APPLIEDSTREETVIEW

Controller

WIFI Remote Control for the Camera

Manual
version 1.1.6

Version: 2022-02-02

Index

Quick Start **4**
- Tablet setup 4
- Camera setup 4
- Start Recording 4

Recommended Hardware and Accessories **6**
- Tablet 6
- Power supply 6
- Tablet Holder 7

Tablet Hotspot set-up **8**

Controller installation **9**

Projects **10**
- Project specific actions 10
  - Show all tracks 10
  - Hide all tracks 10
  - Set release mode 11
  - Backup project 12
  - Delete project 12
- Tours 13
- Backup all projects 13
- Restore projects 13

Map **13**
- Recording 14
- Map tiles 14
- Map layout 15
- Map overlays 15
  - Import 15
  - Create 15
  - Remove 16
  - Show all layers 16
  - Hide all layers 16

Preview **17**

Status **17**

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Record 17
Storage 17
Position 18
Battery 18
About 18

POI 19

Online 21
Automatic upload 21
Manual upload 22

Online Recording Management 23
Manage your recording vehicles 23
Live Maps 23
Progress Reports 24
Screen sharing 25

Preferences 26
Language 26
Map overlay font size 26
Format the SSD 26
Update Camera firmware 26
Positioning device 27

Optional Module positioning device 27

Optional Battery monitor 28
Wiring 28
Bluetooth 29
Status 30
Alarm 30

About 31
Version 31

Support 32

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Quick Start

Tablet setup

Hotspot mode
Long-tap the **Hotspot** icon in the Quick Settings tray.
Set the **Hotspot name**
It’s **camera-** followed by your camera's serial number.
Example: **camera-220003436**
Set the **Hotspot Password.** It is the same as the Hotspot name.
Example: **camera-220003436**
If your Android version has an option for the encryption, set it to **WPA2 PSK**.

Mobile Data
To download map tiles or aerial images from the internet and for the optional **Online Recording Management** service:
Insert a SIM card with a data plan.
In the **Quick Settings tray** activate **Mobile Data.**

Camera setup

Connect all cables except the power cable.
Last connect the power cable to the provided mUPS (mobile Uninterruptible Power Supply), battery or wall-socket power-supply.
Wait for the camera to connect to the tablet's hotspot. This might need a minute.

Start Recording

Open the **Controller** Android app on the tablet:

Tap on **Add project** and enter the name of your first project.
You can have many projects at the same time and alternate recording between projects.

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By default the camera records with the **Distance Mode** set to **5 meter** distance.
For a higher density of streetviews set the **Distance Mode** to **1 m** distance.
In the Creator **6** program you later can automatically remove unwanted streetviews with the **Separation** tool in **Tools**.
See here for how to set the recording mode to **Distance**, **Interval**, **Manual** or **External**.

Tap **Map** in the bottom menu.
If you see Camera disconnected. Trying to reconnect… wait at least one minute for the App to connect to the Camera. Make sure the tablet is set up as a Hotspot and the Hotspot mode is enabled. Not the WLAN mode.

If you see a car icon in the middle of the Map screen, you are connected to the Camera.

Once connected the blue **Start recording** button appears in the bottom right corner.
Tab it to start recording

After recording has been started the Start recording button is replaced with the red **Stop recording** button.
Tap it to stop recording.

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Recommended Hardware and Accessories

Tablet

Preferred:
Huawei MediaPad M6, 8.4” with LTE / 4G.

Also working fine:
Huawei MediaPad M5, 8.4” with LTE / 4G.

Power supply

We recommend powering the camera with the mUSB (**m**obile **U**ninterruptible **P**ower **S**upply).

And to power the tablet by a USB cable. An adapter like this will work fine with the car's cigarette lighter. Ours has 90 Watt.

A 20Ah or 30AhUSB power bank is recommended to power the tablet long-time when recording on foot or by bicycle. Make sure it provides at least 2 Ampere.

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Tablet Holder

The tablet should be mounted to the windscreen with a suction cup holder to ensure a reliable WIFI connection to the camera. Portrait orientation works best.

Experience has shown that a 8” diagonal-style tablet-holder is most reliable.

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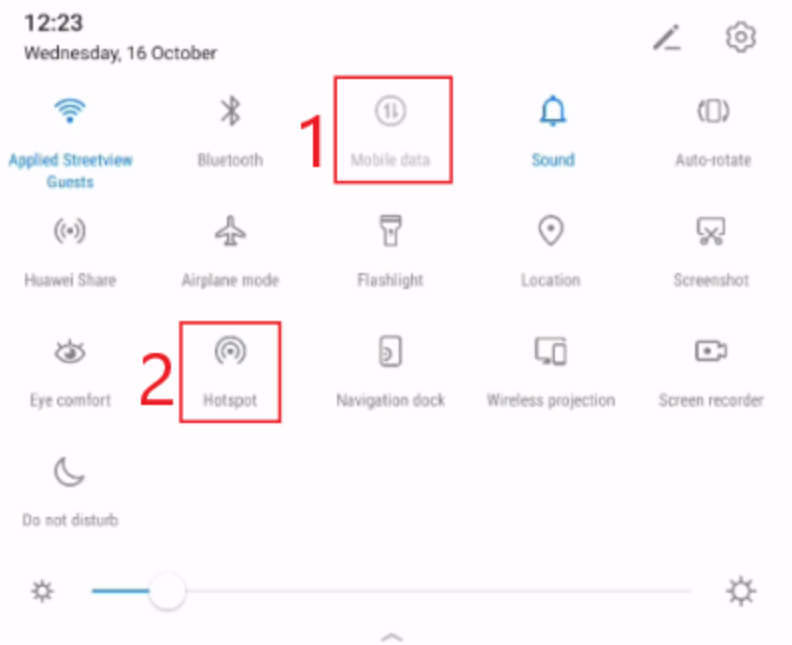
Tablet Hotspot set-up

Quick Settings tray
Activate **Mobile Data (1)**

Activate **Hotspot**
Long-tap the **Hotspot (2)** icon in the Quick Settings tray.



Set up the **Hotspot**
Hotspot name: **camera-** followed by your camera's serial number.
Example: **camera-220003436**
Hotspot Password. It is the same as the Hotspot name.
Example: **camera-220003436**
If possible, set Encryption to **WPA2 PSK**.

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Controller installation

The **Controller** app will already be installed to the tablet.

There are 3 ways to update the Controller App, or to install it to additional devices.

1. When starting the App a message is displayed.
2. You can manually update in Menu -> About.
3. Download the newest release here.

Open the File Manager and navigate to the Download folder.
Then open the downloaded file.
Follow the on-screen instructions.

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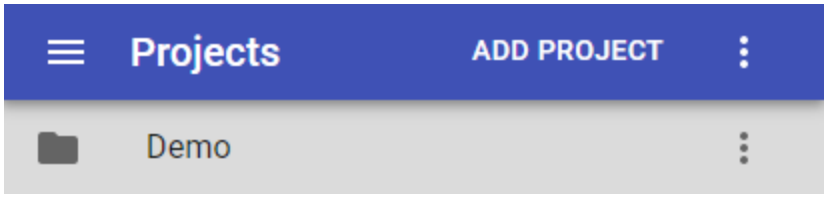
Open the Controller App.

When the App is started the first time the **Map** page is opened.
Click on **Add project** to create a new project.
You can have many projects at the same time and alternate recording between projects.

Projects

Tap on the project to select it. The selected project is highlighted with gray color.
All recording footage (tours) will be saved to the selected project.



Project specific actions

Show all tracks

To the right of the project name tap on ⋮ .
Tap on **Show all tracks** to show all the project's tracks

Hide all tracks

To the right of the project name tap on ⋮ .
Tap on **Hide all tracks** to hide all the project's tracks

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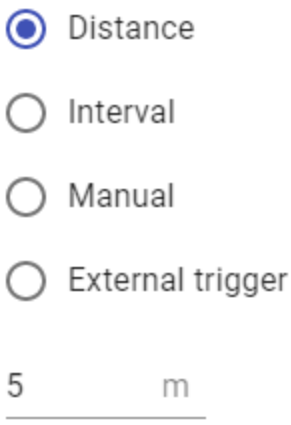
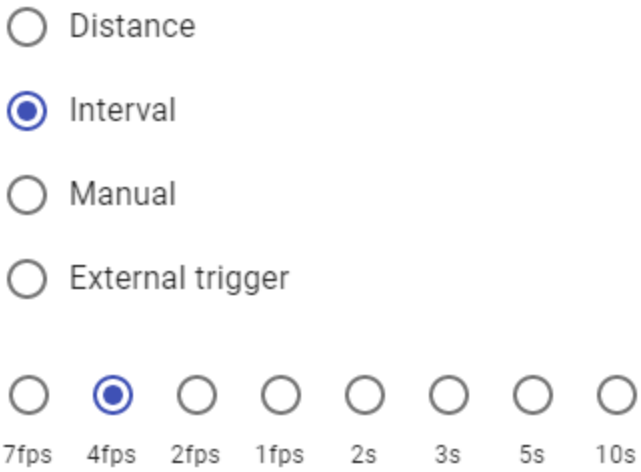
Set release mode

Distance



Release at a specific distance between streetviews.

Interval



Release at a specific time between streetviews.
fps = releases per second.

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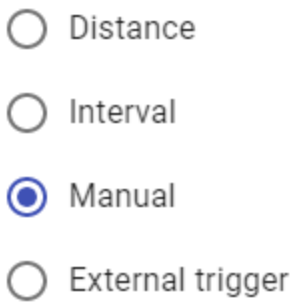
Manual



Release only when the **Manual release** button is tapped in the POI tab**.**

External trigger

Release by the external hardware trigger only.

Backup project

To the right of the project name tap on ⋮ .
Tap on **Backup project.** A directory picker will be open. Pick a directory where the backup of the project will be stored.

Delete project

To the right of the project name tap on ⋮ .
Tap on **Delete project** to delete the selected project.

Hint:
Deleting a project or deleting a tour will not delete the footage on the cameras SSD. The only way to delete the SSD is to format it. See Preferences - Format SSD.

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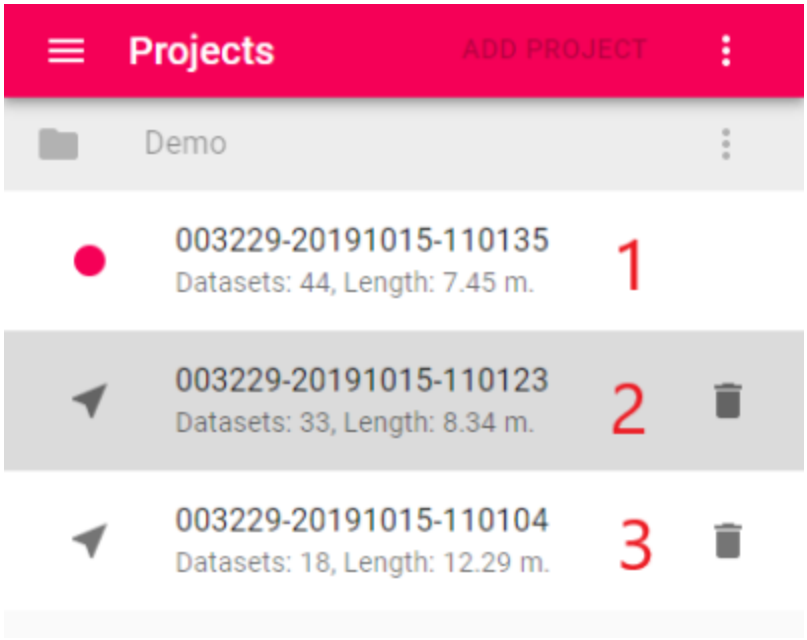
Tours

Click on the Project name to select it. A list of all the project tours will be displayed.



1. The Tour that is being recorded right now
2. Selected Tour. All selected tours will be displayed on the map.
3. Unselected Tour. Will not be displayed on the map.

Tap on the Tour name to toggle it's selection.

Tap on to the right of the Tour name to remove the Tour.

Backup all projects

Tab on in the blue Projects header, then tap **Backup all projects**.

Restore projects

Tab on in the blue Projects header, then tap **Restore projects**
Applied Streetview Controller backup files have the **.backup** extension, Remote Control backups (previous app) don't have an extension. Backups of both apps can be restored. One or multiple backup files can be selected at a time.

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Map

Displays the position of the Camera on the map.

Recording

Start recording button. If this button is visible the Camera is in Standby mode. Not recording. Tap it to start recording.

Stop recording button. If this button is visible the Camera is recording. Tap it to stop recording.

Map tiles

Tap in the bottom left corner to change the **Map tiles source.**
Select an existing online tile provider from the list.

Tap to select a Local folder as the map tiles source.

Tap on to set a custom URL as the map tiles source.
Example custom URL: http:/tiles.yourcompany.com/{z}/{x}/{y}.png

By default the URL follows the widely-used Google grid where x 0 and y 0 are in the top left corner.
The TMS grid where x 0 and y 0 are in the bottom left can be used by using the {-y} placeholder in the URL template.

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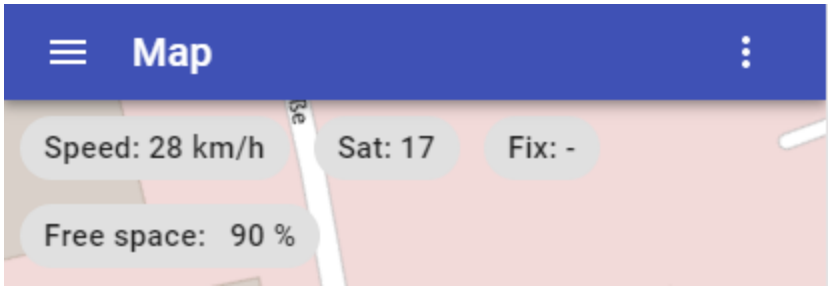
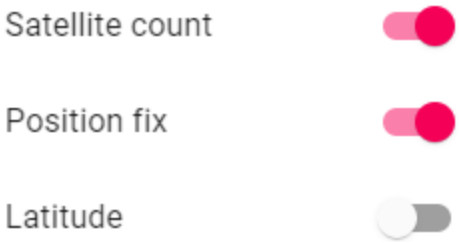
Map layout

Selected data is displayed at the top of the map.



By default not all possible data is displayed. To customize what data should be shown tap on ⋮ in the top right corner to display the **Map layout** list.



Map overlays

Tap on ☰ in the bottom left corner to open **Map overlays.**
A list of all the available Layers will be displayed.

Tap on the Layer name to toggle it's selection. Selected Layers will be displayed on the map. Unselected Layers will not be displayed on the map.

Import

Tap on + to import a KML Layer.
Select a KML file from the SD card.

Create

Tap on ✎ to create a new Layer.

Tap on the map to start drawing a path. Once done, tap on ✓ to finish it.

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Enter a name for your new Layer and pick a color of the path.
Click **OK**.

Remove

Tap on to the right of the Layer name to remove the Layer.

Show all layers

To the right of the layer name tap on ⋮ .
Tap on **Show all layers** to display all the layers on the map.

Hide all layers

To the right of the layer name tap on ⋮ .
Tap on **Hide all layers** to hide all the layers from the map.

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Preview

Shows a real-time preview of the images from the six camera sensors.

To change the view tap on ⋮ and select Front, Front right, Rear right, Rear left, Front left, Top sensor.

To enable the **Slide show** mode, tap on ⋮ and then check Slide show. In Slide show mode all sensors are shown one after the other for 3 seconds each.

Status

Record

Datasets
Total number of recorded streetviews

Release mode
Project's Release mode. Can be Distance, Interval, Manual or External trigger.

Storage

Free: Percentage of storage remaining on the SSD.
Used: Amount of storage used
Total: Total amount of storage
Distance remaining: For the **Distance** release mode
Time remaining: For the **Interval** release mode
Streetviews remaining: For the **Manual** release mode
Streetviews remaining: For the **External trigger** release mode

Note: The SSD missing message has two meanings:

1. There is no SSD inserted into the camera.
   Solution: Power down the camera and insert the SSD.
2. SSD is inserted, but it is not formatted.
   Solution: Go to Preferences and use the **Format the SSD** button.

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Position

Device: Positioning device either **Spatial** (with or without RTK) or **Module**.
Fix:

1. -: No fix. Satellite system not used in position fix, or fix not valid
2. 2D: Navigation Mode in which a fixed value of altitude is used for one or more position calculations while horizontal (2D) position can vary freely based on satellite range measurements.
3. 3D: Navigation mode in which altitude and horizontal position (Longitude and Latitude) are determined from satellite range measurements.
4. SBAS: The various Satellite-Based Augmentation Systems (SBASs) currently under development utilize Geostationary Earth Orbit (GEO) satellites to provide ranging signals to the end user that also contain integrity data on GPS, GLONASS, and/or Galileo satellites.
5. Dead Reckoning: Position is estimated from the build-in IMU.
6. OMNISTAR: Correction data from Satellite-based systems like OMNISTAR.
7. Rtk Float: Satellite system used in real time kinematic mode with floating integers.
8. RTK Fixed: Satellite system used in RTK mode with fixed integers.
9. Autonomous: Satellite system used in non-differential mode in position fix

Coordinates Latitude, Longitude and Altitude
Speed in km/h
Orientation: Heading, Pitch and Roll.
Accuracy: Horizontal and Vertical accuracy estimate
Number of satellites: Total number of satellites, and the number of satellites for each constellation.

Battery

Battery voltage: Current battery voltage reported by Battery Monitor
Alarm value: If battery voltage drops above this threshold an alarm will be triggered

About

Camera serial number Example: 22003436
Camera IP address Example: 192.168.43.50
Camera firmware version Example: V0.26m-20191029153916.w19
App version Example: 1.1.0

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Tablet manufacturer
Tablet OS version
Tablet model

POI

Start recording first. Then manually release the camera by tapping the Manual release button.

Manual release works for the Distance and Manual release modes, but not the Interval or External trigger release modes.

Log Points of Interest (POI) by clicking on the icons.

Mark Point
Logs the icon name for the next recording.
Value in CSV: Mark_point

Mark Point with comment
Logs the icon name for the next recording.
You can enter an extra comment.
Value in CSV: Mark_point: comment

Mark Line
Logs the icon name for all following recordings.
Value in CSV: Mark_line

Mark Line with comment
Logs the icon name for all following recordings.
You can enter an extra comment.
Value in CSV: Mark_line: comment

Return here
Logs the icon name for the next recording.
Value in csv: Return_here

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Online

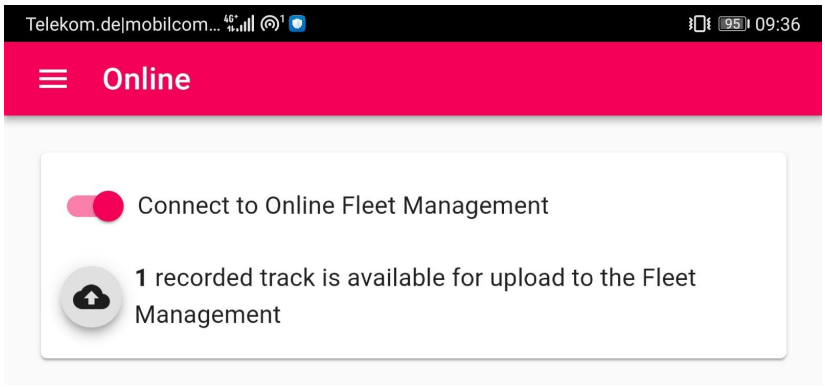
A SIM card with a data plan for LTE / 4G is needed for the tablet.
Two weeks of **free subscription** for the **Online Recording Management** is provided for testing.

Activate the **Online Recording Management**

Automatic upload

When clicking the **Stop Recording** button all finished tracks are automatically uploaded from the tablet to the **Online Recording Management**.
Tracks only, not the streetviews.

During recording



Showing the track that is currently being recorded.
It will be uploaded automatically when clicking the **Stop Recording** button.

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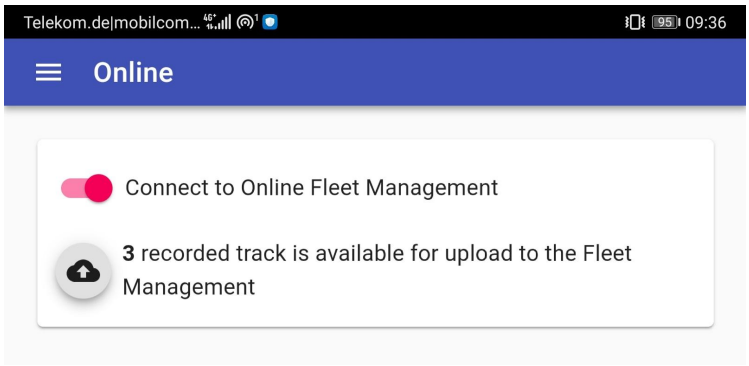
Manual upload

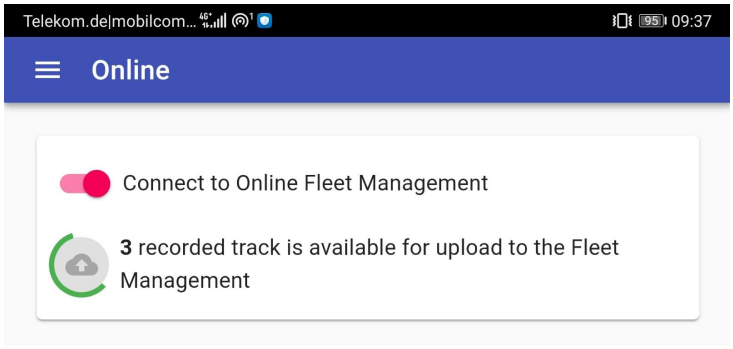
This only needs the tablet, not the camera.
You can do this e.g. in the evening in the hotel in case there was no internet connection when recording during the day.

Click the button to start the manual upload.

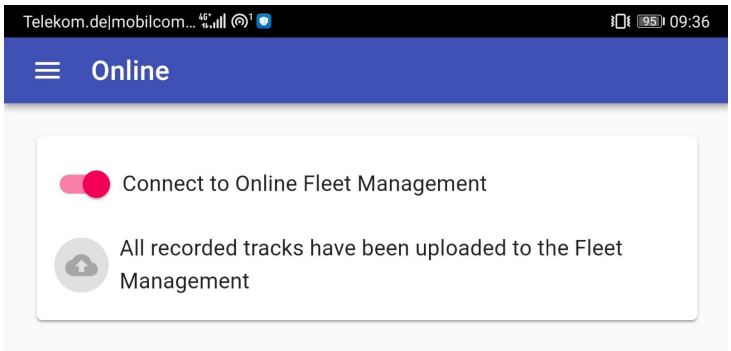
Ready



Uploading



Success



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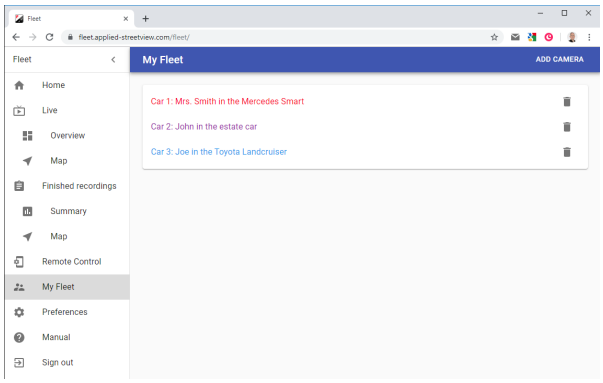
Online Recording Management

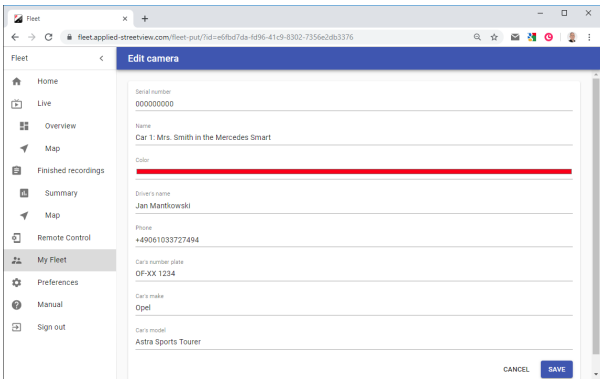
To sign up for your two weeks of **free subscription** for the Online Recording Management open https://fleet.applied-streetview.com on your PC in your office.

Sign-up and log-in.
Tell your email and your cameras serial number(s) by email and we will add your camera to your account.

Manage your recording vehicles

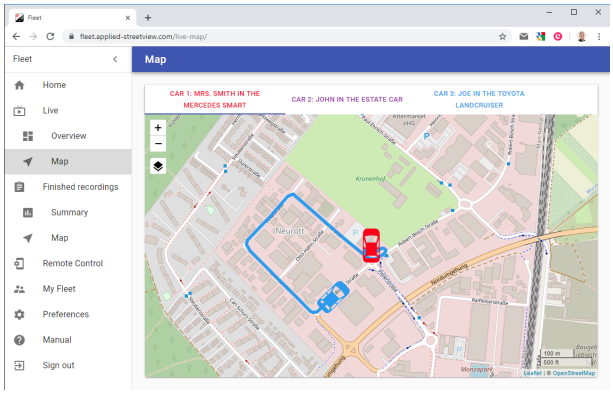
Create your recording fleet by adding your cameras to your account.

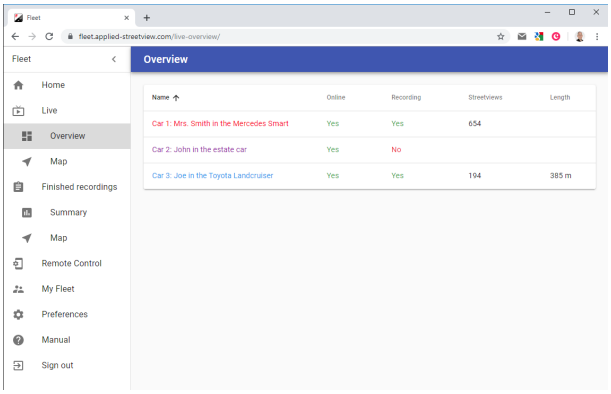




Live Maps

Real-time overview of all recording vehicles tracks on a map.
Real-time statistics.





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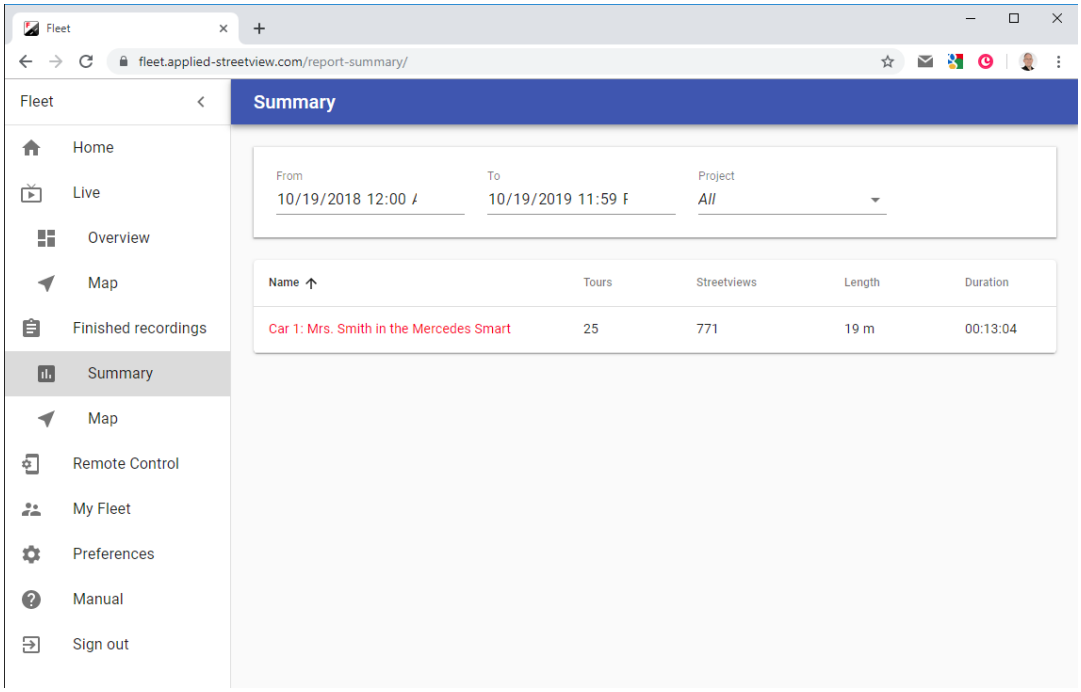
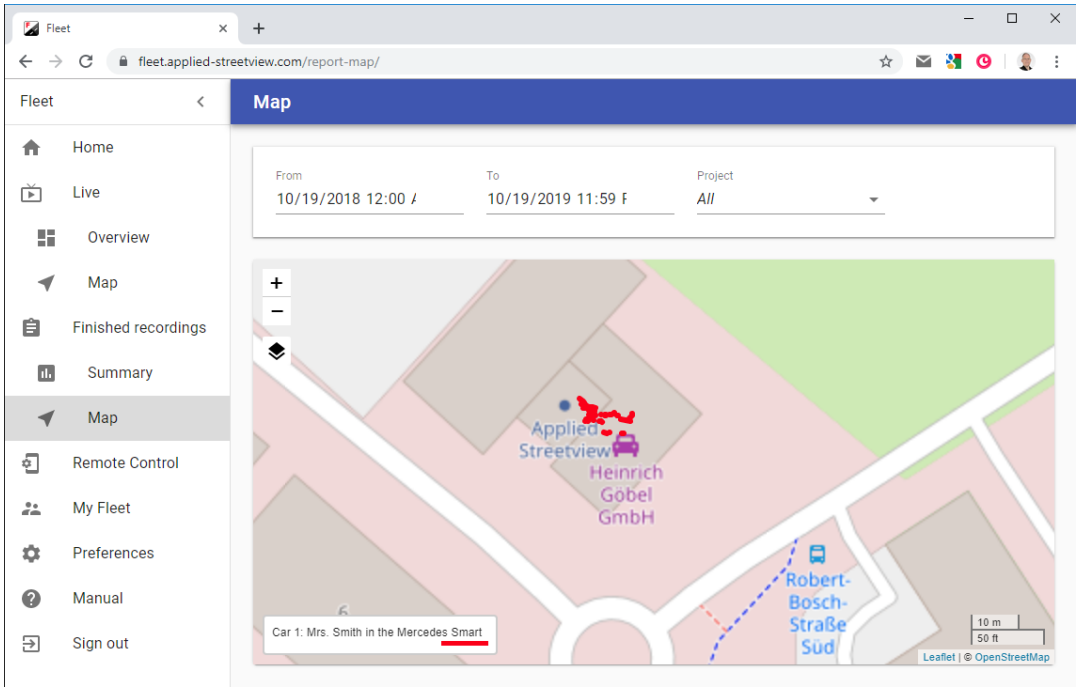
Progress Reports

Reports and maps for all finished recordings.





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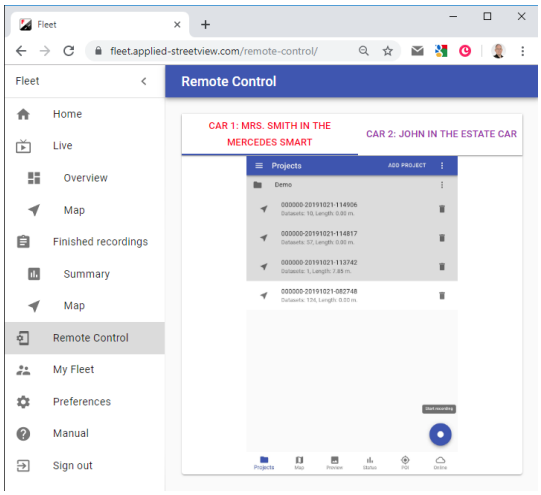
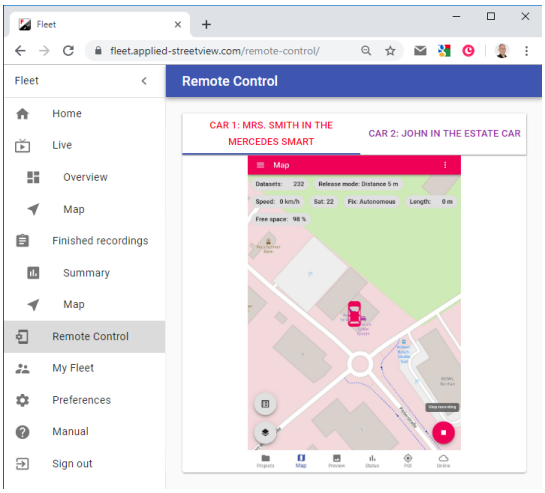
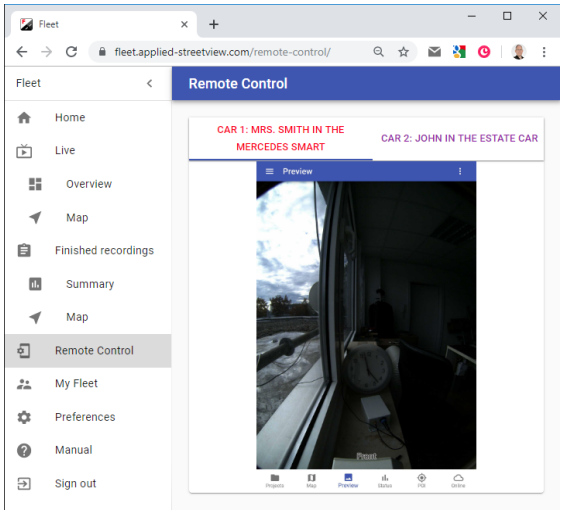
Screen sharing

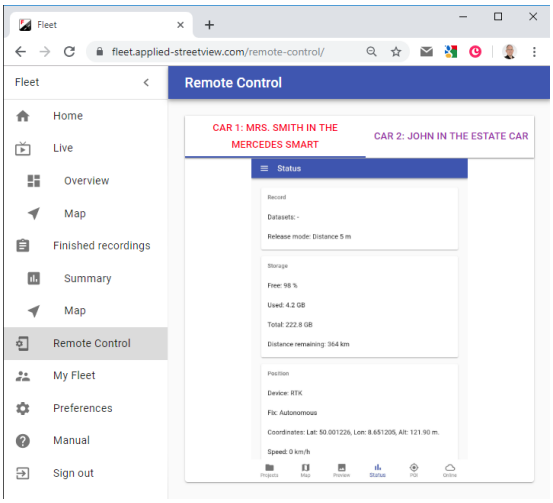
See the tablets Controller app and operate it from your PC.

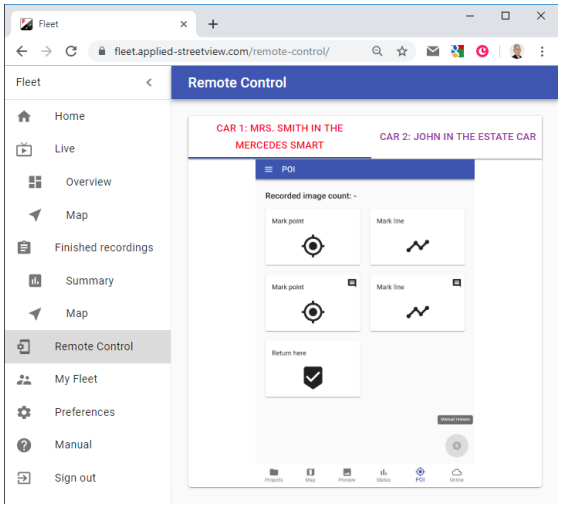
Example: Six main tabs

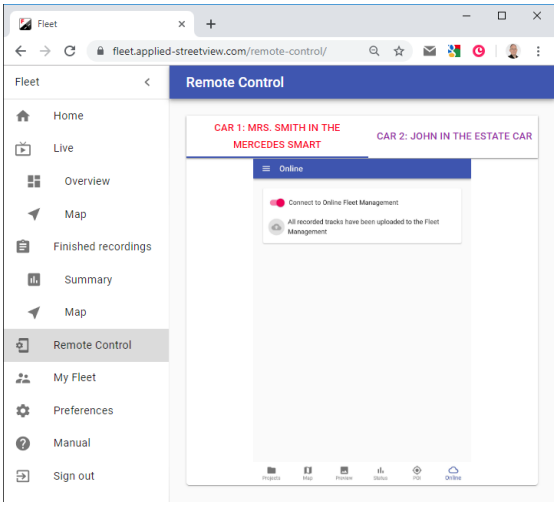












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Preferences

Language

Change the language.
English and German are supported.

Map overlay font size

Change the font size of the status information displayed at the top part of the Map tab.

Format the SSD

To re-use an SSD, it first needs to be emptied.
Formatting in-camera is the only way to do this.
New SSDs must also be formatted in-camera before the first usage.

Recommended SSDs
Samsung EVO Series 860 SSDs.
Sizes supported: 120GB to 1TB.

WARNING
Do not format the SSD with a PC.
Always format the SSD with the camera.

Update Camera firmware

Firmware updates for the camera are made available from time to time.
First, make sure the batteries of the camera and the tablet are fully charged.

Copy the provided firmware file to the tablet. E.g. the Download folder.
Tap the **Update Cameras firmware** button and follow the on-screen instructions.

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Positioning device

Either **Spatial** or **Module**. Spatial is the default positioning device.

To use the Module refer to the Optional Module positioning device section of this manual.

Optional Module positioning device

Module manual
http://updates.applied-streetview.com/RTK_module/RTK_Module_Manual_en.pdf

Spatial with RTK

This manual covers the camera with the AN Spatial GNSS receiver and leveling device **without RTK** only.

Spatial with RTK manual
http://updates.applied-streetview.com/RTK4Spatial/newest.php?file=manual

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Optional Battery monitor

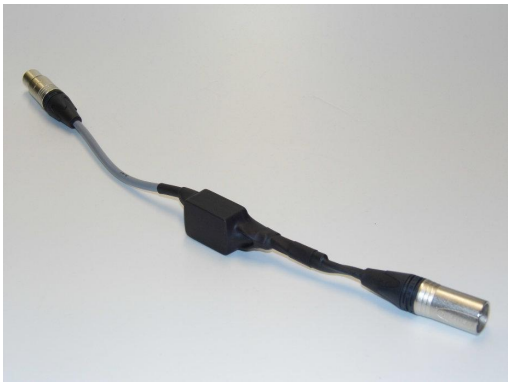
The optional Battery Monitor cable measures the battery voltage and sends it to the Remote Control by Bluetooth.

You can set the alert for the minimum voltage so you know when the battery is nearly empty.

The default is set to 11.5 Volt for the 7 Ah battery from the camera case and the large 24 Ah battery.
Change it to 12.5 Volt for the Backpack Battery Box.

Disconnecting the battery before it is totally discharged protects the camera from an unwanted shutdown.

It also maximizes the number of charge/discharge cycles the battery can do before it is worn out and needs to be replaced.



Battery Monitor cable.
Contact Applied Streetview to purchase it.

All other functions of the Remote Control App will still work if it is not present.

Wiring

Just plug the Battery Monitor Cable in between the battery and the camera's power cable. It works with all batteries types we provide, even the Backpack Battery Box.

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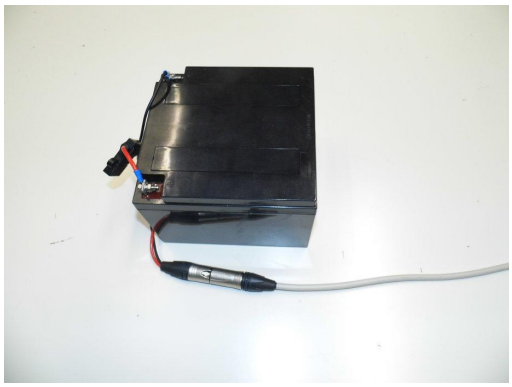
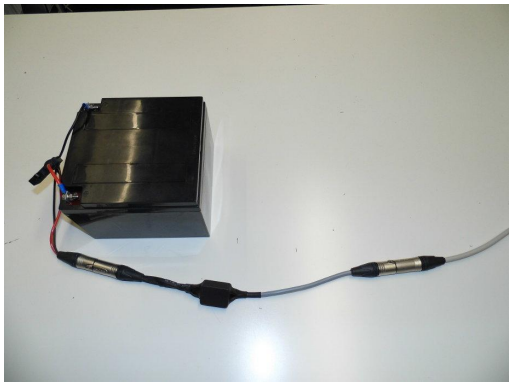
Battery Monitor cable:

Without:



Battery Monitor added:



Bluetooth

Turn on bluetooth.

Open Remote Control App and go to the **Preferences** page.
Enable **Battery Monitor**.

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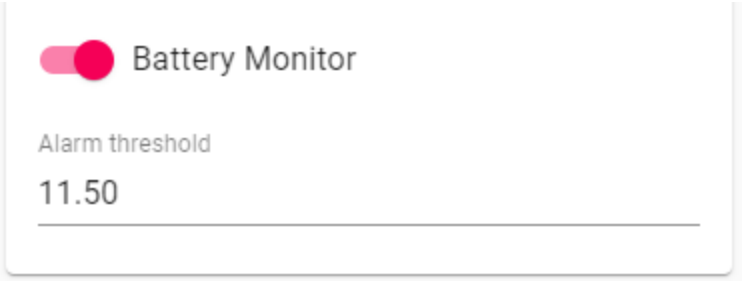


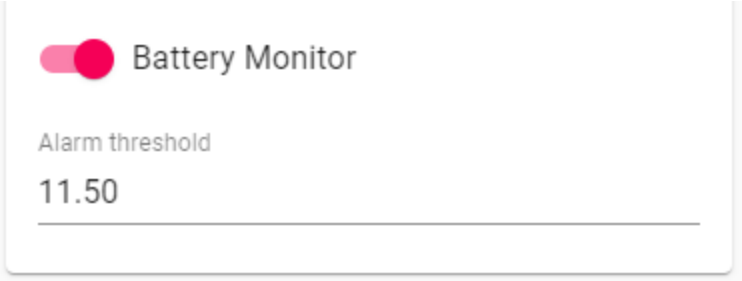
If the Battery Monitor is in close proximity to the Tablet it will automatically connect.
The Bluetooth connection works up a 15 meter distance.
Remote Control will try to automatically reconnect if the Bluetooth connection is lost.

Status

Open the **Status** page and then scroll down to the **Battery Monitor** section.

Alarm

Go to the **Preferences** page.



The default is set to 11.5 Volt for the 7 Ah battery from the camera case and the large 24 Ah battery.
Change it to 12.5 Volt for the Backpack Battery Box.

To test the alarm, change the minimum voltage to 14 Volt.
The Alarm will go off after a few seconds.
This is a good way to make sure the loudspeaker of the tablet is set to the maximum Volume.

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Voltage logging
The battery voltage is sent to the camera and logged with all the other data.
See column 44:custLog9 of the panoramas.csv file in tours folder 7.
Logging the voltage can not be deactivated.
When there is no Battery Monitor cable, there is no voltage log.

In case the low-voltage alarm is triggered, the word **Alarm** is added to the voltage log.

About

Version

Displays the current app version.
Options to check for updates, view release notes.

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Support

Support is provided for the newest Controller app only.

Please update first.
Put the tablet online, then start the Controller app.
When there is a new release, an update option will be shown when connected to the internet.
Follow the on-screen instructions.

Or get it here.

Support is available in English.

Helpdesk: support.applied-streetview.com
E-Mail: support@applied-streetview.com
Skype ID: applied-streetview
Phone: +49 6103 - 37 27 494

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