<table>
<thead>
<tr>
<th>Chapter</th>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Main screen</td>
<td></td>
</tr>
<tr>
<td>1.1</td>
<td>Your location</td>
<td>3</td>
</tr>
<tr>
<td>1.1.1</td>
<td>Recommended iOS Settings</td>
<td>5</td>
</tr>
<tr>
<td>1.1.2</td>
<td>Current location screen</td>
<td>5</td>
</tr>
<tr>
<td>1.2</td>
<td>Menu</td>
<td>8</td>
</tr>
<tr>
<td>1.3</td>
<td>Dashboard</td>
<td>10</td>
</tr>
<tr>
<td>1.3.1</td>
<td>Position button</td>
<td>10</td>
</tr>
<tr>
<td>1.3.2</td>
<td>Route button</td>
<td>10</td>
</tr>
<tr>
<td>1.3.3</td>
<td>Panels</td>
<td>10</td>
</tr>
<tr>
<td>1.3.4</td>
<td>Hiking panel</td>
<td>11</td>
</tr>
<tr>
<td>1.3.5</td>
<td>Cycling panel</td>
<td>12</td>
</tr>
<tr>
<td>1.3.6</td>
<td>Coordinate panel</td>
<td>12</td>
</tr>
<tr>
<td>1.4</td>
<td>Screen orientation</td>
<td>14</td>
</tr>
<tr>
<td>2</td>
<td>Maps</td>
<td>15</td>
</tr>
<tr>
<td>2.1</td>
<td>Modifying map screen</td>
<td>15</td>
</tr>
<tr>
<td>2.1.1</td>
<td>Scroll</td>
<td>15</td>
</tr>
<tr>
<td>2.1.2</td>
<td>Zoom</td>
<td>15</td>
</tr>
<tr>
<td>2.1.3</td>
<td>Center</td>
<td>15</td>
</tr>
<tr>
<td>2.1.4</td>
<td>Rotate</td>
<td>17</td>
</tr>
<tr>
<td>2.1.5</td>
<td>Long press</td>
<td>19</td>
</tr>
<tr>
<td>2.2</td>
<td>Map legend</td>
<td>19</td>
</tr>
<tr>
<td>2.3</td>
<td>Map copyright</td>
<td>20</td>
</tr>
<tr>
<td>2.4</td>
<td>Making maps offline accessible</td>
<td>20</td>
</tr>
<tr>
<td>2.4.1</td>
<td>Map tiles</td>
<td>21</td>
</tr>
<tr>
<td>2.4.2</td>
<td>Downloading map tiles</td>
<td>22</td>
</tr>
<tr>
<td>2.4.3</td>
<td>Updating map tiles</td>
<td>24</td>
</tr>
<tr>
<td>2.4.4</td>
<td>Storage space</td>
<td>24</td>
</tr>
<tr>
<td>2.4.5</td>
<td>Removing map tiles</td>
<td>24</td>
</tr>
<tr>
<td>2.5</td>
<td>Changing current map</td>
<td>25</td>
</tr>
<tr>
<td>2.5.1</td>
<td>Scrolling out of covered area</td>
<td>27</td>
</tr>
<tr>
<td>2.5.2</td>
<td>Automatic map change</td>
<td>27</td>
</tr>
<tr>
<td>2.6</td>
<td>Purchasing maps</td>
<td>29</td>
</tr>
<tr>
<td>2.6.1</td>
<td>Purchasing full maps</td>
<td>30</td>
</tr>
<tr>
<td>2.6.2</td>
<td>Purchasing parts of maps</td>
<td>32</td>
</tr>
<tr>
<td>2.6.3</td>
<td>Purchasing subscriptions</td>
<td>34</td>
</tr>
<tr>
<td>2.7</td>
<td>Gray map screen</td>
<td>36</td>
</tr>
<tr>
<td>2.7.1</td>
<td>Internet connection issues</td>
<td>37</td>
</tr>
<tr>
<td>2.7.2</td>
<td>Scrolled out of coverage region</td>
<td>37</td>
</tr>
</tbody>
</table>
11 Miscellaneous

11.1 Importing geodata files from iMessage

11.1.1 iOS 14
The manual of the topographic maps navigation app Topo GPS for iPhone, iPad and Apple Watch. The complete manual can also be downloaded in PDF format.

Contents:
If you open the Topo GPS app a screen with a map will be displayed. This is the main screen. An example is shown below:

On the top right of the main screen you can find a handle with which you can open the menu. The bottom bar with the meters is the dashboard.

The red marker with the arrow in indicates your current location on the map.

The label on the upper left side of the map indicates the percentage offline accessible map tiles of the area that is currently displayed. By tapping this label you can download maps for offline use.

On the bottom right corner of the map you can find a scale indicator. In the figure above the black horizontal line indicates a distance of 200 m. Using the scale indicator you can quickly estimate the distance between two points on the map.

On the bottom left corner of the map you will find the copyright information of the current map. If you tap this label the map information screen will open. In the bottom you can select a tab with detailed copyright information. If available also a legend tab is available. For some maps their is also a map error tab, which you can use to report feedback on the map.

## 1.1 Your location

Your location is displayed on the map with the position marker:

If you are standing still, the position marker points in the direction in which you point your device. If you are moving, the position marker points in the direction in which you are moving.

The arrow in the status bar next to the battery icon, indicates that the location services are currently in use. This can cause faster battery consumption than usual. Therefore pay attention to the battery level when using Topo GPS.

The default position marker icon is red, you can change it to another color via Menu > More > Settings > Styles > Position. This might to increase the visibility of the position marker on the map.

To center the map on your location, tap the center button on the left hand side of the dashboard.
Fig. 1: The main screen of Topo GPS. The red marker indicates your current location.
1.1.1 Recommended iOS Settings

To enable location access for Topo GPS, first make sure that iOS Settings > Privacy > Location Services is enabled. Then in the same screen give Topo GPS access to precise location while using the app. Or go to iOS Settings > Topo GPS.

It is also recommended to go to iOS Settings > Privacy > Location Services > Scroll to bottom > System and enable the settings ‘Compass calibration’ and ‘Movement and distance calibration’.

1.1.2 Current location screen

If you tap your position marker on the map, the current location screen will appear. You can also open this screen by pressing long on the position button on the dashboard.

The current location screen shows details of your current location. In the current location screen you can also save your current location into a waypoint and export your current location with the buttons in the bottom toolbar. An example of the current location screen is displayed below:

![Current location screen example](image)

Fig. 3: The current location screen (top part).

In the location information screen you find subsequently the following information:
Fig. 4: The current location screen (bottom part).

- **Map**: A map of the surroundings of your current location. You can also zoom and move this map.

- **Coordinates**: The coordinates of your current location in various formats. You can change the displayed coordinate systems by tapping ‘Edit’ in the top right of the current location screen and then Displayed coordinates types. If you press long on a coordinate you can select it, and then press ‘Share’ to share the coordinates in textual format.

- **Address**: The approximate address of your location. If you move this address will be updated automatically. If you press long on the address you can select and share it. If you press ‘Edit’ you can disabled automatic lookup of addresses in the current location screen.

- **Location accuracy**: The accuracy of the location determination. This accuracy means that your true location has a high probability of being inside a circle with a radius equal to the accuracy. If the GPS signal is good the location accuracy is 5 m or less.

- **Altitude**: The current altitude of the device above the WGS84 geoid with the accuracy.

- **Speed**: The current speed of the device.

- **Course**: The direction which respect to the true north in which the device is moving.

- **Device heading**: The direction with respect to the true north in which the device is pointing.

- **Timestamp**: The exact time at which the displayed location was obtained.
**Changing current location screen**

By tapping ‘Edit’ on the top right of the current location screen you can edit the order of the elements appearing in the current location screen.

By dragging the handles on the right hand side the order of the elements can be modified.

By tapping ‘Displayed coordinate types’ the displayed coordinate types can be set so that only coordinate systems which are of interested to you are displayed.

**Saving current location**

By tapping ‘Save’ in the bottom right of the current location screen you can save your current position as a waypoint. The waypoint will be given a title based on settings which you can change by tapping ‘Edit > Waypoint title’ in the current location screen. The automatic waypoint title can be set to either:

- **Time**: The current time

- **Date and time**: The current date and time

- **Number (next: ..)**: A number. If you press ‘Reset’ it will be reset to 1. This setting is useful if you want to save your location several times and number the waypoints.

If you press ‘Save’ your current position will be saved immediately as a waypoint and added to the map. A pop-up will show that the waypoint was saved successfully as you can see in the figure below:

![Fig. 5: Saving your current location as a waypoint.](image)

1.1. Your location
Creating waypoint on current location

By tapping ‘Create waypoint’ in the bottom toolbar of the current location screen you can create a way-
point at the current location. The difference between tapping ‘Save’ is that it is slower, but now a waypoint
creation screen will pop-up in which you can enter the title, description and change the icon. This is the
same screen which appears when creating a waypoint from the map.

Sharing current location

By pressing ‘Share’ on the bottom left of the current location screen you can share your location. An
export pop-up will appear exactly as what happens when exporting waypoints.

1.2 Menu

The menu of Topo GPS can be used to access the most important functions of Topo GPS. It is shown in
the top of the main map screen.

You can open the menu by pressing the handle with the three dots on the top left of the main screen. Or
you can drag this handle to the left.

The menu then appears as in the screen below.

![Fig. 6: The opened menu.](image)

As you can see in the figure above, the menu contains the following items:

- Maps - If you tap this item, the maps screen will be opened. In this screen you can change the
current map and buy additional maps.
• **Layers** - If you tap this item, the layers screen will be opened. In this screen you can add layers to the map like for example the long distance bicycle route layer.

• **Waypoints** - If you tap this item, the waypoints screen will be opened. Here you can manage everything with waypoints like loading them on the map.

• **Search** - If you tap this item you can *search addresses and places* and *enter and scan* coordinates.

• **Routes** - If you tap this item, *the routes screen* will be opened. In this screen you can manage everything with routes like loading, recording, planning, generating and importing routes. While routes are very important in Topo GPS you can also access the routes screen from the dashboard by tapping *the route button* on the bottom right of the screen.

• **Camera** - If you tap this button, the camera will be opened. If you take a photo a waypoint will be created at your current location and the photo will be added to this waypoint.

• **More** - If you tap this item the more screen will be opened. With the tabbar in the bottom you can access the various screens, like changing the *settings*, view the *legend*, and look up information about Topo GPS.

To close the menu you have to move the handle with the three dots to the right. If the menu is closed the main screen looks as follows:

![Map of a location showing a closed menu](image)

**Fig. 7: The closed menu.**
1.3 Dashboard

The bottom bar in the main screen is the dashboard:

![Dashboard](image)

Fig. 8: The dashboard on the bottom of the main screen.

The dashboard consists out of three items: the position button, a panel with counters and the route button. These items are discussed in more detail below.

1.3.1 Position button

By tapping the position button on the left hand side of the dashboard you can center and rotate the map. If you press long on the position button, the current location screen will appear. In this screen you can find the coordinates of your current location among other things.

1.3.2 Route button

By tapping the route button on the right hand side of the dashboard (arrowed icon) the routes screen will appear. In this screen you can do everything with routes, like loading, planning, generating, routes and importing routes.

1.3.3 Panels

In the center of the dashboard you can find a panel with counters. There are three panels

- The hiking panel.
- The cycling panel.
- The coordinate panel.

The circles below the panel indicate the selected panel. By swiping a panel with one finger to the left or the right you can load the next or previous panel.

The units of the meters on the dashboard can be changed via Menu > More > Settings > Units. You can choose between metric, imperial, and nautical units.
1.3.4 Hiking panel

The hiking panel is ideal for walking and is shown below:

![The dashboard with the hiking panel.](image)

The four counters on the hiking panel are subsequently the speedo/alti/direction meter, the route distance meter, the record timer and the record distance meter.

**Speedometer, altimeter and direction meter**

The speedometer (km/h symbol top left) indicates the your current speed.

If tap the speedometer the average speed while recording a route will be shown. This is indicated by the symbol ‘avg’ direct above the ‘km/h’ symbol.

If tap press the speedometer once more, your maximum speed while recording a route will be shown. This is indicated by the symbol ‘max’ just above the ‘km/h’ symbol.

If you finish recording a route and start a new recording, the average and maximum speeds will be reset.

If you press the speedometer once more it turns into an altimeter. Your altitude in meters above sea level will be shown. This is indicated by the symbol ‘alt’.

If you tap the altimeter, the direction meter with the symbol ‘dir’ will be shown. This indicates the current direction with respect to the true north.

If you tap the direction meter, it will turn in the speedometer.

**Route distance meter**

The route distance meter (-.- km top right) indicates the length of all routes that are loaded on the map, including planned routes. If a route is loaded the symbol ‘rte’ appears just above the ‘km/h’ to indicate that this is the distance of a loaded route.

If routes are loaded and you tap the route distance meter, the map will be centered on the loaded routes.

If you are on a route, the route distance meter will automatically change to distance to go (dtg). If the ‘dtg’ symbol is shown the meter indicates the distance to the end of the current route. If you tap the meter in that case, the map will be centered on the route you are currently following.
Record timer

The record timer (–:– h:m bottom left) indicates the time you are recording a route.

If you tap the record timer you can start, pause and stop a route recording. If you are recording a route the symbol ‘rec’ appears just above the ‘h:m’ to indicate a recording is active.

Record distance meter

The record distance meter (-.- km bottom right) indicates the length of a route that is being recorded. By starting a recording you can see with the record distance meter how far you have been traveling. Above the ‘km’ symbol appears the symbol ‘rec’ to indicate that this is the recorded distance.

If you tap the record distance meter while recording a route, the recorded route will be centered on the map.

1.3.5 Cycling panel

In the cycling panel your speed is somewhat more emphasized and your altitude can be seen directly. The cycling panel looks as follows:

![Cycling panel](image)

Fig. 10: The dashboard with the cycling panel.

In the center you will find the speedometer that functions in the same way as in the hiking panel. Tapping this meter will also change it.

On the top left you will find the altimeter, that indicates your altitude above sea level in meters. This is indicated by the symbol ‘alt’. Tapping this meter can also change it, exactly like the speedometer.

In the bottom left the record timer is located.

The route distance meter is located in the top right.

The record distance meter can be found in the bottom right.

1.3.6 Coordinate panel

With the coordinate panel you can straightforwardly read off coordinates from the map. To open the coordinate panel, slide the panels in the dashboard to the left. An example of the coordinate panel is displayed below:

If the coordinate panel is loaded, a cross appears in the middle of the map, as is illustrated below:

The coordinate that is displayed on the coordinate panel is the coordinate of the point in the middle of the cross.
Fig. 11: *The dashboard with the coordinate panel.*

Fig. 12: *The map with the coordinate panel.*
By moving the map you can position the middle of the cross to the point of which you want to determine the coordinate. To quickly determine the coordinates of your current position, you can center the map by pressing the position button on the left hand side of the dashboard.

If you tap the coordinate on the coordinate panel, the coordinate will be shown in a different format.

The possible coordinate formats can be set via Menu > More > Settings > Coordinates > Displayed coordinate types.

1.4 Screen orientation

By rotating your device you can change the screen orientation from portrait to landscape. An example of landscape mode is displayed below:

![Main screen in landscape mode.](image)

If you do not want the screen to rotate if you rotate your device, you can lock the screen orientation in the settings (Menu > More > Settings > Display orientation > Lock).
The main screen of Topo GPS shows the main map. In this section it is explained how you can interact with this map, how you can view the map legend, how you can download maps for offline use and how you can change the current map.

2.1 Modifying map screen

You can modify the map in the main screen by scrolling, zooming, centering and rotating the map.

2.1.1 Scroll

To scroll the map you have to hold a finger on the map. When you move your finger, the map will be moved as well. You can also move the map by making a quick swipe with your finger on the map.

2.1.2 Zoom

You can zoom the map in or out in two ways:

- **Zooming in:** Tap one finger on the bottom of the map. Or hold two fingers on the map and bring them together.
- **Zooming out:** Tap one finger on the top of the map. Or hold two fingers on the map and move them away from each other.

If you do not like zooming in with one tap on the bottom of the map and zooming out with one tap at the top, you can swap this in the via *Menu > More > Settings > Single tap zoom*. You can also change there bottom/top into left/right.

2.1.3 Center

By tapping the position marker icon on the bottom left of the main screen, the map will be centered on your current location. An example is shown in the figure below.

If you are moving, the map will stay centered automatically. The map will move automatically with your movement.

The map stays auto centered as long as you do not move the map manually. To zoom in or out while keeping the map centered, tap on the bottom or top of the map. Zooming with two fingers will cancel the automatic centering.
Fig. 1: A centered map.
Centering the map on your location only works if you have given Topo GPS access to your location. You can do this in the settings app. Go to Settings > Privacy > Location services > Topo GPS.

If you have centered the map on your location, the position marker icon on the dashboard will be changed to a rotation icon.

### 2.1.4 Rotate

You can rotate the map in two ways, *automatically* and *manually*.

#### Automatic rotation

By tapping once on the position marker icon on the bottom left of the screen, the icon turns into a rotation icon as you can see in the figure below. If you tap this rotation icon, the map will be automatically rotated in your direction.

The map is rotated such that the top of the map indicates the direction in which you point your device if you are standing still. If you are moving the top of the map will indicate the direction in which you move. An example is shown in the figure below:

Rotating the map can be useful when you are following a route. Left and right on the map are than also left and right in reality. In addition the position maker will stay centered on the map.

If the map is rotated, an north arrow will appear on the top left of the screen. This arrow indicates the direction of the true north on the map. If you press this arrow the rotation will be cancelled.

You can cancel rotation by pressing the position marker button on the dashboard.

If you move the map or zoom with two fingers automatic rotation will be switched off. The current rotation angle will then not longer changed and the map will not longer be centered at your current location. To zoom the map in or out while keeping the automatic rotation active, tap on the bottom or top of the map screen.

#### Manual rotation

If you put two fingers on the screen and make a rotation gesture by moving on of the fingers, the map will be rotated around the point that lies in between the two fingers. An example of a rotated map is displayed in figure above. You can rotate the map in every desired direction.

If the map is rotated, an north arrow will appear on the top left of the screen. This arrow indicates the direction of the true north on the map. If you press this arrow the rotation will be cancelled.

If you zoom the map or move the map the map stays rotated.

Manual rotation can be cancelled by pressing the north arrow. It is also possible to undo the rotation by manually rotating back to the normal situation.
Fig. 2: A rotated map.
2.1.5 Long press

If you press long on the map an icon will appear which you can drag to a certain location. If you release it, you can *create a waypoint* on that location. If you accidentally pressed long on the map, drag the icon to the top or the bottom of the main screen. The icon will disappear and the waypoint creation screen will not be shown.

2.2 Map legend

A legend gives an explanation for the symbols on the map.

To view the legend, you have to tap the map copyright button. The map copyright button is the button on which it says: ‘Map: …’ in the bottom left of the map. Next you have to select the tab ‘Legend’ in the bottom of the screen that appears. You can also view the Legend via *Menu > More* by selecting the tab ‘Legend’ in the bottom.

If you open the legend of the topographic map of Great Britain you will see the following screen:

![Legend Screen](image)

Fig. 3: *The legend screen of the topographic map of Great Britain.*

You can scroll down in the legend to view more symbols. Most legends are translated to the language the Topo GPS app is using.
2.3 Map copyright

To view the copyright information of a map, you have to press the map copyright button on the bottom left of the map screen. This is that button on which it says: ‘Map: ….’. Next you have to select the tab ‘Copyright’ in the bottom.

The map copyright screen of the topographic map of Great Britain is displayed in the figure below:

![Map Copyright Screen]

Fig. 4: The map copyright screen of the topographic map of Great Britain.

In the map copyright screen you find details of the publisher of the maps, the source, and the license. Maps which use an Open Data License (like Creative Commons) can be shared. Please always make sure that the copyright remains visible when sharing a map.

2.4 Making maps offline accessible

To ensure that the maps are accessible when your are not connected to internet (offline) you can make maps offline accessible. Offline accessible means that the maps are stored on your device and that you can view them without a internet connection.
2.4.1 Map tiles

The maps in Topo GPS are composed out of map tiles. A small number of map tiles is required to fill the map screen. If one or more of these required tiles are not stored on your device, they will be downloaded automatically. This only succeeds if you are connected to the internet.

If you are connected via a cellular network, downloading of map tiles can only occur if you have enabled cellular access for Topo GPS in the iOS Settings > Topo GPS. In Topo GPS you have to enable Menu > More > Settings > Map tiles downloading > Cellular network.

On the top left of the main screen the percentage offline accessible map tiles of the currently visible area is shown. This percentage is the number of offline accessible tiles at all zoom levels relative to the total number of all possible tiles at all zoom levels. An example is shown in the figure below:

![Map Screen Example](image)

Fig. 5: On the top left of the main screen you can view the percentage of the currently visible area that is offline accessible: 22%

In the figure above the percentage of offline accessible map tiles is 22%. By looking at the map screen you might think that all map tiles are already accessible, since the whole map screen is covered with tiles. However, if you zoom in, map tiles with a higher resolution will be loaded. If the percentage is not 100% it can happen that when you zoom in grey tiles or unsharp tiles are shown instead of the higher resolution map tiles.
2.4.2 Downloading map tiles

If you tap the label ‘Offline accessible:’ on the top left of the map screen the map download screen will appear. In this screen you can download map tiles of the area that is currently visible in the map screen.

An example of the map download screen is displayed below:

Fig. 6: The map download screen with which you can download map tiles.

To download all map tiles of the current area, you have to press ‘Download’. The amount of MB indicates an estimate of the size of the download in megabytes.

If downloading of map tiles has been started, the download button shows how many tiles still need to be downloaded, as you can see below:

While downloading map tiles, the percentage offline accessible will increase to 100%. You can cancel the downloading of map tiles at any time by pressing ‘Stop download’.

If you wait the percentage off-line accessible will become 100% automatically, as in the figure below:

If you return to the map screen and do not move or zoom out on the map, you will see that the percentage offline accessible is 100%. In that case you are certain that you have all map tiles off the area stored on your device.

We recommend you to download only areas you really will need, instead of very large regions. This will save you storage space and download time. If you really need to download a very large area it sometimes helps to split it the download into smaller regions.

In the bottom of the ‘Current area’ section in the map download screen is the button ‘Use cellular network’. If you have enabled this switch, you can use the cellular network for downloading map tiles. You also need to give permission to use the cellular network in the iOS Settings > Topo GPS. If these settings are enabled, and you are viewing a part of the map on which map tiles are not stored offline, they will be downloaded automatically over the cellular network. If you have disabled the ‘Use cellular network’
2.4. Making maps offline accessible

Fig. 7: *Downloading map tiles.*

Fig. 8: *The current area has been made completely offline accessible.*
setting, the cellular network will never be used to download map tiles. This can save you data transfer costs. It might happen however that grey tiles are shown in the map if you had not made all tiles of the area offline accessible.

Instead of downloading the map tiles of a specific region, it is also possible to only download the map tiles over which a route is going. For that open the route details screen of a route, scroll down to the section ‘Tiles on current map’ and tap ‘Download’.

2.4.3 Updating map tiles

Sometimes the updated map tiles are available for download. If updated map tiles are available and you view them in the map screen, they will be downloaded and updated automatically.

You can update all map tiles of a certain area in the map download screen. For this you have to press ‘Update (.. MB)’ in the map download screen. When the percentage updated map tiles equals the percentage offline accessible map tiles, you have updated all offline accessible map tiles. This is the case in the figure above, therefore the ‘Update’ button has changed to ‘Updated completely’.

2.4.4 Storage space

Storing of map tiles on your device costs disk space. In the map download screen you can see how much space has been used.

‘Current map’ means the total storage of the complete current map. So in the case of the figure above it means that the complete map of Great Britain uses currently 65 MB of the storage space.

‘All maps’ means the total storage of all maps together. So suppose you have also stored map tiles of New Zealand and France, ‘All maps’ indicates the total size used by France, New Zealand and Great Britain. In the figure above this is 174 MB.

‘Free on device’ means the amount of available storage space on your device. In the figure above this is 1450 GB (This is not a real iPhone, but an iPhone run on a simulator on MacOS).

2.4.5 Removing map tiles

If you need storage space, you can remove map tiles in the bottom of the map download screen.

Suppose you return from a nice vacation on the Shetland Islands. You have no plans to return in the near future, and do not need the maps anymore. Then you move the map such that only the Shetland Islands are visible. Next you press the ‘Offline accessible’ button on the top left of the screen to open the map download screen.’

If you scroll to the bottom of the map download screen you will find a ‘Remove’ button as you can see below:

By pressing the ‘Remove’ button you delete all map tiles of the currently visible area in the map screen. In the example above these are all map tiles of the Shetland Islands.
2.5 Changing current map

In the maps screen (Menu > Maps) you can change the current map and purchase additional maps. Suppose we the main map is currently the topographic map of Great Britain, as in the example below. We now want to change it to the OpenStreetMap map. For that we open the maps screen (Menu > Maps). An example of the map screen is shown below:

The maps screen consists of two sections, the purchases and the store. All purchased maps are accessible. If you tap on an map item in the purchases section the map will be opened immediately and you will return to the main screen.

In the example above, the OpenStreetMap map was purchased. If we tap the OpenStreetMap item, the main map will be changed to OpenStreetMap and we will return to the main screen automatically as in the example below.

If the newly chosen map has coverage in the previously shown area, the newly opened map is zoomed to the previously shown area. Otherwise, the newly opened map is zoomed to the area it covers.
Fig. 10: *The main screen with the topographic map of Great Britain.*

Fig. 11: *The maps screen in which you can change the map and purchase additional maps.*
2.5.1 Scrolling out of covered area

If you scroll out of the covered area of the map, a pop-up will appear in the top of the main screen which suggests you to change the map to a suitable map for that area. In the figure below you can see an example of that pop-up:

In the example above the user has scrolled to the northern border of the topographic map of Switzerland. In the top of the screen the background is gray, because that part is not covered by the map. The pop-up suggests an alternative map, in this case the topographic map of Germany or OpenStreetMap. If you tap one of these maps and you have purchased it, the tapped map will be opened and zoomed to the current visible area. If you have not purchased the tapped map, the purchase window will be shown. In the example below, the map has been changed to the topographic map of Germany.

2.5.2 Automatic map change

If you load a route or waypoints on the map, or tap the center button on the dashboard, the app will check if the items are located on the current map. If not, the map will change automatically to the best suitable map. If the suitable map is not accessible, a screen will appear in which you are presented the suggested map. In this screen you could also *buy the suggested map*.
Fig. 13: A pop-up suggests to change the current map.

Fig. 14: The current map was changed to Germany after tapping on the suggested map.
2.6 Purchasing maps

In the maps screen (Menu > Maps) you can buy additional maps. An example of the maps screen is shown below:

![The maps screen](image)

The maps screen has a section ‘Store’. The maps displayed in this section can be purchased. Tap on an item in the ‘Store’ section to see the details of the map.

There are three kinds of map purchases in Topo GPS.

- **Full maps:** These maps are a one-time only purchase. You get full access to the entire map including future updates.

- **Partial maps:** In these maps you can select parts of the map and buy the parts you need. This is possible with the topographic maps of Great Britain, France and Belgium.

- **Subscriptions:** In these maps you can purchase a 1 year automatically renewing subscription to get access to the entire map. This is possible with the topographic maps of Great Britain, France, and Belgium.

The differences between the map purchases are due to licensing and royalty constraints. Some maps are provided as open data to us, in that case we do not have to pay royalties to the mapping agency. For other maps we however have to pay licensing fees to the mapping agency depending on the amount of maps sold. Therefore these maps are more expensive.

The sales of the maps and layers is our only source of income. It is not possible to create an account in Topo GPS. We do not know your identity. We do not collect any of your data. We do not sell any of your data. We do not show advertisements. With the money we earn by selling maps and layers we fund the development and maintenance of Topo GPS, we pay for the server infrastructure and data transfer, and we pay the delivery fees and royalties of certain maps.
It is not possible to share your purchases with Android. This is because we need money to fund the development and maintenance of the Android app as well. Also we do not want to spend our time creating a complicated purchases transfer system. Rather we want to develop new useful features for our users.

2.6.1 Purchasing full maps

To purchase a full map, for example Switzerland, go to Menu > Maps > Store and tap ‘Switzerland’. The information screen of map of Switzerland will be opened:

![Map information screen Switzerland](image)

In the information screen of the map of Switzerland, you see a preview map on the top. You can scroll and zoom this map to see if this map suits your needs. You can get a small tour through the map by tapping the ‘Tour’ button in the bottom toolbar. Below the map, you find information about the purchase. If you tap the purchase button with the price a purchase will be initiated. You will be asked by the AppStore to confirm the purchase, and once confirmed you will be return to the main screen and the newly purchased map will be opened:

You can zoom in on the purchased map to see it in more detail as in the figure below:

If you go back to the maps screen (Menu > Maps) you will see that the map of Switzerland has now moved to the section ‘Purchases’.

The purchased maps are available on all devices that use the same Apple ID on which the purchase was made. If you have enabled family sharing, the purchased maps are also available to your family members. Sometimes you need to tap ‘Restore previous purchases’ in the bottom of the map screen (Menu > Maps) to make these purchases available.
Fig. 17: The map of Switzerland has just been purchased.

Fig. 18: The purchased map of Switzerland in more detail.
2.6.2 Purchasing parts of maps

Maps of Great Britain, France and Belgium can be bought by part. To purchase part of the map first go to Menu > Maps > Store and tap on the desired map. If no purchases have been made yet, the map information screen will be opened, as in the example below:

Fig. 19: Map information screen Great Britain

Tap the ‘Select part of map’ button to return to the main screen. Then zoom in to the desired area. As you can see in the example below the map is divided in squares with a price:

The prices are only shown on parts which have not been bought. To buy a part of the map, you can simply tap it to select it. In the bottom bar the price will be shown as you can see in the figure below:

In the example a square of 8 x 8 km is selected. If you need more squares, you can select more, and the price in the bottom bar will increase accordingly. If you zoom in, the squares will become smaller, so that you can select a region more accurately. If you zoom out, the squares will become larger, so that you can select a larger region faster. If you buy a larger region at once, most often a discount is applied.

If you tap the info button (i) in the bottom purchase bar the map information screen will be opened and you can lookup the conditions of the purchase.

If you want to change the selected squares, you can simply tap a selected tile to deselect it. You can also tap the cross in the bottom purchase bar to deselect all tiles at once.

If you want to buy the squares over which a route is going, load the route on the map, and tap the route to open the route details screen. Then scroll down in the route details to the section ‘To be purchased map tiles’. Tap ‘Put into shopping cart’. Then you will return to the main map and the squares of the route will be selected.

If you tap the purchase button in the example above, an AppStore pop-up will ask you to confirm the purchase:
Fig. 20: Prices are shown on squares which have not been bought.

Fig. 21: A square has been selected for purchase.
If you tap ‘Confirm’ in the AppStore pop-up the selected area will be purchased. The area will be accessible immediately as you can see in the example below:

After purchasing an area, all map tiles of the purchased area will be downloaded automatically, so that they are offline accessible. Tiles of areas that are not purchased, cannot be made offline accessible. Therefore you can only get Offline accessible to 100% if you zoom in to an area that is fully bought.

The purchases of parts of maps are synchronized with other devices via iCloud. You need to enable the iOS settings Account > iCloud > iCloud Drive > Topo GPS on your devices to see the purchases on your other devices.

### 2.6.3 Purchasing subscriptions

In addition to buying parts of the map, it is also possible to purchase a 1 year subscription to the maps of Great Britain, France, and Belgium. If you need large areas of the map it might be cheaper to purchase a subscription then to buy parts of the map.

To purchase a subscription, first open the maps screen via Menu > Maps. Then tap the info button (i) next to a map. Scroll down to the subscription section. In the example of Great Britain the subscription section looks like:

In the subscription section, you can read the conditions of the subscription. If you press the buy button you are asked to confirm the purchase. Once confirmed, you will return to the main screen and the whole map is accessible.

Subscriptions are accessible on all devices that use the same Apple ID. Subscriptions cannot be shared via family sharing. To enable a subscription on another device, you might need to tap Menu > Maps > Restore previous purchases.
Fig. 23: *The selected area has been purchased.*

Fig. 24: *Subscription information topographic map Great Britain*
Cancel subscriptions

To cancel a subscription, go to Menu > Maps. Then tap the info button (i) next to a map on which you are subscribed. Scroll down to the subscription section. Then tap ‘Cancel subscription’. You will be brought to an AppStore page on which you can manage your subscription, and also cancel them. If you cancel a subscription, the map will remain accessible until the end of the current subscription period.

Mobile device management

Organizations sometimes use devices that are centrally managed through Mobile device management (MDM) software. We can provide these managed devices with the desired maps. This functions via a managed app configuration file. The administrator only has to enter the organization name and a licensing key which we will provide. The purchased maps and layers will then be available to all managed devices.

For details and pricing, please contact support@topo-gps.com.

2.7 Gray map screen

The map consist out of of map tiles. Sometimes it might happen that not all tiles are available. Then the map screen will be partly or completely gray as in the example below.

![Gray map screen](image)

Fig. 25: The map screen is gray, no map is shown.

The reason of a gray map could be problems with the internet connection, or that you have scrolled out of the coverage region.
2.7.1 Internet connection issues

If you are not scrolled out of the region the map covers, the gray screen is caused by internet connection issues. Normally the map tiles should be downloaded automatically. Sometimes, this will not happen, for example if you have only a cellular connection and you have disabled cellular downloading of map tiles.

To see why the maps are not being downloaded, tap the offline accessible button on the top left of the screen to open the map download screen:

![Map download screen](image)

In the map download screen you could tap ‘Download’ and see what happens. Also you could enable ‘Use cellular network’ to allow cellular downloads of map tiles. You also might want to enable cellular access for Topo GPS in the iOS Settings. You can read more about the map download screen in the section Making maps offline accessible.

2.7.2 Scrolled out of coverage region

If you are scrolled out of the region the map covers, most often a pop-up will appear in the top of the map which suggests you to change the map. You might also tap the center button on the dashboard to return the map to your location. Or zoom out to find back the coverage region. Alternatively, you could change the map via Menu > Maps.

2.7. Gray map screen
A waypoint is a location that can be added to the map. The icon and the title of the waypoint are shown on the map. Possible additional information such as photos and a description can be displayed by tapping the waypoint. Waypoints can be loaded on the map and can be imported in and exported to various formats.

Waypoints can be controlled using the waypoints screen which can be loaded by tapping Menu > Waypoints.

3.1 Loading waypoints

To load waypoints that are saved on your device on the map, you first have to open the waypoints screen. You can open the waypoints screen by pressing ‘Waypoints’ in the menu. An example of the waypoints screen is displayed below:

![Waypoints screen](image)

Fig. 1: The waypoints screen (Menu > Waypoints).

The waypoints screen shows the list of waypoints that are stored locally on your device. On the left hand
side the icon of the waypoint is depicted, in this case a red circle. Next to that you see the title. Below the title you find information about the location and creation date. If you press an item in the list, the corresponding waypoint will be loaded on the map and you will return to the map screen.

As an example we now will load the waypoint ‘Stonehenge’. After pressing the ‘Stonehenge’ item in the waypoint list, you will return to the map and the situation will then be as follows:

![Waypoint loaded on map](image)

**Fig. 2:** *The waypoint ‘Stonehenge’ has been loaded on the map.*

In the figure you can see that a waypoint is shown on the map with a red circle icon and a title. If you tap the icon of a waypoints you can view the [waypoint details screen](#).

Waypoints that are loaded on the map acquire a grey background color in the waypoint screen. An example is shown below:

![Waypoint details screen](image)

It is also possible to load multiple waypoints on the map at once. This is explained in detail in the section *[Selecting waypoints](#)*. Summarized: press ‘More (circle with three dots) > Select’ on the top right of the waypoints screen to enter the selection mode. Next select the desired waypoints by tapping them. Then press the ‘Map’ button on the bottom of the screen to load the selected waypoints onto the map.

In the next section we will explain how to remove waypoints from the map.
3.2 Removing waypoints from the map

Via the waypoints screen (Menu > Waypoints) you can remove waypoints from the map. An example of the waypoints screen is displayed in the figure below:

The grey background color of the waypoint ‘Stonehenge’ indicates that it is currently loaded on the map.

If you tap a waypoint item that has a grey background color it will be immediately removed from the map. The grey background color will disappear.

You can also remove all loaded waypoints from the map at once. For this press ‘More’ (the top right circle with three dots) to open the ‘More’ menu in the waypoints screen. Then press ‘Remove all from map’ in the bottom of the menu.

It is also possible to remove a waypoint from the map via the waypoint details screen. Tap the waypoint icon of a waypoint that is loaded on the map to open the details screen. Or tap the info button (i) of a waypoint in the waypoints screen to open the details screen. In the waypoint detail screen tap ‘Remove from map’ on the top right.
Fig. 4: The grey background color indicates that the waypoint 'Stonehenge' is loaded on the map.

Fig. 5: The more menu in the waypoints screen with the 'Remove all from map' option.
3.3 Creating waypoints

There are several ways of creating waypoints in Topo GPS.

- Pressing long on the map and dragging the icon to the desired location.
- Entering an address in the address search tab via Menu > Search.
- Entering a coordinate in the coordinate tab via Menu > Search.
- Scanning a coordinate with the coordinate scanner via Menu > Search.
- Importing a geodata file which contains waypoints via Menu > Waypoints > More > Import file.
- Saving the current location as a waypoint by pressing the position marker and then ‘Save’ or ‘Create waypoint’.
- Taking a photo via Menu > Camera.
- Adding waypoints via the waypoints screen > More > +.

In this section we will explain how to create a waypoint directly on the map.

3.3.1 Creating waypoints on the map

If you press with one finger long on the map an icon will appear. An example is shown in the figure below:

![Waypoint Icon](image.png)

Fig. 6: *By pressing long on the map an icon will appear.*

As long as you hold your finger on the map you can drag the icon to the desired location. If you release your finger the waypoint creation screen will appear. In the waypoint creation screen you can set the properties of the waypoint.
In the waypoint creation screen you can optionally give the waypoint a title, set the icon and enter a description.

If you are connected to the internet and you have enabled ‘Addresses - Find automatically’ in the settings, an automatic suggestion for the waypoint title will appear. This title has a light grey color and will be used if no title has been entered. In the example of Fig. 2 the suggestion is ‘Southwood Farm Lane’. If you wish to have a waypoint without a title please enter a single space in the title field.

As an example we enter ‘Goal A’ as a title. If you press ‘Save’ the waypoint will be saved on your device and loaded on the map with the title as is illustrated in the figure below.

The waypoint that is created from the map is saved on your device and hence will appear in the waypoints screen.

If you accidentally pressed long on the main map so that an icon appeared, you can drag the icon to the top or bottom of map screen. It will then be removed and the waypoint creation screen will not pop up. Also if you press ‘Cancel’ in the waypoint creation screen, the waypoint will not be created.

If you have entered a description in the waypoint creation screen, you can view it in the waypoint details screen. The waypoint details screen will be opened by tapping on a waypoint that is loaded on the map.

Fig. 7: Waypoint creation screen in which you can set the properties and save the waypoint.
Setting the icon of a created waypoint

In the waypoint creation screen you can set the icon of the to be created waypoint. In the example above the icon is set to the default icon, which is in this case a red circle. If you press the icon item below the title field, the waypoint icons screen will be opened as is shown in the figure below:

The currently active icon type has a grey background color. Currently the waypoint icons screen shows only the default icon. To create a new icon, press the + button on the top right. A new screen opens in which you can create an icon.

In the new icon screen you can adjust the properties of the icon. For example we can create a orange rotated rectangle icon with a G inscription like in the example below:

If you press ‘Save’ the new waypoint icon is created and you will return to the waypoint icons screen.

If you press the newly created hiking goal icon it will be used as icon in the waypoint creation screen.

The icon in the waypoint screen is now set to the newly created ‘Hiking goal’ icon. Then if you press ‘Save’ you will return to the map and the waypoint with the hiking goal icon is shown on the map.

If you now create a new icon by pressing long on the map the icon of the last created waypoint will be used. So in the example you will drag a ‘Hiking goal’ icon along the map. If you release your finger the waypoint creation screen will be opened, again with the hiking goal icon as the initially set icon.
Fig. 9: A screen which show all the available waypoint icons on a device.

Fig. 10: A screen in which you can create a new icon.
Fig. 11: A new icon is about to be created.

Fig. 12: Waypoint icons screen with the newly created ‘Hiking goal’ icon.
Fig. 13: The hiking goal icon is now the icon for the to be created waypoint.

Fig. 14: The waypoint with the hiking goal icon is shown on the map.
Planning a route to a created waypoint

If you want to plan a route from your current location to a point on the map, you can press long on the map to create an icon on the map and drag it to the desired location. Then the waypoint creation screen will be opened. In the bottom of the waypoint creation screen you see a ‘Plan’ button with a map next to it. The map shows the newly created waypoint relative to your current location. Below the ‘Plan’ button you can see the currently selected transportation mode. In the example above this is ‘Pedestrian’. If you tap ‘Pedestrian’ you can change the transportation mode, for example you can change it to ‘Bicycle’. If you press ‘Plan’ a route is immediately planned from your location to the newly created point and you will return to the map as is shown below.

The planned route and the waypoint are not saved automatically. To save the planned route press on the route line to open the route planner and then press ‘Save’ on the top right to save the planned route. After the route is saved it will appear in the routes screen.

3.4 Waypoint details

The waypoint details screen appears by tapping on the icon of a waypoint that is loaded on the map. You can also open this screen by pressing the info button (i) on the right hand side of a title in the waypoints screen.

The waypoint details screen of the waypoint ‘Stonehenge’ is displayed below:

The waypoint details screen contains information about the waypoint, such as the title and the coordinates. If available you can also find here a description, photos, a phone number and/or an URL.

The coordinates are displayed in various formats. You can set the displayed coordinate types via ‘Menu > More > Settings > Displayed coordinate types’. In the example above only WGS decimal and OSNG
Fig. 16: A route was planned from the current location to a newly created point on the map.

Fig. 17: The waypoint details screen of the waypoint 'Stonehenge'.
are shown.

The physical address of a waypoint is also displayed in the details screen. If the address of a waypoint is still unknown, Topo GPS will look up this address in a database of Apple. For this you have to enable the option *Addresses - find automatically* in the *settings*. You have also to be connected to the internet.

On the bottom of the waypoint details screen a small map is shown with shows the waypoint relative to your current location. Note that this map will not show up if you have disabled location access for Topo GPS. On the left hand side of the map there is a plan button. If you press the plan button a route will be planned from your current location to the waypoint with the transportation mode which is displayed below the plan button. If you tap the transportation mode button below the plan button you can change the transportation mode.

With the button on the top right of the waypoint details screen you can load a waypoint on the map or remove it from the map.

In the bottom of the waypoint details screen you can find a toolbar with the following buttons:

- ‘<’ and ‘>’ button: Allows you to browse through the list of waypoints, or through the waypoints that are loaded on the map.
- Trash button: If you press this button a pop-up will show up asking you whether you would like to remove the waypoint from your device.
- Export button: If you press this button the export pop-up will show up which allows you to export the waypoint.
- ‘Edit’: Allows you to edit the waypoint.

### 3.5 Editing waypoints

To edit a waypoint you have to press the ‘Edit’ button on the bottom of the *waypoint details screen*. If you press this button an edit pop-up will appear like in the figure below:

The pop-up shows five possibilities to modify the waypoint.

- *Edit text*: Allows you to edit the title and description of a waypoint.
- *Edit photos*: Allows you to edit the photos of a waypoint.
- *Edit coordinates*: Allows you to edit the coordinates of a waypoint.
- *Move on map*: Allows you to move the waypoint on the map.
- *Change icon*: Allows you to change the icon of the waypoint.

#### 3.5.1 Editing title and description

By pressing ‘Edit text’ in the *edit pop-up* you can modify the title and the description of the waypoint. An example is shown below:

To save the changes you have to press ‘Save’ on the top right of the screen. You return to the waypoints details screen as you can see below:
Fig. 18: A pop-up with five possibilities to modify a waypoint.

Fig. 19: Modifying the description of the waypoint ‘Stonehenge’.
3.5.2 Editing photos

By pressing the ‘Edit photos’ button in the *edit pop-up* you can add photos to the waypoint and remove photos from the waypoint. If you press this button the following screen will appear.

In the bottom toolbar of the photos screen you can find three buttons:

- **Map button**: If you press this button you can import photos from your photo library to the waypoint.
- **Camera button**: If you press this button the camera will be opened. If you take a photo it will be added to the waypoint. You could also use Menu > Camera for this, then a waypoint is automatically created at your current location and the taken photo is added to it.
- **Trash button**: If you press this button you can remove the currently displayed photo from a waypoint.

If you have made changes to the photos of a waypoint you have to press ‘Done’ on the top right to save the changes. If you press ‘Cancel’ the photos will not be modified.

As an example we now will add a photo of ‘Stonehenge’ from our photo library by pressing the map icon. An example of the screen that appears is displayed below:

(Used photo of Stonehenge CC-BY 2.0: garethwiscombe)

In the photo library you can choose a photo. By pressing the photo it will be imported and added to the photos screen as you can see below.

If you like you can add more photos from the library or using the camera. The added photos are always copied to Topo GPS. So removing the photo afterwards from your photo library does not remove the photo in Topo GPS. The resolution of the added photo can be set via ‘Menu > Settings > Camera > Photo size’. Larger photo sizes will require more disk space.
Fig. 21: *The photos screen if the waypoint does not have photos.*

Fig. 22: *The photo library*
If you want to confirm the changes to the photos you have to press ‘Done’ on the top right of the photos screen. The changes will then be saved and the photo will be added to the waypoint.

You can view the added photos in the **waypoint details screen** as is illustrated in the figure below:

If you tap a photo in the waypoint details screen, the photo screen will be opened with a larger version of the tapped photo.

You can zoom in on the displayed photo by making a zoom gesture with two fingers. Sharing the photo is possible by pressing the ‘Export’ icon on the top right. If you press ‘Edit’ on the top right you can modify the photos of the waypoint. If the waypoints has multiple photo’s, you can browse through the available photos by sliding the current photo to the left or to the right.

### 3.5.3 Editing coordinates

By pressing ‘Edit coordinates’ in the **edit pop-up** the same screen appears when entering coordinates. An example of editing the coordinates of the waypoint ‘Stonehenge’ is shown below:

If you press ‘Save’ on the top right the waypoint will be displaced to the entered coordinates.
Fig. 24: A photo of Stonehenge can be viewed in the waypoint details screen.

Fig. 25: The photo screen with a photo of Stonehenge.
3.5.4 Move on map

By pressing *Move on map* in the *edit pop-up* you can move the location of the waypoint manually on a map.

In the example of the waypoint ‘Stonehenge’ the following screen will appear.

If you press long on the waypoint you can drag it to a new location, as is illustrated in the figure below:

To save the new location of the waypoint you have to press ‘Save’ in the top right of the screen. Otherwise press ‘Cancel’.

3.5.5 Change icon

If you press ‘Change icon’ in the *edit pop-up* the waypoint icons screen will appear.

The waypoint icons screen contains a list of available icons. The currently active icon of the waypoint has a grey background. If you tap an icon row the waypoint icon will be changed and you will return to the waypoint details screen. You can create a new icon by pressing + in the waypoint icons screen.
Fig. 27: *The screen in which you can move a waypoint.*

Fig. 28: *The waypoint Stonehenge has been moved temporarily.*
3.6 Removing waypoints

To remove a waypoint from your device you first have to open the **waypoint details screen**.

You can do this by pressing the info button right of a waypoint title in the **waypoints screen** or by tapping a waypoint that is loaded on the map.

An example of the waypoint details screen is displayed below:

You can remove the waypoint by pressing the trash icon on the bottom of the waypoint details screen. A pop-up will appear in which you have to confirm the removal as is shown below:

If you press ‘Remove’ the waypoint will be removed from your device.

If you have enabled *iCloud synchronization of waypoints* the waypoint will also be removed from iCloud and from all devices that are synchronized with the same iCloud account.

It is also possible to remove multiple waypoints from the **waypoints screen**. Press ‘More > Select’ and *select* the waypoints that need to be removed. Next press the trash icon on the bottom of the screen and confirm the removal.

If you only want to *remove a waypoint from the map (and not from the device)* you have to tap ‘Remove from map’ in the waypoint details screen.
Fig. 30: The waypoint details screen of the waypoint ‘Stonehenge’.

Fig. 31: Removing the waypoint ‘Stonehenge’.
3.7 Selecting waypoints

In the waypoints screen (Menu > Waypoints) you can select waypoints and perform one of the following actions on the selected waypoints:

- Remove selected waypoints
- Move selected waypoints into a folder
- Export selected waypoints
- Load selected waypoints on the map
- Change icon of selected waypoints
- Remove selected waypoints from the map

Selecting waypoints is similar to selecting routes.

3.7.1 Opening selection screen

If you press the button ‘More’ on the top right of the waypoints screen, a menu will be shown as in the figure below.

![Waypoints screen](image)

Fig. 32: The more menu of the waypoints screen.

Press ‘Select’ in the menu to open the selection screen. It is also possible to open the selection screen by pressing long on an item in the waypoint list. That item will then be selected immediately. An example of a selection screen is shown below:
3.7.2 Selecting waypoints

To select a waypoint, tap a waypoint row in the selection screen. A checkmark will show up and the background of the waypoint row will become grey to indicate that it is selected. An example in which two waypoints are selected is displayed below:

The title of the selection screen shows how many items are selected. You can deselect an waypoint tapping a selected one. If you want to select all waypoints in the list, you have to press ‘All’ on the top left. To return to the usual waypoints screen you have to press ‘Cancel’.

3.7.3 Performing an action

If you have made a selection you can perform an action with one of the buttons in the toolbar on the bottom of the screen. The toolbar buttons are from left to right:

- **Trash button**: If you press this button a pop-up will ask to to whether you would like to remove the selected waypoints from your device (and iCloud if enabled). If you press ‘Remove’ the selected waypoints will be removed.

- **Folder button**: If you press this button a screen with the folder tree will be opened. You can select a folder and the selected waypoints will be moved to a new folder.

- **Export button**: If you press this button the export pop-up will be shown. In this pop-up you can select the kind of data to be exported and change the export settings. If you press ‘Export’ in the export pop-up the selected waypoints will be exported. Another pop-up with apps and actions will be shown. If you tap an app or action, the result of the export will be handled by the app or action.

- **Map button**: If you press this button, the selected waypoints will be loaded on the map. The map will zoom automatically to the selected waypoints and you will be returned to the map.
• More button: If you press the more button in the bottom toolbar, a menu will appear from which you can choose the following actions:

  – Remove from map: If you press this button, the selected waypoints will be removed from the map.

  – Change icon: If you press this button the waypoint icons screen will be opened. You can press an icon in this screen to change the icon of the selected waypoints.

As an example we now will load the two selected waypoints from the example above on the map by pressing the map icon. The map screen will appear and the map will be zoomed to the two selected waypoints as you can see in the figure below:

3.8 Waypoint icons

Waypoints are displayed on the map with an icon and a title. It is possible to customize the waypoint icon. Multiple waypoints can use exactly the same icon. Waypoints in the waypoints screen (Menu > Waypoints) can be filtered on icon.

The waypoint icons screen displays the list of available icons on your device. An example is shown below. Each waypoint is using an icon from the waypoint icons screen. The waypoint icons screen can accessed in several ways when creating or modifying waypoints.

• From the waypoint details screen by pressing ‘Edit > Change icon’.

• From the waypoints screen by pressing ‘More > Select > More (bottom) > Change icons’.

• From the input coordinates screen by tapping the ‘Icon’ row.

3.8. Waypoint icons
Fig. 35: The waypoints ‘Goal A’ and ‘Stonehenge’ have been loaded on the map.

Fig. 36: The waypoint icons screen (Waypoint details > Edit > Change icon).
3.8.1 Default icon

In the waypoint icons screen in the example above only one icon is shown. The default icon. This icon is used for all waypoints for which an icon was not explicitly set.

To change the default icon, tap the info button to open the ‘Edit icon’ screen. If you change the default icon, this will be reflected immediately in all waypoints that are using the default icon.

You only need to change the default icon if you want to change the default red circle. Otherwise it is better to first create a new icon.

3.8.2 Creating icons

In the waypoint icons screen above only the default icon is shown. To add a new icon press ‘+’ on the top right. The ‘New icon’ screen will be opened.

Fig. 37: The new icon screen

The following properties of an icon can be modified.

- Shape. Press ‘Change icon’ and tap the desired shape. You can choose between circle, triangle, rectangle, square, rhombus among other.
- Size. Press ‘Change size’ and tap the desired size. You can choose between ‘Small’, ‘Normal’ and ‘Large’.
- Fill color. Press ‘Change fill color’ to change the fill color of the icon. The color picker screen will appear in which you select the desired color. In the bottom you can set the opacity. If you have selected a color you have to press the cross on the top right to return.
• Edge color. Press ‘Change edge color’ to change the color of the edge of the icon.

• Inscription. If you enter a inscription in the inscription field, a inscription (for example an ‘A’) will be shown in the middle of the icon. The color of the inscription is the same as the edge color if the contrast with the fill color is large enough. If not, it is either white or black, depending on which color gives the most contrast with the fill color.

After you have the set the icon properties, you can give the icon a name and a description. The name and description will be shown in the waypoint icons screen.

As an example we now will create an icon for ancient monuments. We choose a rotated rectangle as the shape, set the size to large, fill color to pink, and enter ‘A’ as inscription. Then for the name we enter ‘Ancient monument’ and as a description information about when to use this icon. The result is shown in the figure below.

![Fig. 38: The new icon screen in which a new icon is about to be created.](image)

To save the icon, press ‘Save’ on the top right of the new icon screen. Then newly created waypoint icon will immediately shown in the waypoint icons screen as is shown below.

### 3.8.3 Editing icons

To edit an icon, press the info button next to an icon in the waypoint icons screen. You can change the properties of an icon in the same way as explained above when creating a new icon. Press ‘Save’ to confirm the changes and to return to the waypoint icons screen. If you make a change to a icon in this way, it will be immediately reflected in all waypoints that are using this icon.
3.8.4 Changing icon of a waypoint

To change the icon of an individual waypoint, open the \textit{waypoint detail screen}. Then press ‘Edit > Change’ icon. The waypoint icons screen will be shown. Then select the desired icon from the list of icons in the waypoint icons screen. If the desired icon is not in the waypoints screen, please first press + on the top right to \textit{create a new icon}. The currently set icon has a grey background. After tapping the desired icon, you will return immediately and the waypoint will use the selected icon.

In this way we for example set the icon of the Stonehenge waypoint to our ancien monument icon.

In the details screen above, the used icon is shown below the title. On the main map the ‘Stonehenge’ waypoint with the newly created icon looks as follows:

3.8.5 Changing icon of multiple waypoints

To change the icon of multiple waypoints open the waypoints screen via ‘\textit{Menu} > Waypoints’. Then press ‘More > Select’ to enter the selection mode. Select the desired waypoints and press in the bottom toolbar ‘More > Change icons’. Then the waypoint icons screen will be opened. Tap the desired waypoint icon. You will return immediately to the waypoints screen and the icons will be changed. If the desired icon is not in the waypoints screen, please first press + on the top right to \textit{create a new icon}.
Fig. 40: The icon of the ‘Stonehenge’ waypoint was changed to ‘Ancient monument’

Fig. 41: The ‘Stonehenge’ waypoint with the ‘Ancient monument’ icon on the main map.
3.8.6 Removing icons

If you press ‘More > Select’ in the waypoint icons screen you can select icons to be removed. Then if you press the trash button and confirm the removal, the icons will be removed. If there are still any waypoints that are using the icons that were removed, they will no longer use the removed icons, but the default icon instead.

3.8.7 Organizing icons into folders

It is possible to organize the icons in the waypoint icons screen just like you do with waypoints and routes. In this way you can keep the waypoint icons organized.

Press ‘More > Create folder’ to create a new folder. To move waypoint icons into a folder press ‘More > Select’ and select the desired waypoints. Then press the folder icon in the bottom to open a folder tree. Select the folder to move the selected icons to the desired folder.

3.8.8 Changing order of icons

If the sort method (below search bar) is set to ‘Customizable order’ you can customize the order of the icons. Press ‘More > Select’ to enter the selection mode. By pressing long on the handle on the right hand side you can drag a waypoint icon row in the list to the desired position.

3.8.9 Exporting icons

If you tap ‘More > Select’ in the waypoint icons screen you can select icons to be exported. Then if you press the export button in the bottom right you can export the selected icons. The icons will be exported in the wsf (Waypoint Style Format) file format. This is a special XML file format designed for use in Topo GPS. Another user of Topo GPS (iOS) can open this file with Topo GPS. Then all icons in this wsf file will be imported and shown in the waypoint icons screen.

3.9 Organizing waypoints

You can keep your waypoints organized by creating folders and moving waypoints into folders. It is also possible to change the order of the waypoints appearing in the waypoints screen. In addition you can keep waypoints organized by assigning them specific icons and filtering on icons.

3.9.1 Creating a folder

To create a folder, first open the waypoints screen (Menu > Waypoints). Then press More (top right) > New Folder. The new folder screen will be opened, an example is shown below:

To create a folder, you have to enter a name. Optionally you can choose the location in the folder tree where the new folder is to be added. This is always initially set to the currently opened folder in the waypoints screen. If you press location and select a folder you can change the location to another folder. When you have entered a name you need to press ‘Save’ to create a new folder. You will return to the waypoints screen and the newly created folder will be shown in the list.

As an example we will enter ‘Sights’ and press ‘Save’ to create a ‘Sights’ folder. The waypoints screen now looks as follows:
Fig. 42: *The new folder screen*

Fig. 43: *A ‘Sights’ folder has been created.*
The ‘Sights’ folder is listed in the waypoints screen with a folder icon.

### 3.9.2 Moving waypoints into folder

To move waypoints into a folder you have to open the selection screen by pressing More > Select or pressing long on an item in the waypoints screen. Select the to be moved waypoints and press the folder icon in the bottom toolbar. Then the ‘Move items to folder’ screen will be shown, example is shown below:

![Move items to folder screen](image.png)

Fig. 44: Move items to folder screen.

In the ‘Move items to folder’ screen, the folder tree is shown. If you tap on a folder the selected items will be moved to that folder and you will return to the waypoints screen.

As an example we now will move the waypoints ‘Stonehenge’ and ‘Tower bridge’ to the ‘Sights’ folder. After moving the two waypoints as indicated above the waypoints screen looks as follows:

In the waypoints screen the waypoints ‘Stonehenge’ and ‘Tower bridge’ have disappeared. They now can be found in the folder ‘Sights’.

### 3.9.3 Opening a folder

To open a folder, just tap the folder item in the waypoints screen. As an example we now open the folder ‘Sights’. The waypoints screen will then look as follows:

The ‘Stonehenge’ and ‘Tower bridge’ waypoints now can be found in the ‘Sights’ folder.

Below the search bar you can see the current location in the folder tree. If you press ‘All waypoints’ you will return to the root folder.
Fig. 45: *The waypoints screen after moving two waypoints into the folder ‘Sights’.*

Fig. 46: *The contents of the ‘Sights’ folder.*
3.9.4 Loading contents of folder

To load all waypoints in a folder and its descendant folders, press long on a folder item in the waypoints screen (Menu > Waypoints) to enter the selection mode and to select the folder. Then press the map icon in the bottom toolbar to load the contents of the folder on the map.

Alternatively tap the info button next to a folder in the waypoints screen (Menu > Waypoints). Then press ‘Show on map’ on the top right to load all waypoints on the map. You will return to the main map screen and the map will be zoomed to the contents of the folder.

3.9.5 Removing contents of folder from map

To remove the waypoints in a folder and its descendant folders from the map, press long on a folder item in the waypoints screen (Menu > Waypoints) to enter the selection mode and to select the folder. Then tap in the bottom toolbar the more button and then tap ‘Remove from map’.

Alternatively, first tap the info button next to a folder in the waypoints screen (Menu > Waypoints) to open the folder details screen. Then press ‘Remove from map’ on the top right to remove all waypoints from the map. If ‘Shown on map’ is shown, first tap it to load all waypoints, then go back to the waypoints screen to open the folder details screen. Then press ‘Remove from map’ on the top right.

3.9.6 Renaming folders

To rename a folder first open the waypoints screen (Menu > Waypoints) and tap the info button next to a folder item to open the folder details screen. Then tap ‘Edit’ in the bottom toolbar, change the name and press ‘Save’.

3.9.7 Changing the order of waypoints

Just below the folder tree / filter bar in the waypoints screen the current sort method is displayed. If you tap the sort method you can change it. If it is set to ‘Customizable order’ you can determine the order of the waypoints.

To change the order of the waypoints in the ‘Sights’ folder, just open that folder. Then press More > Select to enter the selection mode. The waypoints screen then looks as follows:

On the right hand side of each item a handle with three bars is displayed. Drag such a handle to a desired position and release your finger. The waypoint will then be moved in the list to the desired location. In the example below, we have moved ‘Stonehenge’ to the bottom.

3.10 Searching waypoints

In the waypoints screen (Menu > Waypoints) you can search waypoints by entering keywords in the search bar, and by applying filters. Furthermore you can sort the waypoints in various ways.
Fig. 47: The ‘Sights’ folder in selection mode.

Fig. 48: The contents of the ‘Sights’ folder after moving the ‘Stonehenge’ waypoint.
3.10.1 Searching waypoints with keywords

If you enter a keyword in the search bar on the top of the waypoint screen only waypoints will be shown which have the keyword in its title, description, street, town, province, two character iso country code, or zip code. Search is case insensitive. If you search in a folder, also all search results in descendant folders will be displayed. If a filter is applied, the search will restrict itself to the filtered waypoints.

![Fig. 49: Searching on 'Stone'](image)

3.10.2 Sorting waypoints

Below the folder/filter bar below the search bar, the current sort method is displayed in the middle. If you tap the sort button you can change the current sort method between:

- **Customizable order**: The waypoints are sorted in customizable order. If you did not change the order manually, the most recent added waypoints are on top.
- **Closest on top**: The waypoints are sorted according to their distance to your current location, the closest is on top.
- **Newest on top**: The waypoints are sorted according to their creation time, the newest is on top.
- **Oldest on top**: The waypoints are sorted according to their creation time, the oldest is on top.
- **Most recently updated on top**: The waypoints are sorted according to the time at which they were last changed, the waypoint that was changed most recently is on top.
- **Least recently updated on top**: The waypoints are sorted according to the time at which they were last changed, the waypoint that was changed the longest go is on top.
- **Alphabetically**: The waypoints are sorted in alphabetical order.
3.10.3 Filtering waypoints

It is also possible to filter waypoints on location and on icon kind. To enable a filter, tap the filter button in the waypoints screen (just below the search bar on the right hand side). If the filter is enabled, the filter button has a blue background, as in the figure below. If the filter is disabled, only the edge of the filter button is blue, as in the figure above.

In the figure above you see an example of an enabled filter. Below the search bar on the left hand side you see a description of the currently active filter. Here the waypoints are filtered on location, only waypoints within 100 km of the current location are shown. If you tap the filter description you can modify the current filter. To disable the filter, tap on the filter button.

Filtering on location

To filter the waypoints on location, tap the filter button to enable the filter. Then tap the filter description to modify the current filter. The following screen will be shown in which you can change the current filter:

In the section ‘Waypoint location’ you can change the properties of the location filter. The slider can be moved to determine the maximal distance of shown waypoints to a specific point. Below the slider, the point is displayed. In the example above this is the current location. If you tap it, you could change the current point to:

- *Everywhere:* There is no filtering on location.
- *Current location:* Only waypoints within a certain distance of the current location are shown.
- *Visible part of map:* Only waypoints that are within the bounds of the currently visible part of the main map are shown in the waypoints screen.
3.10. Searching waypoints

Fig. 51: A filter is enabled.

Fig. 52: Modifying a filter.
- **Custom location**: If you enter a custom location or coordinate only waypoint within a certain distance of the entered location are shown.

### Filtering on icon

To filter the waypoints on location, tap the filter button to enable the filter. Then tap the filter description to modify the current filter. Then in the bottom of the filter edit screen, enable filtering on icon:

![Filtering on icon is enabled.](image)

In the figure above, filtering on icon is enabled. The icon is set to the default icon, implying that this filter only will show waypoints which have the default icon. To modify this to a specific icon, tap the icon in the filter edit screen. Then the waypoint icons screen will be opened, from which you can select another icon. In the example below we have chosen for the ‘Ancient monument’ icons.

When applying a filtering on icon, only waypoints with a specific icon will be shown in the waypoints screen, as in the figure below. There you see only waypoints with the ’Ancient monument’ icon. To indicate that an icon filter is active, the icon on which is filtered is displayed below the search bar left of the filter description.
Fig. 54: Setting the filter to the ‘Ancient monument icon’.

Fig. 55: Filtering on ‘Ancient monuments’.
3.11 Exporting waypoints

To export a single waypoint, open the **waypoint details screen** and tap the export icon in the bottom toolbar.

To export multiple waypoints, open the **waypoints screen** (Menu > Waypoints). Then open the **waypoint selection screen** by tapping More > Select. Select the desired waypoints and folders and tap the export icon in the bottom toolbar.

After pressing the export icon the export pop-up will appear in both cases, an example is shown below:

![Export pop-up](image)

Fig. 56: *The export pop-up.*

In the export pop-up you can select the kind of data that will be exported when pressing the export button in the bottom of the pop-up. The kind of exported data can be any combination of the following:

- **Geodata:** If you include ‘Geodata’ a data file containing the waypoint(s) will be exported. The file format is shown in the subtitle of the geodata item. In the example above it is gpx.zip. If you press settings you can change the data format. Supported file formats for exporting waypoints are gpx, gpx.zip, kml, kmz, geojson, geojson.zip, csv and csv.zip.

- **Photos:** If you include ‘Photos’ the photos of the waypoint(s) will be exported as well. This item is not available if there are no photos.

- **Map:** If you include ‘Map’ a map of the waypoint(s) will be exported. The pixel size of the map is displayed in the subtitle. You can change the pixel size in the export settings.

After you have selected the kind of data to be exported you can press ‘Export’ in the bottom of the export pop-up to export the waypoint(s). Then a regular iOS pop-up will show up in which you can pick an app to send the exported data to. For example, iMessage to send the waypoint to a friend, or the files app to save the waypoint on the cloud.
3.11.1 Export settings

In the export pop-up you can also change the export settings by pressing the ‘Settings’ button on the top right of the export pop-up. Then the following screen will appear:

![Export settings screen](image)

**Fig. 57: The waypoint export settings screen.**

The first section in the export settings screen is about geodata. Here you can set the data format of the to be exported waypoint(s). By tapping ‘Waypoint data format’ you can choose between gpx, kml, csv and geojson. You can decide whether you want to compress the data. If you enable compression the exported geodata file will be zip compressed. The file size will be much smaller than without compression.

If you export to csv or geojson, you can also choose the spatial reference system (coordinate system) to be used in the exported data. If you for example want to generate a csv from the waypoints with coordinates in the OS National Grid system, you can set the spatial reference system to OSNG as in the example below:

The remaining sections deal with the map (image) that can be exported. You can set the desired pixel width and height with the sliders. Also to generate a map sometimes map tiles need to be downloaded. You can determine if you want to allow cellular downloads of map tiles.
3.11.2 Exporting all waypoints

To export all waypoints stored on your device, open the waypoints screen (Menu > Waypoints). Make sure that the filter is not active (filter button has a blue edge). Go to the root waypoint folder, so that ‘All waypoints’ is displayed below the search bar. Make sure that the search bar is empty. Then open the waypoint selection screen by tapping More > Select. Press ‘All’ on the top left to select all waypoints and folders. Then tap the export icon in the bottom toolbar to open the export pop-up. Select the kind of data to be exported in the export pop-up and press ‘Export’.

3.12 Importing waypoints

It is possible to import waypoints in Topo GPS in the following file formats: gpx, kml/kmz, csv and geojson. Files of these types can also be imported if they are compressed in a zip file.

To import waypoints you could try to tap on a file icon. Most often an app picker will show up. You then have to select ‘Open with Topo GPS’ or ‘Copy to Topo GPS’ and the file will be imported in Topo GPS. Alternatively you could open the waypoints screen in Topo GPS (Menu > Waypoints) and tap More > Import file. Then the files app will be opened. Here you can select a cloud storage, like iCloud, Dropbox, OneDrive or Google Drive. Then you can browse through your files and select the files you want to import.

If the waypoints were imported successfully, you will return to the main map screen and the map will be zoomed to the imported waypoints. In the waypoints screen (Menu > Waypoints) all imported waypoints can be found in a newly created folder.

How to import a geodata file from iMessage is explained in a separate section.
3.13 Synchronizing routes and waypoints with iCloud

Routes and waypoints can be synchronized automatically with iCloud in Topo GPS. This makes all your routes and waypoints accessible on all your devices. This has two advantages:

- **Convenience**: For example, you plan a hike on your iPad. If you save that route, it will be available on your iPhone within a few seconds. You can go outdoors with your iPhone to walk the planned route. Then if you record your route on your iPhone and save it when finished, the recorded route will be accessible on your iPad as well. Hence you can view your recorded route on your iPad.

- **Backup**: With synchronization a copy of all your routes and waypoints will be made on iCloud. If you remove Topo GPS or if you loose your device, your routes and waypoints will not be lost.

3.13.1 Required settings

To enable iCloud synchronization of routes and waypoint you have to do the following.

First you have to be logged in to iCloud (Settings > iCloud). If you want to synchronize between devices, these devices should use the same iCloud account.

Next you should enable on all devices the iOS setting: Account > iCloud > Topo GPS, like in the figure below:

![Figure 59: To synchronize routes and waypoints with iCloud, the iOS setting iCloud > Topo GPS should be enabled.](image)

Finally you have to enable the Topo GPS setting (Menu > More > Settings) Routes and Waypoints - Synchronize with iCloud, as is shown below:
3.13.2 Automatic synchronization

If the settings are correct, no more action is required, synchronization will occur completely automatically. All modifications to routes and waypoints will be sent to iCloud when possible. If a device detects changes on iCloud, they will immediately be carried out.

Below you see an example of iCloud synchronization with an iPhone and iPad. First ‘Saved routes’ screen on the iPhone:

Due to iCloud synchronization, the saved routes screen of the iPad contains exactly the same routes in the same order as the iPhone, as you can see below:

3.13.3 Percentage synchronized with iCloud

To see the percentage of routes or waypoints synchronized with iCloud, go to the waypoints or routes screen. Pull the list with waypoints or routes down. On the top the percentage of items synchronized with iCloud will be displayed, as you can see in the example below:
3.13.4 Details of iCloud synchronization

If you enable iCloud synchronization, your routes and waypoints will still be stored locally on your device. This ensures that your routes and waypoints remain always accessible, even without internet connection and if iCloud is unreachable.

If synchronization is enabled, a copy of all routes and waypoints (with corresponding photos) will be made on iCloud.

Suppose that you have a number of devices which each contain a number of routes and waypoints. Now, enable iCloud synchronization on all these devices. On each device the combination of all routes and waypoints will now be accessible. In case similar routes were available on different devices, it could happen that some routes appear multiple times in the routes screen after synchronization. You can remove this duplicates manually, and this only has to be done once.

If you remove a route or waypoint from a device, they will be also removed from iCloud and all other devices automatically.

If you edit a route or waypoint on one device, and at the same time also at another, a synchronization conflict could occur. Topo GPS then always synchronizes the route that has last been modified and does not give a warning.

The speed at which routes and waypoints are synchronized and become available on other devices depend on the quality of the network connection and the battery level. In good circumstances a route/waypoint will be available on another device within 10 seconds, but sometimes it can take longer.

If you open the routes/waypoints screen all not synchronized modifications will be synchronized. By opening the routes/waypoints screen you can hence force a synchronization.

If you would like to synchronize routes and waypoints on a mobile network (be aware this can lead to
Fig. 62: The saved routes screen on the iPad contains exactly the same routes as the iPhone due to iCloud synchronization.
increased data traffic and battery usage) you have to enable the Topo GPS setting: Synchronize with iCloud - Use mobile network. Also the iOS settings iCloud > Use mobile data should be enabled.

The routes and waypoints that are synchronized with iCloud, are only accessible from within the Topo GPS app with your iCloud account. People using other iCloud accounts and the developers of Topo GPS cannot see your routes and waypoints. You will not find your routes in iCloud Drive.

### 3.13.5 Disabling iCloud synchronization

If you do not longer want to synchronize your routes and waypoints with iCloud, you can disable synchronization in the Topo GPS settings. If you disable iCloud synchronization a pop-up will appear, as is displayed below:

You have to choose whether to keep or remove all routes and waypoints from iCloud. In both cases all routes and waypoints will be kept locally on your device. Locally no routes and waypoints will be removed.

- **Keep:** The routes and waypoints will be kept on iCloud, and synchronization via others possible devices can continue as normal.

- **Remove:** All routes and waypoints will be removed from iCloud. On other possible devices on which iCloud synchronization is still enabled, an alert will appear. This alert will tell the user that all its routes and waypoints have been removed from iCloud. The alert shows to options. The user could decide to remove all routes/waypoints locally. Or to resynchronize all locally stored routes with iCloud.
Fig. 63: If you disable iCloud synchronization, you will be asked whether you want to remove all routes and waypoints from iCloud or to keep them on iCloud.
A route is a collection of points that can be *shown as a curve on the map*. A route can have possible additional information like a description and photos that can be shown in the *route details screen*.

In Topo GPS you can *import, plan, generate, record*, and *export* routes.

Routes can be controlled via the *routes screen* which can be opened by either tapping the *route button* on the dashboard or by tapping *Menu > Routes*.

### 4.1 Routes screen

Routes can be controlled via the routes screen. The routes screen can be opened by tapping the *route button* on the dashboard. This is the button in the bottom right of the *main screen*. Alternatively you can open the routes screen by tapping *Menu > Routes*.

![Routes screen with tab bar](image)

In the bottom of the routes screen you find a tab bar with five different tabs. These are
• **Routes**: This tab shows the routes that are locally stored on your device. This tab can be used for loading routes on the map and exporting your routes.

• **Record**: With this tab you can record your route.

• **Plan**: With this tab you can plan a route.

• **Generate**: With this tab you can generate a route.

• **Shared**: This tab shows routes shared by other Topo GPS users. You can browse through these routes and import them on your device.

To open a tab, tap an item in the bottom tab bar. The currently opened tab is colored blue. The app remembers the last opened tab. So if you have opened the ‘Plan’ tab, return to the main screen and open the routes screen again, the routes screen will be opened with the ‘Plan’ tab open.

### 4.2 Loading routes

To load a route on the map, you first have to open the **routes screen** by tapping the **route button** on the dashboard. Then select the tab ‘Routes’ in the bottom to show the locally saved routes.

An example of the the routes screen that appears is displayed below:

![Example of the 'Routes' tab in the routes screen](image)

**Fig. 2: An example of the the 'Routes' tab in the routes screen.**

A list of routes appears in the routes screen. In the example above there are three: Lake District Walk, Midhurst Fields and Gower Hike.

Directly below the titles of the routes you can see the route type and the length of the route. If the route is recorded, the time is displayed as well. Also it is shown how far away the route is from your current location.
To load a route on the map, you have to tap the title of the preferred route. As an example we now will load the route ‘Gower Hike’. The result is shown in the figure below.

![Map with Gower Hike route](image)

**Fig. 3: The route ‘Gower Hike’ has been loaded on the map.**

The map moves and zooms automatically so that the complete route is visible on the map. The blue line indicates the route. The white arrows on the blue line indicate the direction of the route. The circular distance markers on the route line indicate the distance on the route.

The 13.5 km on the top right of the dashboard indicates the sum of the lengths of all routes that are currently loaded on the map. For this the symbol ‘rte’ is used.

If you want to see the route in more detail, you can **zoom in** on the map.

You can alter the color, width, and transparency of the route line in the **settings**.

If you open the **routes screen** again, you can see that the ‘Gower Hike’ route has obtained a gray background color, as in the example below:

A gray background color in the routes screen indicate that the route is currently loaded on the map.

It is also possible to load multiple routes on the map. This can be useful if you want to combine or compare different routes. If you tap another route in the routes screen it will be added to the map, just as the first loaded route. The route line color will be different from the first route.

It is also possible to load multiple routes at once by entering the selection mode in the routes tab.

In the next section it is explained how to **remove a route from the map.**
4.3 Removing routes from map

A route can be removed from the map in several ways.

4.3.1 Routes screen

Tap the route button on the dashboard to open the routes screen. Then select the tab ‘Routes’. An example is shown below:

The routes with a gray background are currently loaded on the map. If you tap a gray item, it will be removed immediately on from the map.

It is also possible to remove all loaded routes from the map at once by tapping: More (top right in the Routes tab) > Remove all from map.

4.3.2 Map

If you tap a route line of a route that is loaded on the map, the route details screen will be opened. You can tap ‘Remove from map’ in the top right of the route details screen. The route will be immediately removed from the map and you will return to the main screen.

Fig. 4: In the route screen it can be seen that the route ‘Gower Hike’ is loaded on the map.
4.4 Recording routes

When recording your route all the locations you are visiting are collected. If you finish the recording, you can save the locations as a route.

To record a route you need make sure that Topo GPS is given access to your precise location while using the app in the iOS Settings.

4.4.1 Starting a recording

To start a route recording, you have to open the **routes screen** and select the tab ‘Record’. An example is below:

In the ‘Record’ tab of the routes screen you can start a route recording by tapping the ‘Record route’ button.

Alternatively, you can also start recording a route from the **main screen**, by tapping the **record timer** on the dashboard. A pop-up will appear in which you are asked whether you want to start a recording as in the example below:

If you tap ‘Start’ the route recording will be started.
Fig. 6: The route record screen.

Fig. 7: Starting a route recording from the dashboard.
4.4.2 Recording route

If you have started a recording and return to the main screen, you will see that a red line will appear on the map if you are moving. This red line indicates your movement. An example is displayed in the figure below:

![Recording a route. The red line indicates your movement.](image)

The **record timer** on the dashboard indicates the time you are recording. In the figure above this is 0h17m. If you tap the timer you can **end the recording**.

The **record distance meter** on the dashboard indicates the length of a recorded route. In the example above this is 778 m. If you tap the record distance meter the map will be zoomed to the recorded route.

You can modify the color, width and transparency of the record line in the **settings**.

While recording you can safely lock your device or switch to another app. This will not interrupt the recording. In the top of the screen you can see that Topo GPS is using your location in the background. In some devices the clock gets a blue background, on other devices the whole status bar turns blue. If you tap the blue clock or the blue statusbar, you will return to Topo GPS.

If you tap on the line of the recorded route on the main map, the record screen will be opened. You can view a live altitude and speed profile. You can tap these **profiles** to view them in more detail.

If you have **loaded** one or more routes on the map, you can record a route at the same time. An example is shown below:

The blue line indicates the loaded route with a length of 1.9 km, the red line the recorded route with a length of 778 m.

Recording a route will cost a considerable amount of energy, therefore regularly check your battery level when recording a route to make sure you are not running out of power. Also pause or finish a recording if your are not longer moving.
4.4.3 Ending recording

You can end the recording of a route by tapping the *record timer* on the dashboard or by tapping ‘Stop recording’ in the record screen. The record screen can be opened by tapping the line of the recorded route on the map, and by selecting the record tab in the *routes screen*.

A pop-up will appear asking you to stop the recording like in the example below:

If you press ‘Stop’ the recording will be ended and a screen is presented in which you can *save the recorded route*.

4.4.4 Pause recording

If you press ‘Pause’ in the pop-up which appears when *ending a route recording*, the recording will be paused.

The *record timer* on the dashboard will be set to ‘–:–’ during a pause. The :ref:`record distance meter` will show the recorded distance as you can see below:
4.4. Recording routes

Fig. 10: *Ending recording a route.*

Fig. 11: *The recording of a route is paused, which can be seen from the record clock and record distance meter.*
4.4.5 Restart recording

To restart a paused recording you have tap record timer or the ‘Restart recording’ button in the top of the record screen. The following pop-up will then appear:

![Restart recording screen]

Fig. 12: Restarting the recording of a route.

If you press ‘Restart’ the recording will be continued. If you press ‘Stop’ the recording of a route will be finished and you will be given the possibility to save the recorded route.

4.4.6 Saving recording

If you have stopped the recording of a route a screen will appear in which you can save the recorded route. An example is displayed below:

In this screen you can subsequently enter the title, the author and a description.

Based on the start and finish point of the route an automatic suggestion for the route title will be made. This suggestion appears in the title field if you do not enter a title yourself. If you do not enter a title, the suggestion will be used when saving the route.

To ensure automatic title suggestion functions properly, the option ‘Addresses - Find automatically’ should be enabled in the settings.

If you press the ‘>’ on the right hand side of the title you can add an URL.

If you press the ‘>’ on the right hand side of the author you can add contact information, and copyright and license details. If you save a route also the author and copyright details will be saved for future use. If you record or plan a new route, the same author and copyright details will already be filled in. Therefore you do not have to reenter these details when saving the next recorded route.
You can alter the route type by pressing the route type field. If you save the route, the current route type will be used as a suggestion for the next saved route. If you for example only record bicycles routes you therefore only have to set the route type once.

Waypoints that are currently shown on the map can be included with the route by the setting ‘Include waypoints’. If you tap this setting you can change it. You can choose between including all waypoints that are on the map, waypoints near the route, and no waypoints. If you choose for waypoints near route, you can determine the maximal distance of the waypoints to the route. Be careful with setting this setting to all waypoints, since it might cause adding waypoints which are far a ways and hence irrelevant to a route.

If you are ready entering the fields, you can press ‘Save’ on the top right to save the recorded route. If you do not want to save the route you can press ‘Cancel’ on the top left.

The route will be saved into the folder that is currently opened in the routes tab of the routes screen.

After you have saved the recorded route, a pop-up will appear that asks you if you would like to share your route with Topo GPS or with another app (for this tap ‘More). If you do not want to share the recorded route, you can tap ‘Cancel’.

If you choose Topo GPS you can share your route with other Topo GPS users, so that they can import your recorded route.

It is also possible to share the recorded route later.

The screen that appears is the route details screen. You can load the recorded route on the map by tapping the ‘Show on map’ button on the top right of this screen.

You can also load the recorded route on the map at a later time.
4.5 Planning routes

Planning a route is creating a route between several locations using a means of transportation. These locations are called route points in Topo GPS. An alternative to route planning is route generation.

The route planner can be opened by selecting the tab ‘Plan’ in the bottom of routes screen (Dashboard > Route button or Menu > Routes). The following screen will appear:

![The route planner with no route planned.](image)

In the bottom of the screen you find an overlay with a search bar and several buttons which you can use to control the route planner.

To zoom the map to your location, you can tap the position button in the bottom left of the overlay.

To undo an action you have to press the ‘Undo’ button (circle with return arrow) in the planner. You can undo all actions in the planner until the undo button becomes light blue.

Next to the undo button, you find the more Button (circle with points). If you tap the more button a menu will appear with the following options:

- **Change map**: You can change the map of the planner with this option.
- **Add route**: This can be used to join a saved route to the planned route, or to add a saved route to the map.
- **Search**: With this option you can create a route point by entering a location name.
- **Reset**: This will reset the route planner. The planned route and the route points will disappear.

To save a planned route, you have to press ‘Save’ button on the top right.

You can obtain more information about the route planner, by pressing ‘Planner: Copyright’, in the top left of the route planner screen.
4.5.1 Transportation means

To plan a route, first check the transportation means in the bottom center. In the example above, it is set to ‘Pedestrian’. By tapping ‘Pedestrian’ a screen will appear in which you can change the transportation means to for example bicycling, car or as the crow flies.

If you plan a route as the crow flies or over a layer, you can do this without an internet connection. For the other ways of transportation an internet connection is required, because the routes are calculated externally.

4.5.2 Adding route points

To plan a route you need to add route points. You can add route points in three ways:

- By entering a location in the search bar of the route planner overlay.
- By pressing long on the map and dragging the icon to the desired location.
- By tapping waypoints, the position marker, or nodes from a node network.

If you have added at least two route points, a route will be computed between the route points.

Below several examples of planning routes are discussed.

Planning a route by entering the name of a location

To plan a route by entering the name of a location, first open the route planner. If a route is already planned, tap More > Reset to reset the planner.

If you tap the search bar in the route planner overlay a screen will appear in which you can enter the starting point and the destination. An example is shown below:

Your current location is automatically filled in as the starting point, you only need to enter the destination. If you wish to use another starting point just enter another location in the ‘From:’ field. As an example we now enter ‘Sommersham’ as our destination:

If you now tap ‘Plan’ on the top right or tap the location in the list of search results, you will return to the plan screen and a pedestrian route will be planned from your current location to ‘Sommersham’ as you can see in the example below:

In the route planner overlay the destination and origin of the planned route are shown as you can see in the figure above. If you tap them, they can be changed. Furthermore, the length of the route is shown. If you tap the length, the map will be zoomed to the planned route. Also the total ascent is displayed, if you tap it you can view a height profile of the planned route.

If you press ‘Save’ on the top right, you can save the planned route.

If you do not want to save the route, you can press ‘< Map’ on the top left to return to the main screen. The planned route will then also be visible on the map as in the example below:

If you tap the route line of a planned route in the main screen, you will return to the route planner.
Fig. 15: *Screen in which you can enter a starting point and a destination.*

Fig. 16: *Entered the destination ‘Sommersham’.*
Fig. 17: Planned a route from your current location to ‘Sommersham’.

Fig. 18: The planned route is shown in the main screen.
Planning a route by manually creating route points on the map

To plan a route by manually creating route points on the map, first open the route planner. If a route is present, tap More > Reset to reset the route planner.

If you press long on the map, a route point will appear. If you hold your finger on the map, you can drag the route point to the desired position. If you then release your finger, the route point will be positioned. An example is displayed below:

![Fig. 19: A route point is added manually to the map.](image)

The added route point is colored green. The green color indicates that the route point is selected.

You can add a second route point by pressing long on the map. This one will be colored blue and indicates a route point that is being added. A blue route point will always follow a green one. You now have to drag the blue route point to the desired position. If you release your finger a route will be planned from the green to the blue route point as you can see below:

By planning a route the route points will be moved automatically to the closest road.

By releasing the blue route point, it will be selected automatically and colored green. The originally selected route point will be deselected and becomes orange.

The length of the planned route is indicated on the route planner overlay in the bottom. If you tap the length, the map will zoom to the planned route.

To extend the route you have to add a third route point, by pressing long on the map. An example is displayed below:
Fig. 20: A route is planned between two manually route points.

Fig. 21: A route is planned via three route points.
**Planning a round-trip**

To plan a round trip, you first have to add several route points as in the example above. Then tap the first route point. A pop-up will appear in which you are asked to to plan to or select the start point. Tap ‘Plan to start point’ and the route will be closed, as you can see in the example below:

![A round-trip route is planned via three route points.](image)

**Selecting route points**

You can select a route point by tapping it. The tapped route point will become green. A route point that immediately follows a selected route point will be colored purple. In this way you can always recover the direction of the route. All other route points will be colored orange.

**Moving route points**

To move a route point, you first select the desired route point by tapping it. The route point will become green. Next, you press long on the selected route point. Hold your finger on the screen and drag the route point to the new position. An example is displayed below:

If you release the moved route point, the new route will be calculated automatically as you can see in the figure below:
Fig. 23: *Moving a route point.*

Fig. 24: *Newly planned route after moving a route point.*
Inserting route points

To insert a route point in between two existing route points, you first have to select the route point that lies just before the route point that you intend to insert.

If the selected route point is not the last route point, you will see a purple route point. That is the route point that directly follows the green route point. An inserted route point will be inserted between the green and the purple point.

If you press long on the map, a blue route point will appear. If you hold your finger on the map, you can drag this point to the desired position. An example is displayed below:

![Fig. 25: A new route point (blue) will be inserted between the selected (green) and the following route point (purple).](image)

If you release you finger from the screen, the route between the green and purple route point will now go via the inserted route point. This is illustrated in the figure below:

If the new route has been computed, the inserted route point will be automatically selected and colored green.

It is also possible to insert a route point on the current route. Press long on the route, a new blue route point will appear. If you move your finger around, the new route point will move along the route. If you release your finger, the route point will be inserted.
Removing route points

To remove a route point, you first have to select the desired route point by tapping it. Next, press long on this route point, hold your finger on the screen and drag it to the top or bottom of the screen. You will see that the route point disappears. An example is displayed below:

If you have dragged the route point to the route plan window you can release it. The route point will be removed and the route will be recalculated as you can see below:

Planning a route from your current location to a point

You can plan a route from your current location to a point in several ways.

Planning from current location to a point on the map

If you want to plan a route from your current location to a point on the map, the fastest way is to press long on the map. An icon will appear which you can drag to the desired location. If you release your finger the waypoint creation screen will appear. Scroll down in this screen to see the route plan section, as in the example below.

Below the plan button you can see the current transportation means. If you tap it, you can change it to the desired means of transportation. Next to the plan button you see an overview map with the current location and the point. If you tap the plan button, a route will be planned from your current location to the point and you will return to the main screen as you can see in the figure below:

If you tap the route curve, the route planner will be opened. There you can tap More > Reset to remove the planned route, or ‘Save’ to save it.
Fig. 27: Removing a route point by dragging it to the top or bottom of the screen.

Fig. 28: The route after removing a route point.
Fig. 29: *Planning a route to a point on the map.*

Fig. 30: *A route was planned from your current location to a point on the map.*
**Planning from current location to a waypoint**

To plan a route from your current location to a waypoint, first open the waypoint details screen by for example tapping on a waypoint that is loaded on the map. Then scroll down in the waypoint details screen to the plan section. Check the transportation means, and tap ‘Plan’ to plan a route from your current location to the waypoint, as in the example above.

**Planning from current location by entering a location name**

It is possible to plan a route from the current location by entering a location name in the route planner screen. Alternatively, tap Menu > Search > Address and enter a location in the search bar. In the search results that appear, tap the info button to view more information about a search result. Scroll down to the plan section. Check the transportation means, and tap ‘Plan’ to plan a route from your current location to the search result, as in the example above.

**Planning from current location to a coordinate**

To plan a route from your current location to a coordinate, first enter a coordinate, via Menu > Search > Coordinate. Then return to the map, tap on the created waypoint and plan the route as explained above.

**Planning a route over a bicycle node network**

A bicycle node network is a collection of numbered nodes and connections between them. A sign with the node number is placed at the location of a node. It also shows the direction to the nearby nodes. The connections are also marked with signs. A bicycle node network allows for easy navigation, because a route can be described by the node numbers.

Bicycle node networks can be found in the Netherlands, Belgium and Germany.

To plan a route over a bicycle node network, first load the bicycle node network on the map via Menu > Layers > Bicycle node network. Then tap a bicycle node and tap ‘Plan a route’.

Alternatively open the route planner and set the transportation means to ‘Bicycle node network’.

Tap subsequently the desired bicycle nodes to plan a route. An example is shown below:

The route is planned on your device, that is why you do not need an internet connection for planning routes over a bicycle node network.

Like with route planning by creating route points manually on the map, it is also possible to move, insert and remove route points.

If you press long on a connection between the nodes, you can also add a route point on a connection.

In the route planner overlay you can see the list of the nodes you have to follow. You can slide this list to the left and the right.

If you are done planning a route you can press ‘Save’ to save the route. If you tap ‘< Map’, the route will not be saved. You will return to the main screen and the map will zoom to the planned route.
Fig. 31: Planning a route over a bicycle node network.

Fig. 32: The planned bicycle node network route on the main screen.
4.5.3 Finishing route planning

If you are ready with planning a route, you can return to the main map by tapping ‘< Map’ on the top left of the screen. The planned route will then be shown on the map in the main screen, but it will not be saved. If you tap a planned route in the main screen, you will return to the route planner.

4.5.4 Saving planned route

If you want to save a planned route tap ‘Save’ in the top right of the route planner screen. A screen will appear in which you can enter the details of the route as illustrated below:

You can enter the title, author, route type, and description. You can also decide to include waypoints that are currently loaded on the map in the route. Then tap ‘Save’ to save the planned route. You will return to the main screen and the map will be zoomed the planned route.

4.6 Generating routes

Suppose you want to walk or cycle a route of a certain length from a certain point. You could try to plan a route, and by trial and error you will probably end up with a nice round trip route of the desired length. However, in such situation it might be much easier to letting Topo GPS generate a route for you.

Generating a route is the automatic creation of a round-trip route. The only inputs are the starting point, the desired length and the transportation means.

To generate a route, first open the ‘Generate’ tab in the routes screen. A route will be immediately generated as in the example below:
The generated route is shown on the map.

The green point on the map is the start and end point of the route. By pressing long on the green point, you can drag it to another location on the map. Immediately a new route will be generated from the new location.

The slider in the bottom determines the desired length of the route. The desired length is displayed on the right hand side of the slider. If you move the slider, a new route will be generated. The actual length of the generated route is displayed above the slider. In the example above, the desired length is 7 km, but the actual length of the generated route is 7.7 km. The desired and actual length, do not always match exactly.

Next to the actual length, you see the total ascent of the routes. If you tap it, you can view the height profile of the generated route.

Below the slider there is the transportation means button. In the example above it is set to pedestrian. If you tap this button you can change the transportation means to for example ‘Bicycle’.

In the bottom there is the ‘Generate’ button. If you tap it, you will generate a new route. This can be useful if you want to generate another route, but you do not want to change the starting point or the desired length.

In the example below, we have tapped on the ‘Generate button’ to generate a new route from the same point:

Clearly the newly generated route is different from the first route. By pressing multiple times the generate button, you can generate routes until you find a route you like.

As an example we now change the desired length to 50 km. A new longer route is generated, as you can see in the example below:
Fig. 35: Another route is generated.

Fig. 36: A route with a desired length of 50 km is generated.
If you tap ‘Save’ on the top right of the route generation screen, the generated route will be saved on your device, loaded on the map and you will return to the main screen. Below you see the result of saving the first generated route of the examples above:

![Generated Route on Map](image)

**Fig. 37: The generated route was saved and loaded on the main map.**

### 4.7 Route details

By tapping the information button (i) on the right hand side of a route title in the ‘Routes’ tab of the routes screen the route details screen appears.

If you have loaded a route on the map, you can also open the route details screen by tapping the route curve.

The route details screen of the route ‘Carnedd Llewelyn’ is shown below:

In the top of the route details screen a map with the route is displayed.

Next you can see the title, the route type, distance, time (if the route is recorded) and author. If you tap this item, you can view additional details of a route.

A description and photos will be shown if they are present. If you tap a photo, it will be shown full screen and you can browse through the photos as in a slideshow.

Next, if present an altitude/elevation profile, a speed and a distance profile are shown. You can tap these profiles to view the profile in more detail and see additional height and speed information.

If you scroll further down to the section ‘Tiles on current map’, you download the map tiles of a route.

In the bottom of the routes screen you can find a toolbar with the following buttons:

- ‘<’ and ‘>’ buttons: With these buttons you can browse backward and forward through the route details of a collection of routes.
• Trash button: If you tap this button you can remove the currently shown route from your device.

• Export button: If you tap this button you can export the route.

• Edit button: If you tap this button an edit pop-up with several options to edit the route will be shown.

4.8 Downloading map tiles of a route

You can download the map tiles of a route by scrolling down in the route details screen to the section ‘Tiles on current map’. An example is shown below:

The percentage offline accessible map tiles indicates the percentage of map tiles relevant to the route that are stored on your device. This percentage only applies to the map that is currently visible in the map screen. If the percentage is 100% it means that all map tiles necessary to display the route on the map are offline accessible.

Tap the ‘Download’ button to start downloading the map tiles. It is recommended to download all map tiles on a WiFi connection before you go outdoors to follow the route. In that case you can be certain that the part of the map relevant to the route is accessible on all zoom levels, even if you are not connected to the internet.

On the download button it is estimated how many megabyte (MB) the downloading of map tiles will be, and how much storage space the download would require.

If you have tapped the download button, the button will indicate how much tiles remain to be downloaded. You can abort downloading by tapping ‘Stop download’. If all map tiles relevant to the route have been downloaded, the button will read ‘Downloaded completely’ as you can see below:
Fig. 39: All map tiles relevant to the route have been made offline accessible.
4.9 Route profiles

When height information is available you can find an altitude or an elevation profile by scrolling down in the route details screen. When timing information is available you can also find a speed and a distance profile in the route details screen. When recording a route, you can tap the route line of the recorded route to open the record screen. There you also find an altitude and a speed profile. When planning a route, you can tap the ‘Total ascent’ label to see the elevation profile of the planned route.

![Fig. 40: An example of altitude, speed and distance profiles in the route details screen.](image)

Both an altitude and an elevation profile are height profiles. Altitude is the height of the device with respect to the mean sea level. Elevation is the height of the ground with respect to the mean sea level and is most often derived from a digital elevation model. If somebody is walking on the ground, the altitude is approximately equal to the elevation. But if somebody is flying, altitude and elevation are different.

You can tap a profile in the route details screen, to open the profile screen.

Below we discuss only the altitude profile, the other profiles show other information, but their profile screens function similarly.

An example of the altitude profile screen is shown in the figure below:

The altitude profile screen contains a graph and information. The graph contains a pointer which you can drag around to read off a value from the profile.

In the bottom you can select between the tabs ‘Details’ and ‘Map’. In the example above the ‘Details’ tab is opened. This gives detailed information about the altitude profile, such as ‘Total ascent’, ‘Average ascent grade’ and ‘Total descent’.

If you select the tab ‘Map’ a map of the route will be shown in combination with the altitude profile, as you can see in the example below:

The position of the pointer in the graph is shown with a green point on the map. If you drag the green
4.9. Route profiles

Fig. 41: Altitude profile of a route in more detail

Fig. 42: Altitude profile of a route with the map of a route
point along the route, the pointer in the altitude profile will move as well. In this way you can easily find interesting points in the altitude profile on the map.

If you tap ‘More’ you can change the horizontal axis. You can choose between ‘Distance’, ‘Duration’ and ‘Time’. An example with showing the time on the horizontal axis is shown below:

![Altitude profile of a route as a function of time.](image)

If you tap the export icon on the top, you can export and share the altitude profile in PDF format.

### 4.10 Editing routes

To edit a route, first open the **route details screen**. Then tap the button ‘Edit’ in the bottom toolbar. A pop-up appears as you can see in the example below:

In the edit pop-up you can choose between the following options:

- **Edit text.** If you tap this option, a screen will appear in which you can edit the title, author details and description.

- **Edit route type.** If you tap this option, a screen will appear in which you can change the route type.

- **Edit track.** If you tap this option, the route will be loaded in the route planner, which allows you to **modify the route track**.

- **Edit waypoints.** If you tap this option, the waypoints belonging to the route will be shown in a waypoints screen. You can modify and remove waypoints just like you do with normal waypoints.

- **Edit settings.** If you tap this option, you can alter the settings of a route. You can determine whether to enable showing the waypoints of a route. Furthermore you can enable ‘Reverse direction’, which reverses the direction of a route.
4.10.1 Editing route track

To change the track of a route, open the route details screen and tap ‘Edit > Edit track’. Alternatively, open the route planner and tap ‘More > Add route’. Tap a route in the list with routes and choose ‘Join to planner’.

The route will be loaded in the route planner as can be shown from the example above.

Just like with manually planning a route you can add, move, insert and remove route points to modify the route. If you are done editing the route track you can press ‘Save’ to save the result. The modified route will be saved a new route, the existing route will not be changed. Optionally you could remove the original route later.

Below we will give the following examples:

- Extending a route
- Shortening a route
- Replacing a part of a route
- Merging routes

Fig. 44: Edit options pop-up route details screen.
4.10.2 Extending a route

To extend a route, first load the route in the route planner as explained above. Then tap the last route point so that it becomes selected and green. You can now add a route point by pressing long on the map. A blue route point will appear. As long as you hold your finger on the map, you can drag the blue route point to the desired location. If you release your finger a route will be drawn from the green route point to the added route point. The added route point will be selected and colored green. An example of extending the route in the figure above is shown below.

You can now save the extended route by pressing ‘Save’ in the route planner window. A saved route will be always stored as a new route.

4.10.3 Shortening a route

To shorten a route, first load the route in the route planner as explained above. As an example we want to shorten the following route:

We want to start the route in Baylham Stone. Press long on the route to insert a route point on the route. When you move your finger the route point will move on the route. Move the route point to Baylham Stone and release your finger.

Next you have to press long on the first route point, drag it to the bottom or top of the screen and release your finger. The first route point will be removed and the route will be shortened from the inserted route point to the last route point. This is illustrated in the figure below:

You can now save the shortened route by tapping ‘Save’ on the top right.
Fig. 46: *The route is extended to the added route point.*

Fig. 47: *A route that needs to be shortened.*
Fig. 48: *The green route point is inserted into the route.*

Fig. 49: *The first route point has been removed and the route is shortened.*
4.10.4 Replacing a part of a route

To replace a part of a route, first load the route in the route planner as explained above.

As an example we will now change the ‘Gower Hike’ so that the middle part of the route will go over the ‘Gower Way’. Initially the route looks as follows:

If you want to replace part of a route you have insert two route points, one at the point the point the route needs to deviate, and one at the point the deviation will return to the original route. You can insert a route point by pressing long on the route. A blue route point will appear which you can move along the route to the desired location.

Since we want to change the route, so that the middle part runs over the ‘Gower way’ we have inserted two route points at the Gower way, as you can see below:

The route between the orange and the green route point needs to be modified. We now have to insert a third routepoint in between the orange and the green route point by pressing long on the route. The result is shown below:

By pressing long on the green route point you can drag to the bottom or the top of the screen to remove it. The route between the previous and next point will be recomputed so that is runs over the ‘Gower way’ as is shown below:

You can now save the shortened route by pressing ‘Save’ in the route planner window.

Fig. 50: The northern part of the route is to be replaced.
Fig. 51: Two route points have been inserted.

Fig. 52: The green route point is inserted in the route.
4.10.5 Merging routes

To merge routes, first open the route planner. Add one route to the planner by tapping ‘More > Add route’. Tap the desired route and choose ‘Join to planner’. Repeat the previous step to add more routes to the planner.

If you press ‘Save’ in the route planner window, the saved route will be the combination of all added routes.

4.11 Removing routes

To remove a route from your device you first have to open the route details screen.

You can do this by pressing the info button on the right hand side of a route in the save routes tab of the routes screen or by tapping a route that is loaded on the map.

An example of the route details screen is displayed below:

You can remove the route from your device by pressing the trash icon on the bottom of the route details screen. A pop-up will appear in which you have to confirm the removal as is shown below:

If you press ‘Remove’ the route will be removed from your device.

If you have enabled iCloud synchronization of routes the route will also be removed from iCloud and from all devices that are synchronized with the same iCloud account.

It is also possible to remove multiple routes. Open the ‘Routes’ tab of the routes screen. Press ‘More > Select’ and select the routes that need to be removed. Next press the trash icon on the bottom of the screen and confirm the removal.
Fig. 54: *The route details screen of the route ‘Gower Hike’.*

Fig. 55: *Removing the route ‘Gower Hike’.*
If you only want to remove a route from the map (and not from the device) you have to tap ‘Remove from map’ in the route details screen.

4.12 Selecting routes

In the ‘Routes’ tab of the routes screen you can select routes and perform one of the following actions on the selected routes:

- Remove selected routes
- Move selected routes into a folder
- Export selected routes
- Load selected routes on the map
- Remove selected routes from the map

Selecting routes is similar to selecting waypoints.

4.12.1 Opening selection screen

If you press the button ‘More’ on the top right of the ‘Routes’ tab, a menu will be shown as in the figure below.

![Fig. 56: The more menu of the routes tab.](image)

Press ‘Select’ in the menu to open the selection screen. It is also possible to open the selection screen by pressing long on an item in the routes list. That item will then be selected immediately. An example of a selection screen is shown below:
4.12.2 Selecting route

To select a route, tap a route item in the selection screen. A checkmark will show up and the background of the route row will become grey to indicate that it is selected. An example in which two routes are selected is displayed below:

The title of the selection screen shows how many items are selected. You can deselect a route by tapping a selected one. If you want to select all routes in the list, you have to press ‘All’ on the top left. To return to the usual routes screen you have to press ‘Cancel’.

4.12.3 Performing an action

If you have made a selection you can perform an action with one of the buttons in the toolbar on the bottom of the screen. The toolbar buttons are from left to right:

- **Trash button**: If you press this button a pop-up will ask to to whether you would like to remove the selected routes from your device (and iCloud if enabled). If you press ‘Remove’ the selected routes will be removed.

- **Folder button**: If you press this button a screen with the folder tree will be opened. You can select a folder and the selected routes will be moved to a new folder.

- **Export button**: If you press this button the export pop-up will be shown. In this pop-up you can select the kind of data to be exported and change the export settings. If you press ‘Export’ in the export pop-up the selected routes will be exported. Another pop-up with apps and actions will be shown. If you tap an app or action, the result of the export will be handled by the app or action.

- **Map button**: If you press this button, the selected routes will be loaded on the map. The map will zoom automatically to the selected routes and you will return to the map.
• More button: If you press the more button in the bottom toolbar, a menu will appear from which you can choose the following actions:

  – Remove from map: If you press this button, the selected routes will be removed from the map.

4.13 Searching routes

In the ‘Routes’ and ‘Shared’ tab of the routes screen you can search routes by entering keywords in the search bar, and by applying filters. Furthermore you can sort the routes in various ways.

4.13.1 Searching routes with keywords

If you enter a keyword in the search bar on the top of the list of routes only routes will be shown which have the keyword in its title, description or author. Search is case insensitive. If you search in a folder, also all search results in descendant folders will be displayed. If a filter is applied, the search will restrict itself to the filtered route.
4.13.2 Sorting routes

Below the folder/filter bar below the search bar, the current sort method is displayed in the middle. If you tap the sort button you can change the current sort method between:

- **Customizable order**: The routes are sorted in customizable order. If you did not change the order manually, the most recent added routes are on top.
- **Closest on top**: The routes are sorted according to their distance of the start or end point to your current location, the closest is on top.
- **Newest on top**: The routes are sorted according to their creation time, the newest is on top.
- **Longest on top**: The routes are sorted on length, the longest is on top.
- **Shortest on top**: The routes are sorted on length, the shortest is on top.
- **Oldest on top**: The routes are sorted according to their creation time, the oldest is on top.
- **Most recently updated on top**: The routes are sorted according to the time at which they were last changed, the routes that was changed most recently is on top.
- **Least recently updated on top**: The routes are sorted according to the time at which they were last changed, the routes that was changed the longest go is on top.
- **Alphabetically**: The routes are sorted in alphabetical order.
4.13.3 Filtering routes

It is also possible to filter routes on location and on route type. To enable a filter, tap the filter button in the routes screen (just below the search bar on the right hand side). If the filter is enabled, the filter button has a blue background, as in the figure below. If the filter is disabled, only the edge of the filter button is blue, as in the figure above.

In the figure above you see an example of an enabled filter. Below the search bar on the left hand side you see a description of the currently active filter. Here the routes are filtered on location, only routes within 100 km of the current location are shown. If you tap the filter description you can modify the current filter. To disable the filter, tap the filter button.

To edit a filter, tap the filter button to enable the filter. Then tap the filter description to modify the current filter. The following screen will be shown in which you can change the current filter:

Fig. 60: Sorting routes on distance to current location.
Fig. 61: A filter is enabled.

Fig. 62: Modifying a filter.
Filtering on route type

In the section ‘Route type’ you can filter the routes on route type, like for example ‘Walking routes’. If you choose for ‘All routes’ the routes are not filtered on route type.

Filtering on location

In the section ‘Start or finish’ you can change the properties of the location filter. The slider can be moved to determine the maximal distance of the start or finish of a shown route to a specific point. Below the slider, the point is displayed. In the example above this is the current location. If you tap it, you could change the current point to:

- **Everywhere**: There is no filtering on location.
- **Current location**: Only routes within a certain distance of the current location are shown.
- **Visible part of map**: Only routes that are within the bounds of the currently visible part of the main map are shown in the routes screen.
- **Custom location**: If you enter a custom location or coordinate only routes within a certain distance of the entered location are shown.
Filtering on route length

In the section ‘Length’ you can set the minimal and maximal length of the filtered routes.

4.14 Organizing routes

You can keep your routes organized by creating folders and moving routes into folders. It is also possible to change the order of the routes appearing in the ‘Routes’ tab of the routes screen.

Organizing routes is similar to organizing waypoints.

4.14.1 Creating a folder

To create a folder, first open the routes screen and select the tab ‘Routes’ to show your saved routes. Then press More (top right) > New Folder. The new folder screen will be opened, an example is shown below:

![The new folder screen](image)

To create a folder, you have to enter a name. Optionally you can choose the location in the folder tree where the new folder is to be added. This is always initially set to the currently opened folder in the route screen. If you press location and select a folder you can change the location to another folder. When you have entered a name you need to press ‘Save’ to create a new folder. You will return to the routes screen and the newly created folder will be shown in the list.

As an example we will enter ‘Favorites’ and press ‘Save’ to create a ‘Favorites’ folder. The routes screen now looks as follows:

The ‘Favorites’ folder is listed in the routes screen with a folder icon.
Fig. 64: A ‘Favorites’ folder has been created.

4.14.2 Moving routes into folder

To move routes into a folder you have to open the selection screen by pressing More > Select or pressing long on an item in the routes screen. Select the to be moved routes and press the folder icon in the bottom toolbar. Then the ‘Move items to folder’ screen will be shown, example is shown below:

In the ‘Move items to folder’ screen, the folder tree is shown. If you tap on a folder the selected items will be moved to that folder and you will return to the routes screen.

As an example we now will move the waypoints ‘Gower Hike’ and ‘Midhurst Fields’ to the ‘Favorites’ folder. After moving the two routes as indicated above the routes screen looks as follows:

In the routes screen the routes ‘Gower Hike’ and ‘Midhurst Fields’ have disappeared. They now can be found in the folder ‘Favorites’.

4.14.3 Opening a folder

To open a folder, just tap the folder item in the routes screen. As an example we now open the folder ‘Favorites’. The routes screen will then look as follows:

The ‘Gower Hike’ and ‘Midhurst Fields’ routes now can be found in the ‘Favorites’ folder.

Below the search bar you can see the current location in the folder tree. If you press ‘All routes’ you will return to the root folder.

4.14. Organizing routes
Fig. 65: Move items to folder screen.

Fig. 66: The routes screen after moving two routes into the folder ‘Favorites’.
4.14.4 Loading contents of folder

To load all routes in a folder and its descendant folders, press long on a folder item in the routes screen to enter the selection mode and to select the folder. Then press the map icon in the bottom toolbar to load the contents of the folder on the map.

Alternatively tap the info button next to a folder in the routes screen. Then press ‘Show on map’ on the top right to load all routes on the map. You will return to the main map screen and the map will be zoomed to the contents of the folder.

4.14.5 Removing contents of folder from map

To remove the routes in a folder and it descendant folders from the map, press long on a folder item in the routes screen to enter the selection mode and to select the folder. Then tap in the bottom tool bar the more button and then tap ‘Remove from map’.

Alternatively, first tap the info button next to a folder in the routes screen to open the folder details screen. Then press ‘Remove from map’ on the top right to remove all routes from the map. If ‘Shown on map’ is shown, first tap it to load all routes, then go back to the routes screen to open the folder details screen. Then press ‘Remove from map’ on the top right.
4.14.6 Renaming folders

To rename a folder first open the routes screen and tap the info button next to a folder item to open the folder details screen. Then tap ‘Edit’ in the bottom toolbar, change the name and press ‘Save’.

4.14.7 Changing the order of routes

Just below the folder tree / filter bar in the ‘Routes’ tab of the routes screen the current sort method is displayed. If you tap the sort method you can change it. If it is set to ‘Customizable order’ you can determine the order of the routes.

To change the order of the routes in the ‘Favorites’ folder, just open that folder. Then press More > Select to enter the selection mode. The routes screen then looks as follows:

![Fig. 68: The ‘Favorites’ folder in selection mode.](image)

On the right hand side of each item a handle with three bars is displayed. Drag such a handle to a desired position and release your finger. The route will then be moved in the list to the desired location. In the example below, we have moved ‘Gower Hike’ to the top.
4.15 Importing routes

In this section it is explained how to *import a route from a geodata file, from an url* and how to *import routes shared by Topo GPS users*.

4.15.1 Importing routes from geodata files

It is possible to import routes in Topo GPS in the following file formats: gpx, kml/kmz, geojson and ozi explorer track files (plt). Files of these types can also be imported if they are compressed in a zip file.

To import route you could try to tap on a file icon. Most often an app picker will show up. Sometimes you need to scroll through the list of apps or tap More to find ‘Topo GPS’. You then have to select ‘Open with Topo GPS’ or ‘Copy to Topo GPS’ and the file will be imported in Topo GPS.

Alternatively you could open the ‘Routes tab’ of the *routes screen*. Then tap More > Import file. Then the files app will be opened. Here you can select a cloud storage, like iCloud, Dropbox, OneDrive or Google Drive. Then you can browse through your files and select the files you want to import.

If the routes were imported successfully, you will return to the main screen, and the map will be zoomed to the imported routes. The imported routes will be saved on your device and can be found back in the ‘Routes’ tab of the *routes screen*.

How to import a geodata file from iMessage is explained in a *separate section*. 
4.15.2 Importing route from url

If you press long on an url to a geodata file you can copy it to your pasteboard. Then open the routes screen and select the tab ‘Routes’. Tap ‘More > Import URL’ to open the URL import screen. Here you can paste your URL. Then tap ‘Import’ to import the URL.

If the routes were imported successfully, you will return to the main screen, and the map will be zoomed to the imported routes. The imported routes will be saved on your device and can be found back in the ‘Routes’ tab of the routes screen.

4.15.3 Importing routes shared by Topo GPS users

To import a route shared by other Topo GPS users, first open the routes screen and select the tab ‘Shared’.

The shared routes screen will be shown as in the example below:

![The shared routes screen.](image)

The shared routes screen displays routes which are stored on the Topo GPS server and shared by other Topo GPS users. You can search, filter and sort these routes just like you can with your saved routes. Applying a filter can help you to find for example bicycle routes near your current location, as in the example below:

If you tap a route title in the list it will be immediately imported and you will return to the main screen. You can tap long on an item or tap ‘Select’ on the top right to enter the selection mode. Then you can select multiple routes and import them at once.

If you tap the info button (i) next to a route the route details screen of a shared route will be opened. Sometimes it will take a few seconds before all route data is downloaded. An example is shown below.

You can use the ‘<’ (previous) and ‘>’ (next) buttons in the bottom toolbar to browse through the list of shared routes. If you want to import a specific route you can tap the ‘Import’ button on the top right.
Fig. 71: Searching bicycle routes of minimal 10 km length around your current location.

Fig. 72: The route details screen of a shared route.
4.16 Exporting routes

To export a single route, open the route details screen and tap the export icon in the bottom toolbar.

To export multiple route, open the routes screen and select the ‘Routes’ tab. Then open the route selection screen by tapping More > Select. Select the desired routes and folders and tap the export icon in the bottom toolbar.

After pressing the export icon the export pop-up will appear in both cases, an example is shown below:

![The export pop-up.](image)

In the export pop-up you can select the kind of data that will be exported when pressing the export button in the bottom of the pop-up. The kind of exported data can be any combination of the following:

- **Geodata**: If you include ‘Geodata’ a data file containing the route(s) will be exported. The file format is shown in the subtitle of the geodata item. In the example above it is gpx. If you press settings you can change the data format. Supported file formats for exporting routes are gpx, gpx.zip, kml, kmz, geojson, geojson.zip.

- **Photos**: If you include ‘Photos’ the photos of the routes(s) will be exported as well. This item is not available if there are no photos.

- **Map**: If you include ‘Map’ a map of the routes(s) will be exported. The pixel size of the map is displayed in the subtitle. You can change the pixel size in the export settings.

After you have selected the kind of data to be exported you can press ‘Export’ in the bottom of the export pop-up to export the route(s). Then a regular iOS pop-up will show up in which you can pick an app to send the exported data to. For example, iMessage to send the route(s) to a friend, or the files app to save the routes(s) on the cloud.
4.16.1 Export settings

In the export pop-up you can also change the export settings by pressing the ‘Settings’ button on the top right of the export pop-up. Then the following screen will appear:

![The route export settings screen.](image)

The first section in the export settings screen is about geodata. Here you can set the data format of the to be exported waypoint(s). By tapping ‘Route data format’ you can choose between gpx, kml, and geojson. You can decide whether you want to compress the data. If you enable compression the exported geodata file will be zip compressed. The file size will be much smaller than without compression, therefore we recommend you to enable compression.

The remaining sections deal with the map (image) that can be exported. You can set the desired pixel width and height with the sliders. Also to generate a map sometimes map tiles need to be downloaded. You can determine if you want to allow cellular downloads of map tiles.

4.16.2 Exporting all routes

To export all routes stored on your device, open the routes screen and select the ‘Routes’ tab. Make sure that the filter is not active (filter button has a blue edge). Go to the root routes folder, so that ‘All routes’ is displayed below the search bar. Make sure that the search bar is empty. Then open the route selection screen by tapping More > Select. Press ‘All’ on the top left to select all routes and folders. Then tap the export icon in the bottom toolbar to open the export pop-up. Select the kind of data to be exported in the export pop-up and press ‘Export’.
4.17 Sharing routes with Topo GPS

You can share a route with Topo GPS so that it can be imported by other Topo GPS users. Only routes that you have recorded or planned yourself can be shared.

Shared routes including its photos are visible to all Topo GPS users and might in the future be accessible on a webpage.

To share a route with Topo GPS, tap the export icon in the bottom of the route details screen. Then select ‘Geodata’ in the export pop-up and tap ‘Export’ to export the route. A share pop-up will appear in which you can select apps, as in the example below:

![Share pop-up]

In the share pop-up tap ‘Share with Topo GPS’. Then a new pop-up will appear in which you can confirm sharing the route with Topo GPS.

If you tap ‘Share’ in this pop-up the route will be shared with Topo GPS and will be visible to other users in the ‘Shared’ tab of the routes screen, as in the example below:

4.17.1 Modifying shared route

If you want to modify a shared route, you have to edit it on your device and share it again.
Fig. 76: *The share with Topo GPS pop-up*

Fig. 77: *The route Denny wood was shared with Topo GPS*
4.17.2 Removing shared route

If you accidentally shared a route and you want to remove the shared route, please send a message to support@topo-gps.com.
Layers are overlays that can be added to the map. Layers can be controlled via the layers screen (Menu > Layers).

The layers screen shows a list of available layers, an example is shown below:

![Layers Screen Example](image)

Layers that have grey background are currently loaded on the map. If you tap an item without a grey background it will be loaded on the map and you will return to the main screen. If you tap a layer with a grey background it will be removed from the map. To remove all layers, tap ‘More > Remove all from map’ in the layers screen.

In the layers screen you can always access the coordinate grid layers. Optionally you can purchase a special layer, like the bicycle node network or the mountainbike routes layer. It is also possible to import layers in wsf, kml/kmz, and geojson format.
5.1 Coordinate grids

Coordinate grids are a collection of curves at regular intervals that show a coordinate system.

To add a coordinate grid to the map, go to Menu > Layers > Coordinate grids. The following screen will appear:

![Coordinate grids in the layers screen.](image)

If you tap a coordinate grid it will be loaded map and you will return to the main screen. If you return to the coordinate grids screen, the loaded grid will have a grey background. If you tap it, it will be removed from the map.

Sliding the dashboard to the coordinates panel is useful for read off the coordinates from the map.

In the figures below several examples of coordinates grids are displayed.
Fig. 3: WGS84 degree minutes coordinates grid.

Fig. 4: Ordnance Survey National Grid coordinates grid.
Fig. 5: MGRS coordinates grid.

Fig. 6: RD atlasblokken coordinates grid.
SEARCHING ADDRESSES AND PLACES

To search addresses and places you first have to open the search screen via Menu > Search. Then select the ‘Address’ tab above the keyboard.

A screen will appear in which you can enter addresses and place names.

6.1 Loading single search result

As an example we now will enter the town ‘Alton’ in the search box. While typing search results will appear in the list below the search box, as you can see below:

In order to be able to find addresses or places you have to be connected to the internet. Searching will occur via a service of Apple.

If you tap on a search result in the list, it will be loaded on the map as a waypoint and you will return to the main screen. An example is shown below:
In the settings (Menu > More > Settings) you can control whether used search results are automatically saved as a waypoint. The default setting is not to save automatically in order not to clutter your list of waypoint with search results. If you want to save search result as a waypoint, you could tap it to open the waypoint details screen. There you can tap ‘Save’ in the bottom right to save the search result.

### 6.2 Loading all search results

You can also search on a keyword, like for example ‘Pub’. The results that appear in the list depend on the area that is currently visible in the map screen. If you search for Pub and the map is zoomed to Alton, only pubs near Alton will show up, like in the figure below:

If you tap a single search result, it will be loaded on the map. You can also load all results, by pressing ‘Search’ on the bottom right of the screen. This is illustrated in the figure below:

### 6.3 Loading selection of search results

If you now search for ‘Restaurant’, a list of restaurants in Alton will appear, as you can see in the figure below:

If you only want to load a few of the results on the map, you have to press long on one of the desired results. A selection screen will appear as you can see below:

In this selection screen you can select multiple search results by tapping them. In the example above the restaurants ‘Mifta’s Indian’ and ‘The Twisted Teacup’ have been selected. If you press ‘Show on map’ on the bottom right the selected items will be loaded on the map, as is illustrated below:
6.3. Loading selection of search results

Fig. 3: Searching for ‘Pub’ in Alton.

Fig. 4: All found pubs near Alton.
Fig. 5: Searching for a restaurant in Alton.

Fig. 6: Selecting search results.
6.4 Removing search results from the map

To remove a single search result from the map, tap the search result to open the waypoint details screen. Then tap ‘Remove from map’ in the top of the screen. To remove all search results from the map at once, tap Menu > Search. Select the ‘Address’ tab and tap More (top right) > Remove all from map.

6.5 Search result details

If you want to view the details of a search result, you can press the info (i) button on the right hand side of the title in the list with search results. The waypoint details screen of a search result will then appear.

6.6 Searching with search history

Your searches will be saved in the search history. This can be disabled in the settings.

If the search field is empty, the search history will appear below the search field. An example is displayed below:

If you tap a result from the history, it will be searched, and its results will be placed on the map.

For example, it is now easy to search for pubs at another location. Just move the map, and tap ‘Pub’ from the search history.

Fig. 7: Two selected search results have been loaded on the map.
6.7 Clearing search history

You can remove all results from the search history by pressing the ‘Clear’ button on the right hand side of the label ‘Search history’.

It is also possible to remove individual results from the search history. Make a slide to the left with one finger on an item that needs to be removed. A delete button will appear, as is illustrated in the figure below:

If you tap the red 'Delete' button the item will be removed from the search history.

6.8 Search settings

In the settings screen (Menu > More > Settings > Search results) two options are important for searching addresses and places.

• *Save as waypoint:* If this setting is enabled, the search results that are loaded on the map will also automatically saved as a waypoint and show up in the waypoints screen. If you disable this setting, the search results will not be saved as a waypoint.

• *Save history:* If you enable this setting, the search results will be stored in the search history. If this settings is disabled your search results will not be saved. The search history will show up if no text is entered in the search box.
Fig. 9: Removing a search result from the search history.

Fig. 10: Settings related to search in the settings screen (Menu > More > Settings).

6.8. Search settings
Geographic coordinates are a set of numbers and/or characters that refer to a location on the earth.

Topo GPS supports the global WGS84 decimal, WGS84 degree minutes, WGS84 degree minutes seconds, UTM, and MGRS coordinate systems. Next to that we support various country specific coordinate systems.

In Topo GPS you can view the coordinates of a point on the map on the dashboard. You can view the coordinates of a waypoint in the waypoint details screen. It is also possible to add a coordinate grid layer to the map.

Entering coordinates in various formats is possible via Menu > Search > Coordinates. If you have a printed coordinate you can also scan the coordinate via Menu > Search > Camera.

To control the shown coordinate systems, go to: Menu > More > Settings > Coordinates > Displayed coordinate systems.

7.1 Entering coordinates

To enter a coordinate you first have to tap Menu > Search. Then select the ‘Coordinates’ tab on the bottom of the screen, to open the coordinates input screen. An example is shown in the figure below:

7.1.1 Coordinates type

To enter coordinates you have first to make sure that the right coordinates type has been set. If you press the ‘Type’ cell a screen will appear in which you can change the coordinates type, like in the figure below:

You can choose between different coordinates types, including: WGS84 decimal, WGS84 degrees minutes WGS84 degrees minutes seconds, UTM and MGRS. Next to that you can use various country specific coordinate systems.
Fig. 1: *The coordinates input screen.*

Fig. 2: *Choosing the coordinates type.*
7.1.2 Entering coordinates

If you have set the right coordinates type, you can enter the coordinates.

Depending on the position of the center of the map, the first digits of the coordinates are already entered. This makes it faster to enter coordinates if the coordinates are not located far from the center of the map.

As an example we now will enter the WGS84 coordinates ‘51.56321 -4.28942’:

Optionally you can enter a title. As long as we do not enter a title, the suggested placeholder title will be used as a title for the waypoint. Next you could set the icon and enter a description.

If you tap ‘Save’ the coordinates will be saved as a waypoint. The coordinates screen will be cleared, so that you can enter the next coordinates. The first digits will now be based on the previous input. On the top left of the screen a Map button will appear, with which you can return to the map. The number behind map tells you how many coordinates have been entered.

As an example we will now enter the coordinates: N 51°34’01.9” W 4°16’41.9”. To enter these coordinates we had to change the type to WGS degree, minutes second. An example is shown below:

Again we are happy with the suggested title and press save. The coordinates will be saved and the coordinates screen will be cleared, so that you can enter the next coordinates.

Now will we enter the Ordnance Survey National Grid coordinates SS 41996 88847, as is illustrated below.

After pressing ‘Save’ the coordinates will be saved and the coordinates screen will again be cleared.
Fig. 4: *Entering the coordinates N 51°34′01.9″ W 4°16′41.9″.*

Fig. 5: *Entering the coordinates SS 41996 88847.*
7.1.3 Displaying on map

After entering the coordinates, you can return to the map screen by pressing the map button on the top left. The number of successfully entered coordinates is displayed on the map button. After entering the three coordinates in the examples above and tapping ‘Map’ the main screen looks as follows:

Fig. 6: Three entered coordinates are put as waypoints on the map.

7.1.4 Entering a list of coordinates

If you have received a list of coordinates in text format, you could enter them one-by-one via the coordinates input screen, as is explained above.

It could however be easier to select and copy these coordinates. Then select the tab ‘Address’ and then press long on the search box. A paste button will appear as is illustrated in the figure below:

If you press ‘Paste’ the list of coordinates will be inserted and processed. The resulting coordinates will be displayed in the list below the search box, as is illustrated in the figure below:

You can now load individual coordinates on the map, by tapping them. By pressing long on a result you can make a selection of results that you would like to load on the map. If you press ‘Search’ on the bottom right, all results will be loaded on the map, like in the figure below:
Fig. 7: Pasting a list of coordinates into the address search box.

Fig. 8: A list of coordinates has been pasted into the search box.
7.2 Scanning coordinates

Topo GPS contains a coordinates scanner. The coordinates scanner can scan coordinates and show them on the map. You obtain the best results by scanning coordinates printed on paper. Scanning coordinates shown on a display is also possible. Scanning handwritten coordinates does not function very well.

Scanning coordinates is most often much faster and more accurate than entering the coordinates.

To open the coordinates scanner, tap **Menu** > Search. Then select the tab with the camera icon in the bottom.

To use the coordinates scanner you need to give Topo GPS permission to access your camera in the iOS Settings.

If you open the coordinates scanner you see the image of the camera. In the center there is a lighter rectangle. Place that rectangle above the coordinates. You can zoom in and out with two fingers to focus the rectangle on the coordinates. The coordinates should be printed on one line. It is not possible to scan multiple coordinates at once.

An example is shown below:

If you have placed the coordinates in the rectangle and focussed the camera the coordinate will be recognized automatically and shown on the map, as in the example below:

In the top of the screen you see the position of the coordinate on the map. In the bottom you see the scanned image. You can use it to verify that the coordinate was scanned correctly. If you tap ‘Save’ the coordinate is saved as a **waypoint** and the coordinates scanner screen is opened again. As a second example we will scan MGRS coordinates:

After the coordinates are recognized, again a map with the coordinates will be shown:
Fig. 10: Scanning coordinates with the coordinates scanner.
Fig. 11: Coordinates have been scanned and are shown on the map.
Fig. 12: Scanning MGRS coordinates
Fig. 13: MGRS coordinates have been scanned and shown on the map.
Again you can tap ‘Save’ to save coordinates and return to the coordinate scanner screen. As a last example we now will scan Ordnance Survey National Grid coordinates:

![Fig. 14: Scanning OSNG coordinates](image)

Ater the coordinates are recognized, again a map with the coordinates will be shown:

Tap ‘Save’ to return to the coordinates scanner screen.

In the top left of the coordinates scanner screen you see ‘Map (3)’. The number next to map indicates the number of saved coordinates. If you tap ‘Map’ you will return to the main screen and the map will be zoomed to the scanned coordinates as you can see in the example below:

The coordinates scanner detects the coordinates system to be used. For country specific coordinate systems which contains only numbers, sometimes the wrong coordinate system can be picked. To make sure the right coordinate system is used, center the main map on the country that uses the coordinate system you are scanning.
Fig. 15: OSNG coordinates have been scanned and shown on the map.
Fig. 16: *The coordinates scanner screen with 3 saved results.*
Fig. 17: *The three scanned coordinates are shown on the main map.*
If you tap Menu > Camera, the camera will be opened. If you take a photo, a waypoint will be created at your current location. The photo will be added to the waypoint and can be shown by opening the waypoint details screen.

The pixel size of the photo can be set in the Photo size section of the setting.

The photo will also be saved in your photo library if you give Topo GPS access to selected photos of your photo library (iOS Settings > Topo GPS > Photos). The photo stored in Topo GPS is always a copy of the original. If you remove the photo in Topo GPS it will not be removed from your photo library. And also if you remove the photo from your photo library, it will not be removed from Topo GPS.

If you are recording a route you can include the waypoints with the photos in the route. If you save the recorded route make sure that the setting ‘Include waypoints’ is set to ‘Near route’. Then all waypoints with photos that are loaded on the map and are near the route will be included in the saved recorded route.
A compass direction is a path of a certain length from a certain point in a certain direction.

9.1 Creating a compass direction

To add a compass direction to the map, tap Menu > Search and select the tab ‘Compass direction’ above the keyboard.

The compass direction screen will appear like in the figure below:

![Compass direction screen](image)

Fig. 1: The compass direction screen.

In the compass direction screen you can subsequently add the following fields:

- **From**: Here you can set the starting point of the compass direction. Most often it is your current location. If you tap this field you can enter another location or coordinates.
- **Distance**: Here you can enter the length of the compass direction in the displayed units.
• **Angle:** Here you can enter the angle with respect to the true north or magnetic north. If you do not enter a value, the value of the direction in which you point your device is used. This value is displayed in lighter color as a placeholder in this field.

• **North:** Here you can set the kind of north the angle is referring to. If you are entering a reading of a compass, you might want to set it to magnetic north, so that a correct magnetic declination correction can be applied.

• **Description:** Optionally you can add a description.

If you have entered all values, you can tap ‘Save’. The compass direction will be saved, and can be found back in the *routes screen*. You will return to the main screen and the compass direction will be shown as a route on the map.

As an example we now create a compass direction direction of 5000 m with a direction of 45 degrees with respect to the true north. The result is displayed in the figure below:

![Fig. 2: A compass direction was added to the map.](image)

If you are using compass directions it might also be useful to *enable the true north arrow*. This is an arrow on the main screen that shows the direction of the true north on the map.

The *direction you are travelling in* can also be displayed on the dashboard.
9.2 Finding a compass direction

To find a compass direction, you first have to enable the route course markers in the settings. Then you can plan a route to a point, for example with the transportation means ‘Crow fly’. If you do that and return to the main screen, the route with the compass direction is shown on the map. An example is shown below:

Fig. 3: Finding a compass direction.

In the example above, we have planned a ‘Crow fly’ route from our current location to the Knowle Hill. The route course markers are displayed on the route. From these markers we can see that we have to travel in 80 degrees with respect to the true north to get from our current location to the Knowle Hill.
The settings screen can be opened tapping *Menu* > ‘More’ and selecting the tab ‘Settings’ in the bottom. An example of the settings screen is displayed in the figure below:

![The settings screen.](image)

The settings screen contains the following sections:

### 10.1 Display orientation

By enabling the switch ‘Lock’ in the *settings* you can lock the screen such that it does not rotate if you rotate your device.

To lock the screen in the desired orientation, you first disable ‘Lock’. Then you rotate your device to the desired orientation and enable ‘Lock’.
10.2 Switching off display

With the setting ‘Automatic lock’ in the settings you can determine whether the main screen should be switched off and locked automatically after a period of inactivity by iOS. If you disable this setting the main screen will not be switched off.

Suppose you mount your iPhone to your bicycle. Then it could be convenient that the main screen stays on continuously. So in that case you have to disable ‘Automatic lock’.

If you have locked the orientation of an iPhone in the normal (portrait) orientation, then the option ‘Cover camera’ appears.

If you enable the setting ‘Cover camera’ the map screen will be switched off automatically if you cover the front camera. The screen will appear immediately when the the camera is uncovered.

Enabling the option ‘Cover camera’ is recommended when going outdoors. When you put your iPhone in your pocket, the screen will be switched off immediately, saving energy. If you also disable the option automatic lock, the map screen will appear immediately when you uncover your iPhone.

Be aware, if the automatic lock is disabled you do not have to enter your password when the screen reappears. This is convenient, but is also less secure.

10.3 Styles

In the section ‘Styles’ of the settings you can set the appearance of the record, plan and route lines. Moreover you can determine the appearance of the position marker.

10.3.1 Record, plan and route lines

To change the color of the record, plan or route line, tap the corresponding item in the ‘Styles’ section of the settings. A screen will appear in which you can set the properties of the line.

If you tap route lines, you will see that there are 10 different route lines. The first route line is for the first loaded route on the map, the second for the second loaded route, etc.

As an example we now show below the screen in which you can change the line properties of the recorded route:

10.3.2 Position marker

The default position marker has a red color. For visibility it might be better to change the color of the position marker sometimes. Tap the position marker in the ‘Styles’ section of the settings. A screen with available alternative position markers will be shown. If you tap a position marker it will be changed.

Below you see an example of a map with a purple position marker:
Fig. 2: Changing the properties of the record line.

Fig. 3: The position marker was set to purple.
10.4 Routes

In the section ‘Routes’ of the settings you can enable and disable route distance markers, route course markers, and spoken instructions for node network routes.

10.4.1 Route distance markers

Route distance markers are markers that appear on the route on regular intervals to show the distance from the start point. If you enable this switch these markers will appear on all routes that are loaded on the main map. An example is shown in the figure below:

![Route distance markers](image)

Fig. 4: Route distance markers are enabled.

10.4.2 Route course markers

Route course markers are markers that appear on the route on regular intervals to show the course (direction of the route with respect to true north) at the point of the marker. If you enable this switch these markers will appear on all routes that are loaded on the main map. An example is shown in the figure below:
10.4.3 Spoken instructions

If you have loaded a node network on the map, and you have loaded a route along these nodes on the map, the nodes will appear on the dashboard. If you enable ‘Spoken instructions’ and you are near the next node, a voice will tell you the node you are nearing and the upcoming node. The screen should be switched on for this to work, therefore this is only useful in combination with disabling the automatic screen lock.

10.5 Show on map

In the section ‘Show’ of the settings you can enable and disable the following settings:
10.5.1 Location accuracy

If you enable this setting a circle indicating the accuracy of the position determination will appear around the position marker.

10.5.2 True north

If you enable this setting an arrow pointing to the direction of the true north will always appear on the top left of the main screen. On most topographic maps the top of the map does not point exactly to the true north.

10.6 Units

In the section units of the settings you can set the length/speed and angle units. The length/speed can be set to Metric (m, km, km/h), Imperial (ft, mi, mph) or Nautical (ft, NM, kt). The unit of angle can be set to Degrees, NATO mil, Miliradian, Swedish streck and Finish streck.

Below and example of the main screen with imperial units:

![Main screen with imperial units](image)

Fig. 6: The main screen with imperial units
10.7 Coordinates

In the section ‘Coordinates’ of the settings you can determine which coordinate types are displayed in the app. The shown coordinate types in the waypoint details screen, the current location screen and the coordinate panel are determined by this setting.

If you tap displayed coordinate types a screen will appear in which you can enable and disable coordinate types. An example of this screen is shown below:

![Setting the displayed coordinate types](image)

Fig. 7: Setting the displayed coordinate types.

In the figure above, only WGS84 decimal and Ordnance Survey national grid are enabled. With the handles on the right hand side you can determine the ordering of the displayed coordinates. If you go to the waypoint details screen, you see in the ‘Coordinates’ section that also only these coordinate types are shown:

As a second example we now enable other coordinate types, MGRS, WGS84 degree, minutes seconds, and UTM. The settings screen looks then as follows:

In the waypoint details screen the ‘Coordinates’ section then only shows the MGRS, WGS84 degree minutes seconds, and UTM coordinates:
Fig. 8: Only WGS84 decimal and Ordnance Survey National Grid coordinates are shown in the waypoint details screen.

Fig. 9: Setting the displayed coordinate types.
10.8 Map tiles downloading

In the section ‘Map tiles downloading’ of the settings you can find the switch ‘Use cellular network’. If you disable ‘Use cellular network’ map tiles will never be downloaded over a cellular network. This can prevent unwanted cellular downloads if you move the map to an area on which map tiles were not stored offline. Limiting cellular downloads could save you money, depending on your contract. The drawback is that you sometimes could see gray maps.

If you enable ‘Use cellular network’ map tiles can be downloaded over a cellular network. In addition you should enable Topo GPS to use the cellular network in the iOS device settings.

10.9 Single tap zoom in/out

In Topo GPS you can zoom the map in or out with a single tap on the map screen. By default, tapping on the bottom is zooming in, tapping on the top is zooming out.

In the section ‘Single tap zoom/in out’ of the settings you can control the behavior of the single tap zoom. You can choose between the following options:

- **Bottom / Top** - Tapping on the bottom is zooming in, tapping on the top is zooming out.
- **Top / Bottom** - Tapping on the top is zooming in, tapping on the bottom is zooming out.
- **Left / Right** - Tapping on the left is zooming in, tapping on the right is zooming out.
- **Right / Left** - Tapping on the right is zooming in, tapping on the left is zooming out.
10.10 Search results

In the section ‘Search results’ of the settings you can control several options of searching addresses and places.

If you enable ‘Save as waypoint’ all search results that you add to the map are automatically saved as a waypoint and will appear in the waypoints screen.

If you enable ‘Save history’ all search queries are stored in the search history.

10.11 Addresses

In the section ‘Addresses’ of the settings you can determine whether addresses of points are looked up automatically.

If you enable the setting ‘Find automatically’ addresses of locations can be looked up if necessary. To find the address of a location a network request is necessary. We are using the reverse CLGeocoder service from Apple for this.

Addresses are used in the waypoint details screen and in the current location screen.

If you want a high level of privacy, you might want to disable this feature, in order to prevent network requests containing your location or the location of your points.

10.12 Camera

In the section ‘Camera’ of the settings you can determine the pixel size of the photos taken with the camera.

You can choose between:

- Small: 1024 x 768 pixels
- Normal: 1536 x 1152 pixels
- Large: 2048 x 1536 pixels
- Extra large: 2560 x 1920 pixels

Larger photo sizes imply sharper photos, but they also require more storage space.

This setting is only relevant for the photos stored in Topo GPS. Photos that are saved in your photo library are always saved in the original resolution.

10.13 Synchronize with iCloud

In the section ‘Synchronize with iCloud’ of the settings you can determine the behavior of iCloud synchronization.

If you enable the switch ‘Routes and Waypoints’ your routes and waypoints will be synchronized with iCloud. They are then also available on your other devices and they are backed up.

If you enable ‘Use mobile network’ iCloud synchronization is also possible over cellular network if you also have enabled ‘Mobile data’ in the iOS Settings > account > iCloud.
10.14 Device settings for Topo GPS

If you scroll to the bottom of the settings screen or you go to the iOS Settings app > Topo GPS, you can modify the device settings of Topo GPS.

An example of the iOS device settings screen is shown in the figure below:

![Device settings screen for Topo GPS](image)

Fig. 11: The device settings screen for Topo GPS

In the device settings screen you can subsequently set the following options:

- **Location.** If you set this to ‘While using’, Topo GPS can show your position on the map, record your route and find waypoints and routes near your location.

- **Photos.** If you set this to ‘Selected photos’, you can decide which photos Topo GPS can import. Also if you set this to ‘Selected photos’, Topo GPS can save the photos made with the camera in your photo library.

- **Camera.** If you enable the camera, you can make photos and scan coordinates.

- **Siri & Search.** This contains settings related to search and the Siri assistant.

- **Background app refresh.** If you enable this setting, Topo GPS can process various tasks in the background, like updating synchronizing routes and waypoints and updating layers.
• *Mobile data.* If you enable this setting Topo GPS can use the mobile network. This is for example necessary for *route planning* and *downloading map tiles* over a mobile network.

• *Language.* Here you can set the language Topo GPS is using. Supported languages are English, German, Spanish, French, Dutch, Swedish, Norwegian, Danish, Finnish and Japanese. If your device language is supported, that language is used by default.
11.1 Importing geodata files from iMessage

11.1.1 iOS 14

Opening geodata files in iMessage in iOS 14 is unfortunately not very intuitive.

If you tap on a geodata attachment (for example gpx) in an iMessage conversation, most often nothing will happen. For some file formats, like zipped gpx a screen appears with a export item in the bottom left. In that case tap the export item and then choose for ‘Topo GPS’ in the list with apps to import the file in Topo GPS.

To import the geodata file in the case nothing happens, tap the icon of the person sending the file in top of the screen. Then tap ‘info’. Scroll to the bottom of the screen to the section documents. Press ‘Show all’. Here you see all documents that were sent by the person in the conversation. Tap the file, and then tap the export icon in the bottom. Then choose for ‘Topo GPS’ in the list of apps. Sometimes you need to scroll the list of apps to the left to see Topo GPS or you might even need to press ‘More’.