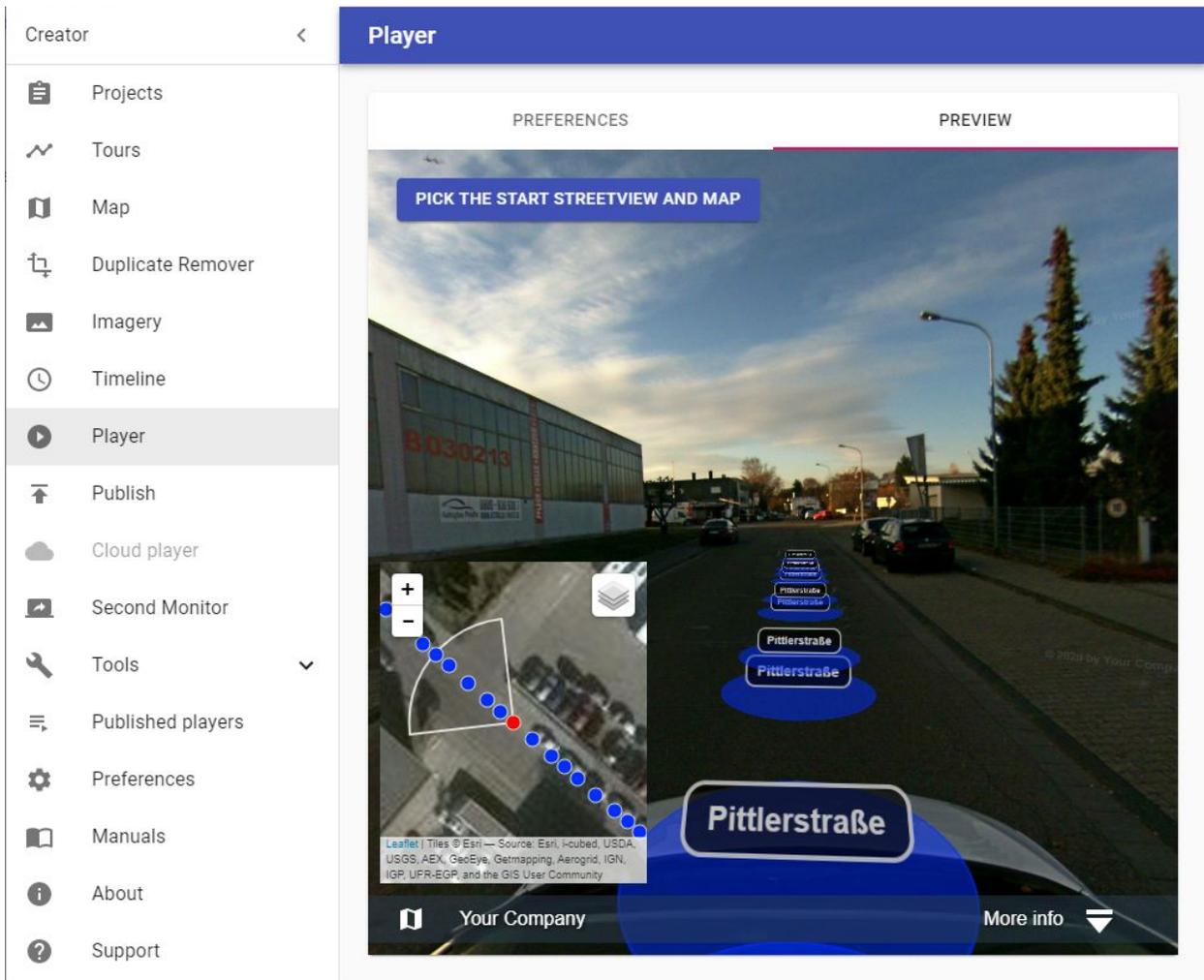




## Creator 5 Creator 5 Pro

Manual  
version 5.8.4



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# Creator 5

**Creator 5** is the Applied Streetview Windows program to process the footage of the [Applied Streetview](#) cameras. It is available starting January 2020. It is the successor of Creator 3. There is no Creator 4.

**Creator 5** can be installed on a **Windows PC** for local processing, or in a **cloud**. In a cloud it can be accessed by Remote Desktop Connection (RDP). We tested Google Cloud, Amazon EC2 and Microsoft Azure.

Minimum requirement is a Windows 10 PC with an NVIDIA graphics card with 4GB VRAM and a [Compute capability of 5.2](#).

We recommend the **NVIDIA GeForce RTX 2060 Super** graphics card with 8 GB VRAM. Or better. It costs about 400 Euro. Relevant for performance is mostly the graphic cards' amount of VRAM. The more VRAM, the better the performance.

**Avoid the new GeForce RTX 30-series graphics cards. They are not covered by CUDA 10.0 and will not work.**

## Cloud Publishing

**Creator 5** is the first program of our 2020 cloud initiative. No matter if Creator 5 runs on a local Windows PC or in a cloud, it generates the new, additional, [Cloud Player](#) and publishes it to the cloud with a single mouse click. The Cloud Player automatically scales up and down to cover for usage spikes. It has never been easier to prepare for your 15 minutes of internet fame. On top of this the cost is up to 70% lower than a player hosted in a datacenter. Also there is zero maintenance for the Cloud Player.

Working with **Creator 5** is really easy. As part of our Software Suite it has the same layout as [all our other programs](#). Everything works the same way. Everything is to be found at the same place in all our programs and even the [Online Recording Management](#) service.

Alternatively you can continue using Creator 3 as-is. However with the release of **Creator 5** there will only be security fixes for Creator 3. All new features and improvements will be added to **Creator 5**. In January 2021 we will stop supporting Creator 3.

## Try Creator 5 for free

**Creator 5** will work for two weeks for free with a Demo watermark.

You can install it in parallel to Creator 3. Just do not run them at the same time.

Copying projects from Creator 3 to **Creator 5** is really easy:

First

- Backup all your projects in Creator 3:  
Project Management -> Backup all projects

then

- Import the backup files in **Creator 5**:  
Projects -> Restore Projects

Creator 5 project backups can not be re-imported into Creator 3.

This means changes made to projects in **Creator 5** can not be transferred back to Creator 3.

Downloads

**Creator 5** [manual](#)

**Creator 5** [program](#)

## Cloud Player Evaluation

For evaluation the new Cloud Player works out-of-the-box. No setup is needed.

Just pick a project and publish your first Cloud Player right away.

**For evaluation the publishing Regions are limited to EU-Frankfurt.**

After purchasing and switching to your own AWS account all other AWS Regions will be available.

Please notice Cloud Players created during evaluation can not be converted into your own Cloud Player. You have to upload all the data again. For this please keep it small.

**We will delete all evaluation cloud players after 4 weeks.**

## Creator 5 Pro

**Creator 5 Pro** is Creator 5 with additional features. Enabled by the licence key.

Features are:

- Run Creator 5 Pro by command line for fully automated mass-production.
- Export and Import of project configuration for mass-production.
- Skip generation of streetview-tiles.

### Downloads

The download is the same as for **Creator 5**.

**Pro** features are enabled by the **Creator 5 Pro** licence key.

Please contact [sales](#) for a quote and a temporary licence key to test **Creator 5 Pro**.  
For the **Pro** features see the [Automation](#) chapter.

## Recommended Setup

It is strongly recommended to create the following folders to organise your data.

### Mandatory folders

In, Out, Creator 5 backups, Camera calibration files.

Set these folders up in Preferences -> Folders.

Camera calibration files have the .pto and .xml file extension.

### Recommended folders

Masks, Logos, Export, Project configuration.

Create the folders manually to keep your projects organised.

## Increase Performance

With a NVIDIA graphics card with 8 GB VRAM you should get a performance of about **240.000 streetviews and streetview-tiles in 24h.**

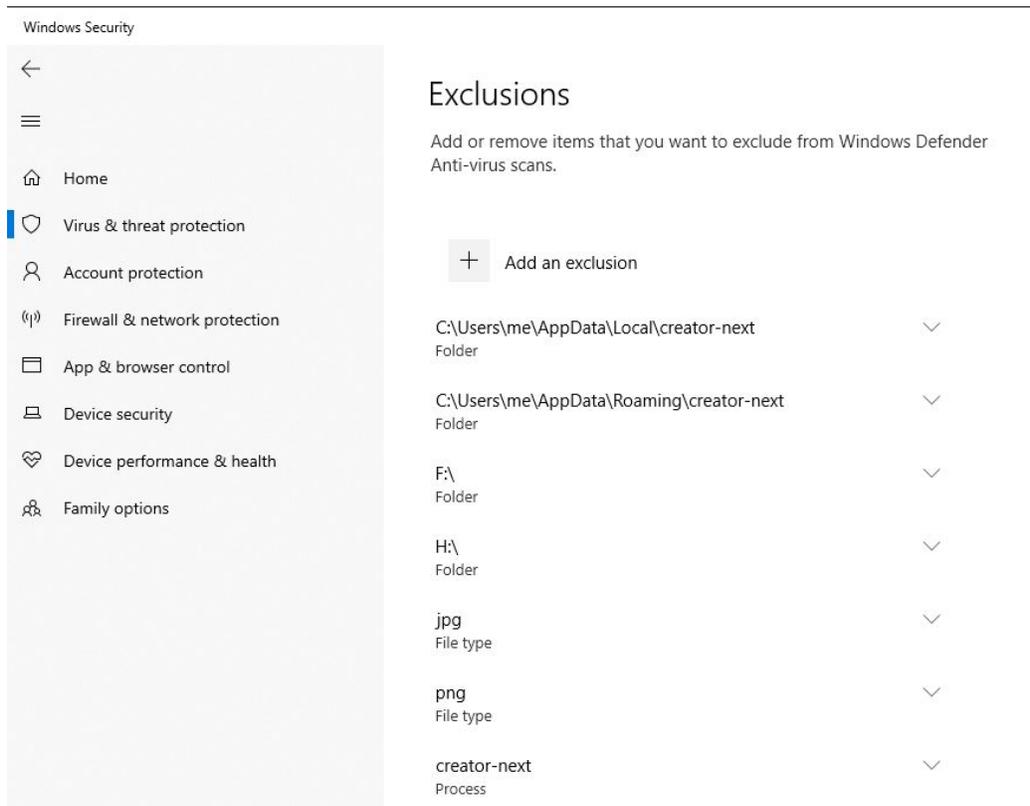
For best performance we recommend an SSD for your data.

Both local HDDs and even NAS will work fine, just not as fast.

If you use HDDs, try to process from one HDD to another HDD to speed things up a bit.

We strongly recommend adding the following exclusions to Microsoft Windows **Virus and thread protection.**

It can make Creator 5 up to **three** times faster.



Please deactivate any third-party virus scanners.

Or apply the above settings correspondingly.

# Projects

A list of all your Projects.

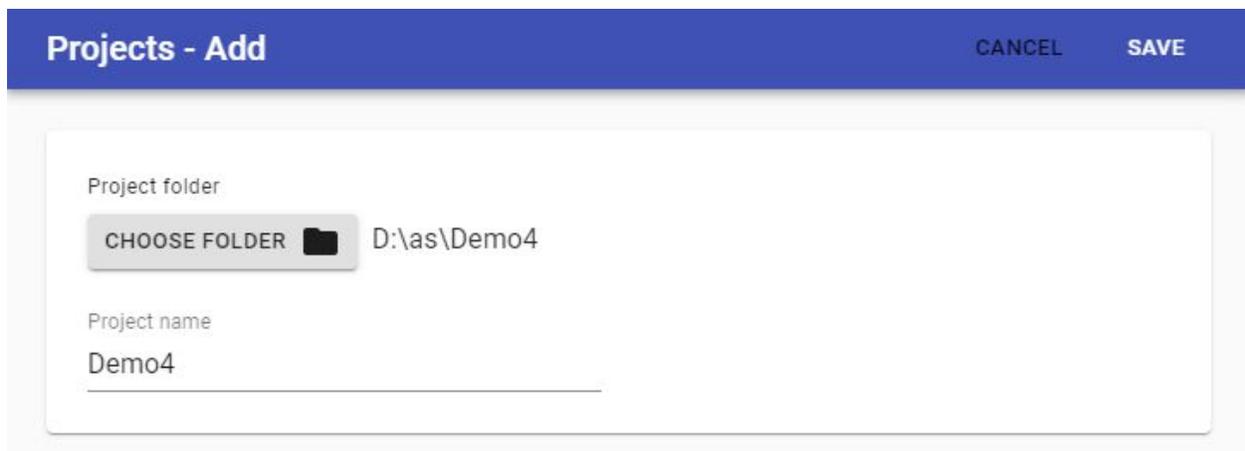


The screenshot shows a web interface for managing projects. On the left is a sidebar with navigation options: Projects, Published Players, Preferences, Manuals, About, and Support. The main area is titled 'Projects' and contains a table with columns for Project, Streetviews, and Created date. A context menu is open over the 'DEMO4-5M' project row, showing options: Edit, Backup, Delete, and Export configuration.

Project	Streetviews	Created date ↓	
DEMO4	1563	2020-06-15 06:43:26	⋮
DEMO4-5M	360	2020-05-27 07:18:01	Edit Backup Delete Export configuration
DEMO2	378	2020-03-23 07:20:16	

## Add project

Click the **ADD** button in the top right corner.



The screenshot shows the 'Projects - Add' form. It has a blue header with 'Projects - Add' on the left and 'CANCEL' and 'SAVE' buttons on the right. The form contains two input fields: 'Project folder' with a 'CHOOSE FOLDER' button and a text field containing 'D:\as\Demo4', and 'Project name' with a text field containing 'Demo4'.

### Project folder

Specify the path to the project folder.

### Project name

By default the project name will be taken from the projects folder name. This can be changed.

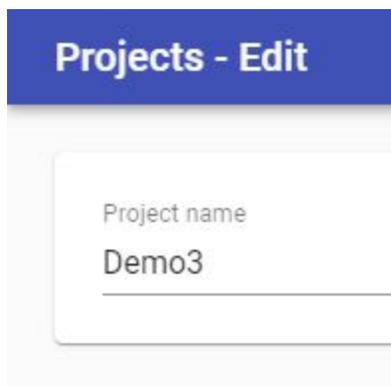
Click the **SAVE** button in the top right corner to add the project.

## Open project

Click the project name to start working on the project. By default this will open the [Tours](#) page.

## Edit project

Click the **:** button next to the project name and then on **Edit**.



### Project name

Adjust the project name.

Click the **SAVE** button in the top right corner to edit the project.

## Delete project

Click the **:** button next to the project name and then click **Delete**.  
Confirm the action.

## Backup project

Click the **:** button next to the project name and then click **Backup project** to create a backup file of the selected project. Backup files are for safekeeping a project.

## Export Configuration

Click the  button next to the project name and then click **Export Configuration**. to create a configuration file of the selected project. Configuration files are for automation.

## More

### Backup all

Click the **Backup all** menu item to create a backup of all the projects and save them to the **Creator 5 Backups** folder.

### Import backups

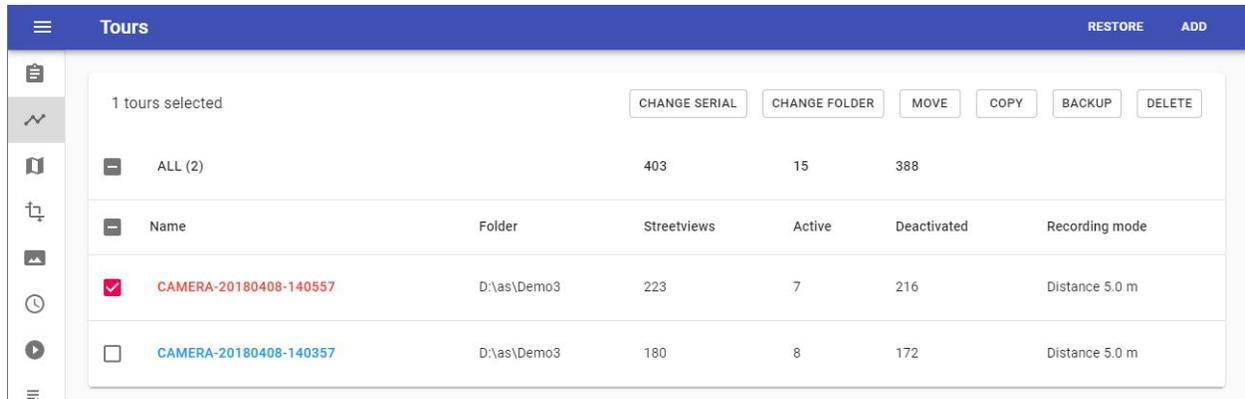
Click the **Import backups** menu item to import a project from a backup file. One or multiple backups can be imported at a time.

### Add project from configuration

Click the **Add project from configuration** menu item to add a project from a configuration file.

# Tours

A list of all the tours of a Project.



Tours						RESTORE	ADD	
1 tours selected		CHANGE SERIAL		CHANGE FOLDER	MOVE	COPY	BACKUP	DELETE
<input type="checkbox"/>	ALL (2)		403	15	388			
<input type="checkbox"/>	Name	Folder	Streetviews	Active	Deactivated	Recording mode		
<input checked="" type="checkbox"/>	CAMERA-20180408-140557	D:\as\Demo3	223	7	216	Distance 5.0 m		
<input type="checkbox"/>	CAMERA-20180408-140357	D:\as\Demo3	180	8	172	Distance 5.0 m		

## Show on map

Click the tour name to show in the [Map](#) page.

## Change Serial

Select one or multiple tours.

### Set Serial number

Serial number

200000000|

CANCEL OK

Provide a new serial number and click the **OK** button.

## Change Folder

When migrating backups from one PC to another or when the project's folder is moved - select all the tours and Click **CHANGE FOLDER** button. Then select the new **Project** folder.

If the project has tours that have been moved or copied from a different project, select each tour group individually and Click **CHANGE FOLDER** button and select the new **Project** folder.

## Move

Moves selected tours to a different project.

## Copy

Copies selected tours to a different project.

## Backup

Backup selected tours.

Source photos will not be backed up.

## Delete

Deletes the selected tours from the project.

Source photos are **not** deleted.

## Restore

Click the **RESTORE** button in the top right corner to import a tour backup. One or many tour backups can be imported at the same time.

## Add

Click the **ADD** button in the top right corner to add one or multiple tour folders to this project.

E.g. when additional footage has been recorded months later.

# Map



In order to display a large amount of streetviews on the map, Creator 5 clusters nearby streetviews together, depending on the current map zoom level.

A cluster is basically a collection of streetviews.

Clusters are displayed for zoom levels 0 to 19 only. Not for zoom levels 20 , 21 etc.

## 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

### Label

Your custom tile provider name

### URL

The URL can point to either an online resource like:

`http://www.your-company.com/map-tiles/{z}/{x}/{y}.png`

or a local folder or NAS drive:

`file://D:folder\{z}\{x}\{y}.png`

Change the bold parts of the URL.

{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.

## Display

Show or hide active and deactivated streetviews icons.

Usually more footage than needed is recorded.

[Duplicate Remover](#), [Separation](#) as well as manual deactivation on the map page can be applied to reduce the number of published streetviews.

Activated streetviews have a **white** outline.

Deactivated streetviews have a **grey** outline.



## Tours

Show the selected tours on the map.

Click **ALL** to center the map on all the tours.

Untick to hide all tours. The tick selected tours to show only them.

## Timeline

Only available when there are timelines.

Show the selected timelines on the map.

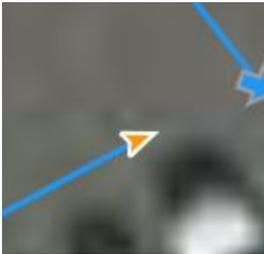
Click **ALL** to center on all the timelines.

Untick to hide all timelines. The tick selected timelines to show them.

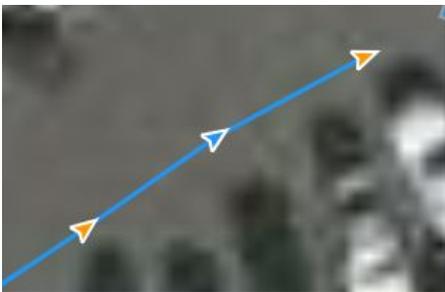
## Select streetviews

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

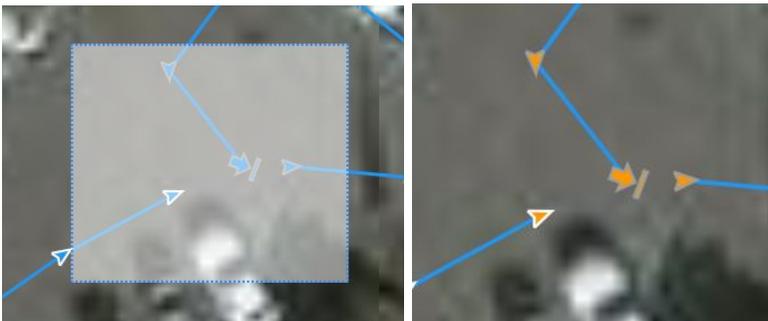
Click a streetview to select it. A selected streetview will change its color to orange.



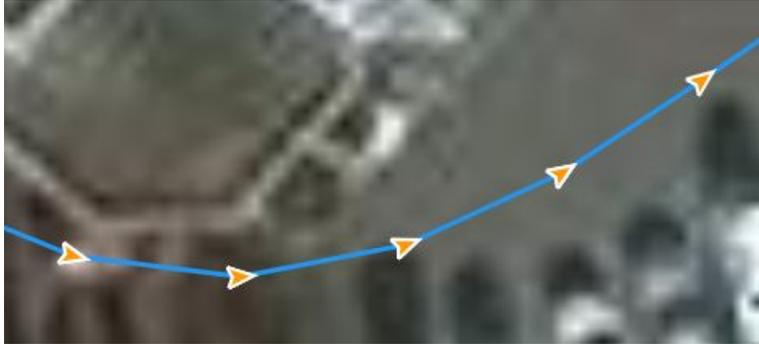
It's possible to select multiple streetviews by holding down CTRL and clicking on the streetviews.



Holding down SHIFT and then drag the mouse to select all the streetviews in the formed region.



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



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.

## Meta Data

See the metadata for the selected streetview. This panel will only be shown if a single streetview is selected. It is not available for clusters.

Information	^
Tour	camera-20180408-140357
Image Number	9
GPS Date	2018-04-08 12:04:13
Local Date	2018-04-08 14:03:55
Latitude	50.001144 °
Longitude	8.651546 °
Height	125.95 m
Heading	56.21 °
Speed	24.18 km/s
Release Mode	Distance 5.0 m

## 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.

Select Road



Pittlerstraße  
Robert-Bosch-Straße  
Otto-Hahn-Straße  
Voltastraße  
Ohmstraße

### Assign a road name to a streetview(s)

Select streetviews on the map to assign a road name to them.

Road name

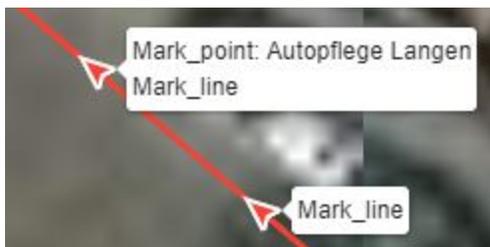
Voltastraße

UPDATE 3 STREETVIEWS

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

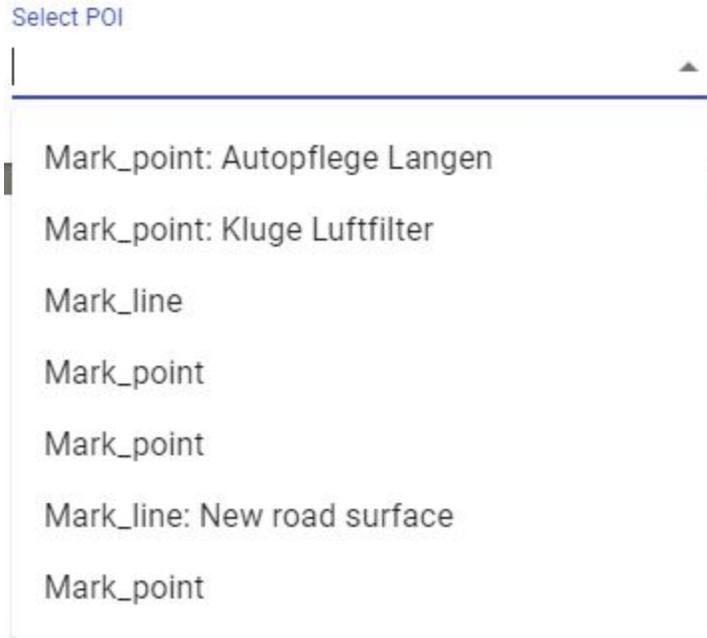
### POI

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.



### **Assign a POI name to a streetview(s)**

Select streetviews to assign a road name to.

Type the name of the road 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.

### **Overlay**

Add a vector overlay to the map.

Supported formats: KML.

Click on the clear button **X** next to the overlay name to remove it from the map.

Overlay 

Add a vector overlay to the map

CHOOSE FILE 

kml\_WGS\_84.kml 

## Level

Select a single streetview to open it in the Imagery pages **Leveling and brightness** tab.

Level 

OPEN IN LEVELING AND BRIGHTNESS

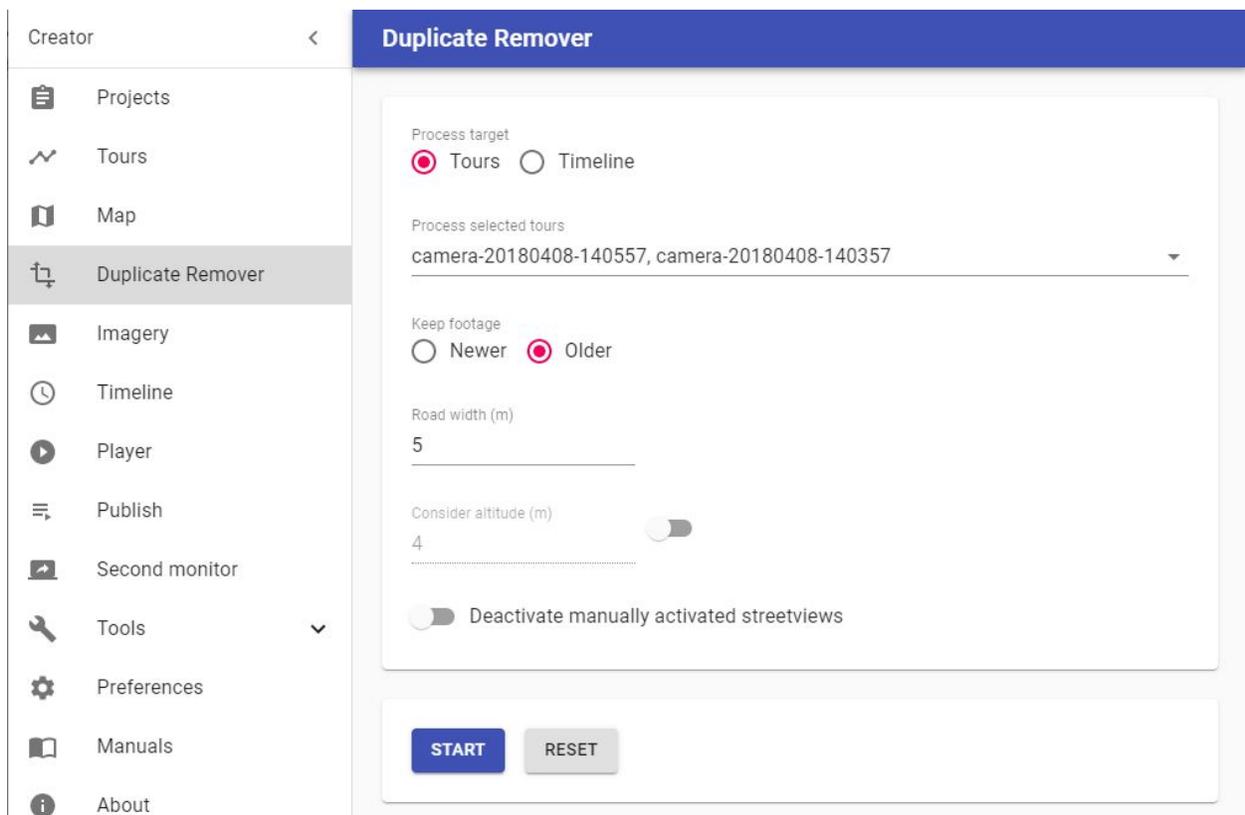
## Keyboard shortcuts

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.

# Duplicate Remover

Removes duplicate recordings from roads recorded more than once.

We recommend recording with the Distance Mode set to 5m or less. E.g. 1m.  
You can always deactivate excessive footage with the [Separation](#) tool after applying the Duplicate Remover.



## Process target

(Visible only when there are timelines)

Process either the selected tours or process the selected timelines.

## Keep footage

**Newer** - Provides best results for most situations.

Keeps the existing streetviews, adds streetviews for newly recorded roads.



**Older** - Replaces existing streetviews with newer footage.

Disadvantage: When driving into a dead-end road, you get the bad footage from reversing out of it.



### **Road width (m)**

Base setting.

### **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. Enable this option to force them to be deactivated.

### **Start**

Start removing duplicates in streetviews.

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

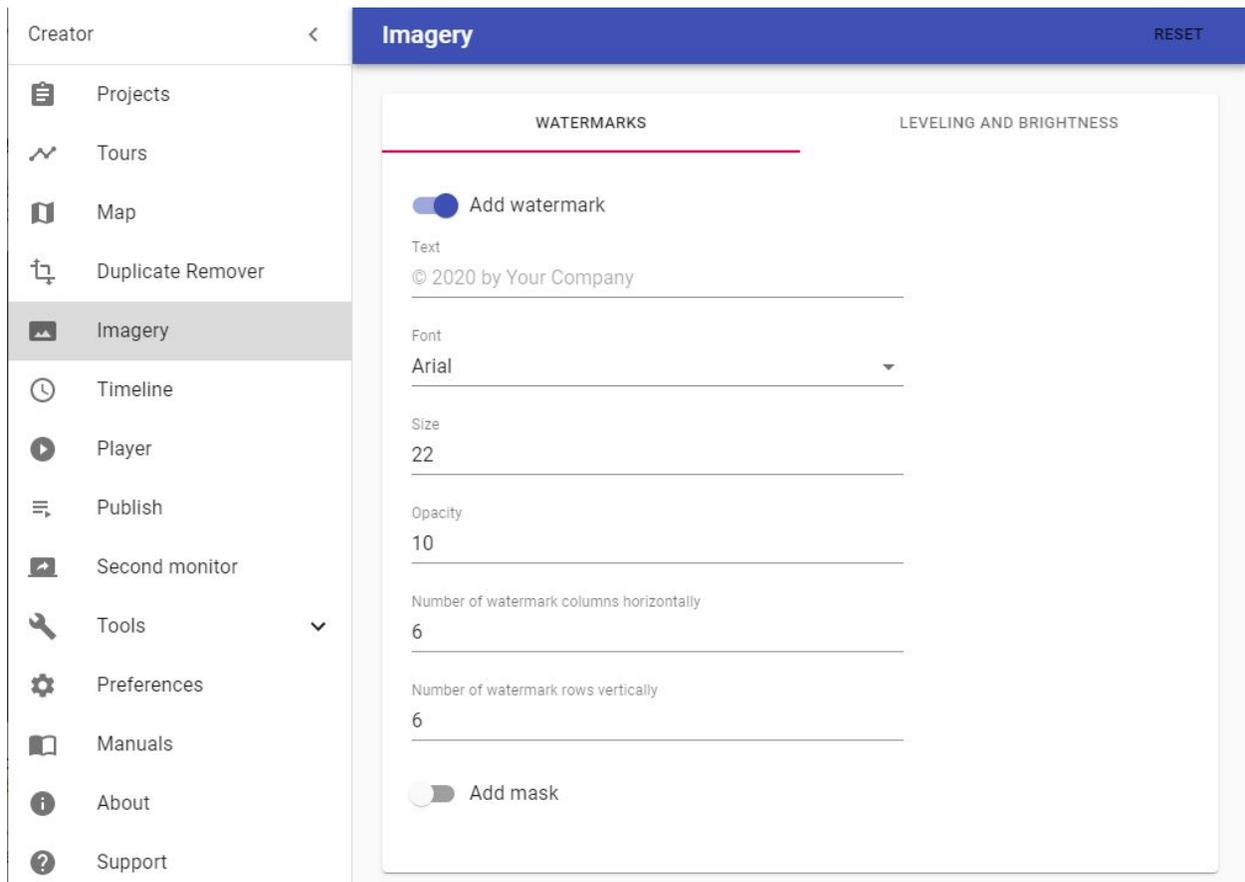
### **Reset**

Reset all streetviews deactivated by Duplicate Remover and [Separation](#) tool.

# Imagery

## Watermarks

Add watermarks to the streetview. Changes can be previewed in the [Leveling and brightness](#) tab. During the free trial period the watermark is fixed to **DEMO**. It can not be changed.



### Add watermark

Enable watermarks.

### Text

Watermark text.

### 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.

**Number of watermarks horizontally**

How many watermarks to place horizontally (left-right).

**Number of watermarks vertically**

How many watermarks to place vertically (up-down).

**Add mask**

Enable to add a mask that will hide the car's rooftop.

Technically it is a transparent PNG image merged to the streetview.

**Mask path**

Path to the mask PNG image. Create your own mask file.

A Nadir logo can be added as a mask. Click [Nadir logo](#) and follow the instructions.

A sample mask can be found in

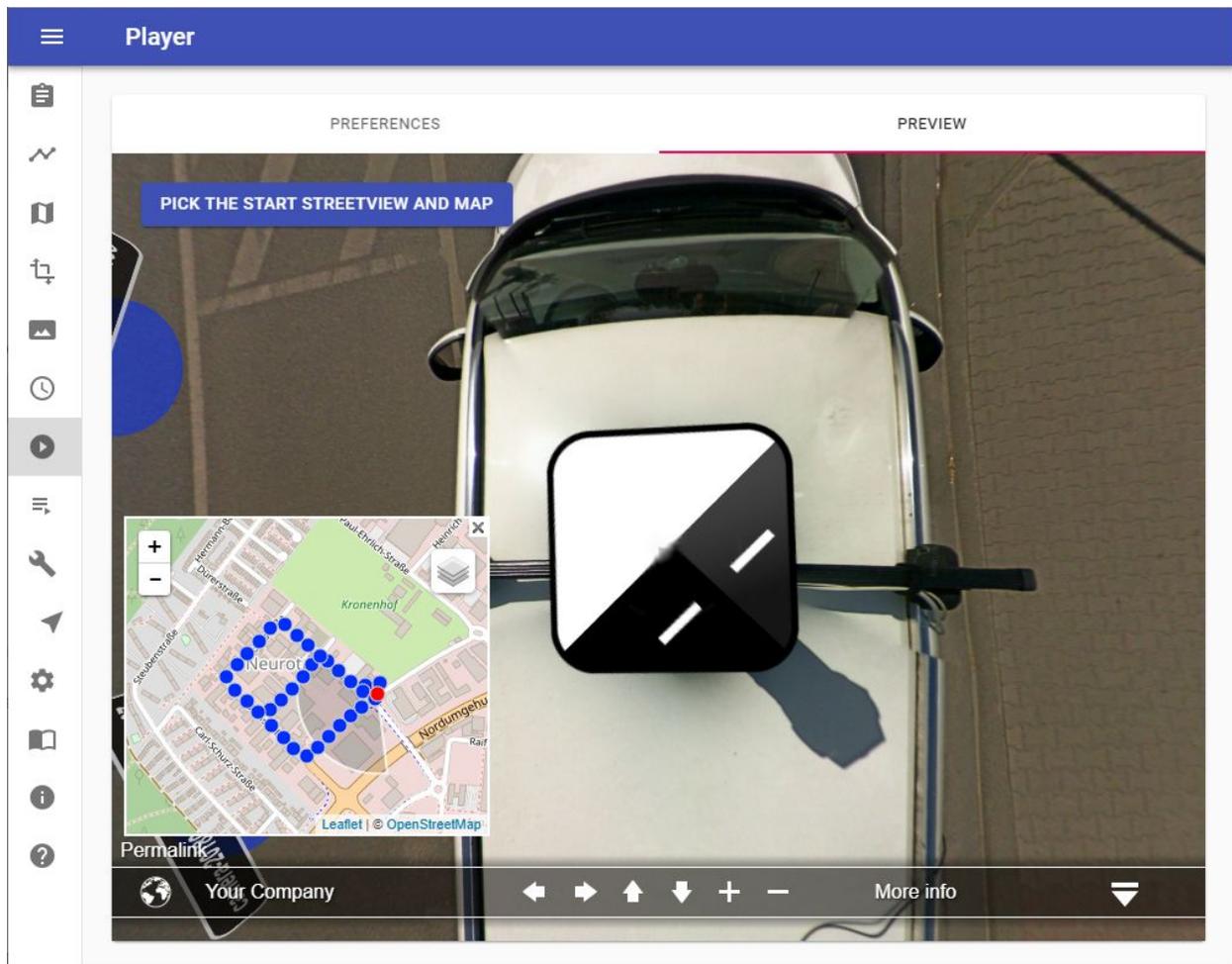
C:\Program Files (x86)\Creator\masks\example-car-roof-mask.png

## Nadir Logo

A Nadir Logo is the only annotation Google allows when uploading streetviews as photospheres to Google maps/streetview.

Add your company's logo to the Nadir (bottom) of your streetviews.

In **Creator 5** Player Preview it looks like this:



You have to change the value of Player - Preferences - **Look down limit (degrees)** from the default -50 to -90 to see the Nadir logo.

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.

## Google Policy

When publishing to Google Streetview using our [G-Publisher](#) program it often is desirable to add your company's logo to the Nadir (bottom) of your Streetviews.

You can not have your company's logo fixed displayed in the top right-hand corner of the screen like with the Applied Streetview players.

This is the only annotation Google allows for in its Contribution Policy:

[Maps User Contributed Content Policy Help](#)

*For 360 photos, superimposed content must be limited to either the zenith or nadir (top or bottom 25% of the equirectangular image), but cannot be present in both.*

## Logo

Have your logo at hand.

Recommended minimum size is 300 px x 300 px.

Supported formats: png, jpeg, tif

### Hint:

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

## Mask

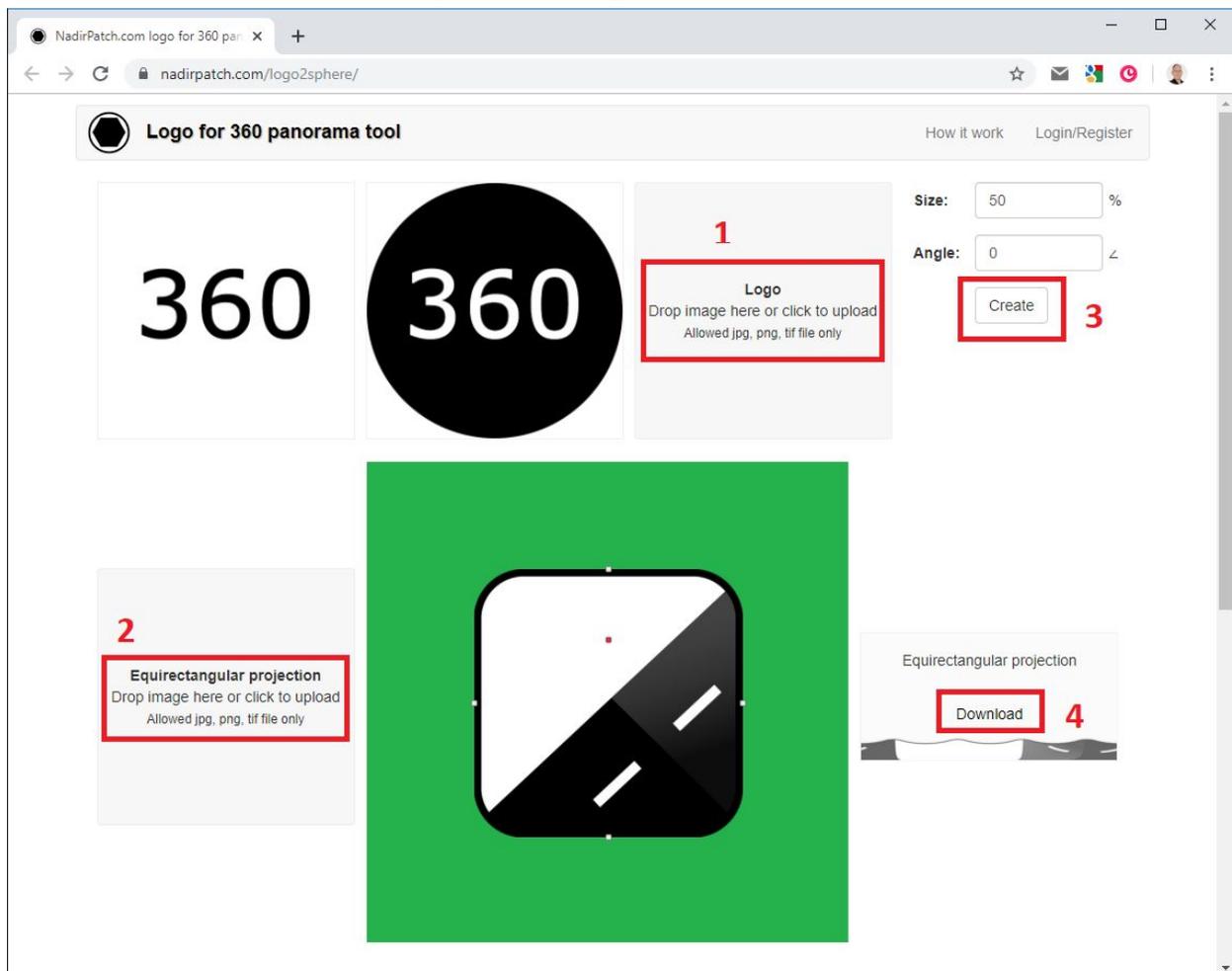
Download and save the provided mask template to your PC.

<https://aplsv-new.s3.amazonaws.com/green-screen-template.jpg>

## Add Logo to Mask

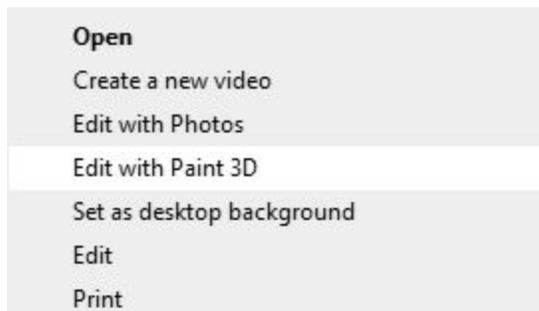
Go to <https://nadirpatch.com/logo2sphere/>

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

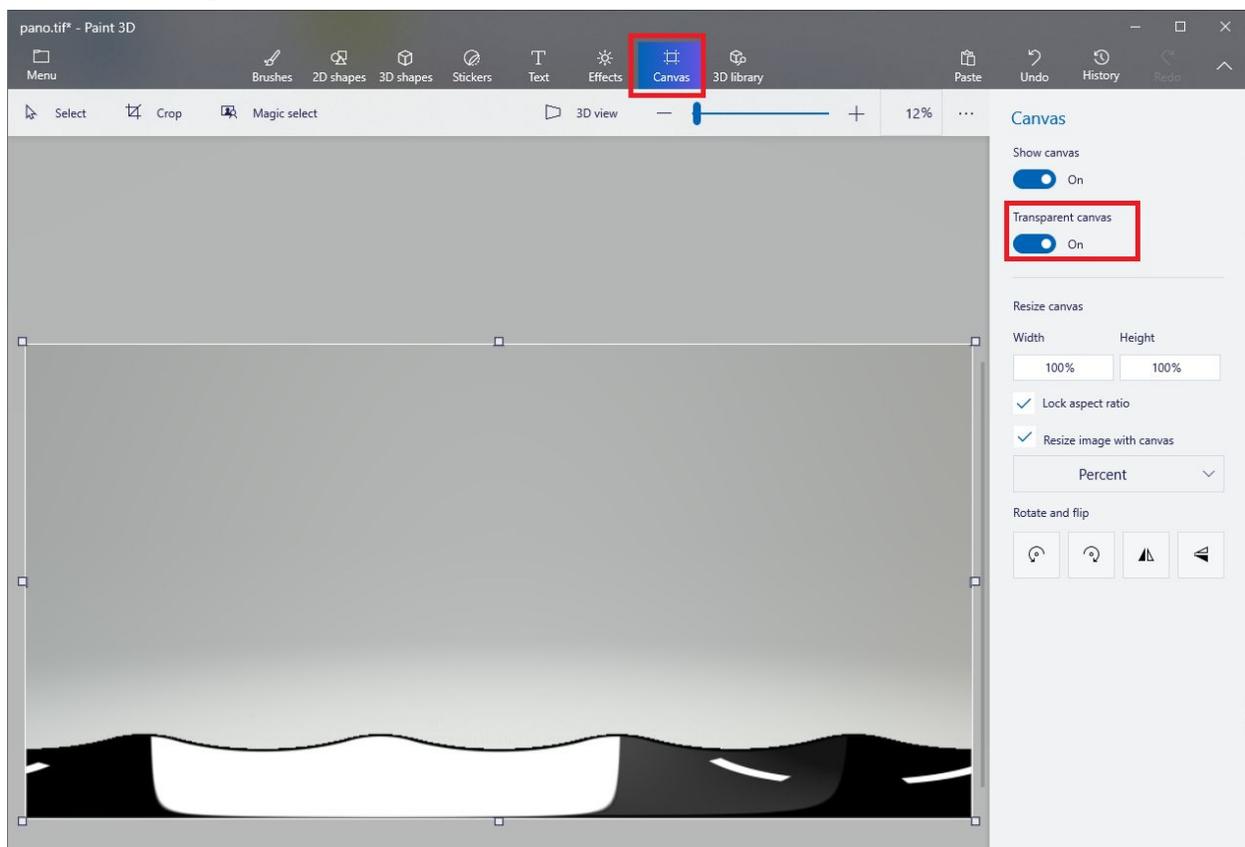


## Set Transparency

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



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 in Creator.

## Apply the Mask

In your project go to [Imagery - Watermarks](#) and activate the mask and set it to the new **pano.png** file.

Add mask

Mask path

 S:\Downloads\pano.png

## Result

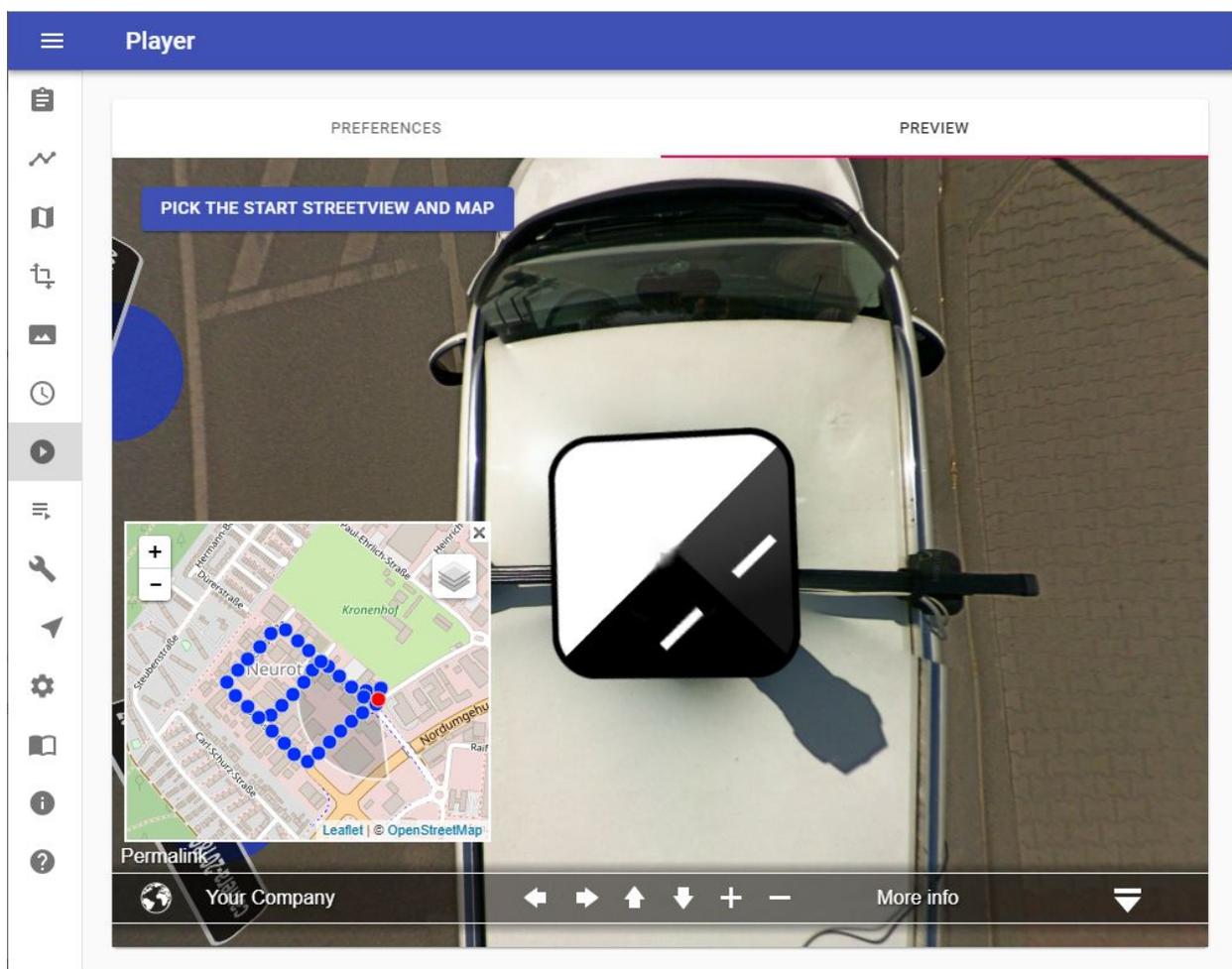
By default all our players are configured to not allow you to look down to see the logo you just added.

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.

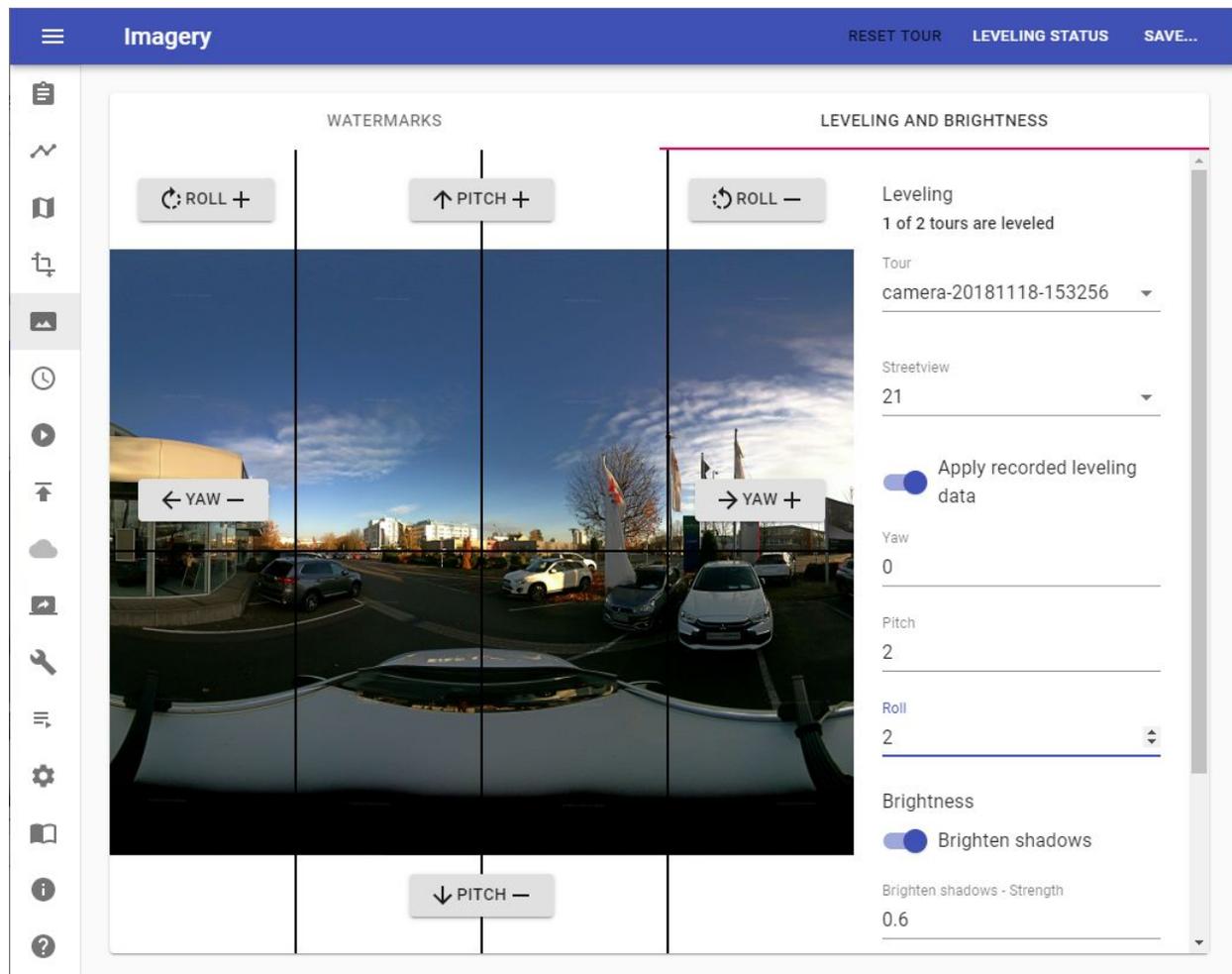
Check what it looks like in Player - Preview:



You now can process to create the 8192 x 4096 pixel streetviews needed to upload to Google streetview later with our [G-Publisher](#) program.

## Leveling and brightness

Adjust for the angle between the camera on the car's rooftop and the leveling sensor inside the car.



### Leveling

In a perfect world

- the camera would be mounted 100% vertical.
- the leveling sensor would be mounted 100% horizontal.
- both would look forward, into the exact same direction.

In the real world this does not happen.

Because of this you need to adjust for the three angles between the camera and the sensor. Use the Pitch+, Pitch- and Roll+, Roll- buttons to adjust until the streetview looks leveled.

Alternatively you can directly enter numerical values into the fields on the right.

Check your findings with a few other streetviews of the same tour by entering a different number into the Streetview field.

In the top right corner click the **Save...** button and then:

Click the **Save to all tours** button to save the values to all the recorded tours.

Click the **Save to all tours of the same day** button to save the values to all tours recorded the same day as the current tour.

Click the **Save to all tours of the same timeline** button to save the values to all the tours that have the same timeline as the current tour.

If both the camera mount and the snap-in holder for the leveling sensor are kept mounted to the car all the time, you can use the same settings for all tours from many different recording days.

Click the **Save to all tours of this project** button to save the values to all tours of the project.

## **Leveling**

If enabled log data from the recording are applied.

## **Yaw, Pitch, Roll.**

Angles between the camera and the leveling sensor.

## Brightness

### **Brighten shadows**

Enabled automatic brightness adjustment for shadows.

### **Brighten shadows - Strength**

Amplifies dark pixels to the threshold level. Value between 0.1 and 1. Default is 0.6.

### **Brighten Shadows - Threshold**

The automatic brightness adjustment will be applied to areas where average brightness is less than the threshold. Value between 0.1 and 1. Default is 0.4.

## Exposure

Adjust image exposure.

0 No change

5 Maximum exposure.

Default is 0.

## Leveling Status

Click the **Leveling Status** button in the top right corner.

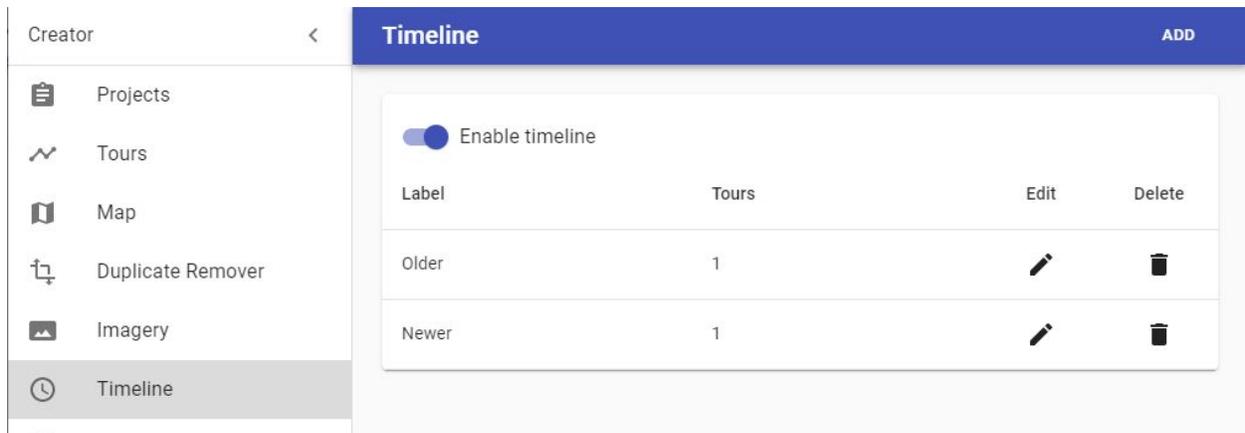
You can see the Yaw, Pitch and Roll values of all tours at once as well as how many tours are leveled.

## Reset tour

Click the **Reset tour** button in the top right corner.

Resets the values of the current tour to its defaults.

# Timeline



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

Create a few timeline labels, such as **Older** and **Newer** or dates like **2018** or **2019**. Assign one or many tours to each timeline label.

The user will then be able to pick the labels in the player.

It looks like this:

<http://players.applied-streetview.com/Timeline/>

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

## 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.

### 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.

# Player

## Preferences

Customize the player to your needs.

Go back and forth between **Preferences** and **Preview** until you have the desired result.

### General

PREFERENCES	PREVIEW
<b>General</b> ^	
Title	<input type="text" value="Demo4-5m"/>
Left Menu text	<input type="text" value="Your Company"/>
Left Menu URL	<input type="text" value="http://www.your-company.com"/>
Left Menu URL target	<input type="text" value="Opens the linked document in a new window or t..."/> ▼
Right Menu text	<input type="text" value="More info"/>
Right Menu URL	<input type="text" value="http://www.your-company.com/example-project"/>
Right Menu URL target	<input type="text" value="Opens the linked document in a new window or t..."/> ▼
Timeline Label	<input type="text" value="Timeline"/>
Navigation mode	<input type="text" value="Hotspots"/> ▼

## Logo

PREFERENCES	PREVIEW
<b>Logo</b> <span>^</span>	
Enabled	<input type="checkbox"/>
Image path	<input type="button" value="CHOOSE FILE"/> 
Click URL	<input type="text" value="http://www.your-company.com"/>
Click URL target	<input type="text" value="Opens the linked document in a new window or t..."/> <span>▼</span>

## Components visibility

PREFERENCES	PREVIEW
<b>Logo</b> <span>▼</span>	
<b>Components visibility</b> <span>^</span>	
Show Map	<input checked="" type="checkbox"/>
Show Menu	<input checked="" type="checkbox"/>
Show Map button	<input checked="" type="checkbox"/>

# Streetview

PREFERENCES		PREVIEW
<b>Streetview</b> <span>^</span>		
View	Relative to Car	▼
Minimum zoom limit (degrees)	50	_____
Maximum zoom limit (degree)	120	_____
Look down limit (degree)	-50	_____
Look up limit (degree)	50	_____
<hr/>		
Show Arrows	<input type="checkbox"/>	
Show Arrow label	Mouseover	▼
Clickable Arrow labels	<input checked="" type="checkbox"/>	
Arrow labels from this column of the Streetview table	Streetview	▼

## Image captured date format

Show image capture date	<input checked="" type="checkbox"/>
Image capture date label	<input type="text" value="Image capture:"/>
Image captured date format	<input type="text" value="Do MMMM YYYY, h:mm a"/>

Formatted according to the format string.

See the formatting options at: <https://momentjs.com/docs/#/displaying/format/>

Default:

Do MMMM YYYY, h:mm a

With a timezone added:

Do MMMM YYYY, h:mm a, z

## Map

PREFERENCES	PREVIEW
Map <span>^</span>	
Show Map Providers list	<input checked="" type="checkbox"/>
Default Map Provider	<input type="text" value="ESRI.WORLDDIMAGERY"/>
Map View	<input type="text" value="Data Extent"/> <span>▼</span>

To change the list edit the **/player/player.xml** file.

# POI

## Points of Interest

PREFERENCES	PREVIEW
<b>POI</b>	^
Display POI list	<input type="checkbox"/>
Show label for a POI	Streetview
Show POI name	Yes
Dropdown label	POI list
Dropdown select POI label	Select POI

## Report a problem

PREFERENCES	PREVIEW
<b>Report a problem</b>	^
Enabled	<input type="checkbox"/>
Support e-mail	support@your-company.com
Label	Report a problem
E-mail subject	Report a problem
E-mail content	Thank you for helping us by reporting content which may be in violation of our standards.  Why are you reporting this streetview:  Streetview permalink: {{permalink}}

## Automatic rotation

PREFERENCES	PREVIEW
<b>Automatic rotation</b> ^	
Enabled	<input type="checkbox"/>
Wait time	0
Speed	3
Direction	Right
Horizon	0
Zoom to FOV	120
Click disables auto rotate	<input checked="" type="checkbox"/>

## Automatic play

<b>Automatic play</b> ^	
Enabled	<input type="checkbox"/>
Loop	<input checked="" type="checkbox"/>
Wait time	3
Direction	Forward

## Preview

A preview of what the Player with the Streetview will look like.

Go back and forth between **Preferences** and **Preview** until you have the desired result.



Adjust the direction and zoom of the streetview and the area and zoom of the map. Then click the **Pick the Start Streetview and Map** button to save the settings as the start-view for the player.

## Assets Visualisation

Have the player show your geo-referenced assets by a URL. No database is needed.

Let's assume your company already has a list of 100.000 geo-referenced assets in a database.

How can you link them to the 5.000 kilometers worth of streetviews 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.

Minimum requirement is the latitude and longitude values for your asset:

[https://cloud-player.applied-streetview.com/?v\\_lat=50.001217&v\\_lng=8.651070](https://cloud-player.applied-streetview.com/?v_lat=50.001217&v_lng=8.651070)

You can also provide the altitude value:

[https://cloud-player.applied-streetview.com/?v\\_lat=50.001217&v\\_lng=8.651070&v\\_alt=140](https://cloud-player.applied-streetview.com/?v_lat=50.001217&v_lng=8.651070&v_alt=140)

Show extra data by adding a key/value pair:

[https://cloud-player.applied-streetview.com/?v\\_lat=50.001217&v\\_lng=8.651070&v\\_alt=129&v\\_Business=Applied%20Streetview](https://cloud-player.applied-streetview.com/?v_lat=50.001217&v_lng=8.651070&v_alt=129&v_Business=Applied%20Streetview)

With a lot of key/values pairs:

[https://cloud-player.applied-streetview.com/?v\\_lat=50.001217&v\\_lng=8.651070&v\\_alt=129&v\\_Business=Applied%20Streetview&v\\_Address=Pittlerstrasse%2053&v\\_Town=Langen&v\\_ZIP=63225&v\\_State=Hessen&v\\_Country=Germany&v\\_Telephone=%2B49%2D06103%2D37%2027%20494](https://cloud-player.applied-streetview.com/?v_lat=50.001217&v_lng=8.651070&v_alt=129&v_Business=Applied%20Streetview&v_Address=Pittlerstrasse%2053&v_Town=Langen&v_ZIP=63225&v_State=Hessen&v_Country=Germany&v_Telephone=%2B49%2D06103%2D37%2027%20494)

With a lot of key/values pairs, no Latitude & Longitude, no Altitude, but a header and a share link:

[https://cloud-player.applied-streetview.com/?v\\_lat=50.001217&v\\_lng=8.651070&v\\_alt=129&v\\_Business=Applied%20Streetview&v\\_Address=Pittlerstrasse%2053&v\\_Town=Langen&v\\_ZIP=63225&v\\_State=Hessen&v\\_Country=Germany&v\\_Telephone=%2B49%2D06103%2D37%2027%20494&v\\_l\\_showlatlng=no&v\\_l\\_showalt=no&v\\_l\\_header=Business%20List%3A&v\\_l\\_showshare=yes](https://cloud-player.applied-streetview.com/?v_lat=50.001217&v_lng=8.651070&v_alt=129&v_Business=Applied%20Streetview&v_Address=Pittlerstrasse%2053&v_Town=Langen&v_ZIP=63225&v_State=Hessen&v_Country=Germany&v_Telephone=%2B49%2D06103%2D37%2027%20494&v_l_showlatlng=no&v_l_showalt=no&v_l_header=Business%20List%3A&v_l_showshare=yes)

You even can set a streetview, it's heading and the and the map and zoom level to look at an asset, in case the view from the nearest streetview is blocked:

[https://cloud-player.applied-streetview.com/?sv\\_startup\\_pano=camera-20180408-140357-000000010&sv\\_startup\\_heading=237.2&sv\\_startup\\_tilt=6&sv\\_startup\\_zoom=90&map\\_center=50.00116825162954,8.651610016822815&map\\_zoom=19&v\\_lat=50.001217&v\\_lng=8.651070&vl\\_showshare=yes](https://cloud-player.applied-streetview.com/?sv_startup_pano=camera-20180408-140357-000000010&sv_startup_heading=237.2&sv_startup_tilt=6&sv_startup_zoom=90&map_center=50.00116825162954,8.651610016822815&map_zoom=19&v_lat=50.001217&v_lng=8.651070&vl_showshare=yes)

URL parameters with a special purpose:

**&vl\_showlatlng=yes/no**

Show latitude and longitude values

**&vl\_showalt=yes/no**

Show altitude value

**&vl\_header=Custom%20Header**

Show a custom header at the top of the panel

**&vl\_showshare=yes/no**

Show the share URL at the bottom of the panel

# Publish

Click the **Start** button in the top right corner to start publishing.

Click the **Stop** button in the top right corner to stop the publishing at any time.

The source images are made into data fit for our four players: [Cloud Player](#), [Instant Player](#) program for Windows, [LAMP Player](#) for Linux, [Android Player](#) app.

And our other programs: [G-Publisher](#), [Photogram](#), [Facades](#) and [G-Publisher](#).

And 8192 x 4096 pixel equirectangular streetviews for 3rd-party workflows.

## Windows, Linux (LAMP) and Android

For the players it is recommended to enable all options to create both streetviews and streetview-tiles for flexibility. All players then can be used right away, without the need to re-process the footage for a specific player.

When processing for a specific workflow or program unnecessary formats can be deselected to save up to 50% of the space.

- Create player**  
Required for [Windows](#), [Linux](#) and [Android](#) players.  
Required for [Photogram](#) and [Facades](#) programs.
- Create streetview-tiles**  
Required for [Linux](#) and [Android](#) players.  
Optional for [Photogram](#) program.
- Create streetviews**  
For review or 3rd party workflow.  
Required for [G-Publisher](#) program.
- Create project backup**
- Skip existing streetviews**

## Create player

Creates the player in **/Output folder/player** folder.

## Create streetview-tiles

Create streetview-tiles from source images. This is optional for [Instant Player](#) and [Photogram](#) since they support on-demand processing.

## Create streetviews

For [G-Publisher](#), review and a 3rd-party workflow.

## Create project backup

Create a new project backup each time publishing is started. The backup file is to be found in the **/Output folder/player** folder. It does not include source images or streetviews or streetview-tiles. Highly recommended to preserve a project's state.

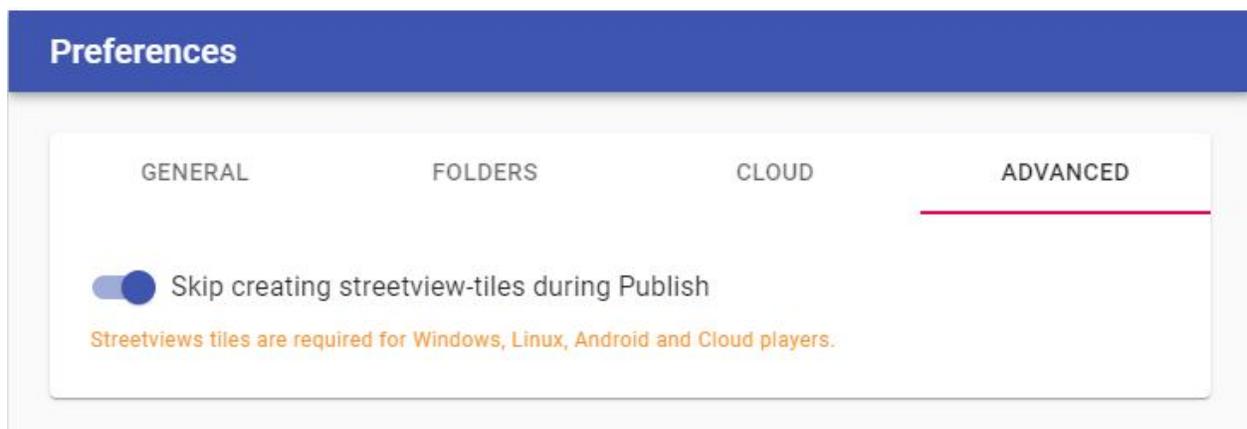
## Skip existing streetviews

In case you are updating a project and reprocessing: If the streetview-tiles for a specific streetview already exist, do not process again.

## Preferences -> Advanced -> Skip streetview-tiles

For a 3rd-party workflow that only requires the 8192x 4092 pixel streetviews, and not the streetview-tiles, the generation of the streetview-tiles can be switched off, for all projects.

Please notice that the **panorama-tiles** folder and empty subfolders are still created. Skipping the streetview-tiles can speed-up processing by up to 100 percent. Depending on your specific setup.



## Instant Player

See the [Instant Player manual](#).

## Android

See the [Android Player manual](#).

## LAMP

The LAMP player has three major components: The player, the MySQL database and the streetview tiles folder.

For testing you can install all three to the same server.

For production, you should install the player and the MySQL database to the same server, and the streetview tiles to a different server, or a cloud.

An expert can install each component to its own server.

### **MySQL database**

Create a new MySQL database.

Import the **projectname/player/xxxxxx.sql.zip** file to it.

### **Streetview Tiles**

Copy the **projectname/streetview-tiles** folder to the web-server or a cloud.

### **Player**

Copy the player folder to the Linux server.

Adjust the

**projectname\player\plugins\streetview\ajax\db.php**  
file for the database access.

Adjust the

**projectname/player/player.xml**  
file for the streetview tiles.

Edit the **tilespath** variable to point to the streetview-tiles folders URL.

Example

```
tilespath="http://www.yourcompany.com/projectname/streetview-tiles"
```

Copy the **projectname/player** folder to a web-server.

## Embed the player into any webpage

It looks like on our website:

<http://www.applied-streetview.com>

First install the player as usual.

For this example, the player is installed to the **Demo** folder:

<http://www.your-server.com/players/Demo/>

In your page, add this code:

```
<div id="demo"></div>
<script src="//www.your-server.com/players/Demo/player.js"></script>
<div id="player" style="width: 100%; height: 700px;">
<script>
var settings = {};
settings.files_path = "//www.your-server.com/players/Demo/";
settings.auth_enabled = +"0";
settings.permalink_anchor = "demo";
embedpano({swf: settings.files_path + "player.swf", xml: settings.files_path + "player.xml", target:"player",
html5:"prefer", vars: settings, passQueryParameters:true});
</script>
</div>
```

When copying the code above

- **Remove the line breaks.**
- **Adjust the URL.**

## Cloud

The Cloud Player is the most modern player we offer.

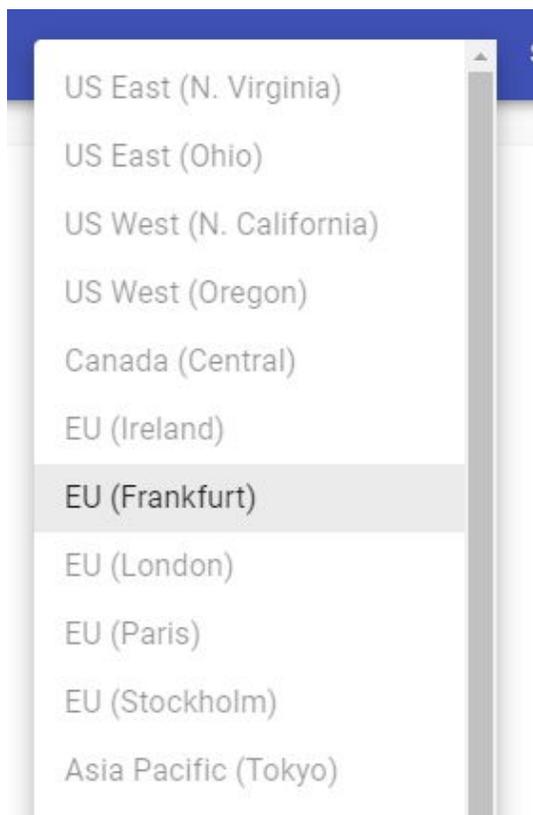
It is the most easy player to deploy.

It is the cheapest player to run.

It even scales automatically.

During the free two-week evaluation period a setup of AWS is not necessary at all.

AWS regions are limited to the **EU (Frankfurt)** location.



After purchasing Creator 5 more options become available:

1. **Access key ID and Secret access key**  
For your own Amazon AWS Cloud account.
2. **Update existing Cloud player**  
The player URL stays the same.  
It updates the existing cloud player and uploads new streetviews if available.
3. **Publish a new Cloud player**  
Creates a new player and uploads the streetviews into a new S3 bucket.
4. **Any AWS region for publishing.**  
Pick the one closest to your audience.

Publish to Cloud  Update existing Cloud player

Access key ID  
AKIATMV4275CTPY36XXO

Secret access key  
.....

Region

- US East (N. Virginia)
- US East (Ohio)
- US West (N. California)
- US West (Oregon)
- Canada (Central)
- EU (Ireland)
- EU (Frankfurt)
- EU (London)
- EU (Paris)
- EU (Stockholm)
- Asia Pacific (Tokyo)
- Asia Pacific (Seoul)
- Asia Pacific (Singapore)
- Asia Pacific (Sydney)
- Asia Pacific (Mumbai)
- South America (São Paulo)
- US Gov West 1
- US Gov East 1

OPEN CLOUD PLAYER

Creator 5 uses Amazon AWS Cloud Computing Services to publish the player to the internet.

An **Access key ID** and **Secret access key** is required for publishing.

This needs to be done 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](https://console.aws.amazon.com/iam/home?#/users$new?step=details) to add a new **IAM user**
  - a. **User name:** creator5
  - b. **Access type:** Programmatic access
  - c. Click **Next: Permissions** button

## Add user



### Set user details

You can add multiple users at once with the same access type and permissions. [Learn more](#)

User name\*

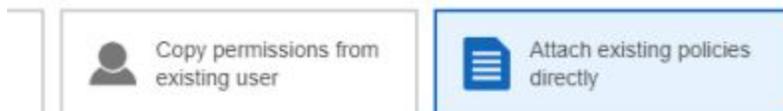
[+ Add another user](#)

### Select AWS access type

Select how these users will access AWS. Access keys and autogenerated passwords are provided in the last step. [Learn more](#)

- Access type\*  **Programmatic access**  
Enables an **access key ID** and **secret access key** for the AWS API, CLI, SDK, and other development tools.
- AWS Management Console access**  
Enables a **password** that allows users to sign-in to the AWS Management Console.

### 3. Select **Attach existing policies directly**



### 4. Select **IAMFullAccess**, **AWSLambdaFullAccess** and **AmazonAPIGatewayAdministrator** privileges.

<input type="checkbox"/>	AlexaForBusinessReadOnlyAccess	AWS managed
<input checked="" type="checkbox"/>	AmazonAPIGatewayAdministrator	AWS managed
<input type="checkbox"/>	AmazonAPIGatewayInvokeFullAccess	AWS managed

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

### User details

---

<b>User name</b>	creator5
<b>AWS access type</b>	Programmatic access - with an access key
<b>Permissions boundary</b>	Permissions boundary is not set

### Permissions summary

---

The following policies will be attached to the user shown above.

Type	Name
Managed policy	<a href="#">IAMFullAccess</a>
Managed policy	<a href="#">AWSLambdaFullAccess</a>
Managed policy	<a href="#">AmazonAPIGatewayAdministrator</a>

7. Click the **Create user** button
8. Copy **Access key ID** and **Secret access key** into the appropriate fields in **Creator 5 Process page**. It is recommended to click the **Download .csv** button in order to save the credentials if you ever need to enter them again.

# Cloud Player

## General

### Open Cloud player

Open the published Cloud player URL in the browser

### Delete Cloud player

Delete published Cloud player

## Users

USERS	STATISTICS	
<input checked="" type="checkbox"/> Enable authentication		
Username	Edit	Delete
admin		

### Enable authentication for Cloud player

Enable the authentication feature

### Add user

Click the **Add user** button in the top right corner.

Set a **Username** and a **Password** then click the **Save** button in the top right corner.

### Edit

Click the  button next to the user.

Modify the **Username** or the **Password** of the user. Then click the **Save** button in the top right corner.

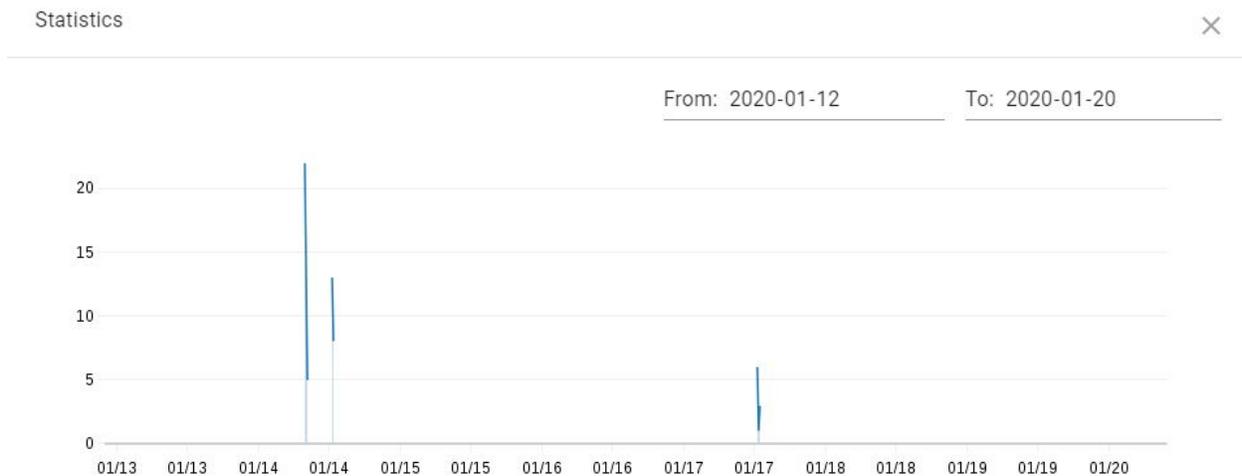
### Delete

Click the  button next to the user then confirm.

**Note:** For any modification to take effect the **Cloud player** needs to be republished. To republish go to [Publish](#) and then click the **Start** button in the top right corner. When adjusting the player itself only, the streetviews will not be uploaded again. This is fast.

## Statistics

After the Cloud Player is published it will start collecting usage statistics. By default visits from the last 7 days are displayed.



To adjust the statistics period change the **From** and **To** fields in the top right corner.

Cloud Player uses **CloudWatch Metrics** to gather and display statistics. CloudWatch Metrics can be accessed directly with your Amazon account to create additional custom graphs. They will not be displayed here.

More information at:

[https://docs.aws.amazon.com/AmazonCloudWatch/latest/monitoring/graph\\_a\\_metric.html](https://docs.aws.amazon.com/AmazonCloudWatch/latest/monitoring/graph_a_metric.html)

## AWS CloudFront (CDN)

If the player is expected to get high traffic it's recommended to create a CloudFront distribution. This will increase the player performance and reduce AWS Lambda cost.

When creating a new cloud front distribution adjust the following options:

- Origin Protocol Policy: HTTPS Only
- Viewer Protocol Policy: Redirect HTTP to HTTPS

- Allowed HTTP Methods: GET, HEAD, OPTIONS, PUT, POST, PATCH, DELETE
- Forward Cookies: Whitelist
- Whitelist Cookies: lambdaplayerAuth
- Query String Forwarding and Caching: Forward all, cache based on all
- Compress Objects Automatically: Yes

<b>Path Pattern</b>	Default (*)	
<b>Origin or Origin Group</b>	Custom-83iaa8ukkl.execute-api.eu-central-1.am: ▾	
<b>Viewer Protocol Policy</b>	<input type="radio"/> HTTP and HTTPS <input checked="" type="radio"/> Redirect HTTP to HTTPS <input type="radio"/> HTTPS Only	
<b>Allowed HTTP Methods</b>	<input type="radio"/> GET, HEAD <input type="radio"/> GET, HEAD, OPTIONS <input checked="" type="radio"/> GET, HEAD, OPTIONS, PUT, POST, PATCH, DELETE	
<b>Forward Cookies</b>	Whitelist ▾	
<b>Whitelist Cookies</b>	lambdaplayerAuth	
<b>Query String Forwarding and Caching</b>	Forward all, cache based on all ▾	
<b>Smooth Streaming</b>	<input type="radio"/> Yes <input checked="" type="radio"/> No	
<b>Restrict Viewer Access (Use Signed URLs or Signed Cookies)</b>	<input type="radio"/> Yes <input checked="" type="radio"/> No	
<b>Compress Objects Automatically</b>	<input checked="" type="radio"/> Yes <input type="radio"/> No	

[Learn More](#)

# Second Monitor

A second monitor is recommended to use this feature in full-screen mode. Works for streetviews selected on the Map tab or in the Player Preview.



Shows the streetviews. You can zoom in and out.

# Tools

## Separation

Tours  
camera-20180408-140557, camera-20180408-140357

---

Type  
 By Distance  By Interval  By Step

Separate by meters between streetviews  
5

Deactivate manually activated streetviews

---

---

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 streetviews to process.

### Process target

(Visible only when there are timelines)

Process either the selected tours or process the selected timelines.

### By Distance

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 Separation tool.

## Road names from OpenStreetMap

Preferred language

- Local language only
- Custom language only
- Custom language, fallback to local if not specified.

For Streetviews

- Activated
- Deactivated

Overwrite previously assigned road names?

Maximum distance (m)

20

START

RESET

### 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

### 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.

## Direction from position

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 heading from position.

Click **Reset** to revert to original values.

## Camera mounted backwards

This tool will fix if the camera was accidentally mounted looking backwards.

Click **Start** to change yaw by 180 degrees. Click **Start** again to revert to original values.

## Export Metadata

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

Format

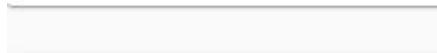
CSV

GeoJSON

Streetview status

Activated

Deactivated



**START**

### Streetview status

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

### Streetview status

Activated: Metadata for activated streetviews

Deactivated: Metadata for deactivated streetviews

### Start

Start the export process.

## Copy Sources

This tool can be used to provide data for support or to copy a part of the data only.

Project backup

Folders "7" (Small archive size)

Source photos (Large archive size)

Activated

Deactivated

Tour folders "7" always contain all data. They are not adjusted for activated or deactivated streetviews.

### **Project backup**

Adds the Creator 5 project backup to the archive.

### **Folders "7" (Small archive size)**

Adds position data (tour folders 7) to the archive. No images.

### **Source photos (Large archive size)**

Activated - Include sources photos of the activated streetviews

Deactivated - Include sources photos of the deactivated streetviews

### **Start**

Create the archive

# Published players

Manage all players published using **your own AWS account**.

Project	Publish date	Open	Statistics	Delete
Demo2	2020-03-03 12:17			

## Project

Project name

## Published date

## Open

Open the player URL in the browser

## Statistics

Display visitor statistics.

## Delete

Delete player (incl. all streetviews) from the Amazon account.

# Preferences

## General

## Language

Set the program language.

**Automatically send usage statistics and crash reports to Applied Streetview.**

Please help us make **Creator 5** better.

## Folders

It is strongly recommended to create the following 4 folders to organise your data:

**In, Out, Creator 5 backups, Camera calibration files.**

Set the folders up in Preferences -> Folders,

Additionally you might want to consider creating two folders named **masks** and **logos** to organise additional, optional, files.

### **Input folder**

Default location of the recorded projects

### **Output folder**

Default location for publishing. A subfolder with the project name is created automatically.

### **Camera calibration files folder**

Default folder for your camera(s) calibration file(s). They have the **.pto** and **.xml** file extension. First Creator 5 looks in the parent folder of the tour. Then in the **Camera calibration files** folder. In case you have many cameras the right file is picked full automatically. You can even mix footage from different cameras in one project.

### **Backup folder**

Default location for saving project backups.

## Cloud

An **Access key ID** and **Secret access key** is required for publishing.

See the [Publish to the Cloud](#) section for how to get your own AWS credentials.

## Advanced

### **Skip creating streetview-tiles during Publish**

Streetviews tiles are required for Windows, Linux, Android and Cloud players.

# Manuals

Open this Creator 5 manual.

## About

### Creator license

Display current licence or add a new one by entering your **activation key**.

View Software License Agreement.

### krpano license

Player is bundled with a demo version of krpano.

To remove the **krpano demo version** watermark from the player a license has to be purchased.



The krpano demo version watermark is visible in the:

- Player - Preview sub-tab
- Player tab
- All generated players

Get a krpano license for 159 Euro from <http://www.krpano.com/buy>

Then get back here and click the **Add activation key** button.

Paste your key into the field and click the **OK** button. You should see a confirmation message that the key is registered.

## Version

Display current version, check for updates, view release notes.

## Logs

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

## About this PC

Displays information about this PC.



# Automation

Automation is a feature of **Creator 5 Pro**. It is not available in Creator 5.

Please contact [sales](#) for a quote and a temporary licence key to test **Creator 5 Pro**.

## Overview

How did the User Interface (UI) change?

Added:

Preferences -> Advanced -> Skip creating streetview-tiles during Publish

Projects -> PROJECTNAME -> More (3 dots) -> Export Configuration

Projects -> More (3 dots) -> Add project from configuration

What is covered by the automation?

Creation of a project.

Creation of the projects tours.

Loading of project and tours settings.

Clicking of "Start" buttons.

Close Creator 5 when processing is finished.

Delete all projects.

Things not covered

Only settings on the project and tour levels are part of the configuration.

All settings applied to a streetview (on the Map page or the Duplicate Remover, etc.) are ignored.

Examples:

- Position
- Heading
- Status (activated/deactivated)
- Road name

## Configuration export and import

This is the workflow to duplicate your project settings.  
This way data is processed identically.

### Steps

Export a configuration as template

Edit it

Import it

Press all the Start buttons needed manually. Make sure not to miss a Start button.

Close Creator

### Export a configuration as template

It is strongly recommended to configure a project as the template in Creator 5.

Do not try to build a configuration file from scratch in a text editor.

### Suggested workflow

Create the project.

Configure it.

Run it for testing.

Check results.

Export it:

Projects -> PROJECTNAME -> More (3 dots) -> Export Configuration

Make adjustments manually to the exported configuration file.

Example configuration file:

[Demo4-20200930-103027.project-config](#)

## Edit the configuration file

A project can have tours from different cameras (and recording vehicles).

The **yaw**, **pitch** and **roll** values then must be set per the cameras serial number/car.

Minimum change the tours name. If needed the tour path.

```
....  
  "name": "Demo4-5m",  
  "created_at": 1597652281375,  
  "tours": {  
    "camera-20181218-104940": {  
      "yaw": "0",  
      "pitch": "3",  
      "roll": "0.5",  
      "imu": true,  
      "exposure": "0",  
      "brightenEnabled": true,  
      "brightenStrength": "0.8",  
      "brightenThreshold": "0.4",  
      "tourPath": "E:\\2020\\in\\Demo4-5m"  
    },  
  },  
....
```

## Import the configuration

Projects -> More (3 dots) -> Add project from configuration

## Apply settings

Click the "Start" buttons in the desired sequence.

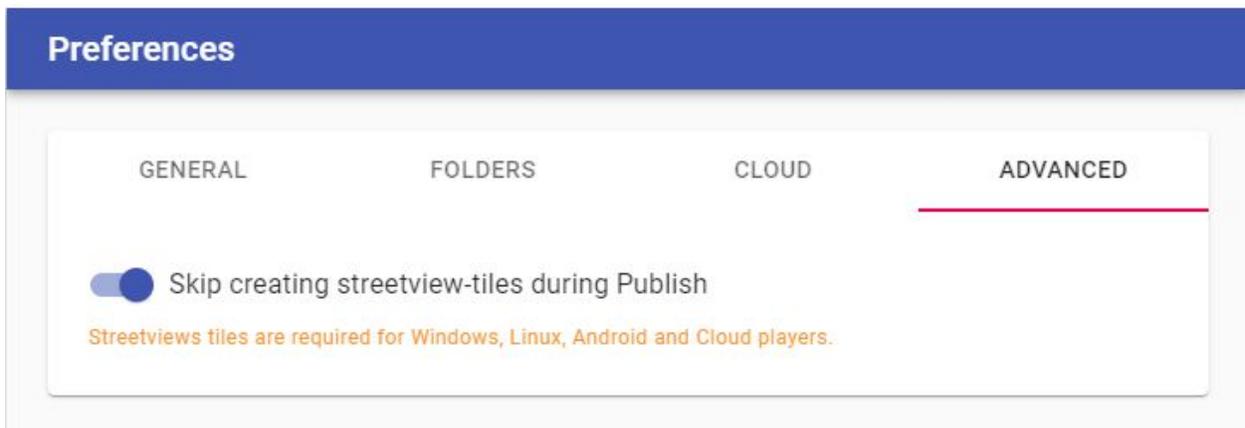
## Processing

Publish -> Start

## Preferences: Skip streetview-tiles

In case only the 8192x 4092 pixel streetviews are needed, and not the streetview-tiles, the generation of the streetview tiles can be deactivated globally. (For all projects.)

Please notice that the **panorama-tiles** folder and empty subfolders are still created. Skipping the streetview-tiles can speed-up processing by up to 100 percent. Depending on your specific setup.



## Full Automation with the command line

### Licensing

Automation is not available with the 2-week trial licence you get by registering for the free trial of Creator 5.

Automation is a feature of **Creator 5 Pro**. It is not available in Creator 5.

Please contact [sales](#) for a quote and a temporary licence key to test **Creator 5 Pro**.

### Mass production

When running **Creator 5 Pro** from the Windows command line make sure that the **current working directory** is set to the directory of the creator-next.exe file.

### Typical Example

```
cd C:\Users\me\AppData\Local\creator-next
creator-next.exe --actions="ImportConfiguration,DuplicateRemover,Publish,Close"
--importConfiguration="S:\Downloads\Demo4-20200930-103027.project-config"
--processSkipTiles=false
```

- --actions
  - **ImportConfiguration** - Add a project from a configuration file and open it. --importConfiguration must be set to the path of the configuration file.
  - **DuplicateRemover** - Run Duplicate Remover with current project settings.
  - **Separation** - Run Tools - Separation with current project settings.
  - **RoadNamesFromOsm** - Run Tools - Road names from OSM with current project settings.
  - **DirectionFromPosition** - Run Tools - Direction from position.
  - **CameraMountedBackwards** - Run Tools - Camera mounted backwards.
  - **Publish** - Starts the publishing process with current project settings.
  - **Close** - Closes Creator 5 when finished
  - **DeleteProjectsAndClose** - Delete all projects and close Creator 5 when finished
- --importConfiguration - Specify a **.project-config** file created by exporting a project configuration. This field is required for the **ImportConfiguration** action.
- --processSkipTiles - Adjusts the value of Preferences - Advanced Skips creating streetview-tiles during Publish. Can be **true** or **false**.

Actions are executed in the sequence they are listed.

If any of the actions trigger an error no other actions will be executed.

Each action creates an entry in the log.  
Errors triggered by an action are logged too.

Each action logs a start and finish message to stdout. This allows for optional progress tracking.

# Running Creator 5 (Pro) in a Cloud

Creator 5 (Pro) can be installed on a Windows PC for local processing, or in a cloud. On the following pages we cover Google Cloud, Amazon EC2, Microsoft Azure Cloud.

When installed in a cloud Creator 5 can be accessed easily by Remote Desktop Connection (RDP).

The following NVIDIA graphic cards provided by the clouds have been tested: M60, P100, V100.

# Google Cloud

## Set Up

1. Go to <https://console.cloud.google.com/compute/instances>
2. Click on **CREATE INSTANCE**
3. In **Machine type** click **customize**
4. Set **Cores** to 8 and **Memory** to 8 GB
5. In the **GPUs** section set **Number of GPUs** to 1 and **GPU type** to NVIDIA Tesla P100 or V100. V100 is about 80% faster for creating streetview tiles.
6. Click on **Boot disk** and select Windows Server 2019 Datacenter. Then set **Boot disk type** to SSD persistent disk.
7. Click **Create**

### Machine type

Customize to select cores, memory and GPUs.

[Basic view](#)

**Cores**

8 vCPU 1 - 96

**Memory**

8 GB 7.2 - 52

Extend memory [?](#)

**CPU platform** [?](#)

Automatic [▼](#)

**GPUs**

The number of GPU dies is linked to the number of CPU cores and memory selected for this instance. For this machine type, you can select no fewer than 1 GPU die. [Learn more](#)

**Number of GPUs** [▼](#) 1 **GPU type** [▼](#) NVIDIA Tesla P100

**i** Machines with GPUs can't migrate on host maintenance

[Choosing a machine type](#) [↗](#)

### Container [?](#)

Deploy a container image to this VM instance. [Learn more](#)

### Boot disk [?](#)

 New 50 GB SSD persistent disk  
Image  
Windows Server 2019 Datacenter [Change](#)

After connecting to the instance:

1. Download and install [CUDA 10](#)
2. Download and install [Creator 5.x.x](#)
3. Exclude the **in** and **out** Creator 5 folders from Windows Security.  
<https://support.microsoft.com/en-us/help/4028485/windows-10-add-an-exclusion-to-windows-security>

## Performance & Cost

For 24 hours:

### **8 Cores, 8 GB Memory, 1 GPU NVIDIA Tesla P100:**

#### **Performance**

Streetviews:	864,000
Streetviews + tiles:	393,000

#### **Cost**

Instance:	53.58 USD
1 Streetview + tiles:	0.00014 USD

### **8 Cores, 8 GB Memory, 1 GPU NVIDIA Tesla V100:**

#### **Performance**

Streetviews:	1,234,000
Streetviews + Streetview tiles:	480,000

#### **Cost**

Instance:	76.38 USD
1 Streetview + tiles:	0.00015 USD

## DATA handling

In order to run **Creator 5** cost effectively in a Google Virtual Machine you should set up separate instances for data-transfer and processing.

### **PROCESS**

Is a GPU instance. It is expensive.

For this you want to spin it up only for the actual data processing. Spin it down when not using it.

### **DATA**

Is a tiny CPU instance. It is very cheap.

With just 1 core, 2 GB RAM and no GPU.

Use it for time-intensive data-transfer like upload and download.

1. Assuming your source images are 1 TB, create a new disk with the size of 2 TB and attach it to the **DATA** instance.
2. Start the **DATA** instance, install an FTP server on it and start the data transfer. The data transfer will need some time, and you save money by using a cheap instance for this.
3. Stop the **DATA** instance, and detach your 2 TB disk.
4. Attach your 2 TB disk to the **PROCESS** instance.
5. Start the **PROCESS** instance and process with **Creator 5** from and to the 2 TB disk.
6. Stop the **PROCESS** instance, and attach our 2 TB disk back to the **DATA** instance.
7. Either download the streeview-tiles directly via FTP or upload them to Google cloud storage. (Google enables it's CDN by default).

# Amazon EC2

## Set Up

1. Go to e.g. <https://eu-central-1.console.aws.amazon.com/ec2>
2. Click on **Launch Instance**
3. Step 1: Choose an Amazon Machine Image (AMI): Choose **Microsoft Windows Server 2019 Base**
4. Step 2: Choose an Instance Type: Choose **p3.2xlarge** - 1 x V100 GPU.
5. **Review and Launch**

After connecting to the instance:

1. Download and install [CUDA 10](#)
2. Download and install [Creator 5.x.x](#)
3. Exclude the **in** and **out** Creator 5 folders from Windows Security.  
<https://support.microsoft.com/en-us/help/4028485/windows-10-add-an-exclusion-to-windows-security>

## Performance & Cost

For 24 hours:

**8 Cores, 8 GB Memory, 1 GPU NVIDIA Tesla V100:**

### **Performance**

Streetviews:	1,234,000
Streetviews + Streetview tiles:	480,000

### **Cost**

Instance:	100.584 USD
1 Streetview + tiles:	0.00021 USD

## DATA handling

In order to run **Creator 5** cost effectively in an Amazon Virtual Machine you should set up separate instances for data-transfer and processing.

### **PROCESS**

Is a GPU instance. It is expensive.

Instance type: **p2.xlarge** or **p3.2xlarge**.

For this you want to spin it up only for the actual data processing.

Spin it down when not using it.

### **DATA**

Is a tiny CPU instance. It is very cheap.

Instance type: **t2.small**.

Use it for time-intensive data-transfer like upload and download.

1. Assuming your source images are 1 TB, create a new disk with the size of 2 TB and attach it to the **DATA** instance.
2. Start the **DATA** instance, install a FTP server on it and start the data transfer. The data transfer will need some time, and you save money by using a cheap instance for this.
3. Stop the **DATA** instance, and detach your 2 TB disk.
4. Attach your 2 TB disk to the **PROCESS** instance.
5. Start the **PROCESS** instance and process with **Creator 5** from and to the 2 TB disk.
6. Stop the **PROCESS** instance, and attach our 2 TB disk back to the **DATA** instance.
7. Either download the streeview-tiles directly via FTP or upload them to Amazon S3.

# Microsoft Azure Cloud

## Set Up

1. Go to e.g.  
<https://portal.azure.com/#blade/HubsExtension/Resources/resourceType/Microsoft.Compute%2FVirtualMachines>
2. Click on **Add**
3. Image: **Windows Server 2019 Datacenter**
4. Size: **Standard NV6**
5. **Review + create**

After connecting to the instance:

1. Download and install [CUDA 10](#)
2. Download and install [Creator 5.x.x](#)
3. Exclude the **in** and **out** Creator 5 folders from Windows Security.  
<https://support.microsoft.com/en-us/help/4028485/windows-10-add-an-exclusion-to-windows-security>

## Performance & Cost

For 24 hours:

**6 Cores, 56 GB Memory, 1 GPU NVIDIA Tesla M60:**

### **Performance**

Streetviews:	455,000
Streetviews + Streetview tiles:	176,000

### **Cost**

Instance:	38.4 USD
1 Streetview + tiles:	0.00021 USD

## DATA handling

In order to run **Creator 5** cost effectively in an Azure Virtual Machine you should set up separate instances for data-transfer and processing.

### **PROCESS**

Is a GPU instance. It is expensive.

Instance type: **Standard NV6**.

For this you want to spin it up only for the actual data processing.

Spin it down when not using it.

### **DATA**

Is a tiny CPU instance. It is very cheap.

Instance type: **B2s**.

Use it for time-intensive data-transfer like upload and download.

8. Assuming your source images are 1 TB, create a new disk with the size of 2 TB and attach it to the **DATA** instance.
9. Start the **DATA** instance, install an FTP server on it and start the data transfer. The data transfer will need some time, and you save money by using a cheap instance for this.
10. Stop the **DATA** instance, and detach your 2 TB disk.
11. Attach your 2 TB disk to the **PROCESS** instance.
12. Start the **PROCESS** instance and process with **Creator 5** from and to the 2 TB disk.
13. Stop the **PROCESS** instance, and attach our 2 TB disk back to the **DATA** instance.
14. Either download the streeview-tiles directly via FTP or upload them to the cloud.

# Downloads

[Creator 5 manual](#)

[Creator 5 program](#)

# Support

Please update first.

Support is provided for the [newest Creator 5](#) release only.

Maybe your problem has already been solved?

## Contact

Support is available in English language.

**Helpdesk:** [support.applied-streetview.com](http://support.applied-streetview.com)

**E-Mail:** [support@applied-streetview.com](mailto:support@applied-streetview.com)

**Skype ID:** applied-streetview

**Phone:** +49 6103 - 37 27 494