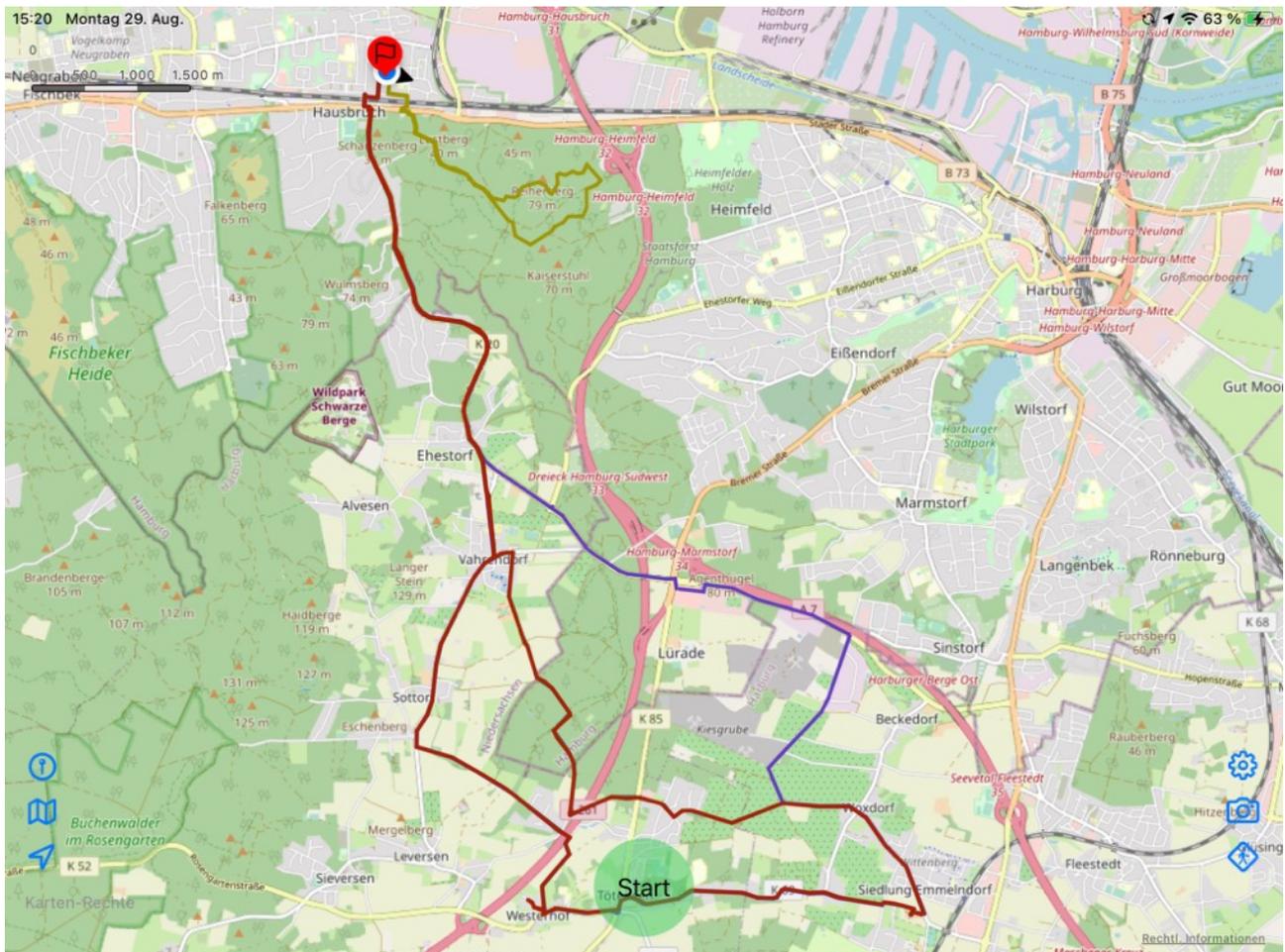
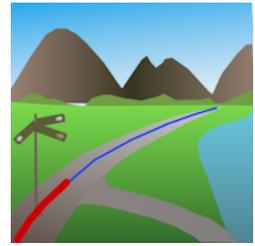


# Muvy Manual

V1.0

Frank-Peter Poschmann - September, 2022



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## 1. Introduction

Muvy is an app for recording hikes, runs, bike rides or other outdoor activities. It is **not** intended for planning tours; there are better tools for that. However, planned tours can be imported in GPX format, and tracks recorded with Muvy can also be saved or shared as GPX files.

The main purpose of Muvy is to record the route covered during a tour and compare it with a planned track or a specified destination. Muvy has its own data structure for imported or self-made tracks. Tracks can be stored in a folder structure of any depth, but there is also a convenient search function. Tracks can be colored and shown or hidden on the map.

In addition to Apple maps, Muvy also uses map material from other providers (e.g. OpenStreetMap®). Furthermore, other (possibly chargeable) maps can also be integrated (e.g. OpenCycleMap or OpenOutdoorsMap).

Routes recorded with Muvy can also be transferred to the Health app. This transmission is turned off by default and can be turned on in Muvy's settings menu.

## 2. For the Hasty Reader

OK, I know the manual has gotten pretty thick, and reading manuals is also rather unfashionable. So here's some help if you want to get started right away without having to read a lot first.

1. Muvy needs to be allowed to use the current location to record tracks, even in the background when the iPhone is put in the pocket with a dark screen. There is more information about this in the [next chapter](#).
2. To start recording, all we have to do is tap on the [nice green button](#) at the bottom center.
3. And to import tracks from external sources, we have to tap on the [corresponding button](#) in the [list of tracks](#) (📁).

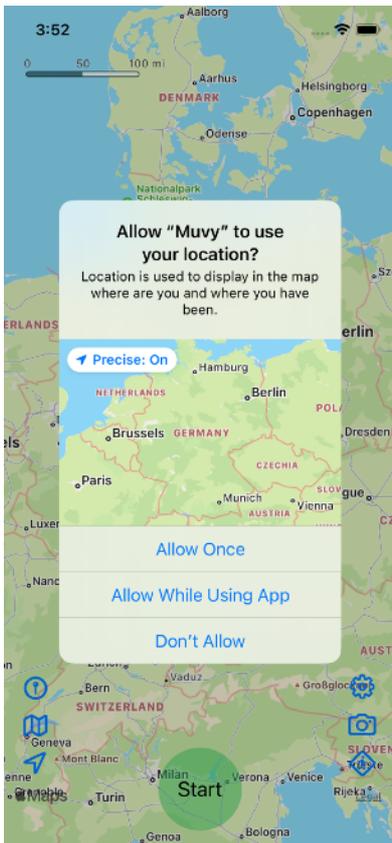
Have fun.

## 3. First Steps

Well, then let's start Muvy. Oops, immediately we have to make a first decision: the operating system asks us whether we should allow Muvy to determine our location. Well, if we deny that, Muvy doesn't make much sense as a tracking app, does it?

So here we should select "Allow While Using App". This means that Muvy always gets the location with the best accuracy from the operating system when Muvy is running in the foreground.

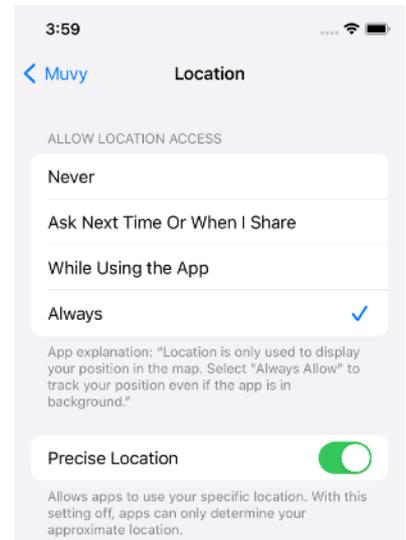
But that will probably not be enough. We don't want to leave Muvy open all the time when hiking, but also put the iPhone in our pocket with a dark screen. In order for the tracking to



continue, Muvy must also receive the location information when it is in background. To do this, we must allow the location information for the background ("Always") in the system settings for the "Muvy" app or in "Privacy" under "Location Services / Muvy".

Great, that's done. Now let's explore the app a little more closely. Since we allowed Muvy to determine our location, the map now shows our position in the middle with the small triangle pointing in our direction of view.

If we tap on this point, we will immediately see our own position. Oh, we can already learn a lot from that.

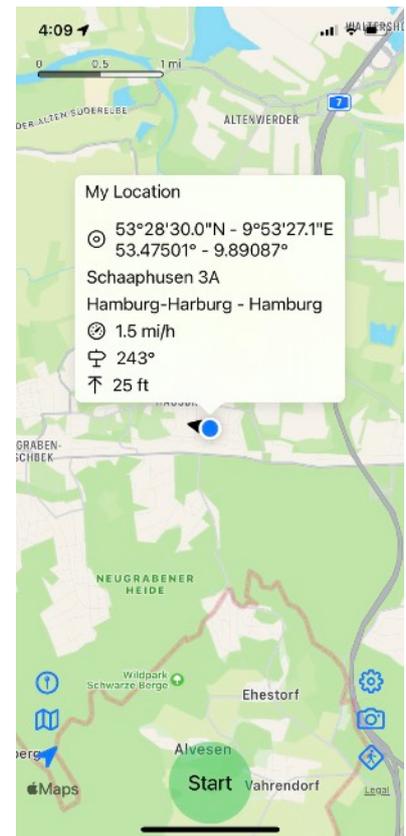


- First of all, there are our coordinates (⊙), once in degrees-minutes-seconds format and also as degrees with their fractions.
- Street and house number and the town / district / country for this position are displayed underneath. Cool, isn't it?
- This is followed by speed (⊙) and direction (⊙) in which we are currently moving.
- And finally, we also see our current altitude above sea level (⊙).

If we tap on the map, the location window disappears.

We can now move the map section with the finger or enlarge or reduce it with the two fingers gestures. With two fingers we can also rotate the map; then the compass rose will appear in the top right corner to indicate the new north direction. We see the current scale for the distances at the top left.

A tap on the compass rose rotates the map back to the standard north direction. Great, we've already seen a lot here. Now let's focus on the bottom, left, and right buttons.

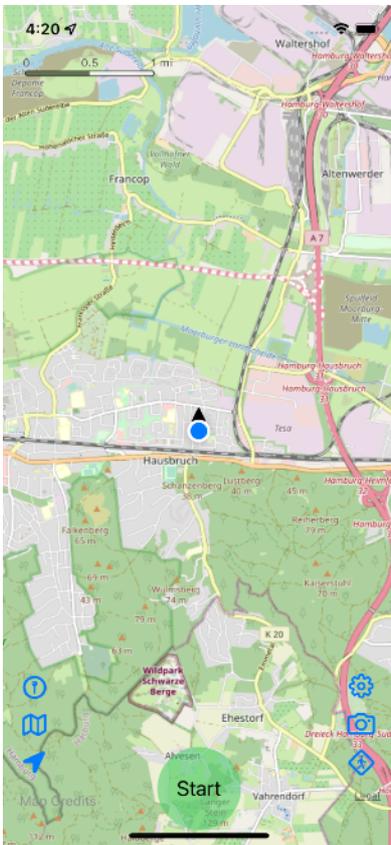


## 4. The Map Buttons

### 4.1. Map Centering and Follow Me

A tap on the small arrow at the bottom left (↖) centers the map section back to our current position. It stays that way, even if we move, i.e. our current position wanders across the map; the small arrow at the bottom left is now filled (➤). If we move the map section ourselves with the finger, the arrow at the bottom left is no longer filled in and the map section no longer changes automatically when we move.

### 4.2. The Map Menu



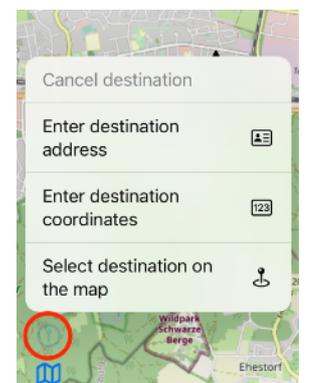
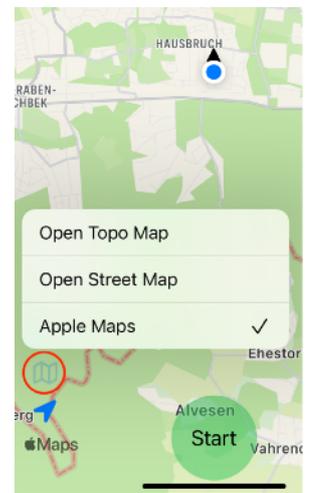
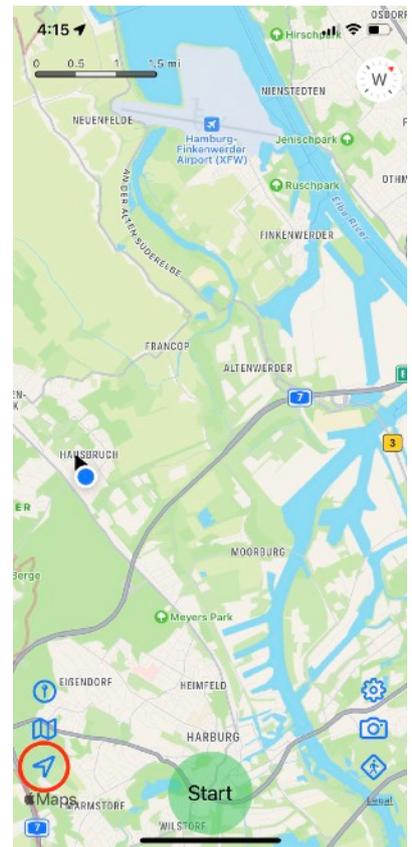
Above the map center we see the symbol of a stylized map (🗺). With this we can select the type of map. By default, we see the Apple map, which we also know from the "Maps" app. But we can also select another map type, e.g. the "OpenStreetMap®" from the [OpenStreetMap Foundation \(OSMF\)](#) (left).

But there are also other maps with special focuses, e.g. for hikers or cyclists. Some of these are chargeable, but can also be integrated into Muvy. We will find out how to do this [below](#).

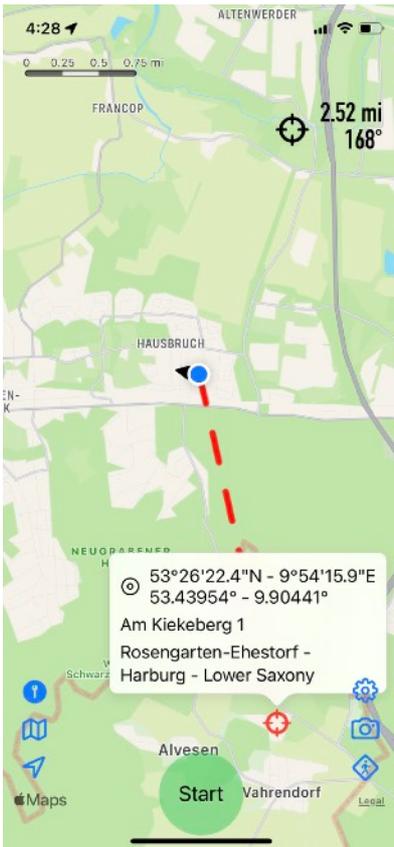
But let's take a look at the other functionality first.

### 4.3. Guidance

Immediately above the map menu we can see the button for route guidance (📍). With that we can select a point on the map and always see the direction and shortest distance to it. This is quite practical if we don't follow a pre-set track, but just want to find the best way to our destination using the map.



### 4.3.1. Set Destination on Map



The easiest way to get directions is the identification of the destination on the map (🎯). If we select this menu item, we only need to tap on our destination on the map and the route guidance will start with these coordinates.

On the map, the shortest route to the destination (📍) is shown with a red broken line. At the top right we always see the distance and direction to the destination. As long as the route guidance is active, this is constantly updated.

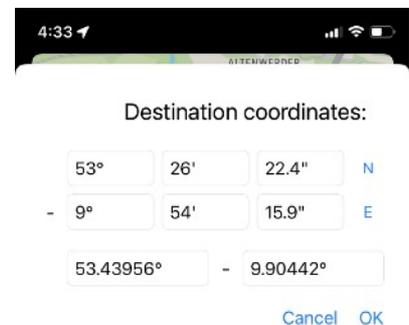
We can also specify a destination directly by a long tap on the desired position on the map without having to go through the menu.

Similar to our own position, if we tap on the destination itself, we will see its coordinates and address, if possible. If we tap somewhere else, this window disappears.

We can also "grab" the destination with the finger and move it freely on the map. As long as the route guidance is active, the button for the route guidance is filled in (📍). Well, and then it is also clear that we can cancel the route guidance with the menu item "Cancel destination", right?

### 4.3.2. Specify Destination Coordinates

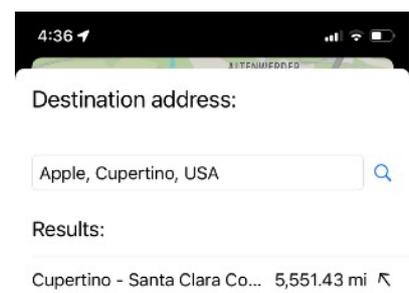
However, we can also specify the coordinates numerically (📄). If we tap on this menu item, the corresponding input window will appear. The coordinates can be given in either degrees-minutes-seconds format or as degrees with fractions.



### 4.3.3. Specify Destination Address

Well, and then we can also specify a destination address and have it searched for (📄). With the magnifying glass symbol (🔍) we start the search and the results are displayed in a list below. We see the location, the distance from our location and the direction to get there. If we select an entry, the route guidance starts with the found coordinates.

Oops, what happened there? The line to the (admittedly quite far away) target is curved. To get from me to Apple is not only





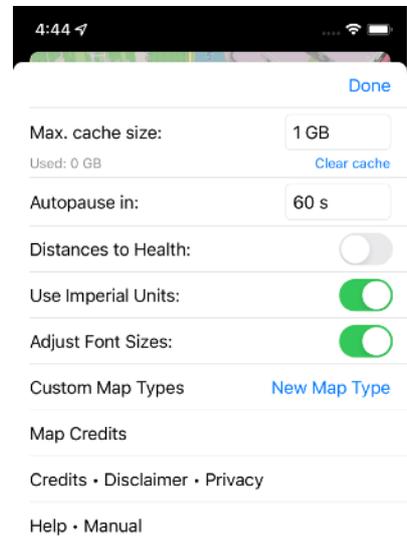
quite a long way, but also goes near the North Pole.

This is because our maps are drawn in the Mercator projection. It tries (like all 2D map projections) to flatten a section of a sphere and inevitably has to distort it. The shortest connection on a sphere is always an auxiliary circle, which generally becomes a curved line in the Mercator projection.

circle, which generally becomes a curved line in the Mercator projection.

## 4.4. The Settings Menu

At the same level as the route guidance but on the right hand side we come to the settings menu (⚙️). Wow, there's a lot to adjust. Let's take a look at that in detail.



### 4.4.1. Cache

Muvy has a map buffer (cache) so that map sections do not have to be loaded from the Internet again and again. This applies to all non-Apple maps; Apple uses its own algorithm for its own map.

A cache size of 1 GB is set here by default. That's quite a lot and if the space on the device should get tight, the cache can be reduced using this menu item. With a cache size of 0, no map cache is used and the corresponding map is loaded from the Internet each time the map section changes.

The current occupancy of the cache is also shown here. We can use the "Clear cache" button to empty the map cache if this gets necessary (e.g. if the loaded map sections are out of date and need to be replaced by new ones).

### 4.4.2. Autopause

If Muvy does not receive any significant new location information from the iPhone for a certain period of time, the current recording of the track ([see below](#)) is interrupted; Muvy goes into "Autopause" state. If new location information arrives because we have moved, the recording resumes automatically with a new track section. As a rule, new location information comes from the operating system every few seconds when we move. With poor satellite re-

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ception, however, this can sometimes be interrupted for a longer period of time; the track recording is always only an approximation of the path actually covered.

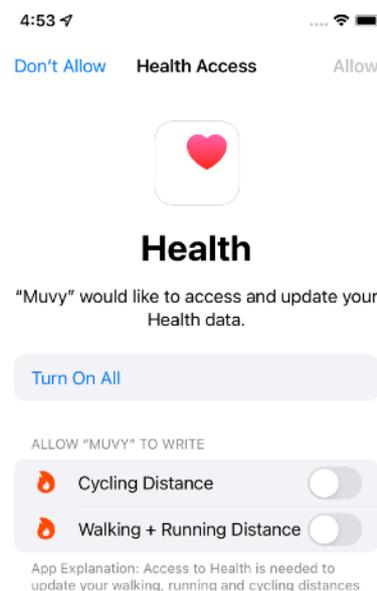
With this setting here in Muvy we can adjust the sensitivity for autopause. At 60 seconds, only an automatic recording pause will be made if we don't move for a minute. If this threshold is set to zero, there is no autopause at all.

### 4.4.3. Transfer of the Recorded Routes to "Health"

When we complete a track, we can also pass the distance traveled to the Apple Health app. That's what this switch is for. When we turn it on, the operating system asks us if we want to give Muvy permission to do it.

At the end of each track recording, we can still decide whether this route that has just been recorded should be transferred to Health ([see below](#)).

**Caution:** If the Health app is used, the iPhone generally records walking and running routes independently and regardless of Muvy. If we also transfer a walking or running distance to Health via Muvy, double counting might occur.



### 4.4.4. Imperial Units of Measurement

This switch toggles the displays in Muvy between metric (kilometers, meters, and kilometers per hour) and imperial units of measurement (miles, feet, and miles per hour).

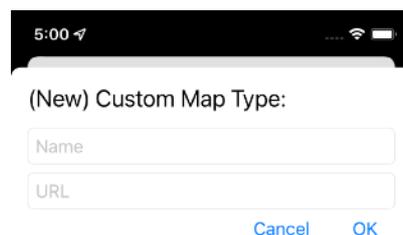
### 4.4.5. Adjust Font Sizes

In the system settings, the operating system offers the option of adapting all fonts to individual needs (enlarging or reducing them). If this switch is set here in Muvy, Muvy also follows this system default. Now, Muvy often displays detailed information, and it can get quite cramped on small screens, especially if a larger font size is set. If we switch off the resizing in Muvy via this switch, the information in Muvy will be displayed in a standard size and the system default for the font sizes will be ignored.

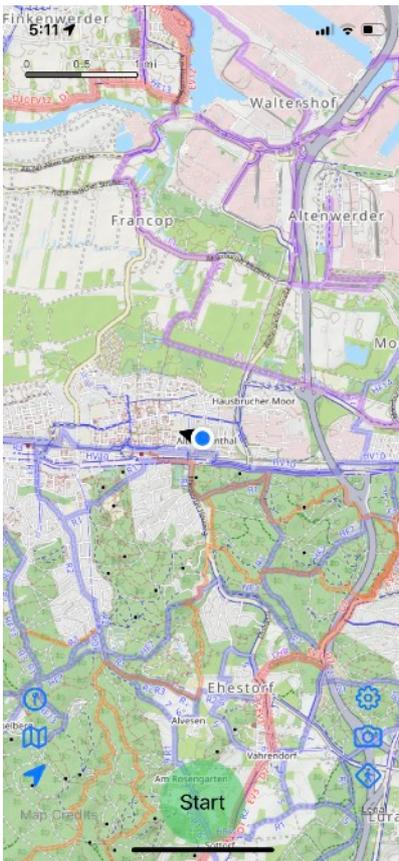
### 4.4.6. Custom Map Types

In addition to the preset map types, Muvy also offers the option of integrating maps from other providers.

For this we give the new map a name; the new type will appear with this name in the above-mentioned [map menu](#). Well, and the URL is provider-specific. The maps are divided into



so-called "tiles", which are numbered in x, y and z. X and y indicate the position of the map section on the globe, and z specifies the magnification.



E.g., a very nice map is the "OpenCycleMap" (left). It is based on the "OpenStreet-Map" but, in contrast to that, is not freely accessible, which is why it cannot be pre-installed in Muvy. Private users can (currently) register free of charge via <https://www.thunderforest.com> and get a so-called "apikey". The URL for the OpenCycleMap looks like this:

`https://tile.thunderforest.com/cycle/{z}/{x}/{y}.png?apikey=...`

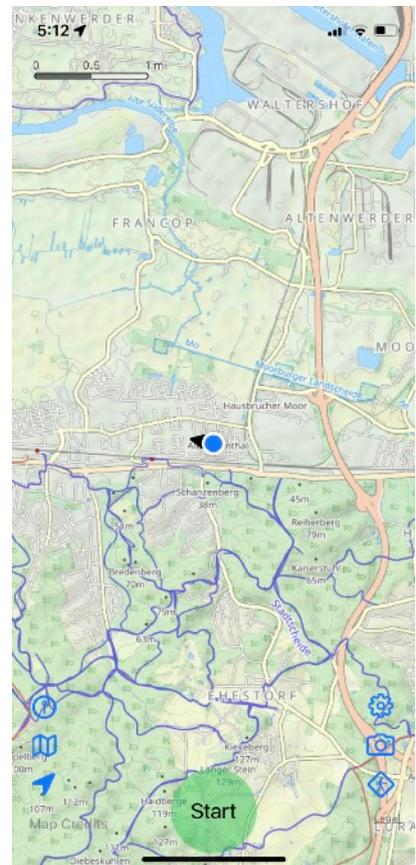
It particularly emphasizes the (long-distance) cycle paths and is therefore equally helpful for cyclists and hikers (hikers should avoid the long-distance cycle paths, if possible 😊).

Another nice map is the OpenOutdoorsMap from the same provider (right). In particular, it shows the hiking trails with their official names and also mountain peaks with altitude information. Its URL has the following form:

`https://tile.thunderforest.com/outdoors/{z}/{x}/{y}.png?apikey=...`

With a tap on one of our custom map type, we can also change the name and URL for it. With a swipe from right to left, we can delete an entry in the list of custom map types.

Custom Map Types	New Map Type
Open Cycle Map:	<code>https://tile.thunderforest.com/cycle/{z}/{x}/{y}.png?apikey=...</code>
Open Outdoors Map:	<code>https://tile.thunderforest.com/outdoors/{z}/{x}/{y}.png?apikey=...</code>



#### 4.4.7. Credits and Manual

The following menu items show the credits, privacy and disclaimer notices as well as this manual. The documents can be shared or printed as desired.

#### 4.5. Map Screenshot

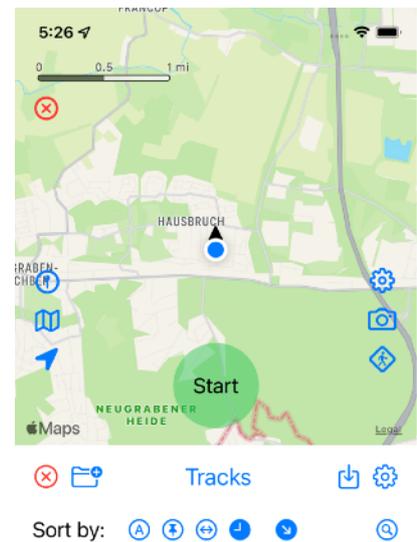
Below the settings menu, we see a camera icon (📷). This allows us to create and share a screenshot of the current map section without the annoying buttons.

## 4.6. To the Track List

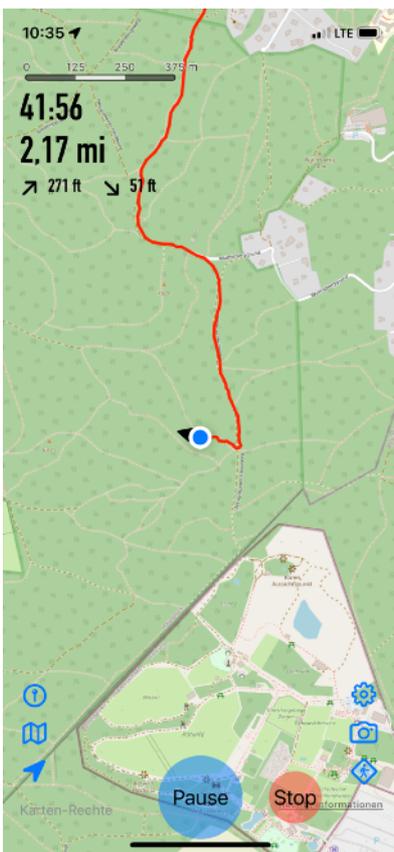
Well, and with the last icon in this group, we come to the list of tracks recorded or imported into Muvy (📍). It still looks pretty sad because Muvy doesn't know of any tracks yet. We want to change that right away.

But it is noticeable that the screen is now split; on the top (or on the left hand side if the iPhone is held in landscape mode) we still see the map and on the bottom (or on the right hand side) we have the still empty list of tracks. We can close each part of the screen separately with the red x in the upper left corner (✕).

We'll do that right now with the track list and return to pure map view.



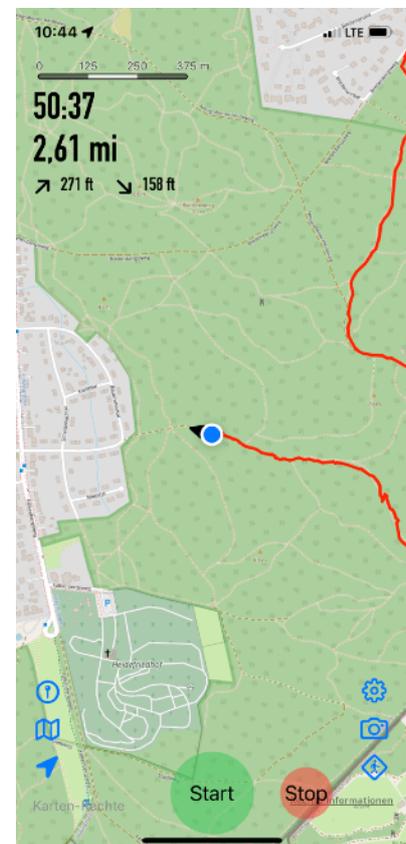
## 5. Track Recording



So, now we finally get to the main topic of Muvy, the recording of tracks. That's what the nice green button at the bottom of the screen is for. Let's touch it. A clock for the time spent in the recording starts running in the upper left corner. Below that, we see the distance traveled and the elevation gain for ascents (↗) and descents (↘). The route covered is marked on the map with a red line.

The location information (including the current altitude) comes from the GPS signal from satellites and is subject to only limited accuracy. That is why the recorded track is not always exactly on the path drawn on the map, although we

never left it. The green button at the bottom center has now suddenly turned blue and is called "Pause". We already got to know the Autopause above. With the now blue button we can explicitly interrupt the recording. The stopwatch at the top

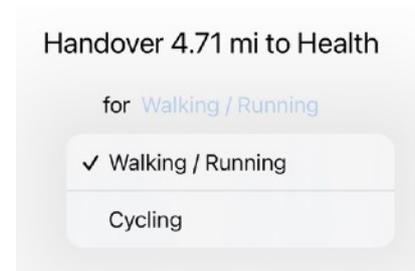


left stops running and location changes are no longer recorded. Now the button is green again and labeled "Start". If we tap that button again, the recording will resume.

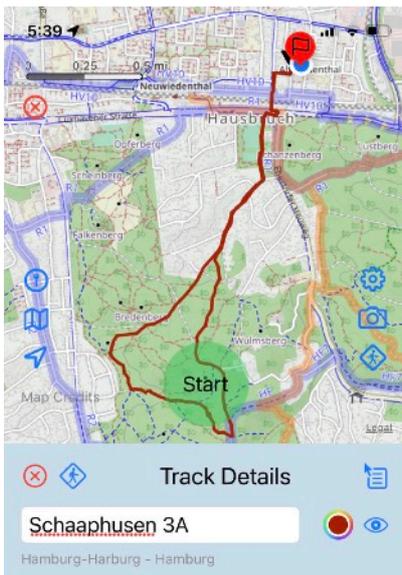
During the break we can also have moved quite a bit of course. The recorded track is therefore not continued at the point at which the pause began, but at the current position. The distances during the break (and also the time) are not counted in the recorded track.

Well, and then there's the new red button to the right of "Start/Pause" labeled "Stop". With that we can stop the recording. If we accidentally do that, it doesn't really matter. Below we see how we can continue an already recorded track and resume recording.

If we have generally allowed the transfer of the routes to the health app in the settings, Muvy now asks us whether we also want to transfer this specific route that has now been recorded. This can be done for the "Walking / Running" or "Cycling" category.



## 6. Track Details



So, we've submitted that (or not) and now the details of our recording appear. In the map view at the top (or left in landscape mode) we see our entire recorded track, and the bottom half (or right) lists the details of it.

We can give our track a name, for example. Muvy suggests the inner-city street and house number of the destination. Outside of towns, this can be another meaningful designation. But we can overwrite that, e.g. with "Sunday walk". Below that, the city / district and country information from the last track point can be seen tiny and in gray.

With the colored dot on the right, we can change the color of the track on the map. This can be very useful for differentiation if we have recorded (or imported) several tracks in the same map region. And with the eye to the right, we can also hide the track on the map, again to make the map display a little bit clearer. If the track is hidden on the map, the eye changes from  to . If we tap the eye again, the track reappears on the map.

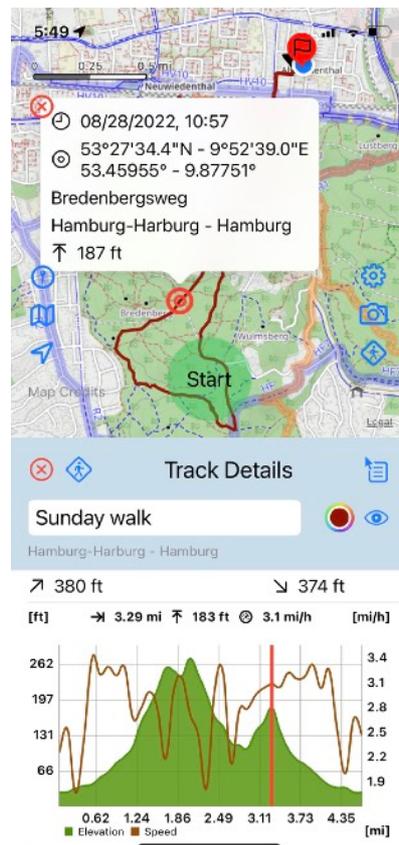
And then finally the details of our recording follow. The date of our track with the times of the first and last track point indicate the total duration of the track. Actual walking or driving time in hours:minutes follows after the clock icon (🕒).

In the next block we see the distance traveled (↔), the average speed (🚶) and the sum of ascents (↗) and descents (↘) as we already know them from the map display. Even if we did a circular route, ascents and descents do not have to match exactly due to the accuracy of the GPS signal. Muvy also averages small differences in altitude on the track.

Well, and then the nice chart follows with the altitude and speed profile in the track. On compact devices, there may not be enough space on the screen for this, so we have to scroll down a bit.

The green mountains show the height profile of our Sunday walk with respect to the left scale. The horizontal scale indicates the distance on the route of our track. The brown superimposed curve represents the velocity profile with respect to the right scale.

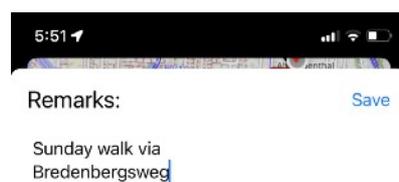
We can tap on the graph to take a closer look at a spot. A red bar will appear, and at the top of the graph we can read the position of this bar in the track (→), the mean altitude (⤴) and the mean speed (🚶) at that point. The chart is created in a 200m grid. The red bar in the chart corresponds to the red marker on the map (📍).



If we tap on this marker, an info window appears, as we already know from route guidance or the current position. Here we can read the time of the track point (🕒), its coordinates (📍) with the textual description and its altitude (⤴). We can move both the red bar on the chart and the red marking on the map with the finger.

If the chart in the detailed view seems to be too narrow, we can also enlarge it (or reduce it) with the 2-finger gesture.

Great, now there's just a comment field (📝) left where we can remember additional information about this track.

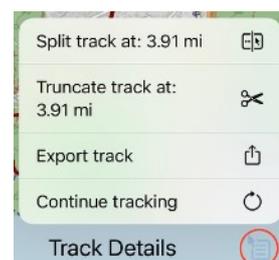


Now let's come back to the button bar at the top of the track details. We already know the two left buttons:

We close the details window with the red x (❌) and only the map view stays visible. By the way, we return to the two-part view directly if we tap on a track in the map view.

And with the stylized walker (🚶) we go to the track list, which we want to look at in more detail later.

To the right of the title of the details window, a button leads to a menu that still has a few functions left for us for the displayed track (☰). They are described in the next chapters.



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## 6.1. Continue Recording

We continue the recording of the current track with the menu item "Continue Recording" (↺). As after a pause, the track is continued at the current location. For security reasons, Muvy makes a copy of the current track before continuing and saves it under the track name with the suffix "- original" in the current folder. If we are satisfied with the continued track, we can delete the copy ("- original") in the track list ([see below](#)).

## 6.2. Export Tracks

With this menu item (📁) we export the current track as a GPX file. This can then be archived outside of Muvy or imported into other apps or devices. In this way, tracks on Muvy installations can also be transferred to other devices (e.g. iPads).

## 6.3. Shorten Track

If we have marked a point in the track in the profile graphic or in the map view, we can shorten the track at this point (✂️). All subsequent track points are then deleted in the current track. This can be very helpful if we did forget to stop the recording.

Again, for security reasons, Muvy makes a copy of the current track before the cut.

## 6.4. Split Track

Likewise, we can split the track at the current marker (📏). The track up to the marking is then given the suffix "- 1" in the name, the remaining part of the track is saved under the same name with the suffix "- 2".

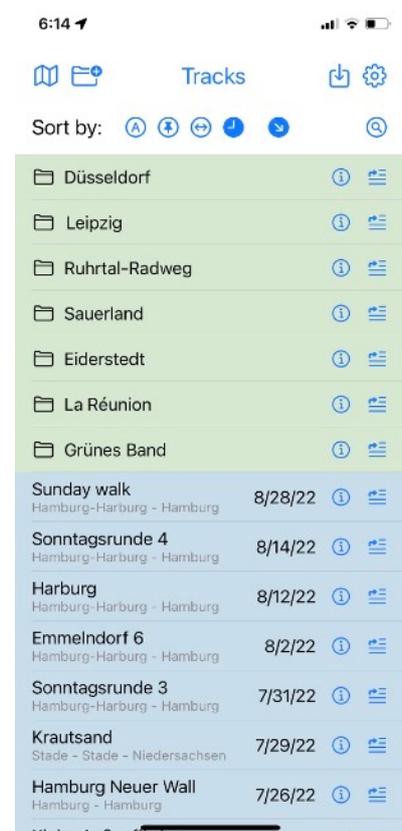
Again, Muvy makes a backup copy of the original track beforehand.

# 7. The Track List

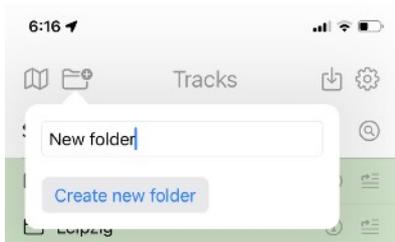
So, now let's finally take a closer look at the track list. We no longer need the map view for this and have hidden it with the red x (⊗). Here's an example when we've been using Muvy extensively for quite a while.

## 7.1. To the Map View

First, let's take a look at the title bar. The button on the far left hand side (🗺️) takes us back to the (exclusive) map view. Well, we don't want to go there now.



## 7.2. New Folder



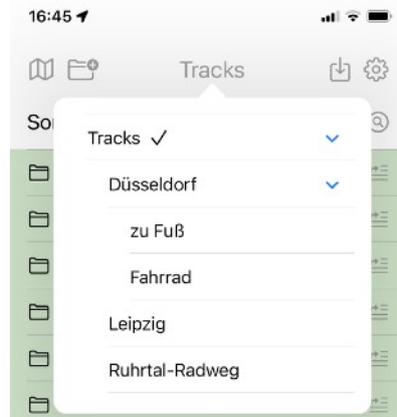
The button next to it is already more interesting (📁+). With this we create a new folder for the track list.

But that is also rather unspectacular; a folder just has a name and nothing else. But the new folder will be created in the

current folder, so we can build a nested structure with this mechanism.

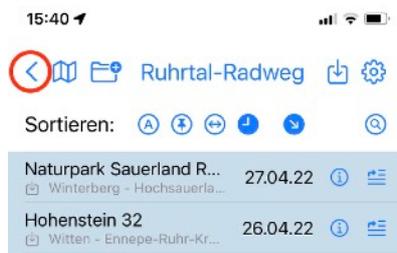
We see that very nicely when we tap on the title in the middle ("Tracks"). This opens up the entire folder structure and we can jump directly to the corresponding subfolder by tapping on an entry. Cool, isn't it?

The top folder is always called "Tracks". The current folder we're in will be marked with a check mark (✓).



## 7.3. One Folder Up

When we are in a subfolder, a button (◀) appears in the top left corner of the title bar, with which we can quickly go up one folder level, that is, to the folder that contains the current folder.



## 7.4. Import Tracks

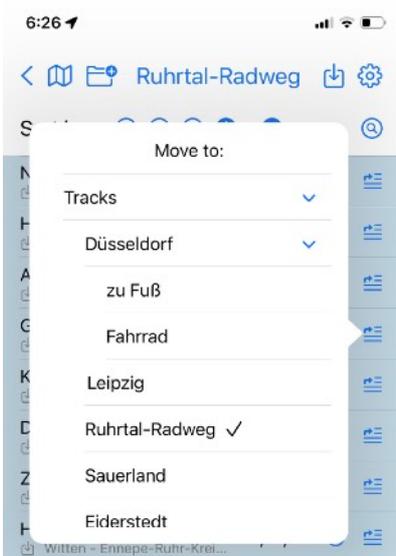
To the right of this we have the button for importing tracks (📁). The tracks to be imported can be stored on the device itself or a cloud service (e.g. iCloud). When we have selected one or more tracks, they will be imported into Muvy's current folder. But we can also copy one or more tracks, e.g. in the Mac Finder via AirDrop to our iPhone and specify Muvy as the destination. Even then, the tracks will be imported into the current Muvy folder.

Imported tracks have a specific marker below the name and before the location description: (📁).

## 7.5. The Settings Menu

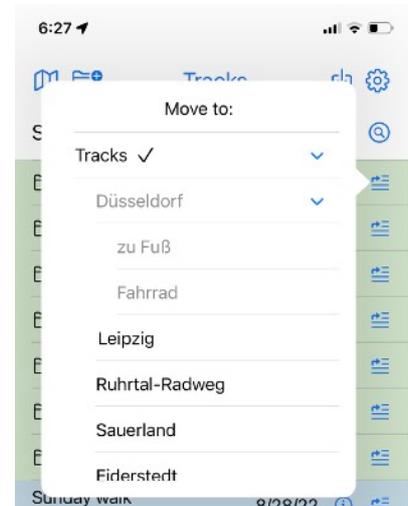
And right next to it we have the well-known settings menu. We can make the same settings here or call up documents as in the map view.

## 7.6. Moving Tracks and Folders



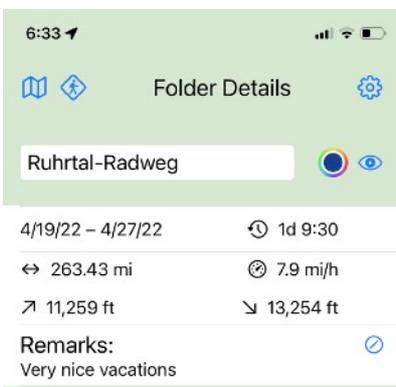
Okay, but how can we fill the folders with tracks that have already been recorded or other folders? There is a button for this on the right of each line in the track list (☰). If we tap on it we can choose the new destination folder of the track or folder. The folder that currently contains this item is checked by a marker (✓).

But there is a peculiarity when moving folders: we cannot move a folder into itself or any of its subfolders!



## 7.7. To the Details View

To the left of the move button, each entry in the track list has a detail view button (ⓘ). In the case of the tracks, this leads to the already familiar details view of the track. With the folders, however, the details look a little bit different.



Again we can change the name of the folder here. The colored dot now affects all tracks in the folder (or its subfolders). If the tracks in a folder have different colors, the color dot in the Details folder is shown as white.

The eye to the right refers now to all tracks in the folder or its subfolders. If we tap on the eye, all of these tracks will be hidden on the map (👁️). If we tap on them again, they all re-appear on the map (👁️).

The following information also relates to all tracks in the folder or its subfolders. First the date range of the recording of the tracks is shown. Then there are the sum of all recording times (🕒). This is followed by the total distance (↔️) and the average speed over all tracks (🚗). And finally we have the sum of all vertical feet for ascents (⬆️) and descents (⬇️).

And of course we can also enter a comment about the entire folder. But back to the track list.

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## 7.8. To the Track on the Map

If we tap on a track's name, we get back to the split view with the map and the entire track. The start and end point of the current track are always marked on the map with a green and a red flag (🚩).

## 7.9. Sorting

Tracks and folders are sorted in the track list. The (sub)folders always come first; then the tracks in the folder follow. By default, sorting is by the start date of the track (oldest in folders) in descending order, i.e. the newest tracks always appear at the top. But we can easily change that.

We have already seen the sort bar under the title bar. There we can set the sorting criteria:

- : by name
- : by location information
- : by route length
- : by start date (for folders: of the oldest track)

A filled-in symbol always shows that this sorting criterion is active (i.e.  for sorting by date). By tapping on one of the buttons we activate the corresponding criterion.

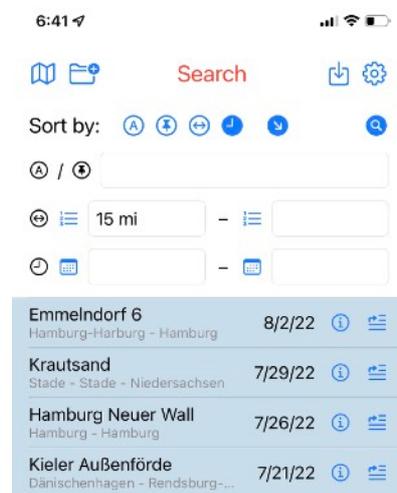
The following button indicates whether the respective sorting criterion is to be sorted in ascending () or descending () order. A tap on it toggles the direction.

## 7.10. Search

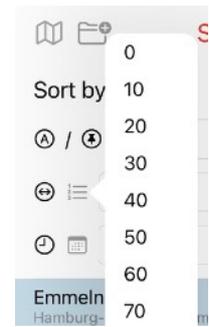
But we can also search for tracks. The right-hand button in the sorting bar is responsible for this (). If we tap on it, the folder structure will disappear and all the tracks that Muvy knows will be presented in the list according to the current sorting criteria. The search button will then appear filled (). Tapping it again brings us back to the folder structure. But we don't want to do that for now.

In the search mode, a block for the search criteria appears under the sort bar. Here we can search for several properties (even combined) of tracks:

-  / : This is a text search box. It searches for the entered text in the names of the tracks, the location information or the remarks. Upper and lower case is not important. If this field is empty, this search criterion will not be used.
- : This is where route lengths are searched for. The first field indicates the minimum and the second field the maxi-

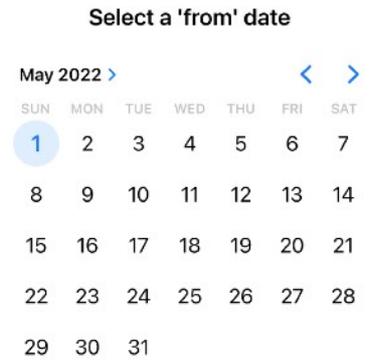


mum route length. Again, empty fields indicate that this criterion is not used. In the example on the right, all tracks are displayed whose distance covered at least 15 mi with no upper limit. Incidentally, we do not need to enter the unit (km or mi, depending on the setting); Muvy adds this automatically.



To simplify the input, we can also tap on the button to the left of the input field (☰) and select a length from the menu.

- 📅: Here we can enter a specific date range for the tracks to be displayed. Again, the fields have the meaning "from - to". Here, too, there is an input help via the button to the left of the input field (📅).



In the result list of the search, we can proceed in exactly the same manner as in the folder structure. We can tap a name or the details button (ⓘ) to view the track in split view.

### 7.11. Deleting Tracks and Folders

Deleting tracks or folders is easy. Regardless of whether the search is active or not, we can (after confirmation) delete the track or folder by swiping from right to left in the line of an entry. But watch out: there is no undo!

So that's it. Have fun with Muvy. But wait, here are a few energy-saving tips:

## 8. Energy-Saving Tips

Muvy tries to be very careful with battery consumption. The location service is only active when Muvy is running in the foreground or a track is being recorded. But if Muvy is also allowed to receive the location information in the background (see "First steps") and we are currently recording a track, Muvy uses more power. That shouldn't be a problem for a day tour with a reasonably healthy and fully charged battery, but you can keep the power consumption within limits by following a few simple rules.

- The screen brightness always has the greatest influence on power consumption. A slight reduction in the maximum brightness has a beneficial effect on power consumption.
- If the battery life is getting tight at the end of a tour, you can switch on the power-saving mode of the device without hesitation. This reduces the processor speed, among other things, but it does not affect the functionality of Muvy or the accuracy of the recorded track.
- When recording a track, Muvy suppresses the automatic dimming of the screen. This means you can also mount the iPhone on the bicycle handlebars and always leave Muvy open during the tour. Of course, this consumes a lot of electricity. However, if you don't need Muvy during the recording, you should always darken the device manually.

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- Many e-bikes also have a (micro)USB port to charge external devices while the ride. Although the charge current may not be enough to actually increase the charge of the iPhone (especially when it's not dimmed), it helps to extend the battery life. The purchase of an appropriate adapter is worthwhile in any case.