

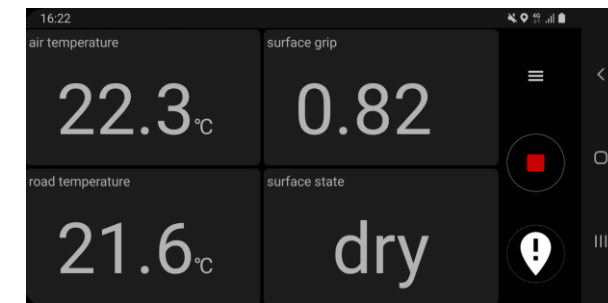
RoadAI with MD30 Usage instructions

For mobile app and online map

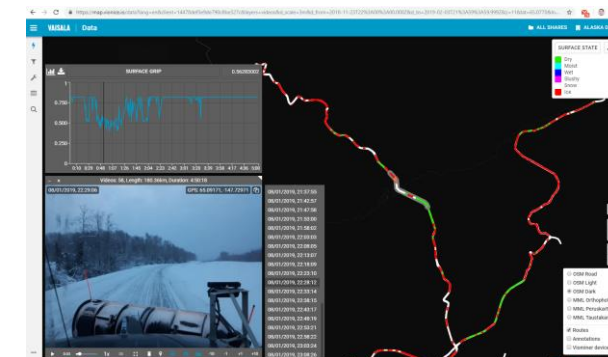
VAISALA



MD30 mobile sensor



**RoadAI mobile app
with MD30 data**



**RoadAI online map
with MD30 data**

Contents

Introduction

- Overview of MD30 and RoadAI system

RoadAI mobile app

- Mobile device setup and pairing instructions
- MD30 data view contents and usage
- Checking if data goes online

RoadAI online map

- Overview, and login and user groups
- Adding more users
- Settings and main menu
- Devices view
- Data view – Using toolbar
- Data view – Finding data
- Data view – Monitoring data
- Data view – Changing map / route colors

Available support

- helpdesk@vaisala.com

RoadAI with MD30

Introduction

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What is MD30?

Mobile road condition sensor for any vehicle

– Designed to work even in snow plow trucks



Surface temperature sensor

- Is road cold?

Air temperature and humidity sensor

- Is air cold or humid?

Surface state sensor

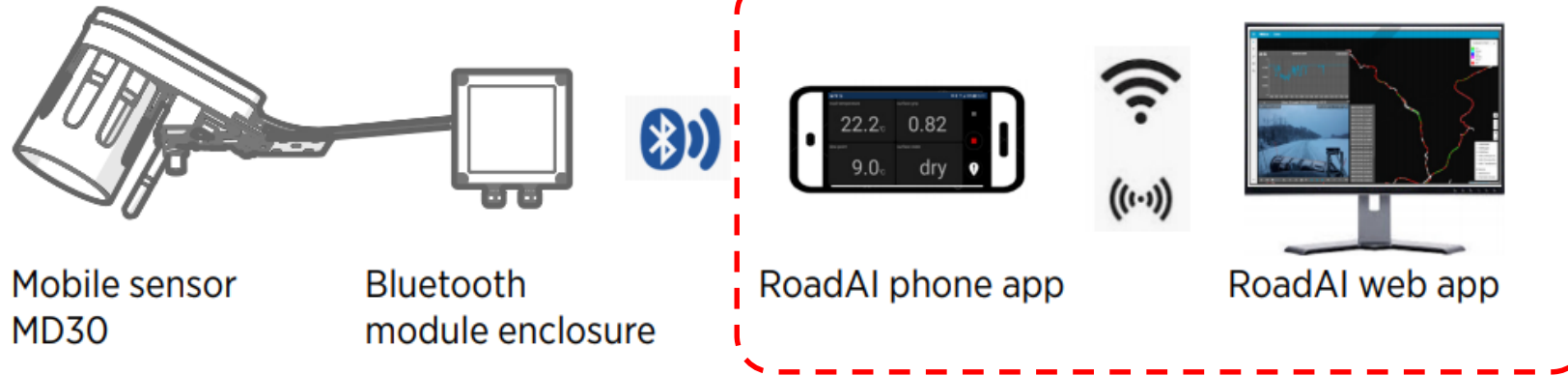
- Is road slippery? Why?



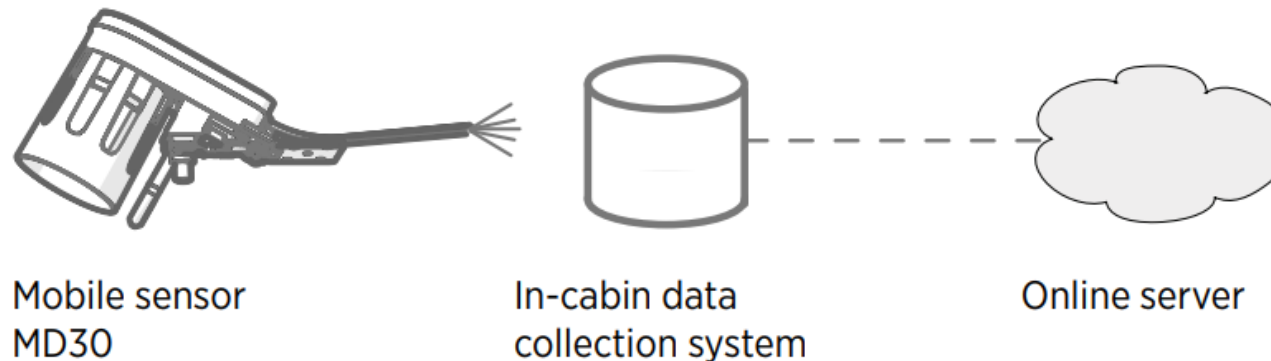
Overview of MD30 systems

System type 1: MD30 and Vaisala RoadAI

Scope of this RoadAI instruction document



System type 2: MD30 and other data collection system



How is MD30 data collected and visualized with Vaisala RoadAI?

For driver:

RoadAI mobile phone/tablet app shows live sensor data

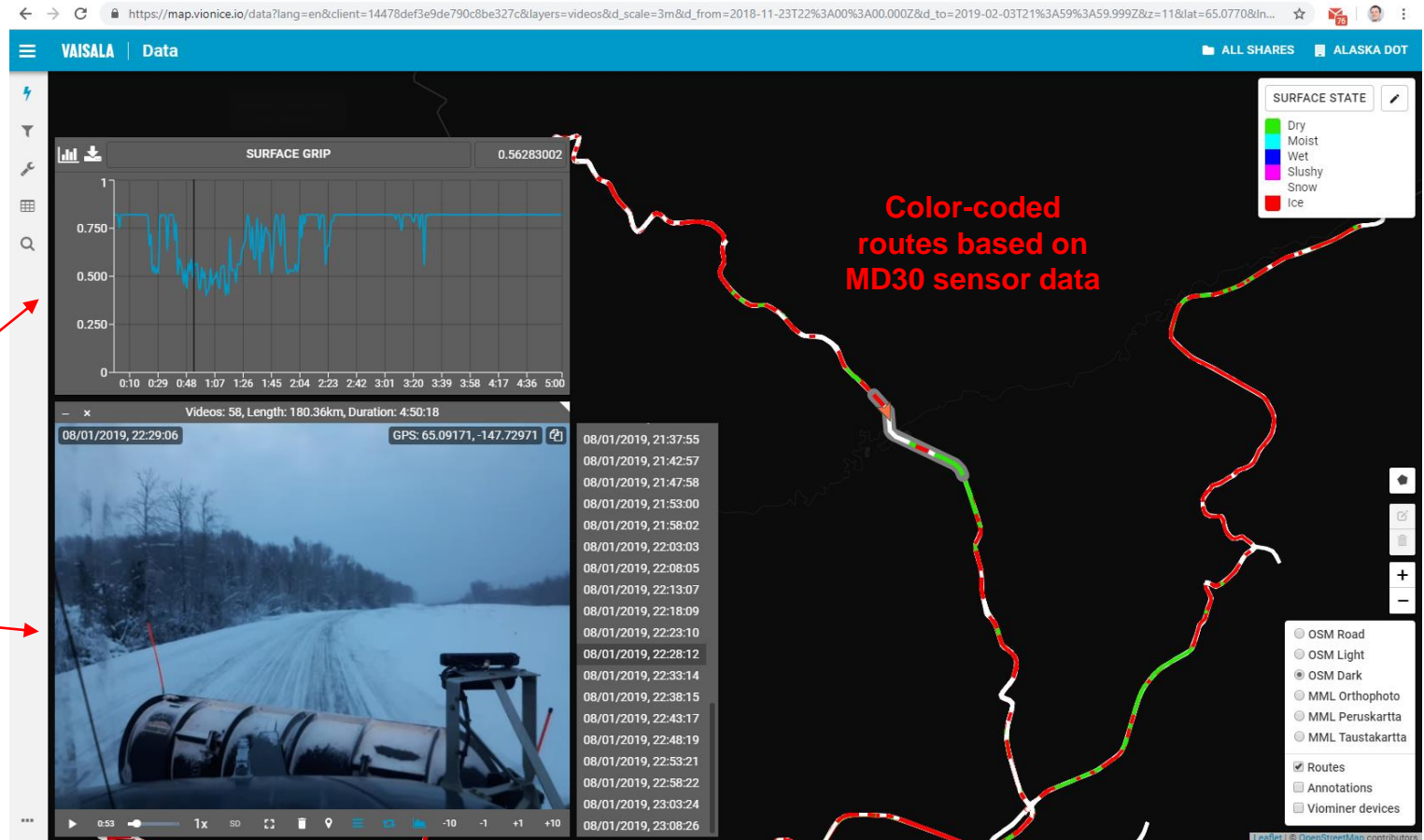


Sensor data

Optional video or photos

For online users:

RoadAI browser map combines sensor data, camera photos / video, and GPS location



RoadAI mobile app

Setup and login

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Mobile device setup instructions

Available at <https://setup.vaisala.ai/>

Includes steps of how to install RoadAI app to Android phone / tablet

SETUP

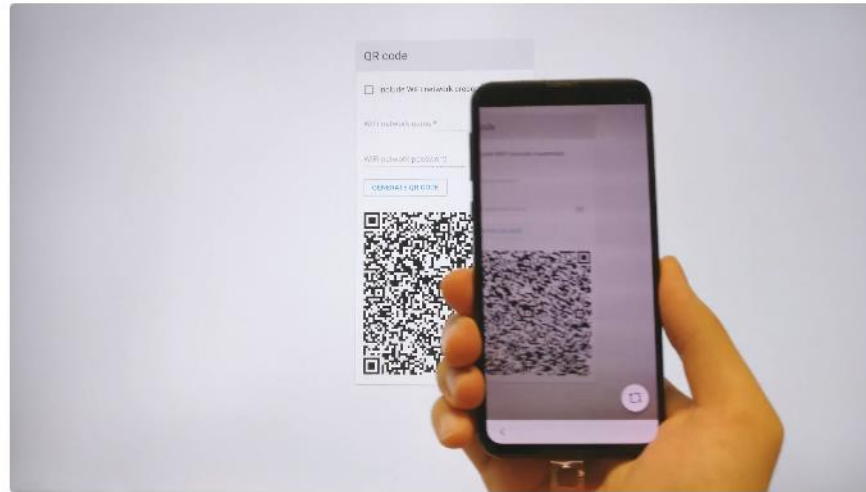
QR CODE

FAQ

GUIDES

Scan QR code to begin setup

4/9



Scan the shown QR code to automatically start installing the phone control software and the RoadAI mobile application. If you don't have mobile data, you are asked to connect to a Wi-Fi network.

Multiple phones to set up?

Use the [QR code generator](#) to automatically set up a Wi-Fi connection by including Wi-Fi credentials in the QR code.

< BACK

NEXT >

Contact us: support@vaisala.ai

SETUP

QR CODE

FAQ

GUIDES

Open RoadAI mobile application



Open the RoadAI mobile application by touching the 'V' icon.

Mobile app login

In first use, app asks user to log in (internet connection needed)

Mobile app login credentials are sent to provided administrator address via email

Example email with credentials

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RoadAI

To start data collection, you need to complete a setup process for your phones. This process turns the phones into dedicated RoadAI recording devices.

For the setup, you will need:

1. MD30 sensor installed to your vehicle
2. New or factory reset Android phone
3. SD card for extra data storage
4. SIM card or Wi-Fi network for internet connectivity
5. Recording account credentials (listed at bottom)

Once you have all the prerequisites, follow the setup instructions:

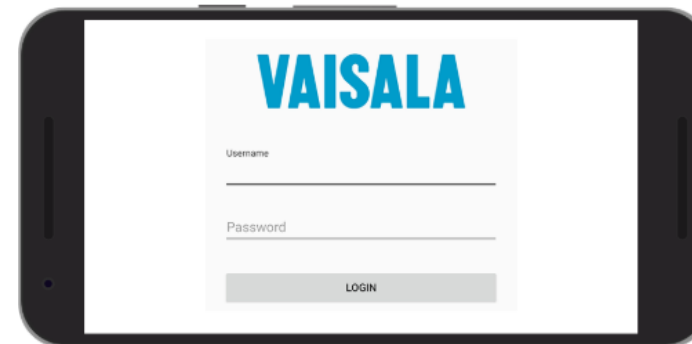
Start setup

Generated recording accounts

Username	Password
TEST_0001	KQwPCBCd
TEST_0002	wJgMnEek
TEST_0003	YXPwf9FW
TEST_0004	t3NzsBNF
TEST_0005	XQRKaLrP

Enter credentials to mobile app login screen

Log in to RoadAI mobile application




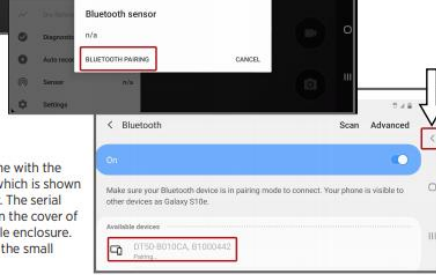
Pairing mobile device with MD30 through Bluetooth


Step-by-step instructions in [MD30 Setup Guide](#)


Setting up Data Transfer

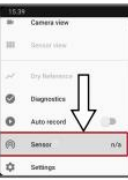
- In the RoadAI phone app, select the menu. From the menu, select **Sensor > Bluetooth pairing**.


- Pair the mobile phone with the Bluetooth module, which is shown with a serial number. The serial number is marked on the cover of the Bluetooth module enclosure. When paired, select the small arrow to go back.


- Select the menu. Select **Sensor**, and the sensor you just paired.


- There is a notification about the need to calibrate. Ignore the message, and the phone starts to show measurement data (calibrate later in step 4.1).

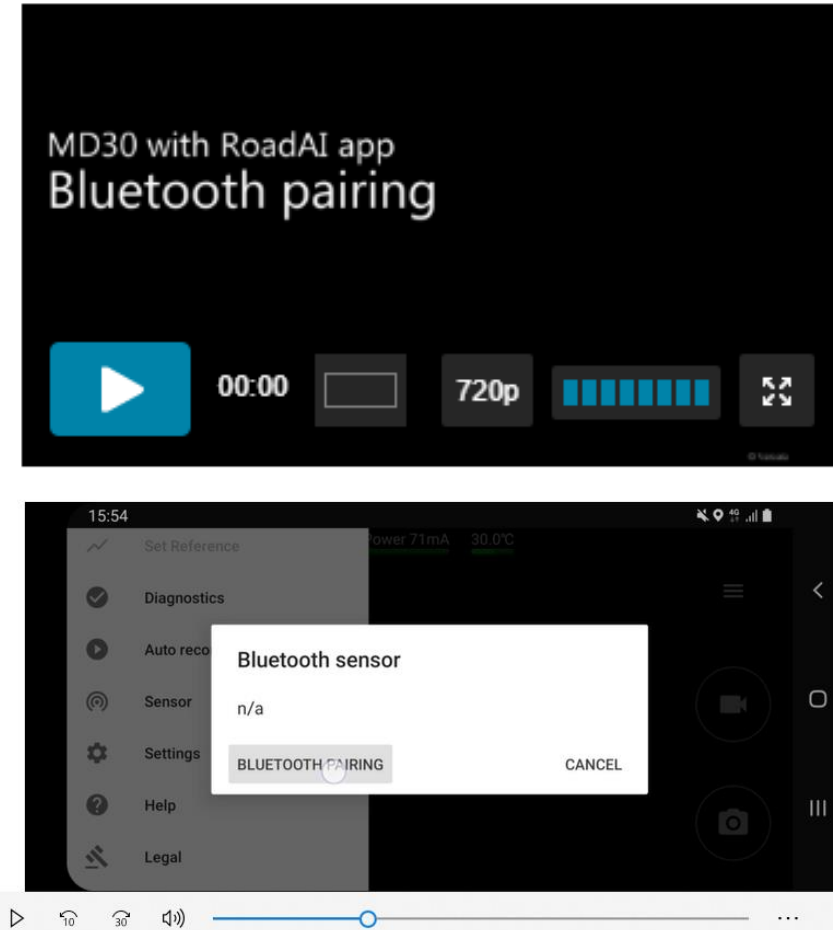

- Install the mobile phone holder on the vehicle dashboard or on the windshield.
- In the RoadAI menu, select **Camera View** and verify that the camera has a clear view of the road.



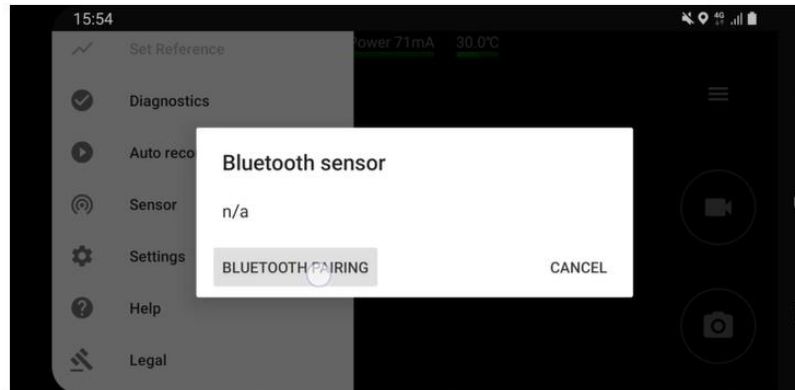
Continue to step 4.1.

Video tutorial in [MD30 Support page](#)

MD30 with RoadAI app
Bluetooth pairing



15:54



Bluetooth sensor
n/a
BLUETOOTH PAIRING CANCEL

RoadAI mobile app

Overview and usage

VAISALA

Overview of RoadAI mobile app

Start screens of phone and app

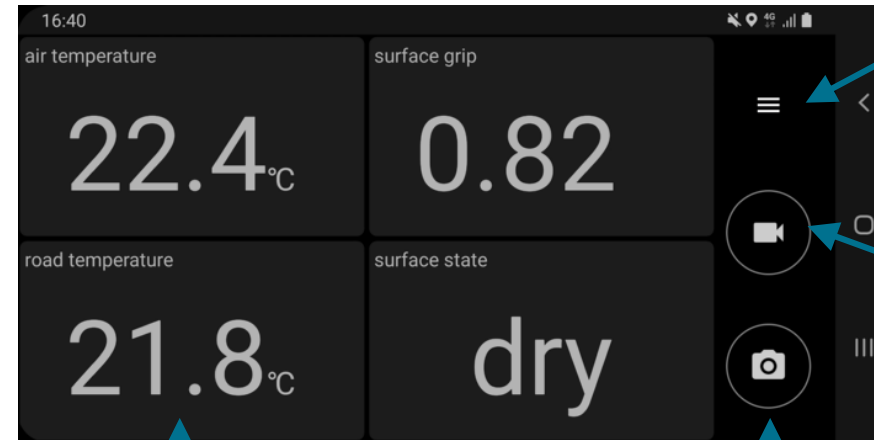
Phone start screen after performing a dedicated RoadAI app installation



Open the app
Checks also if newer version of app is available

Open phone settings
To control, for example, mobile data and Wi-Fi settings

RoadAI app start screen with MD30 sensor data view



Measurement parameters
In 2x2 grid at a time, freely selectable from all available parameters

Photo button
To manually take single photos before actual recording (for example, for testing connection)

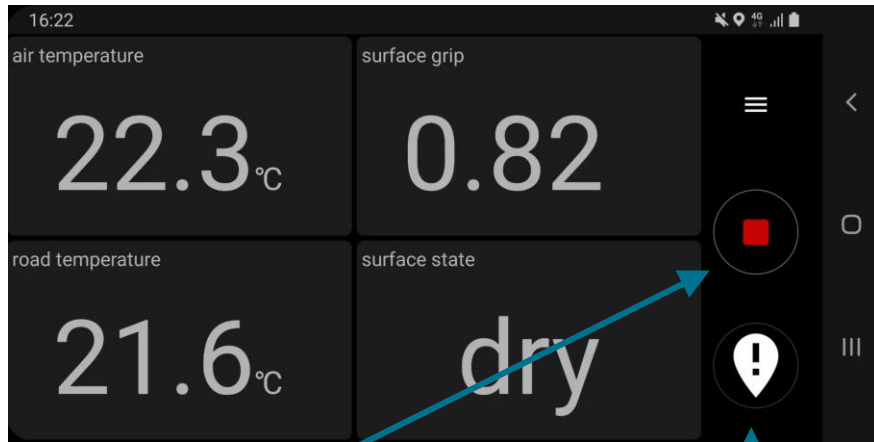
Menu button
To access different settings and features

Record button
To start MD30 data and camera recording

Overview of RoadAI mobile app

App screens while using the app

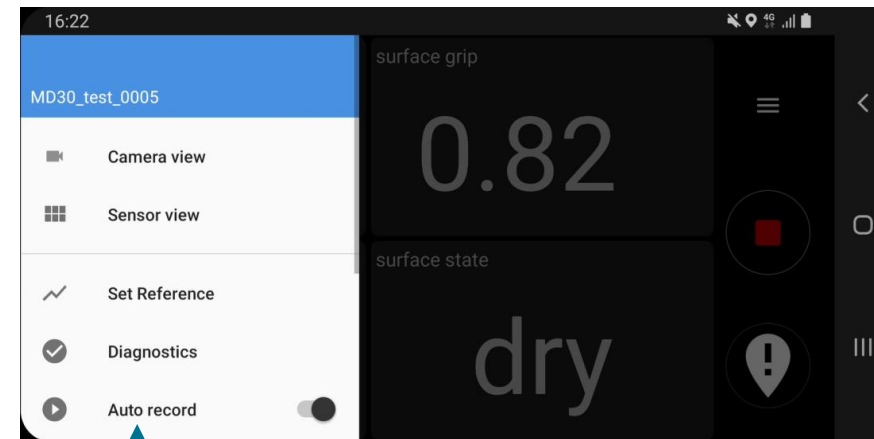
App screen in recording mode



Red square icon
Indicates that recording is ongoing

Exclamation mark icon
To send a note to RoadAI online map about interesting events

App screen when left sidebar menu is opened



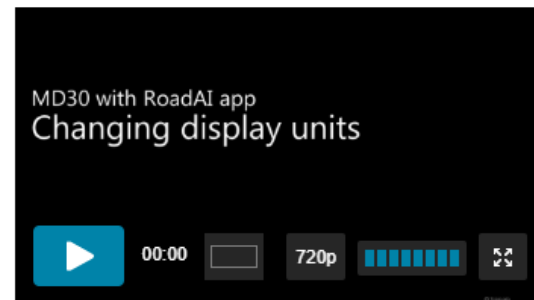
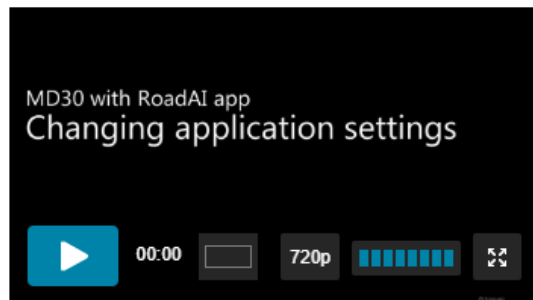
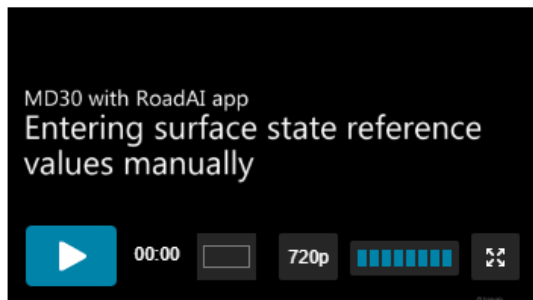
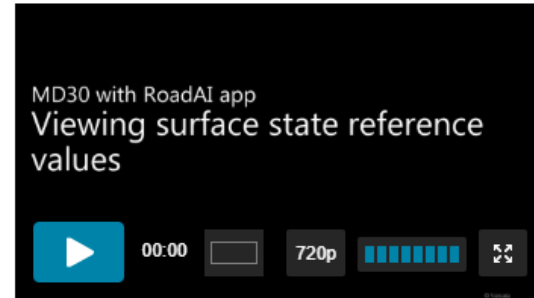
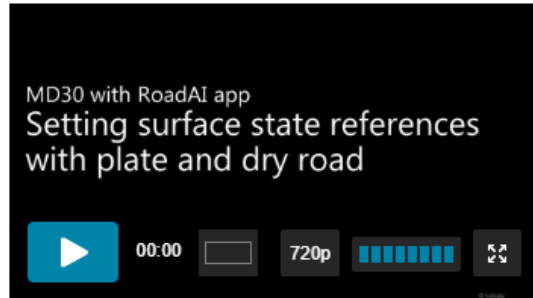
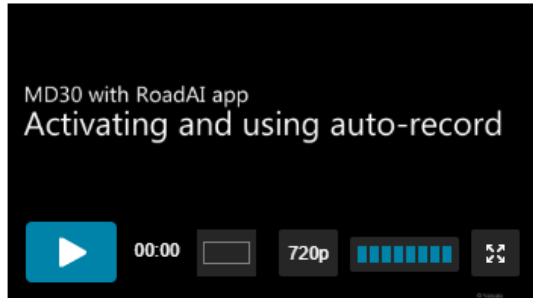
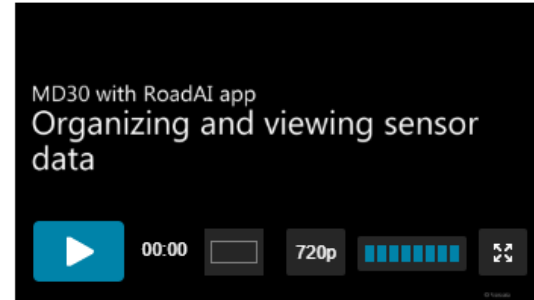
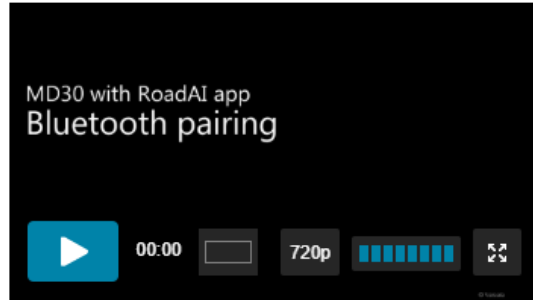
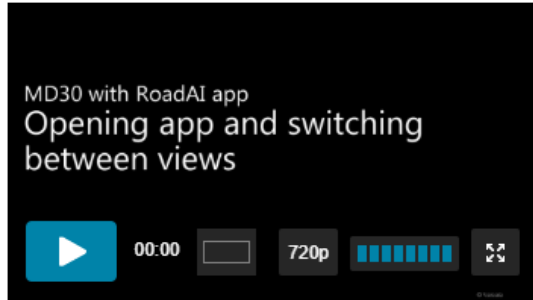
Menu sidebar
To change view between sensor and camera
To calibrate the sensor
To access phone and sensor diagnostics
To enable automatic recording if phone is charged
To change units

Close app button
To manually close the app after recording

Buttons not needed
Can be used to leave the app

Detailed usage of RoadAI app with MD30

Collection of short tutorial videos on [MD30 Support page](#)



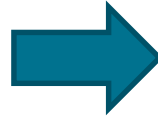
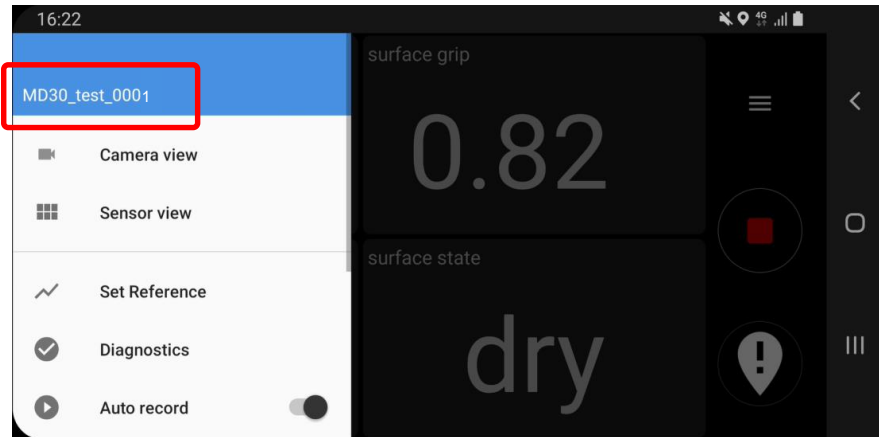
RoadAI mobile app

Verifying data flow to online map

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Verifying if mobile app is sending data to online map

Record data with app and check which username phone is using

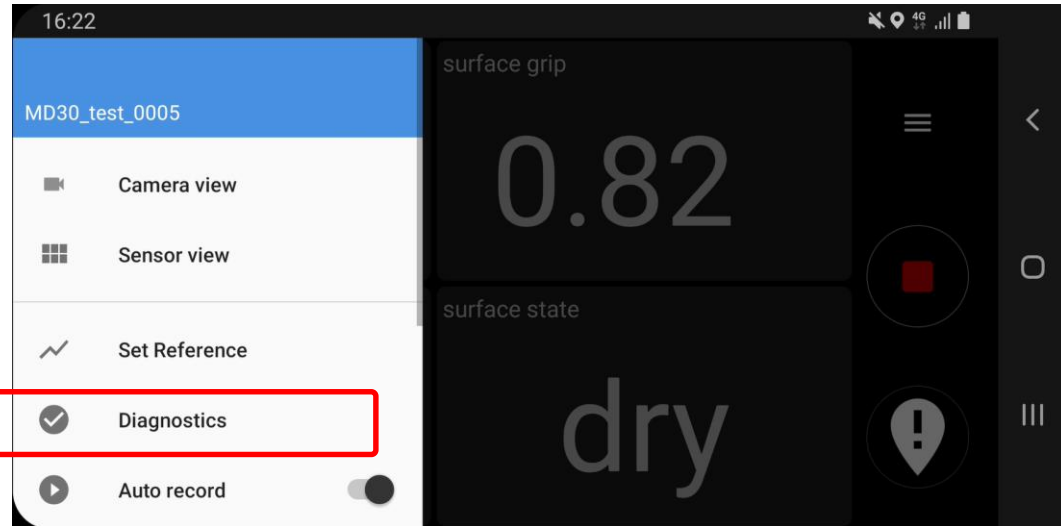


Check from online map did phone username become visible in Devices tab (more on online map on next pages)

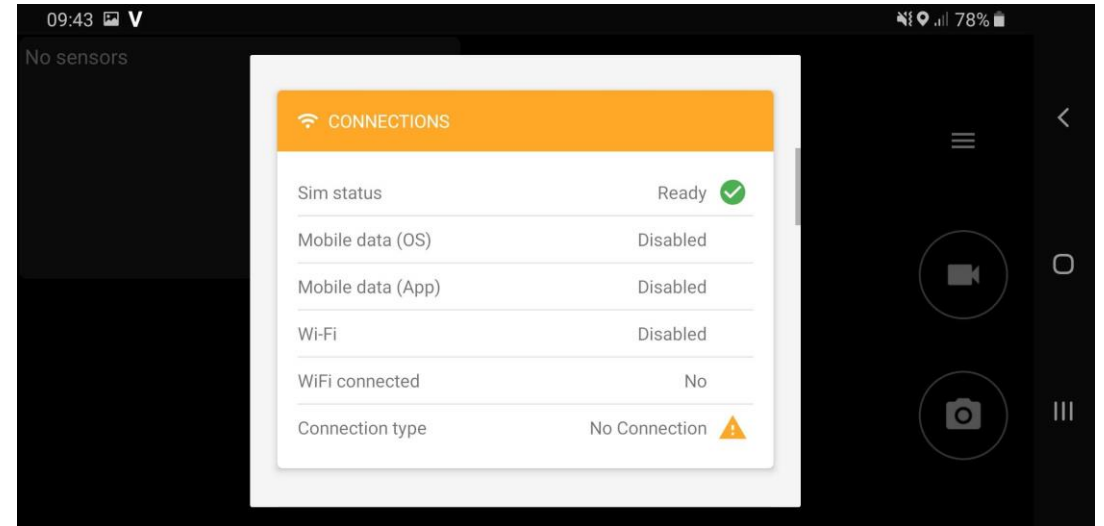
Device model	User	Location	Battery	Signal	Wi-Fi	Other	Updated
samsung SM-G950F	MD30_test_0001	✓	⚠	✓	✓	⚠	A few seconds ago
samsung SM-G930F	MD30_test_0002	✓	⚠	✓	!	⚠	14 days ago
SM-A310F	MD30_test_0003	✓	✓	✓	!	!	A month ago
samsung SM-A202F	MD30_test_0004	✓	✓	✓	✓	!	6 hours ago
samsung SM-G970F	MD30_test_0005	✓	!	✓	✓	✓	15 days ago
SM-T515	MD30_test_0006	✓	✓	✓	!	⚠	A month ago

What if mobile device is not visible on online list?

Open app menu sidebar and select
Diagnostics



Scroll down to see different diagnostics
categories – Check especially Upload and
Connections for possible issues



Typical issues

- Phone does not have an active internet connection
 - → Go to phone settings and activate
- Phone battery charge is too low to upload
 - → Connect charger
- Same login username is used in multiple devices
 - → Log out from other devices (one per username)

RoadAI online map Overview

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Overview of RoadAI online map user interface

Menu toolbar

- Settings
- Time filters
- List of all videos

MD30 data table

- Road state parameters in table or graph format

Photo / video player

- Visual images from phone camera (if used)

Timeline date selector

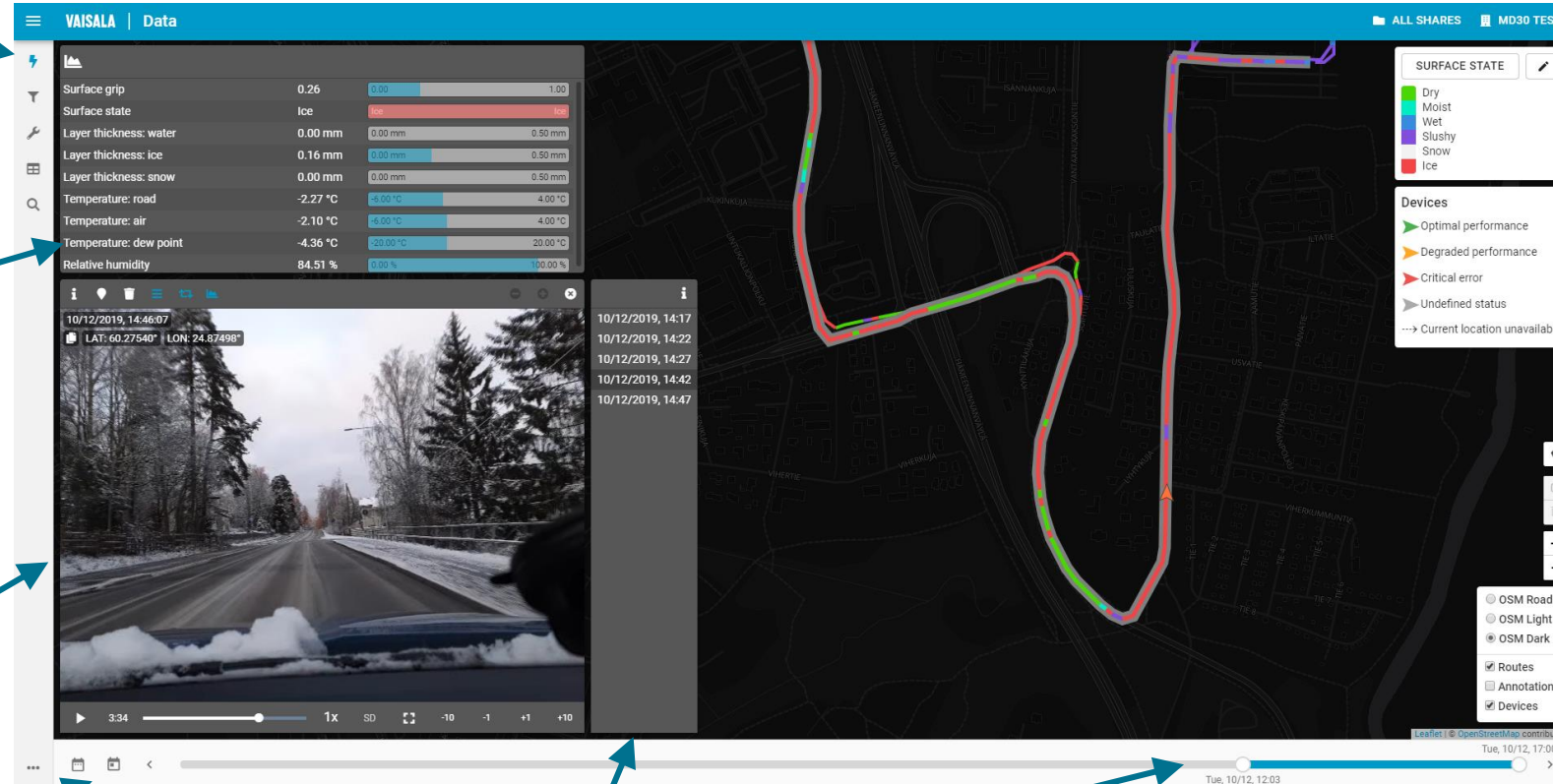
- 24-hour range shown at a time
- Desired date can be selected from calendar view

Photo / video playlist

- List of available videos from one drive
- Split into 5 minute chunks

Timeline

- Configurable to show only recent drives or drives from full day



Heatmaps

- Route color-coding based on selected MD30 parameter

Devices

- Status summary of each phone and sensor in use

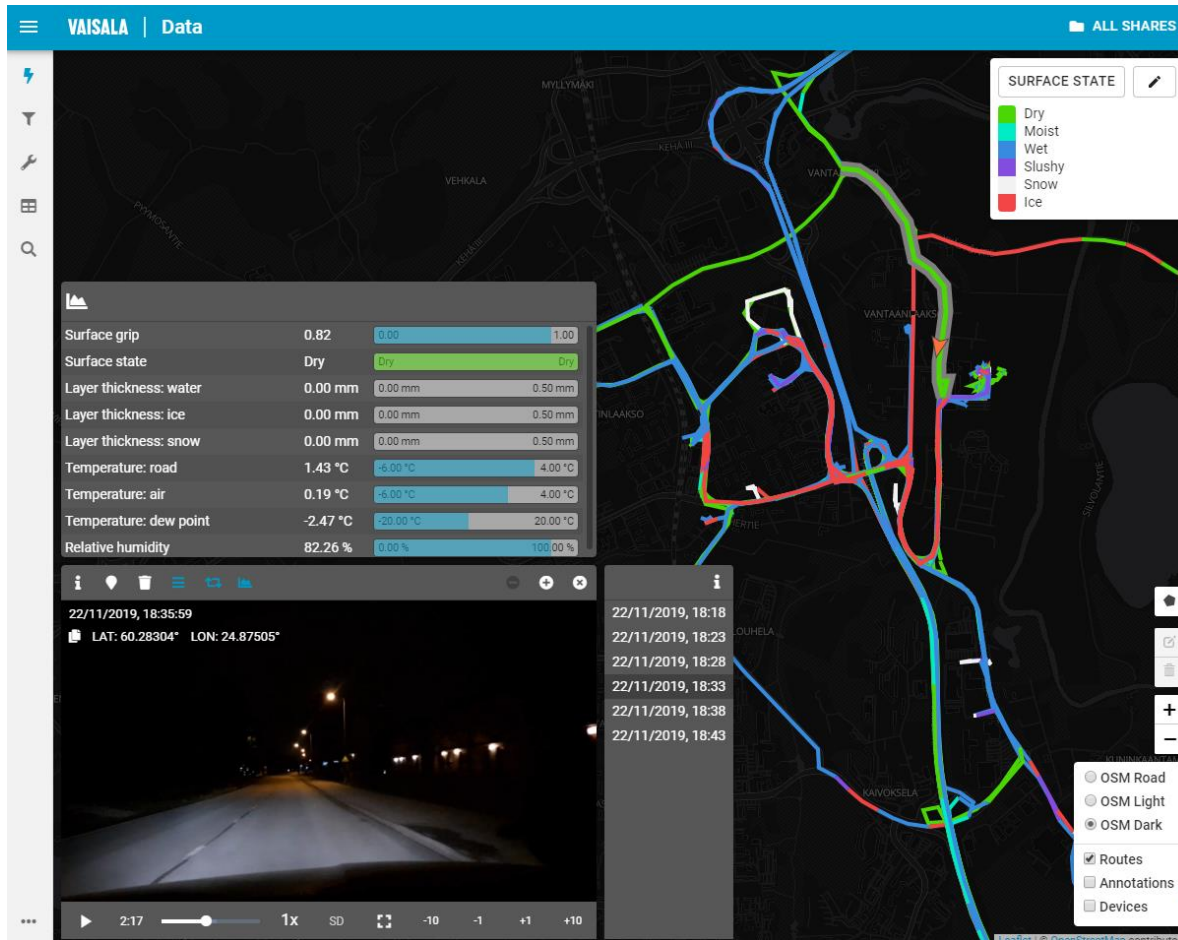
Zoom in/out

Layer selection

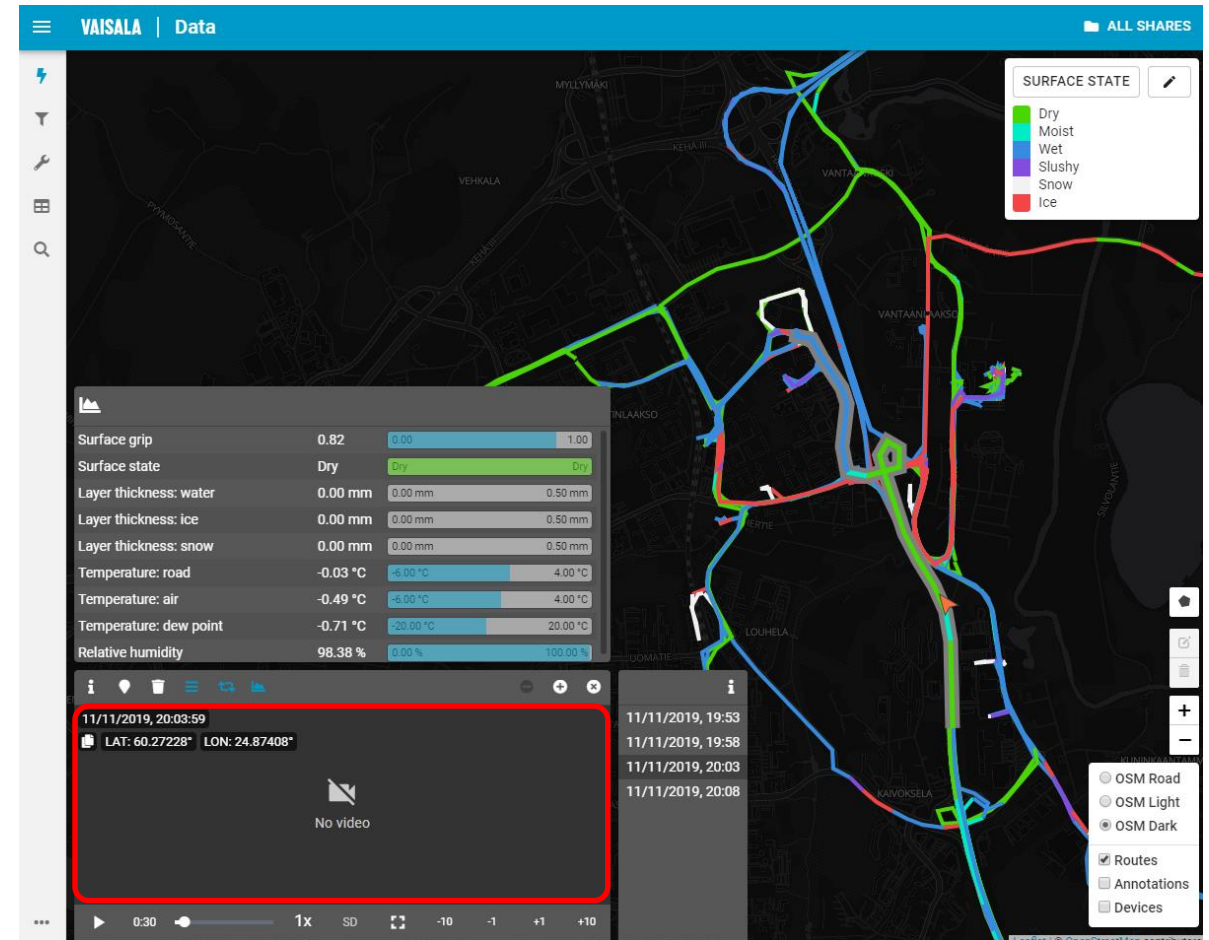
- Map color scheme
- Feature layers

User interface with and without visual images

With MD30 and photo or video recording:
Video player image updates every X seconds (photos)
or continuously (videos)



With MD30 data only:
Video player shows blank No video screen all the time

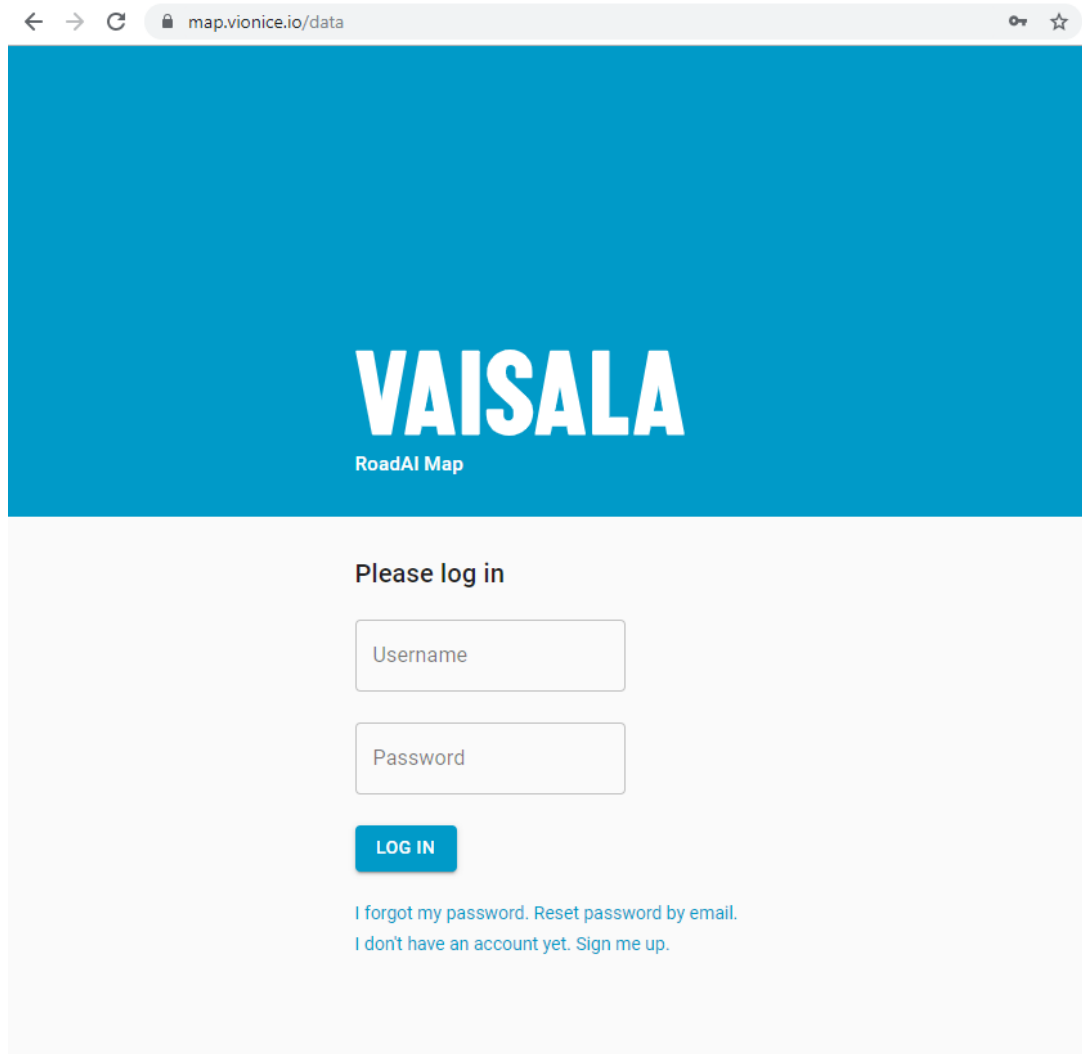


RoadAI online map

Login and user groups

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Receiving login credentials to online map



← → ↻ map.vionice.io/data

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RoadAI Map

Please log in

[I forgot my password. Reset password by email.](#)
[I don't have an account yet. Sign me up.](#)

Online map login is always done with a personal email address

- Organization account activation link is sent to provided administrator email address
- After activation, administrator can invite multiple users to access the online map

Note that on the contrary, mobile app login is always done with a non-email username

- App usernames (recording accounts) sent to administrator's email after account activation

Example emails with login credentials

Usernames are personal email addresses

Passwords can be set by each user individually during first-time use

Example email for administrator

VAISALA

RoadAI

Thank you for choosing Vaisala! A Vaisala MD30 account has been created to **TEST**.

Your username: test@email.com

Set password

Password link expired?

If the link above has expired, you can order a new activation link from the address

<https://map.vionice.io/data?forgot=true>.

MD30 and video data will be collected using the RoadAI mobile app. The mobile sensor data and recorded videos can be viewed in RoadAI Map.

Links:

[RoadAI Map](#)

[More information on MD30](#)

Help on using the software:

[RoadAI Map user guide](#)

[RoadAI mobile app user guide](#)

If you have questions or encounter problems, we can assist you when contacted via email

support@vaisala.ai or by phone +358404869710 (08-16, GMT+3).

This is an automatically generated email – please do not reply to it. If you have any queries regarding this message please email support@vaisala.ai

Example email for standard users (members)

VAISALA

RoadAI

Test client administrator has given you access to Vaisala RoadAI.

Your username: test@email.com

Set password

Password link expired?

If the link above has expired, you can order a new activation link from the address

<https://map.vionice.io/data?forgot=true>.

MD30 and video data will be collected using the RoadAI mobile app. The mobile sensor data and recorded videos can be viewed in RoadAI Map.

Links:

[RoadAI Map](#)

Help on using the software:

[RoadAI Map user guide](#)

[RoadAI mobile app user guide](#)

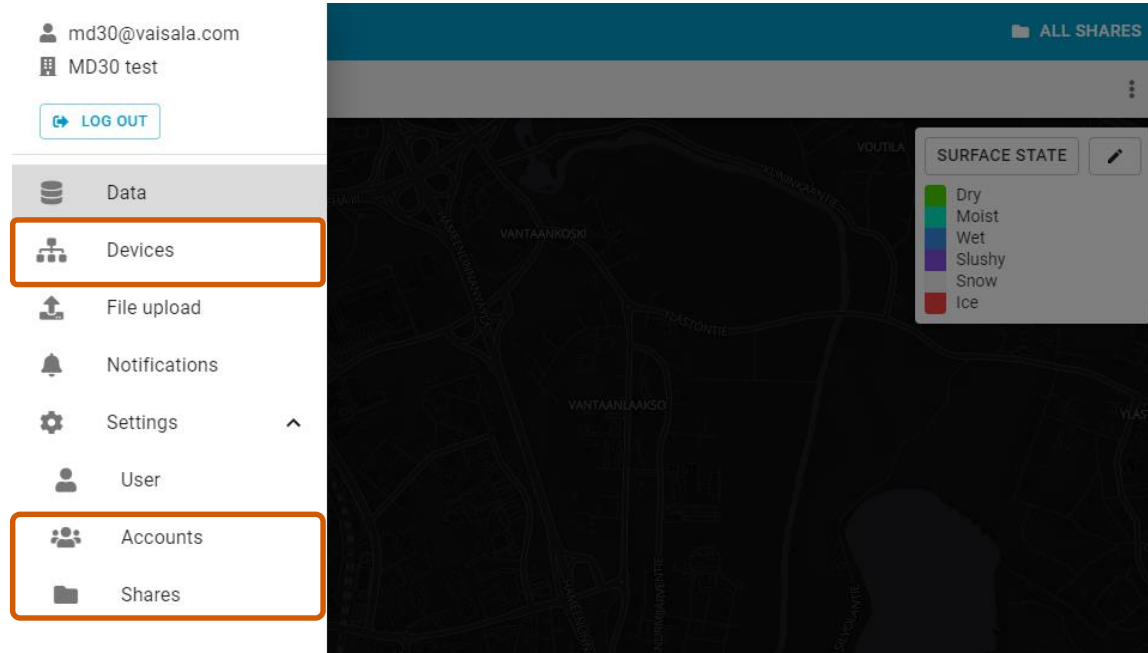
If you have questions or encounter problems, we can assist you when contacted via email

support@vaisala.ai or by phone +358404869710 (08-16, GMT+3).

This is an automatically generated email – please do not reply to it. If you have any queries regarding this message please email support@vaisala.ai

Difference between admin and member users

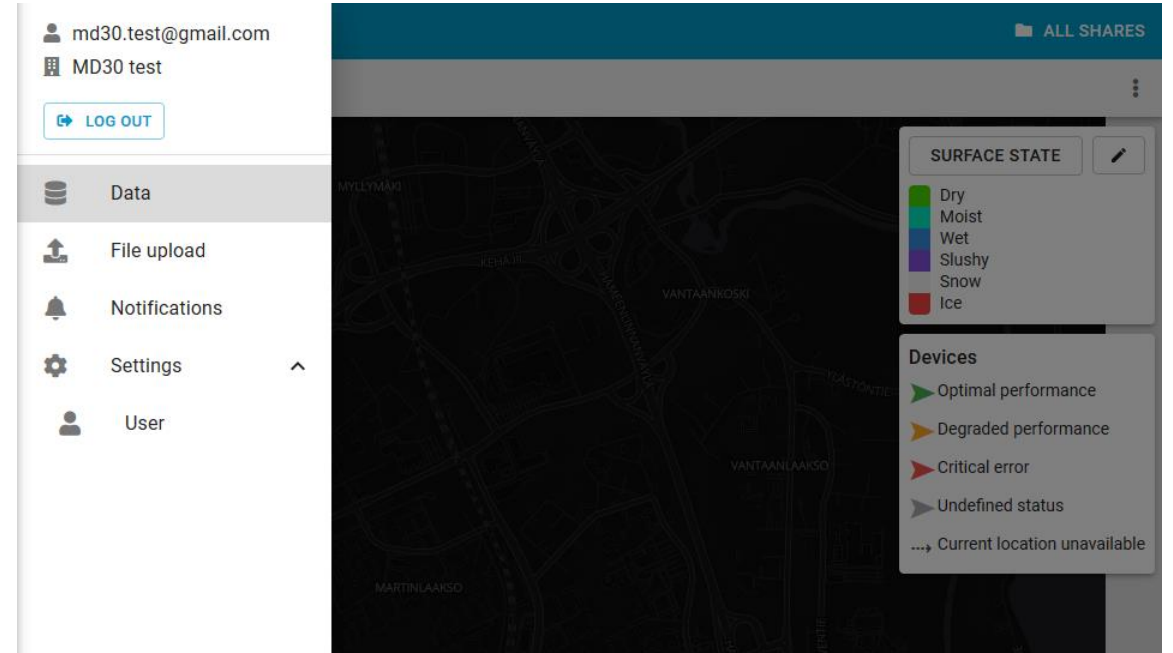
Available menus for admin



Admin

- Can see all data
- Can change their language setting and sensor data unit settings
- Can change their password
- Can delete data if desired
- Can monitor status of sensors and mobile devices
- Can add more users and admins
- Can remove users
- Can create more shares (recording folders)

Available menus for member



Member

- Can see all data
- Can change their language setting and sensor data unit settings
- Can change their password

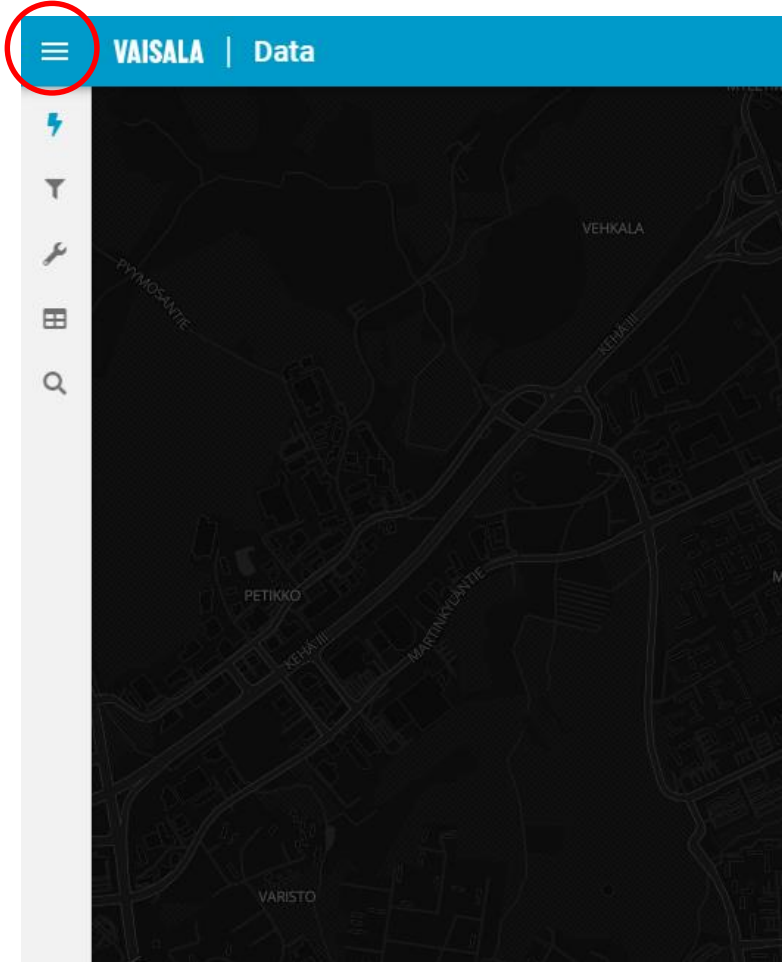
RoadAI online map

Adding more users

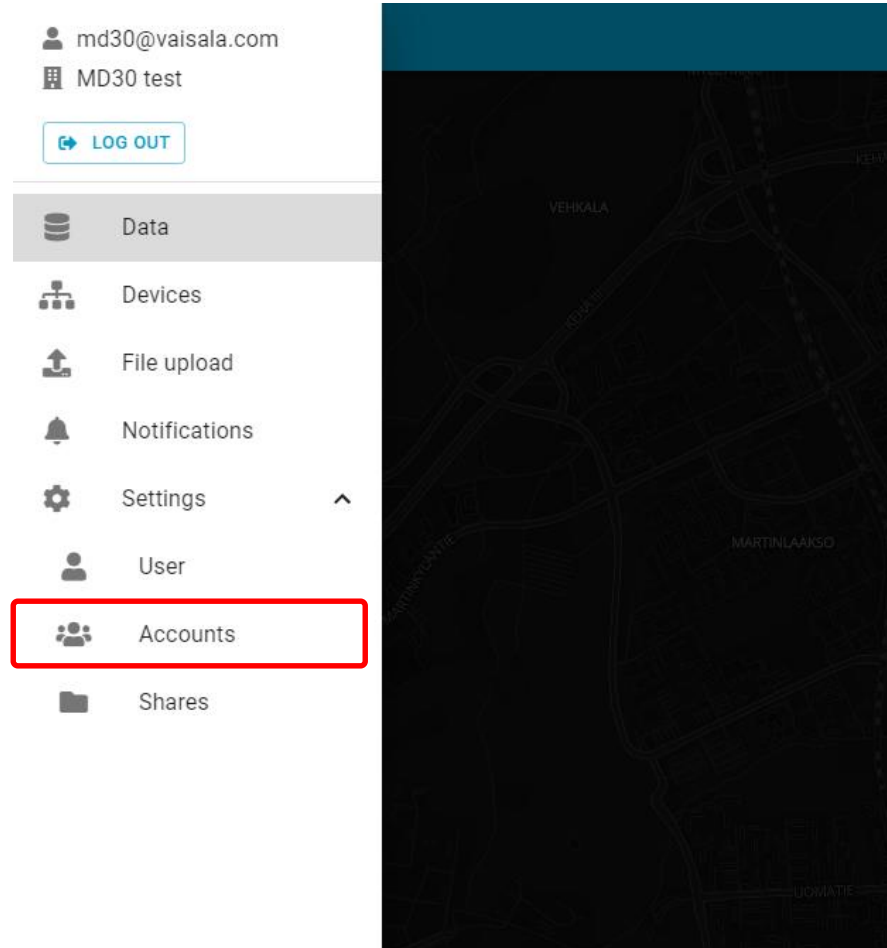
VAISALA

Steps for admin to invite more users to online map

Select menu icon on top left

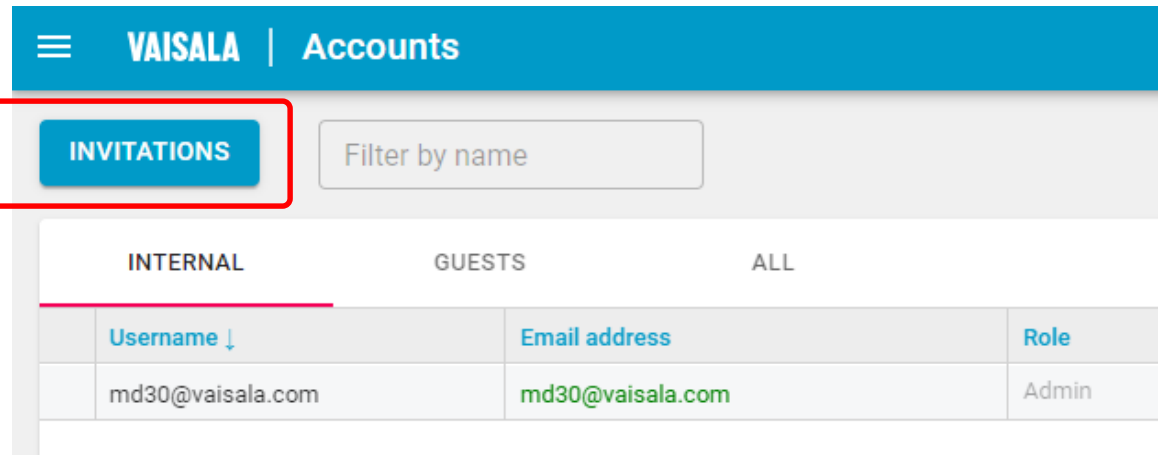


From opened toolbar, select Settings → Accounts



Steps for admin to invite more users to online map

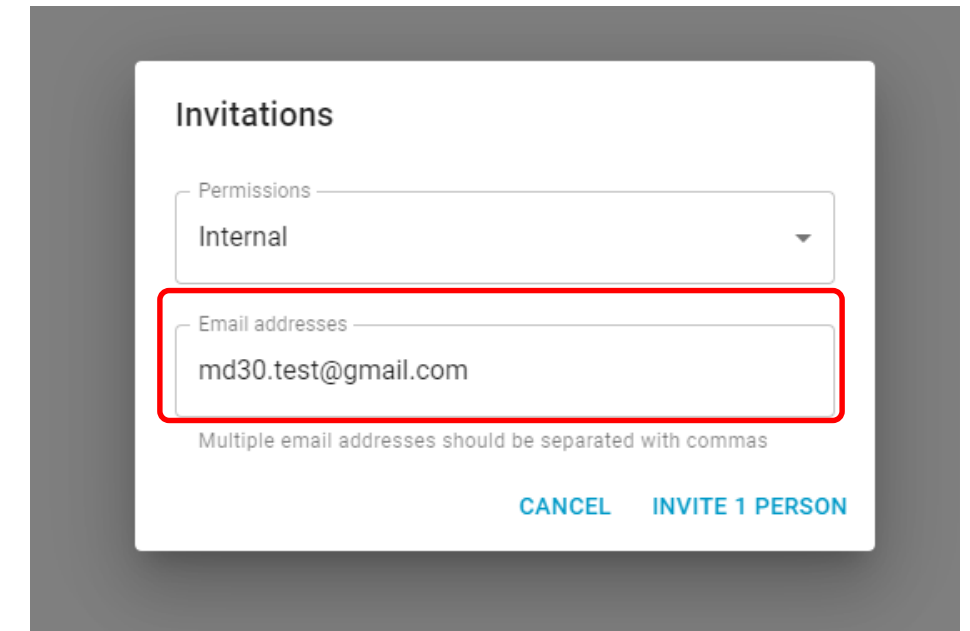
In Accounts, select Invitations



The screenshot shows the VAISALA Accounts interface. At the top, there is a blue header with the VAISALA logo and the word 'Accounts'. Below the header, there is a navigation bar with a blue button labeled 'INVITATIONS' and a search box labeled 'Filter by name'. The 'INVITATIONS' button is highlighted with a red box. Below the navigation bar, there are three tabs: 'INTERNAL', 'GUESTS', and 'ALL'. The 'INTERNAL' tab is selected. Below the tabs, there is a table with the following columns: 'Username ↓', 'Email address', and 'Role'. The table contains one row with the following data: 'md30@vaisala.com', 'md30@vaisala.com', and 'Admin'.

Username ↓	Email address	Role
md30@vaisala.com	md30@vaisala.com	Admin

Enter desired number of email addresses, each user gets an invite email to activate their credentials



The screenshot shows the 'Invitations' dialog box. It has a title 'Invitations'. Below the title, there is a 'Permissions' dropdown menu set to 'Internal'. Below that, there is an 'Email addresses' text input field containing 'md30.test@gmail.com'. The input field is highlighted with a red box. Below the input field, there is a note: 'Multiple email addresses should be separated with commas'. At the bottom right of the dialog, there are two buttons: 'CANCEL' and 'INVITE 1 PERSON'.

Understanding Accounts view

	INTERNAL	GUESTS	ALL	
	Username ↓	Email address	Role	Permissions
🗑️	md30.test@gmail.com	md30.test@gmail.com	Member	Internal
	md30@vaisala.com	md30@vaisala.com	Admin	Internal

Username

- Username for logging into online map is always an email address

Email address

- Address turns green after user has logged in for the first time

Role

- Each invited user gets standard member access rights by default
- Admin can change the rights from member to admin for any user

Permissions

- Users can be categorized as internal or guest
 - Internal = Organization's own users
 - Guest = for example, Vaisala sales person
- Typically permissions are same for both groups
 - Can be changed in Shares tab if desired

Understanding Accounts view

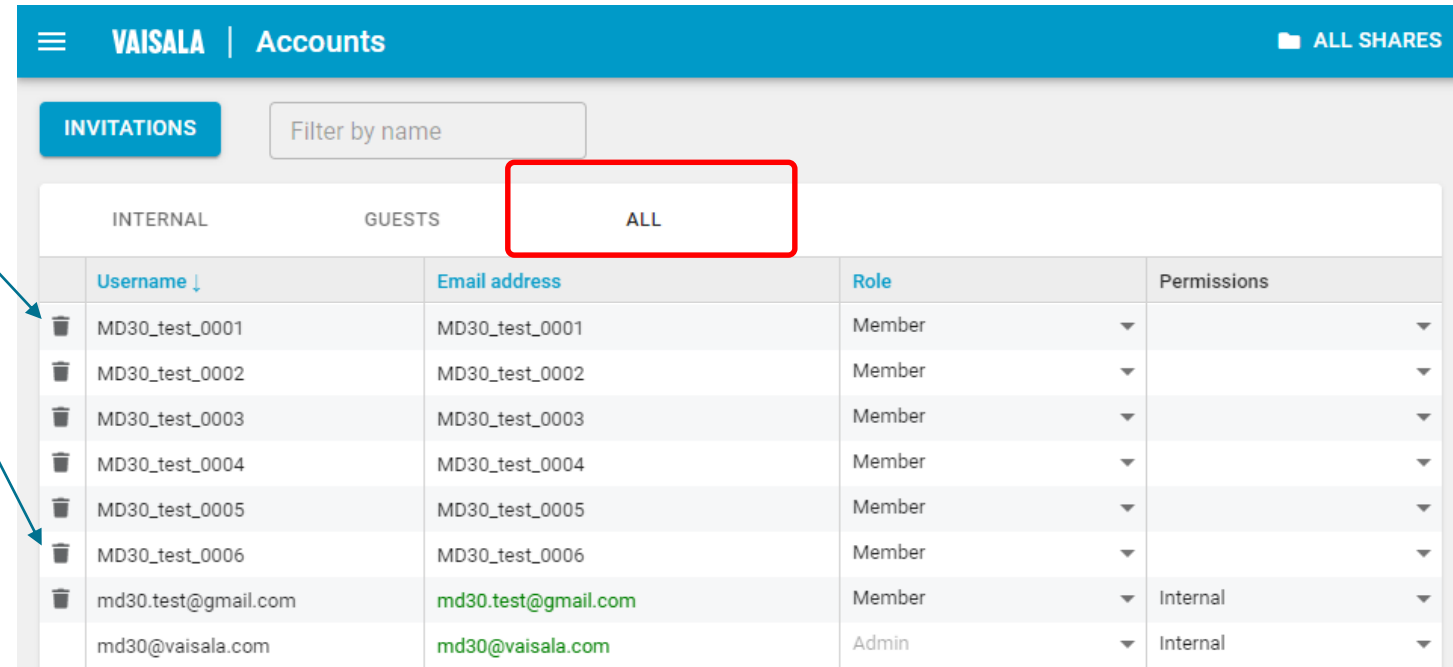
Recording accounts

- Starting with "MD30_test_" in this example
 - Available usernames listed
 - Permissions set as blank (can record, but cannot see any data online)
- Passwords have been sent to admin user when organization account was created
 - See chapter Mobile app login in earlier parts of this document

Typical questions

- Can I change the usernames?
 - At this point, no
 - If there is a need to change the usernames (to represent, for example, the vehicle in question), please contact support@vaisala.ai
- What if I forgot the password for a recording account?
 - Check the original email sent to admin for the passwords
 - If admin email is not available, please contact support@vaisala.ai

To view mobile device recording accounts, select All



VAISALA | Accounts ALL SHARES

INVITATIONS

INTERNAL GUESTS **ALL**

	Username ↓	Email address	Role	Permissions
🗑️	MD30_test_0001	MD30_test_0001	Member	▼
🗑️	MD30_test_0002	MD30_test_0002	Member	▼
🗑️	MD30_test_0003	MD30_test_0003	Member	▼
🗑️	MD30_test_0004	MD30_test_0004	Member	▼
🗑️	MD30_test_0005	MD30_test_0005	Member	▼
🗑️	MD30_test_0006	MD30_test_0006	Member	▼
🗑️	md30.test@gmail.com	md30.test@gmail.com	Member	▼ Internal
🗑️	md30@vaisala.com	md30@vaisala.com	Admin	▼ Internal

RoadAI online map

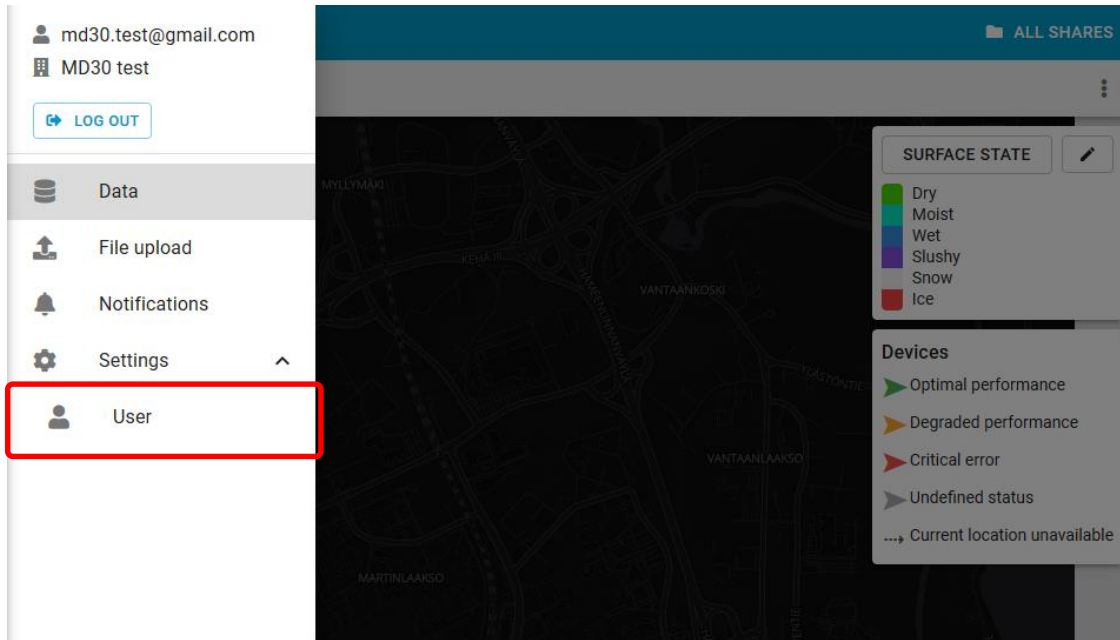
Settings and main menu

VAISALA

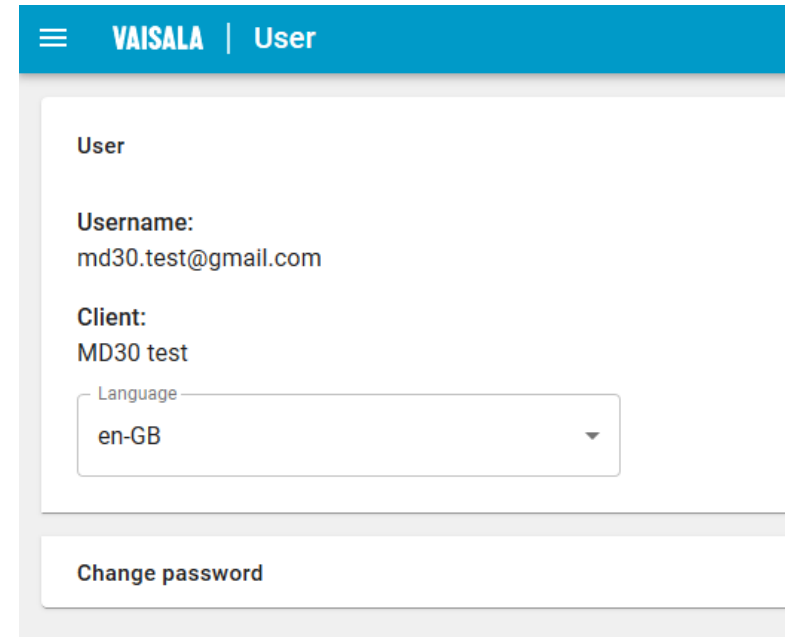
Changing language and display unit settings

Affects only this username

Navigate to Settings → User



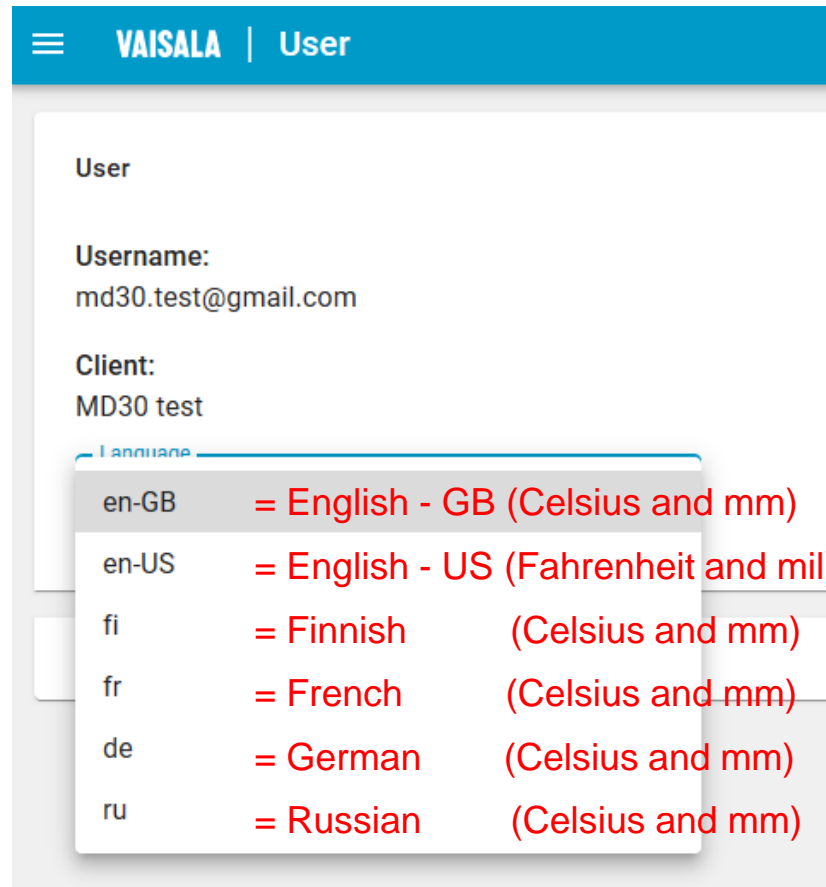
Open User dropdown



Changing language and display unit settings

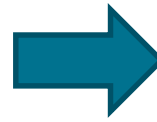
Affects only this username

Open Language dropdown and select desired user interface language and MD30 data reporting units

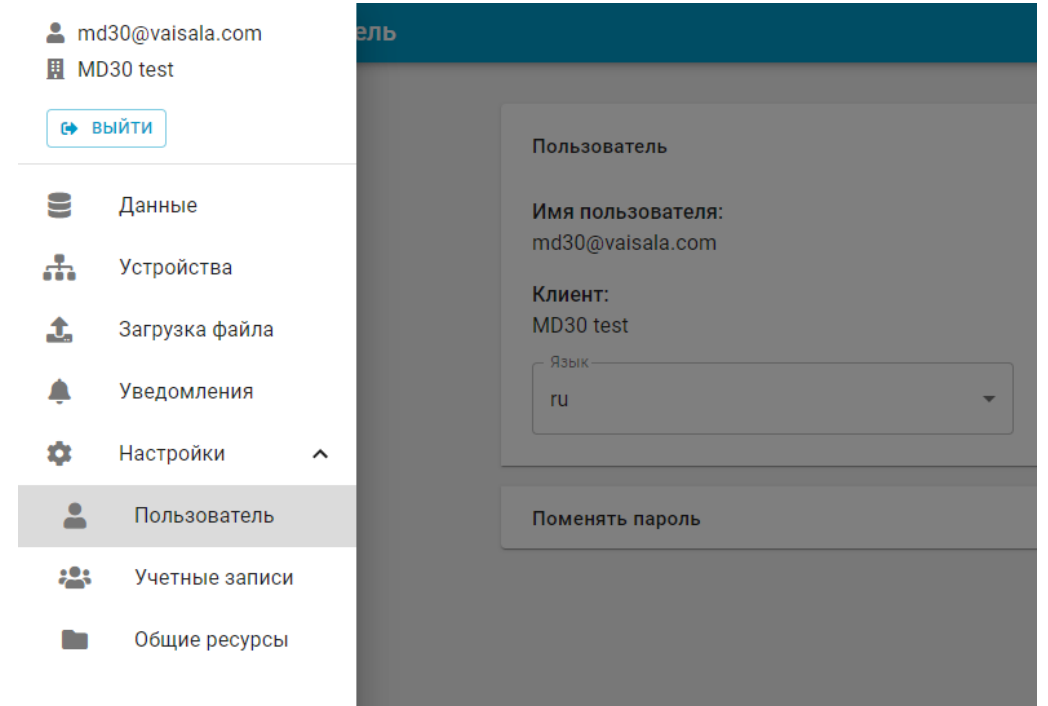


The screenshot shows the Vaisala user profile page. The header is blue with the Vaisala logo and the text 'User'. Below the header, the user's profile information is displayed: 'User', 'Username: md30.test@gmail.com', and 'Client: MD30 test'. A dropdown menu for 'Language' is open, showing the following options:

en-GB	= English - GB (Celsius and mm)
en-US	= English - US (Fahrenheit and mil)
fi	= Finnish (Celsius and mm)
fr	= French (Celsius and mm)
de	= German (Celsius and mm)
ru	= Russian (Celsius and mm)



Example of Russian user interface



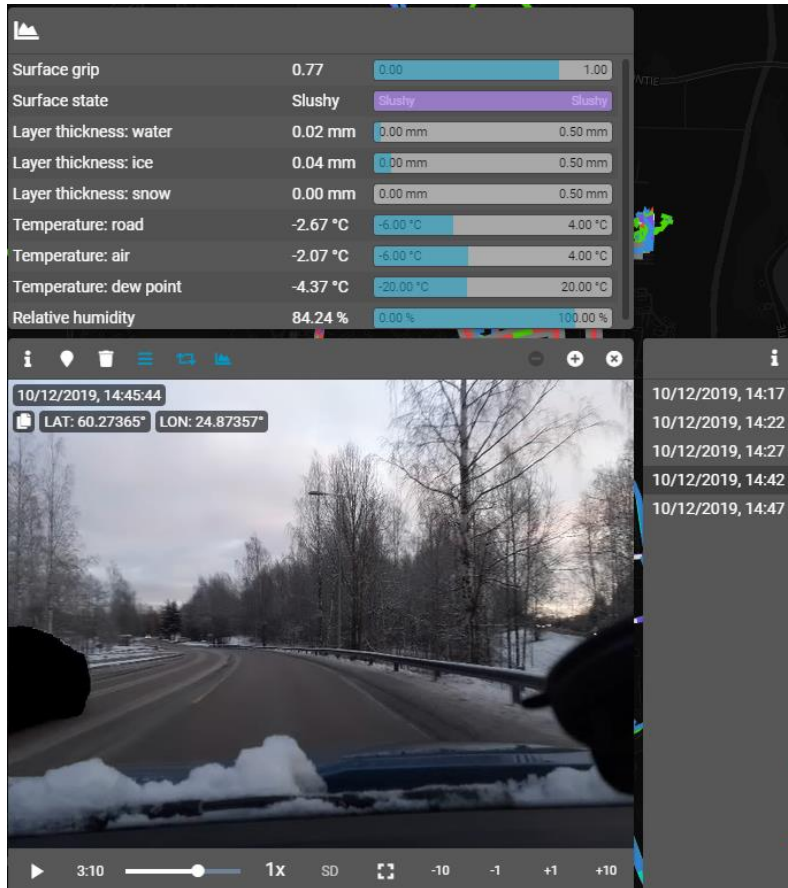
The screenshot shows the Russian user interface. The top bar is dark blue with the text 'ель'. Below the bar, the user's profile information is displayed: 'md30@vaisala.com' and 'MD30 test'. A button labeled 'ВЫЙТИ' (Logout) is visible. A list of menu items is shown: 'Данные', 'Устройства', 'Загрузка файла', 'Уведомления', 'Настройки', 'Пользователь', 'Учетные записи', and 'Общие ресурсы'. The 'Пользователь' (User) item is highlighted. To the right, a modal window displays the user's profile information in Russian: 'Пользователь', 'Имя пользователя: md30@vaisala.com', 'Клиент: MD30 test', and a dropdown menu for 'Язык' (Language) with 'ru' selected. A button labeled 'Поменять пароль' (Change password) is also visible.

Changing language and display unit settings

Affects only this username

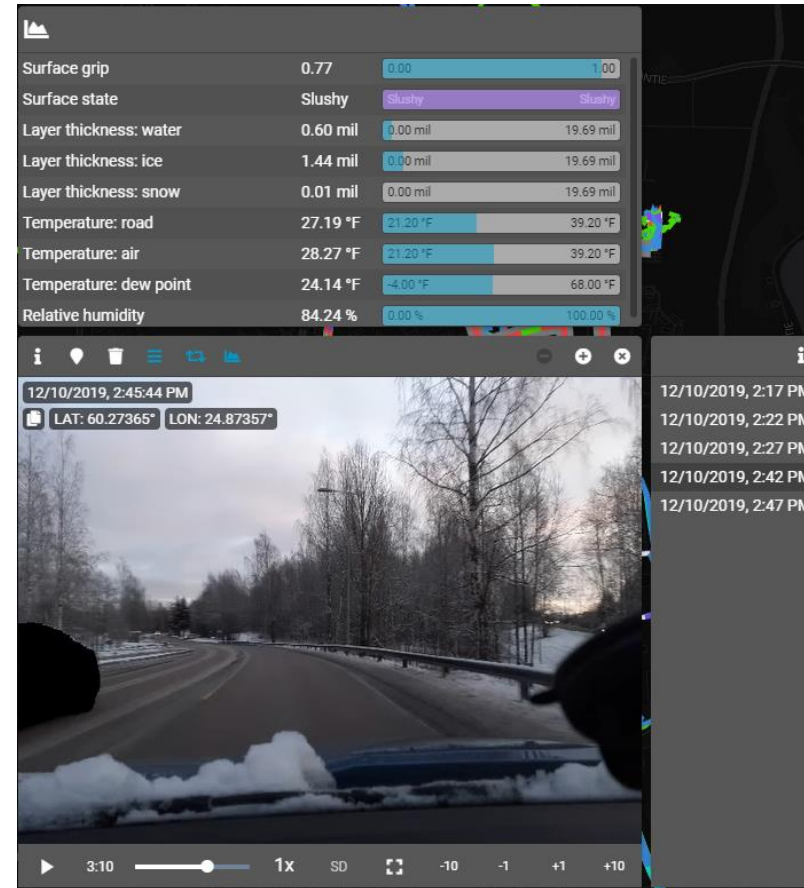
Example with English – GB settings

- Units: Celsius / mm
- Date and time format: dd/mm/yyyy and 24-hour time



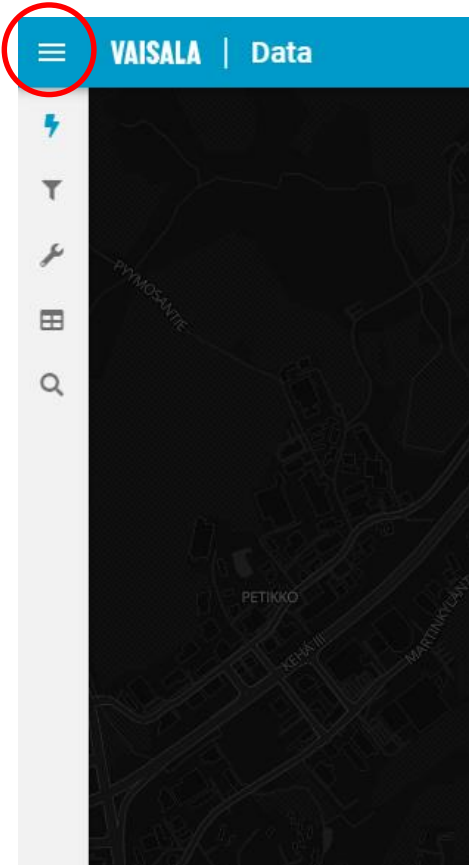
Example with English – US” settings

- Units: Fahrenheit / mil (thousandth of an inch)
- Date and time format: mm/dd/yyyy and AM/PM time

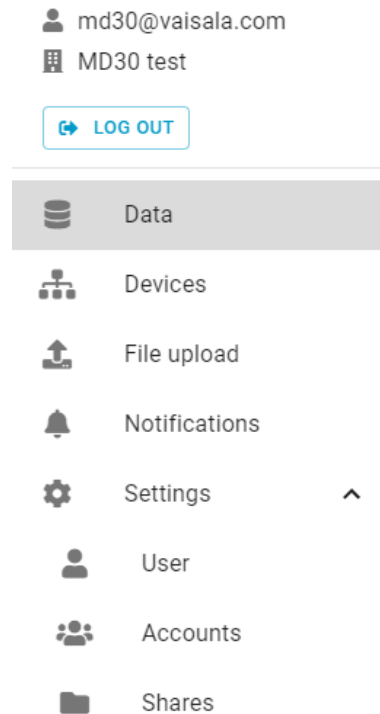


Navigation in main menu

Click menu icon on top left



Select desired menu option



Viewing drives with MD30 data

Monitoring mobile device and MD30 sensor status information

Uploading video files recorded outside RoadAI app (not needed with MD30)

Information about latest new features in online map

Settings in user and organization account level

User-level settings (language / display units, password)

List of users (admins and members) who have access to the online map

List of available data recording settings (with MD30, typically just one used)

RoadAI online map

Devices view

VAISALA

Introduction to Devices view

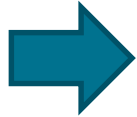
Admin user can select Devices tab from menu toolbar

Devices view shows all mobile devices that have logged in with internet connection at some point (if same username has been used in 2 different devices, 2 rows are shown on list)

md30@vaisala.com
MD30 test

LOG OUT

- Data
- Devices**
- File upload
- Notifications
- Settings
- User
- Accounts
- Shares



VAISALA | Devices

Summary

TOTAL	OPTIMAL PERFORMANCE	DEGRADED PERFORMANCE	CRITICAL ERROR
8	✓ 1	⚠ 1	! 6

Device model	🔑	User	📍	🔋	📶	📶	⋮	Updated
samsung SM-G950F	✓	MD30_test_0001	✓	⚠	✓	✓	⚠	A few seconds ago
samsung SM-G930F	✓	MD30_test_0002	✓	⚠	✓	!	⚠	14 days ago
SM-A310F	✓	MD30_test_0003	✓	✓	✓	!	!	A month ago
samsung SM-A202F	✓	MD30_test_0004	✓	✓	✓	✓	!	6 hours ago
samsung SM-G970F	✓	MD30_test_0005	✓	!	✓	✓	✓	15 days ago

Overview of Devices summary view

Summary

Overall status of devices (overall is green if all status categories are green)

List of devices

One row = Pair of 1 device + 1 username

Typically one row = 1 device, as there should be no need to change usernames after first login

Row is added once app is opened first time and app gets connection to internet

Currently active devices are highlighted, offline device rows are grayed out

VAISALA Devices									
Summary									
TOTAL	OPTIMAL PERFORMANCE	DEGRADED PERFORMANCE	CRITICAL ERROR						
4	0	1	3						
Device model	User	Location	Battery	Upload	Connections	...	Updated		
samsung SM-G950F	MD30_test_0001	✓	⚠	✓	✓	⚠	A few seconds ago		
samsung SM-G930F	MD30_test_0002	✓	⚠	✓	!	⚠	14 days ago		
SM-A310F	MD30_test_0003	✓	✓	✓	!	!	A month ago		
samsung SM-A202F	MD30_test_0004	✓	✓	✓	✓	!	6 hours ago		

Updated
Latest time when mobile device was connected to internet

Device model
Manufacturer's model code (for example, SM-G930F is Galaxy S7)

Latest login
Indicates if this username is latest username that has logged in to this device

User
Username used when logging into mobile device

Status icons
Location
Battery
Upload
Connections
Other (sensor, app version, storage space, ...)

Overview of detailed single device view

Location

- Is GPS enabled in device settings
- Is GPS info coming to the server

Battery

- Device battery level and is it getting charged now
- Device temperature (overheating stops recording)

Connections

- Does device have SIM card
- Has mobile data or Wi-Fi been enabled from device
- Is connection active

Video settings

- Is device collecting MD30 data only or also photo / video images
- Is Auto-record in use

Device: c75f7e22-4cf4-4e59-ac66-39c747309e4d ↻ A few seconds ago 🔒 A month ago ✅ MD30_test_0001

The screenshot displays a mobile device's settings page with several sections:

- LOCATION** (Green header): GPS is Enabled (checked), Available is off, Accuracy is 48.00.
- BATTERY** (Orange header): Charge is 51.00% (warning), Temperature is 75.56 °F (checked), Status is Discharging (warning), Plugged is Unplugged (warning), Health is Good (checked).
- UPLOAD** (Green header): Uploading status is off, Upload speed is 22.76 kB/s, Video files in buffer is 0 (checked), Sensor files in buffer is 0 (checked).
- CONNECTIONS** (Green header): SIM status is Ready (checked), Mobile data enabled (OS) is Yes, Mobile data enabled (App.) is No, WiFi enabled is off, WiFi connected is Yes, Connection type is WiFi.
- SENSOR** (Green header): Sensor is Yes (checked), Connected is off, Model is off, Status is off, Error is off.
- STORAGE** (Green header): Free space is 16.60 GB (checked), Total space is 54.00 GB (checked).
- VIDEO SETTINGS** (Green header): Resolution is 640x480, FPS is 1/6.00, Bitrate/Quality is 76.00 Mb/s, Autorecord is No, Share is Photos: 640x480@1/6FPS (checked).
- ADDITIONAL INFORMATION** (Orange header): Recording is No, RoadAI app version is 0.12.2 (warning), DPC version is off, Device manufacturer is samsung, Device model is SM-G950F.

Upload

- Is upload ongoing right now and with which speed
- Number of 5-minute data files in buffer waiting for upload

Sensor

- Is MD30 paired with this device
- Is MD30 reporting any errors

Storage

- Is there enough free space in device memory or SD card (note: after 5-minute data file is uploaded to server, it is deleted from local memory)

Additional information

- Is device recording right now
- Is latest RoadAI app version installed
- Is RoadAI app installed with dedicated installer or through Play Store
- Which device model is in question

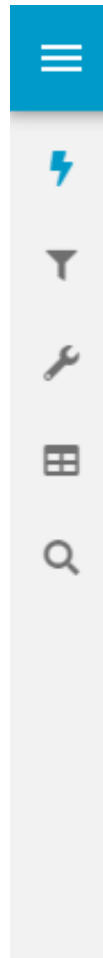
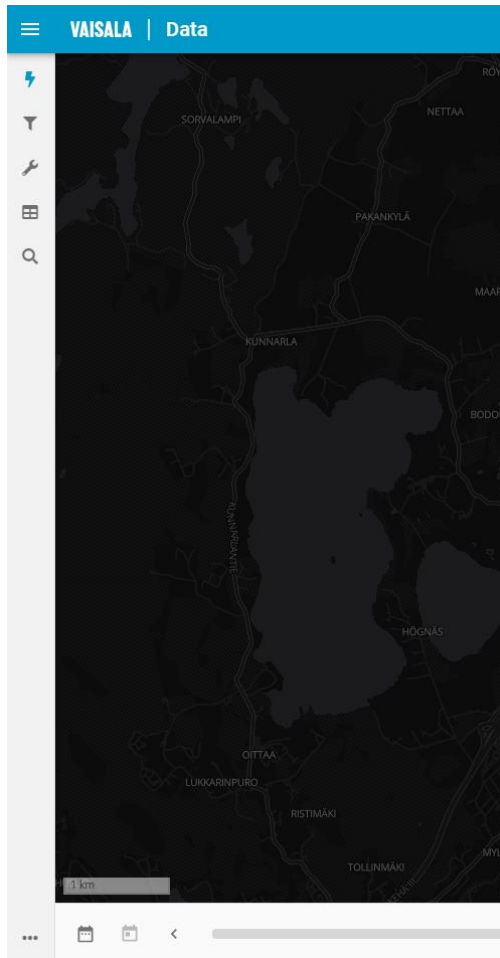
RoadAI online map

Data view

- Using toolbar

VAISALA

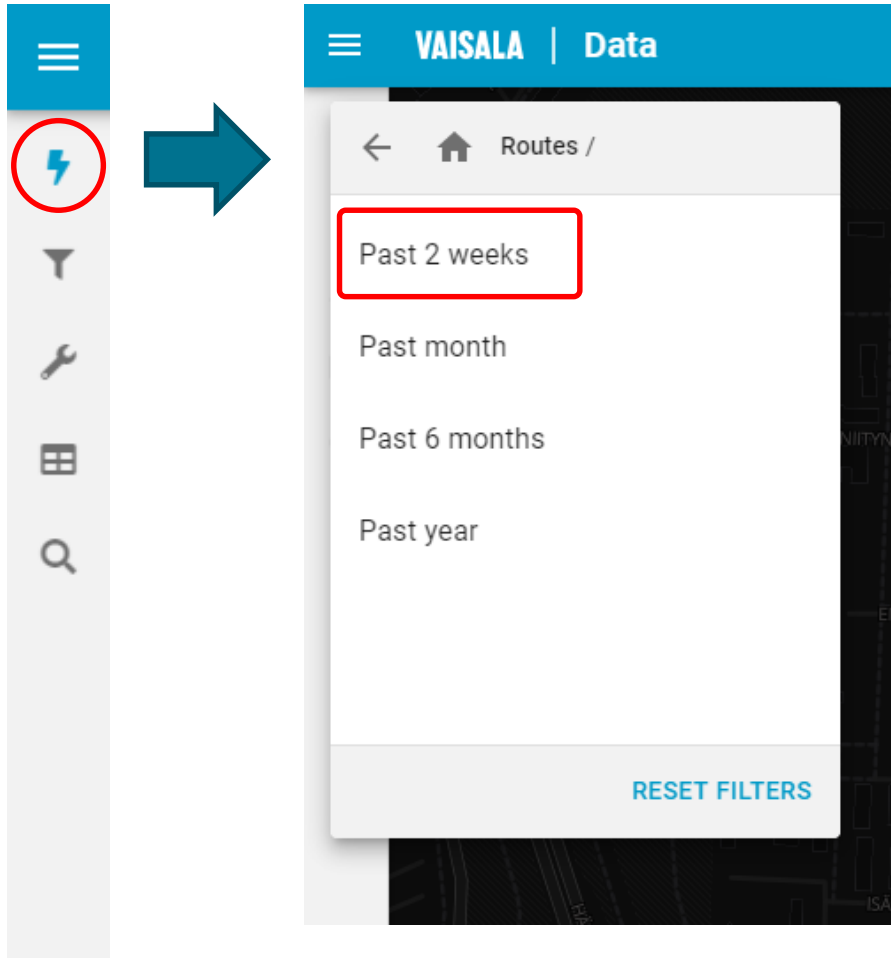
Overview of toolbar buttons in Data view



- Main menu:** To access data view, devices view, and settings
- Quick links:** Use pre-made time filters to show, for example, last 2 weeks of data
- Filters:** Control from which time range and from which devices data is shown
- Tools:** Add a note marker to map to indicate some event (for example, accident or storm)
- Lists:** View in table format all recorded 5-minute data files within selected filter range
- Search:** Make a location search which centers the map around a desired street address

Quick links button

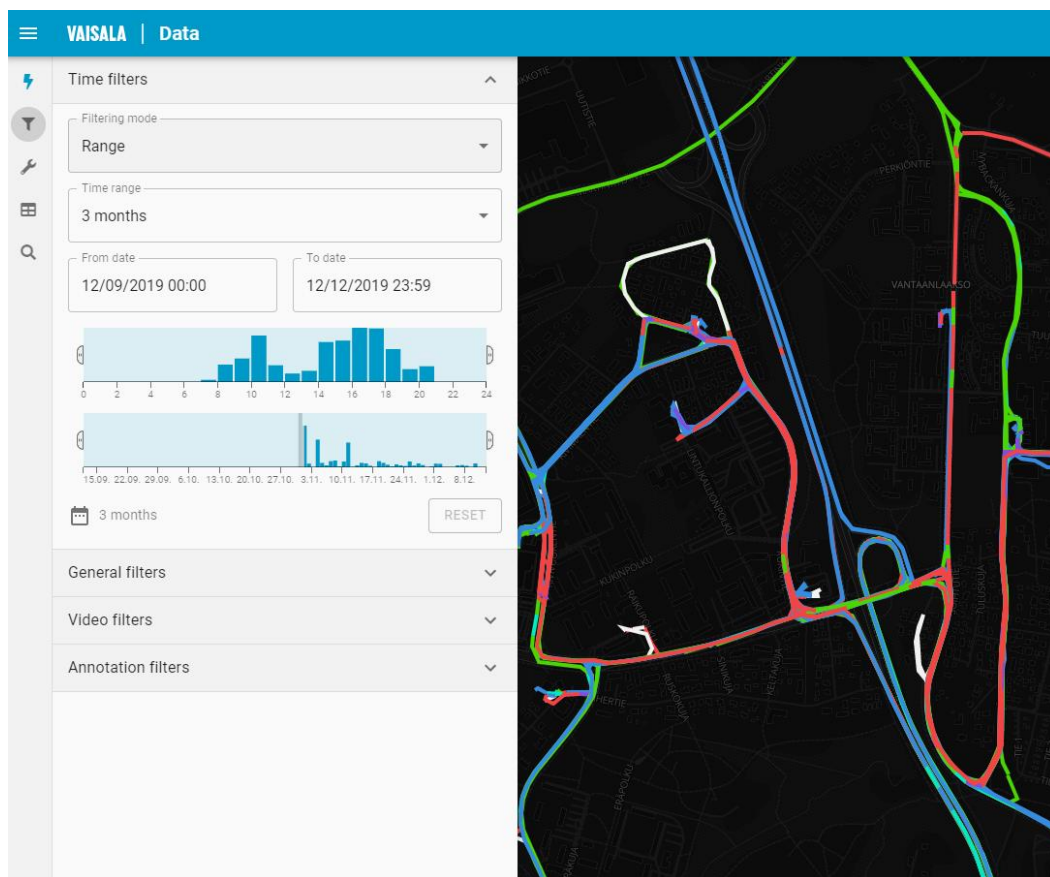
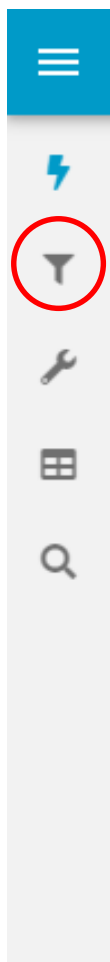
Use pre-made time filters to show, for example, last 2 weeks of data



Filters button

Control from which time range and from which devices data is shown

Further details on how to use the time and user filters are listed in upcoming chapter Finding data



Tools button

Add a note marker to map to indicate some event (for example, accident or storm)

1. Click a desired drive location
2. Write desired tag text and description to the fields
3. Select Tag → Red tag mark is added to that location

4. If red mark is clicked afterwards, it opens details of the tag

The screenshot shows the Vaisala RoadAI interface. On the left sidebar, the 'Tools' button (wrench icon) is circled in red. A large blue arrow points from the sidebar to the main interface. In the main interface, the 'Tag' button is circled in red, and a yellow box labeled '3.' is next to it. The 'Tag' input fields are highlighted with a yellow box labeled '2.'. On the map, a red tag marker is placed on a road, with a yellow box labeled '1.' and a red circle around it. The interface also shows a 'Button annotation' panel with the text 'Here was something' and a 'Feedback loop' toggle. A data panel displays various sensor readings such as Surface grip, Surface state, Layer thickness, Temperature, and Relative humidity. A video player at the bottom shows a road view with a timestamp of 07/11/2019, 08:35:26 and coordinates LAT: 60.26839° and LON: 24.85971°.



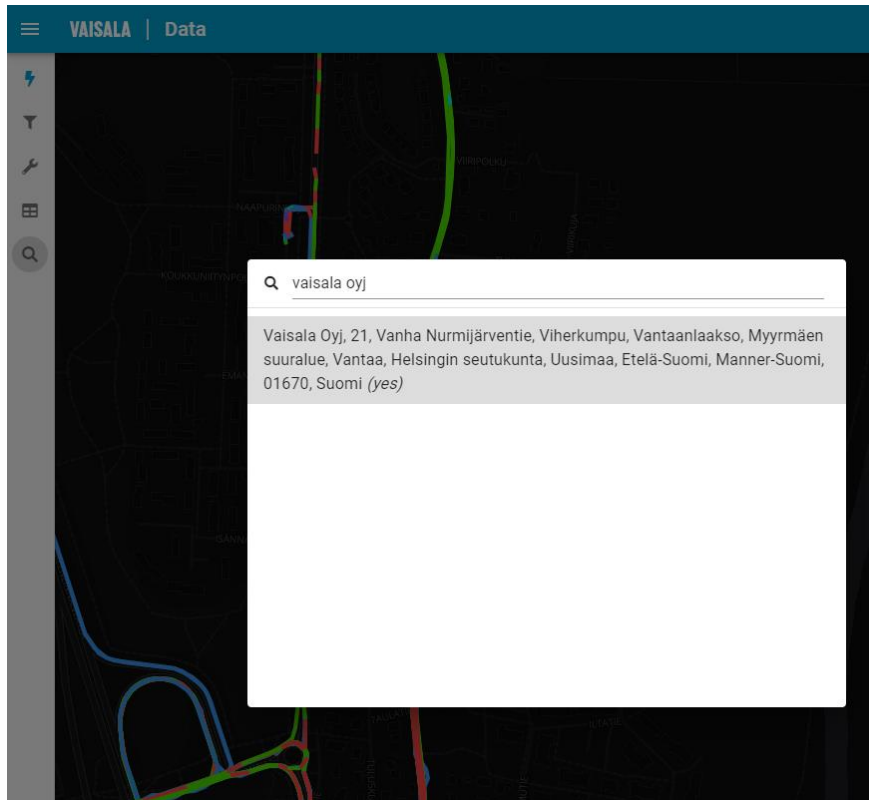
The screenshot shows the tag details view. A yellow box labeled '4.' is next to a photo of a road. Below the photo is a condition bar with values 5, 4, 3, 2, 1. The 'Action' bar shows 'OK', 'Fix', 'Replace', and 'Missing'. The 'Tags' section shows 'Test'. The 'Text' field contains 'Here was something'. The 'ID' field contains 'fRcpZNN8zz7ghZvvT'. The 'Time' field contains '07/11/2019, 08:35:26'. The 'Created at' field contains '13/12/2019, 18:15:15'. The 'Address' field contains 'Not available'. The 'Location' field contains '60.26839, 24.85971 (WGS-84)'. The 'Sensor' field contains 'MD30_test_0004'. The 'User' field contains 'md30@vaisala.com'.

Search button

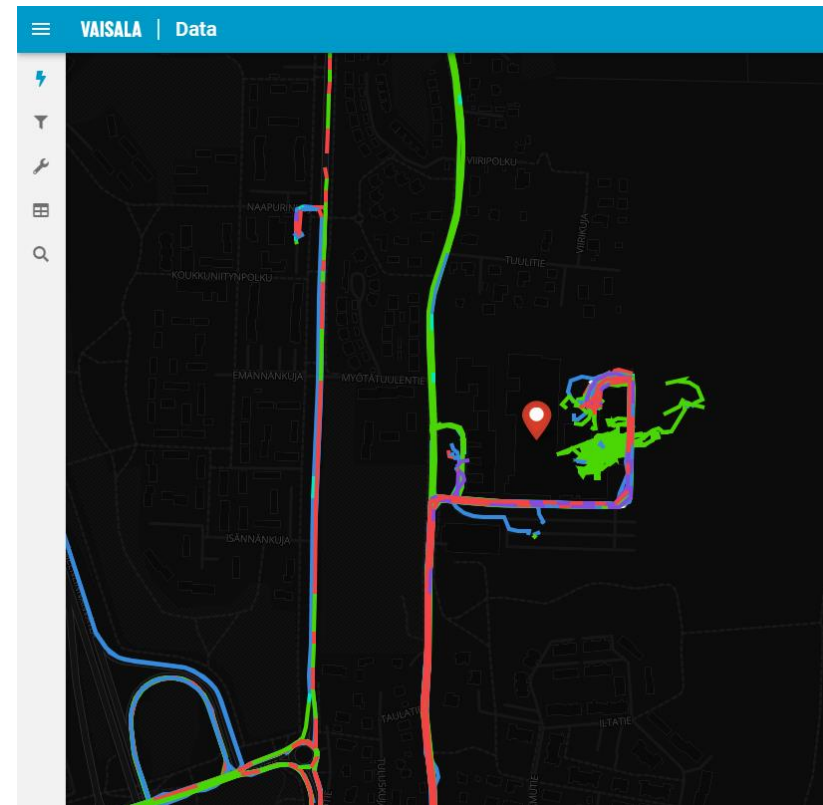
Make a location search which centers the map around a desired location / street address



Location search box opens
Type desired location / address



Map gets centered around the found location,
and the location is marked with a red sign



RoadAI online map

Data view

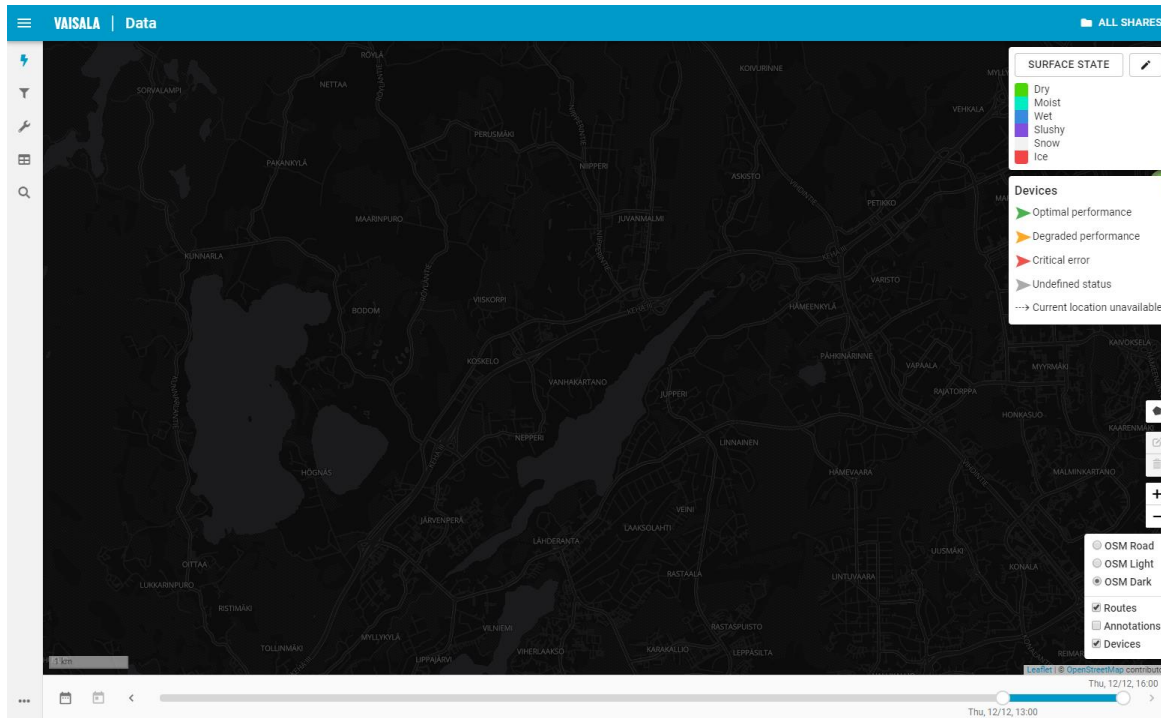
- Finding data

VAISALA

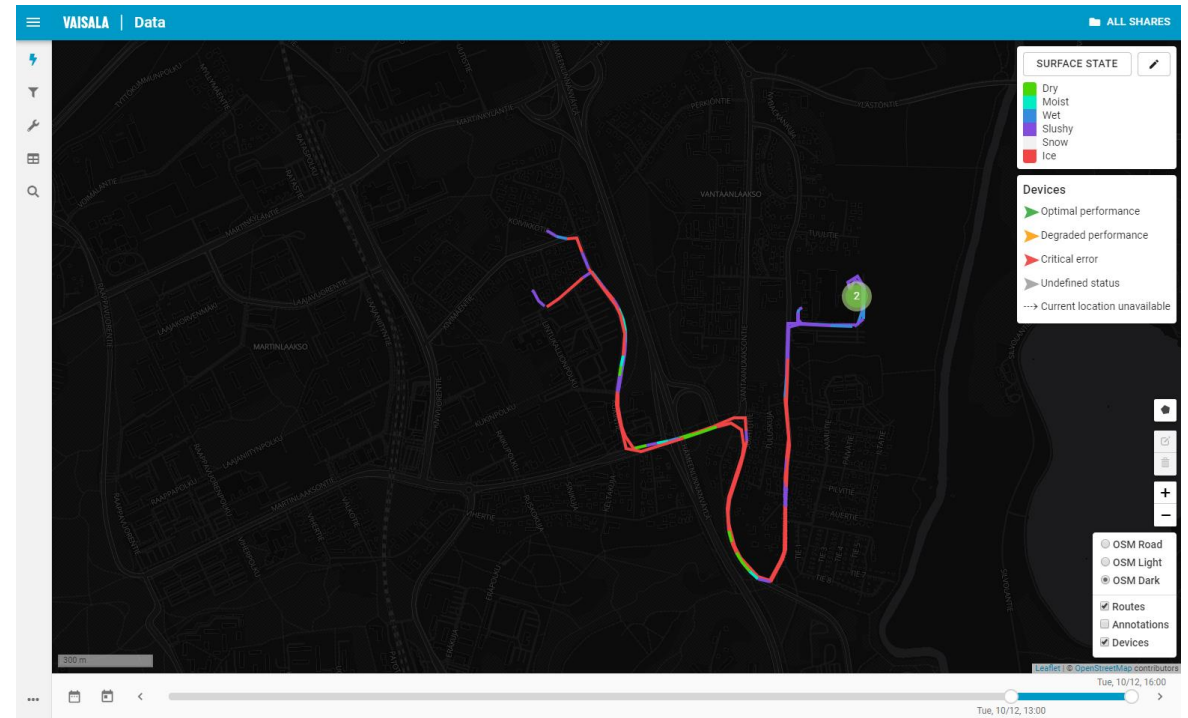
Typical start screen after logging in

Map view with or without sensor data (default setting is to show past 3 hours)

Example start screen without sensor data



Example start screen with sensor data

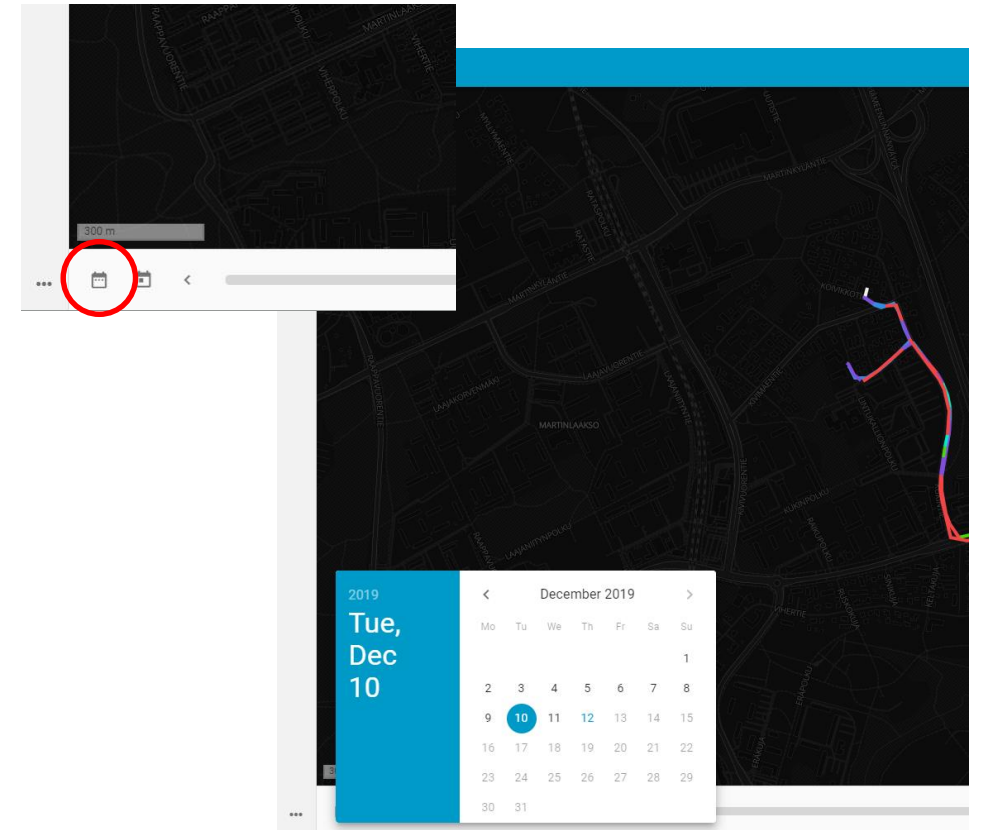
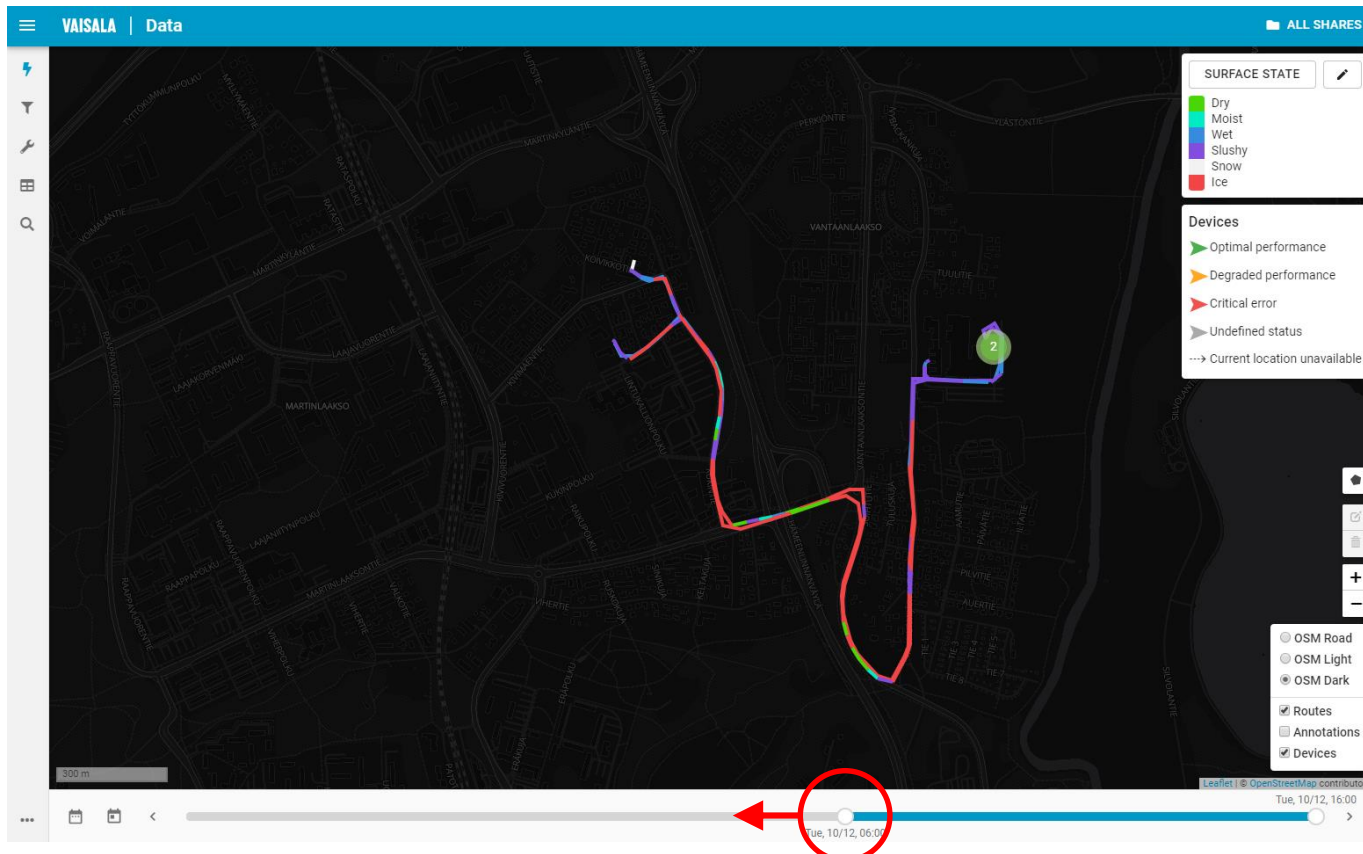


If no data is visible, how to find it?

Option 1: No data visible in start screen means no data has been recorded in past 3 hours
→ Need to change time filter to get data visible

If data should exist within past 24 hours, change visible time range by dragging the timeline ends

If data is over 24 hours old, open calendar view from bottom left to select desired date

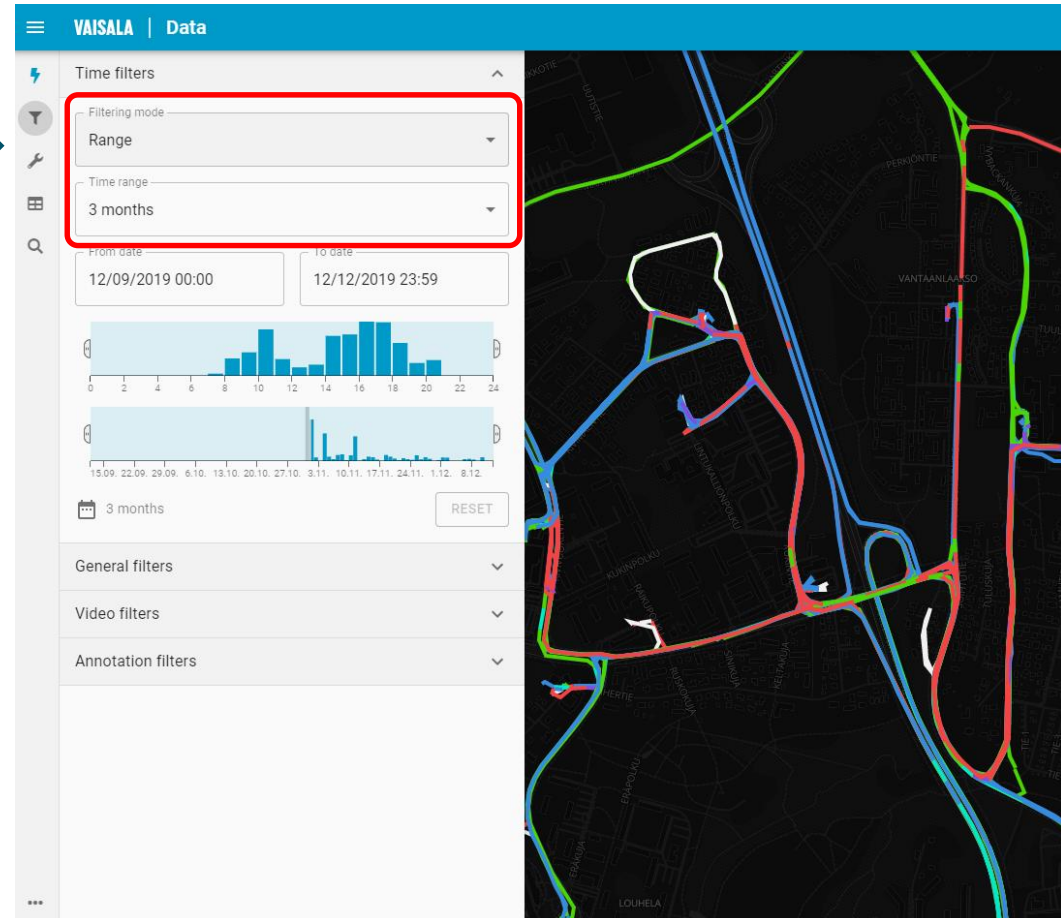
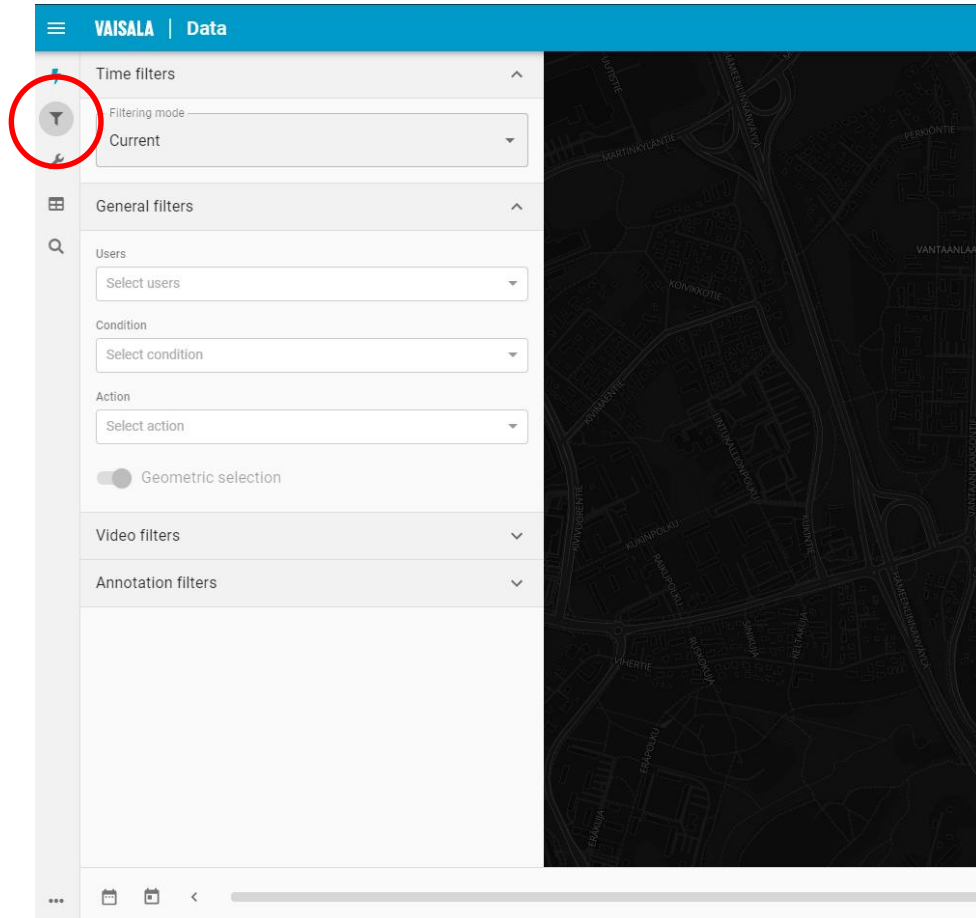


If no data is visible, how to find it?

Option 2: Instead of timeline (Current), use time range filter (Range)

Select Filters icon from left toolbar

Change Filtering mode from Current (timeline) to Range and select a desired time range (for example, 3 months)

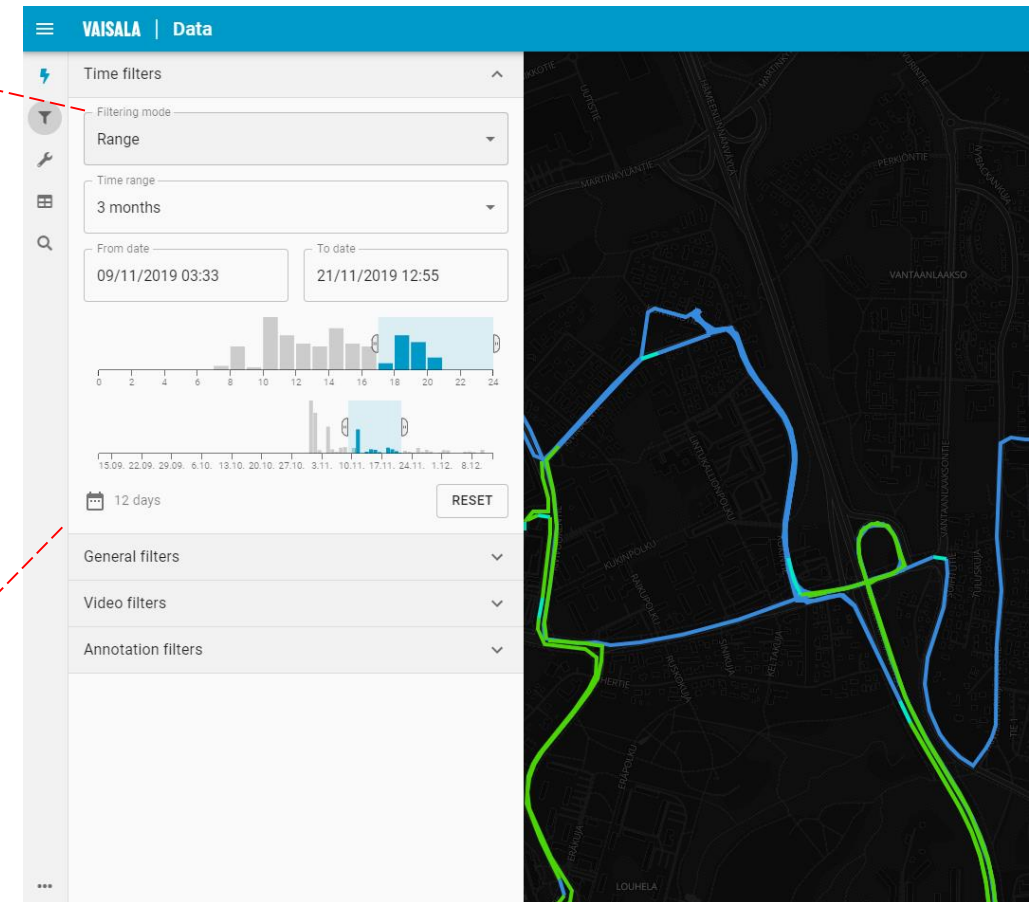
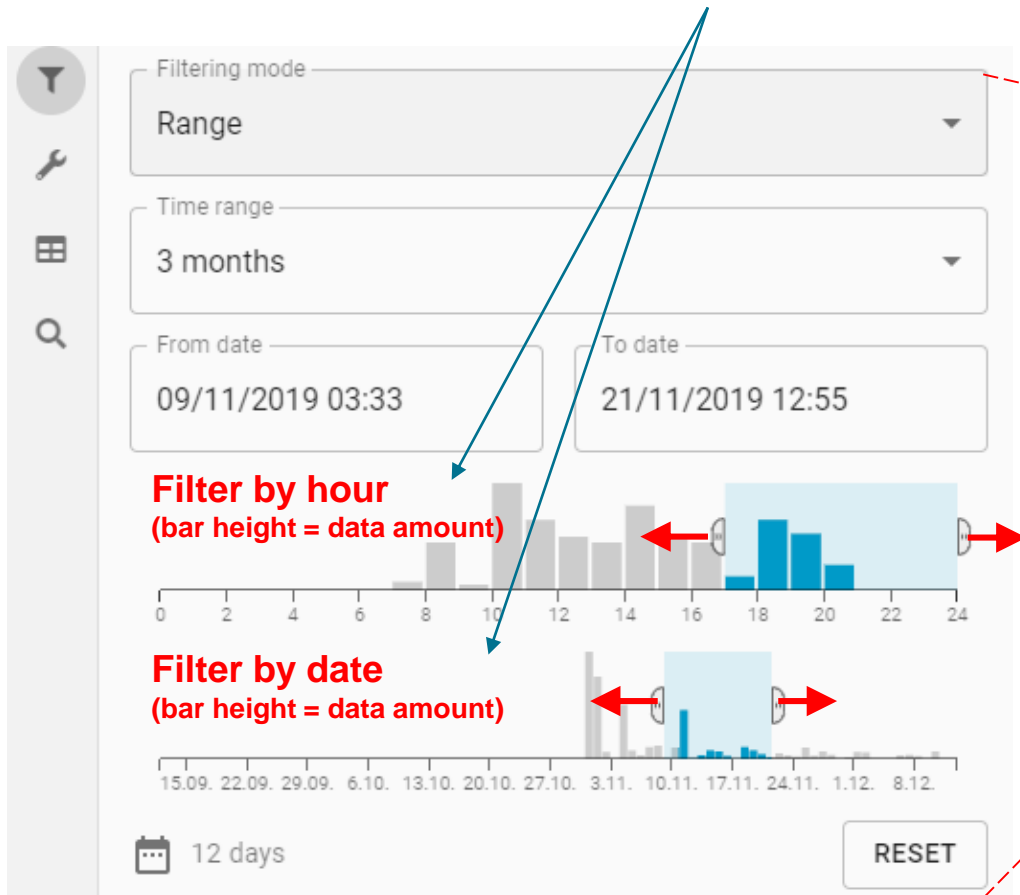


If no data is visible, how to find it?

Result of time filter changes: Data should be visible

In Range mode, data can be searched and filtered also visually from 2 sliders

Select desired time range, get data visible, and continue to data monitoring (next page)



Filter data by device (vehicle)

Go to Filters → General filters → User

Select desired number of users
→ Only data from those users (devices) is shown

The screenshot shows the Vaisala Data interface. On the left, the 'Time filters' section is expanded, showing 'Filtering mode' set to 'Range', 'Time range' set to '3 months', and 'From date' as '09/13/2019 12:00 AM' and 'To date' as '12/10/2019 4:00 PM'. Below this is a histogram. The 'General filters' section is also expanded, and the 'Users' filter is highlighted with a red box. The 'Users' filter shows a list of users: MD30_test_0001, MD30_test_0002, MD30_test_0003, MD30_test_0004, MD30_test_0005, and MD30_test_0006. The 'Users' filter is currently empty.



The screenshot shows the Vaisala Data interface after filtering. The 'Time filters' section is expanded, showing 'Filtering mode' set to 'Range', 'Time range' set to '3 months', and 'From date' as '16/09/2019 07:59' and 'To date' as '13/12/2019 23:59'. Below this is a histogram. The 'General filters' section is also expanded, and the 'Users' filter is highlighted with a red box. The 'Users' filter now shows three selected users: MD30_test_0001, MD30_test_0002, and MD30_test_0003. The 'Condition' and 'Action' sections are also visible, with 'Condition' set to 'Select condition' and 'Action' set to 'Select action'. The 'Geometric selection' option is also visible.

RoadAI online map

Data view

- Monitoring data

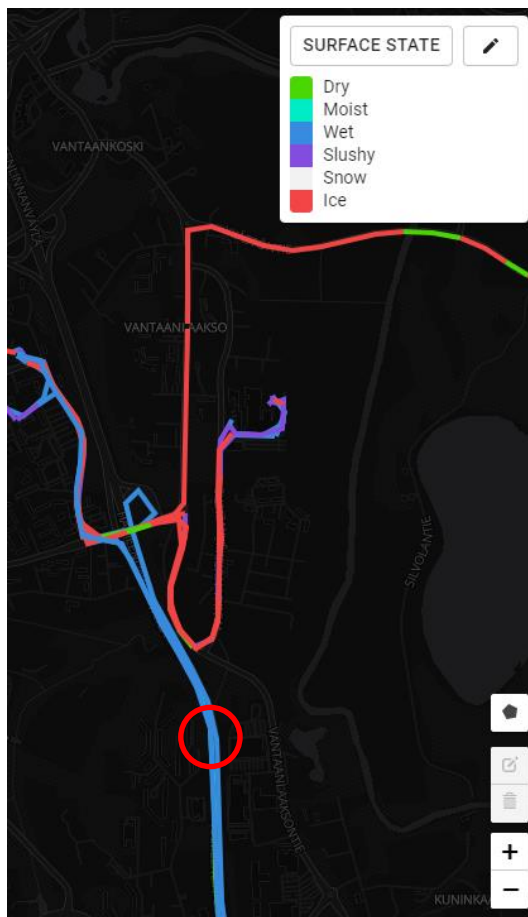
VAISALA

Opening video player

Player loads 5 minutes of data at a time

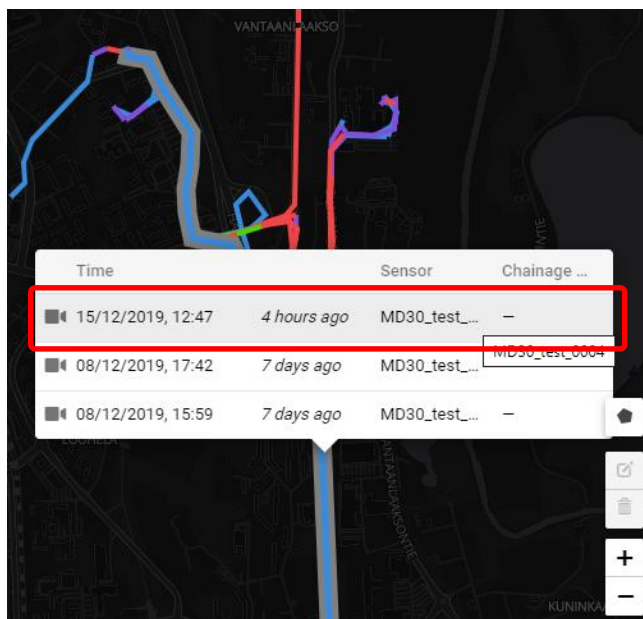
Player continues to next 5 minutes of data automatically

Select desired route spot

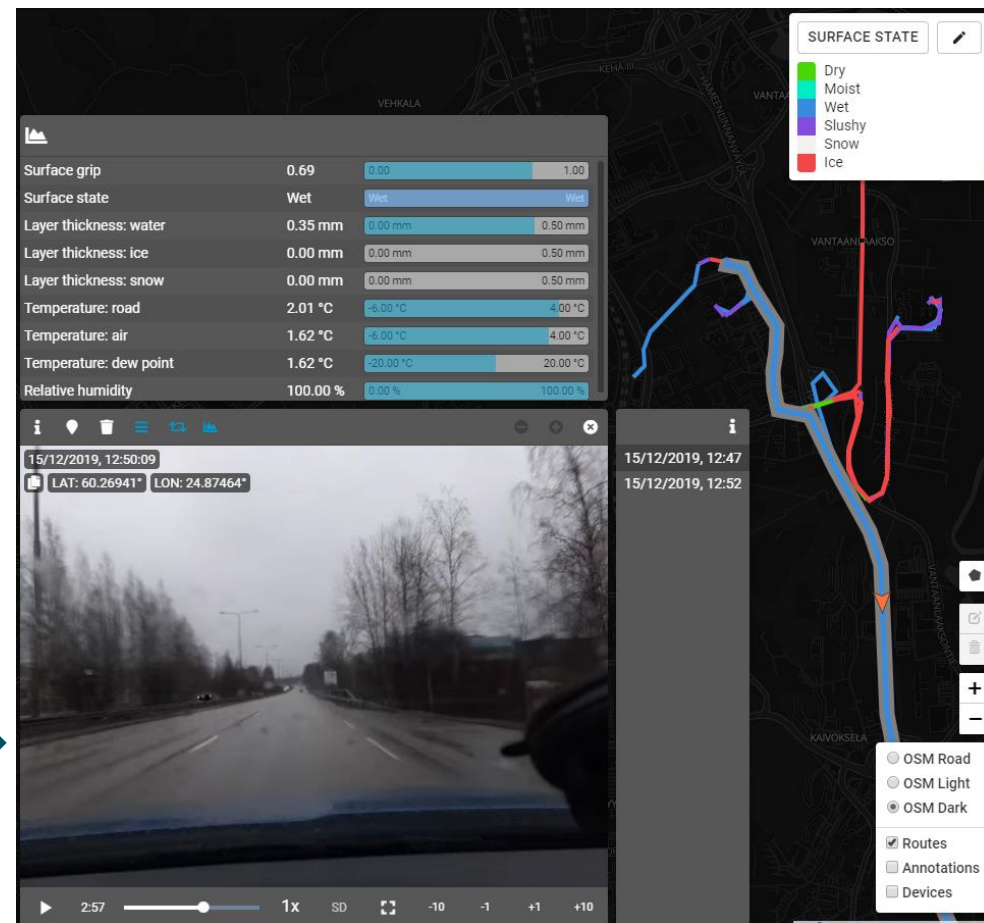


Popup menu opens if multiple drives exist on that spot during selected time filter

Select desired drive from popup menu (latest drive is shown on top)



Video player with MD30 data overlay table opens



Understanding video player buttons

Toggle button between table and graph view

MD30 data can be showed in table (all parameters) or in graph (one parameter)

Info button

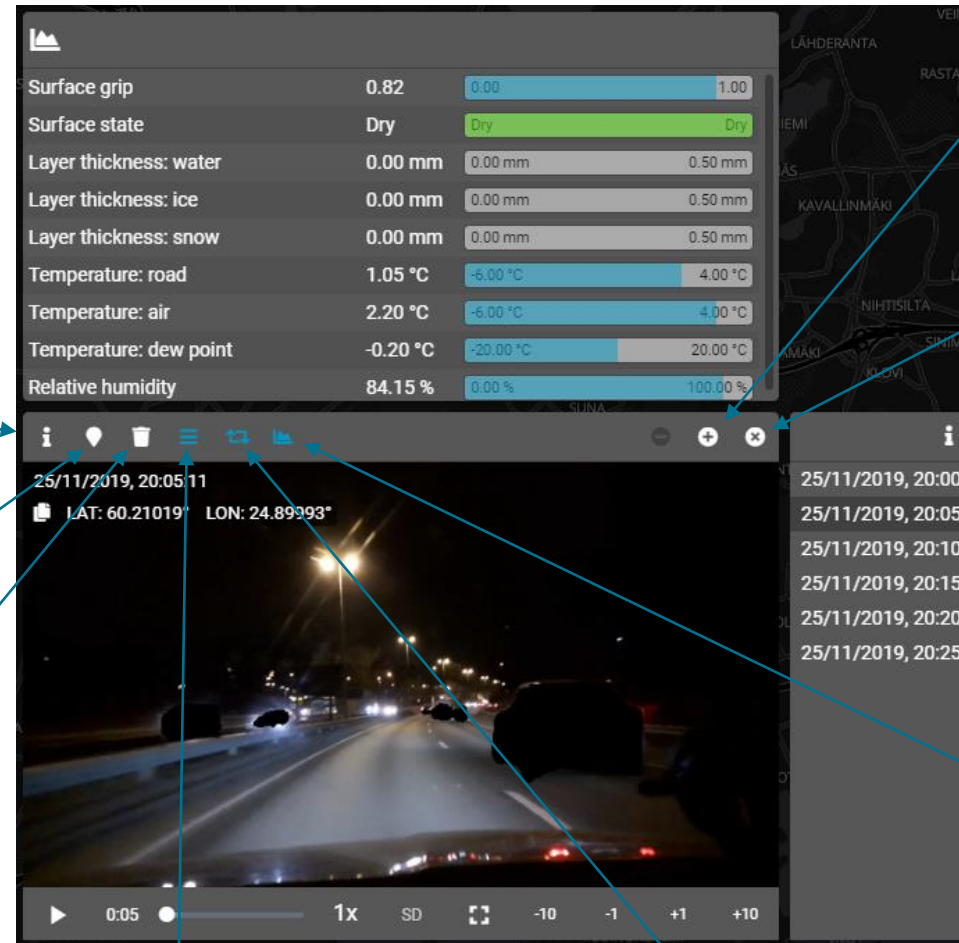
Shows details of 5-minute file (for example, username and drive length)

Location button

Centers map to location where vehicle is

Delete button

Admin can delete unnecessary data files



Playlist button

Shows / hides playlist of 5-minute files on right side of video

Autoplay button

Enables / disables feature to continue to next video after first ends

Player size +/- buttons

Changes video player size

Close player button

Closes player and MD30 data table

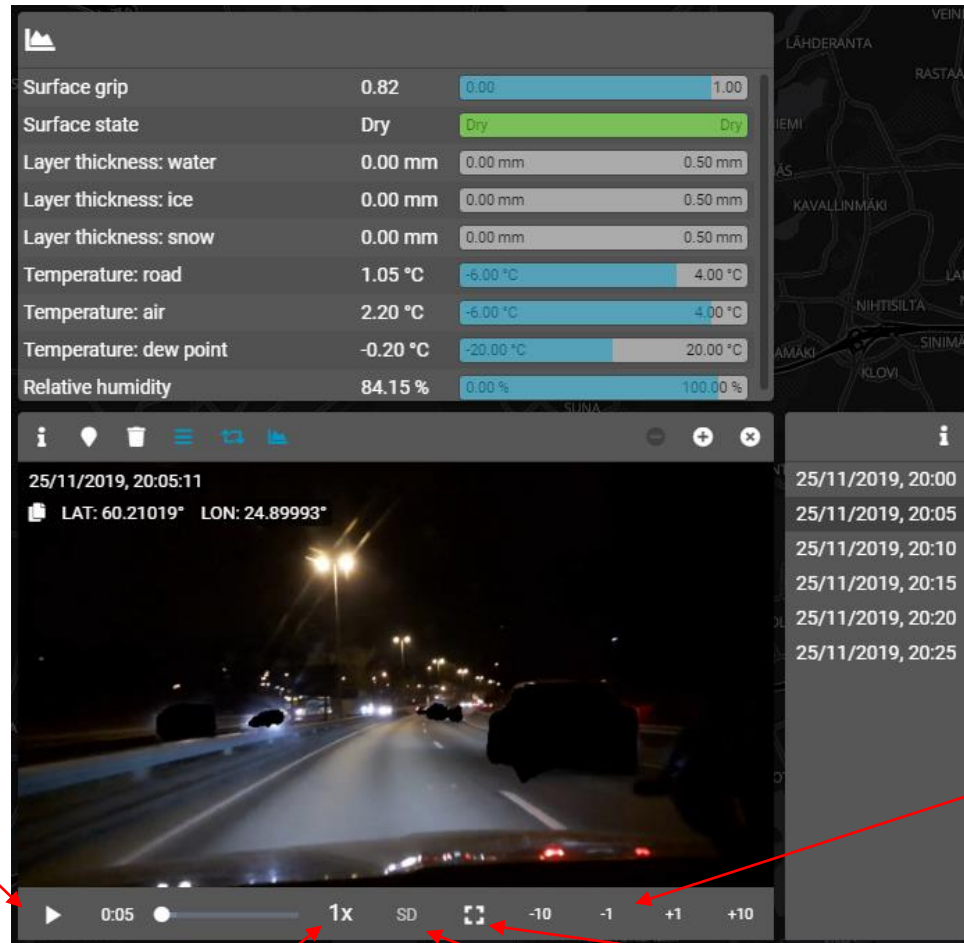
Playlist info button

Shows details of playlist (total duration and length)

Data button

Shows / hides MD30 data table overlay above video

Understanding video player buttons



Play / pause button
Controls video playback

Back / forward 1 or 10 frames
Video playback timestamp fine-tuning on frame level

Video timeline
Duration 0:00 - 5:00

Playback rate button
Video can be played from 5x faster to 10x slower

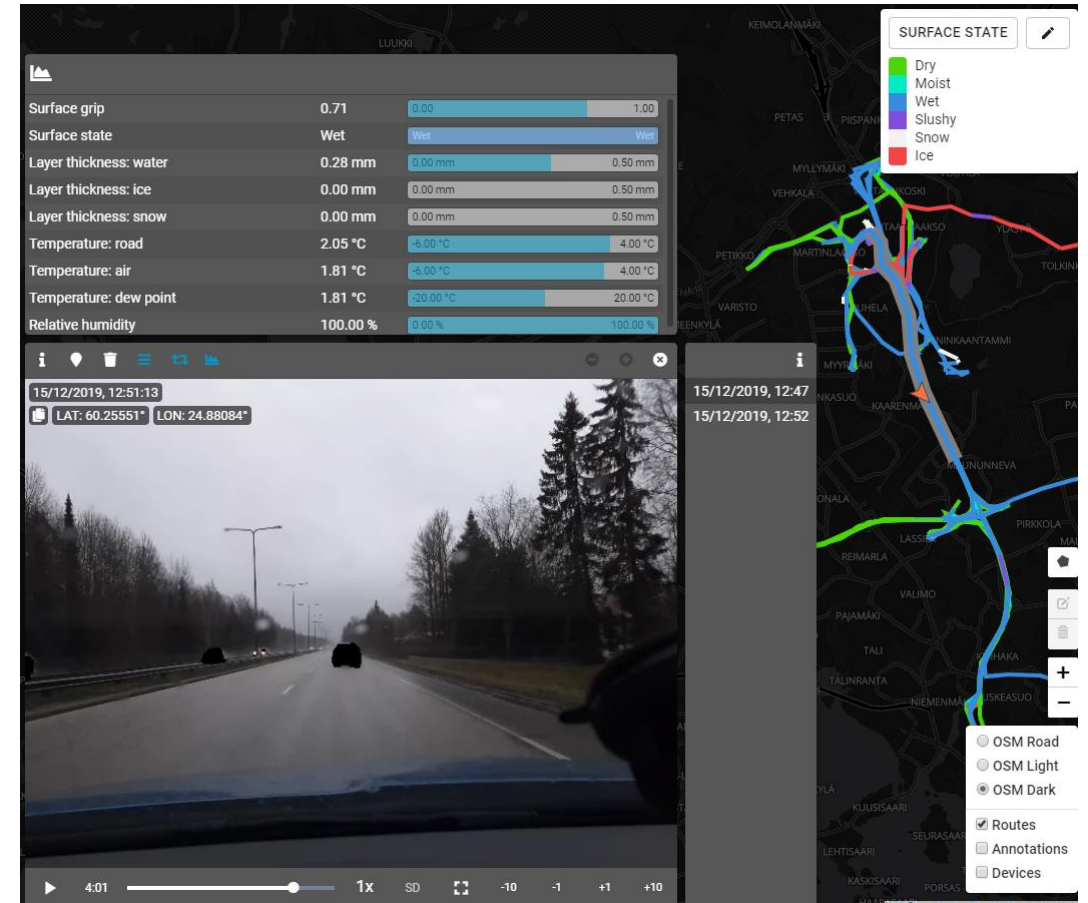
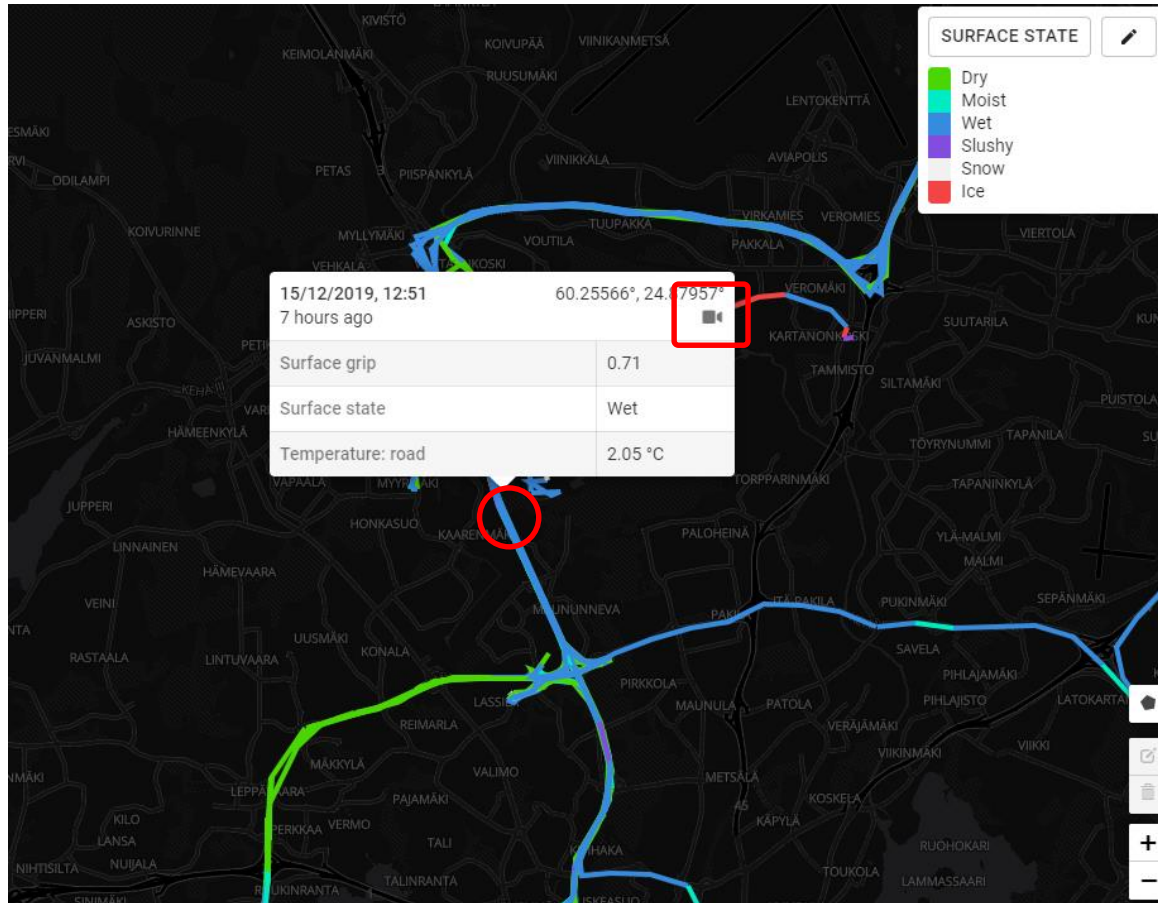
Video quality button
SD (default) or HD quality for playback

Full screen button
Opens video in full screen, no MD30 data is shown

Quick view for MD30 data with right-click on route

Right-click any position on route to open quick summary of key MD30 parameters at that spot

After selecting Camera icon from popup summary, video player opens normally



Note: Photos and videos are anonymized by default

All vehicles and pedestrians are censored with black color overlay based on image recognition algorithms for privacy reasons

The screenshot displays the Vaisala RoadAI interface, which is divided into several sections:

- Top Bar:** Shows 'VAISALA | Data' on the left and 'VIDEOS: 1920X1080...' on the right.
- Data Panel (Left):** A table of sensor data with progress bars for each metric.

Metric	Value	Range
Surface grip	0.82	0.00 - 1.00
Surface state	Moist	Moist
Layer thickness: water	0.04 mm	0.00 mm - 0.50 mm
Layer thickness: ice	0.00 mm	0.00 mm - 0.50 mm
Layer thickness: snow	0.00 mm	0.00 mm - 0.50 mm
Temperature: road	1.67 °C	-6.00 °C - 4.00 °C
Temperature: air	1.65 °C	-6.00 °C - 4.00 °C
Temperature: dew point	1.22 °C	-20.00 °C - 20.00 °C
Relative humidity	96.97 %	0.00 % - 100.00 %
- Video Player (Bottom Left):** Shows a video frame from 27/11/2019, 10:41:00. The video shows a road with several vehicles, all of which are obscured by black rectangular redaction boxes. The video player includes a play button, a progress bar at 1:21, and zoom controls (1x, SD, -10, -1, +1, +10).
- Map (Right):** A map showing the vehicle's path. A legend titled 'SURFACE STATE' indicates: Dry (green), Moist (light blue), Wet (dark blue), Slushy (purple), Snow (white), and Ice (red). The path is color-coded according to these states. A secondary legend at the bottom right shows map styles: OSM Road, OSM Light, OSM Dark, Routes (checked), Annotations, and Devices.
- Timeline (Middle Right):** A vertical list of timestamps: 27/11/2019, 10:39; 27/11/2019, 10:44; 27/11/2019, 10:49; and 27/11/2019, 10:54.

RoadAI online map

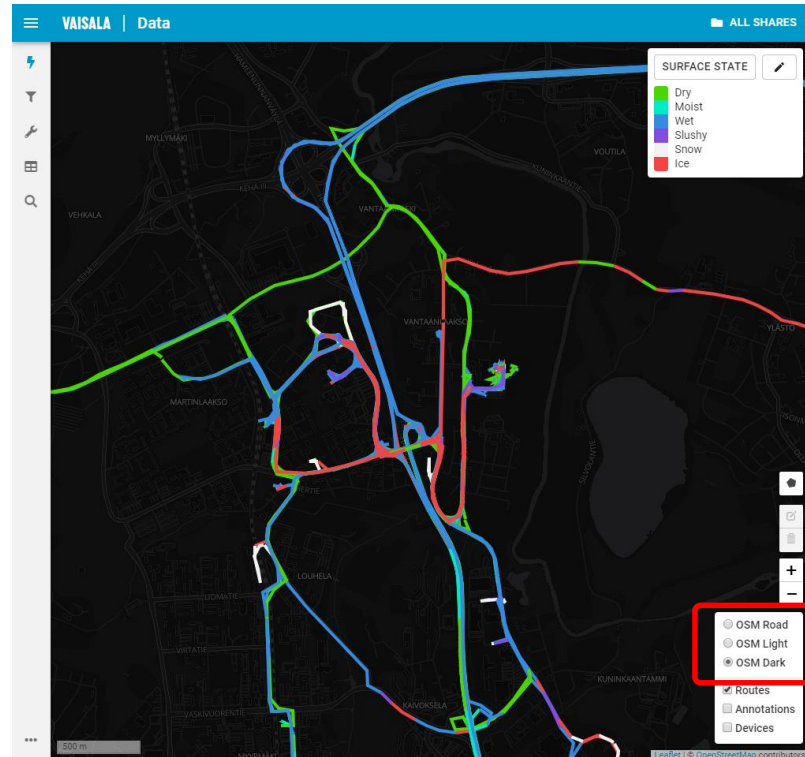
Data view - Changing map and route colors

VAISALA

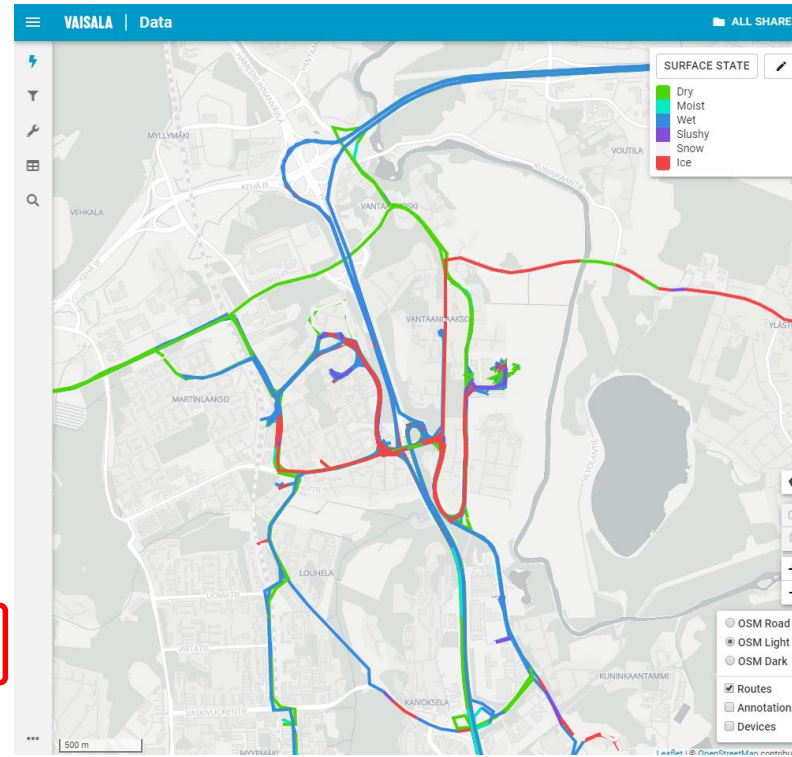
Changing map background color scheme

Map color can be changed from bottom right legend

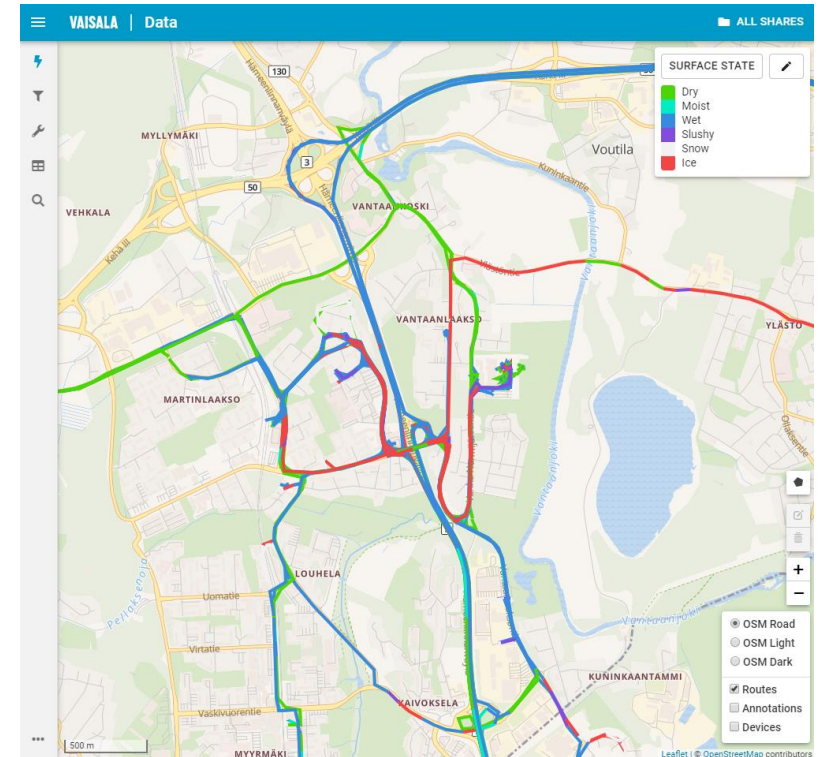
Dark map



Light map



Color map (Road)

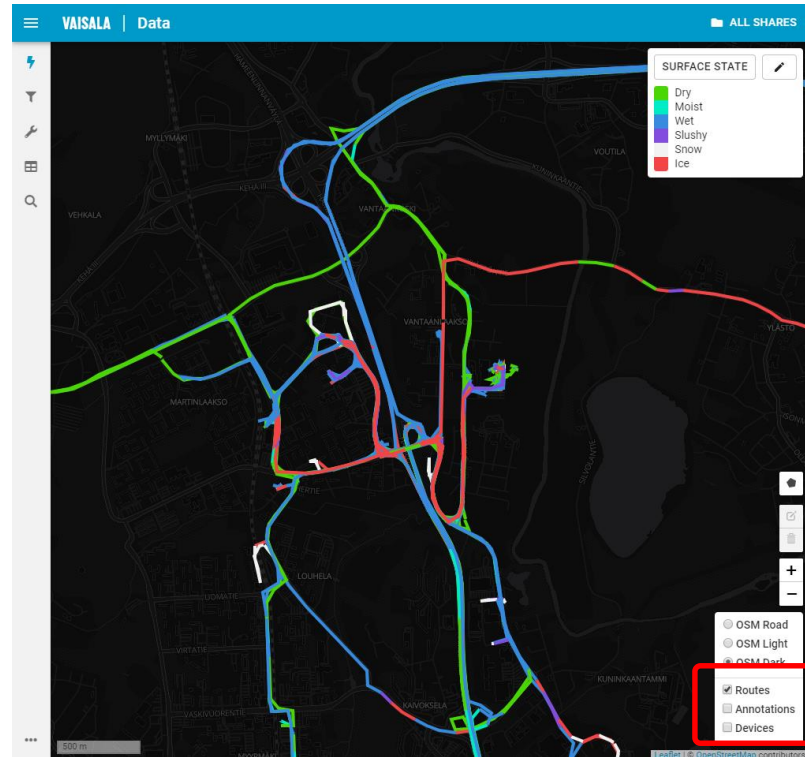


Activating different map layers

Layers can be changed from bottom right legend

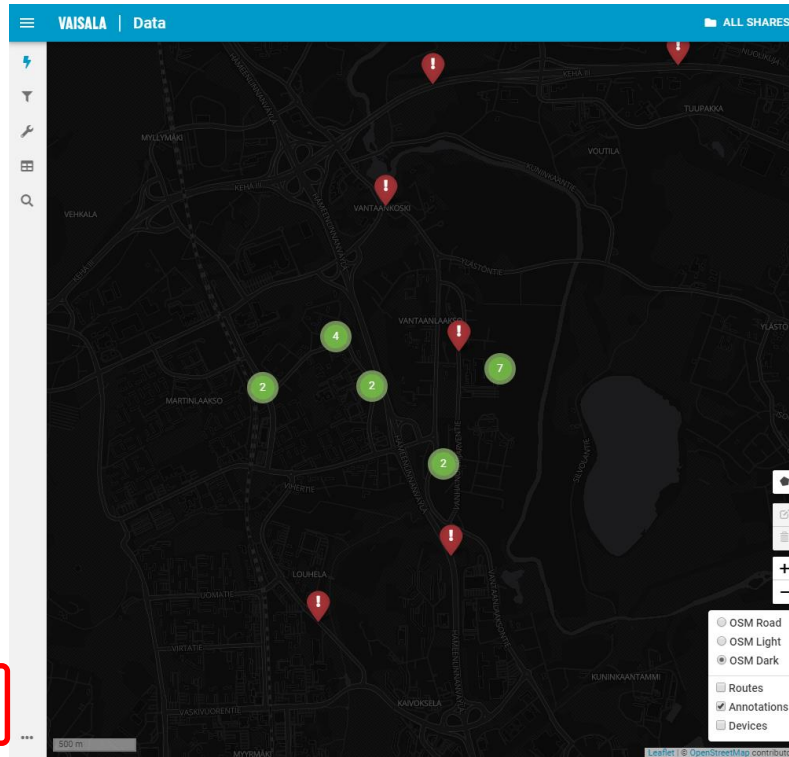
Routes only

Drives recorded with mobile devices



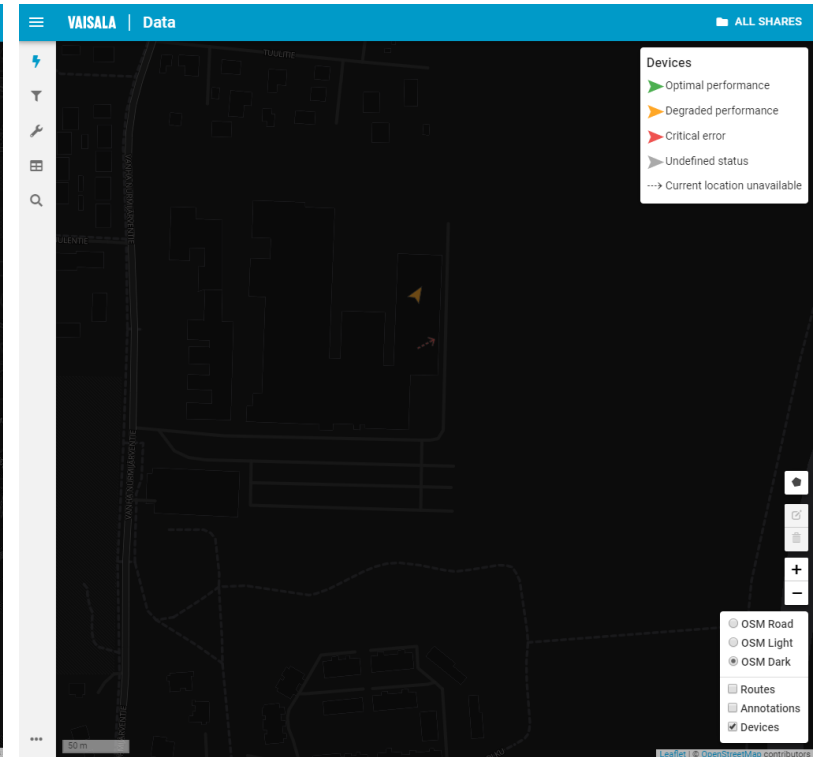
Annotations only

Locations with note markers



Devices only

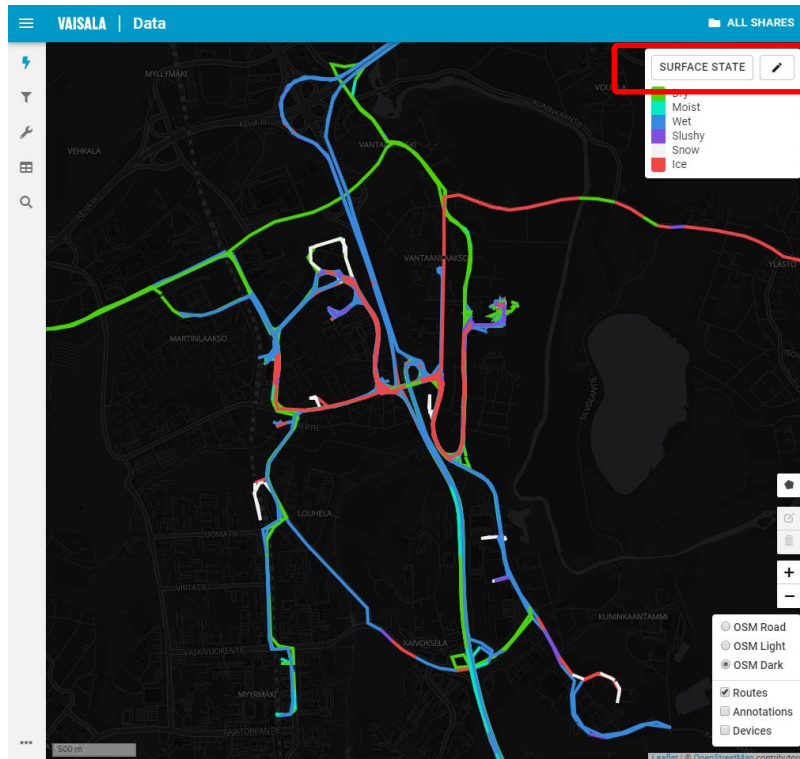
Latest GPS locations from mobile devices



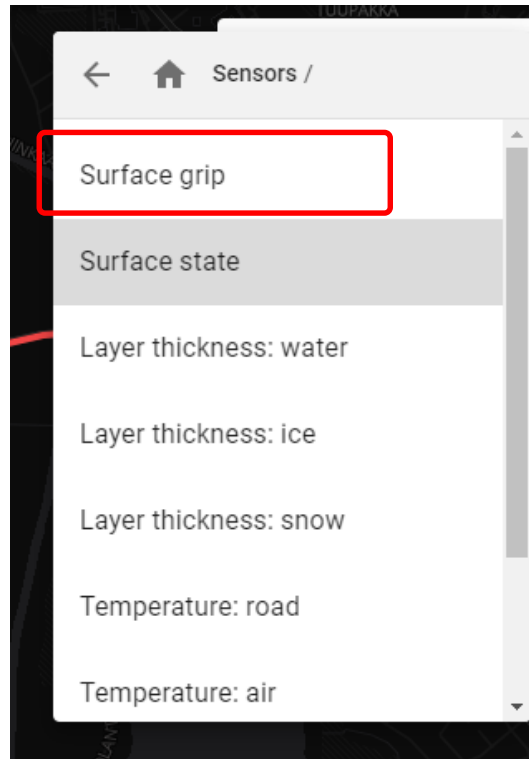
Changing route heatmaps

Heatmaps (of MD30 parameters) can be changed from top right legend

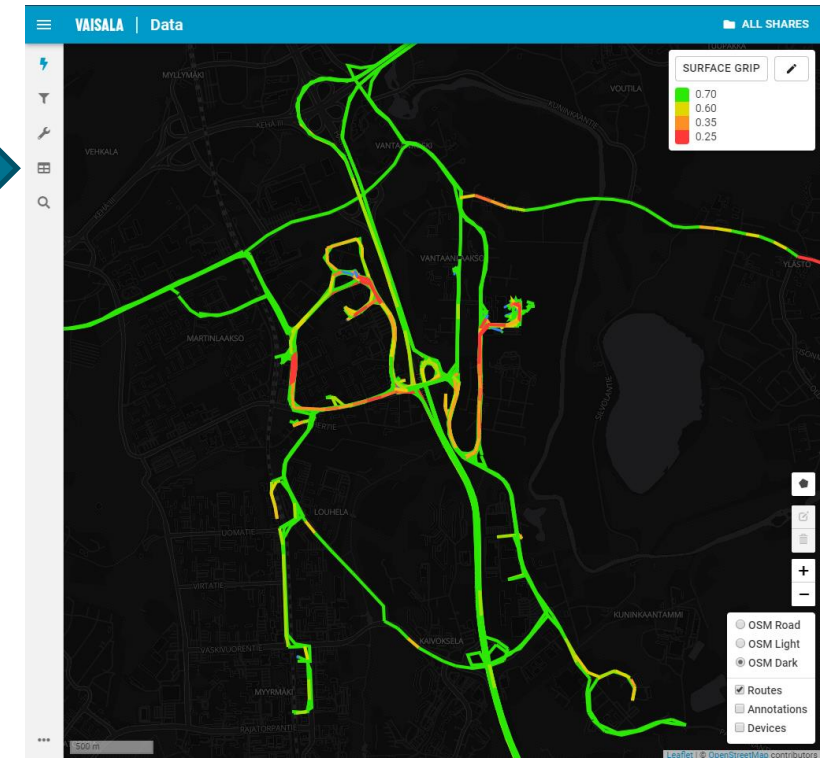
Click heatmap name



Select desired heatmap



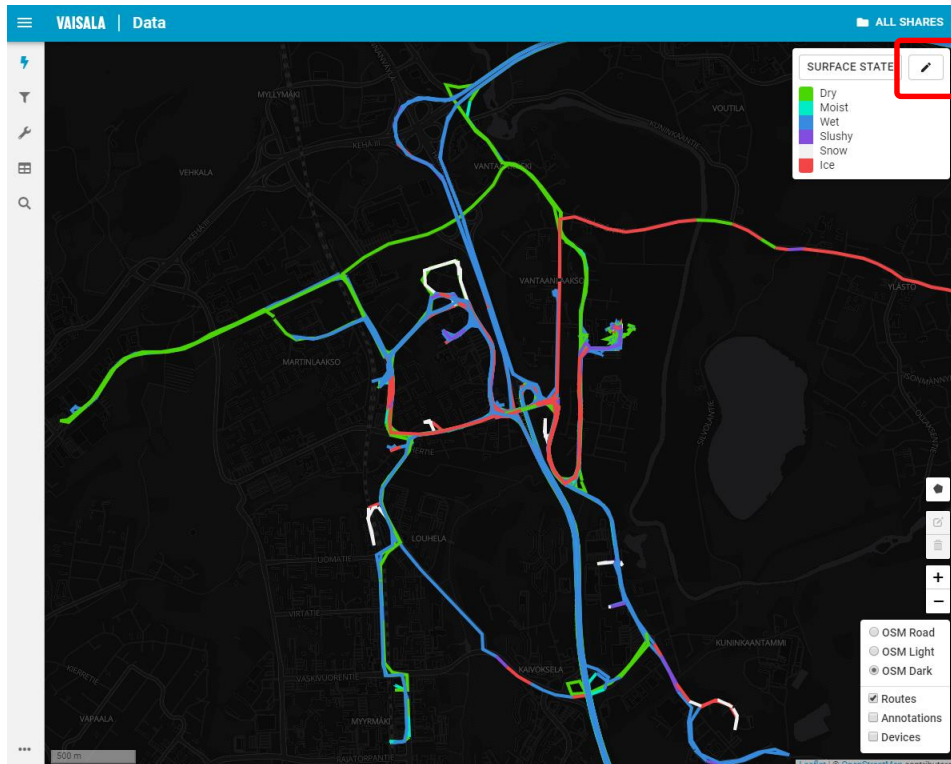
Check results



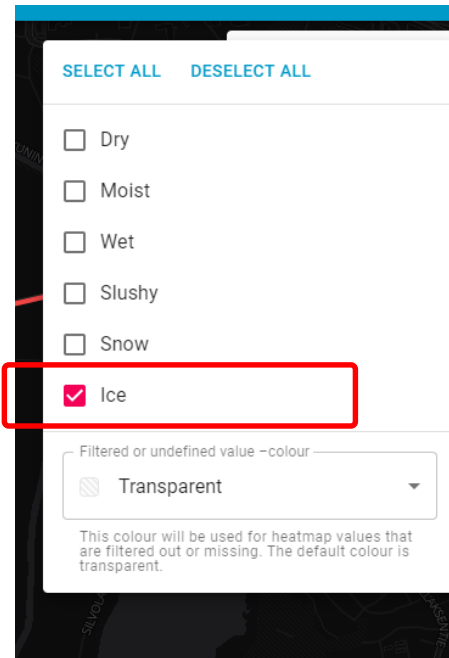
Adjusting heatmap scales

Example: Show only routes with ice

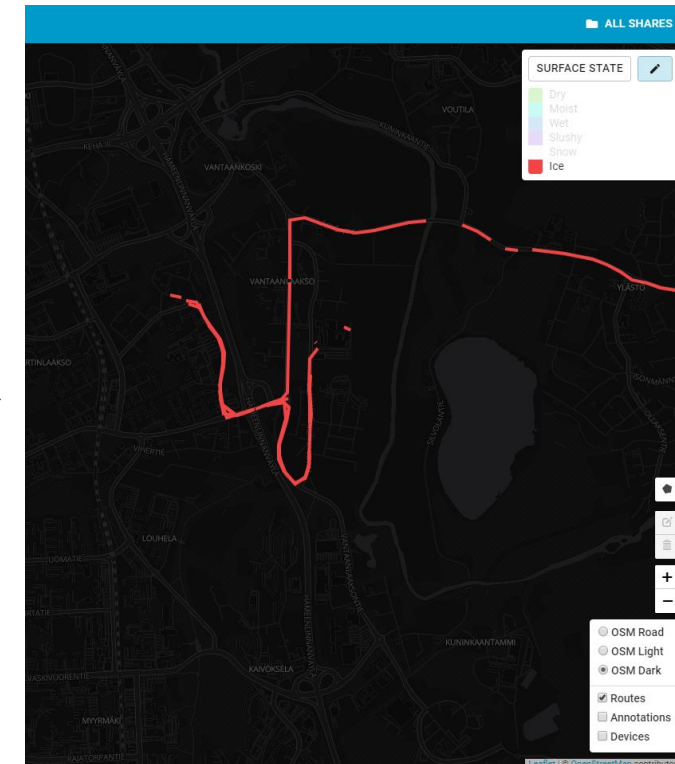
Click "Edit heatmap" from top right



Deselect desired parameters



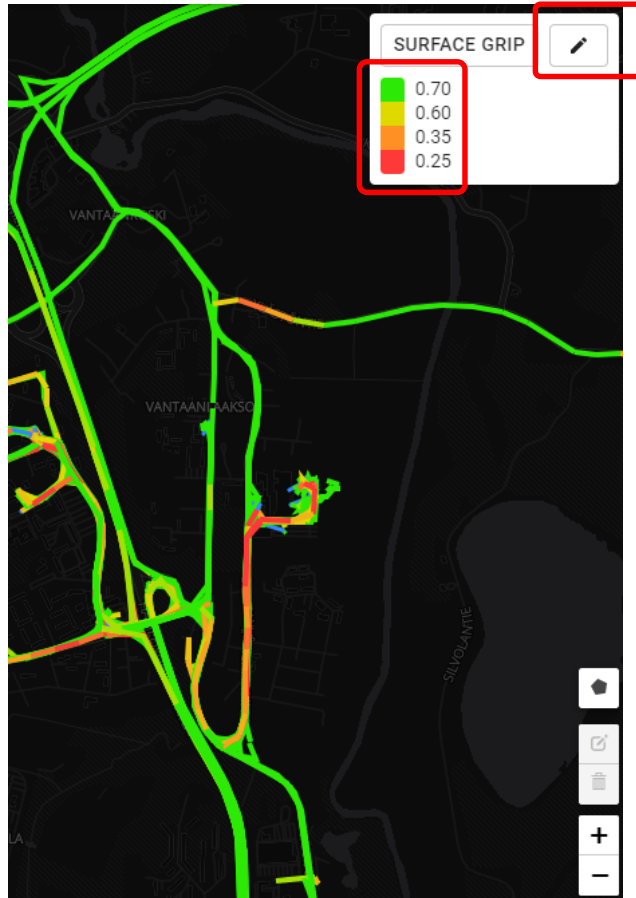
Check results



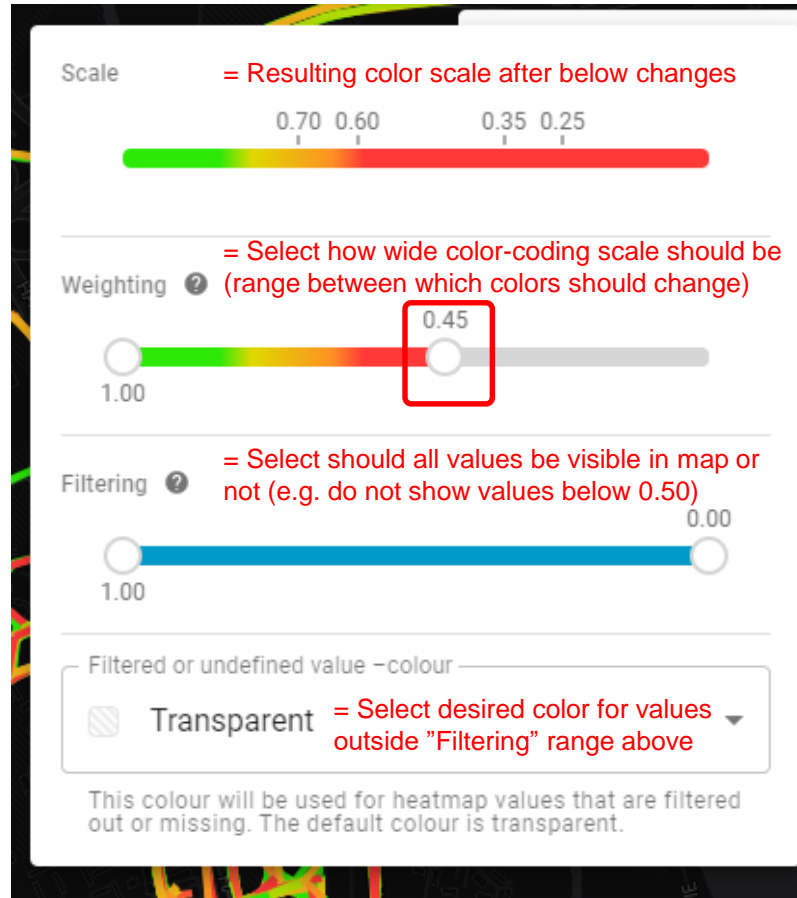
Adjusting heatmap scales

Example: Change grip scale from "red = all below 0.25" to "red = all below 0.60"

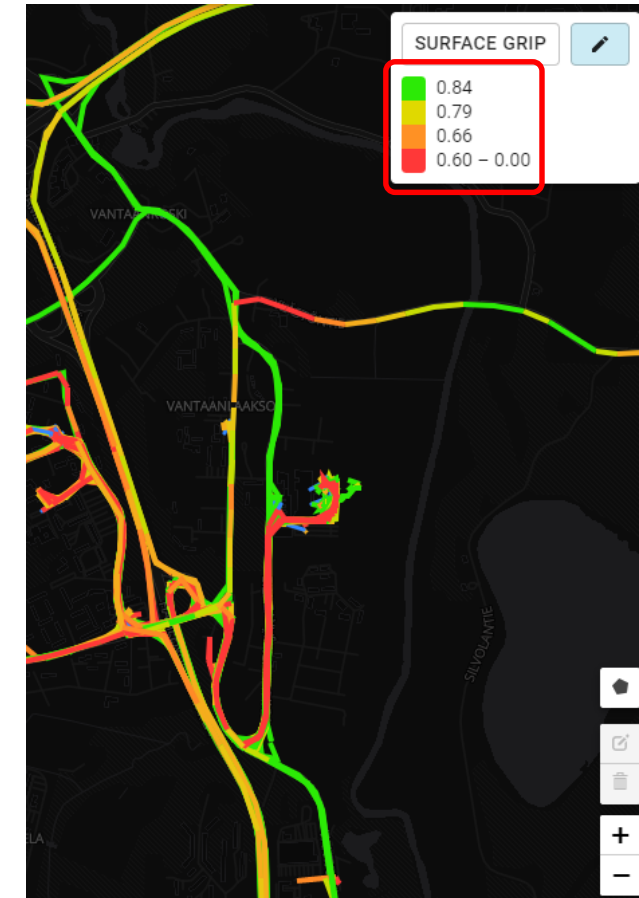
Select "Edit heatmap"



Adjust weighting and filtering sliders



Check results



Questions?

Contact helpdesk@vaisala.com

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