recording after navigation selection:** When a new navigation is started, the recording of the track is also started (*'Triplog'*), no need to press *'Triplog > Record'* each time.
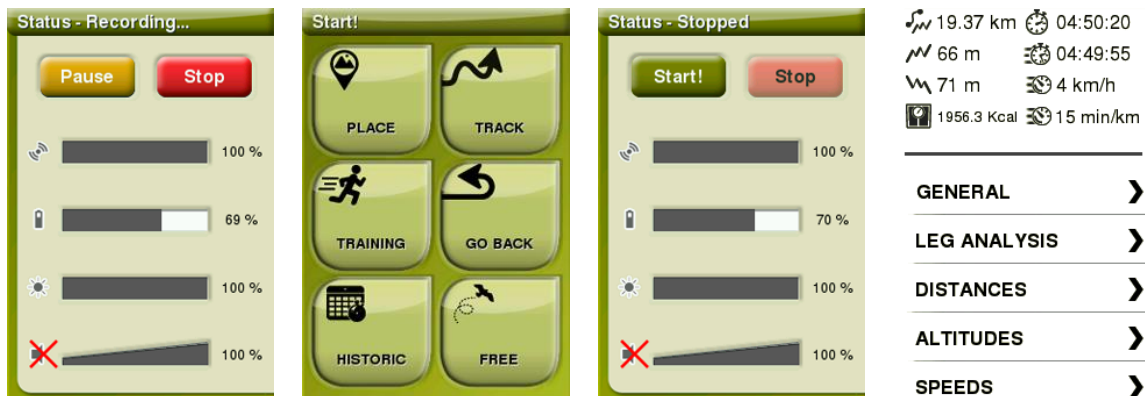
- **Stop navigation when stop recording *'Triplog'*:** When the recording of the *'Triplog'* is stopped, the current navigation is also stopped.

- **Show *'Trip review'* when stop recording *'Triplog'*:** *'Trip review'* (properties of the recorded track) is not shown after the current *'Triplog'* is stopped.

- **Reset *'Triplog'* recording when changing navigation:** When a new navigation is started, the recording of a new track is also started (*'Triplog'*).

8.10 Autonomy

Maximize the autonomy of your device while running TwoNav:

- **Battery level**
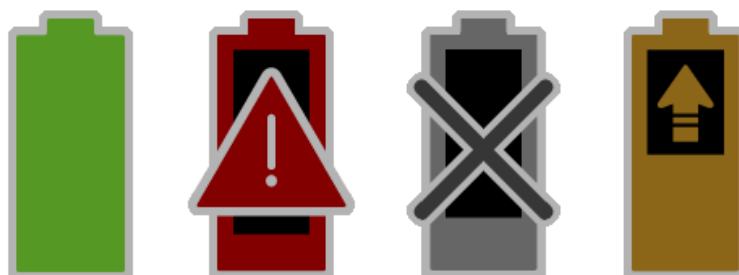
- **Shutdown screen:** Time interval to automatically switch the screen off.

- **Shutdown backlight:** Time interval to automatically switch the backlight function off (screen is still on). Shutting down screen saves more energy than shutting down backlight function.

- **Do not shutdown if plugged:** If enabled, screen shutdown time is not applied, leaving the device with the screen on during all the trip.

- **Connection interval:** Improve the autonomy of the device by setting the connection interval of the GPS.

- **Disconnect GPS when stop:** TwoNav will detect a stop in your itinerary and will automatically disconnect the device. Remember to reconnect the GPS when you resume your itineray.

- **Protection against unplug:** In order to prevent the device from discharging, in case it is disconnected accidentally from the power source, TwoNav will detect the unplugging. If no interaction is done, TwoNav will shut down after 30 minutes.

8.11 Communications

8.11.1 ANT+™ accessories

Only ANT+™ devices: Your device is ANT+™ certified and fully compatible with ANT+™ instruments: heart rate monitors (to measure heart beats), cadence sensors (to measure the pedal stroke frequency) and speed sensors (to measure speed values).

Product ANT+™ certified, it complies with the following specified ANT+™ device profiles.

Full list of ANT+™-compatible products: http://www.ThisisANT.com

Once the sensors are in place, follow these steps to start paring information:
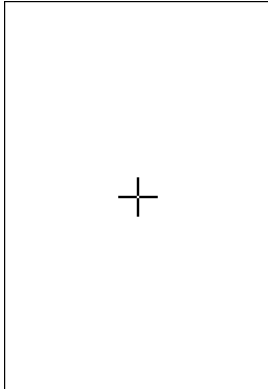
1. Select *'Activate HR/Cad/Spe'*.

2. Then, the device will start looking for the sensor signal.

3. If available, it will be displayed (data will be stored for each point of the recorded track).

NOTE: Use water, ECG gel or other conductive liquids to moisten the conductive rubber contact, do not use vaseline or oils, they may insulate the transmitter making it unable to detect the heart rate signals. Do not bend or stretch the transmitter and keep it out of extreme cold and heat. Clean and dry the transmitter carefully after use, do not store wet.

8.12 Calibration

8.12.1 Touchscreen

If you notice inaccuracies while using the device, you should calibrate the screen, this action prevents little maladjustments. Follow these steps:

1. Click the centre of the displayed cross.

2. Repeat this action in the moving across.

3. Once the screen is calibrated, a confirmation message will pop up. Press any part of the screen to end the calibration process.

8.12.2 Altitude (Barometer)
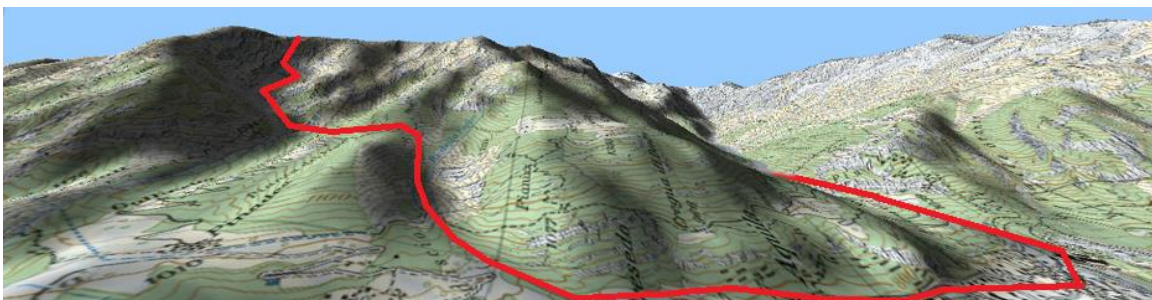
TwoNav offers you different ways to determine the altitude value you are taking during your navigations:

- **GPS:** Altitude data from the GPS will be used.

- **CDEM (Altitude map):** Current altitude of the 3D relief map (3D relief map must be loaded).

- **Barometric (manual):** Values from the barometric altimeter will be used.

- **Barometric (autocalibrated by GPS):** Barometric altitude will be used, but the barometer will be automatically calibrated using the altitude data from the GPS by means of an algorithm that optimizes the final result.

- **Barometric (autocalibrated by CDEM):** Barometric altitude will be used, but the barometer will be automatically calibrated using the altitude data of the 3D relief map (3D relief map must be loaded).

8.12.2.1 Barometer calibration

It is very important to calibrate the barometer in order to achieve reliable data, TwoNav provides you several ways to calibrate it:

- **Manually:** If you know the current altitude, enter it.

- **Current GPS altitude:** Takes the current altitude from the GPS by means of an algorithm that optimizes the final result.

- **Current CDEM altitude:** Takes the current altitude from the 3D relief map (3D relief map must be loaded).

NOTE: This option might minimize little errors of altitude data from the GPS. It also overcomes limitations of the barometric altimeter regarding atmospheric pressure and temperature, alien to altitude changes.

8.12.3 Bearing (Compass)
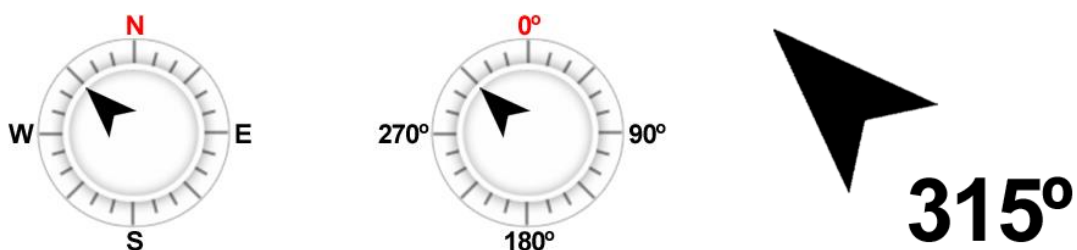
Bearing data determines the orientation of the map when the function *'Orient map: Track up'* is enabled. TwoNav offers you different ways to determine the bearing you are taking during your navigations:

- **GPS:** The latest positions received are used to calculate the bearing of your current movements. As soon as you stop, this reference will not be reliable because there will be no reliable movements to calculate the bearing.

- **Compass:** Data recorded from the compass will be used in order to determine the orientation of the device.

- **Automatic (recommended)**:

  - **Driving slowly:** Data recorded from the compass will be used.

  - **Driving fast:** Data recorded from the GPS position will be used.

8.12.3.1 Compass calibration

The calibration of the electronic compass is essential in order to display right directions during your navigations: Rotate the device slowly in the 3 axes for a few seconds at the same time until compass is calibrated.
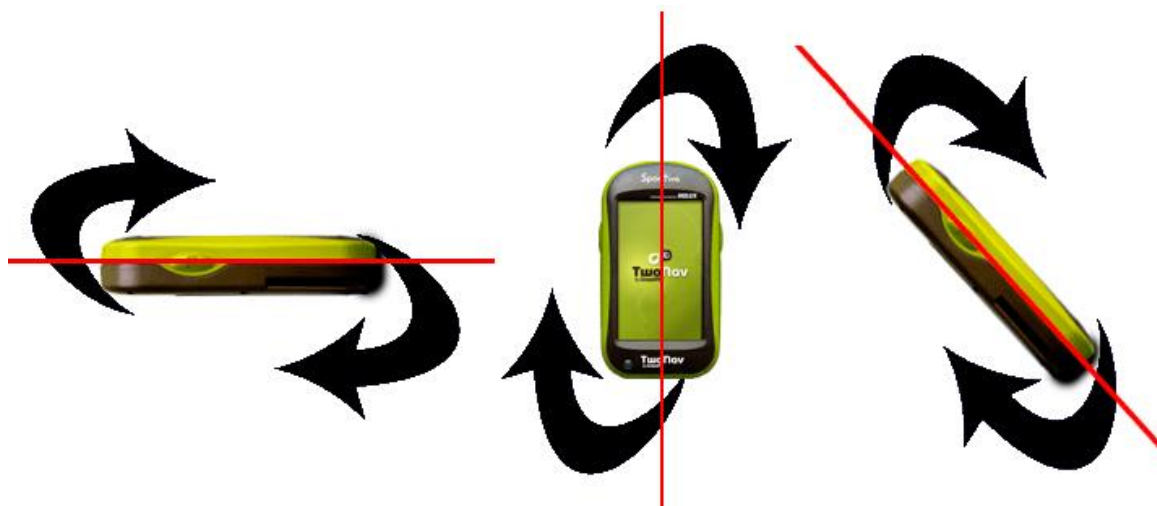
IMPORTANT: The electronic compass is an instrument very sensitive to weather conditions and magnetic fields. Calibration must be carried out in the open air and far from sources of alterations of the magnetic fields, such as cars, buildings or electric lines.

8.12.4 Wheel perimeter

Only ANT+™ devices: Enter here the wheel perimeter of your vehicle, this information will be used to calculate other data.
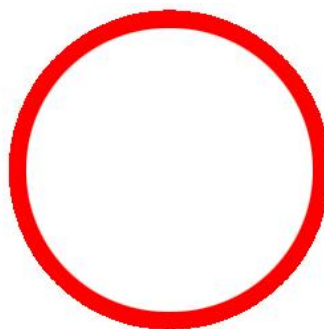
$$P = \pi \cdot 2R$$

$$P = D \cdot \pi$$

$$\pi = 3.1416$$

8.13 Advanced

'Advanced' enables extra functions that are not frequently used and could add unnecessary complexity to the application system:

- **Keyboard:** Set the layout of the application keyboard.

ABCDEF	AZERTY	QWERTY

- **Information in waypoints/tracks list:** Display more information for listed elements. Extra information will be presented in a 2nd line right after the name of the item. Select the data fields that you want to display.

Track.TRK
— 20-11-2007 00:07:35 2.530 km 20 km/h 3 min/km 213 Kcal

Start
 173.5 km 20 km/h 0 km 17:40:06

Arrival
 175.2 km 25 km/h 13.91 km 18:00:16

- **Active waypoints mode:** Set working mode for Active Waypoints Files:

    - **Basic:** Fixed Active Waypoint File + autoload it at start.

    - **Advanced:** First waypoint opened will be the active and it will not be autoloaded at start.

- **Click on Next Event:** Set the default destination when pressing *'Next Event'* function.

- **Reload data when restarting:** TwoNav loads you the same data which was already opened last time application was closed.

- **Activate sensors at start**

- **Pop up for alarms:** Fix the duration of the pop up window alarm.

- **Animated data tree:** When managing elements of any list, TwoNav displays an animation effect to easily see in which elements are you working on.

- **Draw map corners:** TwoNav draws on the map window the frames for all the maps loaded in the application.

- **Lines in Info Next:** Enter how many lines will be displayed in *'Info Next'* function.

Turn RIGHT at the tower, take the main.

Turn RIGHT at the tower, take the main track with white earth, ATTENTION !! don't take any side path.

- **Zoom with double click**

- **Permanent zoom click**

- **Show route overview:** When you are about to navigate a track/route/e-Roadbook, you can display an overview look of the itinerary.
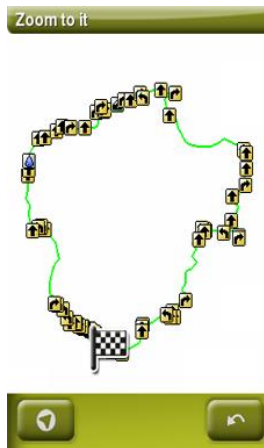
- **Lane information** *(only in 'On-Road' mode)***:** In roads with several lanes, TwoNav will inform you about which is the correct lane to take.
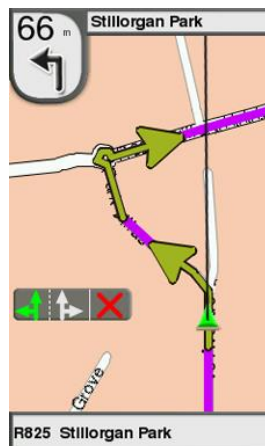
- **Anti-aliasing:** Draw smoother lines in vectorial maps (*.VMAP).
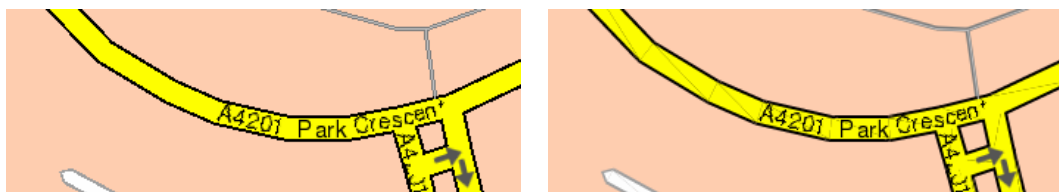
- **Smoother:** TwoNav calculates an interpolation of movement between the positions that the GPS adopts with the aim of showing a gentler movement to allow you a better perception of the speed at which we are driving in relation with the surroundings. By enabling this option, you will be able to calculate the distance and the exact moment to carry out a manoeuvre.

  This function also makes a prediction of GPS position, correcting delay on the signal caused by the system showing current position almost in real time.

- **Seabed areas:** If enabled, only depth contours are displayed.
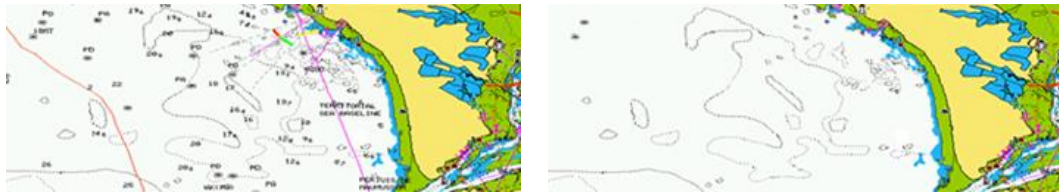
- **Profiles 'On-Road'/'Off-Road' mode:** Since 'On-Road' and 'Off-Road' modes have different needs from each other, TwoNav displays different options for each mode. If disabled, all options (menus and data fields) will be the same for 'On-Road' and 'Off-Road' modes.

- **List menu:** Choose between several modes to display submenus:

  - **List Menu:** Options are displayed on a continuous list.

  - **Button menu:** If there are more options than the screen can display, more pages will be shown.

- **Static navigation:** The chip of the GPS has a minimum speed value to consider movement. Speeds under this value will not be considered movement. This value is set by default, it cannot be modified by you.

- **Minimum accumulated altitude:** Fixes the minimum altitude to be considered increase of altitude. Altitudes under this value will not be considered increase.

Minimum accumulated altitude:	**Current altitude:** **4.7 m**	→	**Increase considered:** **0 m**
5 m	**Current altitude:** **5.2 m**	→	**Increase considered:** **5.2 m**

- **Minimum moving speed:** Set the minimum speed value to consider movement. Speeds under this value will not be considered movement. This value is set by you.

Minimum moving speed:	**Current speed:** **0.5 km/h**	→	**Increase considered:** **0 km/h**
0.8 km/h	**Current speed:** **1.4 km/h**	→	**Increase considered:** **1.4 km/h**

- **Screenshot creates waypoint:** A waypoint with an associated image is created each time a screenshot is made. Picture is saved at *'TwoNavData/Data'*.

waypoint

- **GOTO arrow tangent at:** GOTO arrow displays direction of the following section of the track. Enter here the distance to calculate tangent to provide the direction.

- **Exit waypoint after:** If a track/route contains waypoints, navigation will switch to next waypoint when leaving the current one. Enter here the parameter which determines how far from the waypoint you have to go to exit it.

9 MANAGEMENT FROM A COMPUTER

Land/Air is the perfect software to prepare and analyse all your outdoor activities (Windows/Mac platforms). With Land/Air you will be able to analyse your trips and manage all data recorded by TwoNav comfortably from home.
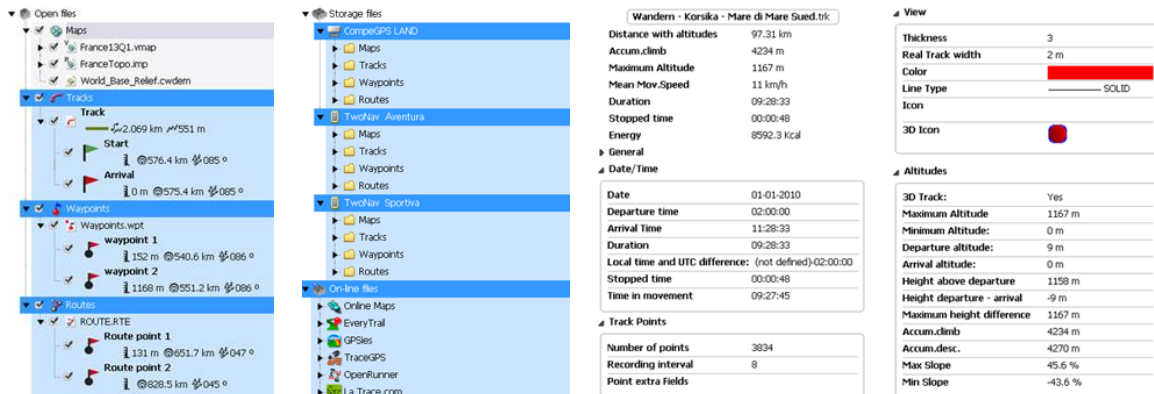
You can get the latest version of Land/Air from http://www.CompeGPS.com (learn more about Land/Air by downloading the full manual).
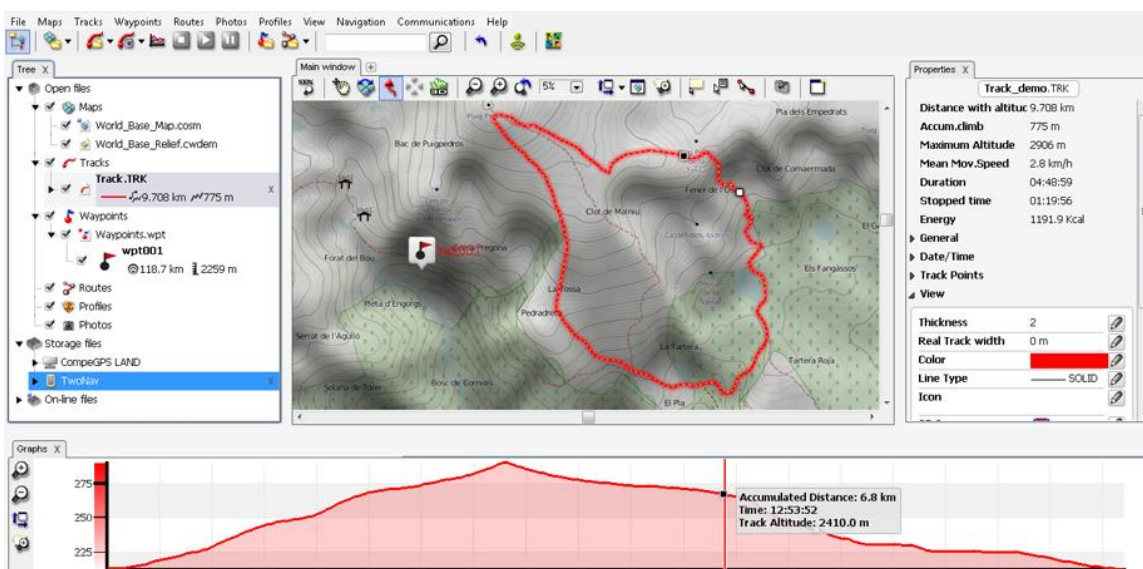
After installing it, all you have to do is connect your TwoNav device to the computer (Windows/Mac). Then Land/Air software will automatically detect the device and display it at *'Storage files'* branch in the data tree.

Under the name of the device you can view its content classified by type of item (tracks/routes/waypoints/maps).

9.1 Open and analyse the data recorded by TwoNav

Land/Air is based on a user-friendly interface, specially desgined to manage the application easily: open a file from a TwoNav device is as easy as do a double click on its name at the tree data.

NOTE: Remember that opened file are still stored in the memory of the device. If you want to save them on your computer, select 'Save'.
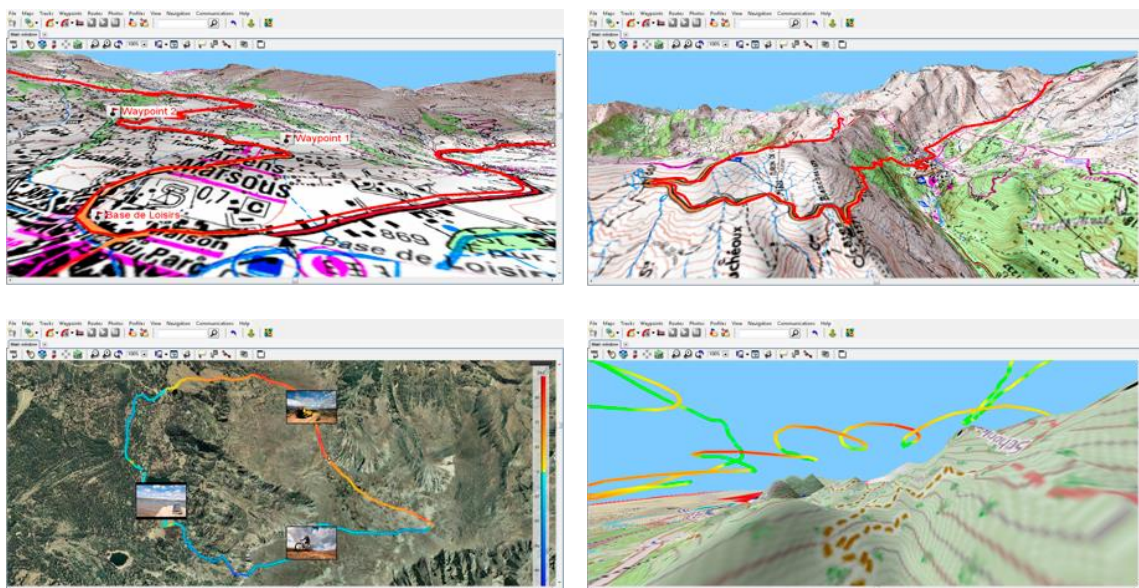
Once opened, the file will appear in the branch *'Open files'* at the data tree. Then, you will be able to start working with it: place it on the map window, analyse its properties, compare its data using graph representations…
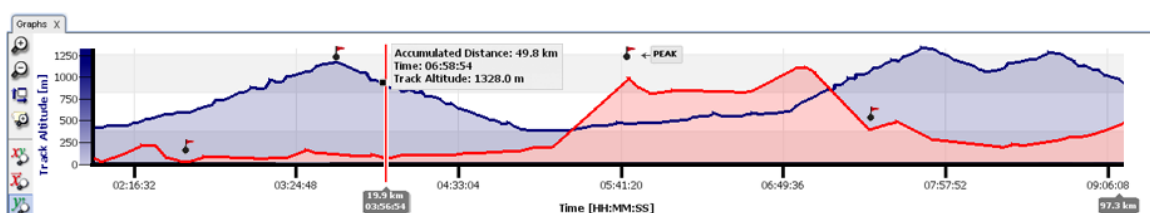
▲ Point no.	● Time	● Coordinates	● Track Altitude [m]	● Accumulated Distance [km]	● Track Speed [km/h]	● Slope [%]
74	02:11:32	41º35'43.6''N 009º14'51.5''E	34	1.921	9.8	0.5
75	02:11:46	41º35'44.4''N 009º14'50.3''E	33	1.959	9.8	0.9
76	02:11:59	41º35'45.4''N 009º14'49.5''E	34	1.995	11	1.8
77	02:12:08	41º35'46.1''N 009º14'48.9''E	34	2.020	10	1.6
78	02:12:20	41º35'46.9''N 009º14'48.0''E	35	2.053	10	1.8
79	02:12:30	41º35'47.6''N 009º14'47.2''E	36	2.081	11	4.5
80	02:12:41	41º35'48.5''N 009º14'46.6''E	38	2.112	10	3.1
81	02:12:56	41º35'49.7''N 009º14'45.9''E	38	2.153	11	3.5

9.2   Activate and transfer files between 'Computer-TwoNav'

If a file is protected it will require a license, so when transferring the file, it will ask for register code to activate the license. If activation is not done, you will not be able to use it in your TwoNav device:

- **Via contextual menu:** Open the contextual menu on any element, either in the data tree or on the map window and select *'Send to'* and choose the final destination of the file.
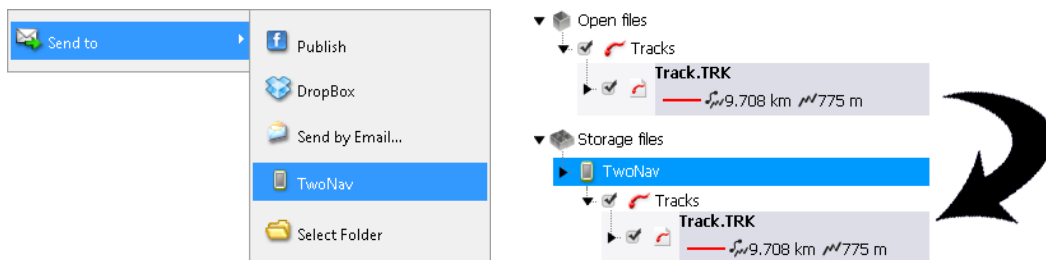
- **From the data tree:** You can move files from the data tree by moving the files from its origin to its final destination. For example, if you want to move any element from the internal memory of your TwoNav device to the your computer:

  1. Drag the file from TwoNav device's folder to the branch *'Open files'*.

  2. Then, the element will be automatically placed in the default folder for that kind of files.

  You can also do the opposite process: drag open files (listed at *'Open files'* branch of data tree) to TwoNav devices listed at *'Storage files'* branch.

NOTE: You can transfer more than one file at a time: hold down 'Control' key while selecting the files.

9.3   Update your device to the latest TwoNav version

Land/Air software can easily update the TwoNav software of your device with just one click:

1. Connect the TwoNav device to the computer.

2. Once your TwoNav device appears listed at the data tree (*'Storage files'*), open its conextual menu and select *'Update TwoNav software'*.
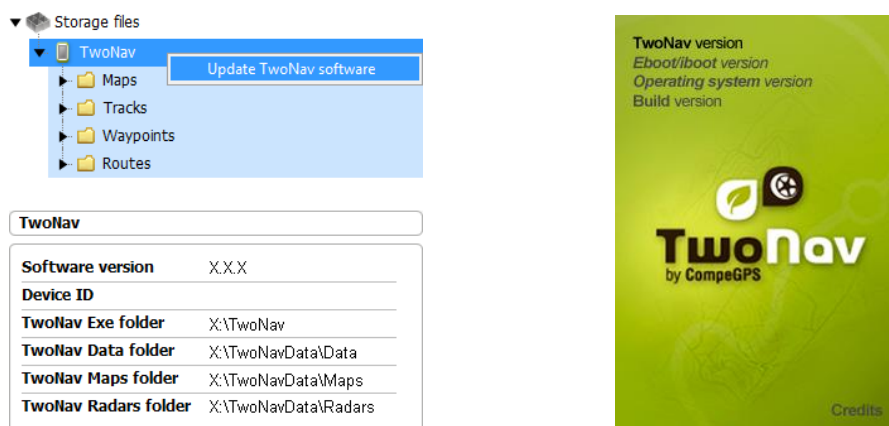
3. Download and installation process will take several minutes.

4. When finished, you can boot the device normally.

10 APPENDIX: DATA FIELDS

Check full list of data fields and their usage. These fields are displayed in the data pages and the data bar, but you can configure which fields to show according to your needs from *'Main menu > Settings > Fields & Buttons > Data fields'*:

- **Accumulated climb:** Total amount climbed from the begining of itinerary up to the current position.

- **Accumulated descent:** Total amount descended from the begining of itinerary up to the current position.

- **Air pressure:** Present atmospheric pressure provided by the barometric altimeter.

- **Altitude at next:** Predicted altitude to next waypoint if current trajectory is maintained.

- **Altitude ground level:** Altitude from the ground level.

- **Altitude:** Altitude from the sea level.

- **Ascent to destination:** Difference between the altitude of destination and current altitude.

- **Ascent to next:** Difference between the altitude of current waypoint and the next waypoint.

- **Barometric altitude:** Altitude provided by the barometric altimeter.

- **Battery:** Remaining energy in your device.

- **Bearing to next:** Course towards to the next waypoint.

- **Bearing:** Current course.

- **Chronometer:** Starts counting when started.

- **City:** Current city.

- **Compass:** Compass representation.

- **Coordinates:** Coordinates of the current position.

- **Croquis:** Image displaying manoeuvres.

- **Current depth:** Current depth value taking as reference the nautical chart.

- **Current pace:** Speed in minute/kilometer.

- **Current power:** Current power at this moment.

- **Depth at next:** Depth value at next waypoint

- **Depth at prow line:** Current depth value at prow line.

- **Deviation from route:** Distance to active route.

- **Differential GPS:** GPS gives differential signal (submetric accuracy).

- **Distance to destination:** Distance to destination (last waypoint of the route).

- **Distance to next radar:** Distance to next radar point.

- **Distance to next:** Distance to the next waypoint.

- **Distance to Virtual Coach:** Distance between your current position and the position of the *'Virtual Coach'*.

- **Estimated hour at destination:** Estimated time of arrival to destination (last waypoint of the route) at present speed.

- **Estimated hour at next:** Estimated time of arrival to the next waypoint (at present speed).

- **Estimated time to destination (cruise):** Estimated time to reach destination (last waypoint of the route) at cruise speed.

- **Estimated time to destination:** Estimated time to reach destination (last waypoint of the route) at current speed.

- **Estimated time to next (cruise):** Estimated time to reach next waypoint at cruise speed.

- **Estimated time to next:** Estimated time to reach next waypoint at current speed.

- **Free memory:** Remaining memory in your device.

- **GOTO arrow:** Arrow that indicates the course towards to the next waypoint.

- **GPS altitude:** Present altitude provided by GPS rerceives via satellites.

- **Graph:** Representation of the track being covered.

- **HDOP:** Horizontal Dilution Of Precision (estimated current accuracy of the GPS).

- **%HRR:** Heart Rate Reserve.

- **Heart rate zone (% Max.):** Predefined heart rate intensity zones.

- **Heart rate zone (% Max-Rest):** Predefined heart rate intensity zones (Cardiac frequency in reserve).

- **L/D instant glide ratio:** Glide ratio dividing horizontal distance by vertical (descending).

- **L/D goal:** Minimum glide ratio required to reach your goal (going through all intermediate waypoints).

- **L/D required:** Minimum glide ratio required to reach next waypoint (distance to waypoint divided by waypoint's altitude over ground level).

- **Land altitude:** Altitude of the land provided by the 3D relief map (*.CDEM).

- **Leg odometer:** Distance covered from the begining of the current leg section up to the current position. Value reseted every time a new leg section is started.

- **Leg chronometer:** Time elapsing the current leg section from the begining of the current leg section up to the current position.

- **Leg mean speed:** Average of all speeds values from the begining of the current leg section up to the current position.

- **Leg mean pace:** Average of all pace values from the begining of the current leg section up to the current position (speed in minute/kilometer).

- **Leg accumulated climb:** Total amount climbed from the begining of the current leg section up to the current position.

- **Leg accumulated descent:** Total amount descended from the begining of the current leg section up to the current position.

- **Magnetic bearing:** Course followed according to the inner device compass.

- **Maximum altitude:** Reached during your itinerary.

- **Maximum power:** Maximum power achieved from the begining of itinerary.

- **Maximum speed:** Maximum speed in current itinerary.

- **Mean moving pace:** Average of all pace values above the minimum speed movement.

- **Mean moving speed:** Average of all speeds values above the minimum speed movement.

- **Mean pace:** Average of all pace values.

- **Mean power:** Average of all power values.

- **Mean speed:** Average of all speeds values.

- **Moving pace:** Average of all pace values avoiding stopped points.

- **Next radar speed:** Displays maximum speed allowed by the next radar.

- **Next slope:** Slope till the distance set at *'Next slope distance'*.

- **Next waypoint name:** Name of the following waypoint.

- **Normal acceleration:** Perpendicular to movement in circular movements.

- **Number of points:** Track points saved up to current position.

- **Partial CO_2 emission:** CO_2 emission from the beginning of itinerary. Value reseted every time TwoNav is turned off.

- **Partial energy:** Partial odometer energy.

- **Partial mean speed:** Average of all speeds values from the beginning of itinerary up to this moment.

- **PDOP:** Position Dilution Of Precision (estimated current position accuracy of the GPS).

- **Place name:** Name of the element of your current position.

- **Precision:** Error margin of the GPS.

- **Radar icon:** Displays an icon when entering the radius of a radar.

- **Radius turn:** Radius of the turn that you are taking at the moment.

- **Route graph:** Representation of the route being covered.

- **Route percentage:** Percentage of the route that has been already done.

- **Signpost:** If available, road indications are displayed.

- **Slope to destination:** Remaining slope till destination is reached.

- **Slope to next kilometer:** Remaining slope from your current position to 1 kilometer.

- **Slope to next waypoint:** Slope from your current position to next waypoint.

- **Slope:** Slope of your current movement.

- **Speed limit:** Speed limit established for the current road.

- **Speed:** Current speed.

- **Stopped time:** Total amount of time without moving.

- **Sunrise:** Sunrise time.

- **Sunset:** Sunset time.

- **Tangential acceleration:** Component of linear acceleration tangent to the path.

- **Temperature:** Current temperature.

- **Time in movement:** Total amount of time moving.

- **Time to Virtual Coach:** Time difference between you and the *'Virtual Coach'*.

- **Time without paquet:** Elapsed time since last time GPS signal was received.

- **Time:** Current time according to the selected time zone.

- **Total CO$_2$ emission:** CO$_2$ emission of all your trips. Value not automatically reseted every time TwoNav is turned off.

- **Total energy:** Total odometer energy.

- **Total odometer:** Accumulated distance of all your trips. Value not automatically reseted every time TwoNav is turned off. (TwoNav can calculate the total distance using different data calculations).

- **Track file name:** Name of the current track.

- **Trip odometer:** Distance covered from the beginning of itinerary. Value reseted every time TwoNav is turned off.

- **Used satellites:** Satellites fixed in current position.

- **VDOP:** Vertical Dilution Of Precision (estimated current vertical accuracy of the GPS).

- **Velocity made good:** Right direction's velocity component to the following waypoint.

- **Vertical speed:** Descending speed (vertical component of speed value).

- **Virtual free memory:** Virtual free memory in your device.

NOTE: Due to platform restrictions, some functions may only be available in certain TwoNav platforms.

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11 APPENDIX: TOOL BAR BUTTONS

Check full list of tool bar buttons and their usage. These buttons are displayed in tool bar, but you can configure which buttons to show according to your needs from *'Main menu > Settings > Fields & Buttons > Tool bar'*:

- **3D mode:** Switch between viewing modes (*'2D > 3D > 3D+'*).

- **Activate GPS:** Start/Stop GPS connection.

- **Alternate maps:** TwoNav superimposes maps, so that you can display two or more maps at the same time at map window.

- **Change leg:** Creates a new leg of the same track starting in the current position.

- **Close edition:** While editing any element, if pressed, the edition will be finished.

- **Close tool mode:** Button to easily close the tool bar mode.

- **FF to next (▸▸|):** Jump to next event of the itinerary.

- **FF (▸▸):** Accelerate the itinerary. Press it again to apply normal speed.

- **Full screen:** Most of user interface elements will be hidden to get a wider view of the map.

- **Less detailed map:** TwoNav will try to load a map of lower resolution than the currently loaded.

- **Man over board:** If some falls into the water, route will be automatically calculated to that point.

- **Mark and edit waypoint:** Create new waypoint in current position and access to its properties, so that you can customize them.

- **Mark e-Roadbook point:** Create new e-Roadbook waypoint in current position with default name and icon.

- **Mark waypoint:** Create new waypoint in current position with default name and icon.

- **More detailed map:** TwoNav will try to load a map of higher resolution than the currently loaded.

- **Mute:** Sound level is totally reduced.

- **Navigate:** Choose the destination that you are about to navigate.

- **New waypoint:** Choose where to create new waypoint and access to its properties, so that you can customize them.

- **Next waypoint:** When navigating, switch to the next waypoint (only visible when navigating a route/track which contains waypoints).

- **Open:** Open any file.

- **Orient map:** Track up/North up.

- **Page:** Access to data pages.

- **Panning/Rotate:** Map movement mode.

- **Pause (‖):** Pause the itinerary. Press it again to resume the simulation.

- **Previous waypoint:** When navigating, switch to the previous waypoint (only visible when navigating a route/track which contains waypoints).

- **RW to previous (◄◄):** Jump to previous event of the itinerary.

- **RW (◄◄):** Accelerate the itinerary in reverse. Press it again to apply normal speed.

- **Screenshot:** A screen picture is automatically taken.

- **Shutdown screen:** When pressed, screen is directly turned off.

- **Start/Stop:** Pause or stop your current navigation.

- **Stop (■):** Stop the itinerary.

- **Synchronize Virtual Coach:** Automatically places the *'Virtual Coach'* at your current position.

- **Take photo:** A photo picture is automatically taken using the camera of the device.

- **Window zoom:** Draw an area on the map to zoom to it.

- **Zoom 100%:** Zoom will be automatically set displaying map at its maximum resolution.

NOTE: Due to platform restrictions, some functions may only be available in certain TwoNav platforms.

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12 APPENDIX: SPECIAL CHARACTERS

You may have to type signs that do not appear in the keyboard system.

In these cases, you will have to check this table of character equivalences, so that you will know which sign to introduce:

- **'A'** → 'À', 'Á', 'Ä', 'Â', 'Å', 'Ã', 'Æ'
- **'C'** → 'Ç'
- **'D'** → 'Đ'
- **'E'** → 'É', 'È', 'Ë', 'Ê'
- **'I'** → 'Í', 'Ì', 'Ï', 'Î'
- **'N'** → 'Ñ'
- **'O'** → 'Ó', 'Ò', 'Ö', 'Ô', 'Ø', 'Õ', 'Œ'
- **'S'** → 'Š', 'ß'
- **'T'** → 'Þ'
- **'U'** → 'Ú', 'Ù', 'Ü', 'Û'
- **'Y'** → 'Ý', 'Ÿ'
- **'Z'** → 'Ž'
- **'-'** → ' ' (space)
- **'_'** → ' ' (space)
- **'\'** → ' ' (space)

For example: If you have to type *'LidlStraße'*, press *'S'* instead of *'ß'*.