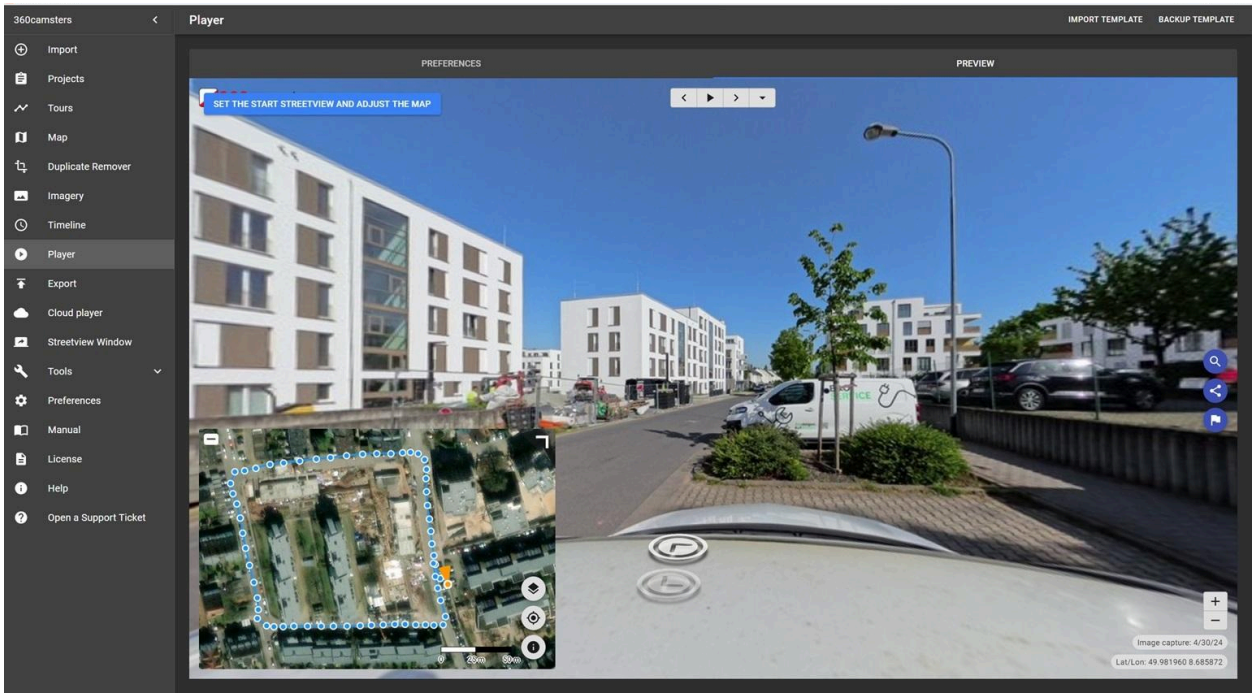
360camsters

Manual

version 2.3.12



360camsters works with the following cameras:

insta360 X5	Mosaic 51
insta360 X4	Mosaic X
insta360 X3	nctech iSTAR Pulsar
insta360 X2	Labpano Pilot One EE
insta360 Pro 2	FLIR Ladybug 5
insta360 Pro	FLIR Ladybug 6
insta360 Titan	**All equirectangular (panoramic) jpg files up to 32k with EXIF metadata.**
Applied Streetview	

Table of Contents

Free Evaluation
Updates
Plans and Pricing
Supported 360 cameras
Setup
Quick Guides
- insta360 X4
- insta360 X3
- insta360 X2
- insta360 Titan
- insta360 Pro 2
- Applied Streetview
- Mosaic 51 and Mosaic X

Basics
Workflow
- Projects
- Tours
- Map
  - Keyboard shortcuts
- Duplicate Remover
- Imagery
- Timeline
- Player
- Export
- Cloud Player
- Streetview Window
- Tools
- Preferences
- Manuals
- License
- Help

Open a Support Ticket
About 360camsters

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Free Evaluation Download

The **360camsters** program is available for free for testing!
Download it now for fee.

Use your own recordings. Or give our test-data a try.

Forever Player

Players created with **360camsters** continue to work, even when your license expires.

Updates

2.x Highlights

- Added support for insta360 **X4**, insta360 **X3**, insta360 **X2**, insta360 **Pro**, insta360 **Pro2**, insta360 **Titan** cameras.
- Added support for the Applied Streetview 8k+ 360 camera.
- Works with all equirectangular panoramas up to 32k by any 360 camera.
- For Windows 11 PCs.
- A NVIDIA graphics card speeds things up considerably.
- Compatible with all previous 360camsters project backups.
- New tiles format.

2.0 Fixes

- Tour names: A tour name now matches the source name for easy recognition.
- Backup and Restore works for extremely large projects. Also is faster.
- Import is a lot faster for large resolution panoramas.
- Improved user interface (UI).

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Plans and Pricing

Free Evaluation

Works for 10 days.
All features are enabled!
Download.

Advantages

- Free!
- Optional one-click-publishing to the Amazon AWS cloud works out-of-the-box. No Amazon AWS account or setup required.

Limitations

- Watermarks on the streetviews.
- Watermark on the player.
- Amazon cloud: “Frankfurt” AWS region only.
- Works for 10 days.

For a thorough evaluation of all the features get the 30-Day plan.

Subscription plans (best value)

Monthly subscription
Annual subscription

One-time payment plans (do not renew)

30-Day
1-Year

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Supported 360 cameras

All 360 cameras are supported.

You can combine recordings of different manufacturers 360 cameras in the same project! No loss of resolution. Ideal for upgrades.

After the recording first process your recordings with the program that comes with your 360 camera.

Exception: Mosaic51 and Mosaic X camera footage can be stitched directly by 360camsters by integration of Mistika VR.

The following 360 cameras are known to work:

- Insta360 X5
- insta 360 X4
- insta 360 X3
- insta 360 X2
- insta 360 Pro 2
- insta 360 Pro
- insta 360 Titan
- Applied Streetview
- Mosaic 51 Stitching available. No manual processing needed!
- Mosaic X Stitching available. No manual processing needed!
- Labpano Pilot EE
- FLIR Ladybug 5
- FLIR Ladybug 6
- All others: Import a folder of equirectangular panoramas with EXIF metadata.

We recommend downloading our insta360 X4 test footage for the first test.

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Setup

To be done once only.

Download

Download the free **360camsters** program and install it to your Windows 11 PC.

Folders

Create 3 folders: **in**, **out** and **backups**.

Open the **360camsters** program.
Open **Preferences** -> **Folders.**
Set the 3 folders you just created: **in**, **out** and **backups**.

Recommended folders
Additionally you should create these folders to keep your data organized:
Masks, Logos, Export, Player templates.

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Quick Guides

insta360 X4

Testing

For testing and learning please use short recordings.
A 1-minute recording driving around the block by car is ideal.
Having 3 or 4 short recordings of different blocks with some roads recorded twice allows you to test nearly all features. Record a block again the next day to give the Timeline feature a try.

Alternatively download our insta360 X4 test footage.

Camera

Mount

Mount the camera to a vehicle.
Do not use a selfie stick or just hold it in your hand.
Mount it upright, leveled and with the screen-side looking backwards.
Make sure the camera is mounted tight and does not move.
Otherwise the directions of your streetviews and the leveling will be off.
A cheap and easy mount is this magnetic mount. There are many others.

Positioning (GPS)

We recommend the Insta360 GPS Preview Remote for ease of use.
An alternative would be a mobile phone with GPS.
It even has the potential to provide a more accurate position by applying RTK by NTRIP.

Power supply

For long-time recording consider connecting an external power supply via USB.
We recommend the Insta360 X4 Mic Adapter that also provides a downward pointing USB socket for power supply (and charging) only.

Camera settings

Bitrate: 200
Video: 360, 8k/30
Color: Standard

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Recording

Start early.
If you need to record a certain road or area, start at least 100 yards before.
Throwing away streetviews is way faster and easier than having trouble with data because the camera, GPS Preview Remote or mobile phone was still adjusting and not ready.

Keep it simple.
Avoid recording 200 short videos per day. Processing that many files individually with the insta360 Studio program needs way too much time.
Instead record longer videos. E.g. two videos in the morning and two in the afternoon.

Data transfer

Stop recording. Wait at least a minute to be sure all data is saved to the SD card.
Switch off the camera.
Remove the SD card.

PC

Copy all folders from the SD card to the PC.
Alternatively download our insta360 X4 test footage.

insta360 Studio

Download the newest free insta360 Studio program. Install it. Launch it.
The following is valid for insta360 Studio 5.4.3

Drag all files from e.g. the \DCIM\Camera01\ folder into the insta360 Studio program.
For each recording there should be 2 files:
VID_20240529_124405_00_071.**insv** <- **Vid**eo, gps, gyro data.
LRV_20240529_124405_01_071.**lrv** <- **L**ow **R**esolution **V**ideo for streaming live view

Top menu: Edit as "Media", not "Project".
Process each recording separately. Do not combine.

Right-hand menu:
Stabilization Type (top icon):
Direction Lock must be activated.

Stats (5th icon from the top):
Activate "Route" to check the existence of the GPS data.
You should see a track overlay on the screen. After export it will not be visible.

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Sometimes you might get a message similar to this on top of the image, and no track:
NO GPS DATA FROM 00:00 TO 00:02
This means that there is no position data for the first 2 seconds.
Fix this by moving the longer left slider slowly to the right until the track becomes visible.
Then move the shorter left slider to the same position to cut the first few seconds from the recording.

Top menu: Click **Eye icon** to switch from "Reframe" to "360 View" to see the whole recording in 360 mode.

Export now would take a very long time as 30 video frames per second (30 fps) are stitched and exported. Let's adjust this because for streetviews one frame per second usually is sufficient.

Timeshift
Bottom menu: Click the **lightning icon** to activate Timeshift.
Use the sliders to mark the entire video red.
In the new Timeshift slider, select "32", which corresponds to app. "1 frame per second".

Important:
When activating Timeshift, Motion ND is automatically activated too.
Click the **running man** icon to switch Motion ND off.
Otherwise all frames of the exported .mp4 file will be blurry and unusable.

Bottom menu: Export (yellow icon):
Settings:

Export as:	360 video
Bitrate:	200
Resolution:	8192 x 4096 (for fastest processing with the **360camsters** program)
Encoding format:	H.264
Media Type:	Video
Apply:	[X] Export GPX file

Click the **Start Export** button at the bottom.

360camsters

Import
Camera: "insta360 X4"

Recordings: “Choose File”
Pick the mp4 file(s) created by insta360 Studio.
You can import many recordings at once.

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Only .mp4 files are shown.
360camsters expects a .gpx file with the same file name as the .mp4 file in the same folder.
Should the import fail, check if the .gpx file really is there.

Example:
VID_20240430_100306_00_020.**mp4**
VID_20240430_100306_00_020.**gpx**

Project
By default a new project is created. Each .mp4 file becomes a “Tour” of the project.
Alternatively you can pick an existing project to add the new recordings to it.
This even works when the project's previous recordings are by a different manufacturer's 360 camera with a different resolution.

Optionally you can edit the project name.
Optionally you can add a note to your project. You can edit the note later.

Click the **Start** button.

After the initial Import the remaining workflow is the same for all recordings.
Continue with the Workflow chapter.

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insta360 X3

Quick Guide

Testing

For testing and learning please use short recordings.
A 1-minute recording driving around the block by car is ideal.
Having 3 or 4 short recordings of different blocks with some roads recorded twice allows you to test nearly all features. Record a block again the next day to give the Timeline feature a try.

Alternatively download our insta360 X4 test footage.

Camera

Mount

Mount the camera to a vehicle.
Do not use a selfie stick or just hold it in your hand.
Mount it upright, leveled and with the screen-side looking backwards.
Make sure the camera is mounted tight and does not move.
Otherwise the directions of your streetviews and the leveling will be off.
A cheap and easy mount is this magnetic mount. There are many others.

Positioning (GPS)

We recommend the GPS Action Remote for ease of use.
An alternative would be a mobile phone with GPS.
It even has the potential to provide a more accurate position by applying RTK by NTRIP.

Power supply

For long-time recording consider connecting an external power supply via USB.
We recommend the Insta360 X3 Mic Adapter that also provides a downward pointing USB socket for power supply (and charging) only.

Camera settings

Bitrate: 200
Video: 360, 5.7k/30
Color: Standard

Recording

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Start early.
If you need to record a certain road or area, start at least 100 yards before.
Throwing away streetviews is way faster and easier than having trouble with data because the camera, GPS Preview Remote or mobile phone was still adjusting and not ready.

Keep it simple.
Avoid recording 200 short videos per day. Processing that many files individually with the insta360 Studio program needs way too much time.
Instead record longer videos. E.g. two videos in the morning and two in the afternoon.

Data transfer

Stop recording. Wait a minute to be sure all data is saved to the SD card.
Switch off the camera.
Remove the SD card.

PC

Copy all folders from the SD card to the PC.
Alternatively download our insta360 X4 test footage.

insta360 Studio

Download the free insta360 Studio program. Install it. Launch it.

Drag all files from the \DCIM\Camera01\ folder into the insta360 Studio program.
For each recording there should be 3 files:

VID_20240529_113109_**00**_070.**insv**	<- **Vid**eo, gps, gyro data. One lens.
VID_20240529_113109_**10**_070.**insv**	<- **Vid**eo, gps, gyro data. Other lens.
LRV_20240529_113109_11_070.**lrv**	<- **L**ow **R**esolution **V**ideo for preview etc.

Top menu: Edit as "**Media**", not "Project".
Process each recording separately. Do not combine.

Right menu:
Stabilization Type (top icon):
Activate **FlowState Stabilization**
Activate **Direction Lock**

Stats (4th icon from the top):
Activate **Route** to check the existence of the GPS data.
You should see a track overlay on the screen. After export it will not be visible.

Sometimes you might get a message similar to this on top of the image, and no track:

NO GPS DATA FROM 00:00 TO 00:02
This means that there is no position data for the first 2 seconds.
Fix this by moving the longer left slider slowly to the right until the track becomes visible.
Then move the shorter left slider to the same position to cut the first few seconds from the recording.

Top menu: Switch from "Reframe" to "**360 View**" (Eye icon) to see the whole recording in 360 mode.

Bottom menu: Export (yellow icon):

Settings:	Export 360 video
Bitrate:	200
Resolution:	8192 x 4096 (allows for the quickest processing with **360camsters**)
Encoding format:	H.264
Tick:	[X] Export GPX file

This would take a very long time as 30 video frames per second (30 fps) are stitched and exported. Let's adjust this because for streetviews one frame per second is sufficient.

Timeshift
Bottom menu: Click on the **Timeshift** icon. (Lightning icon).
Use the sliders to mark the entire video red.
In the new Timeshift slider, select e.g "32", which corresponds to app. "1 frame per second".

Important:
When activating Timeshift, "Motion ND" is automatically activated too.
Switch "Motion ND" off with the "running man" icon to the right of the Time Shift icon.
Otherwise all frames of the exported .mp4 file will be blurry and unusable.

Start Export

360camsters

Import
Camera: "insta360 X3"

Recordings
Click **Choose File**.
Pick the mp4 file(s) created by insta360 Studio.
You can import many recordings at once.

Only .mp4 files are shown.
360camsters expects a .gpx file with the same file name as the .mp4 file in the same folder.

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Should the import fail, check if the .gpx file really is there.

Example:
VID_20240430_100306_00_020.**mp4**
VID_20240430_100306_00_020**.gpx**

Project
By default a new project is created. Each .mp4 file becomes a “Tour” of the project.
Alternatively you can pick an existing project to add the new recordings to it.
This even works when the project's previous recordings are by a different manufacturer's 360 camera and have a different resolution.

Optionally you can edit the project name.
Optionally you can add a note to your project. You can edit the note later.

Click the **Start** button.

After the initial Import the remaining workflow is the same for all recordings.
Continue with the Workflow chapter.

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insta360 X2

Quick Guide

Testing

For testing and learning please use short recordings.
A 1-minute recording driving around the block by car is ideal.
Having 3 or 4 short recordings of different blocks with some roads recorded twice allows you to test nearly all features. Record a block again the next day to give the Timeline feature a try.

Alternatively download our insta360 X4 test footage.

Camera

Mount

Mount the insta360 X2 camera to a vehicle.
Do not use a selfie stick or just hold it in your hand.
Mount it upright, leveled and with the screen-side looking backwards.
Make sure the camera is mounted tight and does not move.
Otherwise the directions of your streetviews and the leveling will be off.
A cheap and easy mount is this magnetic mount. There are many others.

Positioning (GPS)

We recommend the GPS Action Remote for ease of use.
An alternative would be a mobile phone with GPS.
It even has the potential to provide a more accurate position by applying RTK by NTRIP.

Power supply

For long-time recording consider connecting an external power supply via USB.

Camera settings

Bitrate: 200
Video: 360, 5.7k/30
Color: Standard

Recording

Start early.

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If you need to record a certain road or area, start at least 100 yards before.
Throwing away streetviews is way faster and easier than having trouble with data because the camera, GPS Preview Remote or mobile phone was still adjusting and not ready.

Keep it simple.
Avoid recording 200 short videos per day. Processing that many files individually with the insta360 Studio program needs way too much time.
Instead record longer videos. E.g. two videos in the morning and two in the afternoon.

Data transfer

Stop recording. Wait a minute to be sure all data is saved to the SD card.
Switch off the camera.
Remove the SD card.

PC

Copy all folders from the SD card to the PC.
Alternatively download our insta360 X4 test footage.

insta360 Studio

Download the free insta360 Studio program. Install it. Launch it.

Drag all files from the \DCIM\Camera01\ folder into the insta360 Studio program.
For each recording there should be 3 files:

VID_20220519_133942_**00**_011.insv	<- **Vid**eo, gps, gyro data. One lens.
VID_20220519_133942_**10**_011.insv	<- **Vid**eo, gps, gyro data. Other lens.
LRV_20220519_133942_**11**_011.insv	<- **L**ow **R**esolution **V**ideo for preview etc.

Top menu: Edit as "Media", not "Project".
Process each recording separately. Do not combine.

Right menu: "Stats" (4th icon from the top):
Activate "Route" to check the existence of the GPS data.
You should see a track overlay on the screen. After export it will not be visible.

Sometimes you might get a message similar to this on top of the image, and no track:
NO GPS DATA FROM 00:00 TO 00:02
This means that there is no position data for the first 2 seconds.
Fix this by moving the longer left slider slowly to the right until the track becomes visible.
Then move the shorter left slider to the same position to cut the first few seconds from the recording.

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Top menu: Switch from "Reframe" to "360 View" (Eye icon) to see the whole recording in 360 mode.

Bottom menu: Export (yellow icon):
Settings:
Export 360 video
Bitrate: 200
Resolution: 8192 x 4096 (allows for the quickest processing with **360camsters**)
Encoding format: H.264
Tick: [X] Export GPX file

This would take a very long time as 30 video frames per second (30 fps) are stitched and exported. Let's adjust this because for streetviews one frame per second is sufficient.

Timeshift
Bottom menu: Click on the Timeshift icon. (Lightning icon).
Use the sliders to mark the entire video red.
In the new Timeshift slider, select e.g "32", which corresponds to app. "1 frame per second".

Important:
When activating Timeshift, "Motion ND" is automatically activated too.
Switch "Motion ND" off with the "running man" icon to the right of the Time Shift icon.
Otherwise all frames of the exported .mp4 file will be blurry and unusable.

Start Export

360camsters

Import
Camera: "insta360 X2"

Recordings
Click **Choose File**.
Pick the mp4 file(s) created by insta360 Studio.
You can import many recordings at once.

Only .mp4 files are shown.
360camsters expects a .gpx file with the same file name as the .mp4 file in the same folder.
Should the import fail, check if the .gpx file really is there.

Example:
VID_20220519_133942_**00**_011.**mp4**
VID_20220519_133942_**00**_011.**gpx**

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Project
By default a new project is created. Each .mp4 file becomes a “Tour” of the project.
Alternatively you can pick an existing project to add the new recordings to it.
This even works when the project's previous recordings are by a different manufacturer's 360 camera and have a different resolution.

Optionally you can edit the project name.
Optionally you can add a note to your project. You can edit the note later.

Click the **Start** button.

After the initial Import the remaining workflow is the same for all recordings.
Continue with the Workflow chapter.

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insta360 Titan

Quick Guide

Testing

For testing and learning please use short recordings.
A 1-minute recording driving around the block by car is ideal.
Having 3 or 4 short recordings of different blocks with some roads recorded twice allows you to test nearly all features. Record a block again the next day to give the Timeline feature a try.

Camera

Mount

Mount the camera to a vehicle.
Mount it upright, leveled and the correct camera looking forward.
Make sure the camera is mounted properly and does not move.
Otherwise the directions of your streetviews and the leveling will be off.

Positioning (GPS)

Ensure you have a GPS lock.

Power supply

For long-time recording consider additional insta360 Titan batteries.

Recording

Start early.
If you need to record a certain road or area, start at least 100 yards before.
Throwing away streetviews is way faster and easier than having trouble with data when processing because the equipment was still adjusting and not ready.

Keep it simple.
Avoid recording 200 short videos per day. Processing that many files individually with the insta360 Studio program needs way too much time.
Instead record longer videos. E.g. two videos in the morning and two in the afternoon.

Data transfer

Stop recording. Wait a minute to be sure all data is saved to the 9 SD cards.

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Switch off the camera.
Remove the 9 SD cards.

PC

Save all the files from the 9 SD cards to the same folder on your PC.

Files list for a single recording:
origin_1.mp4
origin_1_lrv.mp4
origin_1-01.tif
origin_2.mp4
origin_2_lrv.mp4
origin_2-01.tif
origin_3.mp4
origin_3_lrv.mp4
origin_3-01.tif
origin_4.mp4
origin_4_lrv.mp4
origin_4-01.tif
origin_5.mp4
origin_5_lrv.mp4
origin_5-01.tif
origin_6.mp4
origin_6_lrv.mp4
origin_6-01.tif
origin_7.mp4
origin_7_lrv.mp4
origin_7-01.tif
origin_8.mp4
origin_8_lrv.mp4
origin_8-01.tif
preview.mp4
pro.prj

Insta360 Pro STITCHER

Download the Insta360 Pro STITCHER 4.0 (as of June 2024) program.
Install it. Launch it.

Drag the folder (**NOT the files**) from the PC into the Insta360 Pro STITCHER program.

To be added.

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Import

Camera: "insta360 Titan"

To be added.

After the initial Import the remaining workflow is the same for all recordings.
Continue with the Workflow chapter.

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insta360 Pro 2

Quick Guide

Testing

For testing and learning please use short recordings.
A 1-minute recording driving around the block by car is ideal.
Having 3 or 4 short recordings of different blocks with some roads recorded twice allows you to test nearly all features. Record a block again the next day to give the Timeline feature a try.

Camera

Mount

Mount the camera to a vehicle.
Mount it upright, leveled and the correct camera looking forward.
Make sure the camera is mounted properly and does not move.
Otherwise the directions of your streetviews and the leveling will be off.

Positioning (GPS)

Ensure you have a GPS lock.

Power supply

For long-time recording consider connecting an external power supply.
See: https://onlinemanual.insta360.com/pro2/en-us/basic/prepare/adjustment

Recording

Start early.
If you need to record a certain road or area, start at least 100 yards before.
Throwing away streetviews is way faster and easier than having trouble with data when processing because the equipment was still adjusting and not ready.

Keep it simple.
Avoid recording 200 short videos per day. Processing that many files individually with the insta360 Studio program needs way too much time.
Instead record longer videos. E.g. two videos in the morning and two in the afternoon.

Data transfer

Stop recording. Wait a minute to be sure all data is saved to the SD cards.

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Switch off the camera.
Remove the SD cards.

PC

Save all the files from the SD cards to the same folder on your PC.

Files list for a single recording:
origin_1.mp4
origin_1_lrv.mp4
origin_2.mp4
origin_2_lrv.mp4
origin_3.mp4
origin_3_lrv.mp4
origin_4.mp4
origin_4_lrv.mp4
origin_5.mp4
origin_5_lrv.mp4
origin_6.mp4
origin_6_lrv.mp4
preview.mp4
pro.prj

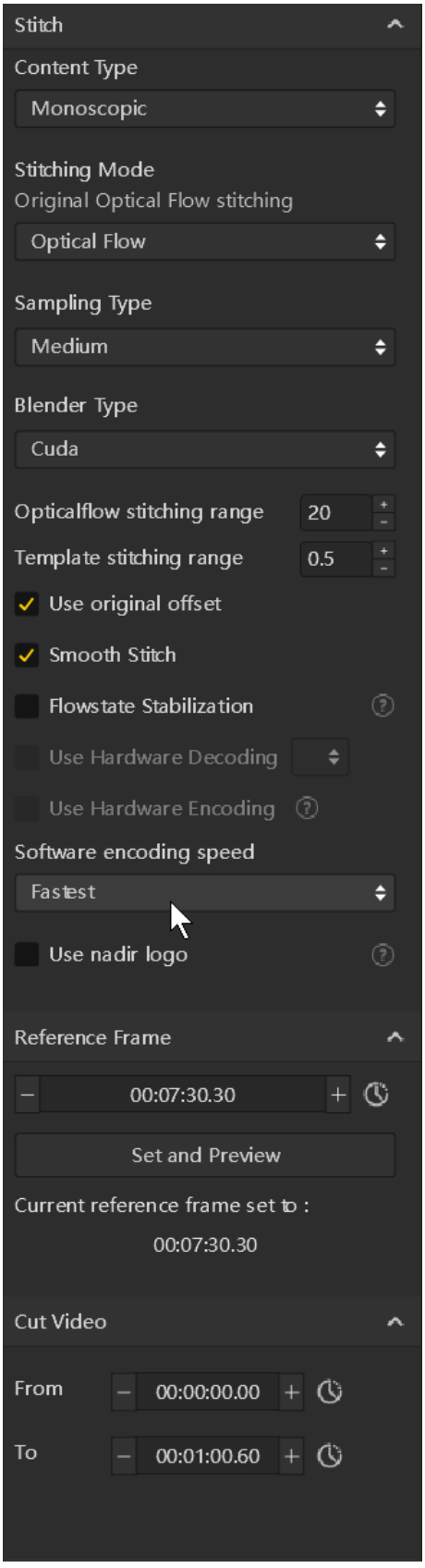
Insta360 Pro STITCHER

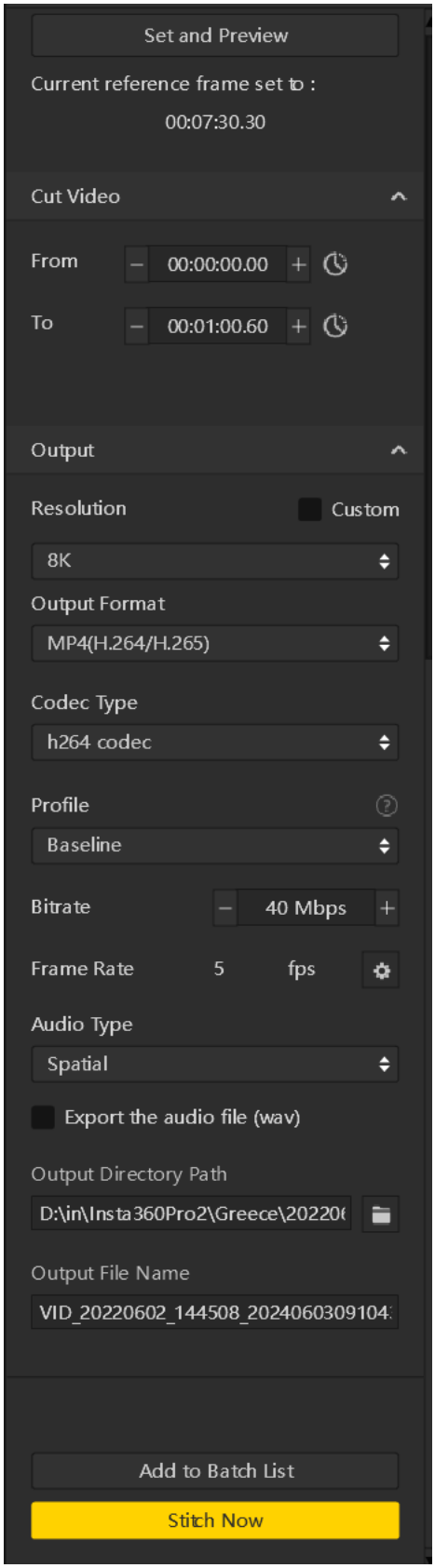
Download the Insta360 Pro STITCHER 4.0 (as of June 2024) program.
Install it. Launch it.

Drag the folder (**NOT the files**) from the PC into the Insta360 Pro STITCHER program.
Process into a .mp4 file of 8k resolution.

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Settings that worked for our PC:





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Import
Camera: "insta360 Pro 2"

Recordings
Click **Choose File**.
Pick the mp4 file(s) created by insta360 Stitcher.
You can import many recordings at once.

Project
By default a new project is created. Each .mp4 file becomes a “Tour” of the project.
Alternatively you can pick an existing project to add the new recordings to it.
This even works when the project's previous recordings are by a different manufacturer's 360 camera and have a different resolution.

Optionally you can edit the project name.
Optionally you can add a note to your project. You can edit the note later.

Click the **Start** button.

After the initial Import the remaining workflow is the same for all recordings.
Continue with the Workflow chapter.

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Applied Streetview

Quick Guide

Testing

For testing and learning please use short recordings.
A 1-minute recording driving around the block by car is ideal.
Having 3 or 4 short recordings of different blocks with some roads recorded twice allows you to test nearly all features. Record a block again the next day to give the Timeline feature a try.

Alternatively download our Applied Streetview test footage.

Camera

Mount

See the Camera manual for how to mount the camera properly.

Positioning (GPS)

See the Camera manual for how to mount the GNSS-aided INS (“GPS receiver”).
See the Alignment manual for custom GPS antenna positioning.
See the RTK manual for optional RTK by NTRIP setup.

Power supply

For long-time recording use the mobile Uninterruptible Power Supply (mUPS). Inquiry.

Recording

Start early.
If you need to record a certain road or area, start at least 100 yards before.

Keep it simple.
Avoid recording 200 short tour per day. Processing that many tours is a time consuming mess. Instead record longer tours. E.g. a tour in the morning and a tour in the afternoon. You can always delete (de-activate) unwanted panoramas in the Applied Streetview Creator program.

Data transfer

See the Remote Control manual for how to remove the SSD with the recordings.

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PC

See the Creator manual.how to handle the recordings.

Creator

See the Creator manual for how to process the recordings.

360camsters

Import

Camera: "Applied Streetview"

Recordings

Click **Choose File**.

Pick the /projectname/panoramas/ folder created by the Creator program.

Or import a parent folder with many subfolders containing the panoramas. Each subfolder becomes a tour.

Project

By default a new project is created. Each folder becomes a “Tour” of the project.

Alternatively you can pick an existing project to add the new recordings to it.

This even works when the project's previous recordings are by a different manufacturer's 360 camera and have a different resolution.

Optionally you can edit the project name.

Optionally you can add a note to your project. You can edit the note later.

Click the **Start** button.

After the initial Import the remaining workflow is the same for all recordings.

Continue with the Workflow chapter.

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Mosaic 51 and Mosaic X

Quick Guide

For the **Mosaic 51** and **Mosaic X** cameras the **360camsters** program offers optional stitching with the **SGO Mistika VR** program. This means you do not need to operate a third-party program at all. Just select your recording files and watch it all happen.

In case you already processed your recordings into “Equirectangular jpg files with EXIF metadata” you can skip the installation of Mistika VR.
Instead when importing pick: Camera: **Folder of jpg Panoramas**.

Mistika VR Setup

To be done once only.

With it **360camsters** will automatically import and stitch the Mosaic 51 or Mosaic X recordings for you.

We recommend signing up at the SGO website with your **email address** and **password**.
Avoid the **Continue with Google** option. In our experience it’s troublesome later when you need to log into your SGO account in the SGO Activation Manager program.

Mistika VR Savings Options
https://www.mosaic51.com/featured/free-mistika-vr-trial-for-mosaic/
https://www.sgo.es/product/mistika-vr-professional-edition-90-day-license-mosaic-51-special-promotion/

Alternative
Purchase one of the many subscriptions or one-time licenses. The cheapest working option is the Monthly Subscription – Personal Edition for 49 Euro.
The free Evaluation Edition license will not work!
You can cancel it any time. Even immediately. It then will continue to work for 1 month.

You get an email with a license code that looks similar to this:
42f3dg2-0123-4gg4-cb2d-01d2w382ws2f

Sign up at the SGO website with your **email address** and **password**.
Avoid the **Continue with Google** option.

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Log into your SGO account and open:
https://www.sgo.es/my-account/downloads/

Download **MistikaVR 10.10.0 (or newer) for Windows**.
Only install it. No need to start it!

On your PCs Desktop open the **SGO activation tool**.
Log in with your SGO account with your email address and password.

Find the email with the Mistika VR activation code. It looks like this:
42f3dg2-0123-4gg4-cb2d-01d2w382ws2f

Enter your Mistika VR activation code and activate it.
Close the SGO activation tool.

The setup is finished.
360camsters now can use Mistika VR to stitch the Mosaic recordings for you upon import as “reels”.

PC

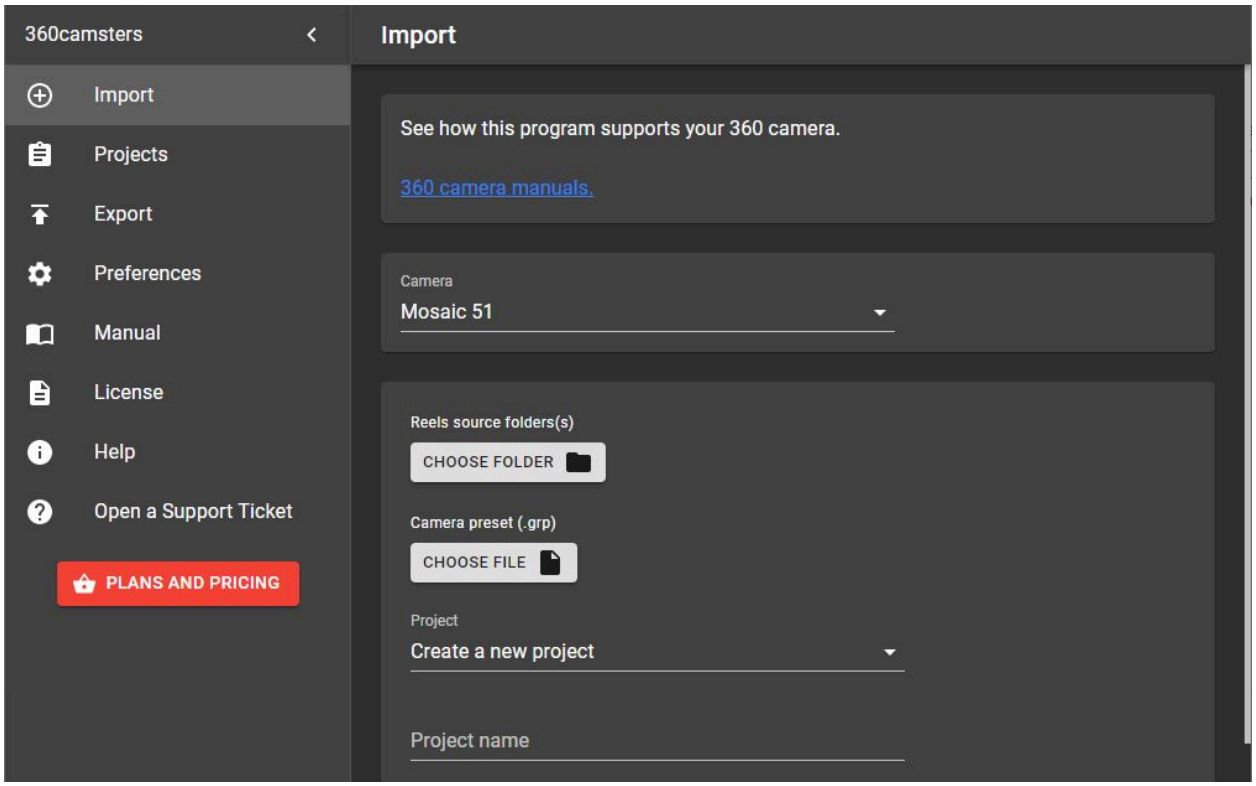
Copy the data from the Mosaic USB-SSD to your PC.

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Import

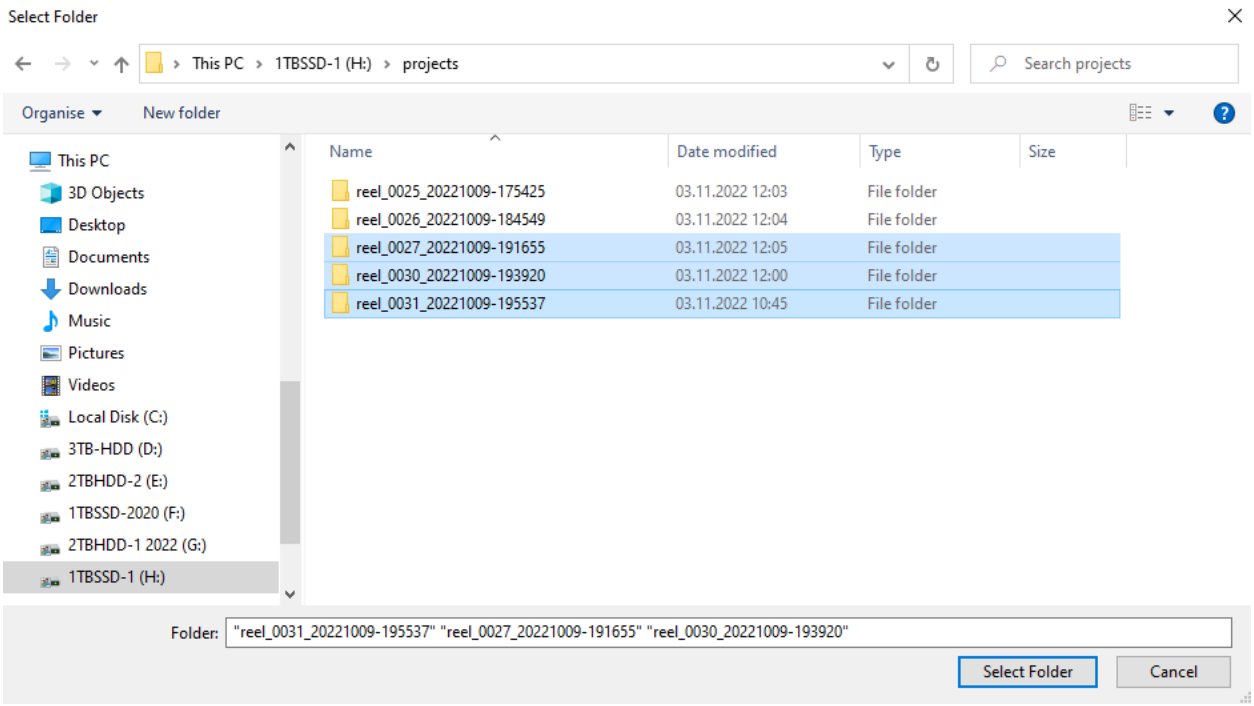
Launch the 360camsters program. If necessary log in with the same email and password you used to register at the 360camsters website.

Select **Mosaic 51** then **Choose Folder**.



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Pick one or many **reel** folder(s):



Set your Mosaic cameras .gpr file. (Provided by Mosaic by email.)

After the initial import the remaining workflow is the same for all recordings.
Continue with the Workflow chapter.

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Basics

Main Features

360camsters is a Mobile Mapping application.
To manage the recordings of your 360 camera(s).
Then to convert them into a performant streetview player capable of displaying millions of streetviews.

The resulting street view player can be viewed in many ways:

- 36camsters: Player -> Preview.
- 36camsters: Export -> View Player
- 36camsters: Use the built-in Publisher to upload to the Amazon cloud.
- On your Windows 10 or Windows 11 PC by e.g. free krpano testing server.
- Copy the player to your Windows Server.
- ftp the player to any webserver. E.g. Apache, NGINX, IIS. Both shared and dedicated hosting works.
- Upload to any cloud. E.g. Amazon AWS, Google Cloud, Microsoft Azure. For the Amazon AWS cloud there is a built-in Publisher.

Also the 360camsters program itself can be installed to a server or a cloud.
Then upload the recordings and operate it by Remote Desktop Connection (RDP).

Features

- **Privacy**
  Perfect privacy by local installation, processing and optional publishing. Alternatively you have the option to run the program in a cloud.
- **Publishing**
  To your own PC, servers, shared or dedicated hosting, Amazon AWS, Google cloud, Azure cloud, as well as to literally any webserver.
  There is no obligation to publish to the public.
- **Project Size**
  For up to country-size projects with millions of street views.
- **Timeline**
  Record the same multiple times for a before / after comparison.
- **Embedding**
  Control the player by its javascript API in any web-page.
- **Versatile**
  Mix recordings from many different recordings. Even by different cameras from different brands.

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- **Localisation**
  Add your own translations to the player.
  Default languages provided: English, Spanish, German, Arabic, Greek.
- **Map**
  Pick one of 30 provided maps or aerial images. Or use your own maps.
- **Mapbox**
  Use your Mapbox maps for the player.

Resolutions

360camsters supports different resolution footage from different 360 camera brands in the same project and the same player.

This is ideal for upgrading from a lower resolution 360 camera e.g. the 5.7k insta 360 Pro 2 to a higher resolution 360 camera e.g. the 12k Mosaic 51 camera.
To have both the old and new cameras recordings in the same project and to show it in the same player.

When importing 360 recordings 360camsters creates equirectangular panoramas.

There are 3 resolutions to preserve maximum resolution:
8k 8192 x 4096
16k 16384 x 8192
32k 32768 x 16384

360 Camera	**Camera Resolution**	**360camsters Streetview Size**
Insta 360 X5 Insta 360 X4 Insta 360 X3 Insta 360 X2 Insta 360 Pro 2 Insta 360 Pro Labpano Pilot One EE Applied Streetview	8k 8k 5.7k 5.7k 8k 4k 8k (7680 x 3840) 8k+ (8192 x 4096)	8192 x 4096
Insta 360 Titan Mosaic 51 Mosaic X Custom camera	11k (10560 x 5280) 12k (12288 x 6144) 13k Up to 16k	16384 x 8192
Custom camera Custom camera	24k Up to 32k	32768 x 16384

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Data formats

In addition to camera-specific recordings, folders with equirectangular panoramas with EXIF metadata are supported.

Minimum EXIF data needed:
To be added.

You also can import a project folder with subfolders of panoramas. The subfolders then become individual tours.

API

When embedding the player into any html page as an iframe, you now can control it from the html page by javascript.

See the working API examples on our website:
https://www.360camsters.com/gallery/#api
For your own development, download the Javascript API examples.
Then develop your own solution. You can combine many examples into one player.

Working examples are automatically added to each project of yours:
out/projectname/player3/**examples**/

Please contact us, we are available for hire for customisation and integration.

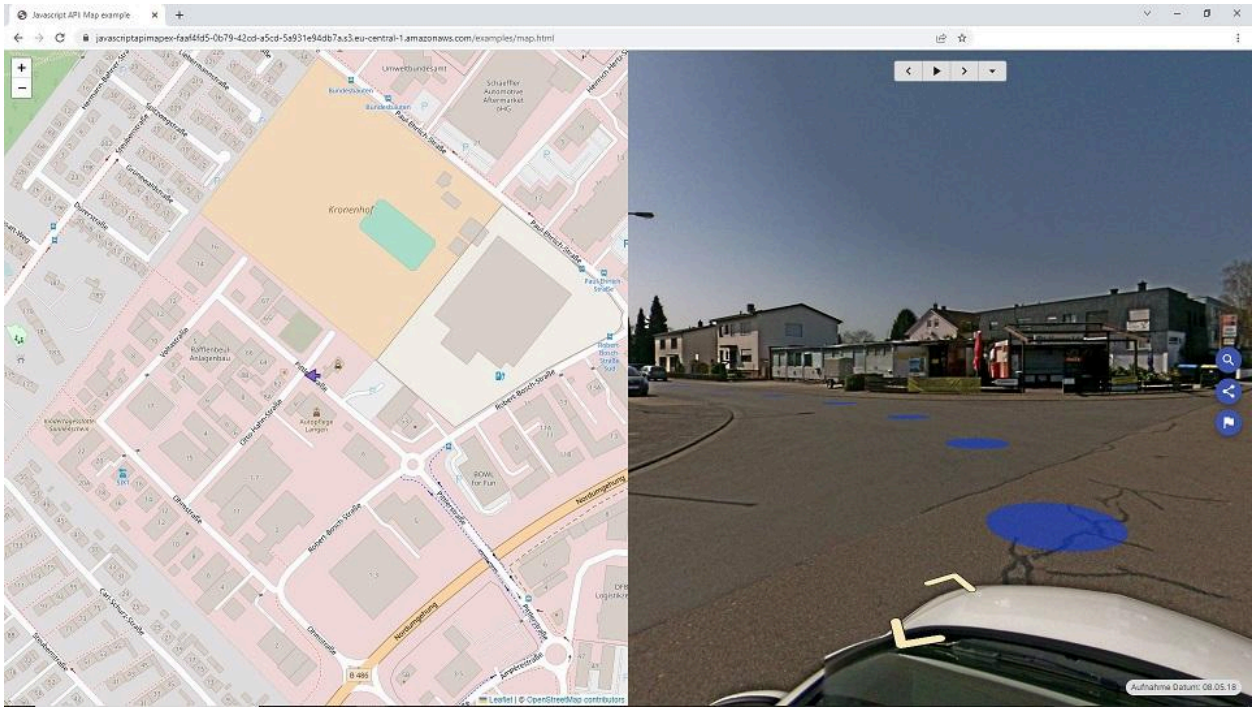
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Map API

Click anywhere on the map, and the player will open the nearest panorama.
Navigate the panorama in the player, and the map will update.

On the left side it shows an external map. In this case Leaflet.
The map could be any map. E.g. **Leaflet**, **Openlayers** or **Google map**, etc.

On the right side it shows the player in an iframe. With the new layout **streetview only**.



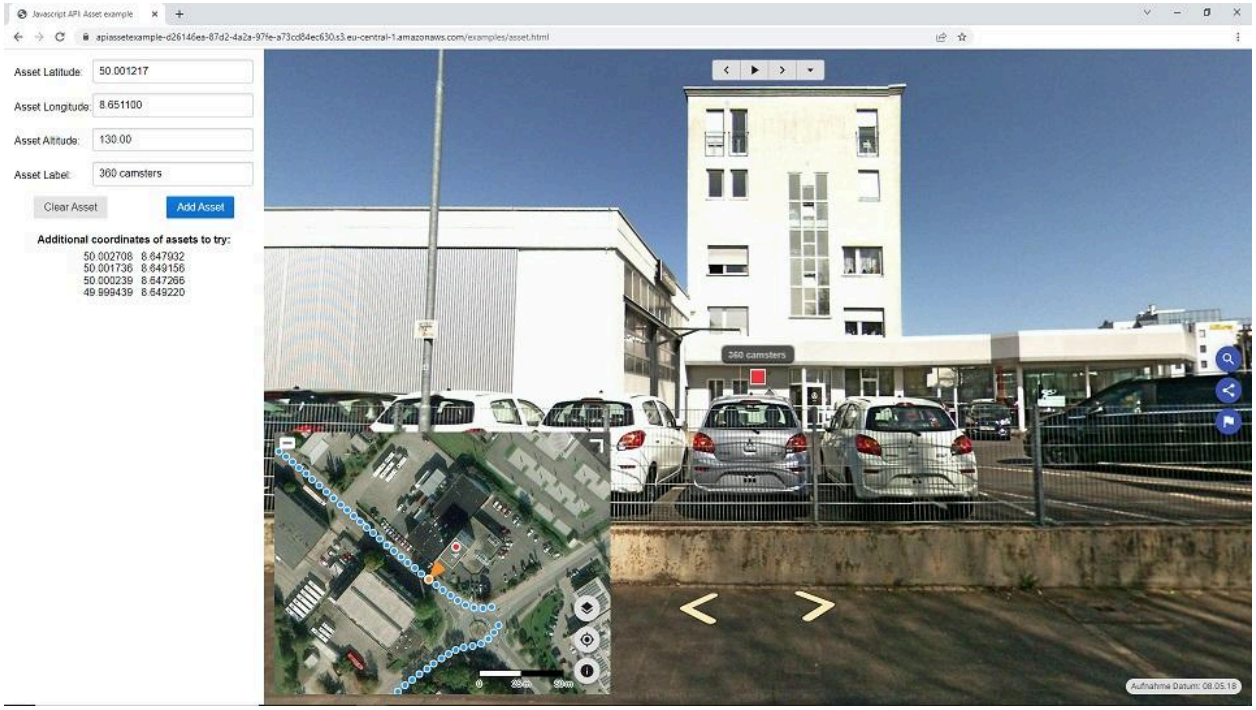
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Asset API

To view an asset by its Latitude and Longitude.
The nearest panorama will open and pan to look at the asset.
The asset description can be provided by the API too.



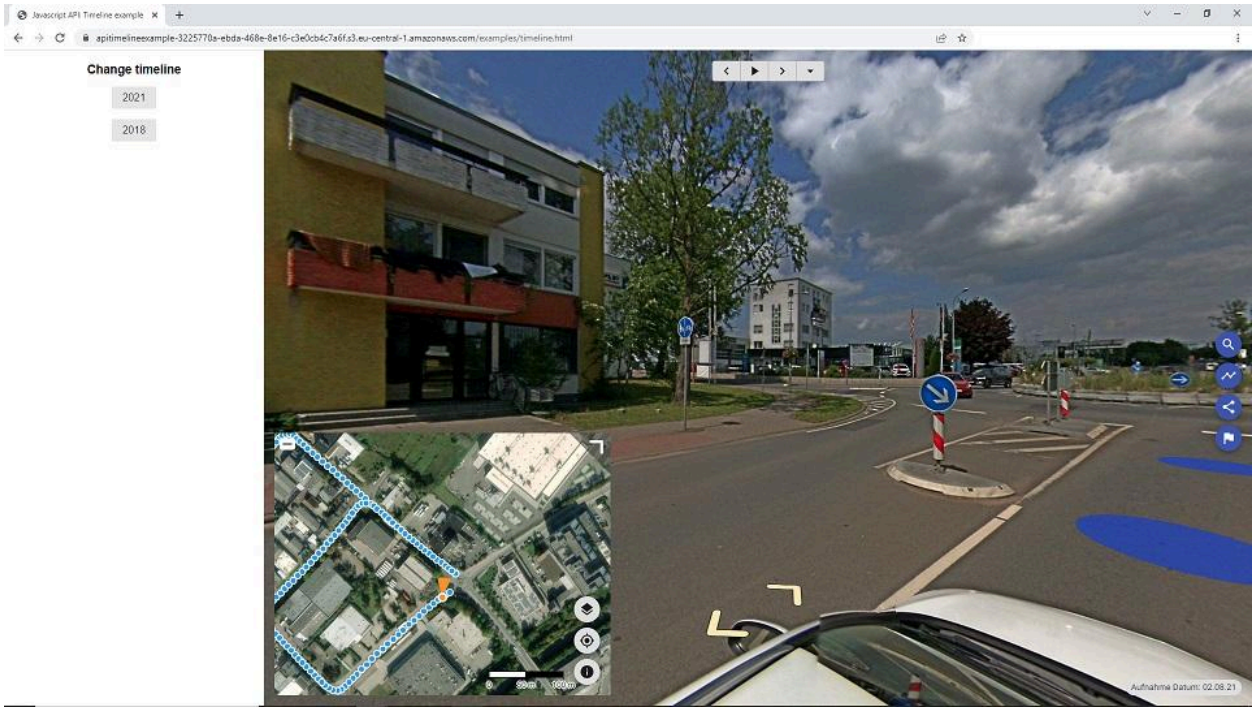
See the working example on our website:
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Timeline API

Switch the timeline for a “before and after” comparison.
You also can have many timelines. E.g. 2019, 2020, 2021, 2022.



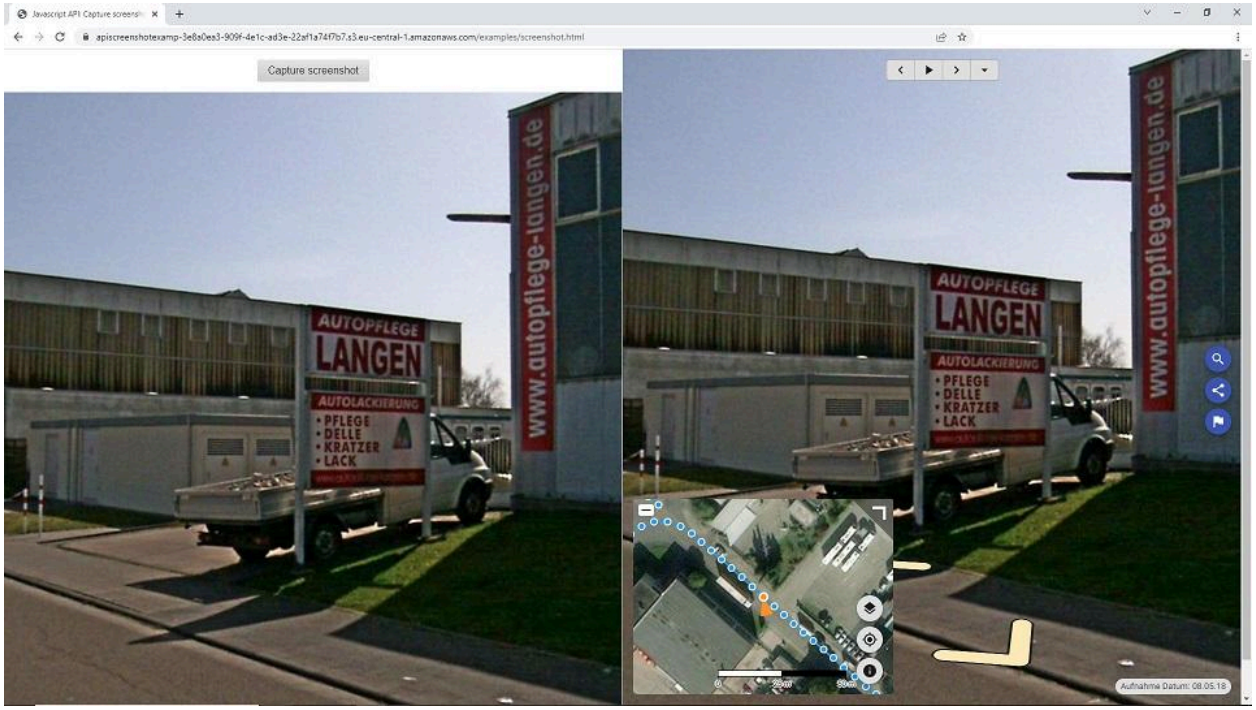
See the working example on our website:
https://www.360camsters.com/gallery
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Then develop your own solution.

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Screenshot API

Take a screenshot and save it.
E.g. of the currently visible part of the streetview. E.g zoom in to show a specific issue.
Ideal to add photos to a pdf file or a database.



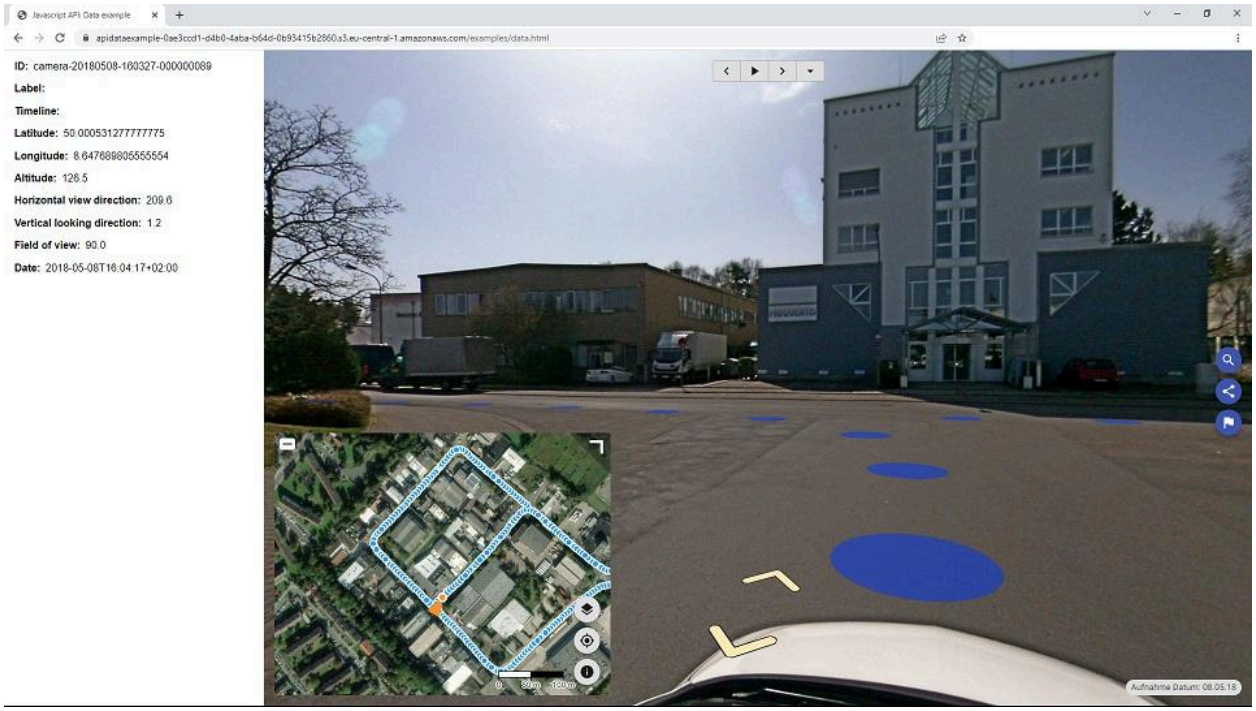
See the working example on our website:
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Data API

Get all the data available for the street view.



Data shown:

- Streetview ID
- Label
- Timeline
- Latitude, Longitude, Altitude
- Viewing direction (0-360 degree like on a compass)
- Vertical viewing direction (up and down)
- Zoom
- Date and time + timezone

See the working example on our website:
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Hardware

360camsters can be installed to a Windows 10 PC or Windows 11 PC or to the Google Cloud, Amazon Web Services EC2 or Microsoft Azure.

PC

The minimum requirement is a Windows 11 PC.
A NVIDIA graphics card and CUDA then speeds things up, but it works without.

Cloud

The **360camsters** program itself can be installed to a cloud.
You then can operate it by Remote Desktop Connection (RDP).
We tested Google Cloud, Amazon Web Services EC2 and Microsoft Azure.

Performance

Import

Approximately 120.000 streetviews/day.
Your results will vary depending on your specific hardware and setup.

Export

Approximately 120.000 streetviews/day.
Your results will vary a lot depending on your specific hardware and setup.

For best performance we recommend different drives for the **in** and **out** folders.

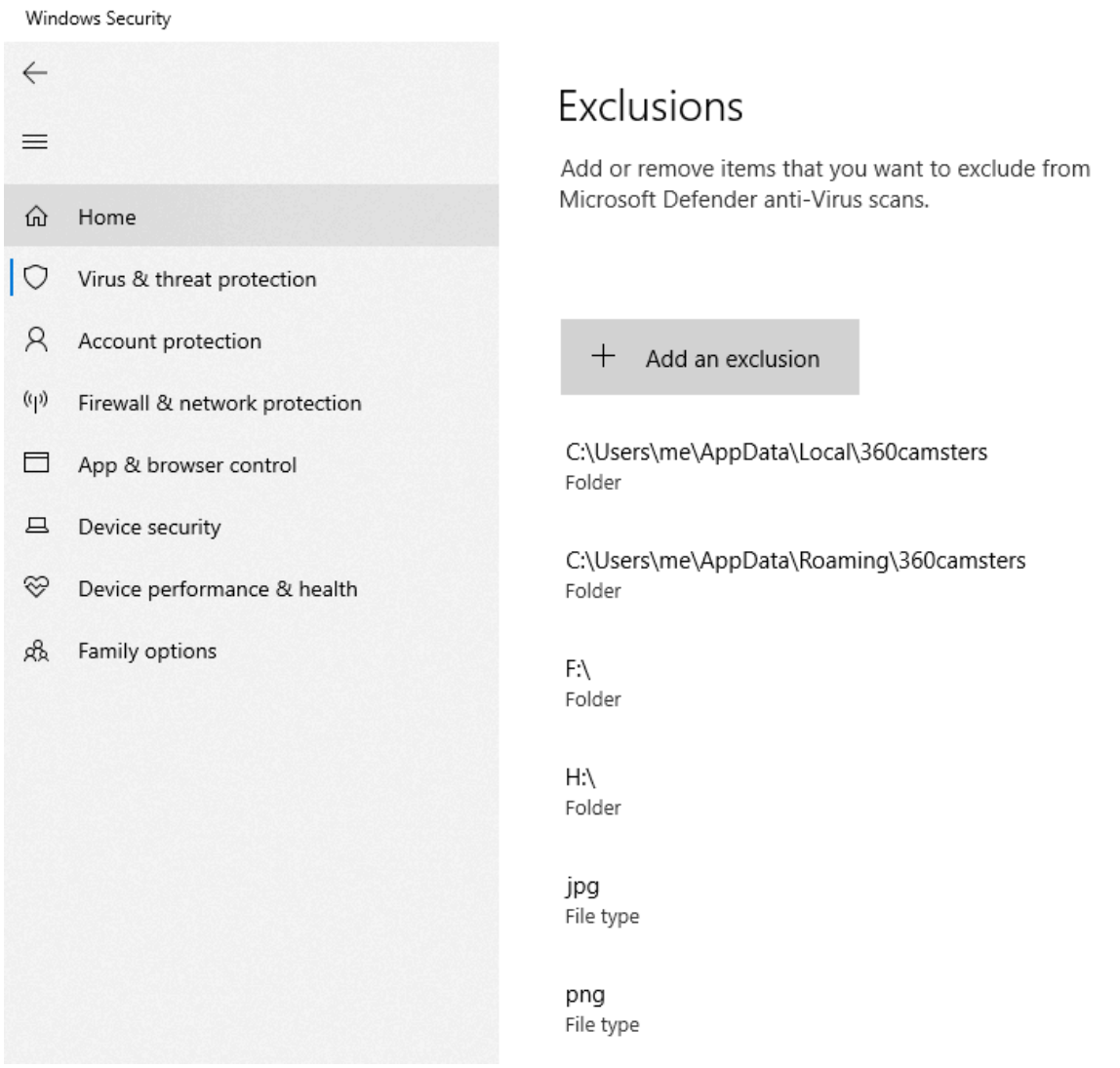
SSDs will be the fastest. Followed by HDDs. NAS can be very slow.

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Windows Virus and Thread protection

We strongly recommend adding the following **exclusions** to Microsoft Windows **Virus and Thread protection.**
This can speed up processing by 300%.

Please deactivate any third-party virus scanners.
Or apply the following settings correspondingly.



Download

Get the 360camsters program, this manual and recordings of many 360 cameras:
https://www.panohopper.com/downloads.html

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Player Performance

The player has been designed for very large projects with millions of street views.
There are only static files. No database. Not even php.
For this there is no need for complicated load balancing etc. Publishing the player to a server or cloud is sufficient.

Cloud

Publishing to the Amazon cloud is up to 80% cheaper than a player hosted in a conventional datacenter. Also there is virtually no maintenance when publishing to a cloud.

It has never been easier to prepare for your 15 minutes of internet fame.
Just add CloudFront as a CDN to your player. You even can create a custom URL for your own domain.

Update Policy

With a valid license (Trial, Subscription or one-time payment) you automatically get the newest release with the next start of the 360camsters program.

Additionally you can check and update yourself anytime at
Menu: Help -> About: Check for update.

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Backups

Backup often.
This way you can import the last “good” backup anytime to continue.

It is best practice to always have an up-to-date backup of both your data and the project backups on a disconnected drive.
If the drive is connected to your network and powered up it is just a copy, not a backup.

You can back up one or many project(s), tours(s), or just the player configuration(s) incl. the translations.
Sources or generated data (streetviews, tiles and players) are never part of a project backup. Back them up separately.

Data safety

This program can not edit or delete your source recordings.

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Workflow

The Import chapters are cameras specific.
This Workflow chapter then is the same for all recordings.

In case you do not have a 360 camera yet, use our insta360 X4 test footage.

Basic workflow

1. Follow the menu from the top to the bottom.
2. Skip menu items you do not want.
   Go back and forth to make adjustments.
3. Last step is to Export.

After Export click **Export -> View Player** to test the generated player.

Project size

For testing and learning, start with a small project.
This way adjustments can be processed faster.

Video for street views

Some 360 cameras record at 30 frames per second (30 fps) while others allow to reduce the frame rate. Or to record by a custom distance between the streetviews. E.g. every 5 m.

The standard video 30 fps is way too much data for a streetview player. Processing and uploading takes a really long time. Hosting is more expensive. Navigating streetviews just 30 cm (1 foot) away from each other is frustrating and tiresome.

Recommended Solutions:

- Reduce the amount of footage by recording at a lower framerate
- Reduce the framerate when stitching with the cameras stitching program
- Skip frames in **360camsters** (fully configurable)

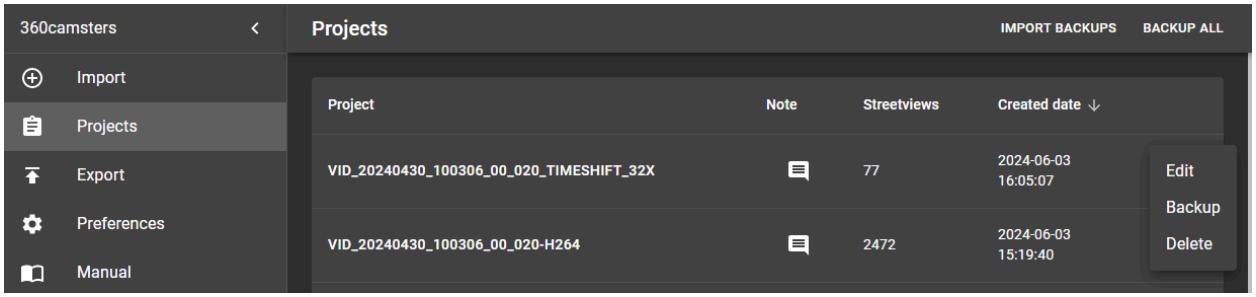
Availability depends on the cameras stitching software. Insta360 Studio provides the **Timeshift** feature for this.

360camsters provided the fully configurable **Skip** feature to reduce the footage before processing and uploading.

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Projects

The list of all your projects.
Click a project name to open it. The Tours tab will open.



Import Backups
Import one or many project backups.
Manual project backups to be found in the **/out/Backups** folder.
Export automatically creates a backup in the **/out/*projectname*/backups** folder.

This is only for this program's data.
Sources or generated data is never part of a backup.
In case a backup is from another PC, the paths to the recordings must be adjusted on the Tours tab.

Backup All
Backup all your projects with just one mouse click.
This is only for this program's data. Sources or generated data is never part of a backup.

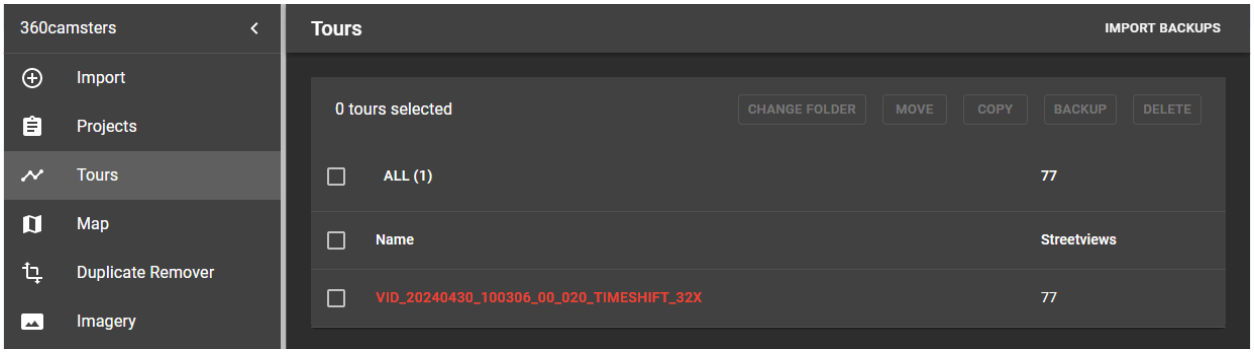
Additionally you can **Edit**, **Backup** or **Delete** a single project.
This is only for this program's data. Sources or generated data is never part of a backup.
This program can not change or delete your source data.

It is best practice to always have an up-to-date backup of your data and the project backups on a disconnected drive.
If the drive is connected to your network and powered up it is just a copy, not a backup.

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Tours

A list of all the tours of a Project.
The project's tours can be from different cameras, at different resolutions and different camera brands. E.g. insta360X4 8k and Mosaic51 12k.



Show on map

Click **All** or a tour to open the Map tab.

Import Backup

Import a tour backup. One or many tour backups can be imported at the same time.

Change Folder

When migrating backups from an old PC to a new PC or when the project's **in** folder has been moved: Select all the tours and click the **CHANGE FOLDER** button. Then set the path to the new **in** folder.
If the project has e.g. additional tours that have been moved or copied from a different project, then tick those new tours individually and Click **CHANGE FOLDER** button.

Move

Move selected tours to a different project.
This is for this program's data only. Sources or generated data are never moved.

Copy

Copy selected tours to a different project.
This is for this program's data only. Sources or generated data are never copied.

Backup

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Backup selected tours.
This is for this program's data only. Sources or generated data are never part of a backup.

Delete

Deletes the selected tours from the project.
This program can not change or delete your source data.
You should always have up-to-date backups.

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Map



In order to display a large amount of streetviews on the map, streetviews are clustered together, depending on the map zoom level.
A cluster is basically a collection of streetviews.
Clusters are displayed for zoom levels 0 to 19 only. Zoom levels 20 , 21 etc. always show all streetviews individually.

Change map base layer

Click the button in the top left corner to change the map base layer.
Esri.WorldImagery is the default. Select a different provider from the list. Or provide your own custom map tiles by clicking the button.

Custom map tiles

The slippy map tiles format is supported with both Google/Bing/OSM tile coordinates and TMS.
Also works with Mapbox.com raster data.
See the Mapbox chapter for the URL format.

Label
Your custom tiles provider name

URL
The URL can point to an online resource:
Change the bold parts of the address.
http://**www.your-company.com/map-tiles**/{z}/{x}/{y}.png

Local
A local folder or NAS drive:
Change the bold parts of the address.
file://**D:\folder**\{z}\{x}\{y}.png

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{z} is the zoom level, and {x} and {y} are the coordinates of the top left corner of the tile in web mercator projection. For the TMS format use the {-y} placeholder.

Attribution
Copyright information displayed at the bottom of the map.

Mapbox
Check the Mapbox section for instructions.

Display
Show or hide icons for active and deactivated streetviews.

Usually more footage than needed is recorded.
The Duplicate Remover and the Skip tool as well as manual deactivation on the map page can be used to reduce the number of streetviews to be published.

Activated streetviews have a **white** outline.
Deactivated streetviews have a **gray** outline.



Tours

Show the selected tours on the map.
Click a tour to zoom to it.
Click **ALL** to center the map on all the tours.
Untick to hide all tours. Then tick selected tours to show only them.

Timeline

Only available when timelines have been created.
Show the selected timelines on the map.
Click **ALL** to center on all the timelines.
Untick to hide all timelines. Then tick selected timelines to show only them.

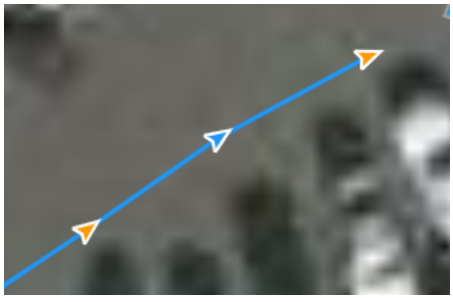
Select streetviews

Most of the actions like activate/deactivate, move, rotate, assign a road name or POI are performed on one or many selected streetviews.

Click a streetview to select it. A selected streetview will change its color to orange.

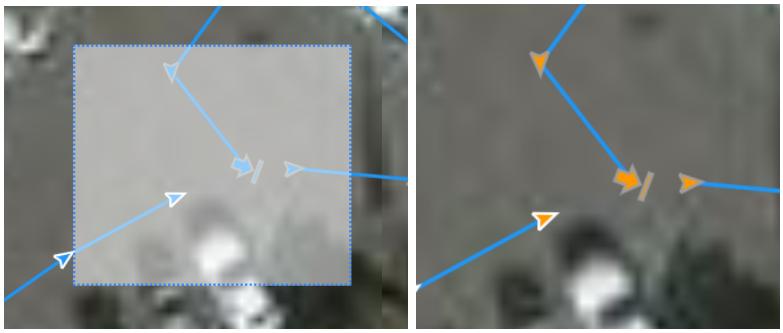


It's possible to select multiple streetviews by holding down the CTRL key when clicking on the streetviews.

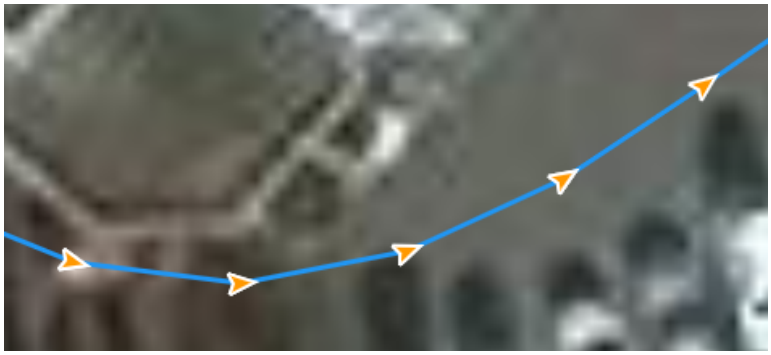


Holding down the SHIFT key and then drag the mouse to select all the streetviews in a rectangle.

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To select all the streetviews from first to last and everything in between, select the first streetview, then while holding down the ALT key, select the last one streetview.



To deselect click anywhere on the map or press the **ESC** key.

Deactivate and Activate



Select the streetviews.
To deactivate selected streetviews click the **DEACTIVATE STREETVIEWS** button.
To activate selected streetviews click the **ACTIVATE STREETVIEWS** button.

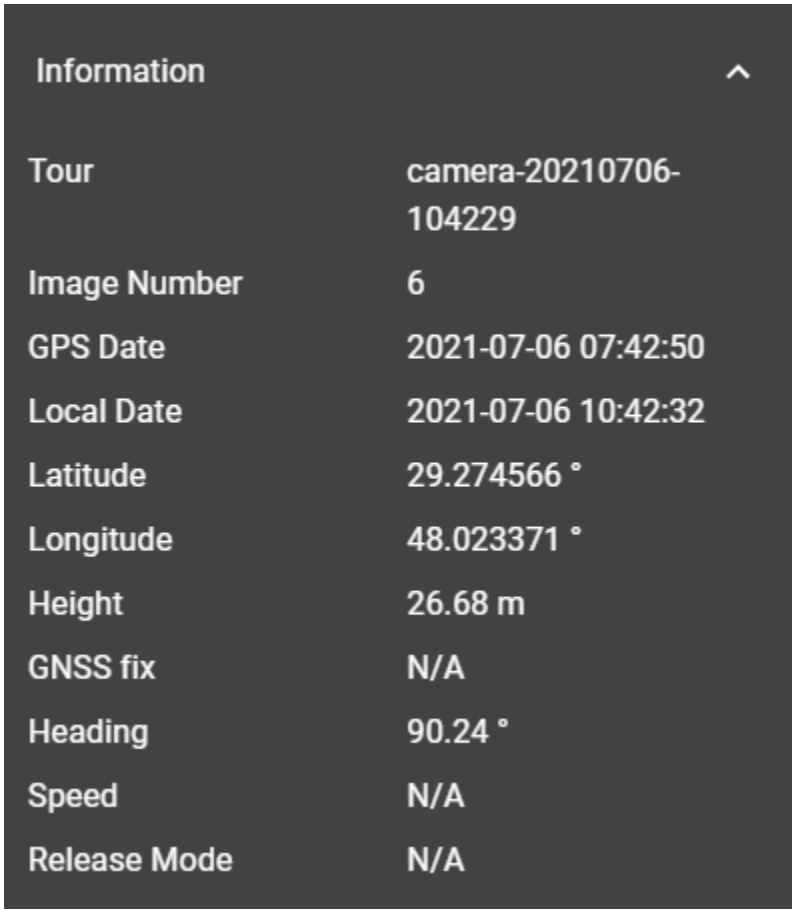
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Meta Data

Displays the metadata for a selected streetview.

This panel will only be shown if a single streetview is selected.

It is not available for clusters. Zoom in more to see individual street views.



Road

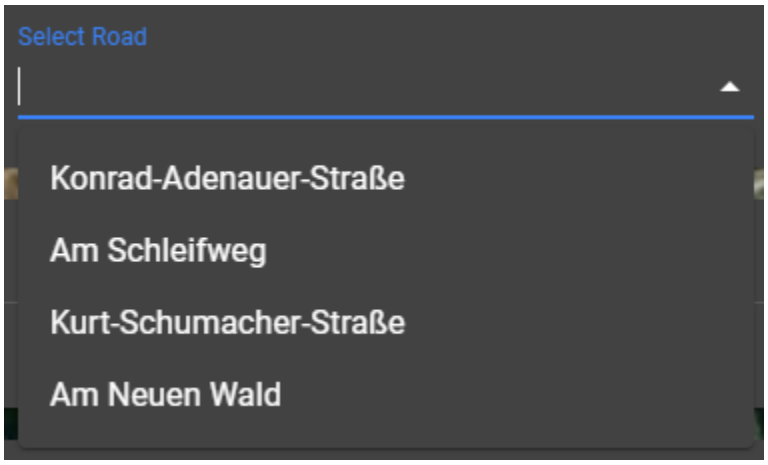
Enable **Show Road on Map** to display the road name as a label for each streetview.



Select all streetviews with the same road name

Select and zoom to a specific road by selecting it from the list in the panel.

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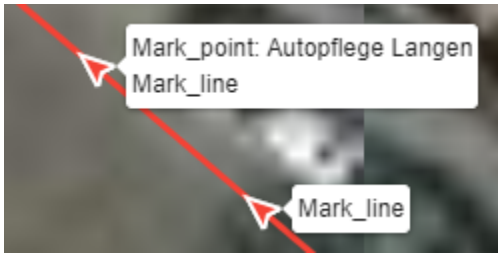
Assign a road name to a streetview(s)
Select streetviews on the map to assign a road name to them.



Type the name of the road in the text box and click the **UPDATE STREETVIEWS** button.

POI

Enable **Show POI on Map** to display the POI name as a label for each streetview.



Select all streetviews with the same POI name
Select and zoom to a specific POI by selecting it from the list.

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Assign a POI name to streetview(s)
Select streetviews to assign a POI to.

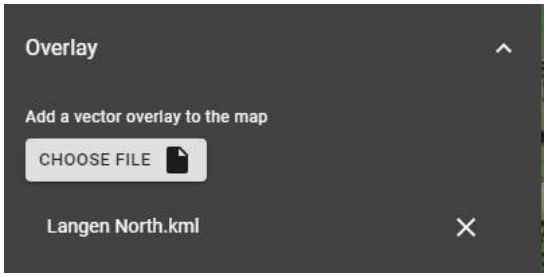
Type the name of the POI in the text box and click the **UPDATE STREETVIEWS** button.

If a single streetview is selected, a POI of type point will be assigned the new name.
If multiple streetviews are selected, a POI of type line will be assigned the new name.

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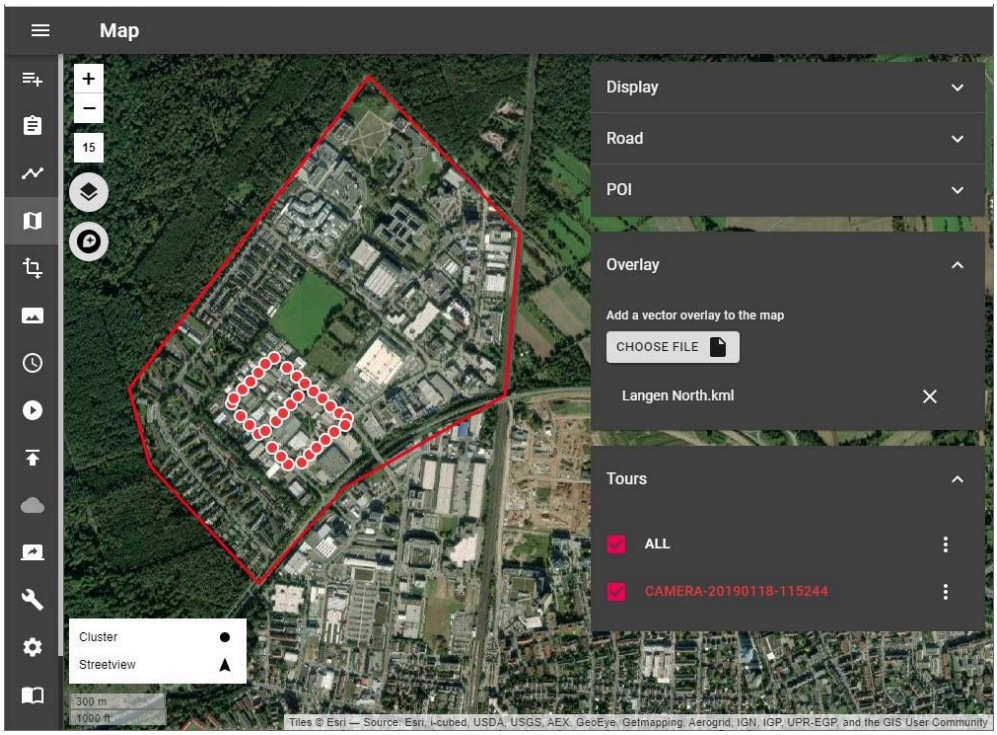
Overlay

Add a vector overlay to the map. Supported formats: kml.



Click on the ✕ button next to the overlay name to remove it from the map.

The red line is the overlay



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Keyboard shortcuts

360 Private Publisher - Cheat Sheet.pdf for easy printing.

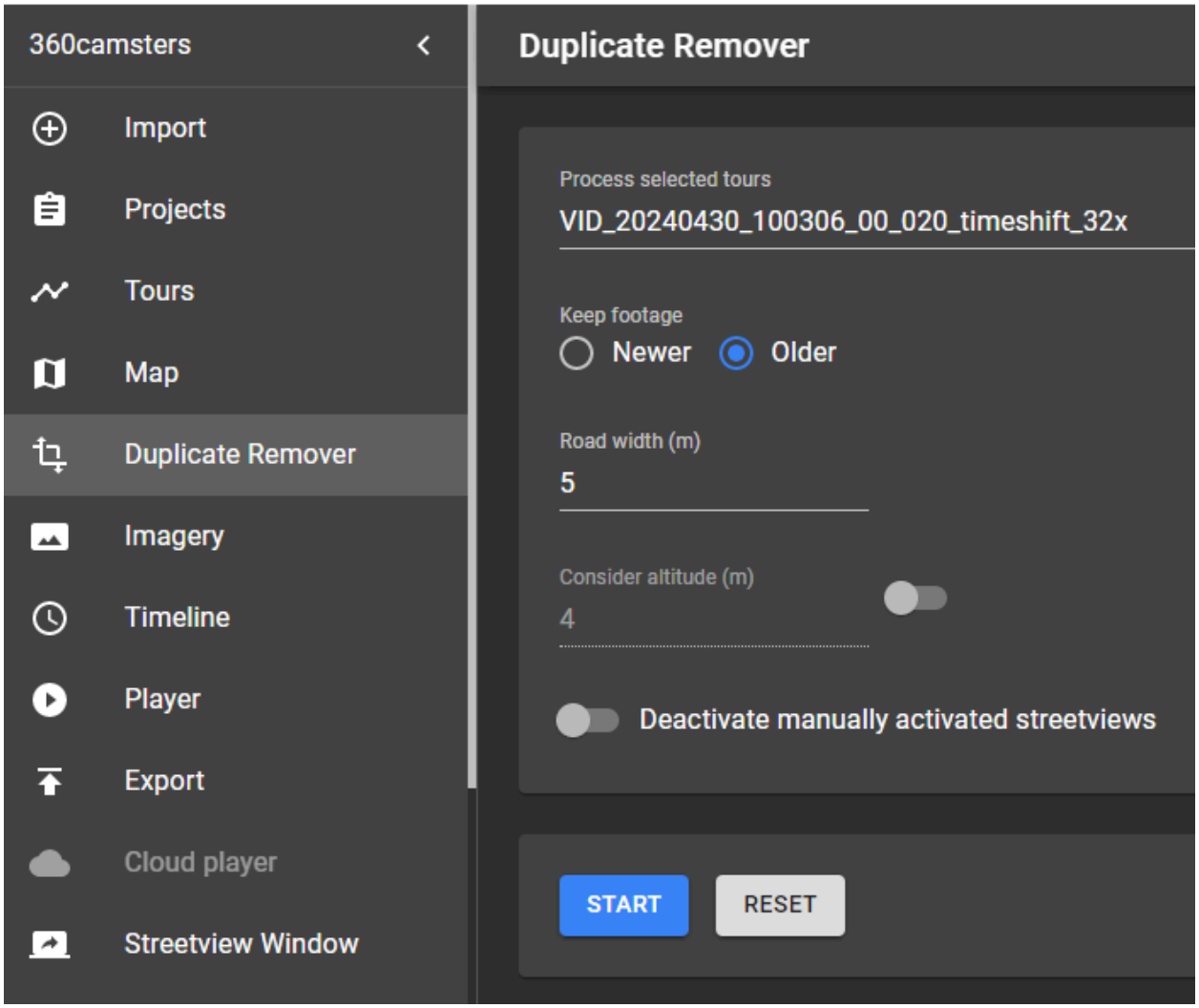
Mouse	Move all selected streetviews
ESC	Unselect all selections
CTRL + A	Select all streetviews visible on the map
Click an arrow	Select a streetview
Hold CTRL + click a Streetview	Add a streetview to the current selection
Shift + draw rectangle	Select all the streetviews in the rectangle
Hold CTRL + SHIFT + draw rectangle	Add all the streetviews in the rectangle to the current selection
Hold ALT + click a Streetview	Line selection. Having a streetview selected hold ALT then Click a second streetview to select it and all the streetviews in between.
CTRL + L	Align all selected streetviews in a straight line.
DELETE	Deactivate all selected streetviews
INSERT	Activate all selected streetviews
HOME	Rotate all selected streetviews counterclockwise
END	Rotate all selected streetviews clockwise
PG UP	Go to the next streetview
PG DOWN	Go to the previous streetview
Arrow keys: Up, Down, Left, Right	Scroll the map.

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Duplicate Remover

Removes duplicate recordings from roads recorded more than once.

Hint:
Additionally you can deactivate excessive footage with the Skip tool.
For best results run the Skip tool after the Duplicate Remover.

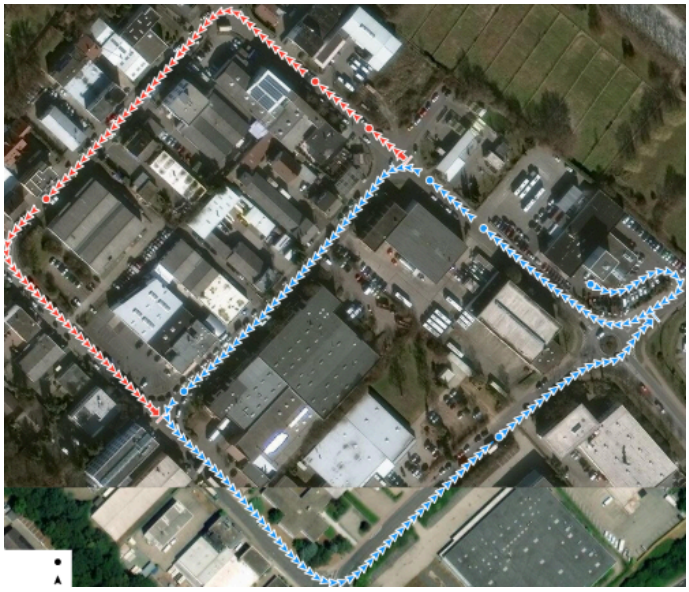


Process target
(Visible only when there are timelines)
Process either the selected tours or process the selected timelines.

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Keep footage

Older - Provides best results for most situations.
Keeps the existing, older, streetviews (blue), adds new (red) streetviews for newly recorded roads.



Newer - Replaces existing streetviews (blue) with newer footage (red).
The overall data will be more up-to-date.
Disadvantage: After driving into a dead-end road, you get the probably worse footage from reversing out of it.



Road width (m)

Base setting.

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Consider Altitude (m)
By default the altitude is ignored when detecting duplicates.
Try it when there are many bridges and tunnels.

Deactivate manually activated streetviews
By default manually activated streetviews are not deactivated by the Duplicate Remover. Enable this option to force them to be deactivated.

Start
Start removing duplicates in streetviews.

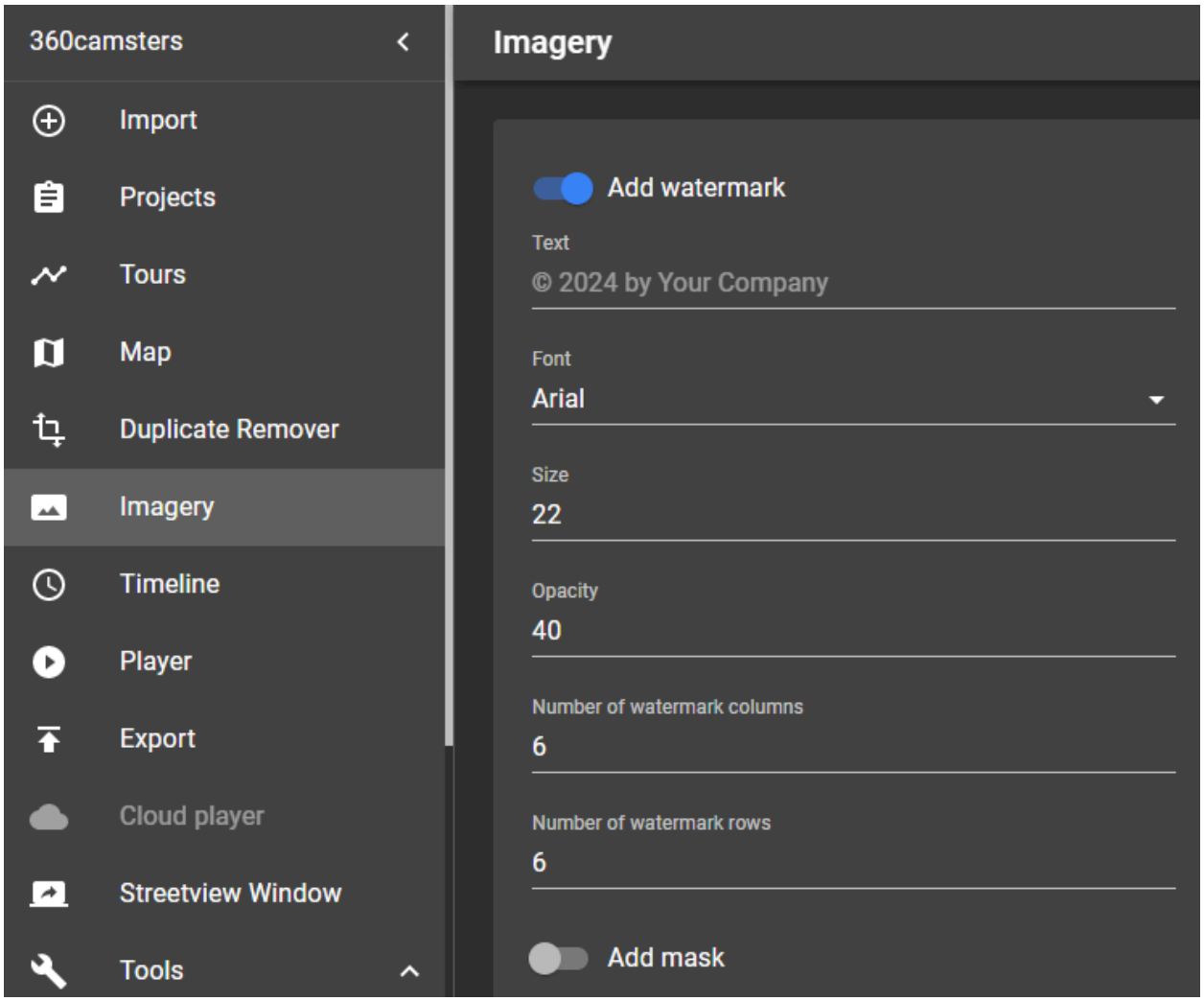
Reset
Reset all streetviews deactivated by Duplicate Remover and Skip tools.

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Imagery

Add watermarks to the streetview. Changes can be previewed in the **Player -> Preview** tab.

Hint:
For the Free program version the watermark is set to **DEMO.** It can not be changed or removed. Consider a paid version if you need to adjust the watermarks.



Add watermark
Enable watermarks.

Text
Watermark text.

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Font
Pick a font for the watermark. The list of fonts is taken from C:\Windows\Fonts.

Size
Watermark text size.

Opacity
Watermark text opacity. (See through.)

Number of watermark columns
How many watermark columns to show. (left-right).

Number of watermark rows
How many watermark rows to show. (up-down).

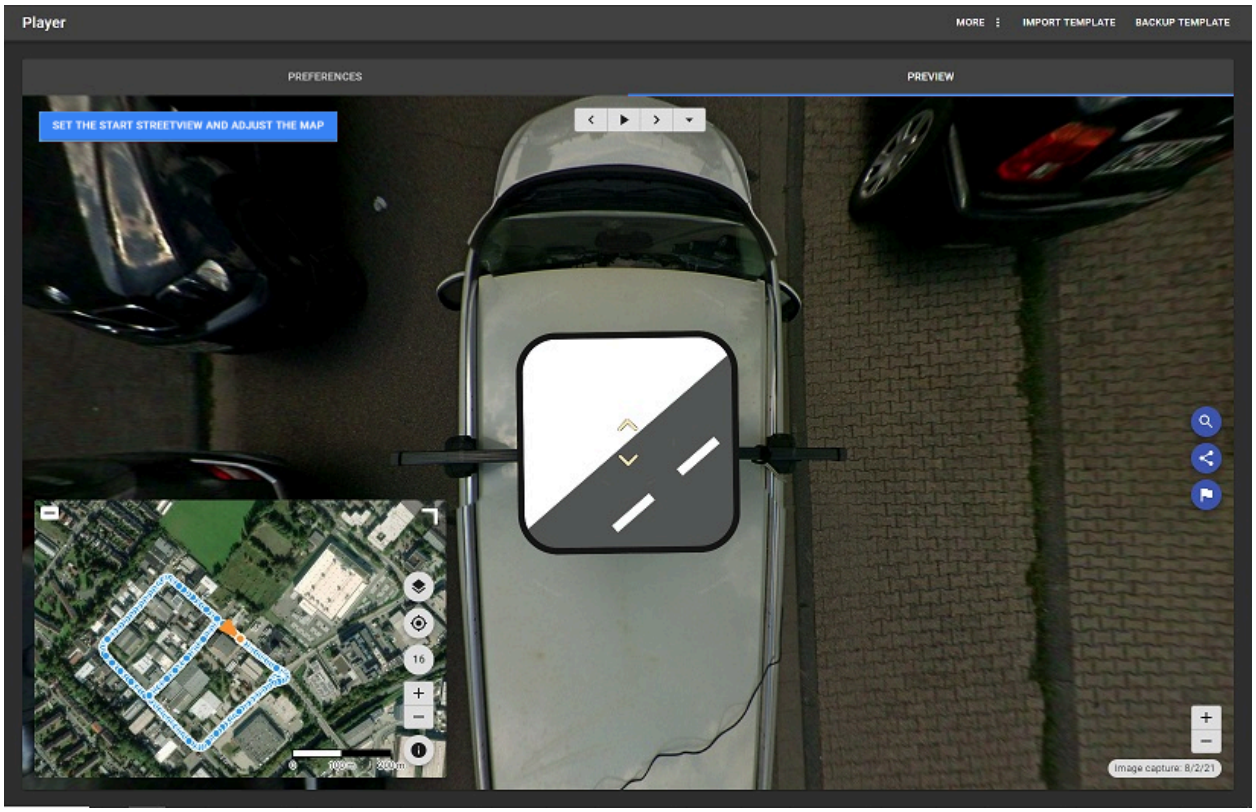
Add mask
Add a mask to hide the car’s rooftop.
Technically it is a transparent PNG image merged to the streetview.
Download an example mask.

Mask path
Path to the mask PNG image.
A Nadir logo can be added as a mask.

Nadir Logo

Add your company's logo to the Nadir (bottom) of your streetviews.
In **Player - Preview** it looks like this:

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To see the Nadir logo change Player - Preferences:
- **Look down limit (degrees)** from the default -50 to -90
- **Maximum Zoom Level** from default 120 to **150**.

This way you can see the Nadir logo better.
Change it back both when done reviewing.

Hint:
Color logos will be automatically made into grayscale logos during processing. This can not be changed.

Add Logo to Mask

Preparations:
Download this example with all files needed.

Additionally only your own logo is needed.
Recommended minimum size for your logo: 300 px x 300 px.
Supported formats: png, jpeg, tif

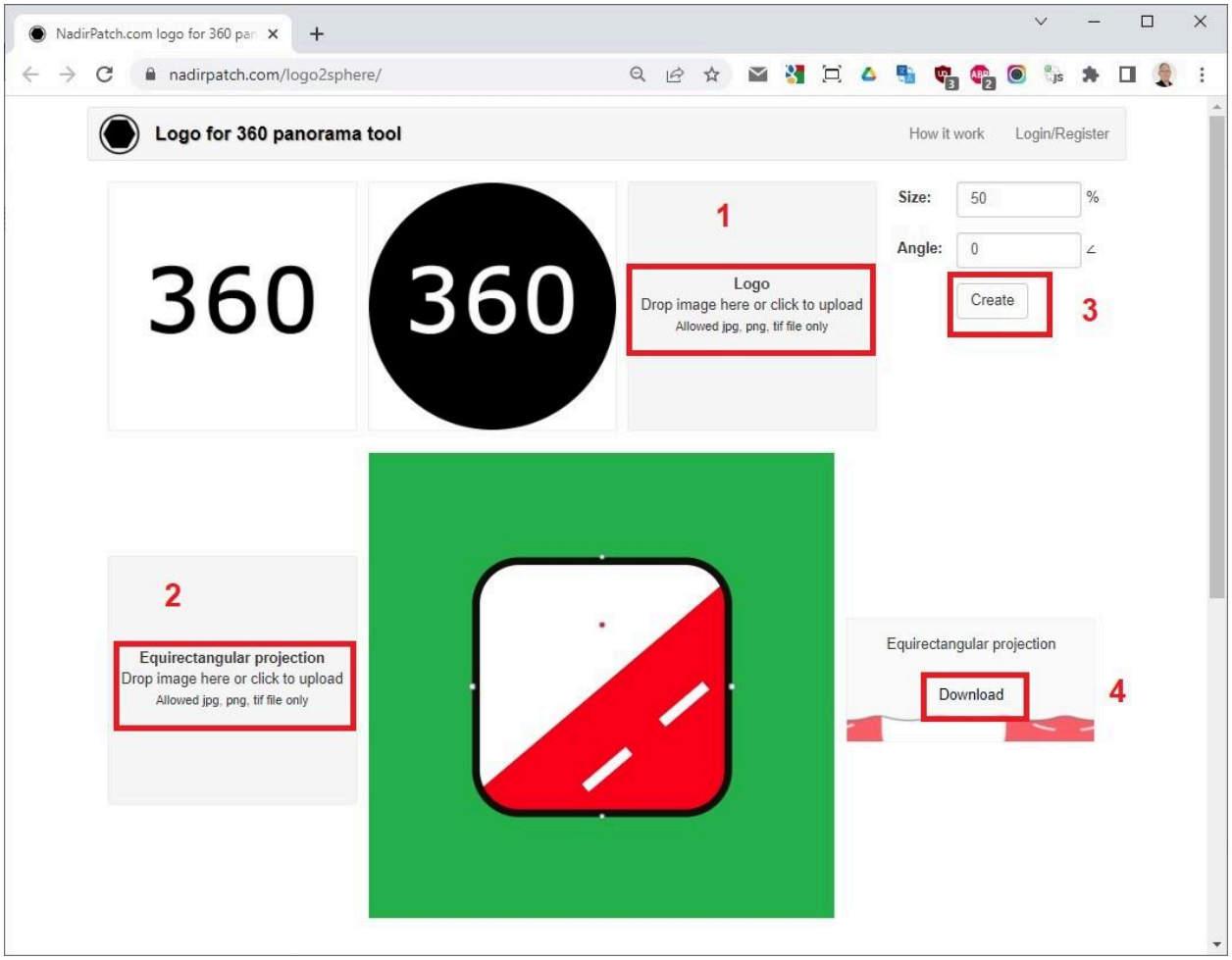
Hint

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Color logos will be automatically made into grayscale logos during processing. This can not be changed.

Go to https://nadirpatch.com/logo2sphere/

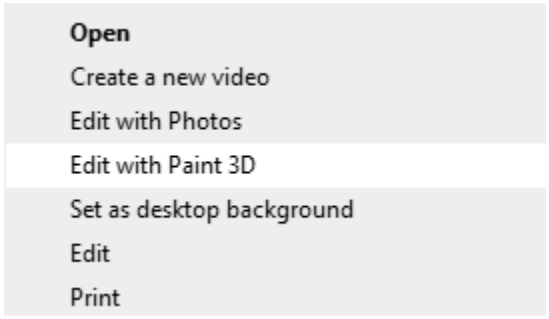
1) **Logo:** Drop your own logo onto **Logo** or select it to upload.
2) **Equirectangular:** Drop green-screen-template.jpg onto **Equirectangular projection** or select it to upload.
3) **Create:** After upload is complete click the **Create** button in the top right corner.
4) **Download:** After the image is created click the **Download** button in the bottom right-hand corner. Download and save the **pano.tif** image.



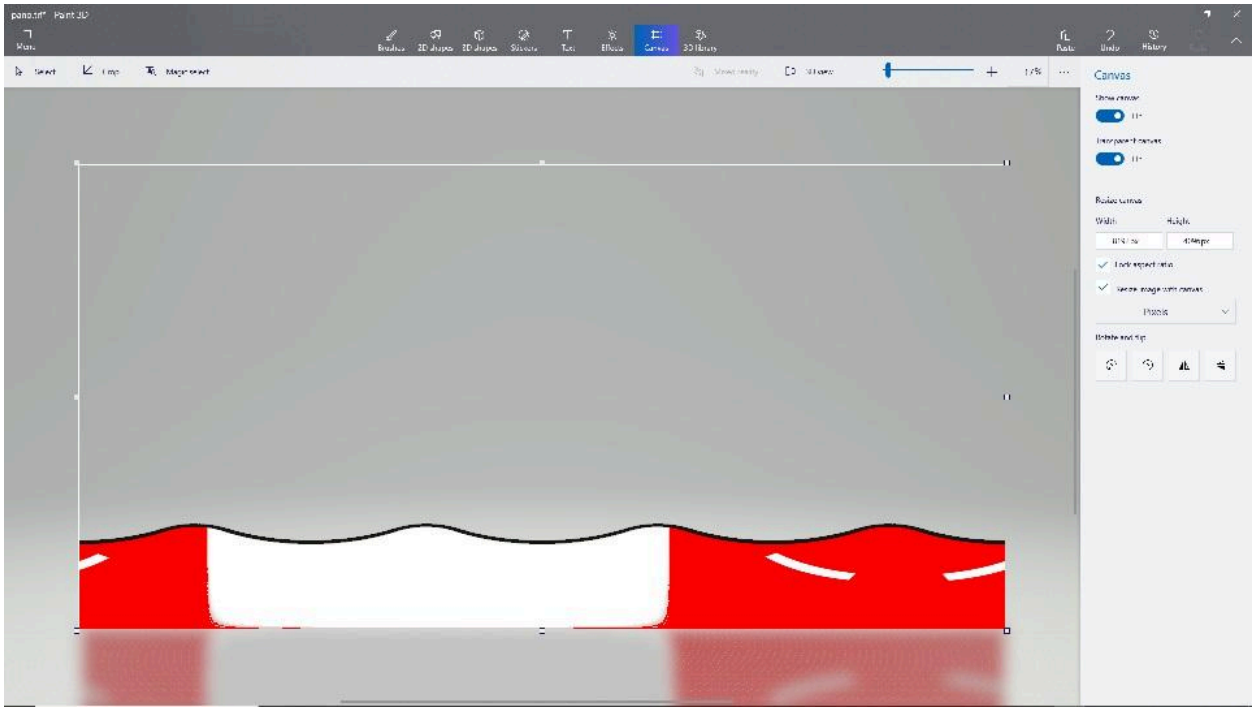
Set Transparency

On your PC: Edit with **Paint 3D:** Right click the **pano.tif** image then select.

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In the top navigation bar Click **Canvas** and then enable **Transparent canvas**.



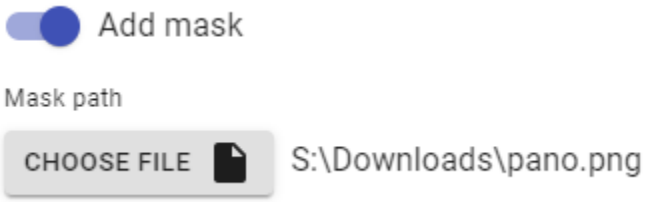
To save press CTRL + S then Click **Image**.
Change Save as type to **2D PNG** then click **Save**.

pano.png is now ready to be used as a Mask for this program.
Or just download our own pano.png for a quick test.

Apply the Mask

In your project go to the Imagery tab and activate the mask and set it to the new **pano.png** file.

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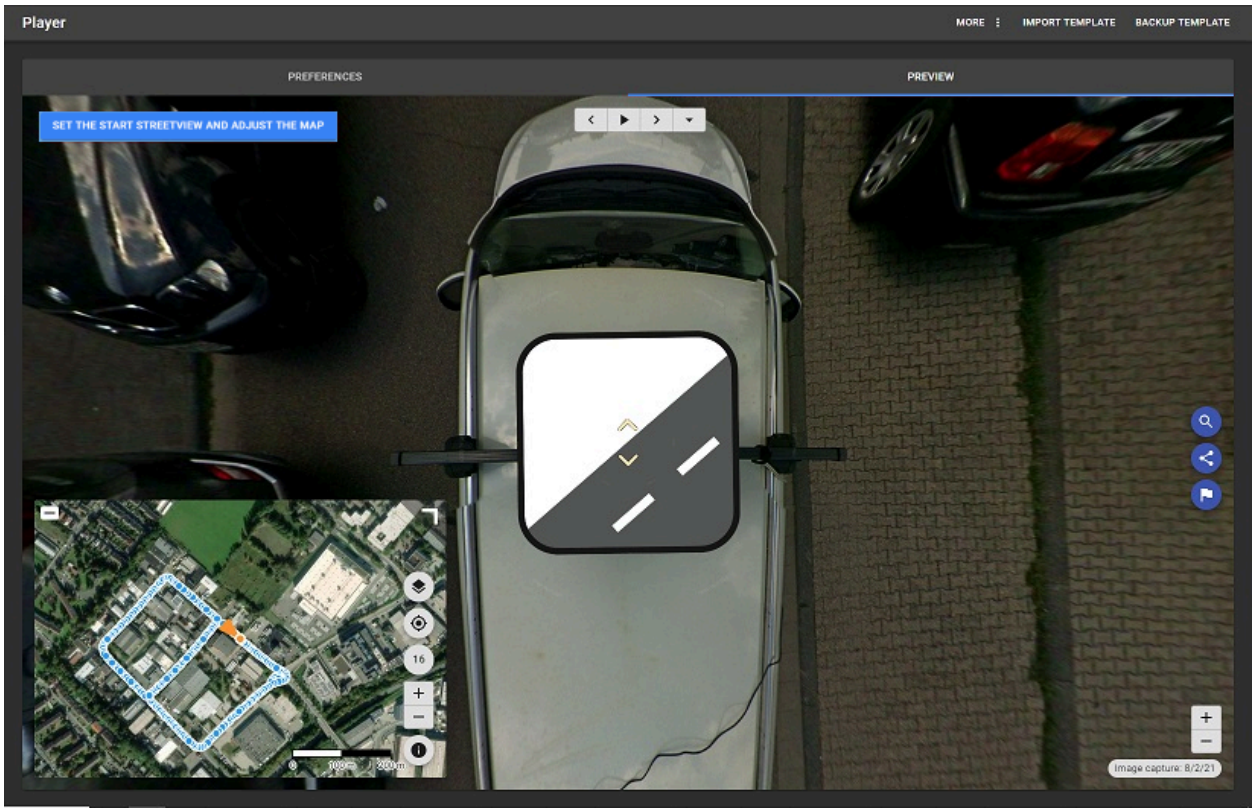
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Result

By default all our players are configured to **not** allow you to look down to see the logo you just added.
To change this, go to Player - Preferences - Streetview
Change **Look Down Limit** from default -50 to **-90**.
For your convenience change Maximum Zoom Level from default 120 to **150**. This way you can see the result better.

Change back both when done reviewing.

Check what it looks like in Player - Preview:



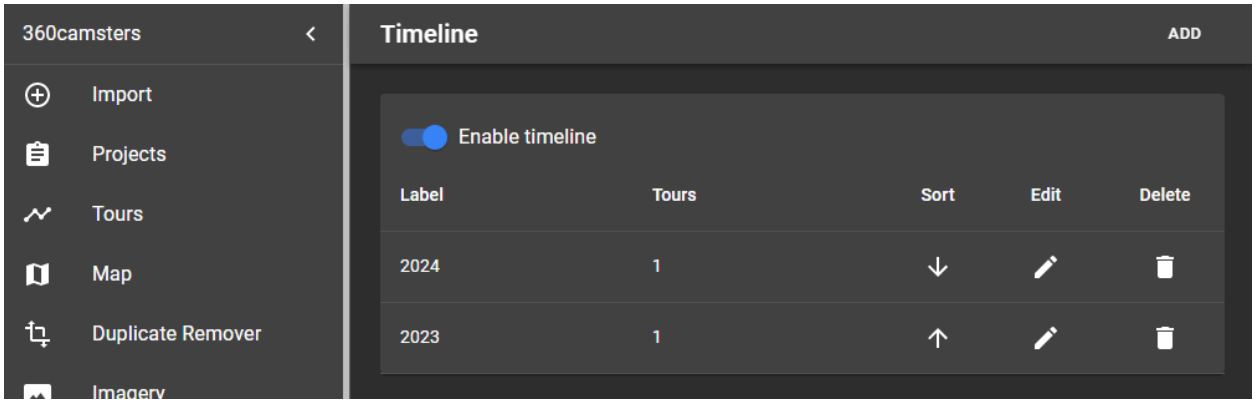
Now process the project as usual.

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Timeline

Record the same road or area multiple times to document change.

A simple example with just two timelines, each with one tour only:



Create a minimum of two timelines. E.g. dates like **2018** and **2022**.
Assign a minimum of one tour (folders) to each timeline.

Whats the player then looks like:
https://construction-timel-080700b8-0fe4-432f-a1bf-291943c6b7ad.s3.eu-central-1.amazonaws.com/index.html

Enable timeline
Enable the timeline feature

Add

Click the **Add** button in the top right corner.
Set a **Label** for the timeline and which **Tours** belong to this timeline then click the **Save** button in the top right corner.

Sort

You can sort the timelines as needed.

Edit

Click the ✎ button next to the timeline.
Modify the **Label** of the timeline and which **Tours** belong to this timeline. Then click the **Save** button in the top right corner.

Delete

Click the 🗑 button next to the timeline then confirm the delete operation.

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After assigning all tours to timelines you can use the Duplicate Remover to sort out duplicates in each timeline.

Player

The new default player is based on the open source Photo Sphere Viewer:
https://photo-sphere-viewer.js.org/

Should you need the proprietary krpano player from 360camstres 1.x you can switch back to it in Preferences -> Advanced: Player

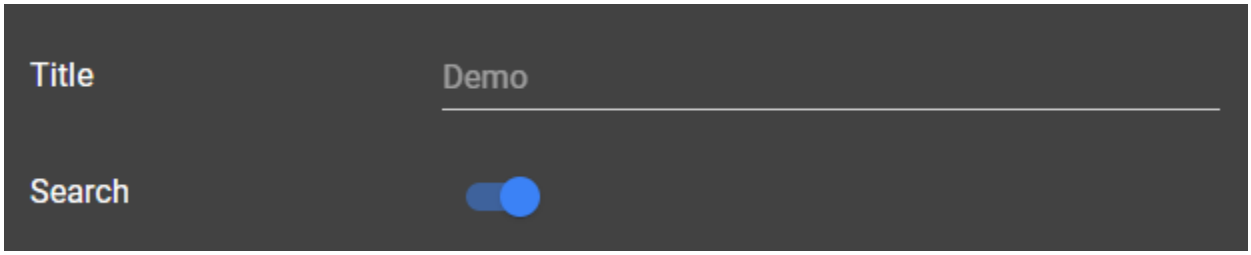
Player Keyboard shortcuts

PG UP	Go to the next streetview
PG DOWN	Go to the previous streetview
Arrow keys: Up, Down, Left, Right	Look down, up, left, right.
Ctrl + Shift + h	Screenshot mode: Toggle visibility of hotspots and arrows.

Preferences

There are many options to configure the player.
Best is to go back and forth between the Preferences and the Preview tabs while making adjustments.

General

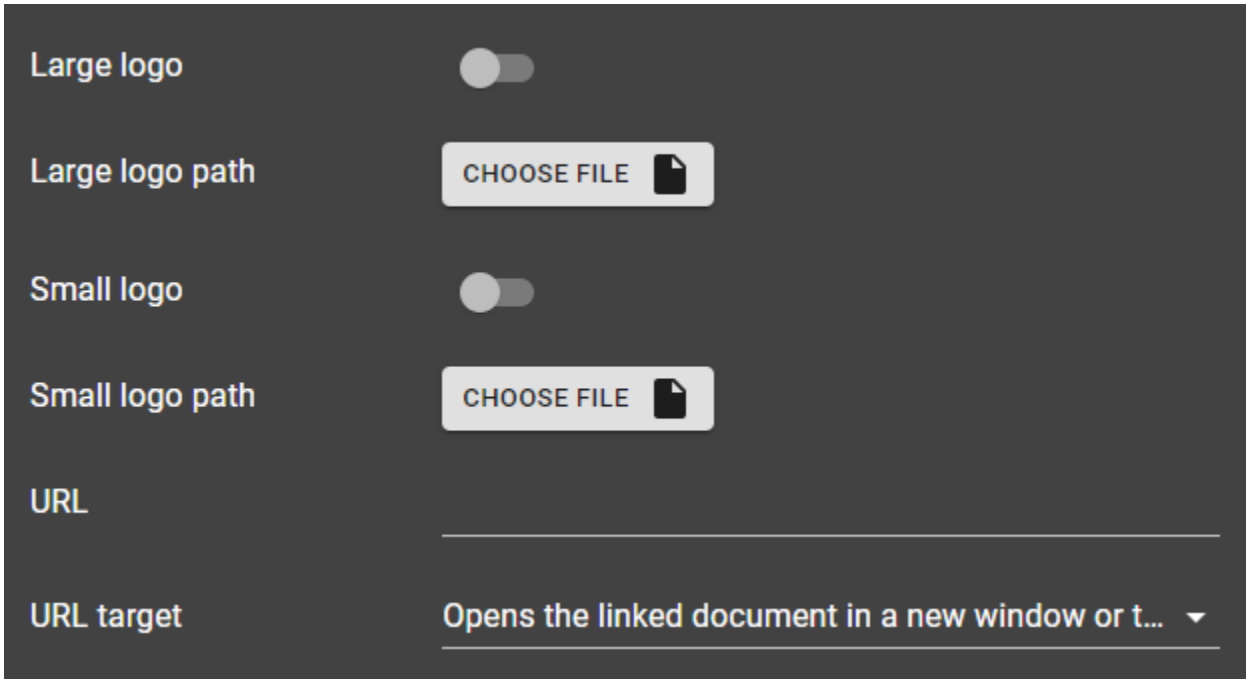


Layout

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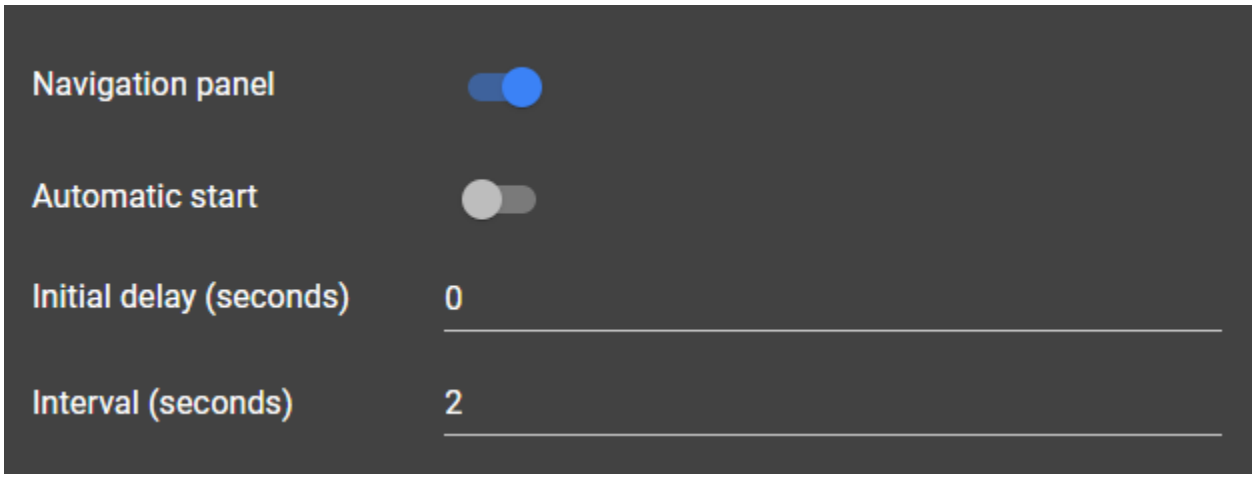


Logo

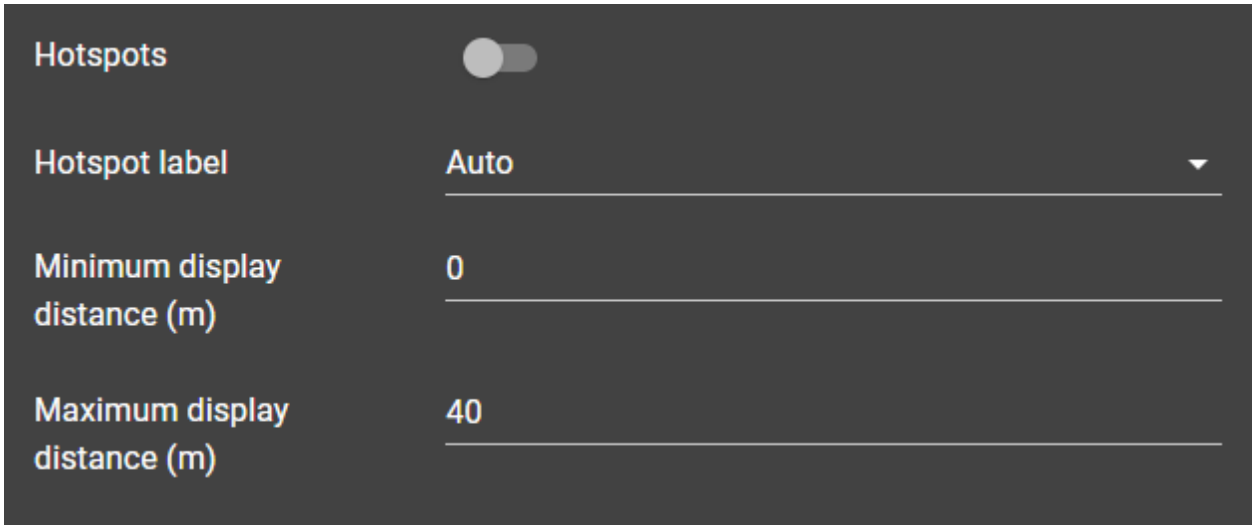


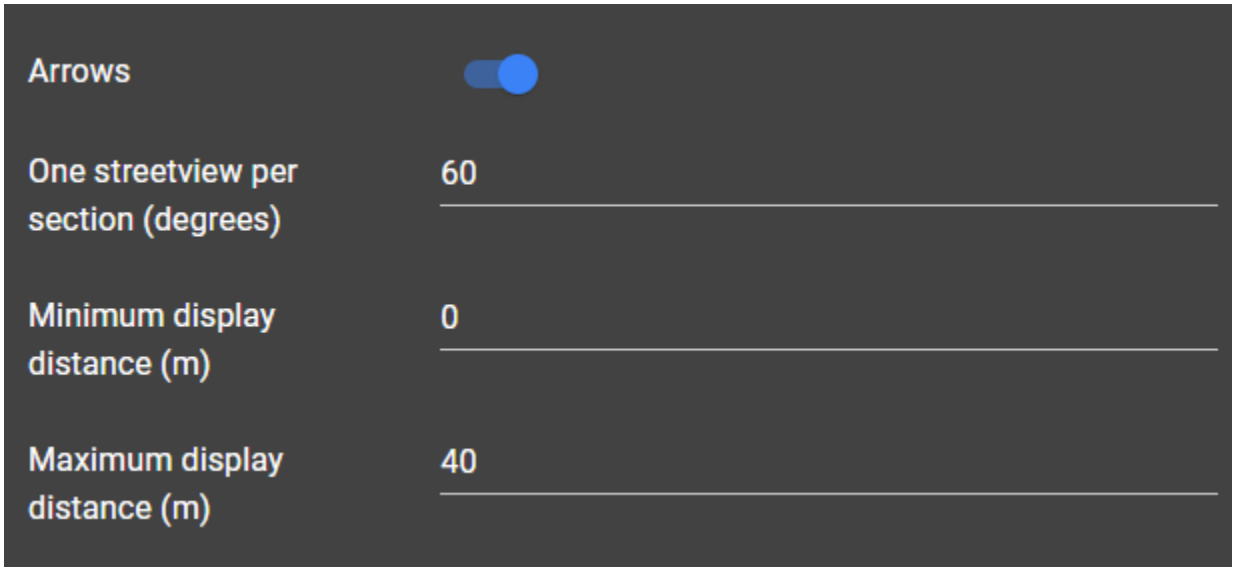
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Streetview



Only available in **Player 2 - Krpano**



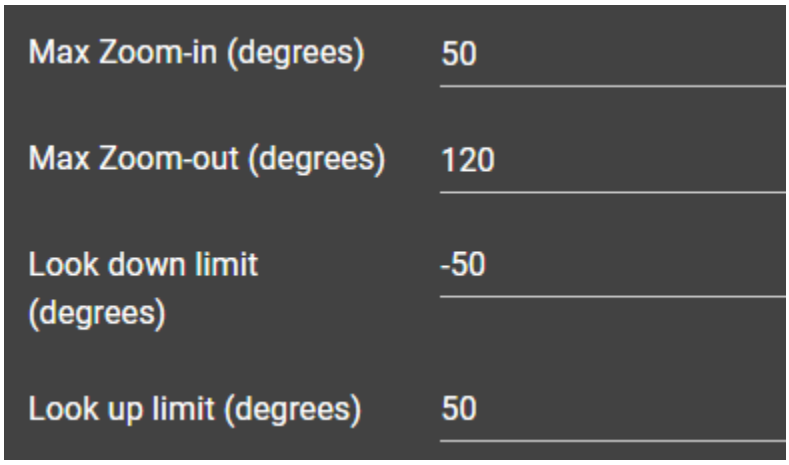


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Only available in **Player 2 - Krpano**

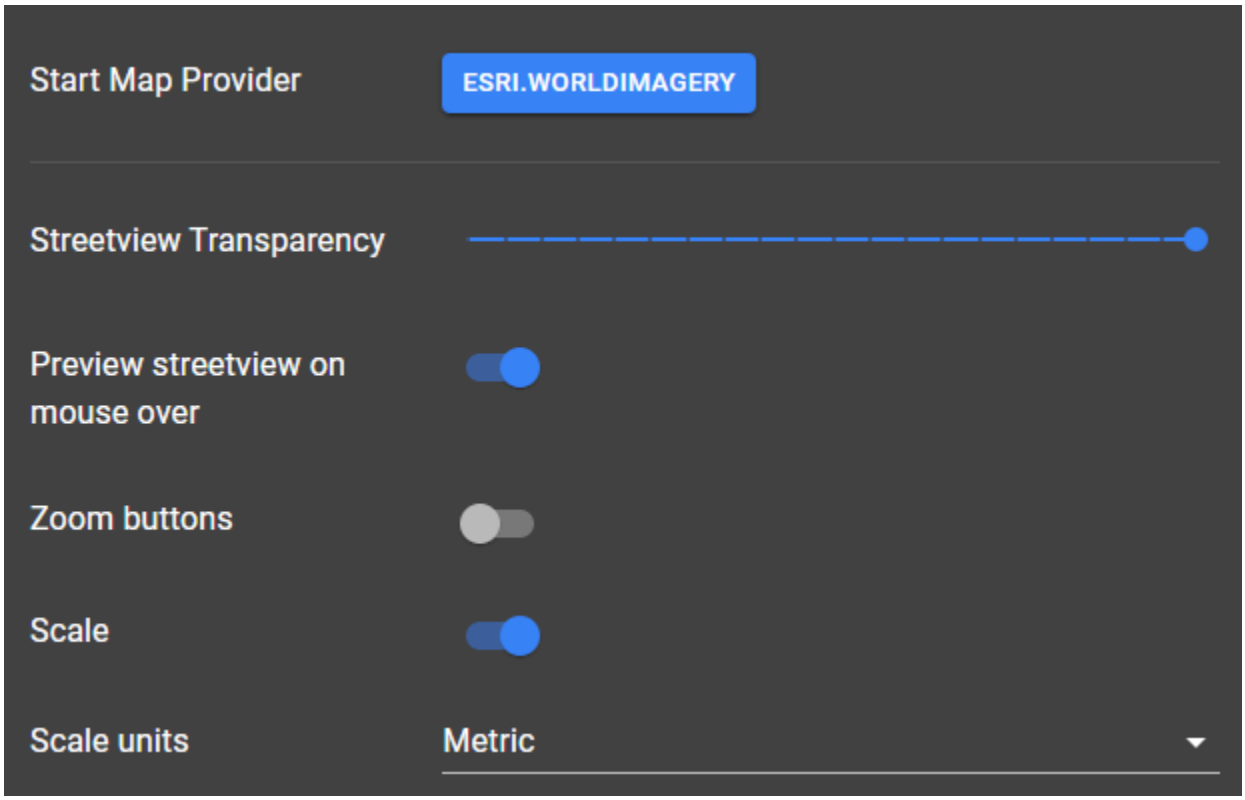






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Map



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Mapbox

Raster data

If you have raster data at mapbox.com, please use “Custom map tiles” instead.
The mapbox URL for “Custom map tiles” looks like this:
https://api.mapbox.com/styles/v1/YOUR_USERNAME/YOUR_STYLE_ID/tiles/256/{z}/{x}/{y}?access_token=YOUR_MAPBOX_ACCESS_TOKEN

Vector data

The following is for vector data only.
If you have your own vector data and would like to add it to the Player.
Mapbox provides an easy way to do it.



Map provider label
Name of the map provider shown in the Player - base layer selection panel.

Style URL

To get the URL of your style, in Mapbox studio click on the Share button in the top right corner and then copy the value of the **Style URL** field.

Access token

To get the URL of your style, in Mapbox studio click on the Share button in the top right corner and then copy the value of **Access token** field.

Map data legal notices
Custom map data legal notices

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Automatic rotation



Translations

For each language the default translations shown below will be used, unless you enter something else.
The Player will try to match the browser locale with one of the available languages, if that fails the first language will be used as the default.
Enable **Multi language** to show a button to allow the user to select the language manually in the Player.

Click on **Add new Language** button ⊕ to create a new language.
You can find the 2 letter codes (ISO 639-1) of all the languages here:
https://en.wikipedia.org/wiki/List_of_ISO_639-1_codes

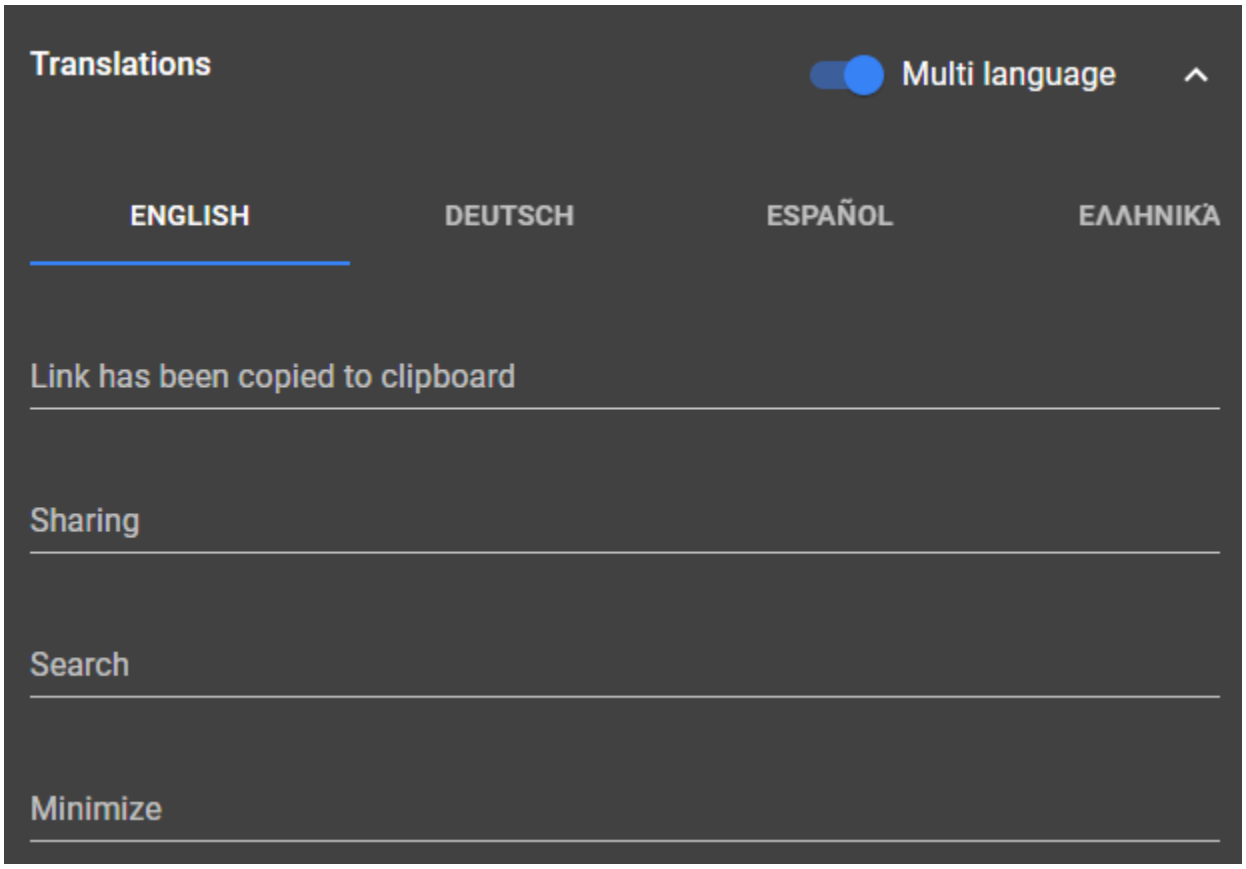
Delete
Consider doing a backup of the player settings and all translations before deleting.
Import a Backup to restore an added language and all other player settings.
You can delete your customisations to the four default languages and additional languages added.

In case one of the four default languages was deleted and you want to bring it back, just add it via the **Add new Language** button ⊕ and specify one of default language codes: en, de, es, ar. There is no need to enter all the translations again.

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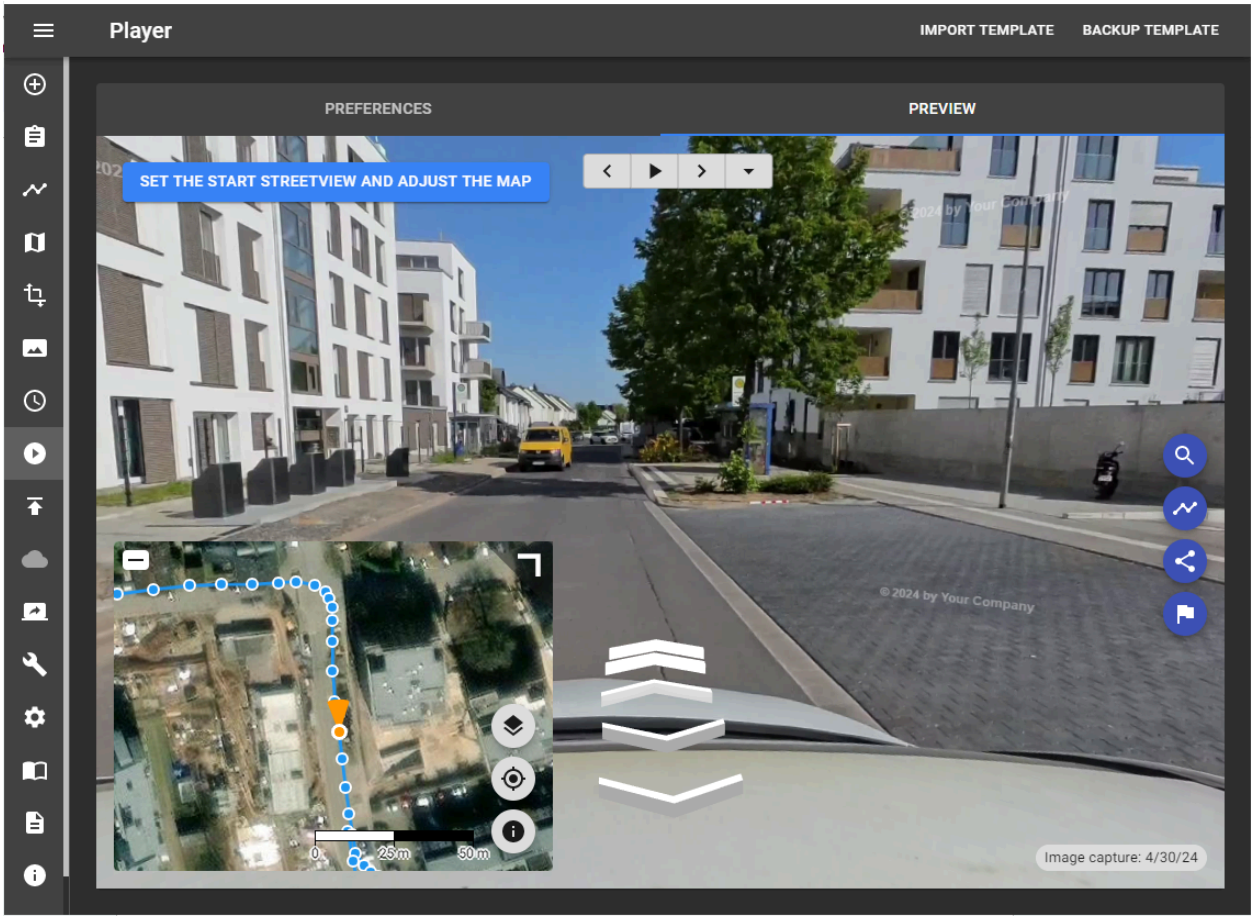
Default language
The player will try to match the browser language to one of the available languages. In case no match could be made - the first language will be used (by default English).

To set a different default language, delete all the languages except the desired language to make it the first language.
Then add all other languages again.



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Preview



Press CTRL + SHIFT + H to toggle hotspot visibility. E.g. for manual screenshots.

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Asset Visualization

In addition to the API the player can simply show your assets via the URL.

Let's assume you already have a list of 100000 assets with Latitude and Longitude. How can you link them to the 500 kilometers worth of street views you have just recorded?
Simply have your existing system generate a URL for each of your assets.

The player then will automatically open the streetview closest to the asset and look at it. This even works with timelines. Perfect for inspection and documentation of change.

Most simple example:
https://dhwg78vfdmqzw.cloudfront.net/index.html?v_lat=29.274778&v_lng=48.023550
You should see a man with a water hose.

Same, but with a label added:
https://dhwg78vfdmqzw.cloudfront.net/index.html?v_lat=29.274778&v_lng=48.023550&v_alt=128&v_label=Man%20with%20%20a%20waterhose

Minimum requirements:
Latitude and longitude values for your asset specified by URL query parameters:
v_lat - Latitude
v_lng - Longitude

Optional parameters:
v_alt - Altitude
v_label - asset description. It must be url encoded.
v_timeline - The name of an existing timeline. It must be url encoded.

Layout
v_layout can be one of the following values
map - Map
streetview - Streetview
streetviewBottom - Top Map, Bottom Streetview
streetviewTop - Bottom Map, Top Streetview

v_minimized
0 bottom left window being maximized
1 bottom left window maximized

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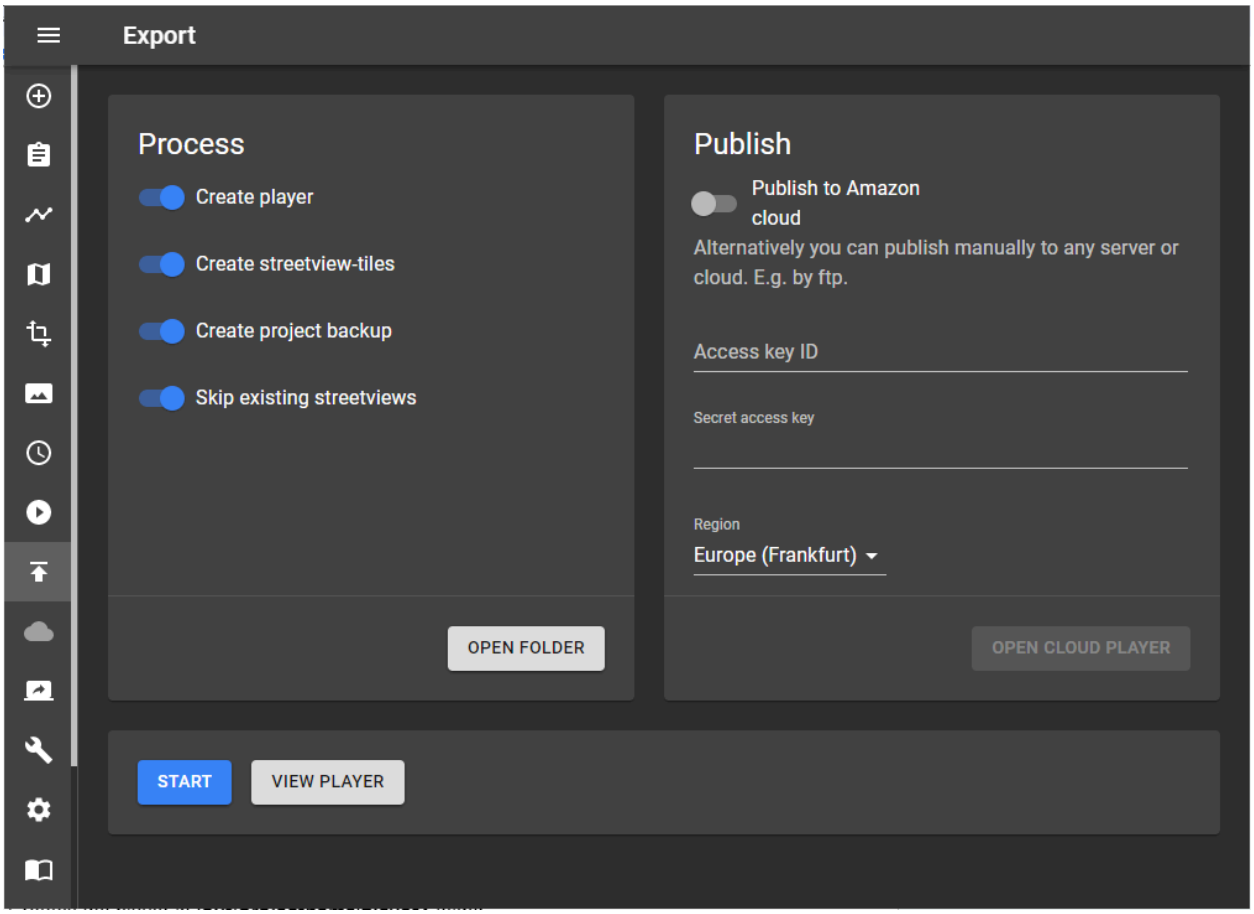
v_htmlTitle changes the title of the page. It must be url encoded.

Formatting
v_label, v_htmlTitle, **v_timeline** must be url encoded.
To encode URLs use https://www.urlencoder.org/ or similar websites.

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Export

Quick start: Click **Start**, wait, then click **View Player**.



Process

Creates the player and all data for it on your PC.

Create player

Creates the player in **/out/*projectname*/player3** folder.

Create streetview-tiles

Creates the streetview-tiles for the player in **/out/*projectname*/panorama-tiles** folder.

Create project backup

Creates a project backup with a timestamp in the **/out/*projectname*/backups** folder.
We strongly suggest keeping the **Create project backup** option activated.

Skip existing streetviews

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In case you are updating a project and reprocessing: If a streetview already exists, do not process it again. This can save a lot of time.

However, if you make changes to the streetviews e.g. by adding or removing a watermark or mask in Imagery, deactivate this option to reprocess the streetviews.

Alternatively you can manually delete the /out/*projectname*/**panorama-tiles** folder.

Player folders

When processing a folder *projectname* with 4 subfolders is created:

/out
    /*projectname*
        /backup
        /panoramas
        /panorama-tiles
        /player3

For a working player only the **player3** and **panorama-tiles** subfolders need to be uploaded.

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Publish

One-click upload of the player and the streetview-tiles to your Amazon AWS account.

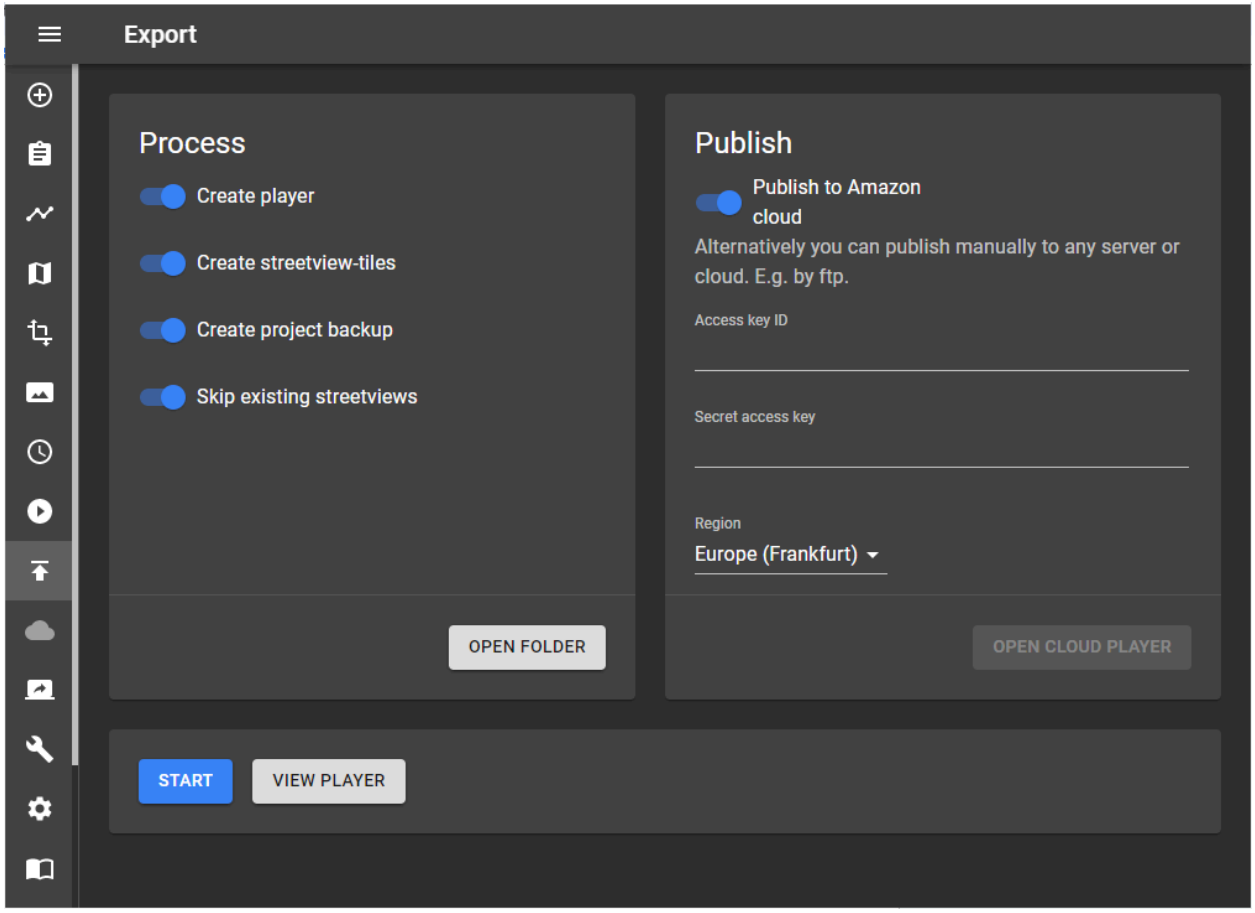
For the free evaluation period we provide our own Amazon AWS cloud account.
Therefore no setup is required.

- Free testing with the 360camsters Amazon AWS account.
- Amazon regions are limited to Europe (Frankfurt).

Alternatively you can manually publish to Amazon AWS (S3), Microsoft Azure, Google Cloud, Apache, NGINX, IIS and literally any other web server.

Publish to Amazon cloud

Process and then publish in one simple step.
You also can process only. And then publish anytime later without re-processing.



Advantages of the Amazon AWS player

- Easiest player to publish.
- Cheapest player for hosting and data transfer.

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- Very versatile. E.g. add a CND like CloudFront to speed up the loading of the streetviews even more. Or enable for a world-wide audience.

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Details for the player published to Amazon AWS
A unique ID (UUID) is part of the cloud player's URL. It can not be guessed.
Only users you tell the URL can access the player.

Consider adding a CDN (**C**ontent **D**elivery **N**etwork to your player.
For Amazon AWS that is CloudFront. In addition to ensuring a snappy player that way you can remove and then add a different CloudFront URL, without having to upload the player and the streetviews again.
Also you could add a domain or subdomain to the player URL, or the CloudFront URL.

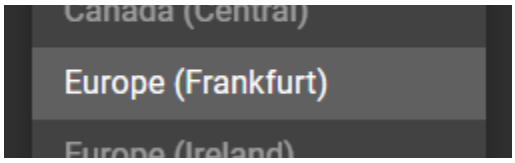
This is the same player, with 3 different URLs:

Player example (bold: UUID)
https://fmbeach-**0af93b09-d80e-4824-a917-6ee14d5ce5f4**.s3.eu-central-1.amazonaws.com/index.html

Player CloudFront example
https://d1l4vlab4nh63j.cloudfront.net

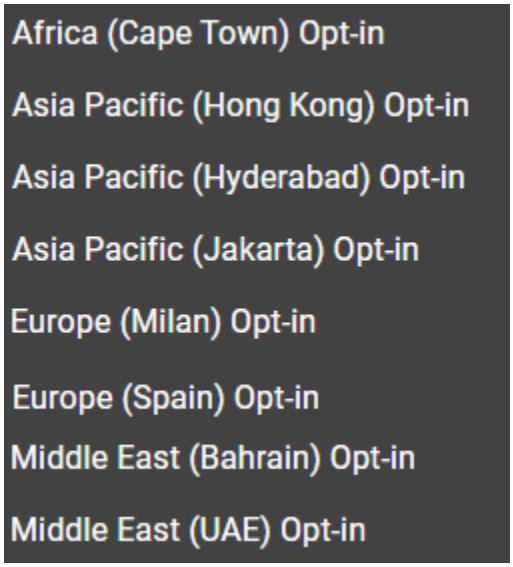
Player subdomain example
https://ian.360camsters.com

During the free evaluation period the AWS regions are limited to the **EU (Frankfurt)** location. With the full version all 26 AWS regions are available to you.



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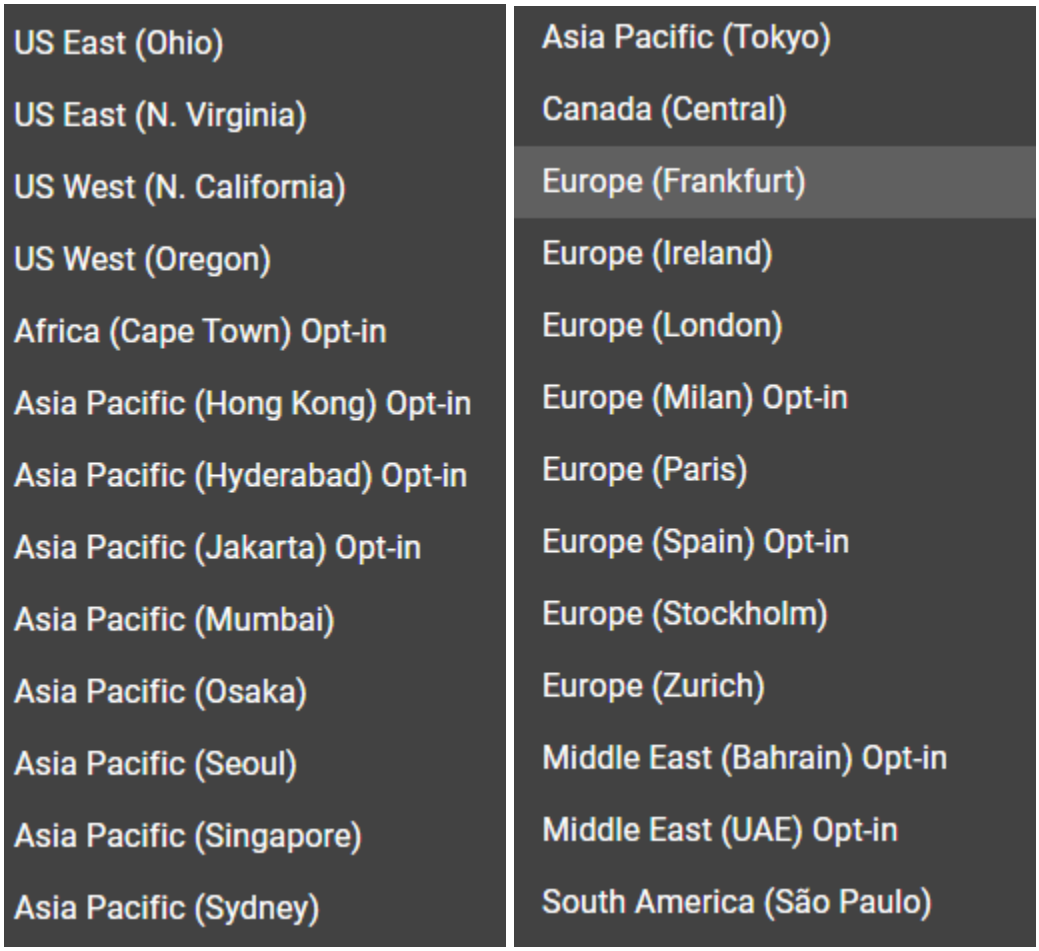
To publish to regions marked as **Opt-in** in the list, you need to activate them first: https://console.aws.amazon.com/iam/home#/account_settings



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After purchasing 360 Private Publisher more options become available:

1. **Access key ID** and **Secret access key**
   Follow Amazon Web Services Cloud on how to get your free AWS credentials.
2. **AWS region for publishing**.
   Pick one of the 25 AWS regions closest to your viewers. This is not necessarily the region closest to you. Each player can have its own region.



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View the player

The player can be viewed in many ways:

1. **Player -> Preview**: Player with on-the-fly processed footage.
2. **Export -> View Player** button: View the exported player on your PC.
3. **Export -> Open Cloud Player** button: See the published cloud player.
4. **Manual upload:** Upload the player by e.g. ftp to any cloud or server.
   E.g. Amazon AWS (S3), Microsoft Azure, Google Cloud, Apache, NGINX, IIS and literally any other web server. Both shared and dedicated hosting works.
   No database or php needed.

AWS CloudFront (CDN)

If your cloud player needs

- a custom domain
- to handle high traffic from all over the world

It's recommended to add a CloudFront distribution to the player.

Go to https://console.aws.amazon.com/cloudfront/home and click the **Create Distribution** button.

Origin Domain Name
Select the player in the drop-down field.
Example:
https://ghost-town-e6a1df59-15f6-45ea-9675-2de94703f92b.s3.eu-central-1.amazonaws.com/index.html

Viewer Protocol Policy
Set to **Redirect HTTP to HTTPS**.

Default root object
Enter **index.html**

Scroll down and click the **Create Distribution** button.

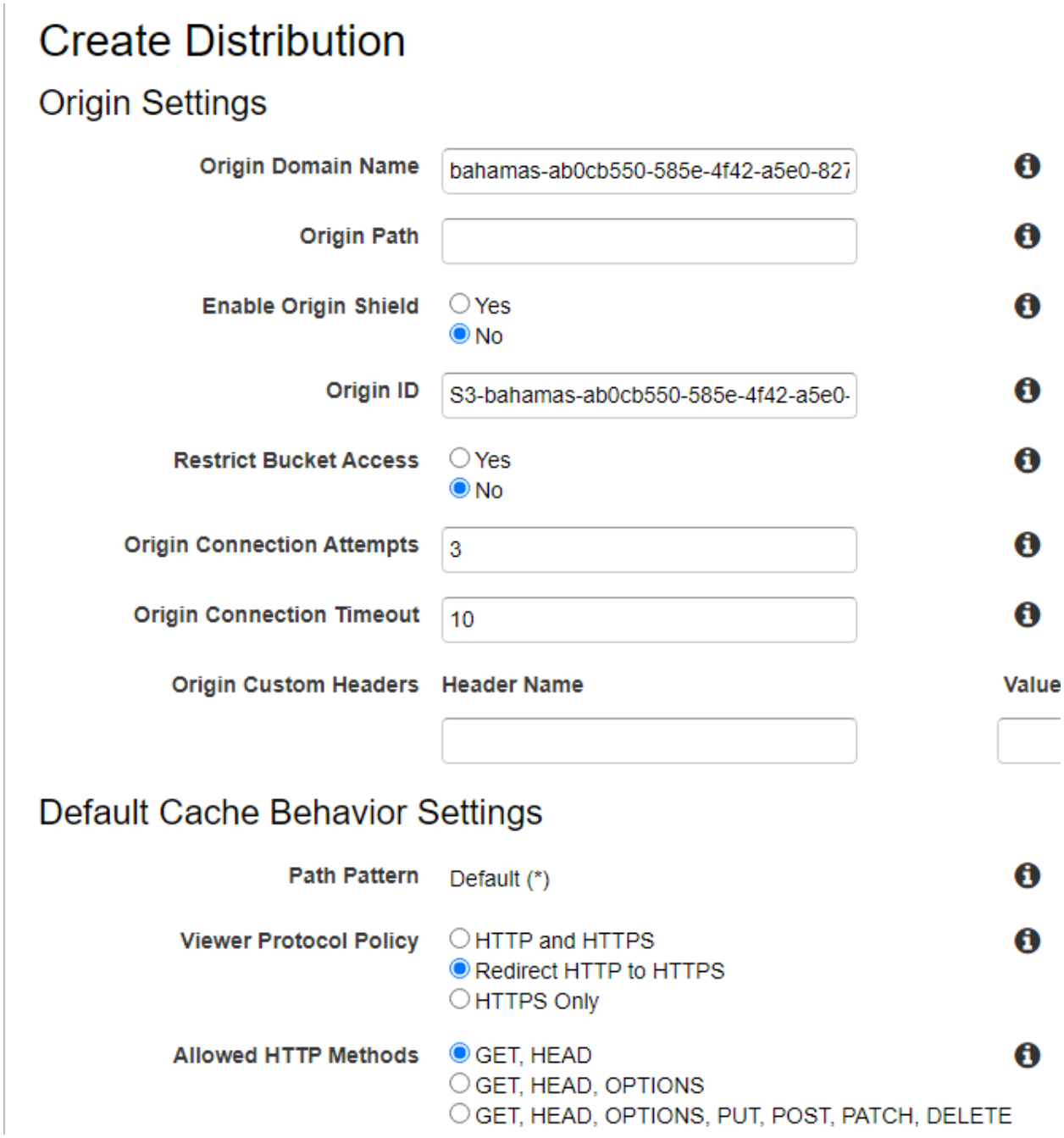
Go to **CloudFront Distributions** list, and wait until the distribution is created (**Status** column changes to **Enabled**). This might need a few minutes.

The complete CloudFront URL for the browser or for embedding:
https://d2gm8i73pgaxv.cloudfront.net

Hint:
Please notice that it might need up to 24 hours for the new CloudFront Distribution to

deploy worldwide to work properly. Up until then it will work by forwarding to the S3 domain name.

URL query parameters like v_lat, v_lng, etc. will start working only when the CloudFront deployment is completed. This might need up to 24 hours.



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Embed the Cloud Player into any webpage

What it looks like on our website:

http://www.360camsters.com

3 examples for the same player:

Cloud Player URL from this program:

Get the URL from **Publish -> Open Cloud Player**.

```
<iframe
src="https://fmbeach-0af93b09-d80e-4824-a917-6ee14d5ce5f4.s3.eu-central-1.amazonaws.com/index.html" width="100%" height="600" frameborder="0"
style="border:0" tabindex="0"></iframe>

Same player, with Amazon CloudFront CDN instead:
<iframe src="https://d1l4vlab4nh63j.cloudfront.net" width="100%"
height="600" frameborder="0" style="border:0" tabindex="0"></iframe>

Same player, with a custom subdomain for CloudFront:
<iframe src="https://ian.360camsters.com" width="100%" height="600"
frameborder="0" style="border:0" tabindex="0"></iframe>
```

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Cloud Player

Manage this project’s Amazon AWS cloud player.

Open Cloud player
Opens the published Cloud Player in the browser.

Delete Cloud player
Deletes the published Cloud Player from the internet **and** the project.
The same URL can **not** be re-used.

To only delete the cloud player from the internet, but to keep the URL in the project, use Preferences -> Amazon Cloud instead.
An updated player then can be published with the same URL.

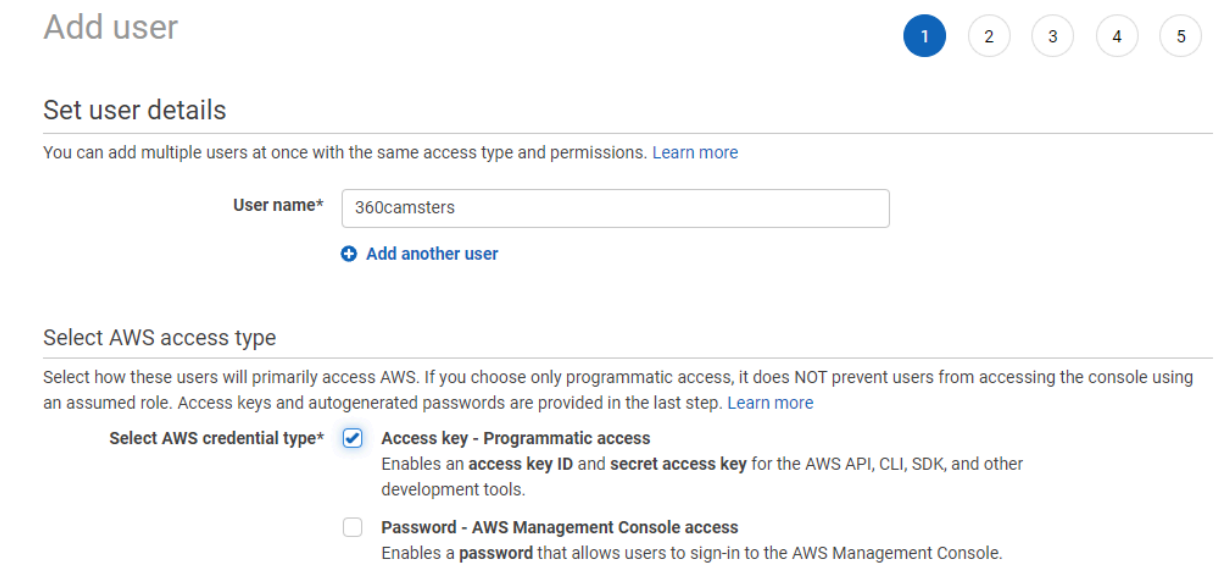
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Create Amazon Web Services (AWS) account

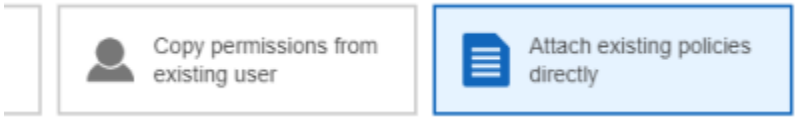
360 Private Publisher has a built-in one-click publishing feature for the Amazon Web Services (AWS) Cloud Computing Services to easily publish the player to the internet.

An **Access key ID** and **Secret access key** is required for publishing.
(In the free evaluation period it works without.)
This needs to be set up only once.

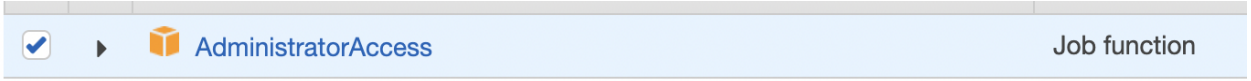
1. Go to https://aws.amazon.com/console/ and sign in with an existing Amazon account or create a new account.
2. Log in and continue to https://console.aws.amazon.com/iam/home?#/users$new?step=details to add a new **IAM user**
    a. **User name**: 360camsters
    b. **Access type**: Programmatic access
    c. Click **Next: Permissions** button



3. Select **Attach existing policies directly**

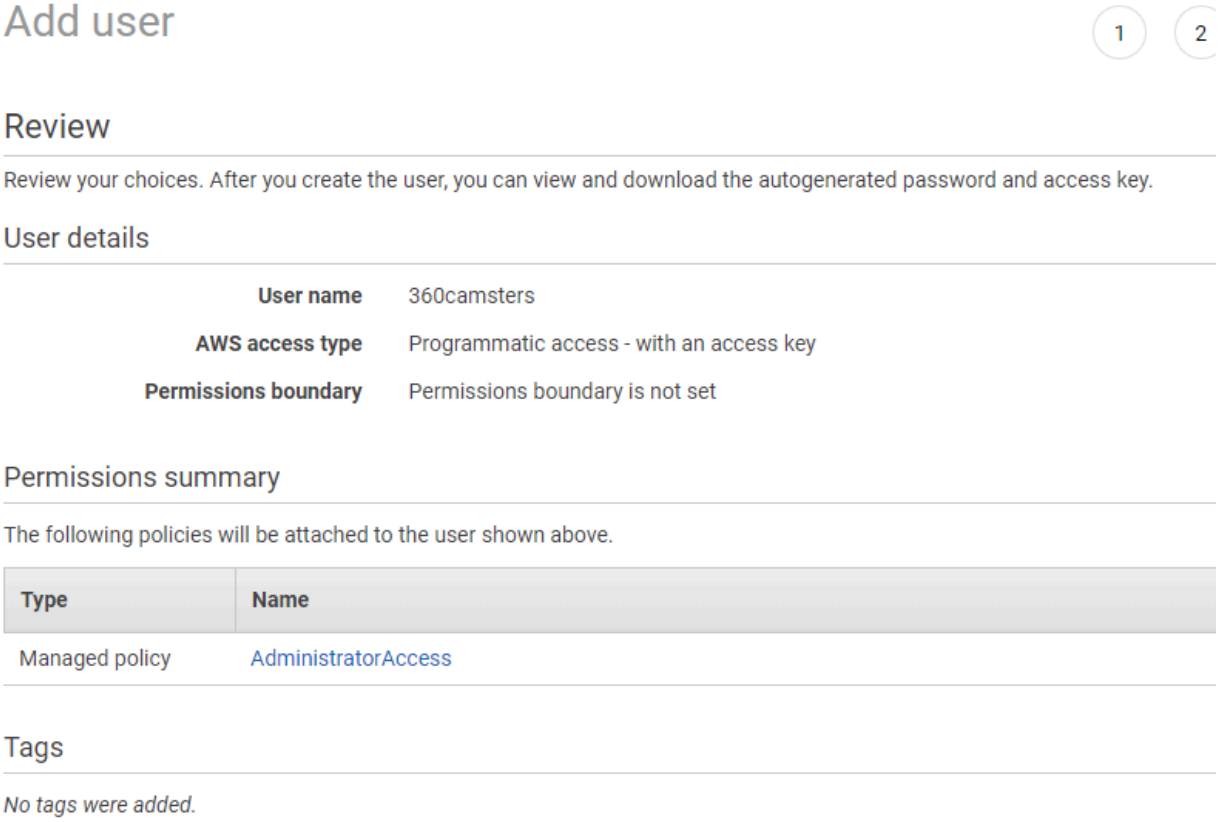


4. Select **AdministratorAccess** privileges.



5. Click the **Next: Tags** button
6. Click the **Next: Review** button. Make sure User details and Permission summary matches the image below.

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7. Click the **Create user** button
8. Regions:
   All regions are available to a newly created IAM user by default.

   To publish to regions marked as **Opt-in** in the list, you need to activate them first: https://console.aws.amazon.com/iam/home#/account_settings

Then copy the **Access key ID** and **Secret access key** into the appropriate fields on the **360 Private Publisher -> Export: Publish** page.
Or **360 Private Publisher -> Preferences -> Amazon Cloud**.

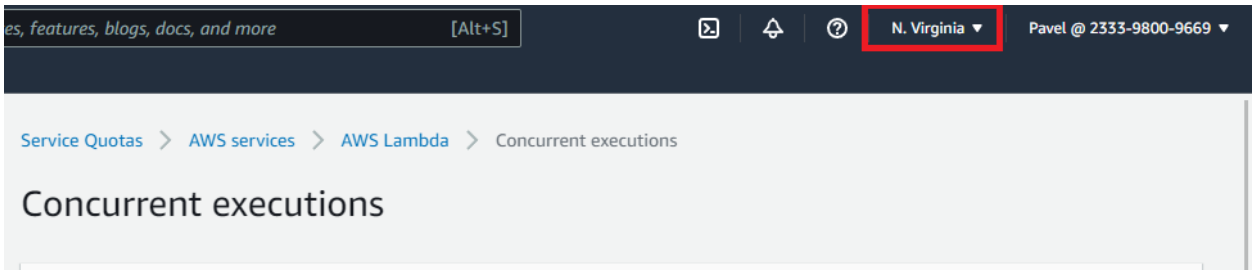
It is recommended to click the **Download .csv** button in order to save the credentials to your PC should you ever need to enter them again.

Request quota increase: Concurrent execution

Go to
https://console.aws.amazon.com/servicequotas/home/services/lambda/quotas/L-B99A9384

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Switch to the region where the player will be published.

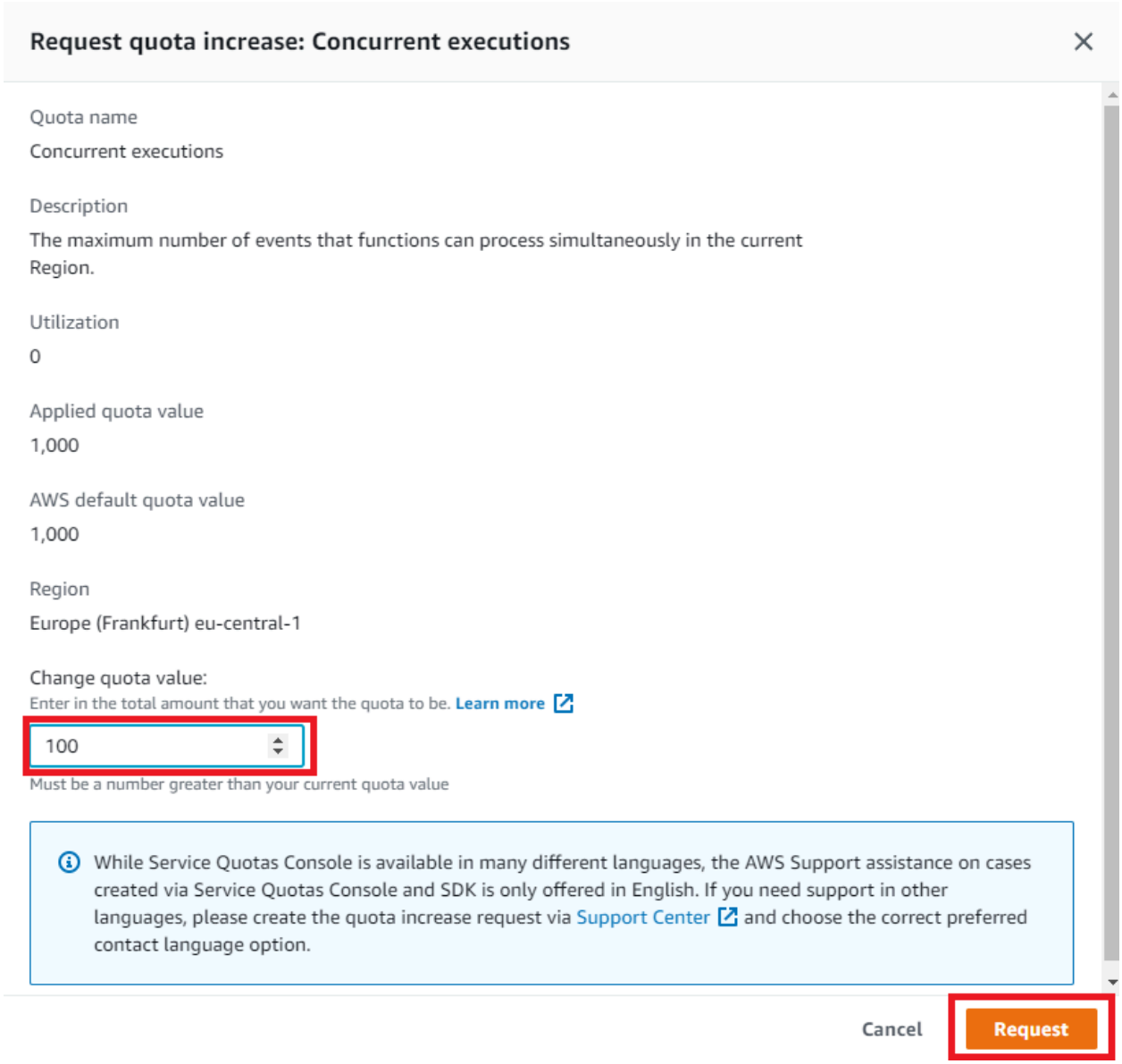


Click on the **Request quota increase** button.

The quota increase is per AWS region. In case you plan to publish different players to different regions, you need to do this for each region you want to publish to.

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Set **Change quota value** to **100**
Click on the **Request** button.



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Apache, NGINX, IIS, MS Azure and Google Cloud

The player can be published to literally any web server or cloud. It is a collection of static files (html, js, css, etc.). No database is needed.

Copy both the **player3** and the **panorama-tiles** folders to e.g. the /**players/hometown** folder on your web server. The players URL would then be:
https://www.your-server.com/players/hometown/player3/

Embed the player into any webpage

First publish the player to a webserver.

Both the **player3** and the **panorama-tiles** folders are published to the **hometown** folder:

https://www.your-server.com/players/hometown/**player3**

https://www.your-server.com/players/hometown/**panorama-tiles**

In your page, add this code:

```
<iframe src="https://www.your-server.com/players/hometown/player3/"
width="100%" height="600" frameborder="0" style="border:0"
tabindex="0"></iframe>
```

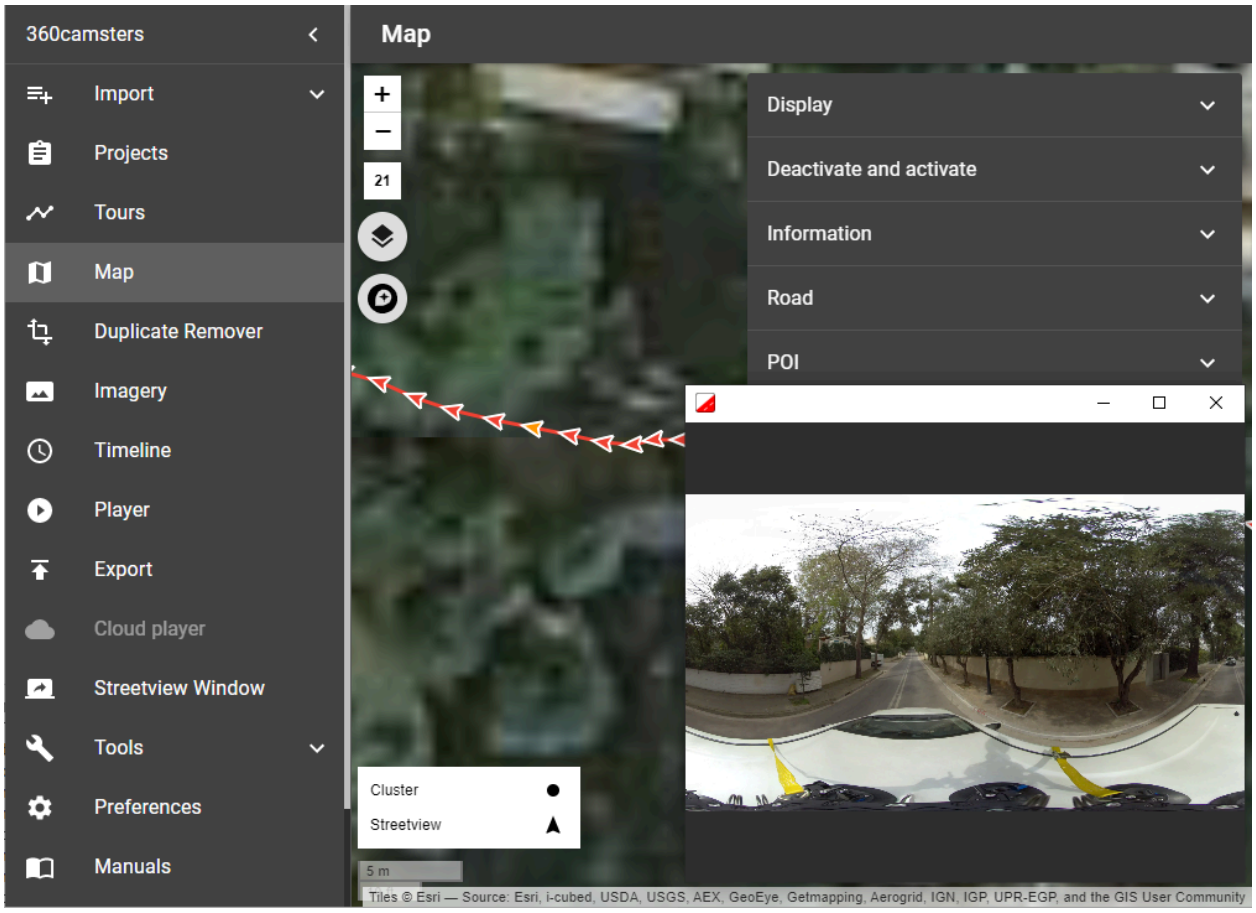
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Streetview Window

Works with streetviews selected on the **Map** and **Player - Preview**.

By adding a second monitor you can see the program and the **selected streetview in full size,** at the same time. Side by side.

You can test this with a single monitor:



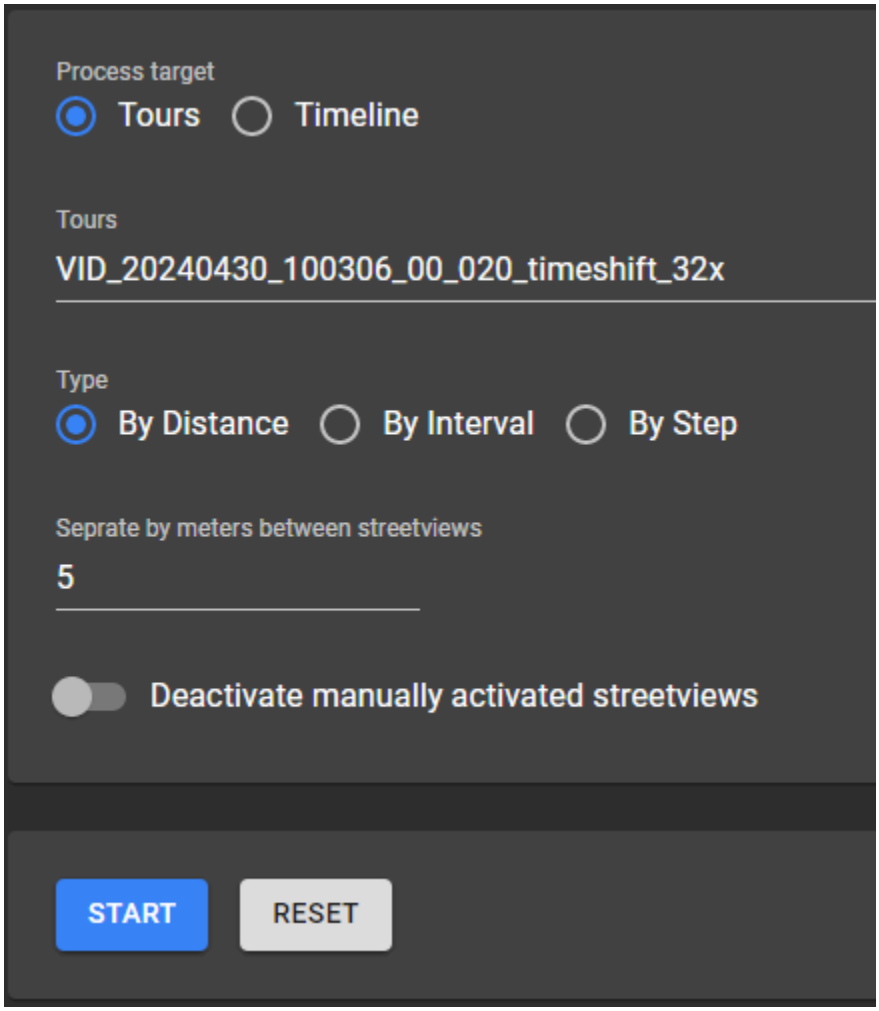
Shows the selected streetview.
You can navigate in **Map** and **Player -> Preview** using the PgUp and PgDown keyboard keys.

You can zoom in and out.

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Tools

Skip



Always to be used after the Duplicate Remover.

To convert tours recorded in **1m** Distance Mode to **5m** Distance Mode.
To convert tours recorded in **Interval Mode** to **Distance Mode**.
Etc.
This greatly reduces the number of street views to process upload and host.

Process target
(Visible only when there are timelines)
Process either the selected tours or process the selected timelines.

By Distance

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Separate by meters between streetviews.

By Interval
Separate by seconds between streetviews.

By Step
Process every x-th streetview.

Deactivate manually activated streetviews
By default manually activated streetviews are not deactivated. Enable this option to force them to be deactivated.

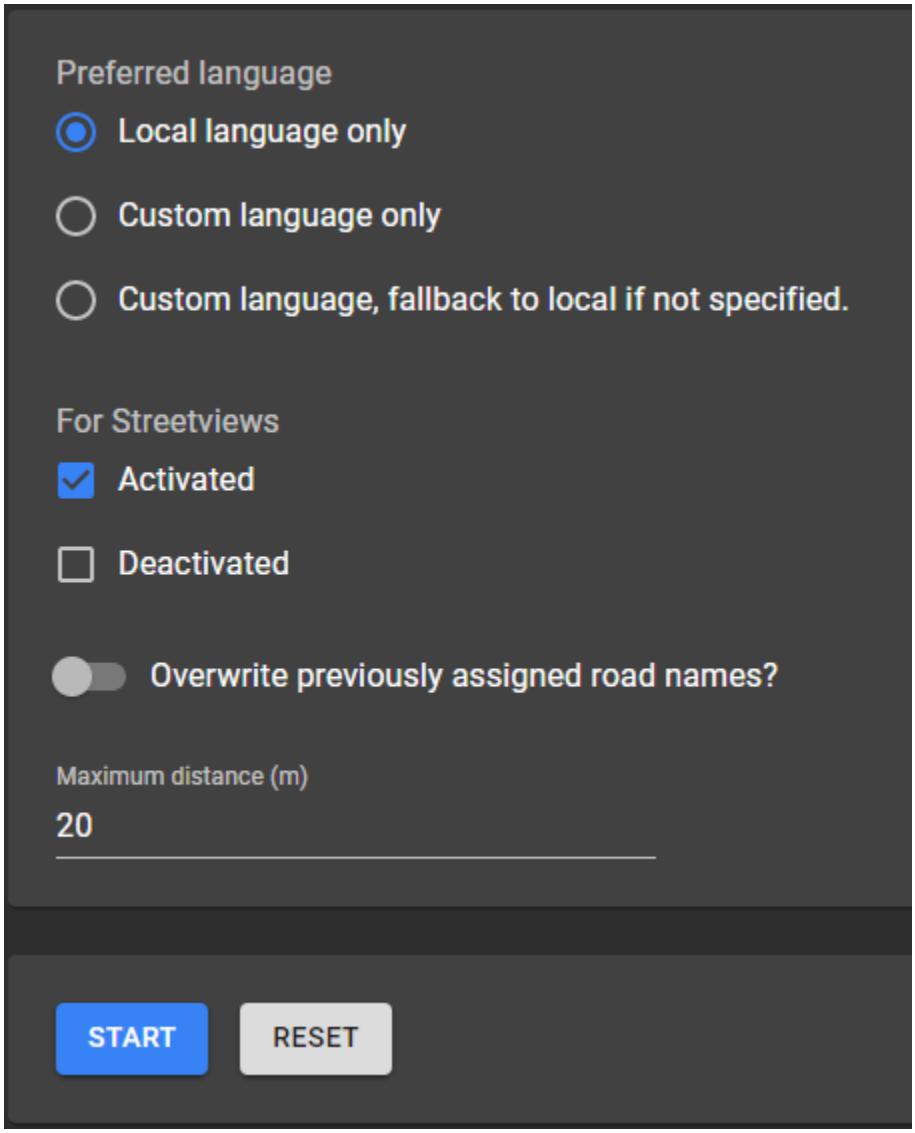
Start
Start separating the streetviews.
Try a few times to find the optimum settings for your footage.

Reset
Reset all streetviews deactivated by Duplicate Remover and Skip tool.

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Road names from OpenStreetMap

If you already have road names, make a project backup first.
This ensures you can restore in case you accidentally change them in an unwanted way.



Preferred language
Local language only - "name" value of the OSM road.
Custom language - "name:language" value of the OSM road.
Custom language, fallback to local if not specified - If "name:language" value does not exist use "name".

For Streetviews
Activated streetviews
Deactivated streetviews

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Overwrite previously assigned road names?
If enabled streetviews with an existing road name will be skipped.

Maximum distance (m)
Maximum distance to the closest road to be considered for geocoding.

Start
Geocode streetviews with road names from OSM

Reset
Remove all assigned road names, even those assigned manually via the Map page.

Fix Direction

If the heading of the majority of the streetviews is not correct it's possible to calculate the heading from the streetviews position.

Click **Start** to calculate the healing from position.
Click **Reset** to revert to original values.

Fix altitude

If the Altitude (height) of streetviews is not correct or missing it's possible to determine it from the Latitude and Longitude. We are using NASA Shuttle Radar Topography Mission Global 3 arc second V003 dataset for this.

Click **Start** to calculate the height from the digital terrain model.
Click **Reset** to revert to the original values.

Once **Start** is clicked, 360 Private Publisher will download the digital terrain model for your project's location and cache it.
This tool therefore requires an active internet connection.

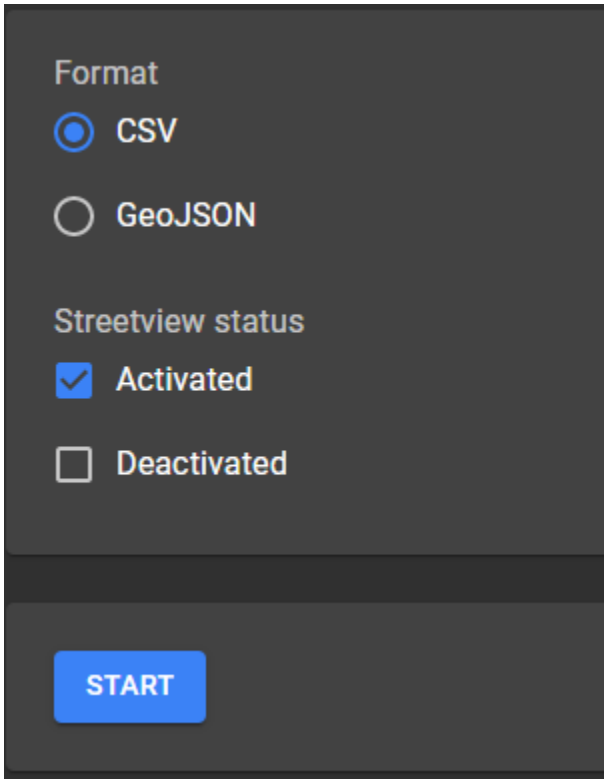
The size of the height-data is about 3 MB for a 1x1 degree area.
The area is determined by a bounding box for all the streetviews in the Project, both active and deactivated.

Hint:
Streetviews deactivated for wrong positions can present a problem. They still will be considered for the bounding box, even when in the middle of the Atlantic Ocean for both Latitude and Longitude being "0". Please move them closer to the active streetviews.

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Export Metadata

Export streetview metadata.
E.g. for a 3rd-party program.



Streetview status
CSV (comma separated, double quote as as string delimiter),
GeoJSON

Streetview status
Activated: Metadata for activated streetviews only.
Deactivated: Metadata for deactivated streetviews only.

Start
Start the export process.

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Export Panoramas

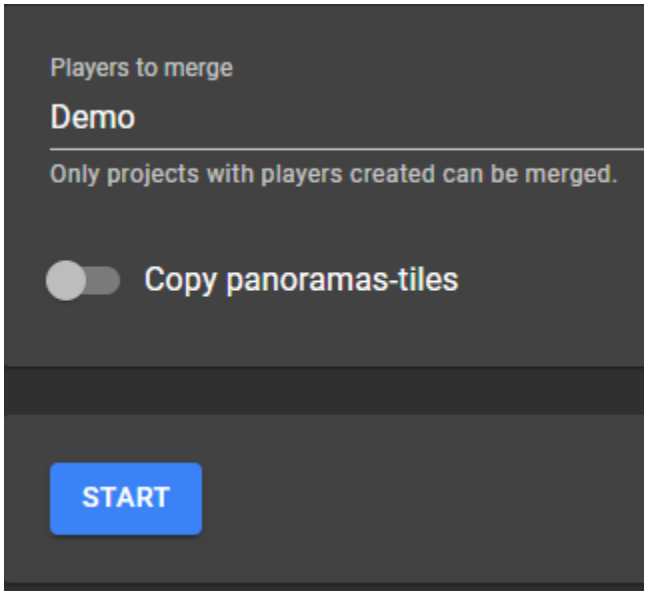
Export streetview equirectangular panoramas.
E.g. for a 3rd-party program.

Output Folder
Copy equirectangular panoramas into the selected Output folder/Project name/Tour name

Streetview status
Activated: Metadata for activated streetviews only.
Deactivated: Metadata for deactivated streetviews only.

Start
Start the export process.

Merge Players



Players to merge
List of the available projects.
Only shows processed projects with data in /out.
Process all projects first, then merge.

Copy panoramas-tiles
Copy the panoramas-tiles folders of all the players into **Output Folder**/panorama-tiles
This might need a while.

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Start
Create the merged player in a new folder.
The projects to be merged are not changed.

Open Output Folder
Open the output folder of the merged player.
The new folder with the merged player is always saved to the **out** folder.

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Preferences

General

Language
Set the program language.
Languages supported: English, Spanish, German.
We are happy to add more languages. Just contact us.

Automatically send usage statistics and crash reports to 360camsters.
Please help us make this program better.

Folders

It is strongly recommended to create the following 3 folders to organize your data:
In, Out, Backup.
Set the folders up in Preferences -> Folders.

Input folder
Usually named **in**.
Default location of the project input data. You should place your recorded data here.

Output folder
Usually named **out**.
Default location for publishing.
All the project folders are subfolders of the **out** folder. They are created automatically.

Backup folder
Default location for saving project backups.
Weekly or daily backups are strongly recommended.
This is only for this program's data. Sources or generated data is not included in a Backup.

Manually create additional folders to keep your data organized:
Masks, Logos, Export, Player templates.

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Amazon Cloud

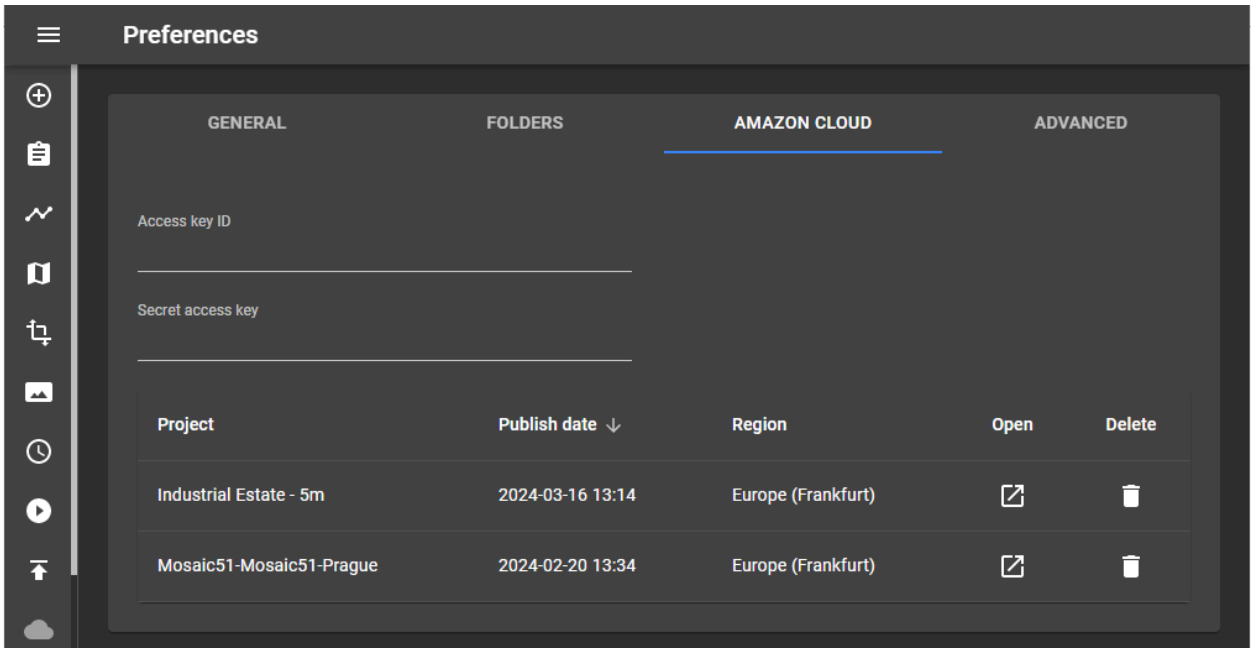
This works independent from any project.
All it needs is an Amazon AWS **Access key ID** and **Secret access key**.

See the Create Amazon Web Services (AWS) account section for how to get your own AWS credentials.

To view and delete players published to your **AWS account**.

If you delete a player from your AWS account, the project still knows the URL the player has been published to. Meaning you can re-publish to the same URL using the project, or a project backup.

To delete a player from both the Internet and the project, use **Cloud Player -> Delete Cloud Player** instead**.**



Project
Project name

Published date
Date and time of the upload.

Open

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Open the player URL in the browser

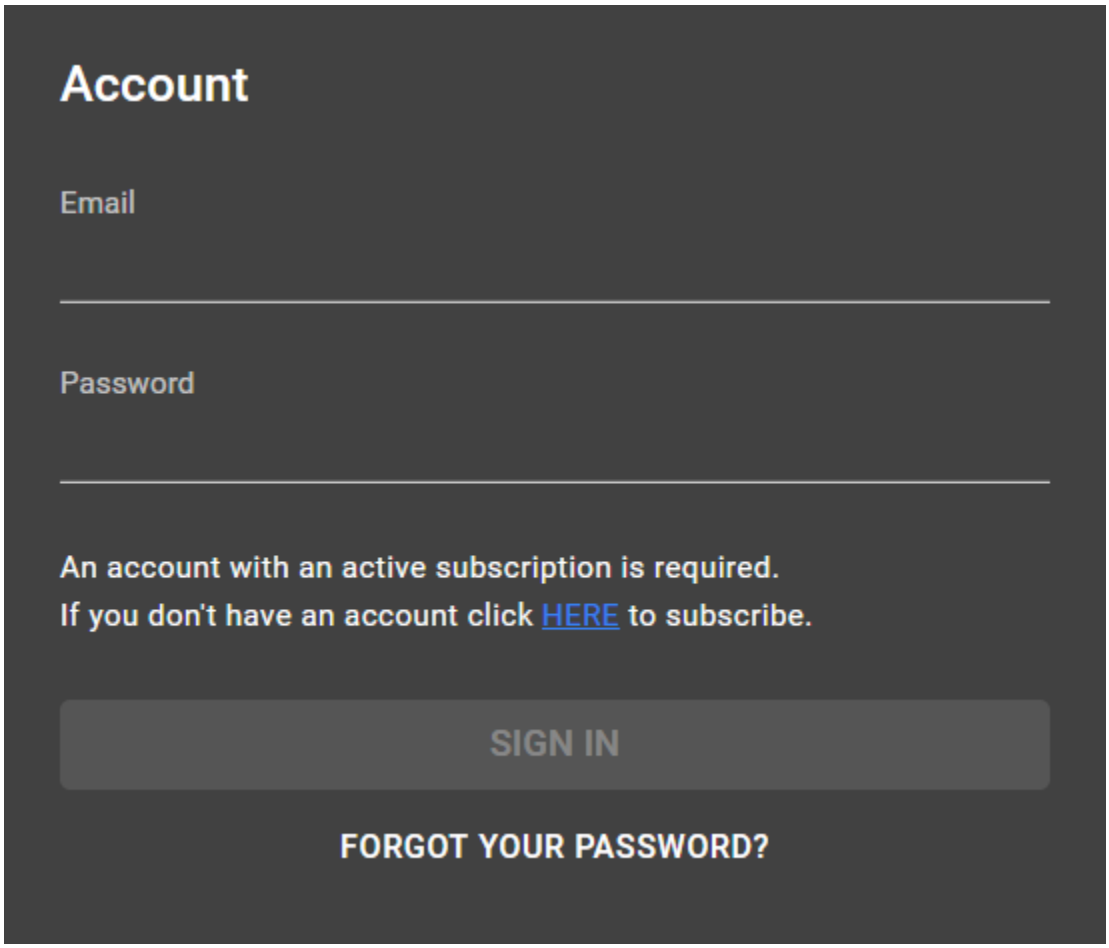
Delete
Delete player (incl. all streetviews) from the Amazon account.
Local projects will not be changed.
The project still knows the same cloud URL and can be re-published to it.

Manuals

Opens this manual.

License

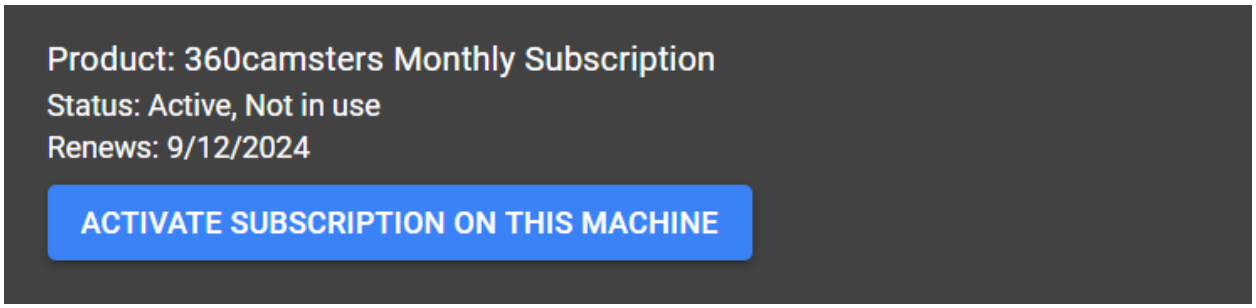
In order to activate a license in the app, use the same email address and password you used to start the Free Trial or to purchase a paid license.



If you don't have an account yet, click “Here” to subscribe.

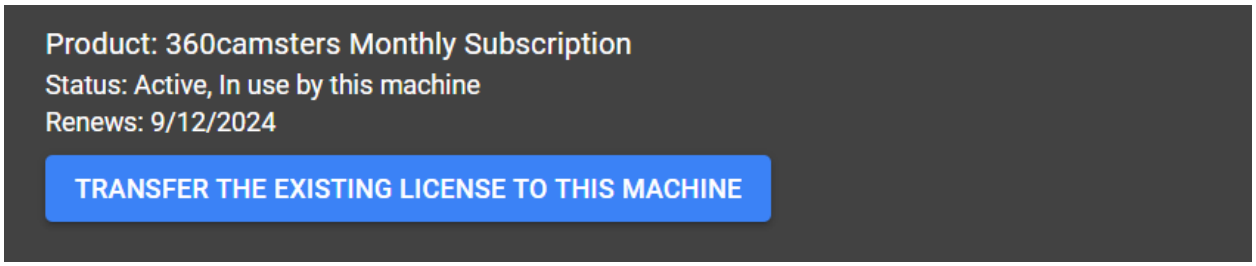
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If you have started a Free Trial or purchased a paid license click the **Activate subscription on this machine button** to start using the program.



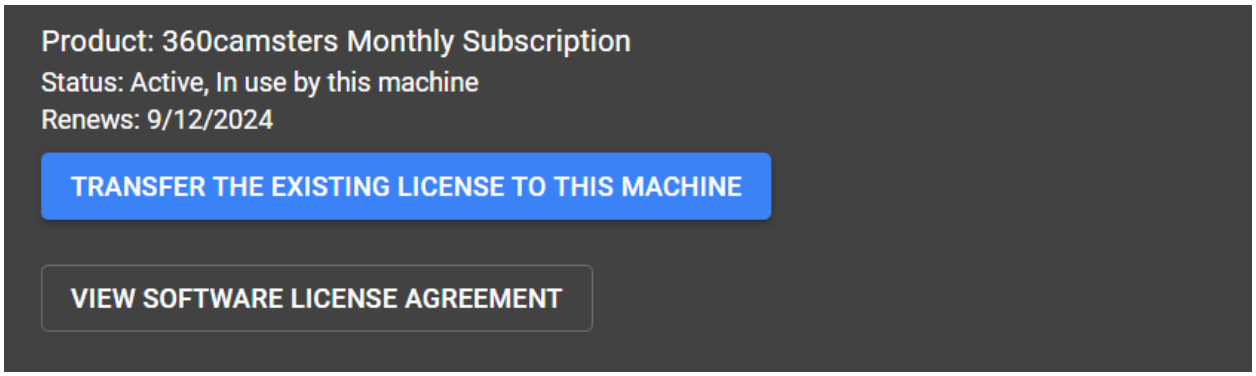
To use the subscription or product on a different PC or Laptop, install the program, sign in, and click the **Transfer the existing license to this machine** button.
Only one PC or Laptop can be used at the same time and account.
You can transfer as often as you like.

Projects and players will not be transferred!
Make a project backup, copy it to the new PC and import it. Recreate the player.



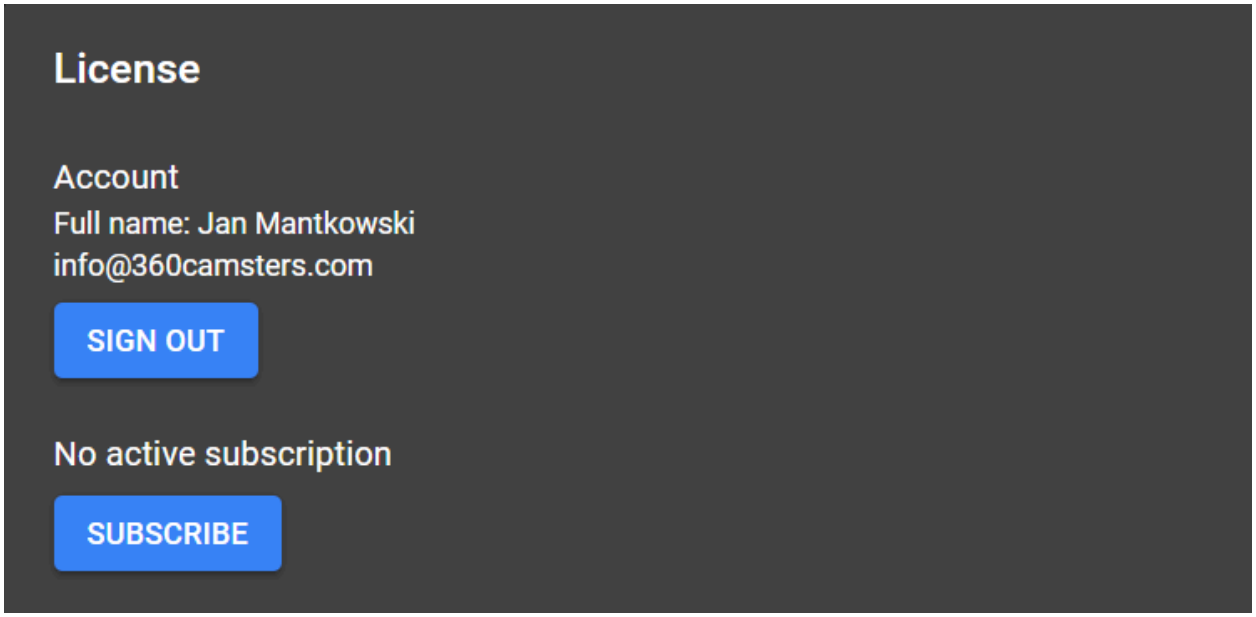
View Software License Agreement

Click on the View Software License Agreement button to open it in a new window.



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Once signed in, if you have no active subscription or product (e..g because the Free Trial, subscription or one-time purchase expired) you will be asked to subscribe again. Click the Subscribe button.



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Help

About

Displays this program's installed version. Check for updates, view the release notes.

krpano license

The free and open source Photo Sphere Viewer replaced Krpano as the new default player. It is based on https://photo-sphere-viewer.js.org/

Should you need the proprietary krpano player as known from 360camsters 1.x you can switch back to it in Preferences -> Advanced: Player

A single krpano license is sufficient for all players you create.

For the **Evaluation** version of this program you can not enter your own krpano license.

Click **Add activation key** to enter your krpano license key.
Purchase a krpano License if you do not have one already.
Paste your krpano key into the field and click the **OK** button. You should see a confirmation message that the key is registered.
Restart this program and re-create all players to remove the krpano watermarks.

krpano watermarks:



The krpano demo version watermark is visible in the playe:

- Player - Preview
- All generated players

Logs

Open the newest log file or open the folder with all the log files.

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Hardware

Displays the specifications of the PC.



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Very large, country-size, projects

For country-size projects we recommend processing the data split into smaller, separate projects. Have separate projects for e.g. capital, counties, states, etc.
Process and export each.

Then combine the players with **Tools -> Merge Players**.
This does not change the existing projects and their players.
It creates an additional, combined, player with all the data.

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Trial and publishing to the Amazon AWS could

For trial one-click-publishing to the Amazon cloud works out-of-the-box.
No setup needed.

Just pick a project and publish your first player right away.
For the Trial version the publishing Regions are limited to **EU-Frankfurt**.
After purchase and switching to your own Amazon AWS account all other AWS Regions will be available to you.

Please notice players published to our AWS account during trial can not be transferred to your own AWS account later. You have to upload all the data again. Best to keep it small.

All players created by the Trial version will be deleted after a while.

FTP

The built-in one-click publishing feature for AWS is just for your convenience.
Of course you can upload the player manually to any cloud or server instead.

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Open a Support Ticket

Support is provided for the newest release only.
Please update first.

Support Portal

https://support.360camsters.com/

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About 360camsters

We do complete projects for you.
We are available for hire and to help you remotely.

We provide:
Consulting, Development, Customisation & integration for all things 360.
Data Management and Data Processing.

Need something else? A feature?

Get in touch!



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Webpage: https://www.360camsters.com/contact/

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