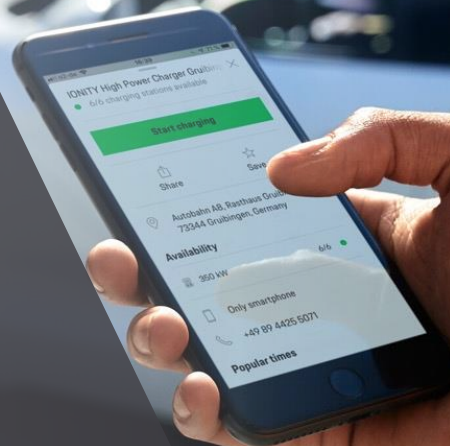




PORSCHE

Porsche Track Precision app

Training document



Important terms & abbreviations

CIC	Customer Interaction Center
CW	Calendar week
GPS	Global Positioning System
MB	Megabyte
PAG	Porsche Aktiengesellschaft
PC	Personal Computer
PCM	Porsche Communication Management
PCSI	Porsche Connect Service Information
PQIS	Porsche Qualitäts Informations System
PRMS	Porsche Request Management System
PTPA	Porsche Track Precision App
SDK	Software Development Kit
UK	United Kingdom
VIN	Vehicle Identification Number

Agenda

- 1 Introduction
- 2 Access and navigation
- 3 App handling
- 4 Support cases



Agenda

- 1 Introduction
- 2 Access and navigation
- 3 App handling
- 4 Support cases



Goals of today's training unit



What this training document is about

- » In this training document, you will be introduced to the **Porsche Track Precision app**.
- » The version was available in app store **from May 2019 on** and is part of the **Connect portfolio**.
- » Customers use the app to get detailed **vehicle data for driving advice** and **evolution of past sessions**.



Introduction

Porsche Track Precision app in a nutshell



With the Porsche Track Precision app, customers can use detailed vehicle data for driving advice and evaluation of past sessions.

- » The Porsche Track Precision app enables the customer to
 - determine **lap times** and compile **driving statistics**,
 - **record and manage the results** on their smartphone and
 - **share them** with other drivers for comparison.
- **NEW Free Drive Mode** since April'22
 - Free Drive mode is for **recording Road Trips**
 - record **beautiful moments** in short Videos and Photos
 - Capture **automatic moments** on dynamic driving events



Introduction

Porsche Track Precision app and user groups



What is the Porsche Track Precision App ?

The Porsche Track Precision app supports customers with vehicle data as well as track analysis of the driven racetracks.

- **Before the race customers can** track information, get driving and preparation tips or check vehicle information for a specific track.
- **During the race customers can** use a lap timer, Performance indicator, log data or record a video.
- **After the race customers can** analyze their driving performance (graphical and video analyzes) comparing it to previous journeys or laps and improve it.
- The app makes use of **GPS and high-precision data** from the on-board computer and the customer can select their desired track from **over 300 predefined racetracks worldwide**.
- additionally a new **Free Drive mode** for recording on public Roads



Who can use the Porsche Track Precision app?

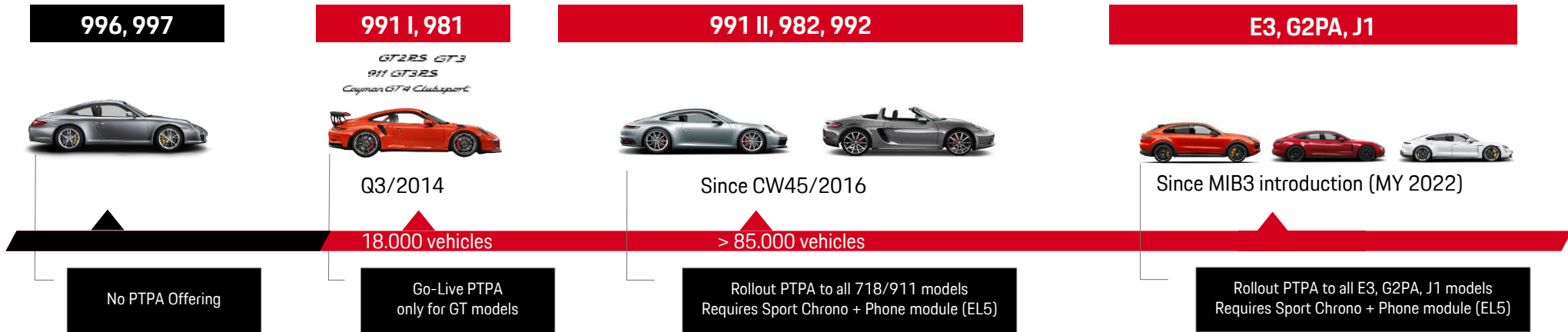
- The **Porsche Track Precision app** is usable for **Porsche customers** with the following vehicle types: All 991, 911 GT models & 982 models equipped with PCM 4.0/ 5.0, Connect Plus & Sport Chrono Package & production date after CW45/2016. For older 991 I only GT vehicles with Sport Chrono & app gateway.
- Since MY 2022 the PTPA is also available to all E3 (Cayenne), G2PA (Panamera) and J1 (Taycan) models equipped with PCM 6 and the Sport Chrono Package and a Phone module (EL5).
- The app is available to customers in **all Connect countries***:
 - The app is currently available in **10 languages**: Chinese, German, English, French, Italian, Japanese, Portuguese, Russian, Spanish, Swedish.
- The app can be downloaded in the Google play store and in the Apple app store **by customers for up to 67 countries****.

*in China without google SDK **Availability of PTPA in up to 67 countries in 10 languages: Angola, Australia, Austria, Bahrain, Belgium, Brazil, Brunei, Bulgaria, Canada, Cayman Islands, Chile, China, Colombia, Croatia, Cyprus, Czech Republic, Denmark, Dominican Republic, Estonia, Finland, France, Germany, Greece, Hong Kong, Hungary, Iceland, Indonesia, Ireland, Italy, Japan, Kazakhstan, Kuwait, Latvia, Lebanon, Lithuania, Luxembourg, Macedonia, Malaysia, Malta, Mexico, Netherlands, New Zealand, Norway, Oman, Peru, Philippines, Poland, Portugal, Republic Of Korea, Romania, Russia, Saudi Arabia, Singapore, Slovakia, Slovenia, South Africa, Spain, Sweden, Switzerland, Taiwan, Thailand, Tunisia, Turkey, Ukraine, United Arab Emirates, United Kingdom, United States.

Availability of Porsche Track Precision app

Vehicle compatibility

The Porsche Track Precision App is now available for the Panamera, the Cayenne and the Taycan*



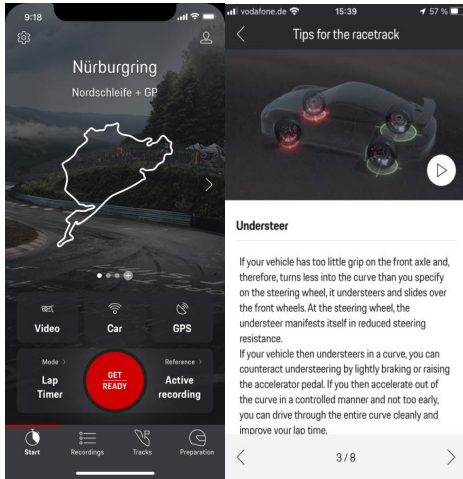
*News update from the Porsche Newsroom, 02.12.2021: <https://newsroom.porsche.com/de/2021/innovation/porsche-track-precision-app-panamera-cayenne-taycan-26605.html>

Introduction

Phases of usage Laptimer

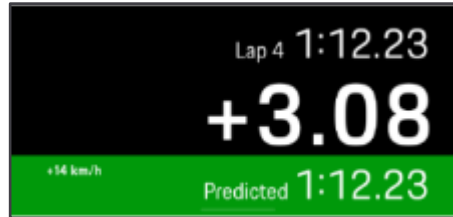
Preparation

- Track information
- Vehicle information
- Driving tips
- Preparation tips



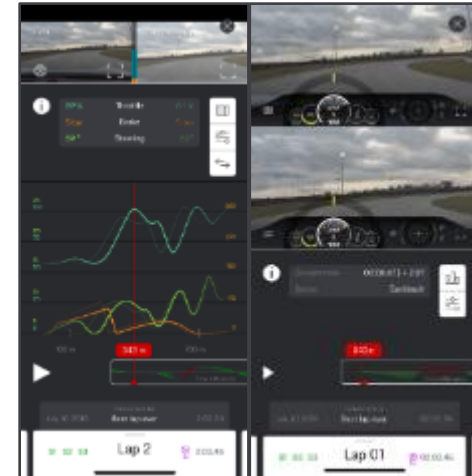
Recording

- Lap timer
- Performance indicator
- Data logging
- Video recording



Analysis

- Track analysis
- Comparison
- Graphs
- Video analysis

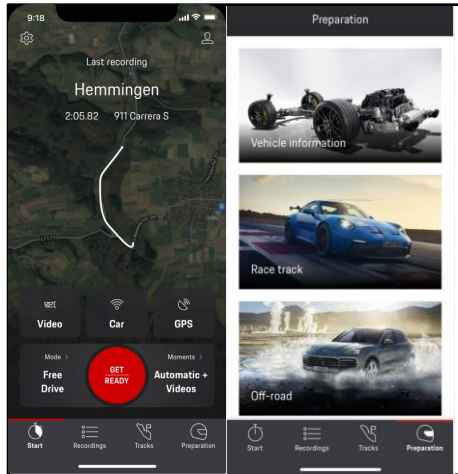


Introduction

Phases of usage FreeDrive

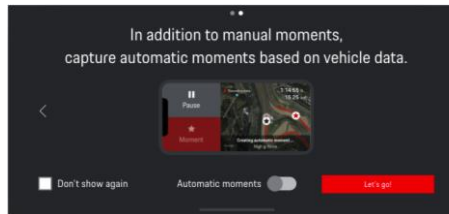
Preparation

- Vehicle information
- Driving tips for Offroad
- Preparation tips Offroad



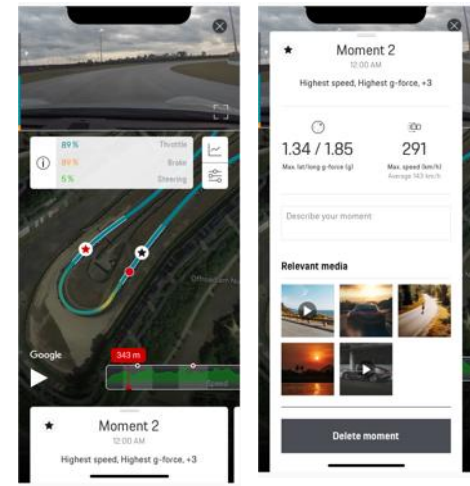
Recording

- Onboarding before Recording
- Short Videoclips 30s
- Data logging for the Trip
- capture automatic moments



Analysis

- Track and Data analysis
- show highlights in Video
- Taken Photos will be matched to Moments in the Trip



Agenda

1 Introduction

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4 Support cases



Access and navigation

Starting the app for the first time

When the app is started for the first time, a welcome screen appears.

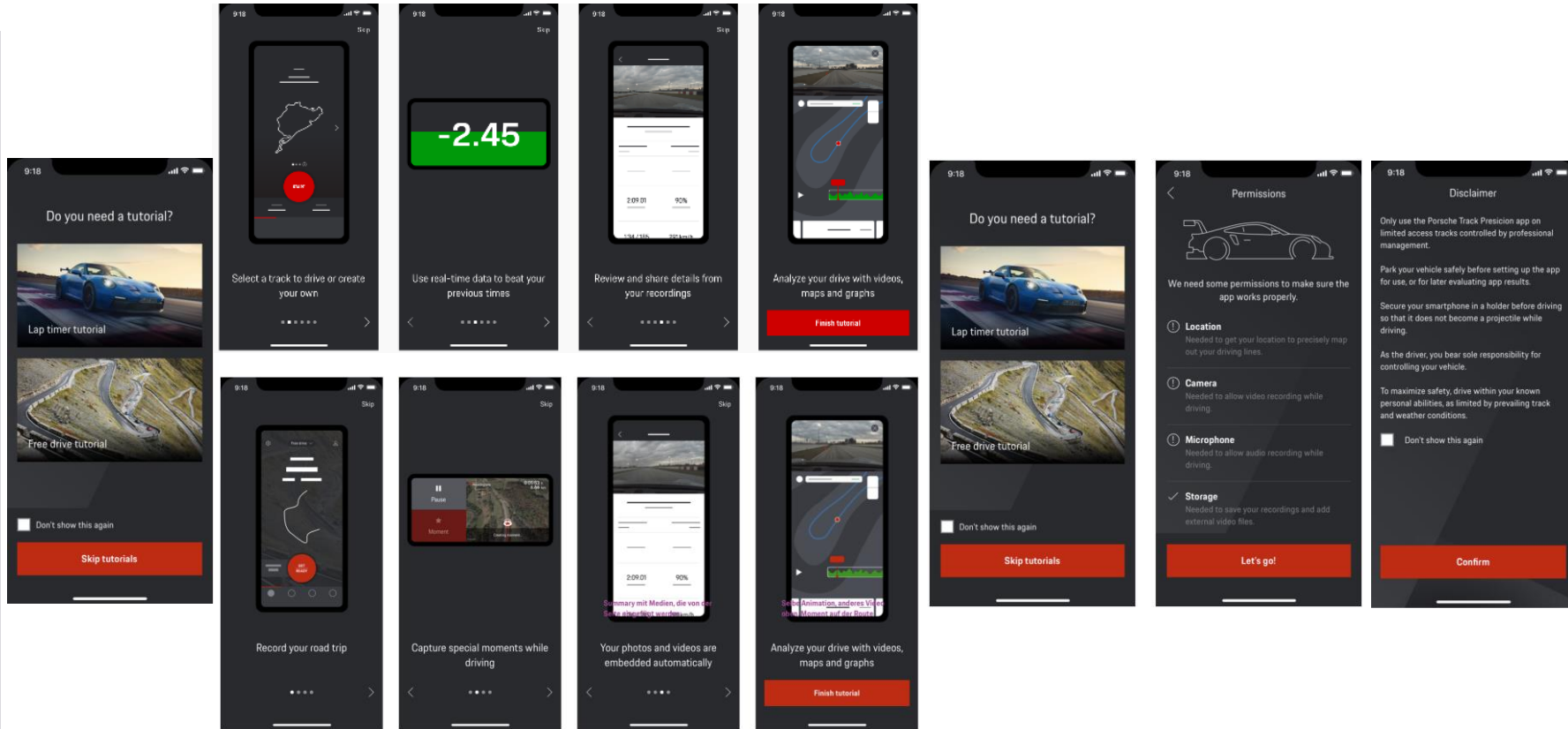
1. The customer needs to **agree to the Porsche Track Precision app terms of use and privacy policy**.
2. The customer can proceed by tapping on the **checkbox** on the left of the text and tap on "**Confirm**". Accepting the Terms of Use is **mandatory** for further usage.
3. By clicking on the **underlined text**, the **Terms of Use or privacy policy are displayed**.



Introduction App Onboarding

After confirmation, the customer **receives an automatic introduction to the app.**

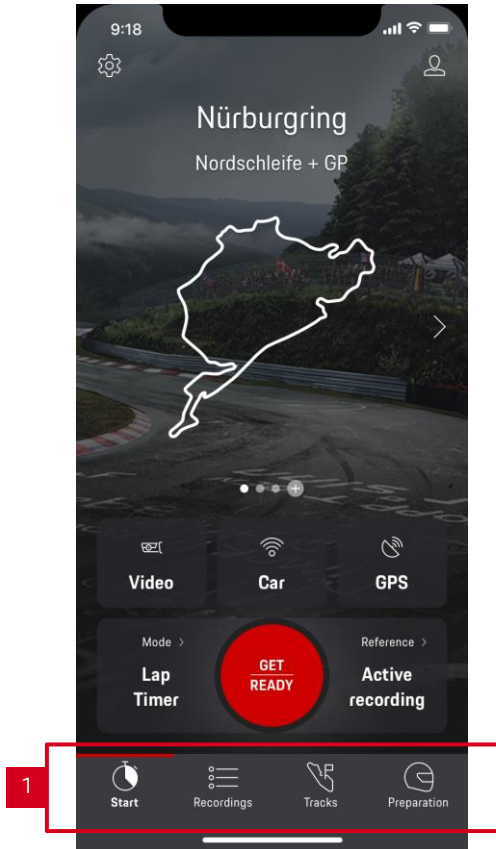
1. They can either **swipe** through the introduction and set permissions (e. g. for location, camera etc.) ...
2. ...or tap on **"Skip"** to go directly to the home screen.
3. In the end of the introduction the customer is asked for Permission to get access to Camera, Microphone and Location.



Access and navigation Sections

- To return to the start screen, the customer can click on **"Start"**. The customer can access three additional tabs:
 - **Recordings**
 - **Tracks**
 - **Preparation**

The four tabs of the app will be explained on the following slides.

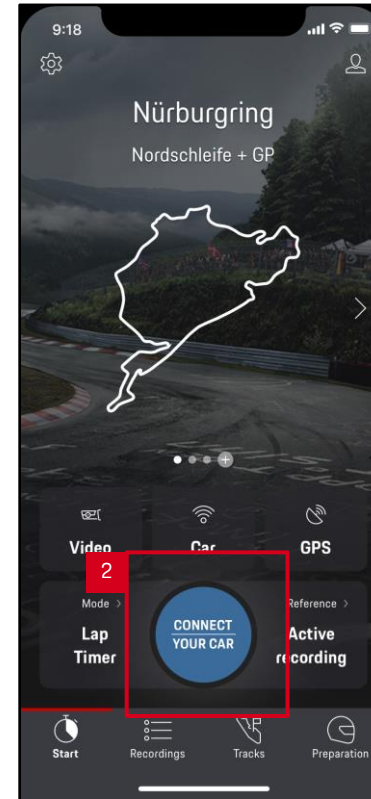
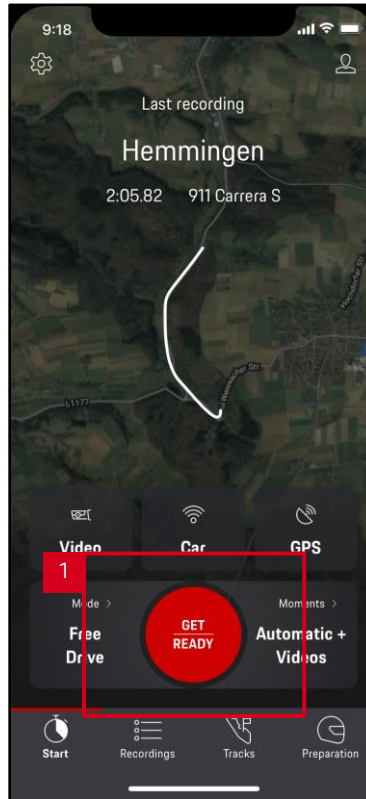


Access and navigation

Connect your car (1/3)

1. When the home screen is initially opened, the app automatically tries to connect to the smartphone within 1 to 5 seconds. As soon as a vehicle is connected, the connect button turns into a **start button** that can be used to start a new recording.
 - IF the customer presses "**Get ready**" the app is ready to record on a selected track.
 - The button illuminates **red** when all **conditions for recording** are met.
2. If the connection is not established automatically, the customer needs to click on "**Connect your car**". If this option is also unsuccessful, the help information opens automatically (see next slide).

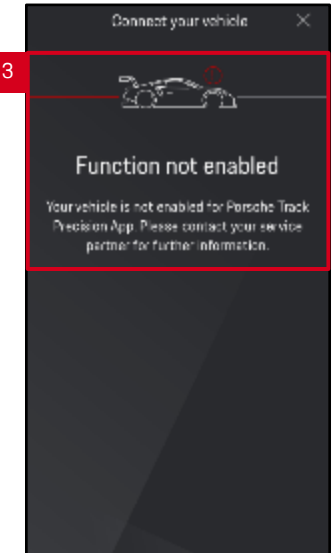
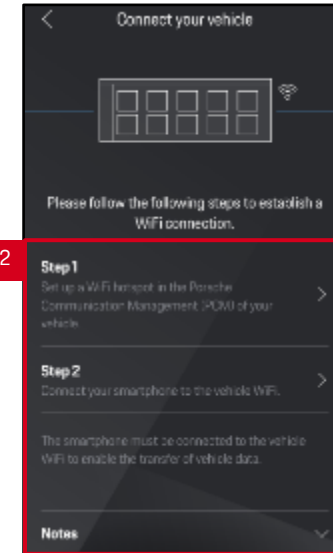
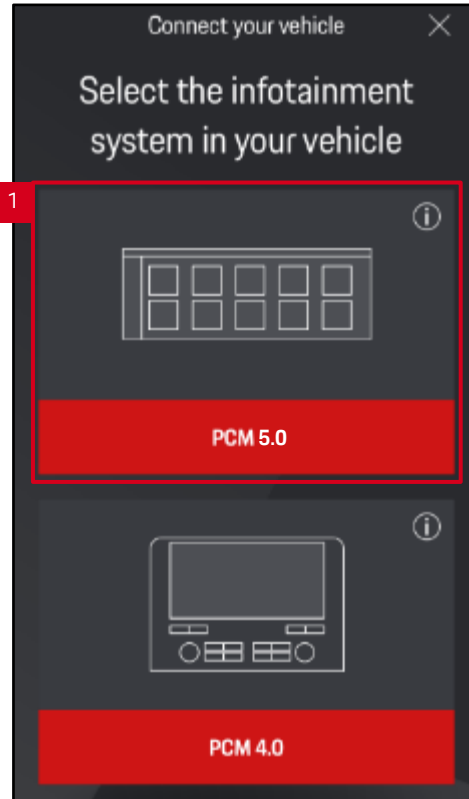
Please note: For further information about the Sport Chrono Package, please check the vehicle specific BAL in the PCSI.



Access and navigation

Connect your car (2/3)

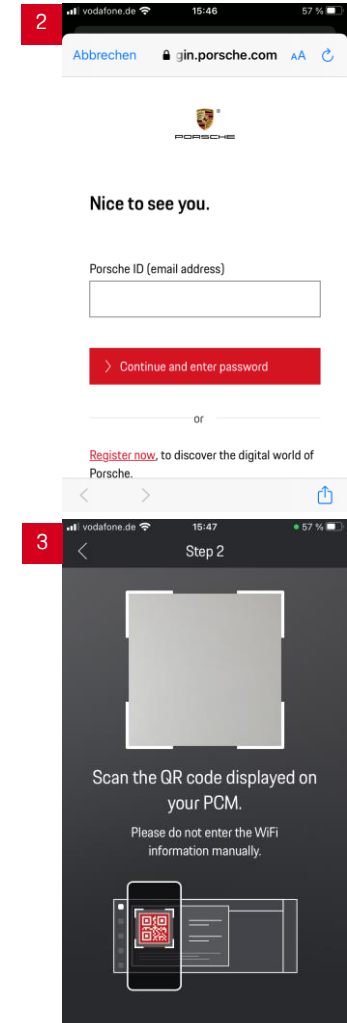
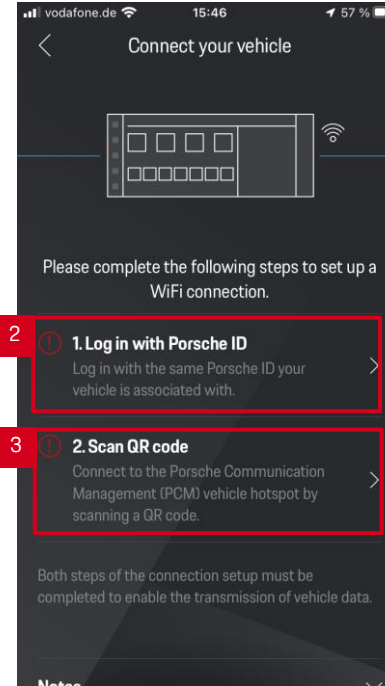
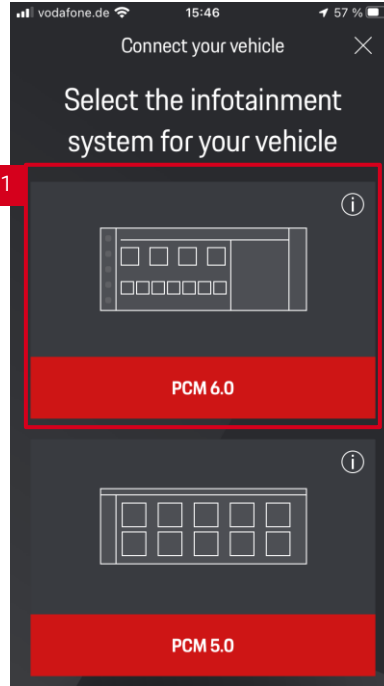
1. If a connection cannot be established directly, the app offers additional information automatically. First, the **customer selects the PCM of his vehicle**. An info layer informs the customer which PCM (hardware) is installed in which Porsche model.
2. Secondly, a **step-by-step guidance** is displayed on a new page. The guidance explains in detail how to establish a WiFi connection.
3. The app can not be used with every Porsche model. For those which are not enabled and therefore cannot connect, a pop up informs about it.



Access and navigation

Connect your car with PCM 6 (3/3)

1. First, the **customer selects the PCM of his vehicle**. An info layer informs the customer which PCM (hardware) is installed in which Porsche model.
2. With the usage from PCM 6.0 it is **necessary** to log in with the **Porsche ID**. The customer can use every P-ID Account it doesn't have to match to the Car Account.
3. A **step-by-step guidance** is displayed in detail how to establish a WiFi connection. **PCM 6** provides a **QR Code** to simplify the connection and to exchange Tokens between Car and Phone, therefore it is not sufficient to connect to the WiFi manually.
4. If the Porsche ID is not the same like in the car the customer has to **confirm permissions** for connecting the Track Precision App in the PCM in a popup screen.



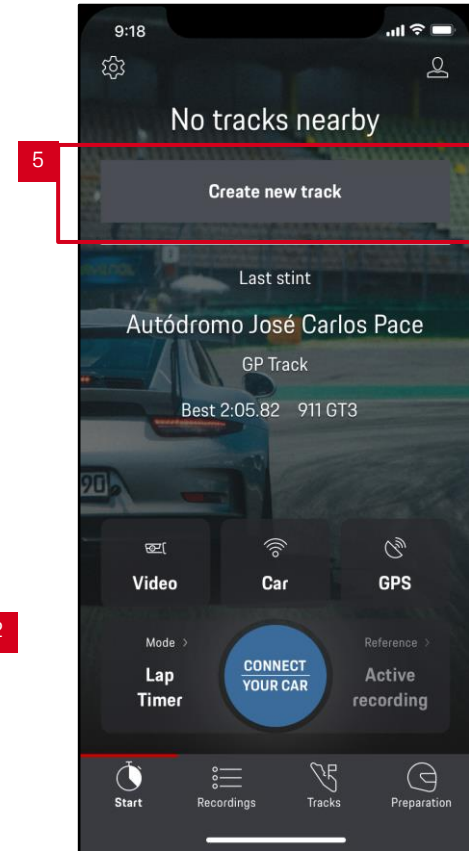
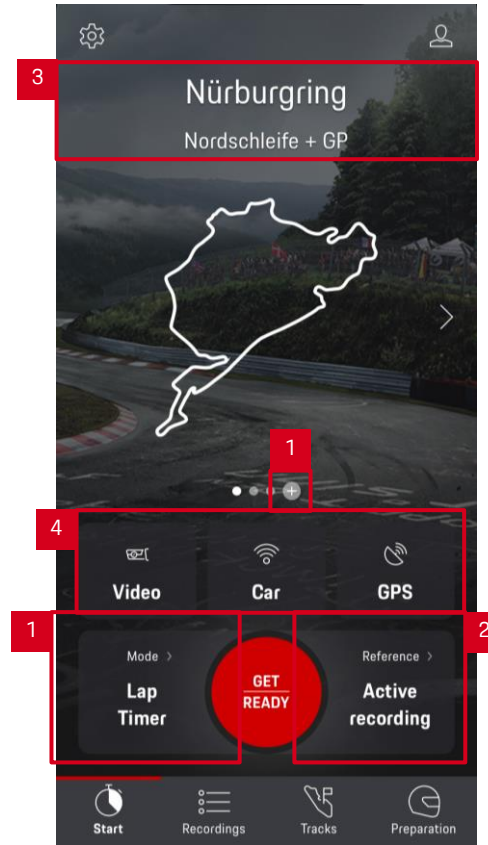
Access and navigation

Track features

1. The customer can select the lap timer for the driving mode via the **"Driving mode"** button:
 - a) An automatic lap timer with live views while recording vehicle data and video
 - b) Freedrive Mode to record drives on public Roads
2. Via the button **"Reference"**, the customer can select a reference lap. "Best lap in active recording" is chosen by default.
3. If **tracks nearby** are available, they are **shown on the top** of the home screen.
4. The customer get displayed the **status of the Car** and the **video settings**. For detailed Information like temperatures, tire pressures and GPS Quality and changing video settings, the indicators are also selectable.
5. In addition, an option is displayed **to create a new track*** on the Top, when the customer is not nearby a Track. On a official Track he can also add a new variant, by tapping on "+" or swipe to the right. The customer can create a new track either before driving (via map) or while driving.

Please note: The customer can connect their smartphone to the PCM via Bluetooth® for acoustic output of the lap times.

* This function is not available in China and Turkey.



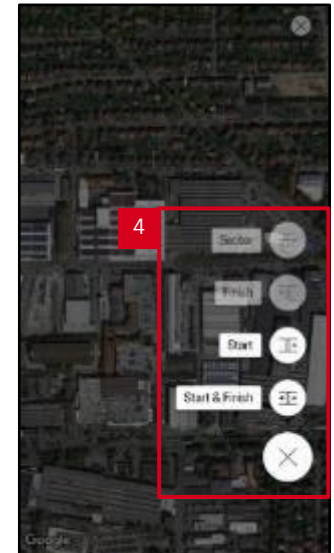
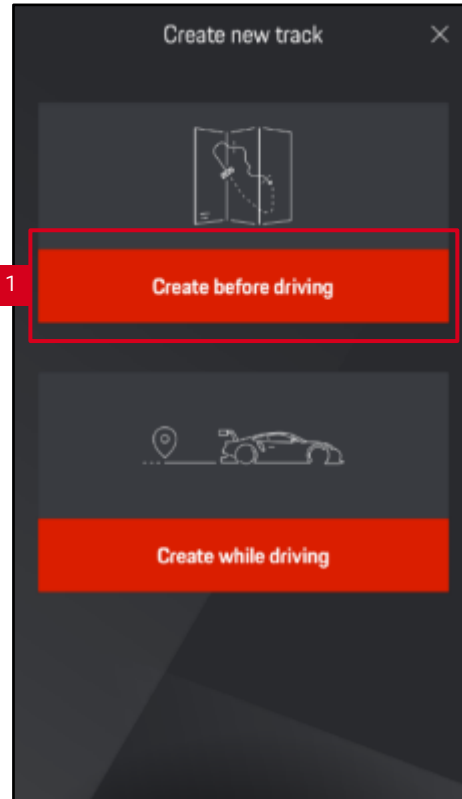
Access and navigation

Create new track* (1/2)

After choosing "Create new track", a layer pops up asking if the customer wants to create a new track before or while driving.

1. If the customer selects "**Create before driving**", a Google Map (set on satellite view by default) is shown.
2. By clicking on the "**crosshair**" button, the **view is centered** to the current position.
3. Via the "**Plus**" button, the customer can **design an own track** using the marks "Sector", "Finish", "Start" or "Start & Finish" on the map.
4. To create a circuit, the customer selects "**Start/Finish**" and optionally defines sectors. They need to arrange the marks in the direction of travel and zoom into the map to place the marks as precisely as possible. To create an open racetrack, the customer chooses "**Start**" and another "**Finish**" on the map.

Naming of the track and marks is optional and can also be done later. The track layout is then saved on the home screen.

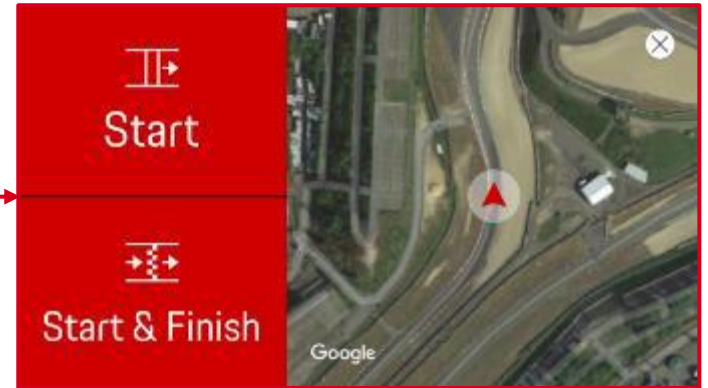
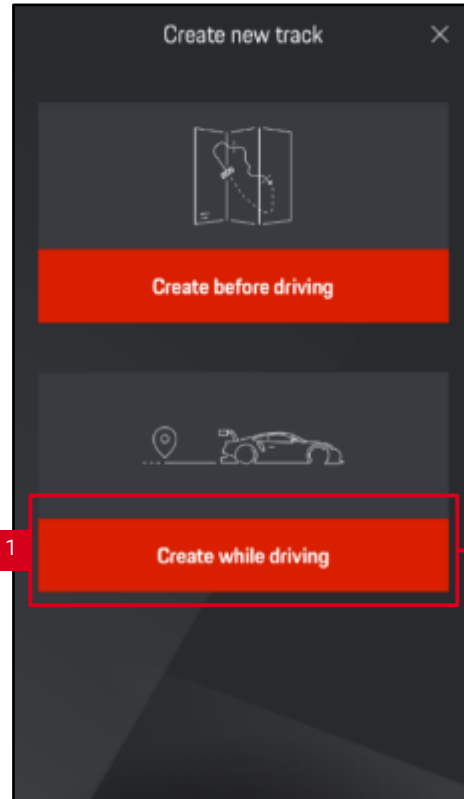


* This function is not available in China and Turkey.

Access and navigation

Create new track* (2/2)

1. In order to record a track and define the marks directly while driving, the customer selects **"Create while driving"** on the main screen. The first programmed lap will be saved as a selectable racetrack.
 - To create a circuit, the customer must press **"Start/Finish"** and **define the start and finish lines** at the current position. The **second lap is automatically started** when the start line is crossed again, and the screen will switch to lap timer.
 - To create an open racetrack with a different finish, the customer must place the start line at the current position by selecting **"Start"** and then the finish line at the current position by pressing the button again.
 - The set **start and finish point** as well as the already recorded track **appear on the map**.



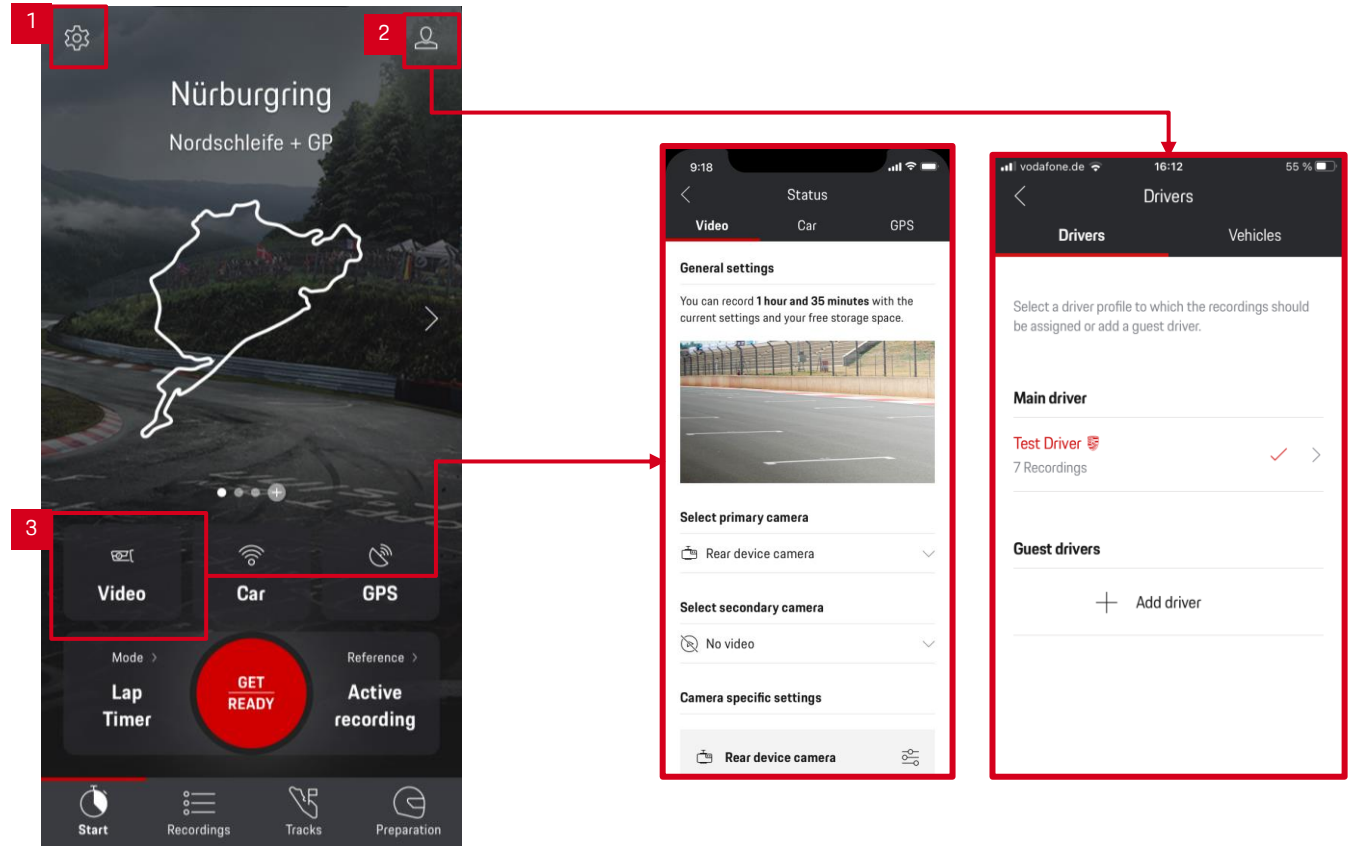
* This function is not available in China and Turkey.

Access and navigation

Settings and profile

The customer has direct **access** to:

1. the **settings section** which provides all the **setting options for data recording** as well as display options.
2. the **profile section** via the icon at the top. The customer can create their profile before starting driving. Connected vehicles are stored here.
3. The **video settings** which provide all the **setting options for video recording and cameras** (including the Porsche Dashcam).



Access and navigation

Settings options (1/3)

1. Recording lap times

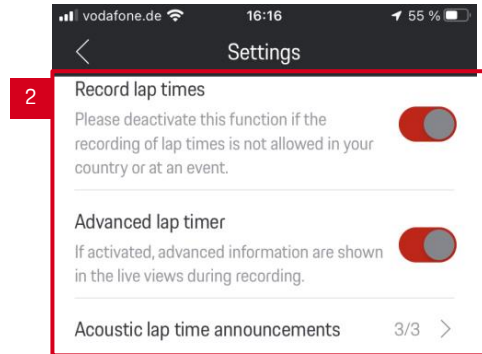
- If regulations forbid recording a lap time on a racetrack (e.g. in UK), the customer can deactivate recording and storage in the "Settings" section with the slide bar for "Record lap times".

Advanced lap timer

- If the advanced lap timer is switched on, advanced information is shown in the live views during recording.

Acoustic lap time announcement

- This setting can be used to acoustically output the lap time, time difference, and information when a new best time is set. This announcement can additionally be output via the vehicle speakers. The speaker must be connected to the PCM via Bluetooth® for this, and Bluetooth must be selected as the audio source.



"Free drive" mode

Automatic moments

If activated, moments will be automatically created if, for example, high G-forces, strong acceleration or hard braking is detected.



Moment videos

If activated, every manually set and automatically recognized moment is recorded in a video.

Note: When recording in "Free drive" mode, there is no permanent video recording.



Access and navigation

Settings options (2/3)

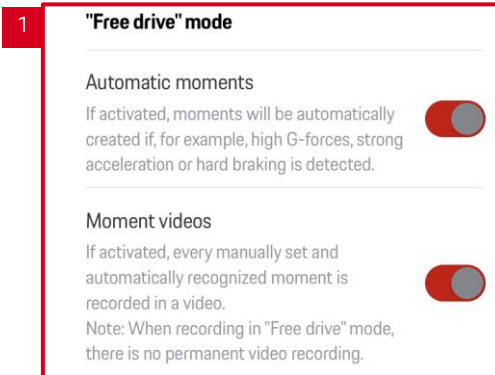
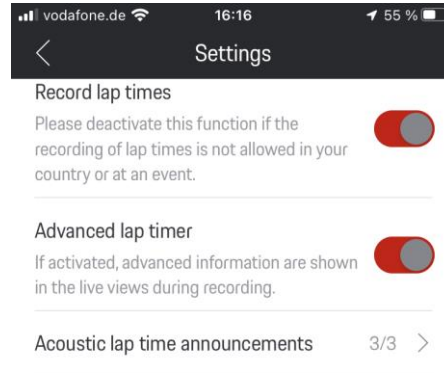
1. Freedrive Mode

Automatic Moments

- The customer can decide whether they want to activate the "Automatic Moments". If activated, short moments will be automatically created if for example high G-forces, strong acceleration or hard braking is detected

Moment Videos

- If activated, every manually set and automatically recognized moment is recorded in a 30s short Video before and after this moment.



Access and navigation

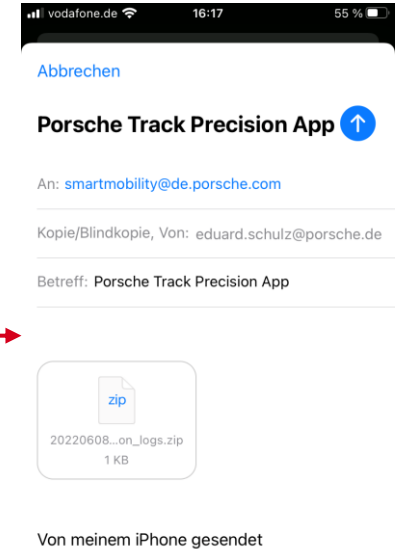
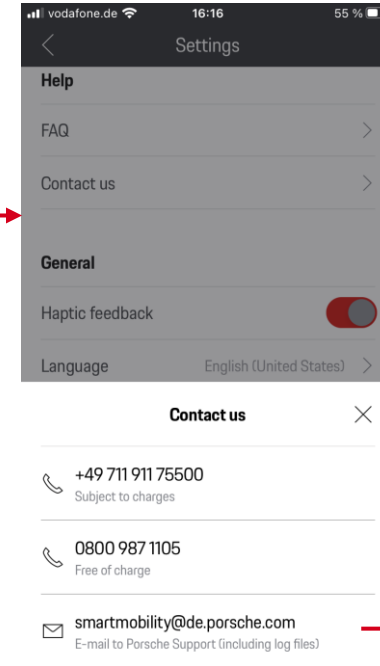
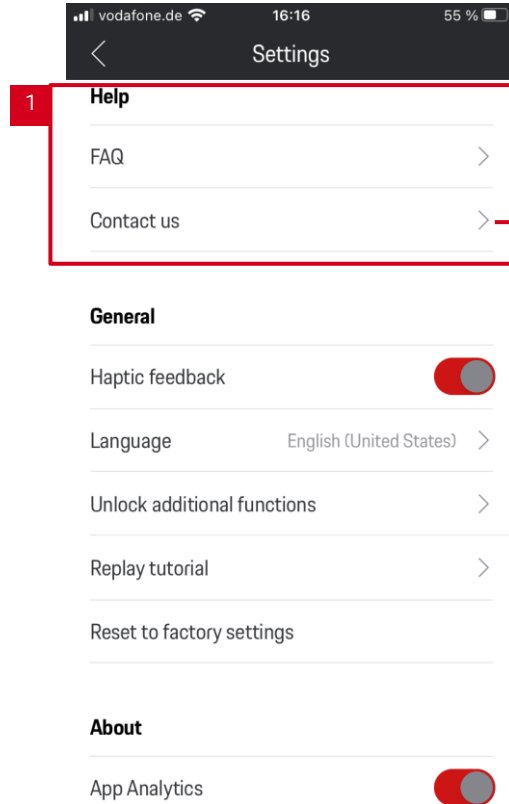
Settings options (3/3)

1. Help and Support FAQ

- The customer can look for Frequent Asked Questions and find maybe a solution for his answer

contact us

- By "contact us" he get Phone Numbers matched to his country, and the possibility to write a Mail. In this Mail are the failure Log files from the last 30 days automatically attached, which helps the developer to find issues.



Access and navigation

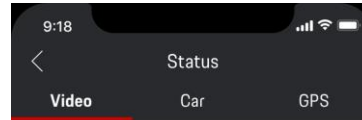
Video Settings

1. Camera Selection

- The customer can select a **primary and secondary camera**. Both selected cameras will capture video simultaneously while recording.
- The previous above shows a live preview for the selected cameras

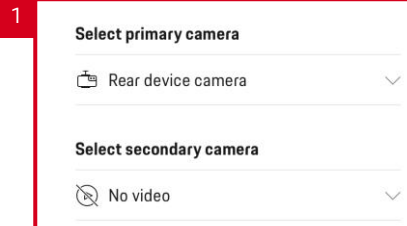
2. Camera specific settings

- The customer can change specific settings for each camera
- If the Porsche Dashcam is not yet connected to the car, the customer can start the connection process

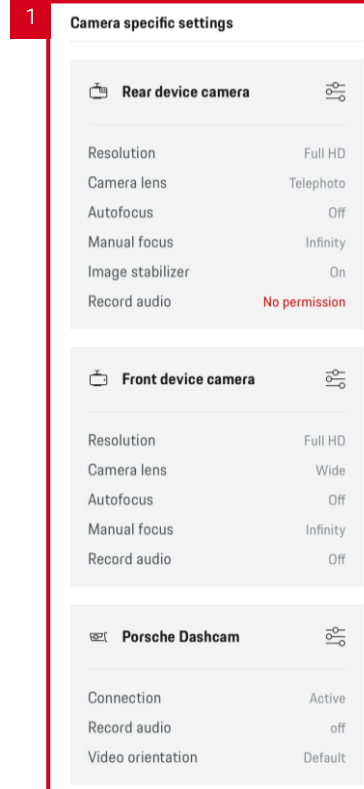
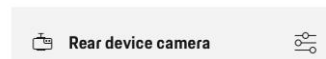


General settings

You can record **1 hour and 35 minutes** with the current settings and your free storage space.



Camera specific settings



Agenda

- 1 Introduction
- 2 Access and navigation
- 3 App handling
- 4 Support cases



Agenda

3 App handling

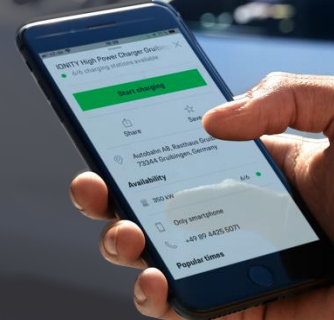
- » Recordings
- » Tracks and preparation
- » Further information



Agenda

3 App handling

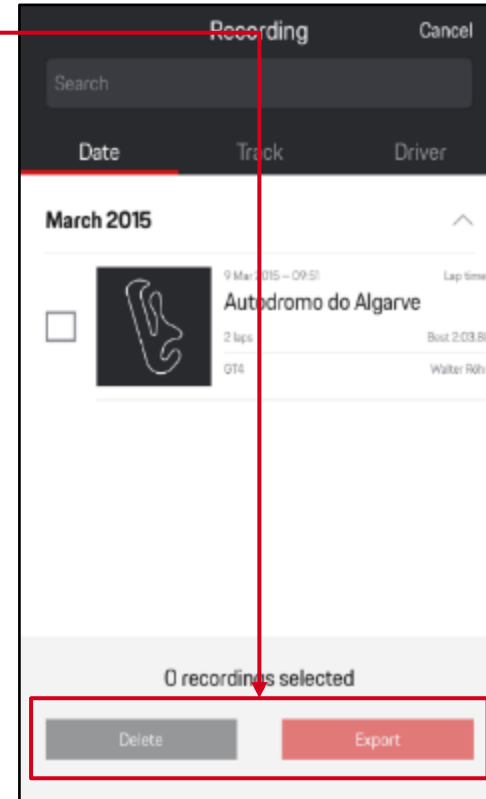
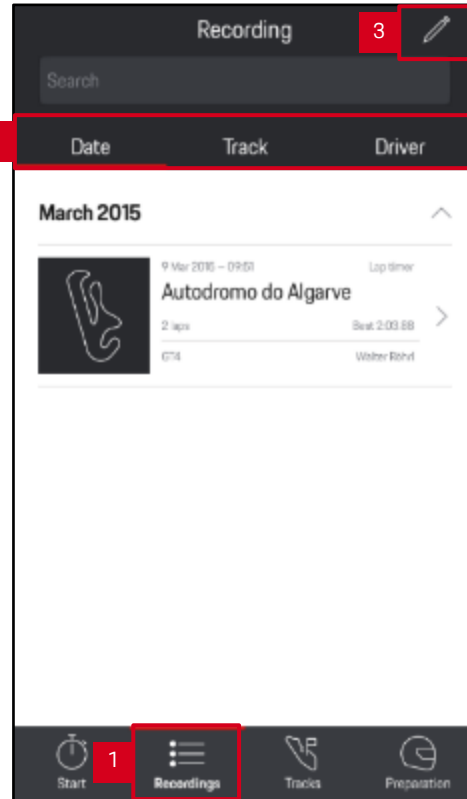
- » Recordings
- » Tracks and preparation
- » Further information



Recordings Overview

1. The tab "Recordings" opens a list of all the recorded drives. The customer can **view, export, share, or delete the recordings** here. In addition, the customer can **search for a specific recording** via search on the top.
2. The **recordings are sorted** by date, track and driver.
3. By clicking on the pencil on the top, different features allow to **import, export or delete recordings** by selecting one.

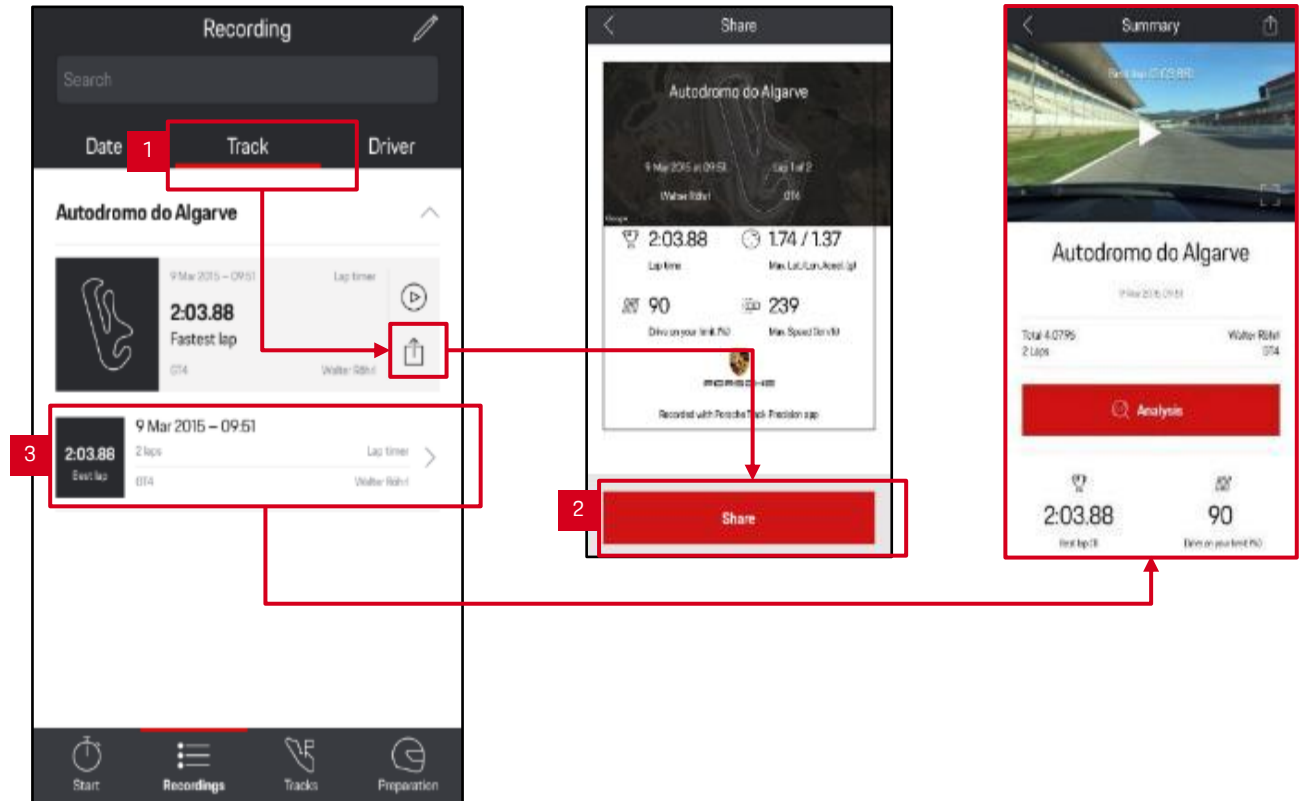
Please note: Another option to export tracks is part of the track summary (detailed description on the next slides). In this section, the customer can also download a demo video (350 MB).



Recordings

Share and summarize recordings

1. The customer has the option to **share tracks on social media platforms as well as via email or different messengers**. Therefore, the customer clicks on “Tracks” (within the upper navigation bar), selects a trip and recording of their choice and clicks the “share” button next to the specific recording.
2. A layer shows up that **resumes the recording** information. Depending on the option the smartphone offers, the recording can be shared.
3. By clicking on the summarized information, a “**Summary**” opens. By scrolling down, more content is shown as well as the option to **make notes or delete** the recordings. The summary can also be shared.



Recordings

Video analysis

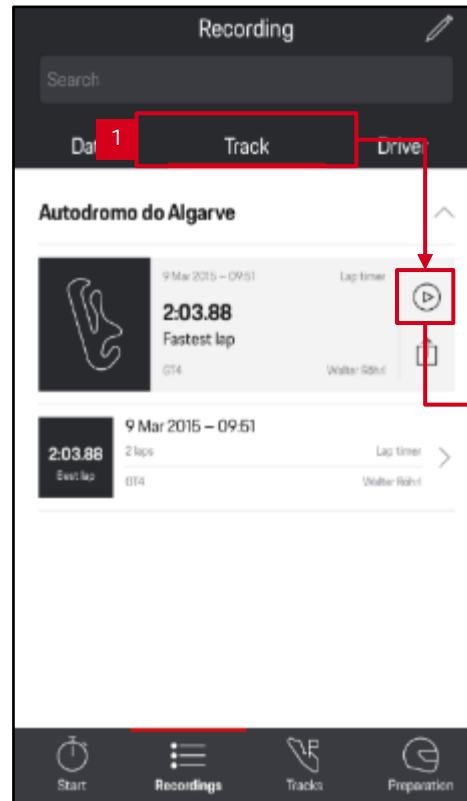
The video analysis gives the opportunity to **analyze the driving performance via video**. The video analysis comprises several functions:

- Video recording with smartphone camera and vehicle data overlay
- Several options for camera settings
- One overlay with specific rev counter
- Video export for further usage on different devices
- Integrated demo including video

1. To see and analyze a video, the customer clicks on "tracks" and selects a **trip of their choice**. By clicking on "**play**", the customer can either analyze the video in the header of the overall analysis page in the portrait view (see next page "Analysis") or switch into full screen.

Please note:

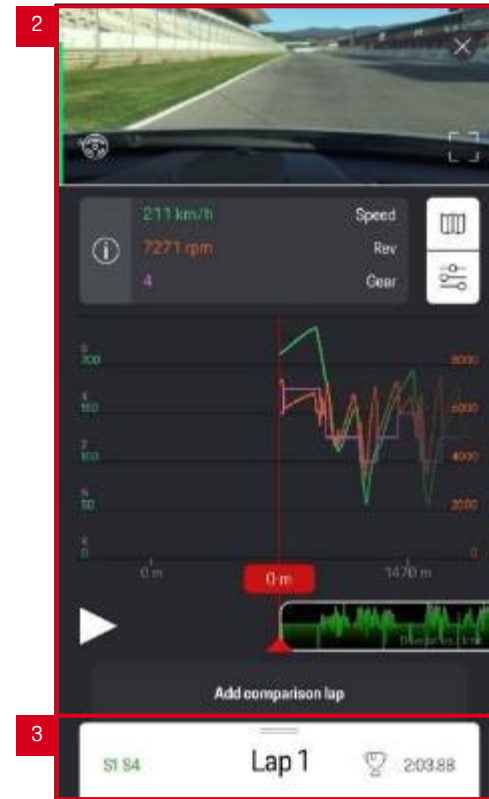
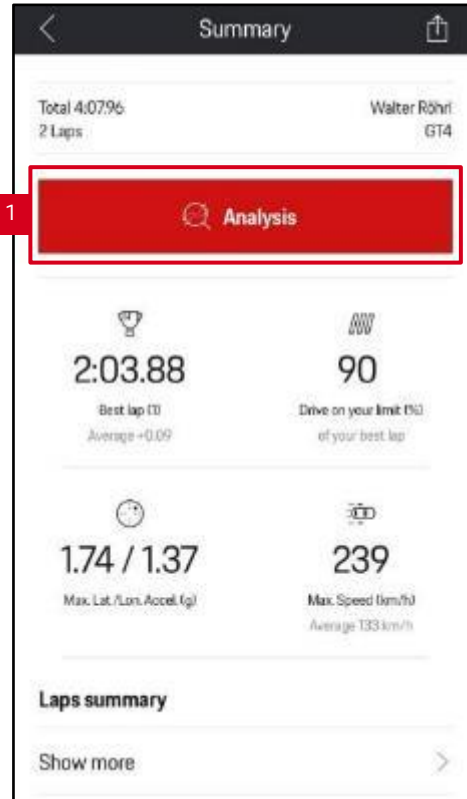
- The video analysis is also available via "Summary" → "Analysis".
- Interruptions such as incoming calls, for example, will interrupt video recording, however driving data will still be recorded. It is therefore recommended to activate flight mode as well as WiFi and GPS in the settings.



Recordings

Analysis of records and driving data

1. To **analyze** the **records more deeply**, check the driving performance and identify optimization potential, the customer clicks on **"Analysis"**. It is possible to:
 - Perform an analysis on GPS track
 - Analyze performance data in a graph with all relevant driving data
 - Perform sector analysis with optional lap time (when available)
 - Show maximum values in the interval
 - Start video at every position in analysis
2. Per default, the analysis page shows the **recorded video** at the top and a **graph** with all relevant driving data in the middle.
3. More **information** on the **single laps** are at the bottom of the page. The **best lap time** driven is indicated with a **medal**.

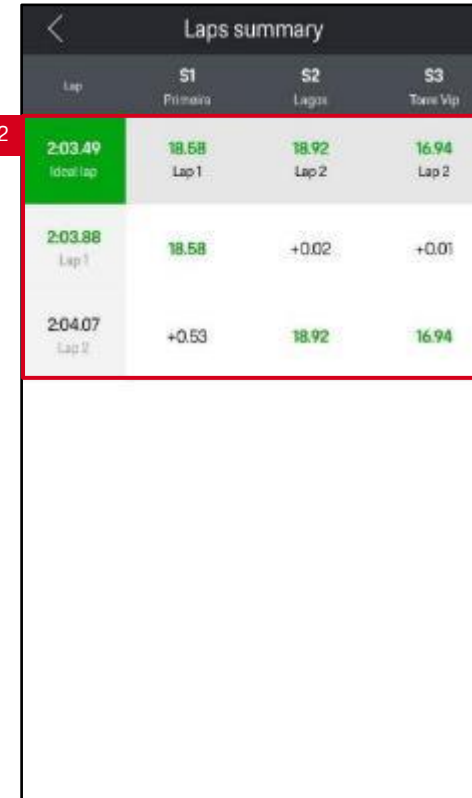
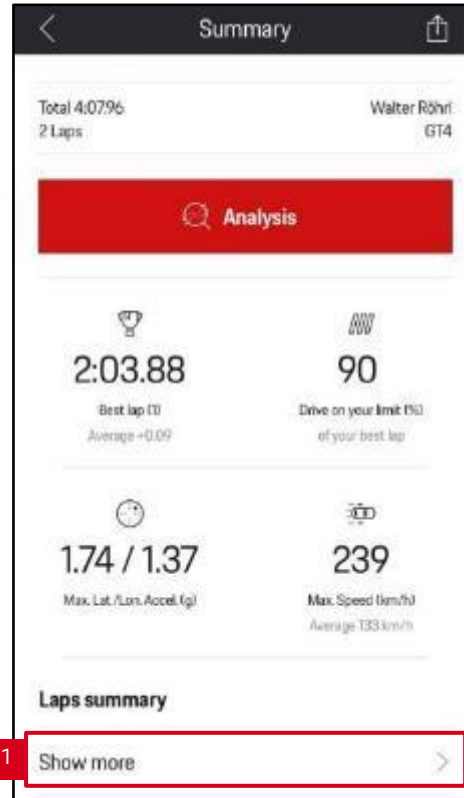


Recordings

Lap summary

The summary allows the customer to check the **performance for every lap**.

1. To open "Laps summary", the customer clicks on "**Show more**".
2. The lap overview for a recording shows the **best times for each sector in green**. The theoretically best possible lap time is the **arithmetic sum of all the best sector times**. This identifies the customer's personal potential. If a lap is invalid (e.g. if the circuit was incomplete), it is marked with an "X" and the sector times as well as the lap time are **grayed out**.



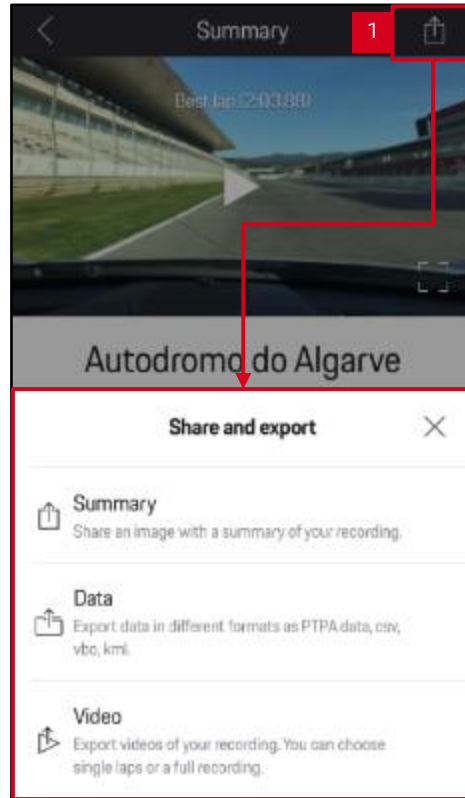
Recordings

Export recordings

- By clicking on the “**share**” icon in the top right corner of the summary, a new layer appears, showing different options for sharing and exporting:
 - Summary:** The customer can share an image with a summary of their recording
 - Data:** Data can be exported in several different formats, such as PTPA data, csv, vbo or kml
 - Video:** The customer can export the video of their recording and choose between single laps or full recordings.

Please note: Customers can choose to either

- export data only (.tparecord),
- data and video (.tparecord),
- text (.csv) or circuit tools (.vbo),
- circuit tools and video (.vbo) or
- Google Earth (.kml).



Agenda

3 App handling

» Recordings

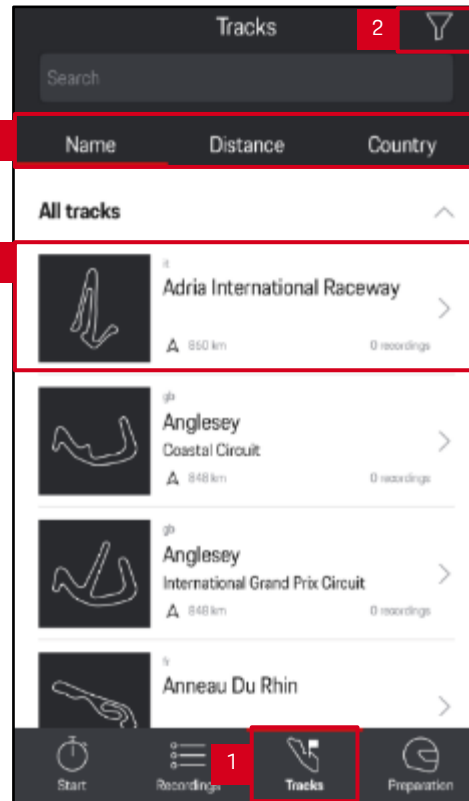
» Tracks and preparation

» Further information



Tracks Overview

1. The tab “Tracks” opens the **Track Management function**. The customer can **select existing tracks or create new tracks** here.
2. Additional **filter options** allow to select official and/or custom tracks.
3. Tracks are **sorted** by name, distance and country.
4. By tipping on one of the proposed tracks, the customer is led to a **detailed overview** including **additional information** such as address, telephone number, website link, opening hours and a Google satellite **preview of the racing track**.



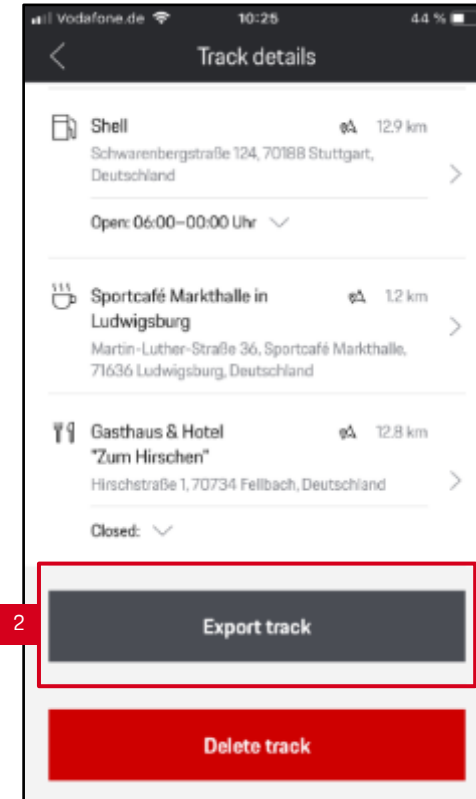
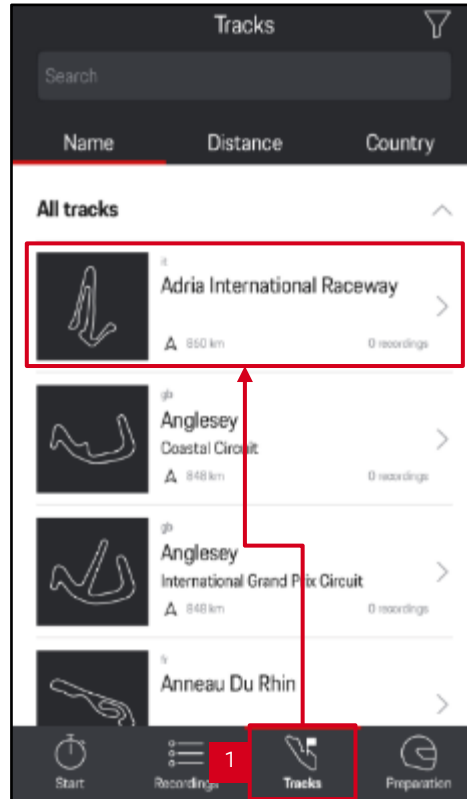
Tracks

Export tracks

1. It is possible to export tracks from the app by **selecting the desired track** under "Tracks"
2. Then the customer clicks on the grey button "Export" at the end of the page.

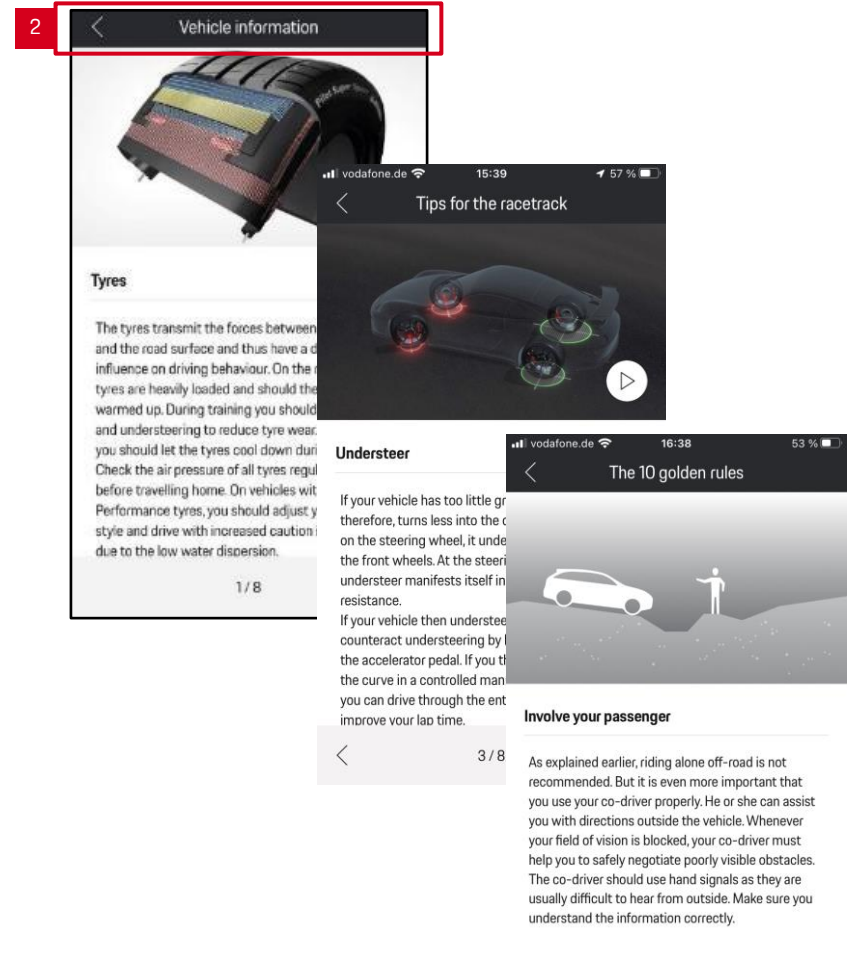
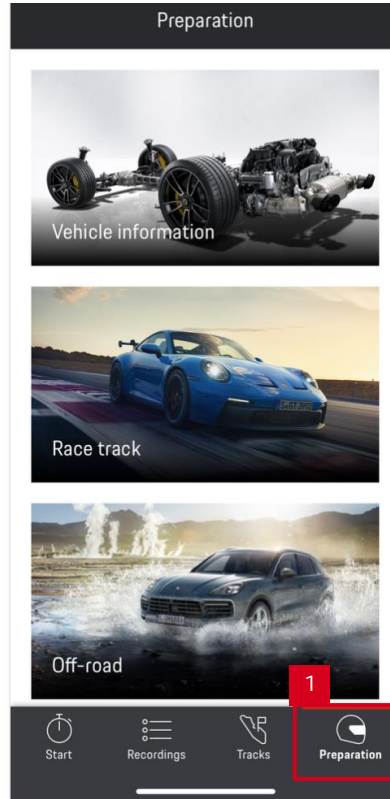
The track can be **sent** using **various services natively**, e.g. via AirDrop, Messages, Mail, WhatsApp etc.

The file is also saved in the file system of the smartphone. The file has the extension ".tpatrack" and can be found in the **track precision folder of the smartphone**.



Preparation Overview

1. In the tab "Preparation", the customer finds **extensive information to prepare for a session** on the racing track. The customer can access information about the connected vehicle, basics of driving physic and general information about driving on a racetrack.
2. There the app offers four sub chapters with different content (e.g. concerning the tires (see screenshot)):
 - **Vehicle information** (see screenshot)
 - Explanations of different technical systems and components in Porsche sports cars
 - **Race Track**
 - General information to prepare the driver and the vehicle for the racetrack
 - Background information about vehicle physics and general tips for driving on a racetrack
 - **Offroad**
 - General information to prepare the driver and the vehicle for Offroad Tracks



Preparation

Start recording

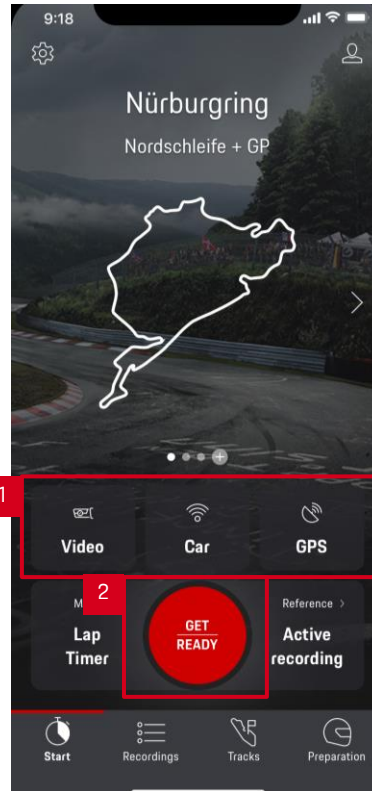
- For the preparation, **extensive information** for a session on a racetrack are displayed. In order to be able to start recording, **4 prerequisites** must be met:
 - **Active WiFi connection** between the vehicle and smartphone
 - **Active GPS connection**
 - Selection of a **driver profile**
 - Selection or programming of a **track**

The customer must be **within a radius of 1 km/ 0.6 miles of the start line**.

The smartphone should be **sufficiently charged or connected to a power supply** and **attached to the windshield** centrally beneath the rearview mirror in order to facilitate **good video recording when driving**.

- Once the prerequisites are met, the app can be readied to record with "**Get Ready**".

Please note: Time measurement with data recording will start after the virtual start line is crossed (GPS coordinates of the start line or the optional lap trigger).



Agenda

3 App handling

- » Recordings
- » Tracks and preparation
- » Further information



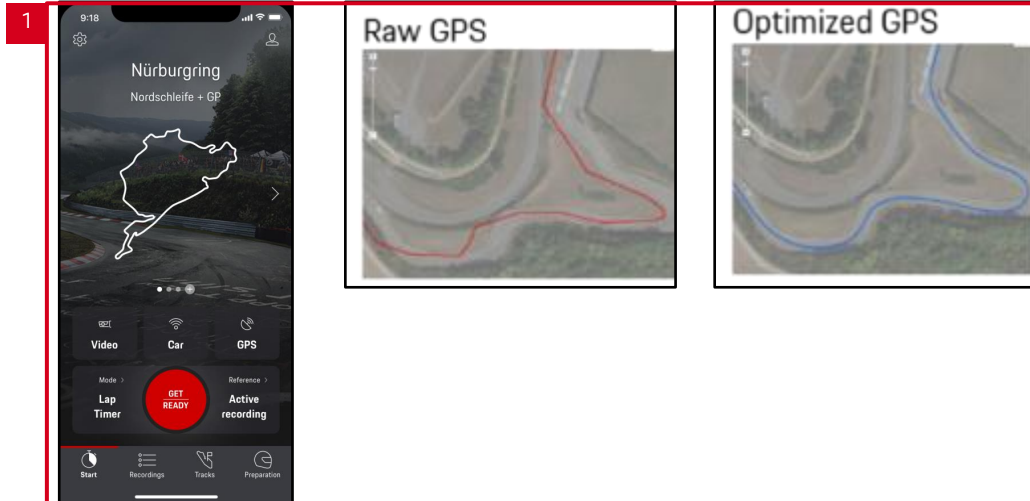
During the race

Lap triggering and lap overview

1. During the race, the customer benefits from automated GPS lap triggering. The customer can choose from more than 200 predefined tracks worldwide or create one themselves.

GPS recording is offered from different sources:

- Precise 10Hz GPS signal in connection with PCM 4/5
- Optimized 1Hz GPS signal for customers with AppGateway

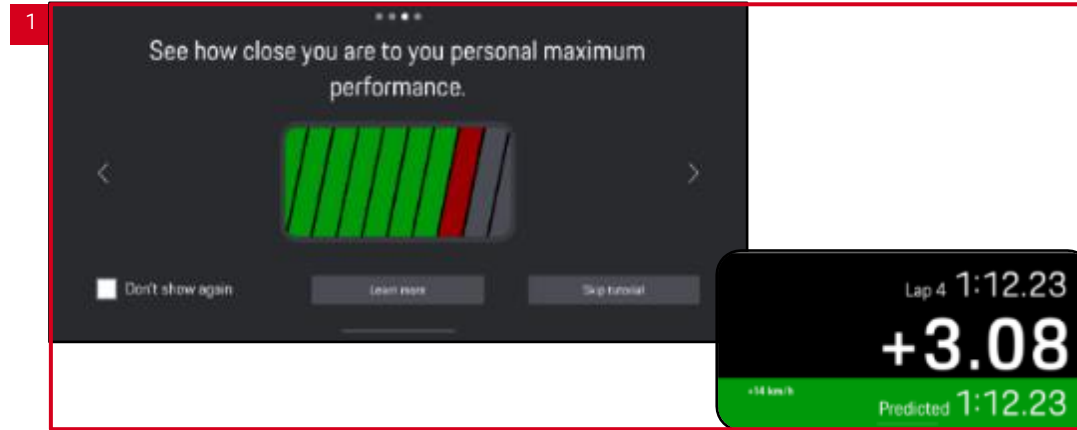


During the race

Live views

1. When driving, it is possible to switch between the **two live views**:

- **Lap timer**: Shows the lap time with real-time deviation from a reference record.
- **Drive on your limit**: The customer gets an indicator of their current and possible performance. The performance is composed of the acceleration used in the current driving state, the accelerator pedal position and the brake pressure.



Further information

External devices

1. Cameras

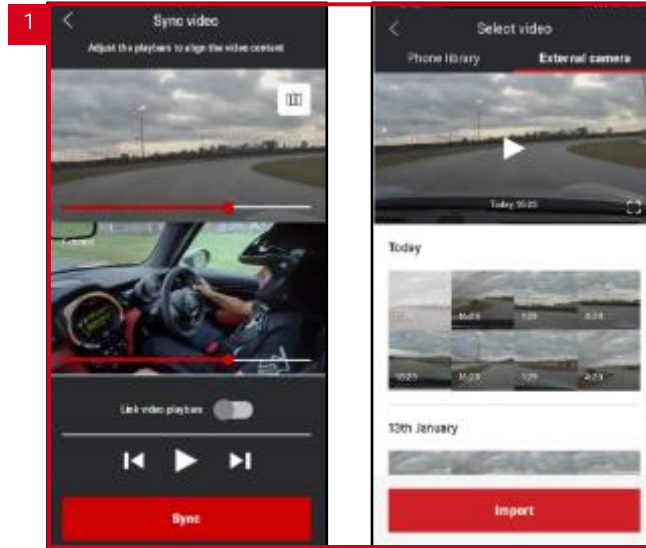
The customer can use external cameras (GoPro 4 & newer, Sony models) to record driving*. Afterwards, external videos can be added to an existing main video. Therefore, the imported video needs to be synchronized with vehicle data. It is also possible to perform a picture-in-picture video analysis with two videos.

2. Apple Watch app

- PTPA can be **remotely controlled via Apple Watch** (basic settings, video preview, choosing a track, Start/Stop, statistics).
- A vibration feedback is sent via Apple Watch when a **new lap record** is set.

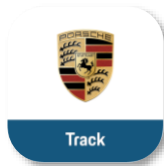
3. iPad app

- The customer can **import recordings and videos** from smartphone using AirDrop and other services.
- Afterwards, the customer can analyze the data through a customized UI and different layouts and size.
- A **synchronized playback of video** and data is also available.



*For further information check the support cases camera compartment in the next chapter.

Because of limited customer benefit due to very pointed positioning, Porsche Track Precision app and the Offroad app will be merged



Transfer to PTPA

- Free drive mode (incl. customized analysis)
- Preparation Offroad - Tutorial/How to drive
- Automatic moments from vehicle data (incl. partial video recording for moments & analysis of moments)
- UI Customization

No transfer to PTPA

- Automatic highlight video
- Offroad specific moments (suspension travel, incline/descent)

- Focus on racetrack
- Successful product with fixed user base
- Available for 911 and 718 since 2014
- Since MY2022 also available for E3, J1 and G2PA

- **GT** 
- **911** 
- **718** 
- **Cayenne** 
- **Panamera** 
- **Taycan** 
- **Cayenne** 

- Focus on terrain
- Limited customer benefit due to very pointed positioning
- Available for E3 and Macan PA since 2018

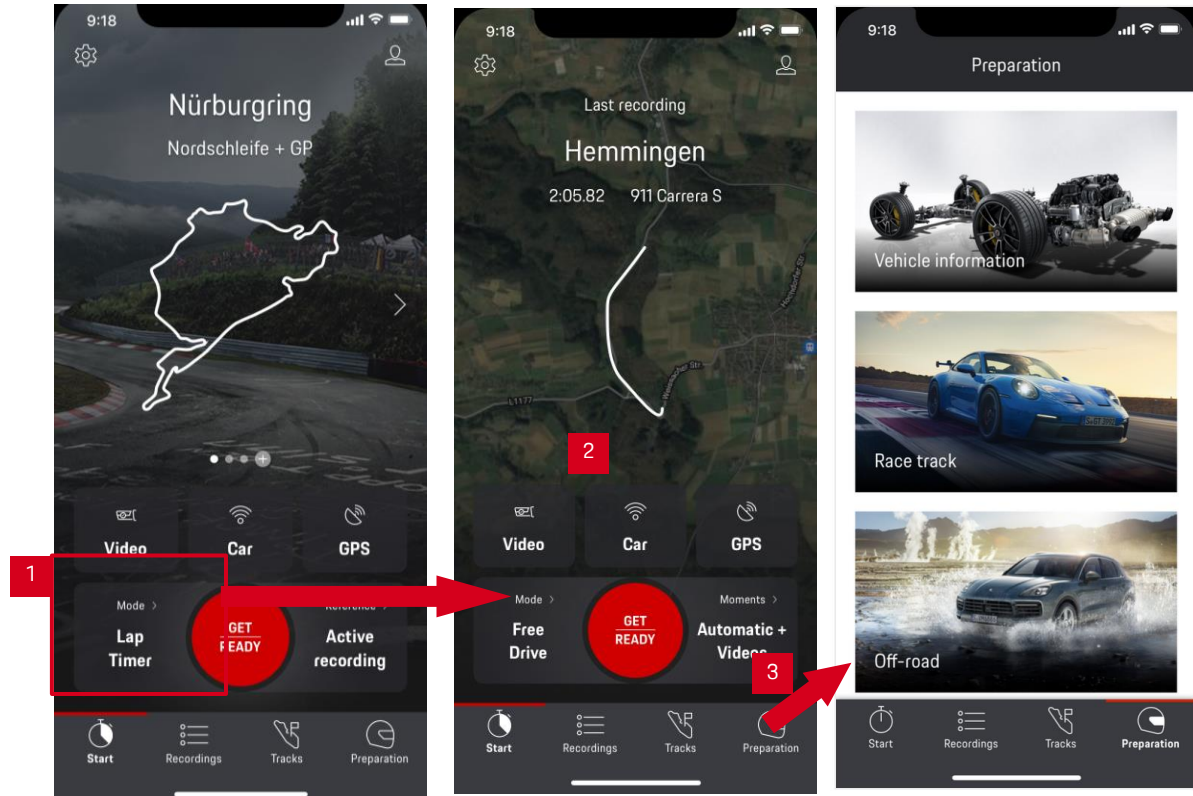
Integration of the Offroad app in PTPA

- Selected functions will be integrated (CW13)
- Offroad app will be switched off (CW17)
- Consolidate Porsche app portfolio
- Avoid maintenance costs

Offroad app feature integrated into PTPA

Free drive mode

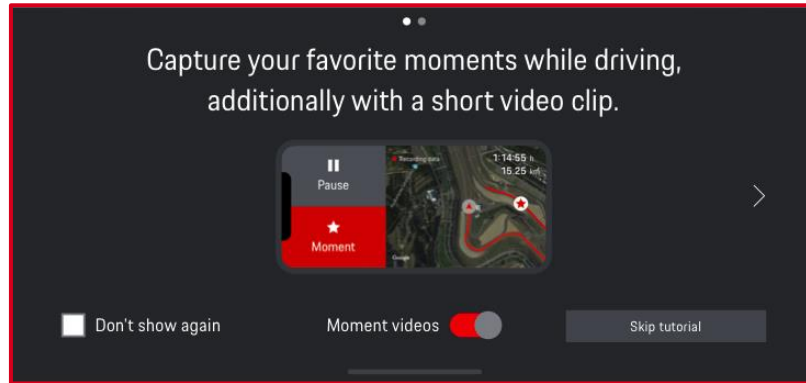
1. **Change of recording mode** in the status bar > hint on first entry to the new function.
2. **New adaptive buttons** with improved status around the start button
3. **New layout and integration of the offroad tips** in the "Preperation".



Recording Onboarding

Explanation of new functions before the first recording with the Dree Drive Mode

- Intelligent automatic video capture (via smartphone camera) when setting a moment +/- 30s.
- The rest is deleted continuously.

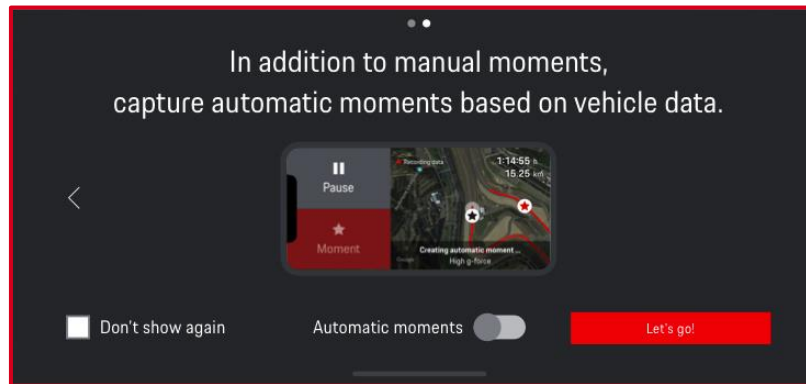


Automatic moments are triggered by vehicle data:

- Total acceleration above 1.0 (still under discussion)
- Accelerator pedal position 100% over 3s
- Brake pressure over 120bar (ABS active)
- ESP intervention
- Oversteer over 20%

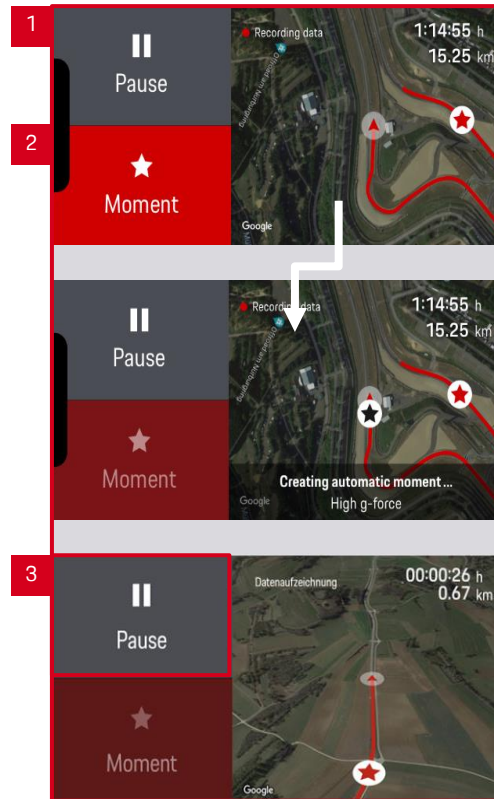
After recording:

- Maximum speed
- Maximum acceleration



Live-View

1. **Simple UI** with button layout and design like PTPA
2. In **automatic moments** the condition for it is displayed
3. **Automatic pauses** at disconnect and speed below 10kmh
4. Recording can be **continued even after app restart**

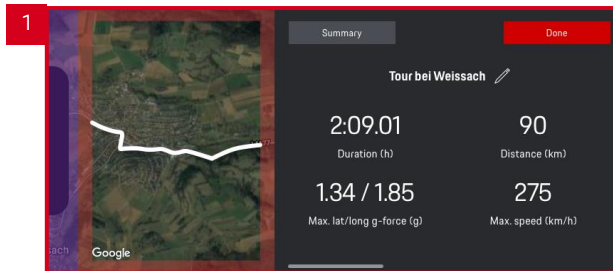
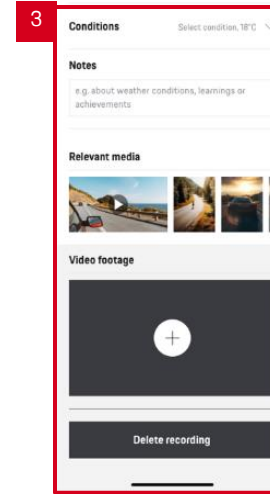
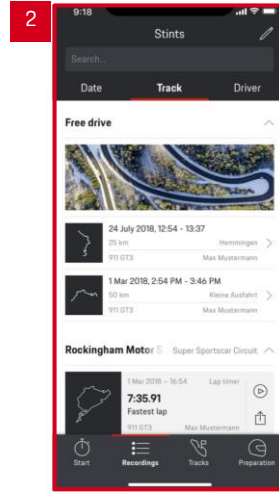
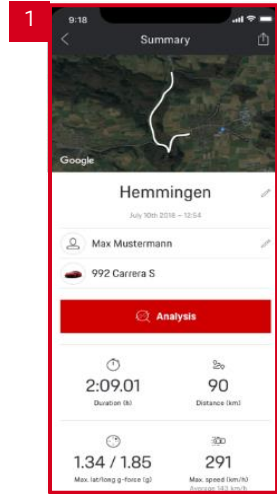


Manually or automatic moment.

Summary and record list

Minor adjustments for Free Drive

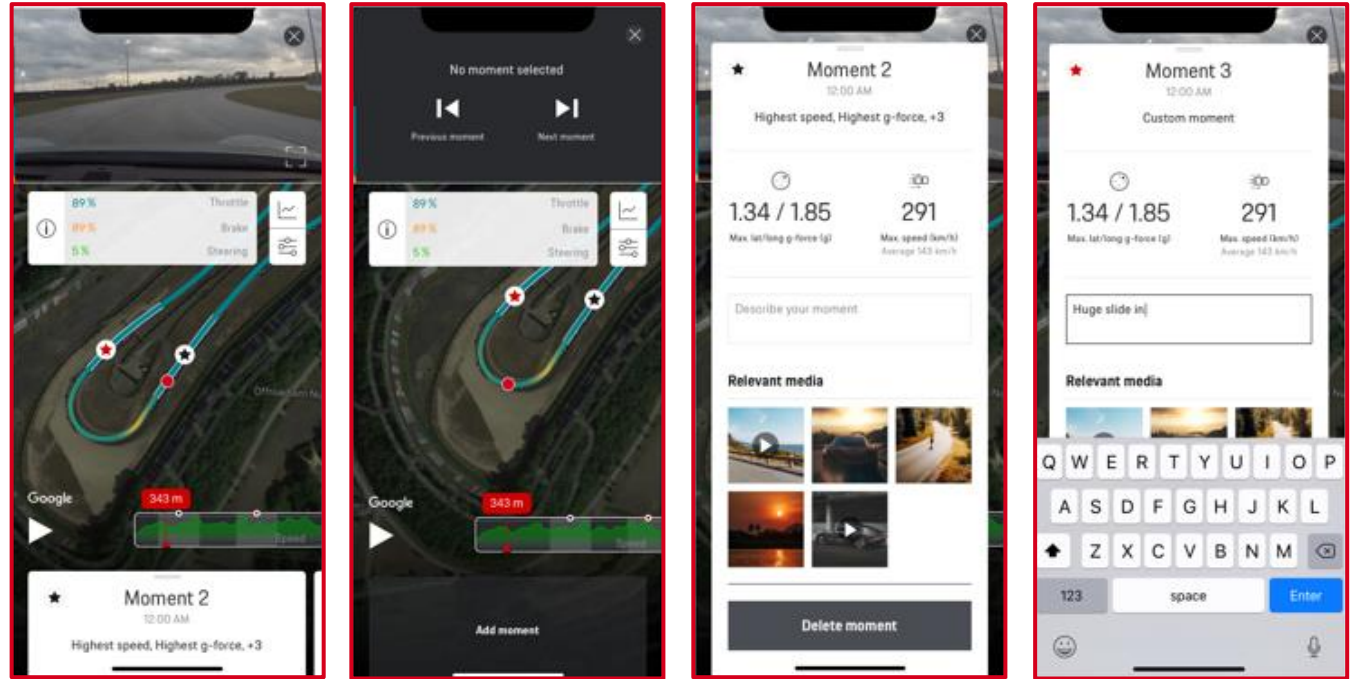
1. In the short summary after the drive
2. In the record list
3. Recording summary with automatic integration of matching customer photos



Analysis

Adjustments of the PTPA Analysis on Free Drive

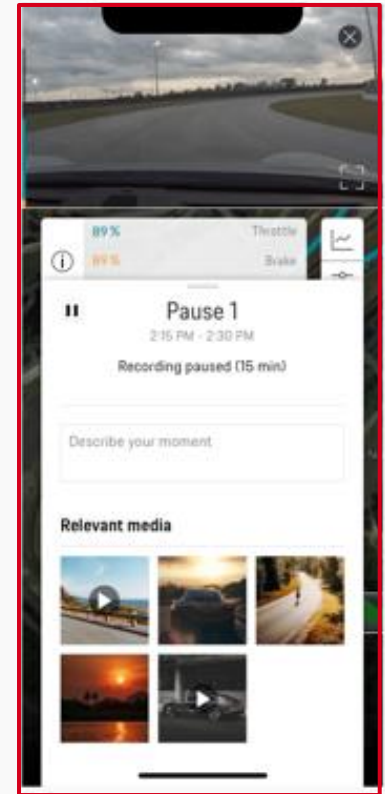
- Focus on moments/highlights and their media, and no focus on lap times and performance.
- Interactive lap carts are used for moments and breaks.



Analysis

Adjustments of the PTPA on Free Drive

- Graphs for vehicle data are of secondary importance, but are also available.
- Breaks are automatically recognized and enriched with the photos and videos within this time.



Porsche Dashcam

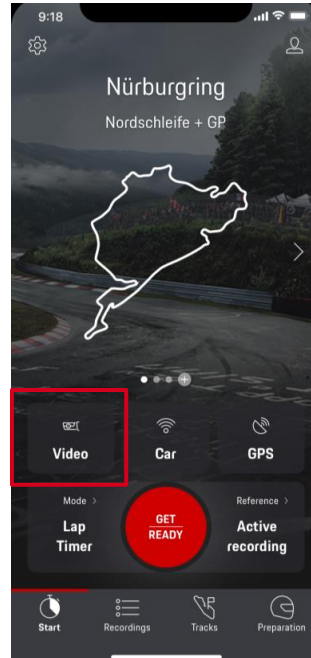
Using the Porsche Dashcam as camera in PTPA

The Porsche Dashcam is available through tequipment (<https://tequipment-finder.porsche.com/prod/pag/tequipment/TeqFinder.nsf/ITeqFinderCountrySelect?ReadForm&ac=search&u=dashcam>) and can be retrofitted in most new Porsche models.

Customers can use the Porsche Dashcam in PTPA **as replacement for the smartphone cameras** for recording videos during driving.

The Dashcam is fully integrated, meaning that the customer can choose the dashcam as input device in PTPA and videos will be **automatically transferred** to the phone during recordings.

The dashcam is (additionally to the smartphone cameras) the **recommended external camera** for PTPA.



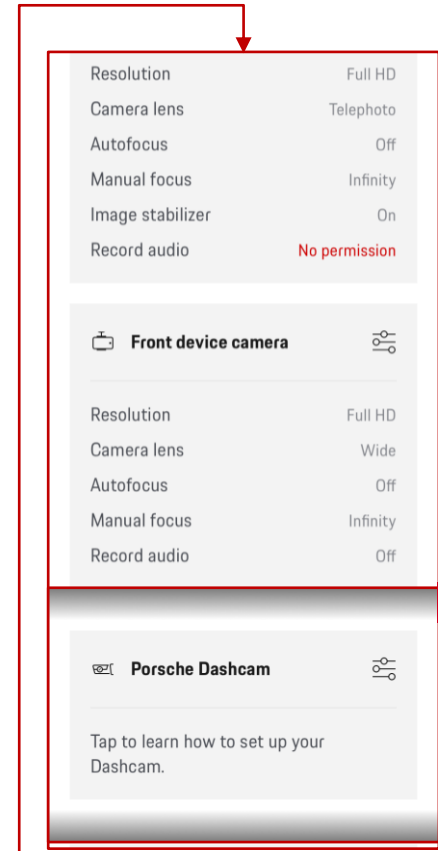
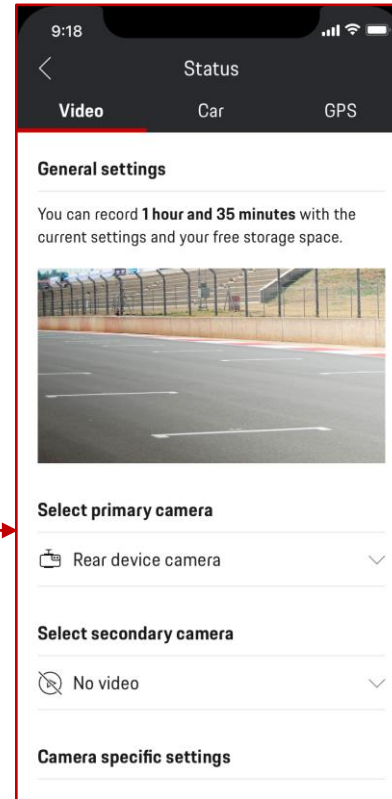
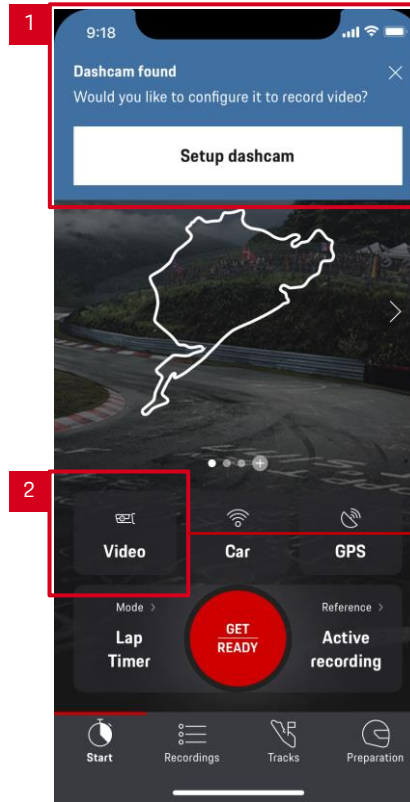
Porsche Dashcam

Connecting the Porsche Dashcam

- The Porsche Dashcam has two Wifi modes:
 - In the Access Point mode, the dashcam itself provides a wifi network. A smartphone can control the dashcam by directly joining the wifi network
 - In the Station Mode, the dashcam joins an existing wifi network. A smartphone can join the same network to control the dashcam

The PTPA has to be connected to the vehicle's wifi to work properly, so the dashcam also needs to connect to the vehicle hotspot

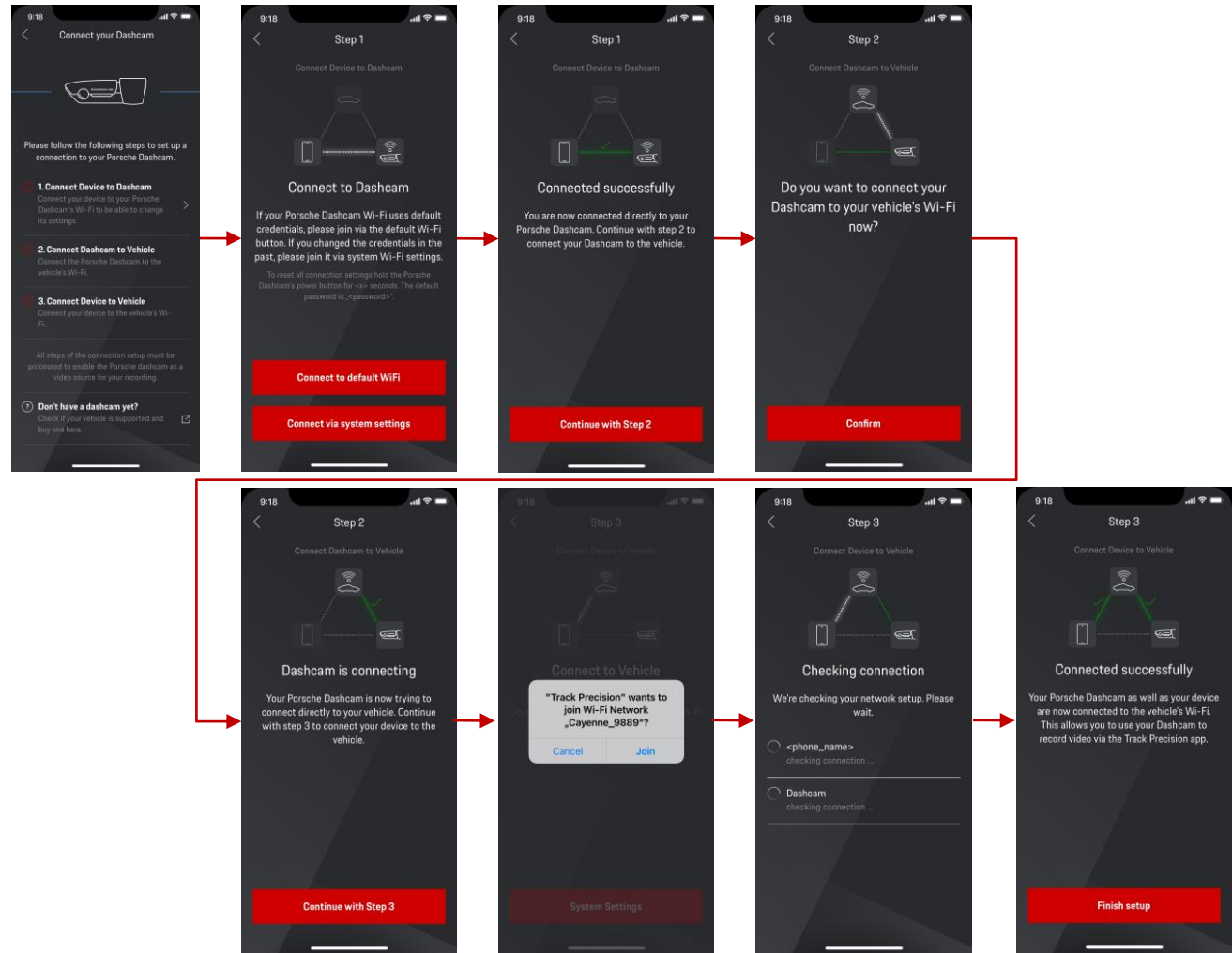
- If the Dashcam is already connected to the vehicle's wifi, the PTPA automatically finds the dashcam
- If the dashcam is not connected, the customer can follow all steps in the automatic setup process to connect to the dashcam
- The automatic setup process can be started by tapping on the Porsche dashcam tile



Porsche Dashcam Connecting the Porsche Dashcam

The customer has to follow the steps in the automatic setup process step by step to correctly connect the dashcam to the car. To start the setup process, the customer has to be connected to the car with the app.

1. Tap on „**Connect Device to Dashcam**“
2. If the dashcam is still using factory settings, the „**Connect to default WiFi**“ Button can be used to connect directly to the dashcam. The customer can also reset the dashcam to bring it back to factory settings, in case the wifi password was forgotten.
3. If the dashcam is configured with a custom wifi, the customer should connect to it in the system settings using the „**Connect via system settings**“ button
4. In step 2, the dashcam will be automatically setup to connect to the cars wifi. During this step, the dashcam will automatically restart.
5. In step 3, the customer has to reconnect back to the cars wifi. This usually happens automatically, but the customer has the option to press „**System settings**“ to connect manually.
6. **The dashcam should be detected automatically and the setup process can be closed.**



Porsche Dashcam

Configuring the Porsche Dashcam

The customer can choose up to **two cameras for video capture** during a recording.

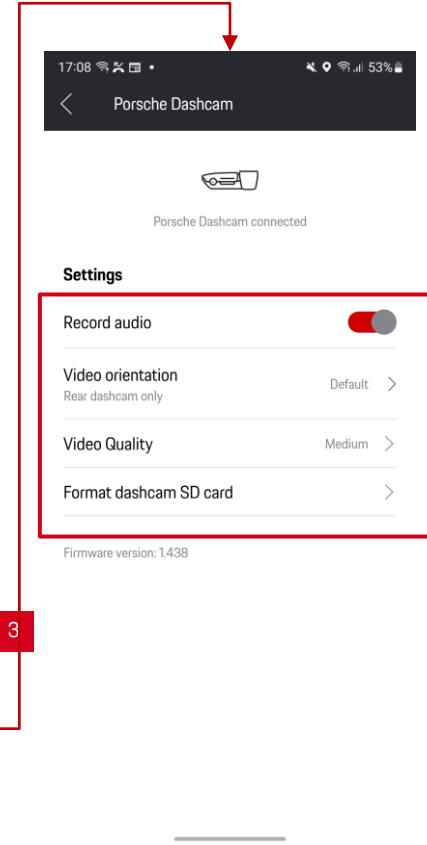
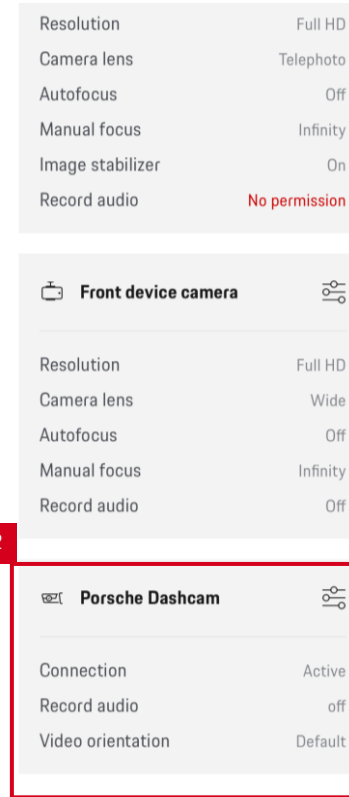
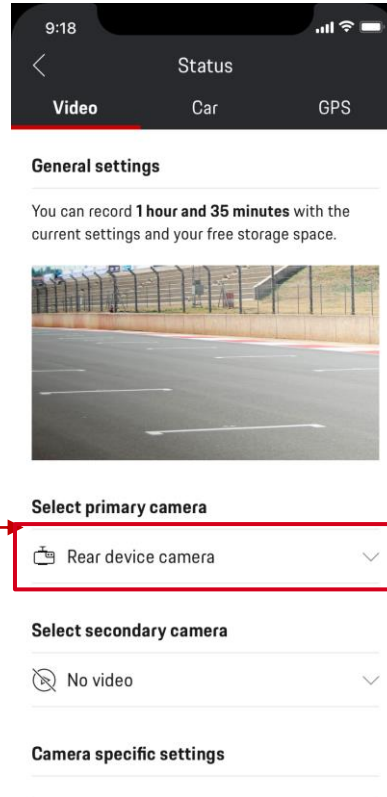
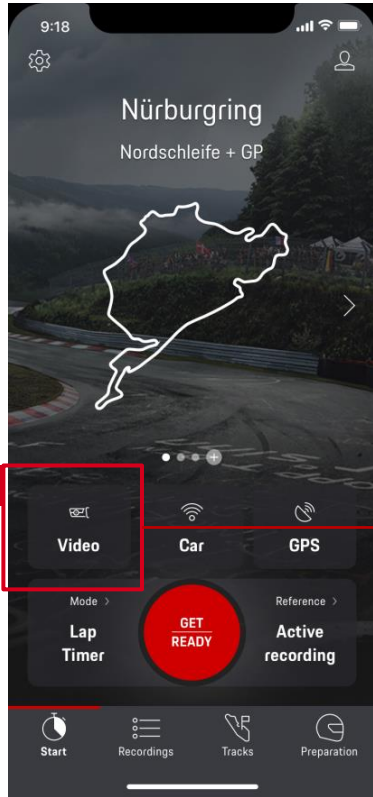
Select Dashcam as camera device

1. Open the video settings
2. Choose the Dashcam Front Camera or the Dashcam Rear Camera (if available) as primary or secondary camera

Change Dashcam settings

3. Click on the Porsche Dashcam tile to open the settings page for the dashcam
4. the customer can change multiple settings:
 - audio recording
 - Video orientation
 - Video quality

Note: For some settings, the dashcam has to reboot. This is expected behaviour.

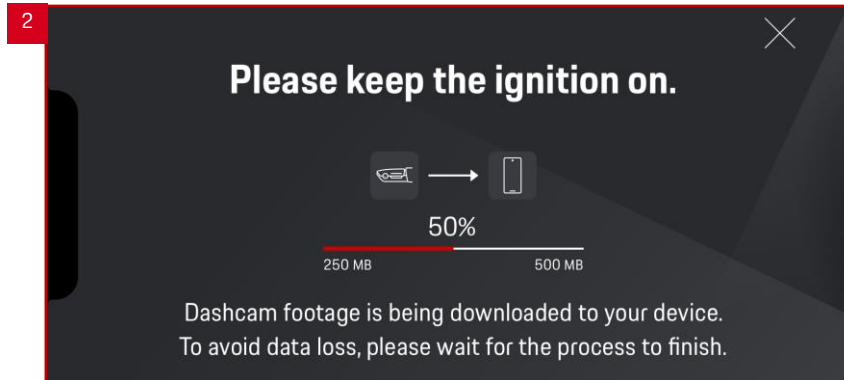
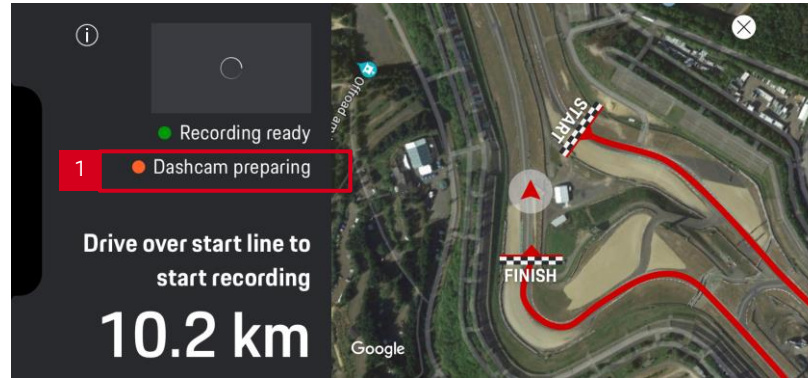


Porsche Dashcam

Recording with the Dashcam

- When starting a recording with the dashcam, the dashcam state is displayed in the recording onboarding (1)
- The dashcam automatically records videos and downloads them in the background.
- Because of hardware limitations, not all videos can be loaded while in background
- After a recording, the download screen is shown (2)

Important: The ignition and the dashcam have to stay on while videos are downloading. **If turning of the vehicle or removing the dashcam, videos from the recording might get lost.**



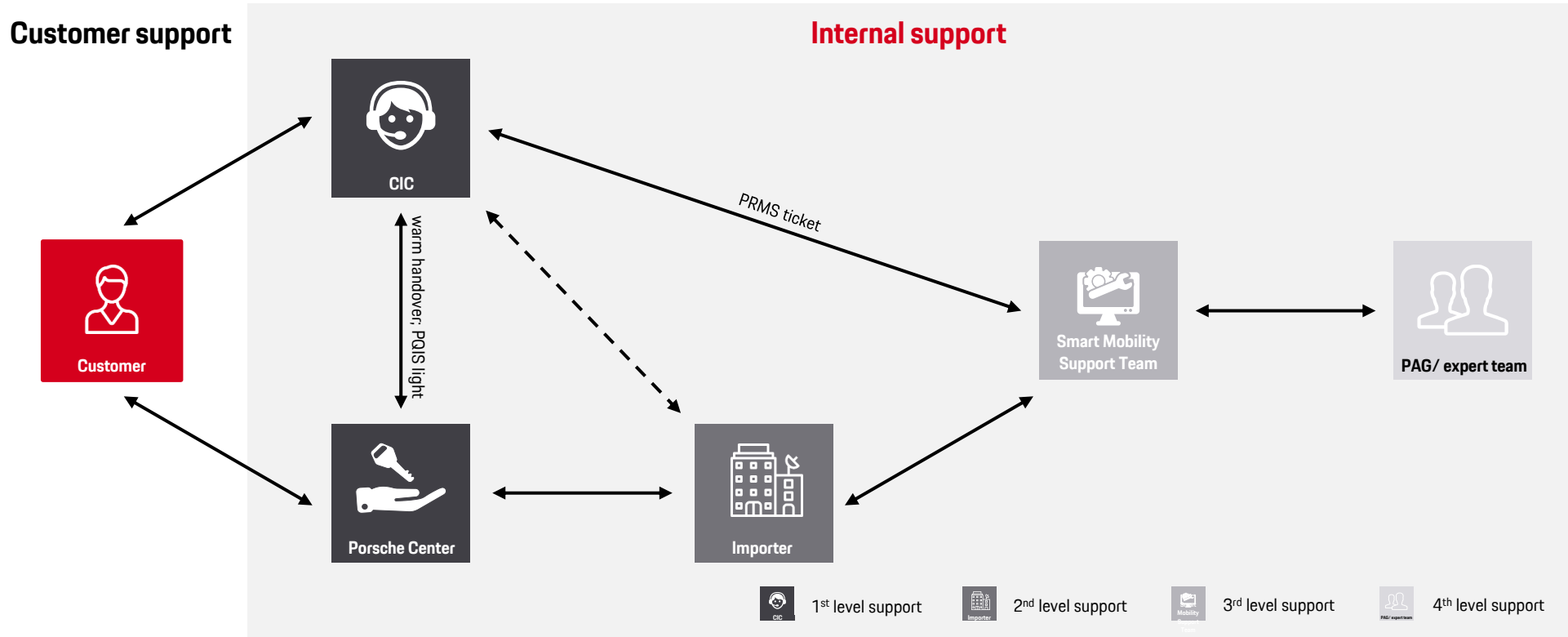
Agenda

- 1 Introduction
- 2 Access and navigation
- 3 App handling
- 4 Support cases



Current support structure for PTPA

Overview



Support cases for PTPA

Camera compartment

Support Case

Active Support Request:

- “Which external cameras are compatible with the app?”

Active Support Request:

- “How can I use Go Pro along with PTPA?”

Guidance for handling

Cameras which are compatible:

- Inform the customer that the Porsche Dashcam is the preferred solution for external cameras and is fully integrated into the app
- Inform the customer that the following cameras can be used in conjunction with the PTPA for direct video import:
 - GoPro (all models starting with the "Hero 4" using a W-LAN/Bluetooth® connection)
 - Sony HDR-AS15
 - Sony HDR-AS20
 - Sony HDR-AS30
 - Sony HDR-AS100
 - Sony HDR-AZ1

GoPro compartment:

- Inform the customer that the smartphone can only connect with one WiFi (and this is the PCM WiFi).
- Therefore, the GoPro video must be recorded separately and afterwards can be integrated into the PTPA recording. More Information can be found in the "Import tracks" section.

Tools and systems

- Compatible camera
- PTPA

- Compatible GoPro
- PTPA

Support cases for PTPA

Video recording

Support Case

Active Support Request:

- “Why are the video recordings not being saved?”

Active Support Request:

- “Why does the recorded video not have any sound?”

Guidance for handling

Save video recordings:

- If video recordings are not being saved, it could be due to one of the following reasons:
- The memory of the smartphone is full. The customer must delete old recordings or archive them.
- The PTPA must be enabled to access the camera in the smartphone settings. Access to the camera as well as the location should be allowed to ensure that the app works properly.

Sound settings:

- Ask the customer to activate the "record audio" functionality in the settings of the PTPA.
- The customer must allow the PTPA to access the microphone in the smartphone's settings.
- When playing a recording back, let the customer check whether the smartphone's sound profile is set to "Silent" or whether the value for the media volume has been set too low.
- Let the customer choose a different sound profile or increase the media volume in order to activate the sound for the video recording.

Tools and systems

- PTPA

- Compatible GoPro
- PTPA

Support cases for PTPA

Lap trigger

Support Case

Active Support Request:

- “Why does the PTPA not trigger the laps over GPS when Sport Chrono is active?”

Active Support Request:

- “Why is the “Create while driving” function not setting a new course?”

Guidance for handling

Lap trigger:

- In order to avoid double triggering of the start/finish line, we only use the manual triggering of laps when using Sport Chrono. This also applies to using the optional lap trigger. Sectors and a different destination (open routes) are still set using the app and are then triggered via GPS.

New course:

- In order to start recording a new track using “Create while driving”, directional information is necessary. Due to this, the vehicle must be in motion when setting the starting line.
- To display the track markers, the PTPA must be started one time using an active data connection in order to load the map material.

Tools and systems

- PTPA

- PTPA

Support cases for PTPA

Manage recordings

Support Case

Active Support Request:

- “Why are some of the laps marked as invalid?”

Active Support Request:

- “Why do I see no video or a wrong video for my recording?”

Guidance for handling

Invalid laps:

- If the length of the selected track does not match the length of the track from the customer’s lap, it will be marked as invalid.
- If the race track the customer is driving on offers multiple layouts, the customer must make sure to select the right layout prior to driving or to create a new track if the layout is not yet available. In the case of extremely poor GPS reception, however, the calculated distance may also deviate to such an extent that the lap is marked as invalid.
- The customer is still able to analyze a lap to full extent, even if it has been marked as invalid.

Video analysis:

- Inform the customer that video files are assigned the file names from the recordings.
- If the file name of a recording has been changed, then it will no longer be possible to allocate it correctly.
- Inform the customer that videos saved on the PC will only be recognized by the app if the file name has not been changed.

Tools and systems

- PTPA

- PTPA

Support cases for PTPA

Connection to the vehicle

Support Case

Active Support Request:

- "Why is there no connection to the vehicle possible?"

Guidance for handling

Connect to the vehicle:

- Inform the customer that if they exceed 10 attempts to connect to the vehicle, a connection lock will be activated.
- In order to reestablish a connection, the customer can try different options:
 - Check if the smartphone is not connected to another host;
 - Switch off and on the W-Lan hotspot of the smartphone;
 - Restart the PCM by pressing the left rotary push button for 10 seconds.
 - Try to connect with another smartphone.
- Afterwards, explain the customer how to reconnect the smartphone to the PCM (check the following support cases for a WiFi connection).

Tools and systems

- Smartphone
- PTPA
- Porsche vehicle

Support cases for PTPA

WiFi connection using separate app control unit

Support Case

Active Support Request:

- "How can I set up a WiFi connection?"
- For all vehicles before build year 2017 (without PCM or with PCM 3.1)

Guidance for handling

Set up a WiFi connection via separate app control unit:

- Ask the customer to switch on the vehicle ignition.
- Ask the customer to activate the WiFi function of the smartphone.
- The customer has to select the vehicle from the list of WiFi devices (name: My_Porsche_XXXXXX).
- The customer must enter the password: GTx and then the complete VIN number (e.g. GTxWPOZZZ.....), which can be found in vehicle registration documents or below the windshield.
- As last step, ask the customer to check the WiFi connection with the vehicle in the app.

Please note: On devices with an Android version 5.0 operating system, it is recommended to deactivate the automatic network switch between WiFi and mobile networks in the system settings of the smartphone. Ensure that there is no mobile data connection available at the same time when there is an active WiFi connection with the vehicle. If an internet connection in the vehicle is needed (e.g. track editor), first deactivate the WiFi function of the smartphone.

Tools and systems

- Smartphone
- PTPA
- Porsche vehicle

Support cases for PTPA

Disable internet connection

Support Case

Active Support Request:

- “Why am I not connected to the internet as soon as I am connected to the vehicle?”
- Only for Android users

Guidance for handling

Set up internet connection:

- Inform the customer that Android smartphones generally only allow one type of connection, either WLAN or mobile data.
- Ask the customer to disable the WLAN if they need an Internet connection (e.g. for sharing or using the map view).
- If the customer has a vehicle with an inserted SIM card with a data connection, the smartphone has an internet connection via the PCM hotspot of the vehicle.

Please note: On devices with an Android version 5.0 operating system, it is recommended to deactivate the automatic network switch between WiFi and mobile networks in the system settings of the smartphone. Ensure that there is no mobile data connection available at the same time when there is an active WiFi connection with the vehicle. If an internet connection in the vehicle is needed (e.g. track editor), first deactivate the WiFi function of the smartphone.

Tools and systems

- Android Smartphone
- PTPA
- Porsche vehicle

Support cases for PTPA

WiFi connection using PCM 4.0

Support Case

Active Support Request:

- "How can I set up a WiFi connection?"
- For all vehicles equipped with PCM 4.0

Guidance for handling

Set up a WiFi connection via PCM 4.0:

- Ask the customer to switch on the vehicle ignition.
- Ask the customer to press the "Phone" button beneath the PCM display and then the "Opt" button. Select "SET PHONE" on the PCM display.
- For the next step, ask the customer to select "WiFi settings".
- It is possible to change the password and name of the WiFi hotspot using the "Configure WiFi hotspot in PCM" option. The password must be at least 8 characters in length.
- Ask the customer to activate the WiFi function of the smartphone and to select the vehicle's WiFi hotspot from the available WiFi networks.
- Ask the customer to enter the configured WiFi password.

Please note: If there is no SIM inserted in the PCM, the customer must still connect to the vehicle's hotspot to be able to record the vehicle data.

Tools and systems

- Smartphone
- PTPA
- Porsche vehicle/ PCM

Support cases for PTPA

WiFi connection using PCM 4.1

Support Case

Active Support Request:

- "How can I set up a WiFi connection?"
- For all vehicles equipped with PCM 4.1

Guidance for handling

Set up a WiFi connection via PCM 4.1:

- Ask the customer to switch on the vehicle ignition.
- Ask the customer to press the "Phone" button on the PCM display.
- Then, the customer must select "Device manager" in the drop-down selection at the top of the PCM display.
- For the next step, the customer must select "WiFi" and activate WiFi (if it is not already activated).
- The customer need to press "Configure PCM hotspot" to view the specified name and set the password for the vehicle WiFi.
- The password must be at least 8 characters in length.
- Ask the customer to activate the WiFi function of the smartphone and to select the vehicle's WiFi hotspot from the available WiFi networks.
- Ask the customer to enter the configured WiFi password.

Please note: The device manager can also be opened by clicking the LTE symbol on the start screen of the PCM 4.1 or by selecting "Devices" from the menu bar. Then, WiFi can be selected in the drop-down selection at the top of the PCM display.

Tools and systems

- Smartphone
- PTPA
- Porsche vehicle/ PCM

Support cases for PTPA

WiFi connection using PCM 5.0

Support Case

Active Support Request:

- "How can I set up a WiFi connection?"
- For all vehicles equipped with PCM 5.0

Guidance for handling

Set up a WiFi connection via PCM 5.0:

- Ask the customer to switch on the vehicle ignition.
- Ask the customer to press the "Set" button on the PCM display
- The customer needs to open the device manager and select "WiFi" in the drop-down selection at the top of the PCM display.
- For the next step, the customer must switch on WiFi (if it is not already activated).
- For the next step, then select "Configure WiFi hotspot in the PCM".
- Configure the WiFi hotspot by select or change the hotspot name and password. The password must be at least 8 characters in length.
- Ask the customer to activate the WiFi function of the smartphone and to select the vehicle's WiFi hotspot from the available WiFi networks.
- Ask the customer to enter the configured WiFi password.

Please note: The device manager can also be opened by clicking the LTE symbol on the start screen of the PCM 5.0. Then, WiFi can be selected in the drop-down selection at the top of the PCM display.

Tools and systems

- Smartphone
- PTPA
- Porsche vehicle/ PCM

Support cases for PTPA

Bluetooth® connection via GPS

Support Case

Active Support Request:

- “Why am I not able to establish any Bluetooth® connection to an external GPS?”

Guidance for handling

Bluetooth® connection via GPS:

- Please follow the following instructions with the customer in order to establish a connection to an external GPS receiver:
- The customer must make sure the external GPS receiver is compatible with a Bluetooth® connection to the smartphone.
- Ask the customer to verify if Bluetooth® is enabled on the smartphone as well as the external GPS receiver.
- The customer needs to verify that the external GPS receiver is charged sufficiently.
- Ask the customer if the GPS signal is not restricted due to buildings, tunnels or weather conditions.
- Ask the customer to make sure that only one device is connected to the external GPS receiver.
- Now, ask the customer to disconnect and reconnect the GPS receiver from the smartphone.

Tools and systems

- Smartphone with Bluetooth®
- PTPA
- Porsche vehicle/ PCM

Support cases for Porsche Track Precision app

Video recording

Support Case

Active Support Request:

- "Why are the video recordings not being saved?"

Active Support Request:

- "Why do I see no video or a wrong video for my recording?"

Guidance for handling

Save video recordings:

If video recordings are not being saved, it could be due to one of the following reasons:

- The memory of the smartphone is full. The customer needs to delete old recordings or archive them.
- The Offroad Precision app must be enabled to access the camera in the smartphone settings. Access to the camera as well as the location should be allowed to ensure that the app works properly.

Video analysis:

- Inform the customer that video files are assigned the file names from the recordings.
- If the file name of a recording has been changed, then it will no longer be possible to allocate it correctly.

Tools and systems

- Smartphone
- Offroad Precision app

- Offroad Precision app

Support cases for Porsche Track Precision app

Connection to the vehicle

Support Case

Active Support Request:

- "Why is there no connection to the vehicle possible?"

Guidance for handling

Connect to the vehicle:

- Inform the customer that if they exceed 10 attempts to connect to the vehicle, a connection lock will be activated.
- In order to reestablish a connection, the customer can try different options:
 - Checking if the smartphone is not connected to another host;
 - Switching off and on the WLAN hotspot of the smartphone;
 - Restarting the PCM by pressing the left rotary push button for 10 seconds.
 - Trying to connect with another smartphone.
- Afterwards, explain the customer how to reconnect the smartphone to the PCM (check the following support cases for a WiFi connection).

Tools and systems

- Smartphone
- Offroad Precision app
- Porsche vehicle

Support cases for Porsche Track Precision app

Disable internet connection*

Support Case

Active Support Request:

- “Why am I not connected to the internet as soon as I am connected to the vehicle?”

Guidance for handling

Set up internet connection:

- Inform the customer that Android smartphones generally only allow one type of connection, either WLAN or mobile data.
- Ask the customer to disconnect the WLAN if they need an internet connection (e.g. for sharing or using the map view).
- If the customer has a vehicle with an inserted SIM card with a data connection, the smartphone has an internet connection via the PCM hotspot of the vehicle.

Please note: On devices with an Android version 5.0 operating system, it is recommended to deactivate the automatic network switch between WiFi and mobile networks in the system settings of the smartphone. Ensure that there is no mobile data connection available at the same time when there is an active WiFi connection with the vehicle. If an internet connection in the vehicle is needed (e.g. track editor), first deactivate the WiFi function of the smartphone.

Tools and systems

- Android Smartphone
- Offroad Precision app
- Porsche vehicle

*Only for Android users

Support cases for Porsche Track Precision app

WiFi connection using PCM 5.0

Support Case

Active Support Request:

- "How can I set up a WiFi connection?"

Guidance for handling

Set up a WiFi connection via PCM 5.0:

- Ask the customer to switch on the vehicle ignition.
- Ask the customer to press the "Set" button on the PCM display
- The customer needs to open the device manager and select "WiFi" in the drop-down selection at the top of the PCM display.
- For the next step, the customer is asked to switch on WiFi (if it is not already activated).
- For the next step, then select "Configure WiFi hotspot in the PCM".
- Configure the WiFi hotspot by select or change the hotspot name and password. The password must be at least 8 characters in length.
- Ask the customer to activate the WiFi function of the smartphone and to select the vehicle's WiFi hotspot from the available WiFi networks.
- Ask the customer to enter the configured WiFi password.

Please note: The device manager can also be opened by clicking the LTE symbol on the start screen of the PCM 5.0. Then, WiFi can be selected in the drop-down selection at the top of the PCM display.

Tools and systems

- Smartphone
- Offroad Precision app
- Porsche vehicle/ PCM
- KDB

Support cases for Porsche Track Precision app

WiFi connection using PCM 6.0

Support Case

Active Support Request:

- "How can I set up a WiFi connection?"

Guidance for handling

Set up a WiFi connection via PCM 6.0:

- Ask the customer to log in or register with Porsche ID
- Ask the customer to switch on the vehicle ignition.
- Ask the customer to press the "Devices" button on the PCM display
- The customer needs to open the device manager and select "Connect new devices" in the drop-down selection at the top of the PCM display.
- For the next step, the customer need to select "Connect to vehicle hotspot" or "Connect Porsche App"
- For the next step, the customer have to scan the shown QR code also if he is already connected to the Cars WiFi, because the Track App get the Vehicle Token from this QR Code, and the phone gets automatically connected to the WiFi.
- Ask the customer if he gave the permissions to the Track Precision App in a popup on the PCM.
- Ask the customer if he is connected to the internet while the connection where established.

Tools and systems

- Smartphone
- Offroad Precision app
- Porsche vehicle/ PCM
- KDB

Support cases for Porsche Track Precision app Porsche Dashcam

Support Case

Active Support Request:

- “How can I get the Porsche Dashcam?”

Active Support Request:

- “How can I use the Porsche Dashcam with the PTPA? (PCM 6.0)”

Guidance for handling

Buy Porsche Dashcam:

- Inform the customer that the Porsche Dashcam can be acquired through tequipment (<https://tequipment-finder.porsche.com/prod/pag/tequipment/TeqFinder.nsf/ITeqFinderCountrySelect?ReadForm&ac=search&su=dashcam>) and needs to be build into the vehicle by a Porsche dealer
- Please be aware that the Porsche Dashcam is not available in every country. The availability can be checked in the tequipment finder

Porsche Dashcam Connection:

- The Porsche Dashcam is automatically detected when connected with the vehicle hotspot (The phone and the dashcam both need to be connected to the 5GHz vehicle hotspot)
- The customer can manually connect the Porsche Dashcam using the Porsche Dashcam app to the vehicle wifie or use the automatic connection process in PTPA
- To use the automatic connection process, the customer has to open video settings in the PTPA and scroll down to the “Porsche Dashcam” tile. Clicking on it will guide the customer through the automatic connection process.

Tools and systems

- Browser

- Smartphone
- Track Precision App
- Porsche Dashcam

Support cases for Porsche Track Precision app Porsche Dashcam

Support Case

Active Support Request:

- "The Porsche Dashcam is not supported with my PCM. What can I do?"

Active Support Request:

- "How can I use the Porsche Dashcam with the PTPA (< PCM 6.0)?"

Guidance for handling

Connecting to older PCMs:

- Inform the customer that the Porsche Dashcam also works with older PCMs but because of the limited wifi bandwidth, the video download can take longer and the automatic connection flow is not supported
- To use the Porsche Dashcam with older PCMs, the customer has to manually connect the Porsche Dashcam to the vehicle hotspot using the Porsche Dashcam app. The customer can then select the Porsche Dashcam in PTPA and use it.

Conencting to older PCMs:

- To use the Porsche Dashcam with older PCMs, the customer has to manually connect the Porsche Dashcam to the vehicle hotspot using the Porsche Dashcam app. The customer can then select the Porsche Dashcam in PTPA and use it.

Tools and systems

- Smartphone
- Track Precision App
- Porsche Dashcam

- Smartphone
- Track Precision App
- Porsche Dashcam

Support cases for Porsche Track Precision app Porsche Dashcam

Support Case

Active Support Request:

- “Why is the PTPA not connecting to my Porsche Dashcam?”

Active Support Request:

- “How can I update the firmware of my Porsche Dashcam?”

Guidance for handling

Troubleshoot Porsche Dashcam Connection:

- Inform the customer, that the phone and the Porsche dashcam must be in the same vehicle hotspot (5GHz)
- Inform the customer, that the Porsche Dashcam can only be connected to one app at the same time. Close all other apps that connect to the Porsche Dashcam on the same phone and on all other phones connected to the vehicle hotspot
- If the customer is unable to connect after multiple tries, advice him to reset the dashcam (hold down the button on the dashcam until 3 beeps are played, this takes around 30s) and reconnect it to the PCM using the [setup process](#).

Update firmware:

- The Porsche Dashcam firmware can be updated using the Porsche Dashcam app:
 1. Download & Install the Porsche Dashcam app on the phone
 2. Connect to the Porsche Dashcam in the Porsche Dashcam app
 3. Click on firmware and update the firmware following the steps in the Porsche Dashcam app

Tools and systems

- Smartphone
- Track Precision App
- Porsche Dashcam

- Smartphone
- Track Precision App
- Porsche Dashcam



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