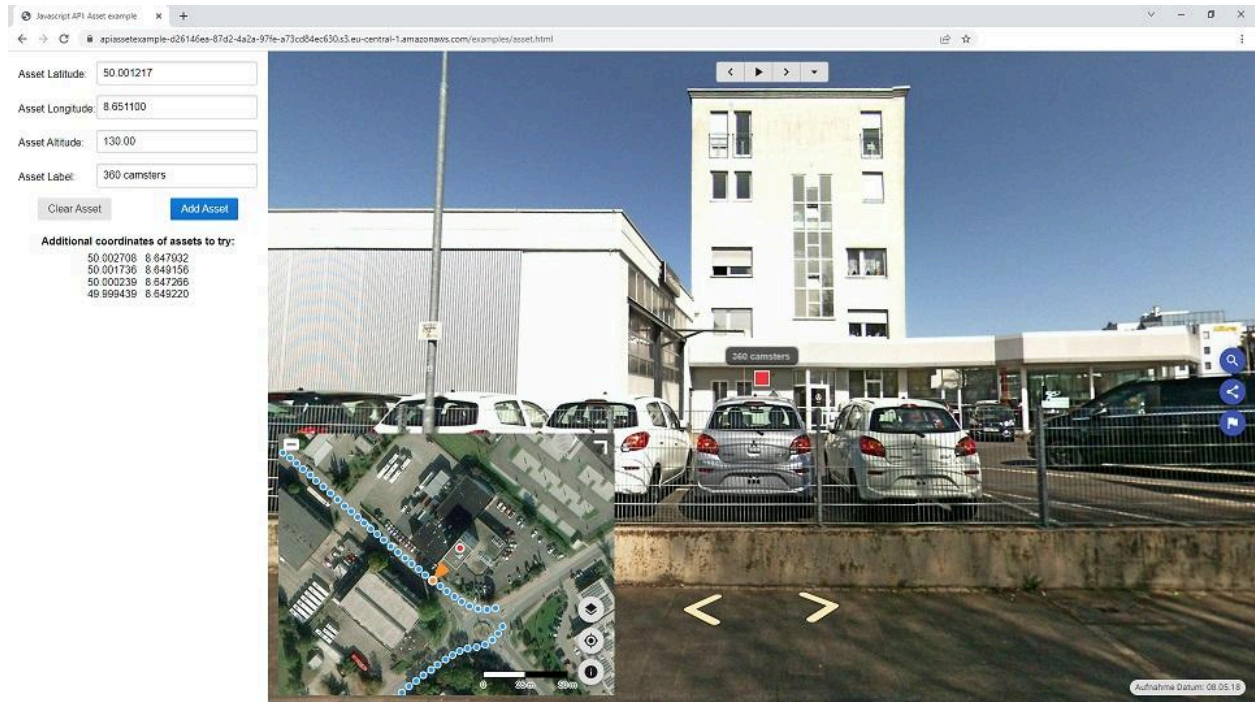# APPLIEDSTREETVIEW

Creator 8

Manual
version 8.0.5

Title photo shows the [asset example](#) of the players API.
More [info](#) on the API.

Index

Free Testing

Creator 8 will work for two weeks for free.

Creator 8 Downloads

[Manual](#)

[Program](#)

[Cheat sheet](#)

Example Data

Demo-2021, recorded with RTK by NTRIP, (3.2 GB)

https://aplsv-new.s3.amazonaws.com/Demo-2021/in/Demo-2021.zip

Demo4-5m (800 MB)

https://s3.amazonaws.com/aplsv-new/Demo4/in/Demo4-5m.zip

Demo4-1m (3.5 GB)

https://s3.amazonaws.com/aplsv-new/Demo4/in/Demo4-1m.zip

Demo3 (980 MB)

https://s3.amazonaws.com/aplsv-new/Demo3/in/Demo3.zip

Limitations of the free evaluation version
- Demo watermark on the streetviews.
- Demo watermark on the player.
- Only the Europe, Frankfurt region is available for one-click publishing to the Amazon AWS cloud.

Creator 8

Creator 8 by Applied Streetview is a program to create a high-performance streetview player for footage recorded by the Applied Streetview 360 camera.

Main Features

- For country-size projects with millions of streetviews.
- Integrate into your existing IT by the players API.
- Perfect privacy by optional local installation, processing and publishing.
- Publish to your own servers, shared or dedicated hosting, Amazon AWS cloud, Google cloud, MS Azure cloud. As well as to literally any internet server by ftp.
- Localisation: Add your own player translation in just a few minutes.
- Map: Pick one of 30 map-providers or use your own maps or aerial images.

Creator 8 ítself can be installed **locally** to a Windows 10 PC, or to a **cloud**.

We tested Google Cloud, Amazon Web Services EC2 and Microsoft Azure.
In a cloud it can be accessed by Remote Desktop Connection (RDP).

Main New Features of Creator 8

- **Faster player**
  For large and dense projects the player now is a lot faster than with Creator 7. Updating just needs minutes. No need to upload all the streetview tiles again.
- **View Player**
  A "View Player" button has been added to the "Export" page to view the created player right away. No need for a local 3rd-party server anymore to review the real player before publishing it.
- **Amazon AWS cloud**
  Added newly available regions: Asia Pacific (Hyderabad), Asia Pacific (Jakarta), Europe (Spain), Europe (Zurich), Middle East (UAE).
- **Switch off generation of streetview tiles**
  For 3rd-party workflows the creation of the streetview tiles can now be deactivated globally in Preferences -> Advanced. In case only the large 8192 x 4096 pixel streetviews with EXIF metadata are needed.

Cloud Publishing

The player has been designed for very large projects with millions of streetviews. It has never been easier to prepare for your 15 minutes of internet fame. On top of this the cost is up to 80% lower than a player hosted in a datacenter. Also there is no maintenance for the player when published to a cloud.

Cloud Player Evaluation

For evaluation the new Cloud Player works out-of-the-box.
No Amazon AWS account 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 Amazon AWS account all other AWS Regions will be available to you.

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.

Updating from a previous Creator release

Working with **Creator 8** is very easy. As part of our Software Suite it has the same layout as previous Creator 7 and [all our other programs](#). Everything works the same way. All features to be found at the same spot in all our programs and even the [Online Recording Management](#) service.

You can install Creator 8 in parallel to existing Creator 3, 5, 6 and 7.
Just do not run them at the same time.

Copying projects from previous Creator releases to **Creator 8** is very straight forward:

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

Creator 5
    Backup all your projects:
    Projects -> Backup all projects

Creator 6
    Backup all your projects:
    Projects -> More -> Backup all

Creator 7
    Backup all your projects:
    Projects -> More -> Backup all

Import the backup
Creator 8
    Projects -> Import backups

Hint:

Creator 8 project backups can not be re-imported into Creator 3, 5, 6 or 7.

Hardware

Windows 10 PC
For a local installation the minimum requirement is a Windows 10 PC with a matching NVIDIA graphics card.

We recommend the **NVIDIA GeForce RTX 2060 Super** gaming graphics card with 8 GB VRAM.
Relevant for the performance is the graphic card's amount of VRAM.
The more VRAM, the better the performance.

Cards known to work:
RTX 2060, 8GB
GTX 1080, 8GB
GTX 1650, 4 GB (Slower. No internal power cable is needed. Great for older PCs.)
RTX 2080, 8GB
Quadro RTX 6000, 24 GB

The following cards should work too:
RTX 2080 Ti, RTX 2080 Super, RTX 2080
RTX 2070 Super, RTX 2070
RTX 2060 Super, RTX 2060
GTX 1660 Ti, GTX 1660 Super, GTX 1660
GTX 1650 Super, GTX 1650

RTX 30 or RTX 40.. (series 30 or 40) graphics cards do not work.

Cloud
Creator 8 also can be installed to a **cloud**.
You then can operate **Creator 8** by Remote Desktop Connection (RDP).
We tested Amazon Web Services EC2, Google Cloud and MS Azure.

Setup

Folders

Mandatory folders
Create these folders: In, Out, Creator 8 project backups, Camera calibration files.
Then set the folders up in Preferences -> Folders.
Camera calibration files have the .pto and .xml file extension.Save all .pto and .xml files
for all your cameras to the same "Camera calibration files" folder.

You can work with recordings from many different Applied Streetview cameras. Creator
automatically picks the right templates for stitching. Even for the same project.

Recommended folders
It is strongly recommended to create the following additional folders to organize your
data**:** Masks, Logos, Export, Project configuration.
Create the folders manually to keep your data organized.

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 a SSD for your data.
Next best thing is HDDs.
Separate HDDs for the "in" and "out" folders will speed things up considerably.
NAS works fine. Depending on your network it can be very slow.

In case you are using a Laptop, more than one monitor, or are playing games:
Set **Hardware-accelerated GPU** scheduling to **On** in
Settings -> System -> Display -> Graphics Settings:

Graphics performance preference:
Browse for Creator 8. In Options set **Graphics preference** to **High performance**.

Restart the PC to apply the settings.
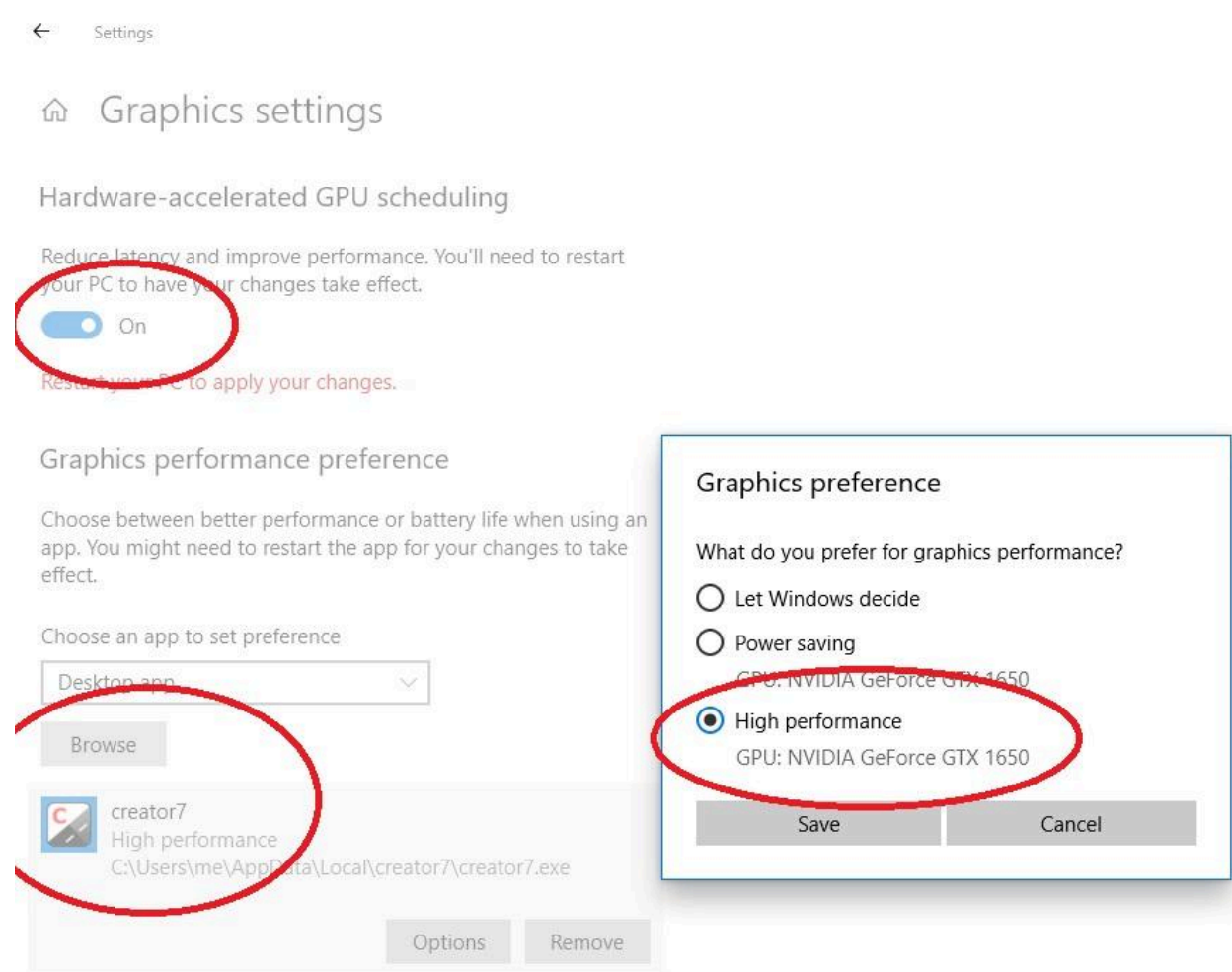
We strongly recommend adding the following exclusions to Microsoft Windows **Virus and thread protection.**
It can make Creator 8 up to three times faster.

Apply the above settings correspondingly to third-party virus scanners.

Workflow

Just follow the menu from the top to the bottom.
Skip menu items your project does not need.
Go back and forth to review and make adjustments.

Project size

For quick results start familiarizing yourself with Creator 8 with a small project with less than 100 streetviews in a few short tours.
This way alterations can be done real fast.

Data Management

On the **Tours** page you can copy or move or copy Tours from one project to another.
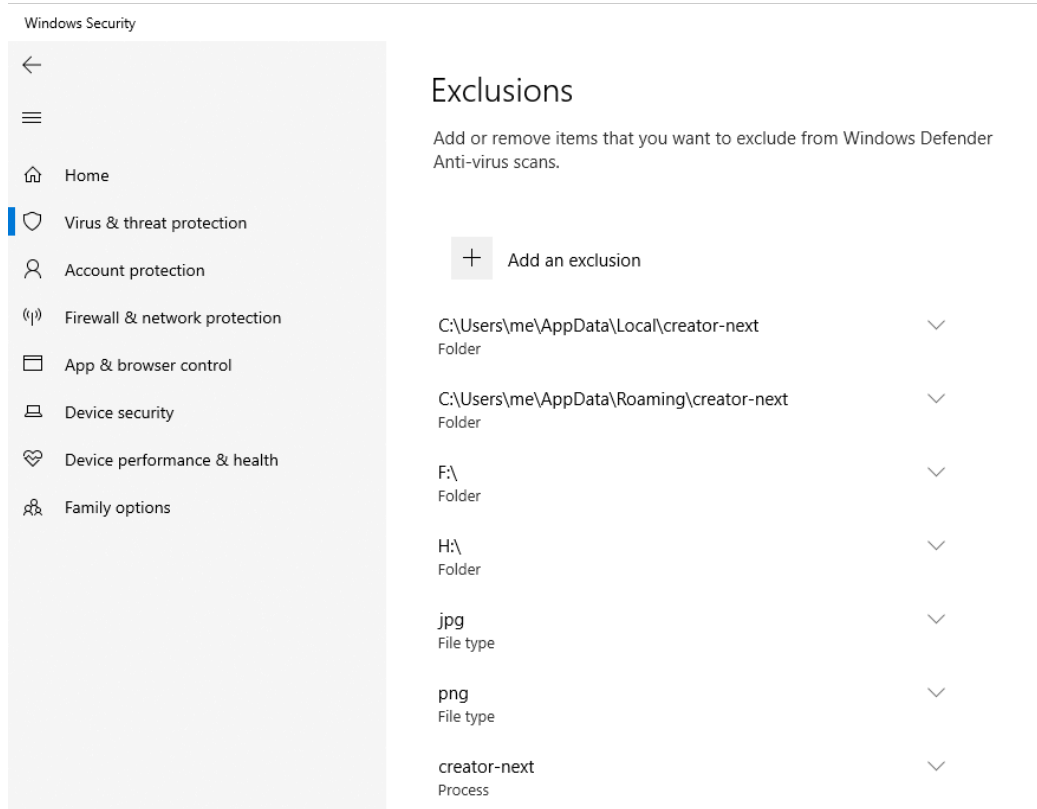
Country-size projects should be split into smaller, separate projects. E.g. separate projects by cities, counties, states, etc.
Then process all the projects. Finally combine the resulting players with **Tools -> Merge Players** into one large player with all the recordings. Publish.

You can work with recordings from many different Applied Streetview cameras in the same Project. Creator automatically picks the right templates for stitching.

You can add many newly recorded Tours of the Applied Streetview camera directly to an existing project on the projects **Tours** page with the **Add** button.

Import

Basics

A new project always starts with the top menu item **Import**.

Project folder
The path to your data on the PC.
Pick a project folder. It must have at least 1 tour folder.

Project name
By default the project name will be taken from the projects folder name.
You can change the project name manually before continuing.

Click the **START** button to create the new project.
See [Data Management](#) for how to combine recordings.

Import Formats

Applied Streetview camera recordings

Image files

Image type:	6 jpeg source photos
Image resolution:	Each 2560x1920 pixel
Image ratio:	4:3
Chroma subsampling:	4:2:0
File format:	6 JPEGs without EXIF Metadata

Folder structure

A **Project** folder with at least 1 subfolder.

Each subfolder is a **Tour**.

Each **Tour** has seven subfolders named: 1,2,3,4,5,6 and 7.

1-6 are for the source-photos.

7 is for the log data.

Example data

Demo-2021, recorded with RTK by NTRIP, (3.2 GB)

https://aplsv-new.s3.amazonaws.com/Demo-2021/in/Demo-2021.zip

Demo4-5m (800 MB)

https://s3.amazonaws.com/aplsv-new/Demo4/in/Demo4-5m.zip

Demo4-1m (3.5 GB)

https://s3.amazonaws.com/aplsv-new/Demo4/in/Demo4-1m.zip

Demo3 (980 MB)

https://s3.amazonaws.com/aplsv-new/Demo3/in/Demo3.zip

Projects

A list of the projects.
Click a project to work with it.

Import Backups
Import one or many project backups from Creator 3, 5, 6 or 7.
This is only for the Creator data. Sources or generated data is not included in a Backup.
[Paths](#) to the source data then can be adjusted on the Tours page if needed.

Backup All
Backup all your projects with just one mouse click.
This is only for the Creator data. Sources or generated data is not included in a Backup.

Click the **Backup All** button. The Backup folder set in Preferences is opened.
Click **Select Folder** to create the backup(s).

For each project a Backup is saved to a new subfolder named after the current date and time:
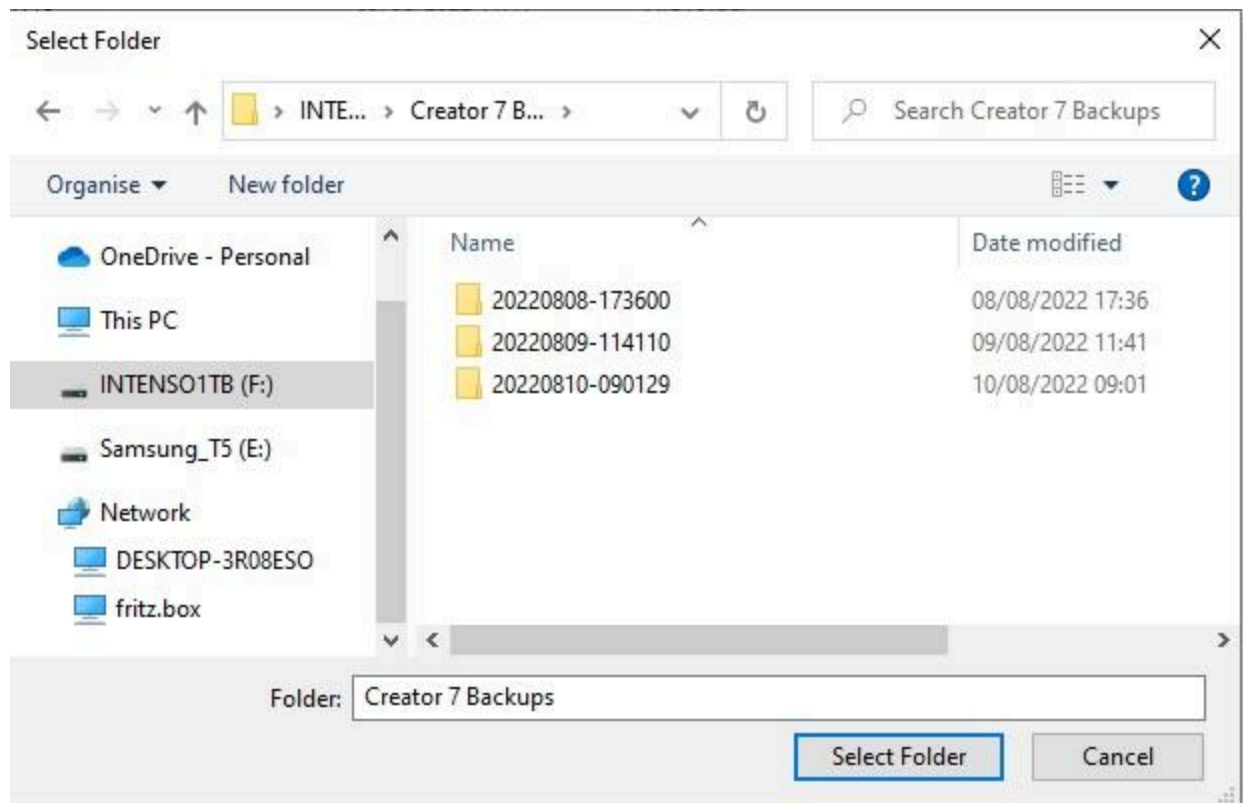
You can **Edit**, **Backup** or **Delete** a single project.
This is only for the Creator data. Sources or generated data is not included in a Backup.

Creator can not change or delete your source data.
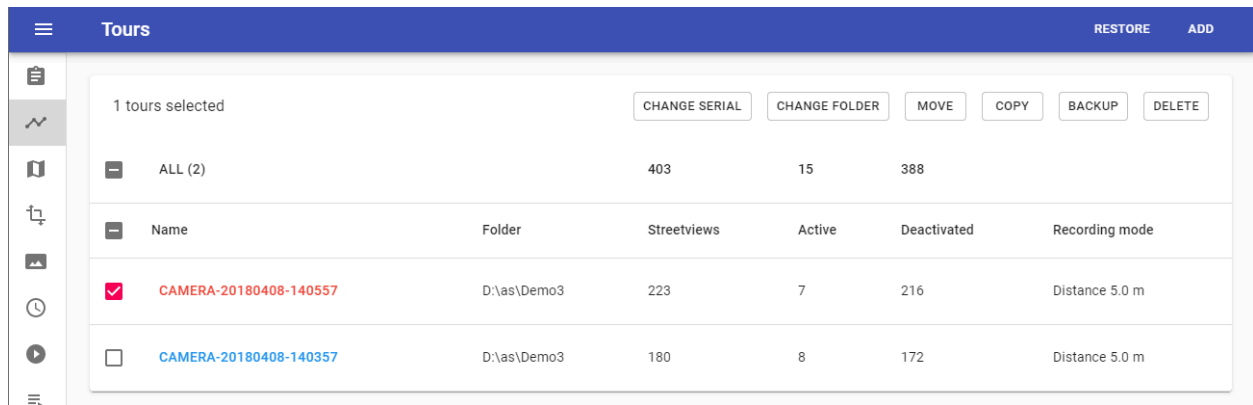
Tours

A list of all the tours of a Project.
Tours can be from different cameras.

Show on map

Click the **tour name** to zoom to a single tour on the Map page.
Click **ALL** to see all tours on the Map page.

IMPORT BACKUPS

IMPORT BACKUPS button in the top right corner:
Import a tour backup. One or many tour backups can be imported at the same time.

Add

ADD button in the top right corner:
Add one or multiple tours of the Applied Streetview camera to this project.
E.g. when additional footage has been recorded months later.

Change Folder

When migrating backups from one PC to another PC, or when a folder has been moved
to a different drive: Tick all tours you need to adjust the paths for. Then click the
CHANGE FOLDER button. Then set the new **Project** folder.

Move

Moves selected tours to a different project.

Copy

Copies selected tours to a different project.

Backup

Backup selected tours.
This is only for the Creator data. Sources or generated data are not included in a
Backup.

Delete

Deletes the selected tours from the project only.
Creator can not change or delete your source data.

Map

In order to display a large number of streetviews on the map, Creator 8 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, 22, etc.
Zoom in to see the individual streetviews.

Cluster   ●

Streetview   ▲

Change map base layer

Esri.WorldImagery is the default.

Click the ⬙ button in the top left corner to change the map base layer.
Then select a different map 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.

In addition to about 40 map providers up to 3 different custom map providers can be specified. This could be your own map server.

Base layers

☐ Custom 1 ⚙

☐ Custom 2 ⚙

☐ Custom 3 ⚙

☐ Mapbox.com ⚙

☐ CartoDB.DarkMatter

Set up a custom map tiles provider

Custom

Label

Custom

URL

file://D:\folder\{z}\{x}\{y}.png, http://www.your-company.com/map-tiles/{z}/{

Attribution

Copyright by Your Company. Al

CANCEL   OK

Label
Your custom map tiles provider name

URL
Change only the **bold** parts of the address.

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

Local:
A local folder or NAS drive:
file://**D:\folder**\{z}\{x}\{y}.png

{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

Mapbox is available for both the New Player and the Legacy Player.
Check the [Mapbox](#) section for instructions on how to add your own style.

Display

Show or hide active and deactivated streetview icons.

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 applied 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 **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 there are timelines.
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.
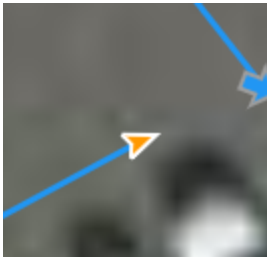
It's possible to select multiple streetviews by holding down the CTRL key when clicking on the streetviews.

Holding down the SHIFT key and then drag the mouse to select all the streetviews in a rectangle.
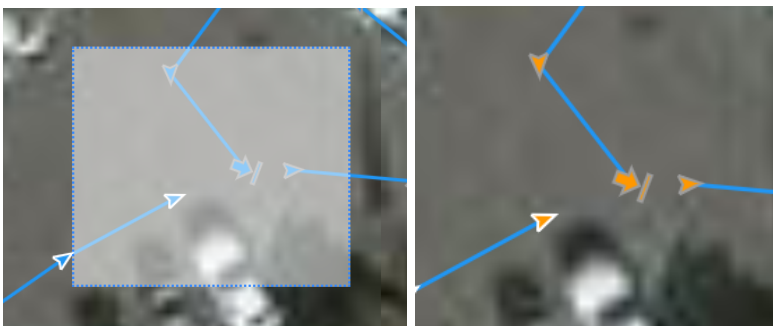
To select all the streetviews from first to last and everything in between, select the first streetview, then while holding down the ALT key, select the last one streetview.

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.

Meta Data

Check 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 streetviews.

Information	^
Tour	camera-20181218-105201
Image Number	84
GPS Date	2018-12-18 09:51:28
Local Date	2018-12-18 10:51:10
Latitude	50.001941 °
Longitude	8.647113 °
Height	124.88 m
GNSS fix	RTK Float
Heading	222.74 °
Speed	7.13 km/h
Release Mode	Distance 5.0 m

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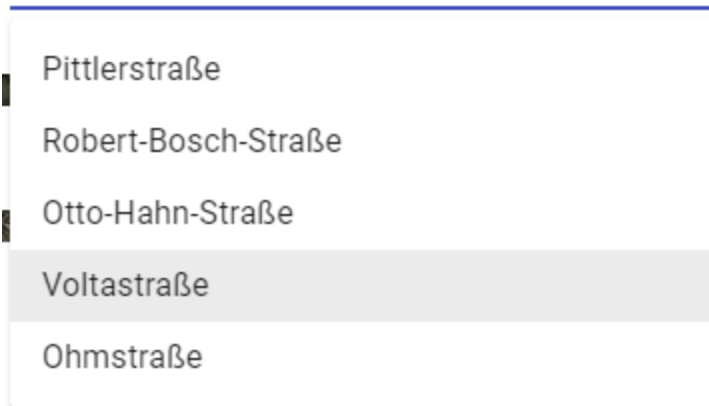
Enable **Show Road on Map** to display the road name as a label for each streetview.

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.

Mark_point: Autopflege Langen
Mark_line
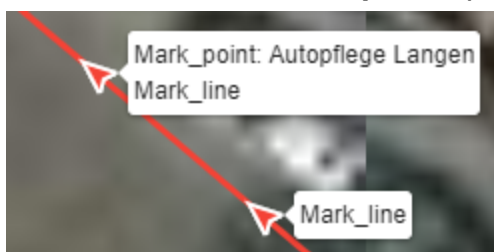
Mark_line

Select all streetviews with the same POI name

Select and zoom to a specific POI by selecting it from the list.

Select POI

Mark_point: Autopflege Langen

Mark_point: Kluge Luftfilter

Mark_line

Mark_point

Mark_point

Mark_line: New road surface

Mark_point

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.

Overlay

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

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

Level

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

Leveling is available only for footage of the Applied Streetview camera.

Keyboard shortcuts

It is recommended to download and print this page as the [Cheat sheet](#).
Valid for the Map tab and the player2.
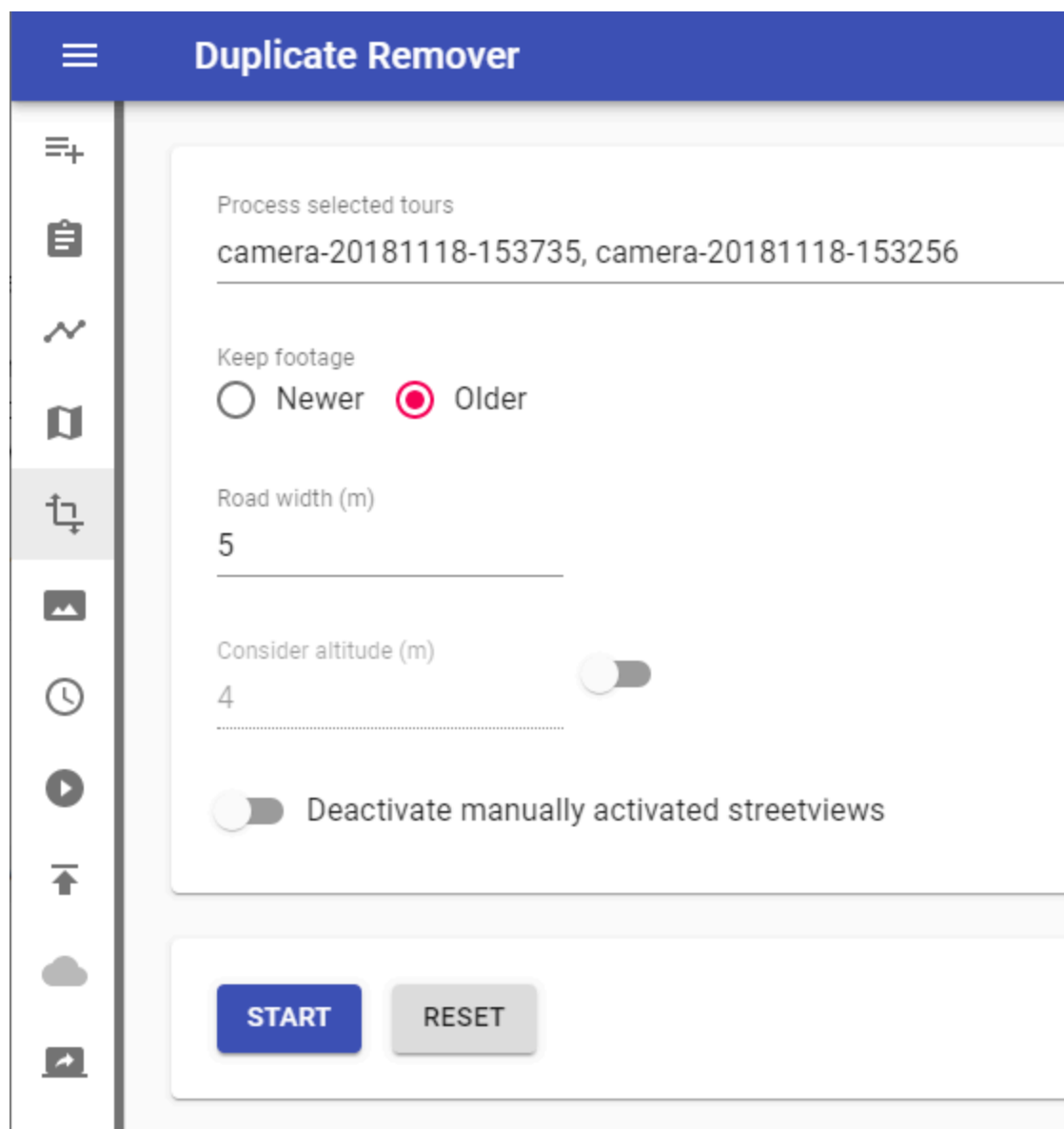
Mouse	Move all selected streetviews
ESC	Unselect all selections
CTRL + A	Select all streetviews visible on the map
Click an arrow	Select a streetview
Hold CTRL + click a Streetview	Add a streetview to the current selection
Shift + draw rectangle	Select all the streetviews in the rectangle
Hold CTRL + 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.
Ctrl + Shift +h	Screenshot mode Temporarily hides the Hotspots and the navigation arrows.

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 Skip tool after applying the
Duplicate Remover. Make sure to run the Skip tool after Duplicate Remover for best
results.

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

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 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 by the Duplicate
Remover. 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 Skip 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 or removed.
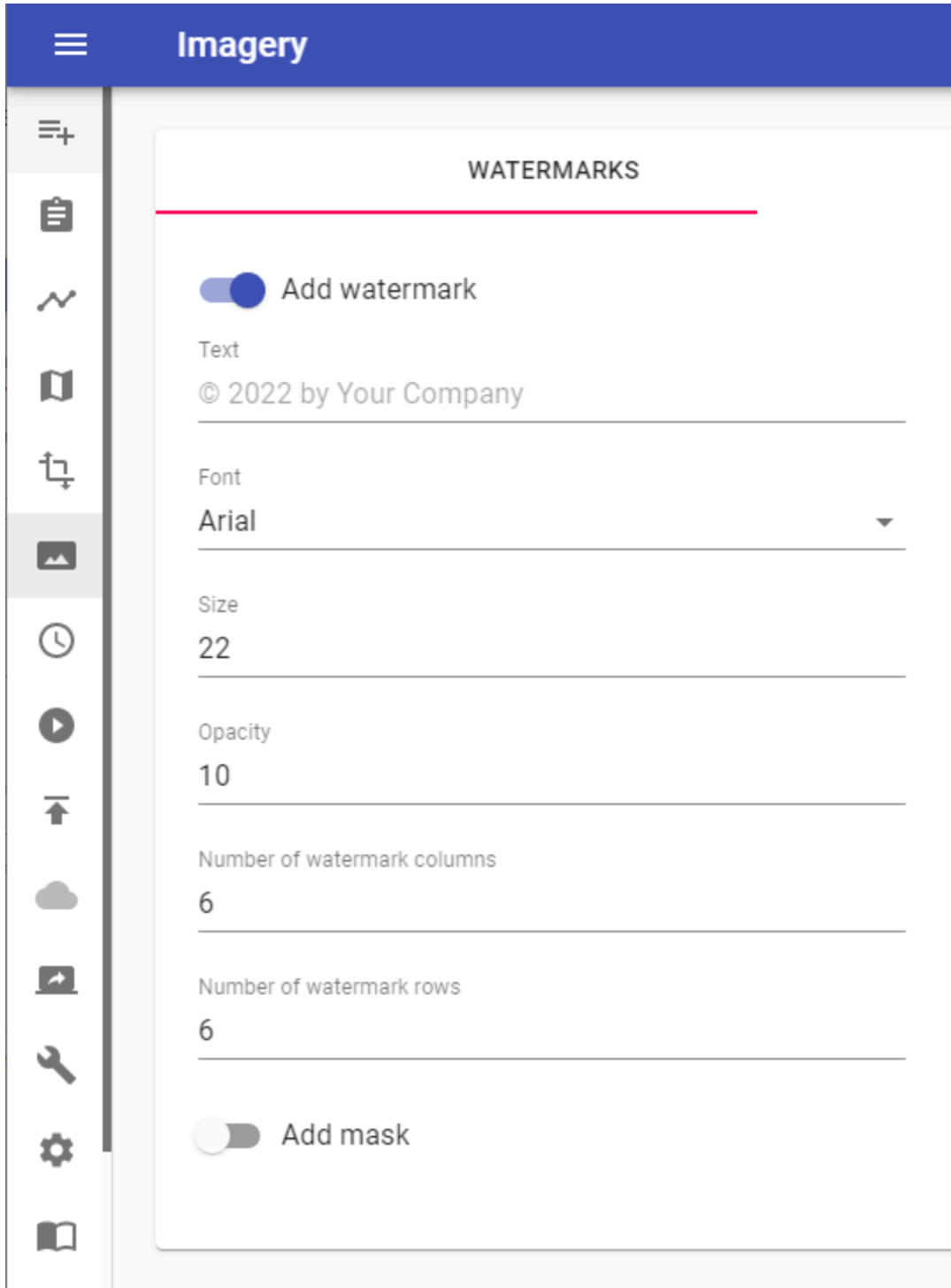
Add watermark
Enable watermarks.

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 watermark columns

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

Number of watermark rows

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

Add mask

Enable to add a mask to 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 8** Player Preview it looks like this:
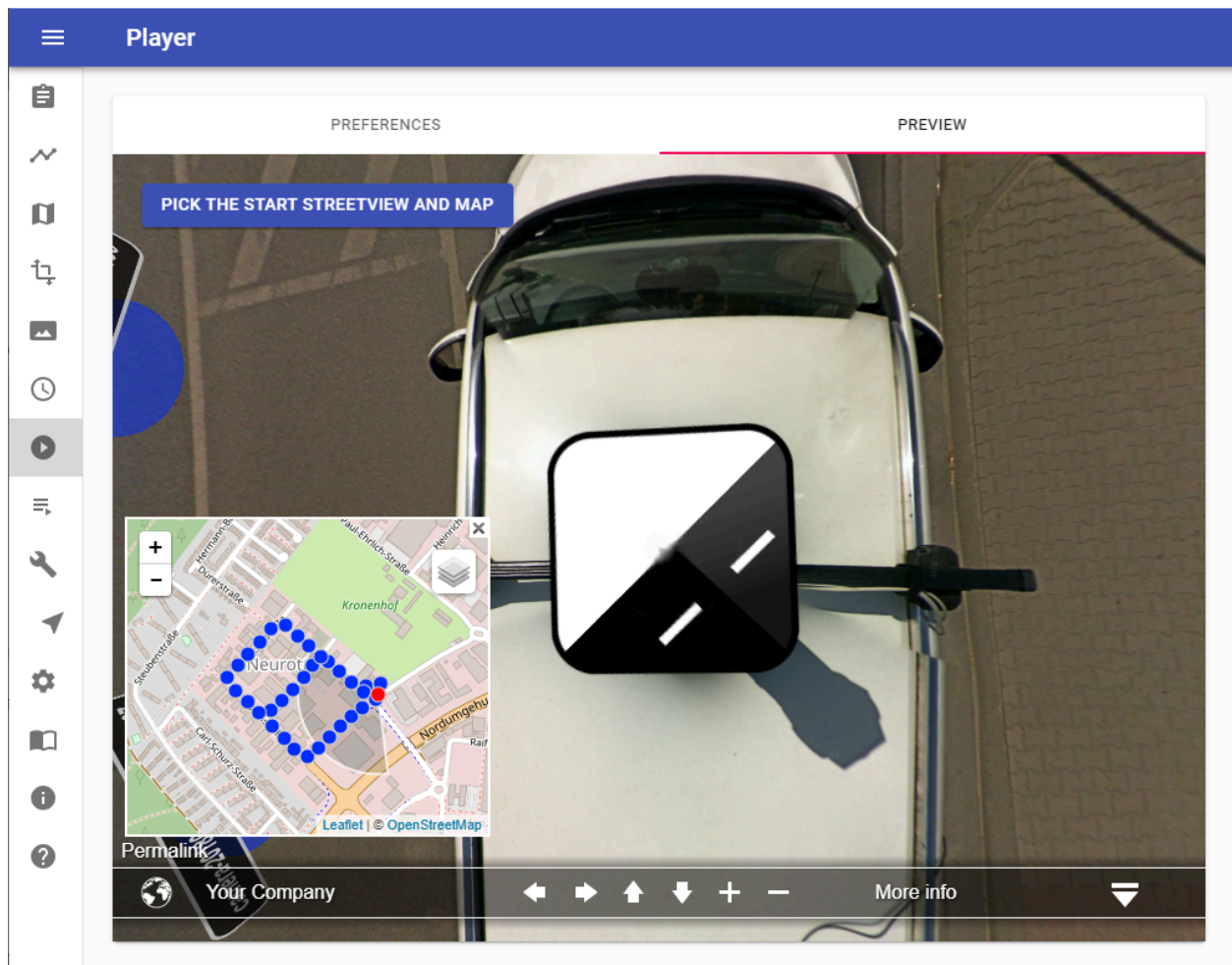
You have to change the value of Player - Preferences - **Look down limit (degrees)** from the default -50 to -90 to actually see the Nadir logo.

For your convenience change **Maximum Zoom Level** from default 120 to **150**. This way you can see the result better.
Change it back both when done reviewing.

Google Policy

When publishing to Google Streetview with 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 displayed in the top right-hand corner of the screen like with all 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.
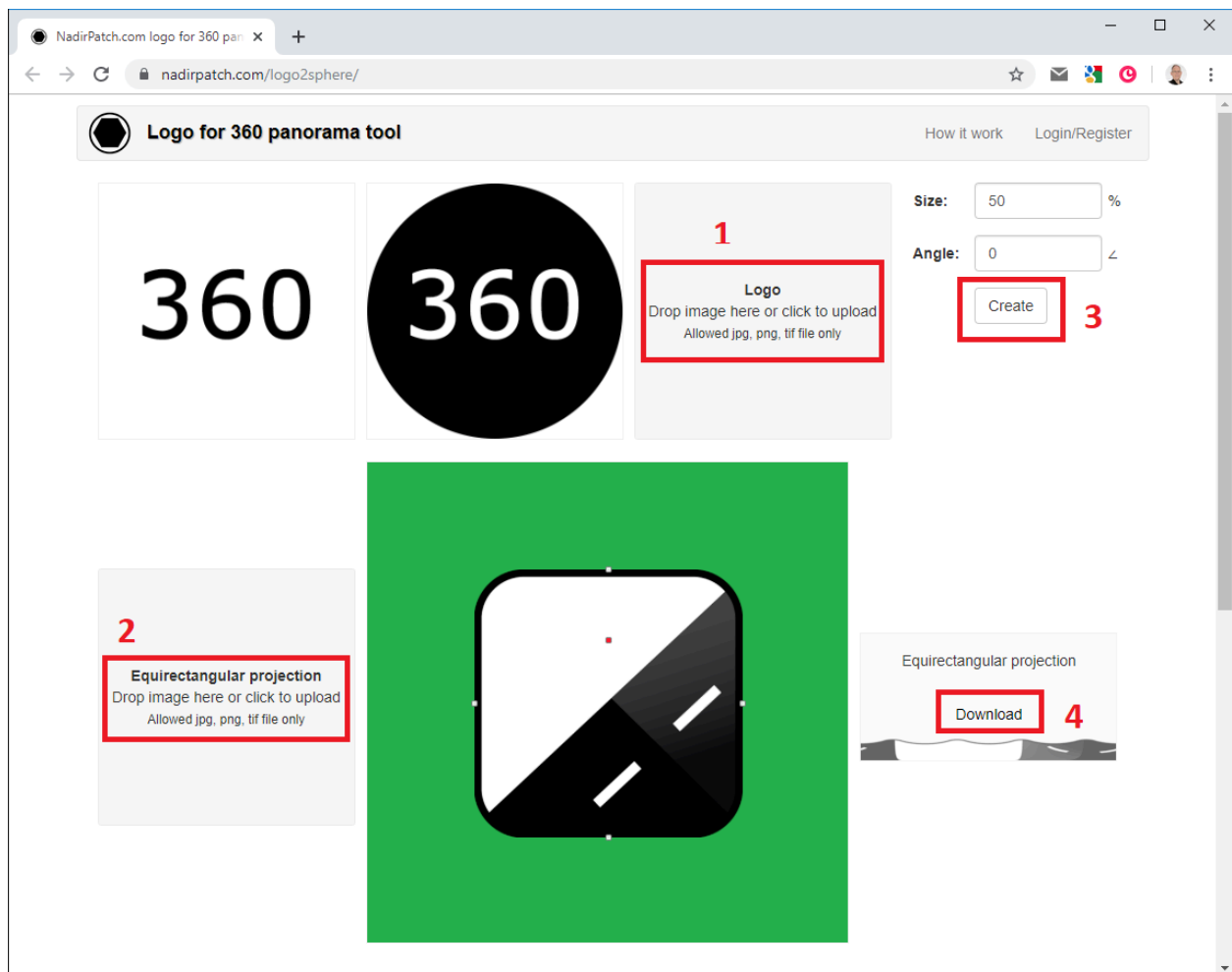
Set Transparency

On your PC right click the **pano.tif** image then select **Edit with Paint 3D**.
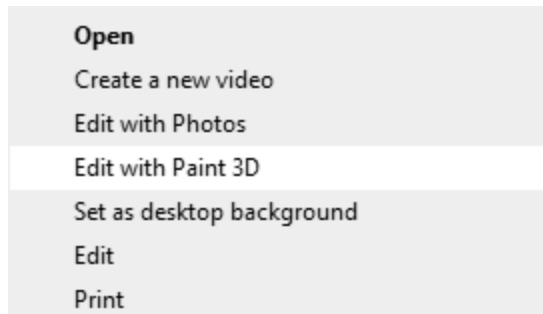
In the top navigation bar Click **Canvas** and then enable **Transparent canvas**.
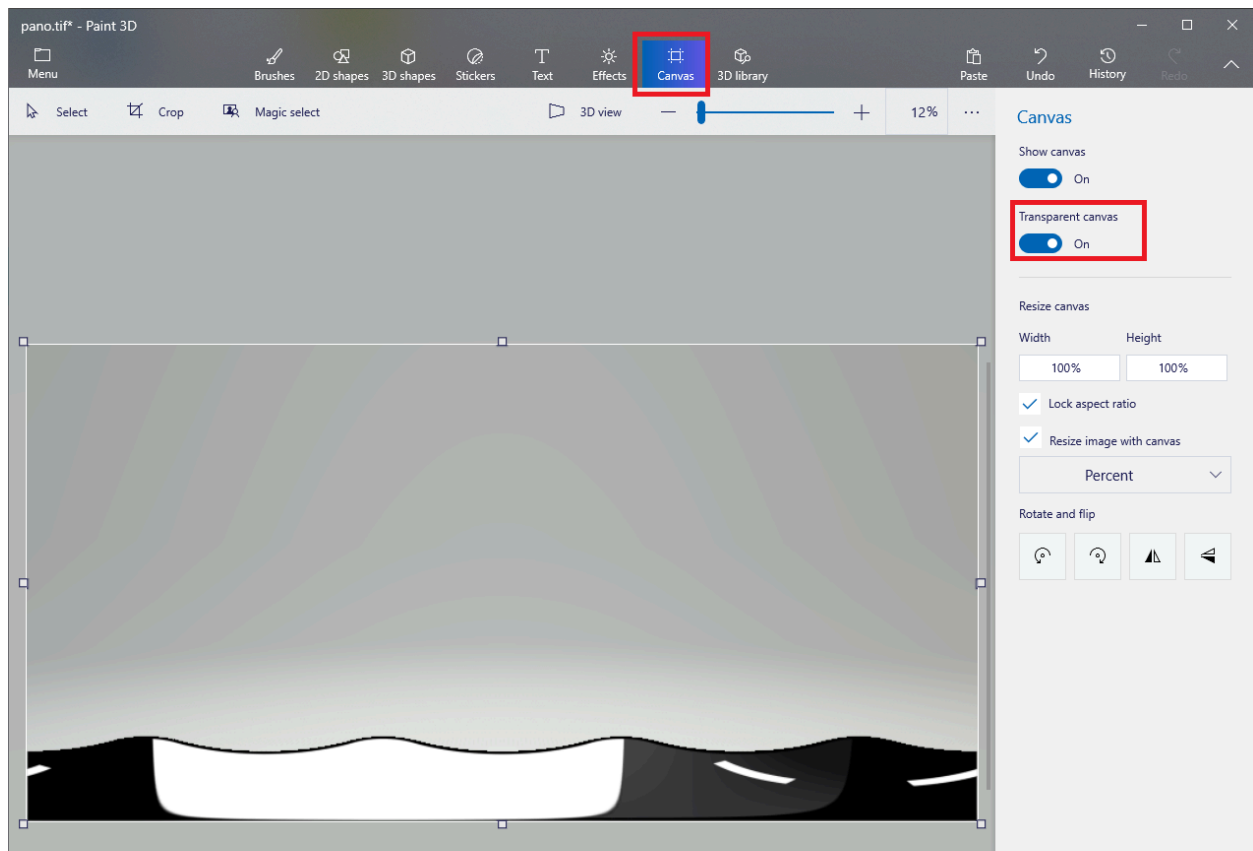
To save press CTRL + S then Click **Image**.
Change Save as type to **2D PNG** then click **Save**.

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.

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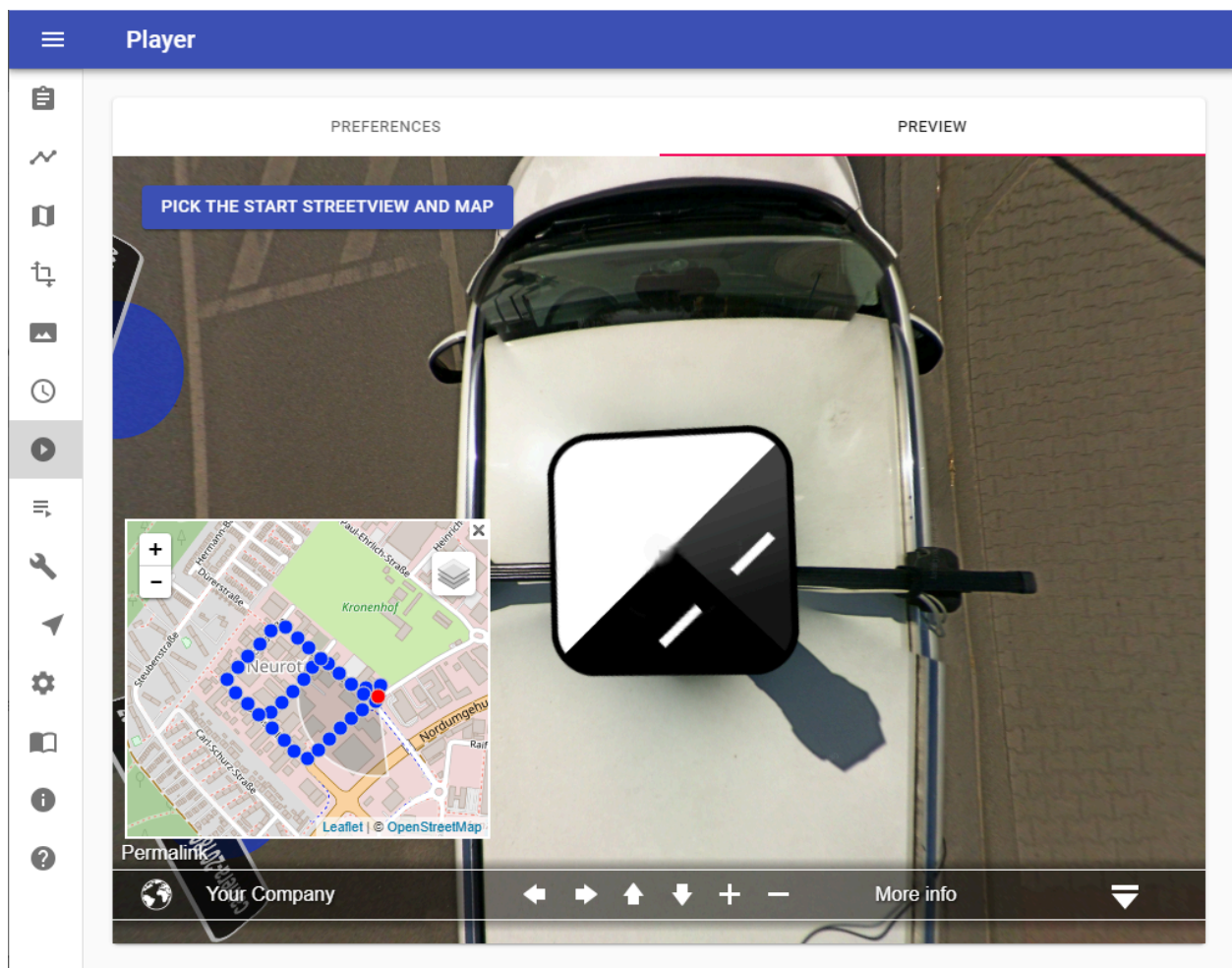
You now can process to create the 8192 x 4096 pixel streetviews needed to upload to Google streetview later with our G-Publisher program.

Leveling and brightness

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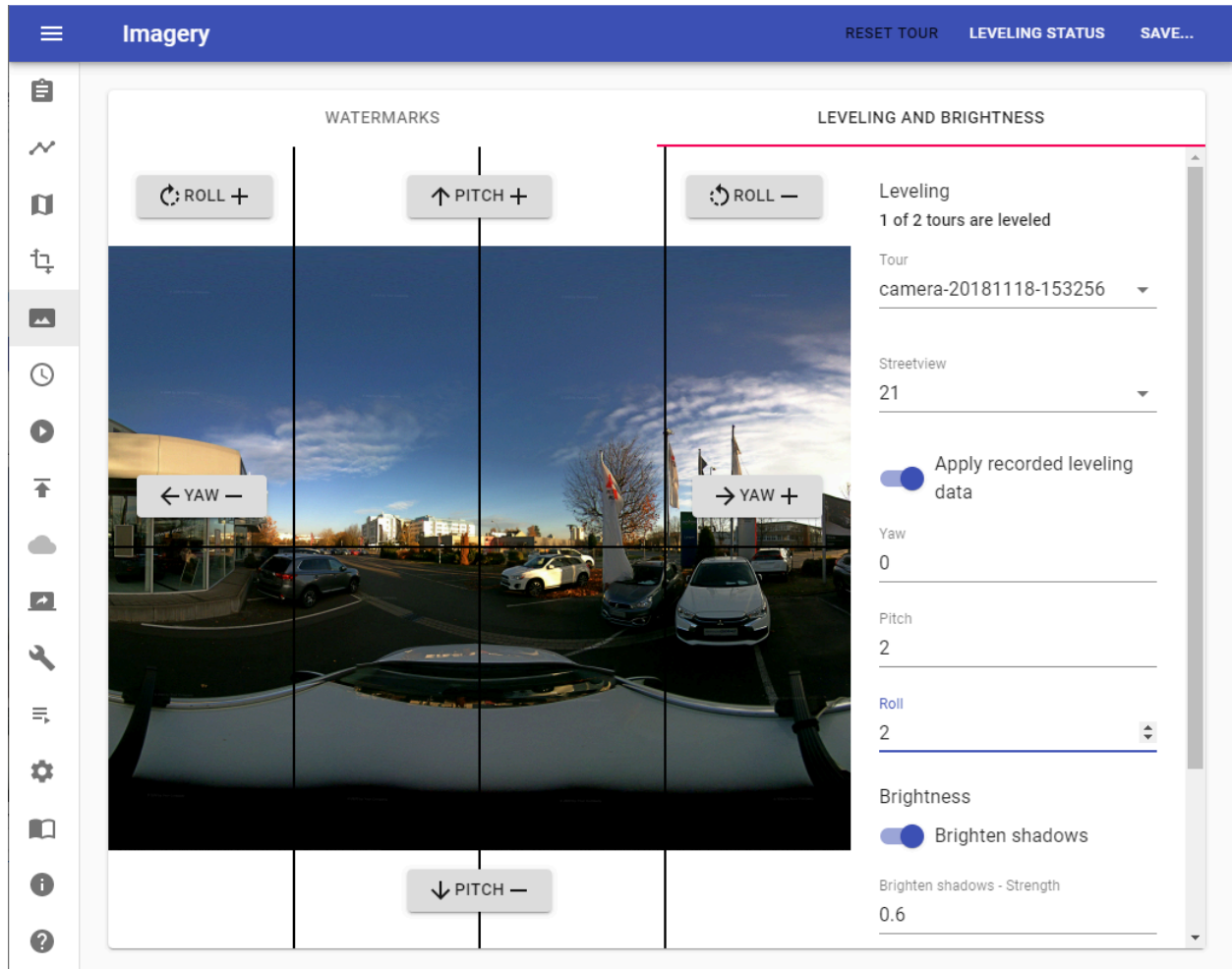
Leveling

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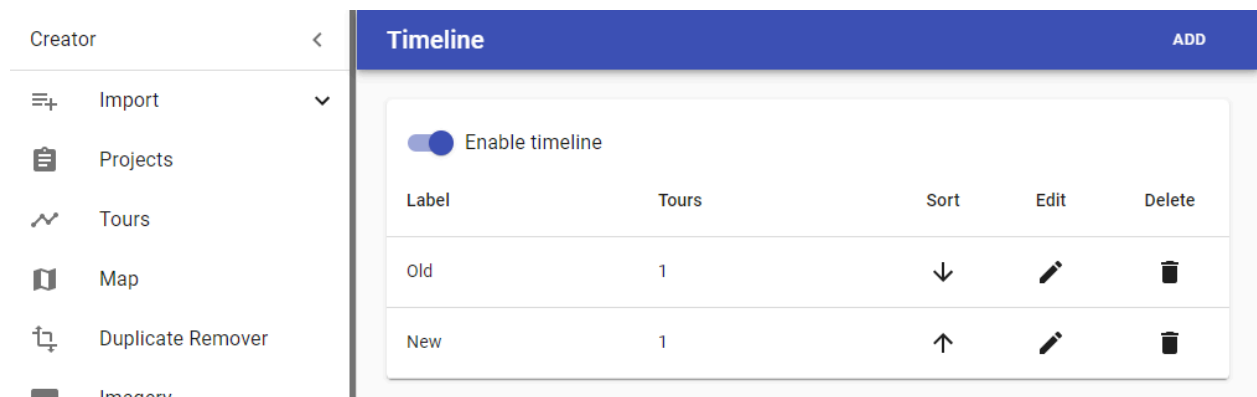
Record the same road or area multiple times to document change.

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.

New Player

Creator 8 comes with the new **Player 2** enabled by default. Click on the **Preview** tab to check how your project looks with **Player 2**.

Player 2 Keyboard shortcuts

PG UP	Go to the next streetview
PG DOWN	Go to the previous streetview
Arrow keys: Up, Down, Left, Right	Pan up, down, left, right.
Ctrl + Shift +h	Screenshot mode Temporarily hides the Hotspots and the navigation arrows.

Preferences

General

Title   Demo3

Search

Layout

PREFERENCES

General

Layout

Screen-Layout

Large map with small streeetview

Large streeetview with small map

Top: Map, Bottom: Streetview

Top: Streetview, Bottom: Map

Streetview only

Logo

Large logo	
Large logo path	CHOOSE FILE
Small logo	
Small logo path	CHOOSE FILE
Click URL	
Click URL target	Opens the linked document in a new window or tab. Value: _blank

Streetview

Enable Navigation panel

Automatic start

Initial delay (seconds)	0

Interval (seconds)	1

Show Hotspots	⬤

Hotspot label	Auto ▾

Minimum display distance (m)	0

Maximum display distance (m)	40

Show Arrows	○

One streetview per section (degrees)	60

Minimum display distance (m)	3

Maximum display distance (m)	40

Image capture date	⬤
Image capture time	⬤
Share button	⬤
Zoom buttons	⬤
Image latitude and longitude	⬤

Max Zoom-in (degrees)	50
Max Zoom-out (degrees)	120
Look down limit (degrees)	-50
Look up limit (degrees)	50

Map

Map	^
Map Providers List	OPENSTREETMAP.MAPNIK, ESRI.WORLDIMAGERY, ESRI.WORLDSTREETMAP
Start Map Provider	ESRI.WORLDIMAGERY
Streetview Transparency	●━━━━━━━━━━━━━━━━━━━━━━━●
Preview streetview on mouse over	🔘 (on)
Zoom buttons	⚪ (off)
Scale	🔘 (on)
Scale units	Metric ▾

Mapbox

If you have your own custom data and would like to add it to the Player, [Mapbox](#) provides an easy way to do that.

Mapbox

Map provider label	Mapbox streets
Style URL	mapbox://styles/mapbox/bright-v9
Access token	
Map data legal notices	<a href="https://www.mapbox.com/abou

Map provider label
Text for the map provider 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.
Example:
© Applied Streetview

Then on the **Map** page, click the **Base Layer icon** and tick **Mapbox map tiles**.
Check how it looks and works in **Player -> Preview**

Auto forward

Enabled	⬤
Automatic start	⬤
Initial delay (seconds)	0
Interval (seconds)	1

Automatic rotation

Enabled	(toggle off)
Direction	Right
Initial delay (seconds)	0
Interval (seconds)	3
Click disables auto rotate	(toggle on)

Translations

The player already has been translated to English, German, Spanish, Arabic and Greek. The defaults shown will be used except you overwrite them with your own translation..
If Multi language is enabled a language select button will be available in the Player. 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.

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
You can delete your customisations to the four default languages and additional languages added.
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.

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.

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 and the first language added will be the default. Add all the other languages.

Translations   Multi language   ∧

ENGLISH   DEUTSCH   ESPAÑOL   اللغة العربية

Link has been copied to clipboard

Sharing

Search

Minimize

Preview
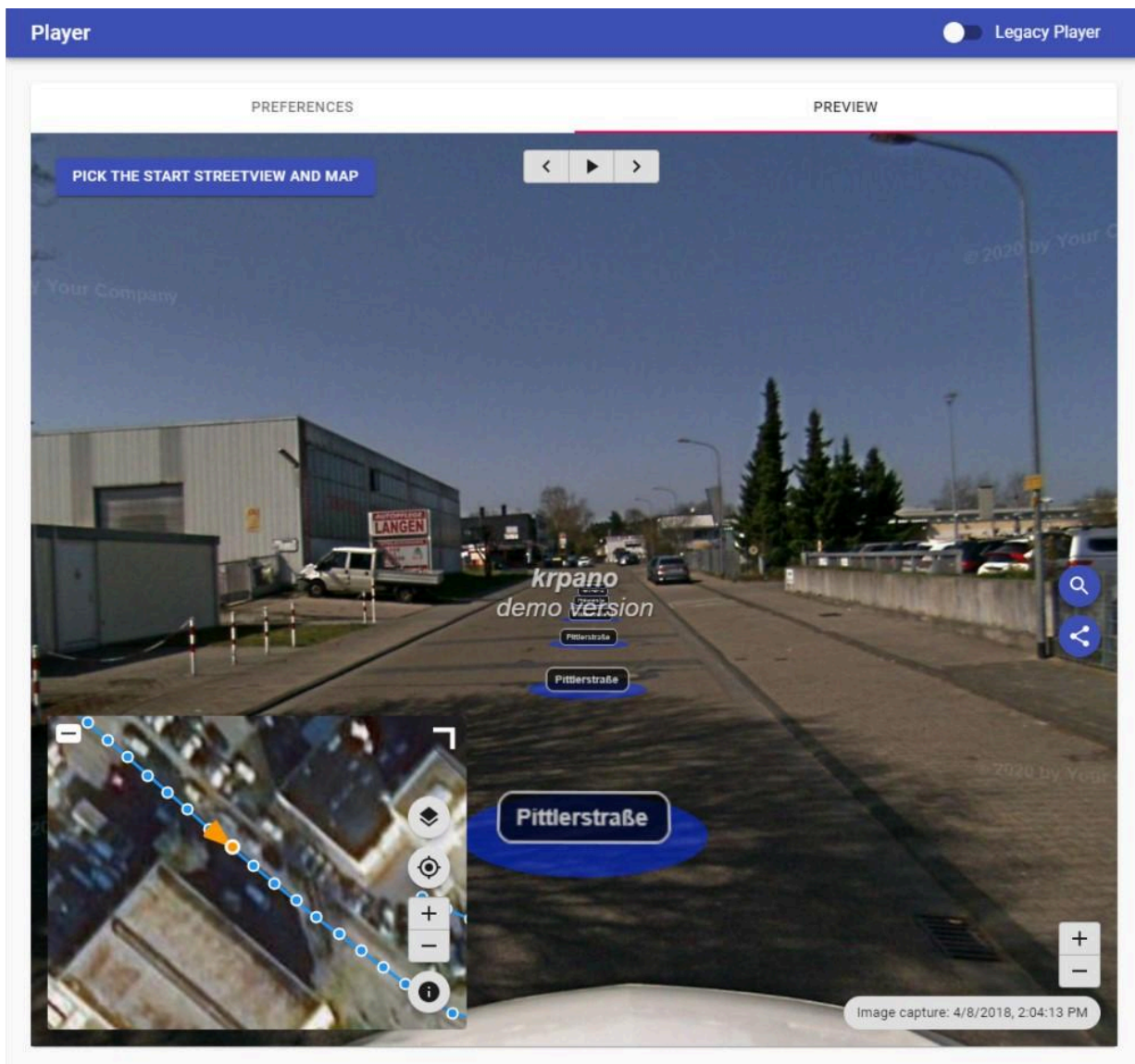
Press CTRL + SHIFT + h to toggle hotspot visibility.

Assets Visualization

Have the player show your geo-referenced assets by a URL. No database is needed.
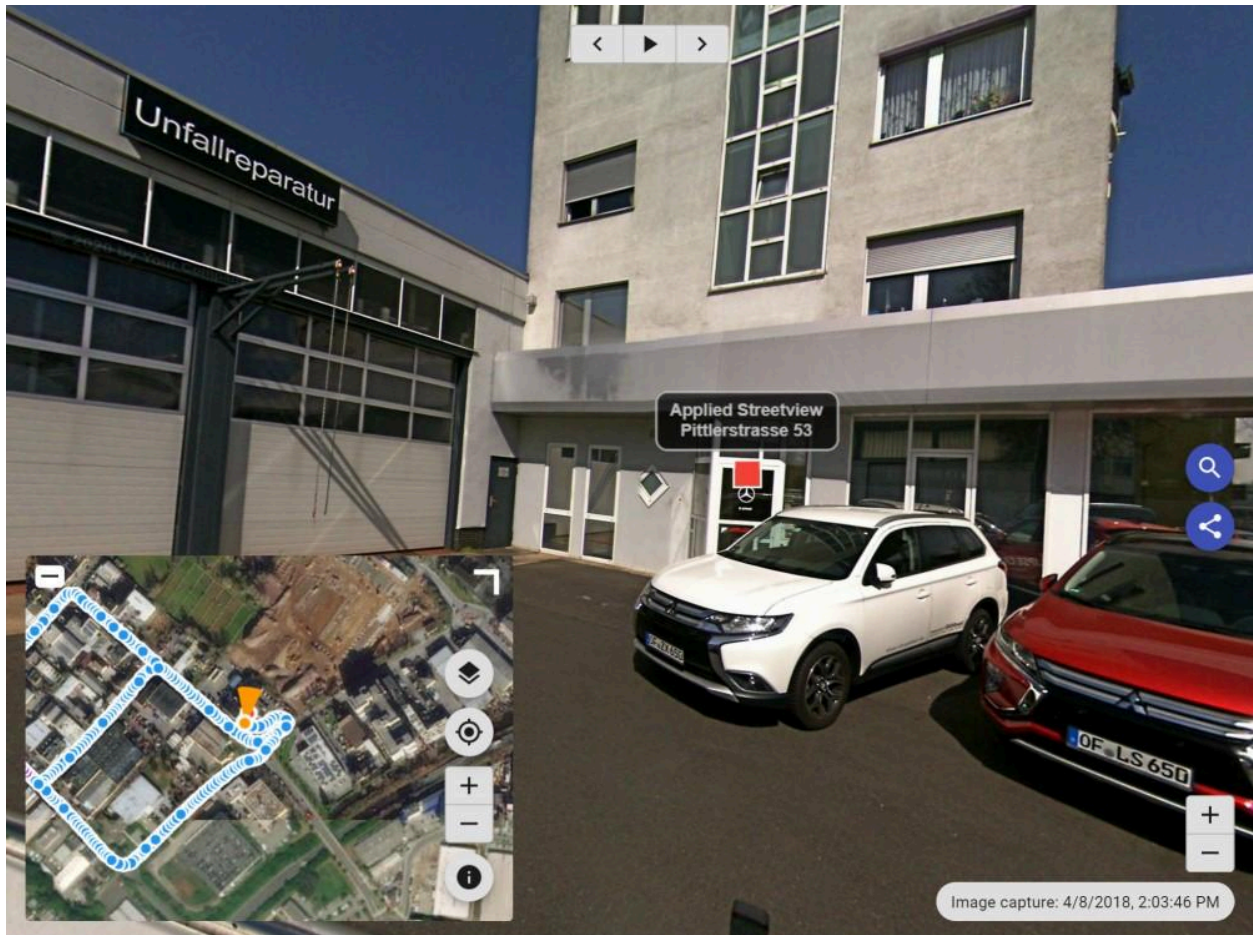
Let's assume your company already has a list of 100.000 geo-referenced assets in a database.
How can you link them to the 5.000 kilometers worth of streetviews you have just recorded?
Simply have your existing system generate a URL for each of your assets.

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

Most simple example:
https://dy2zv8q8iszcq.cloudfront.net/index.html?v_lat=50.001217&v_lng=8.651100

More complex example:
https://demo3-42be868b-8dd0-4272-ab75-bbcb72cf939d.s3.eu-central-1.amazonaws.com/index.html?**v_lat**=50.001217&**v_lng**=8.651100&**v_alt**=128&**v_label**=Applied%20Streetview%3Cbr%3E%0APittlerstra%C3%9Fe%2053%3Cbr%3E%0A63225%20Langen%20%28Hessen%29%3Cbr%3E%0AGermany

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

Optional parameters are:
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.

Example
https://demo3-42be868b-8dd0-4272-ab75-bbcb72cf939d.s3.eu-central-1.amazonaws.com/index.html?v_lat=50.001217&v_lng=8.651100&v_alt=128&**v_timeline**=new%20data

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

v_minimized can either be a 0 which results in the bottom left window being maximized or a 1 - bottom left window maximized.

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.

Export

By default Creator generates all players and all data formats at once:

- New **player2**.
- Legacy Player (known from Creator 5).
- Data for [G-Publisher](), [Photogram]() and [Facades]() programs.
- 8192 x 4096 pixel equirectangular streetviews for 3rd-party workflows.

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. You can continue later.
Click the **View Player** button to open the published player locally.

Create player
Creates the new player in **/Output folder/player2** folder.
Also creates the Legacy 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 creation of streetview-tiles. A sufficient graphics card is needed for this.

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/backups** 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. Can save a lot of time.

Amazon AWS
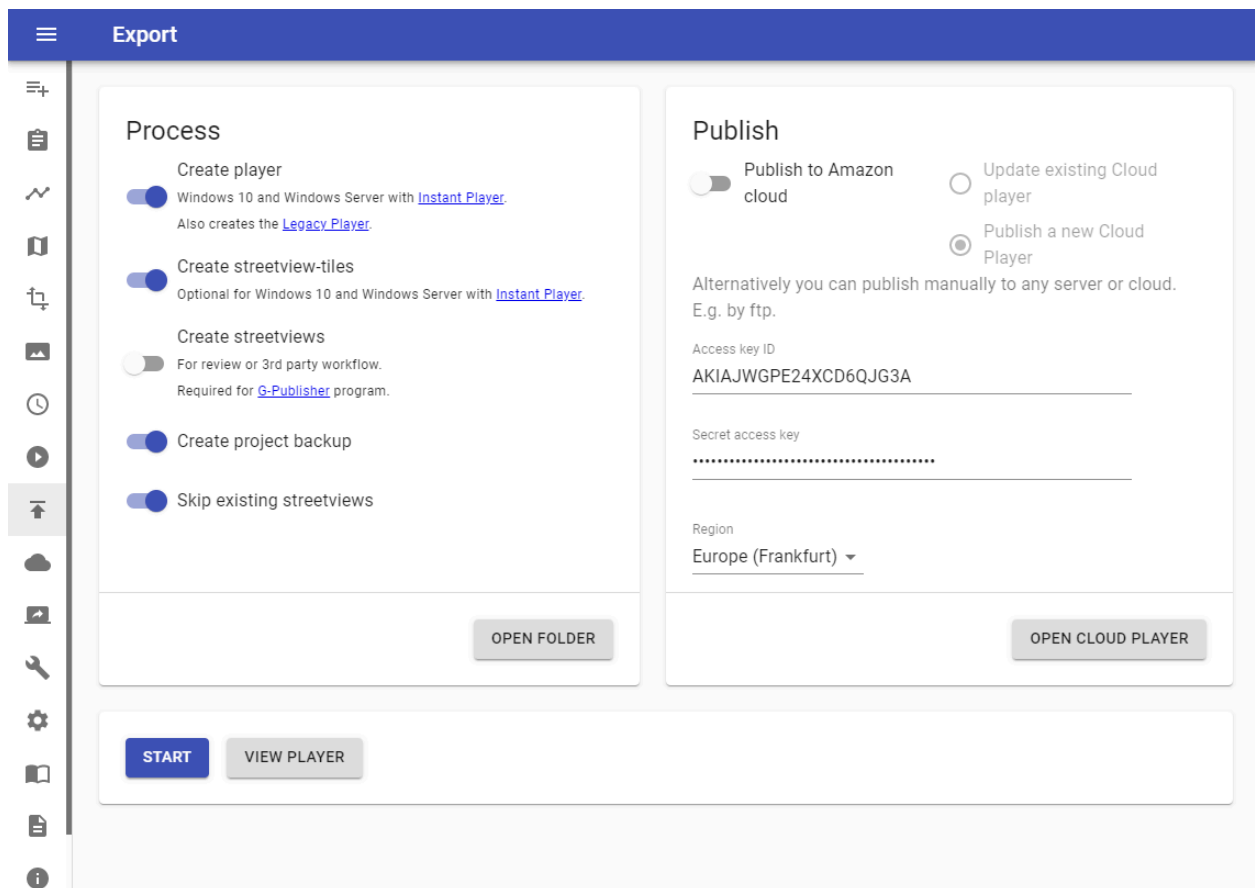
The Cloud Player is the easiest player to publish.
It is the cheapest player to run.
It even scales automatically.

Only active streetview-tiles will be uploaded to the cloud. Even if you have a lot more.

Sharing the player

The cloud player URL is unique (UUID) and is not listed anywhere.
It can not be guessed.
Only users you tell the URL can access the player.

UUID
https://demo3-**42be868b-8dd0-4272-ab75-bbcb72cf939d**.s3.eu-central-1.amazonaws.com/index.html

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.
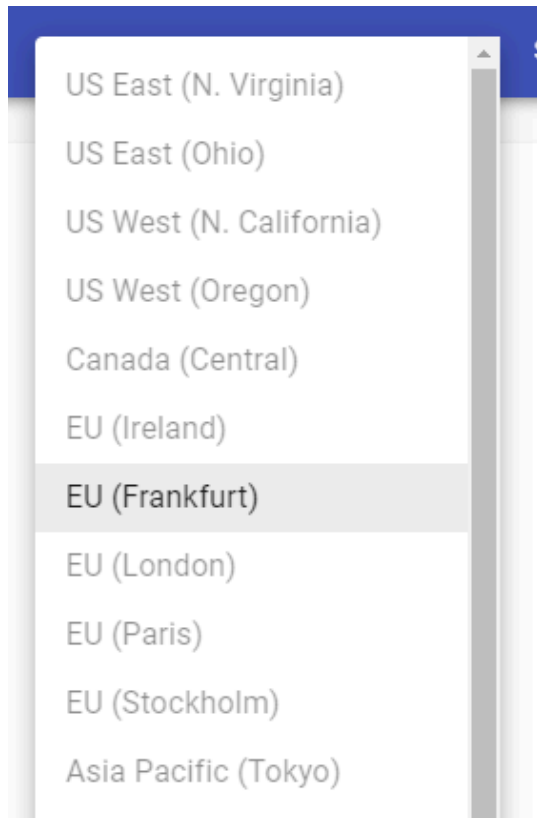
After purchasing Creator 8 more options become available:
1. **Access key ID** and **Secret access key**
   Follow [Amazon Web Services Cloud](#) on how to get your own AWS credentials.
2. **Any AWS region for publishing**.
   Pick the one closest to your audience.

AWS CloudFront (CDN)

If the Cloud Player is expected to
- Have a custom domain
- Handle high traffic across multiple regions

It's recommended to create a CloudFront distribution.

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

Select the player's S3 domain name in the **Origin Domain Name** drop-down field.
Example:
https://ghost-town-e6a1df59-15f6-45ea-9675-2de94703f92b.s3.eu-central-1.amazonaws.com/index.html
Set **Viewer Protocol Policy** to **Redirect HTTP to HTTPS.**
Scroll down and click the **Create Distribution** button.

Go to **CloudFront Distributions** list, and wait until the distribution is created (**Status**
column changes to **Deployed**).
The CDN enabled domain looks like this: d2z6fc2o2b33zp.cloudfront.net

The complete URL for the browser or for embedding:
https://d2z6fc2o2b33zp.cloudfront.net**/index.html**

Hint:
Please notice that it will need 24 hours for the new CloudFront Distribution to deploy to
work properly. Up until then it will forward to the S3 domain name.
URL query parameters like v_lat, v_lng, v_alt and v_label etc. will start working with
CloudFront once the deployment is done.

Create Distribution

Origin Settings

Origin Domain Name `bahamas-ab0cb550-585e-4f42-a5e0-827` ⓘ

Origin Path ⓘ

Enable Origin Shield ○ Yes ⓘ
● No

Origin ID `S3-bahamas-ab0cb550-585e-4f42-a5e0-` ⓘ

Restrict Bucket Access ○ Yes ⓘ
● No

Origin Connection Attempts `3` ⓘ

Origin Connection Timeout `10` ⓘ

Origin Custom Headers **Header Name** **Value**

Default Cache Behavior Settings

Path Pattern Default (*) ⓘ

Viewer Protocol Policy ○ HTTP and HTTPS ⓘ
● Redirect HTTP to HTTPS
○ HTTPS Only

Allowed HTTP Methods ● GET, HEAD ⓘ
○ GET, HEAD, OPTIONS
○ GET, HEAD, OPTIONS, PUT, POST, PATCH, DELETE

Embed the Cloud Player into any webpage

What it looks like on our website:

http://www.applied-streetview.com

First publish the Cloud Player.

Get the URL from Creator 8.

In your page, add this code:

```
<iframe
src="https://ghost-town-d0a8e0c0-8d50-4f90-8b63-a731a4001704.s3.eu-cen
tral-1.amazonaws.com/index.html" width="100%" height="600"
frameborder="0" style="border:0" tabindex="0"></iframe>


Same player, but CloudFront CDN has been added:
<iframe src="https://d1hiuutentj66y.cloudfront.net/index.html"
width="100%" height="600" frameborder="0" style="border:0"
tabindex="0"></iframe>
```

Instant Player for Windows

For our Instant Player program for Windows 10 and Windows Server please see the separate Instant Player manual.

Apache, NGINX, IIS, clouds

The player from Creator 8 can be published to literally any web server.
It is just a collection of static files (html, js, css, etc.), with no database.
Copy the **player2** and the **panorama-tiles** folders to a folder and then access it e.g via
https://your-server.com/folder/player2/

Embed the player into any webpage
First publish the player to a webserver.

For this example, the **player2** and the **panorama-tiles** folders are published to the **Demo3** project folder:
https://www.your-server.com/projects/**Demo3**/player2
https://www.your-server.com/projects/**Demo3**/panorama-tiles

In your page, add this code:

```
<iframe src="https://www.your-server.com/projects/Demo3/player2/"
width="100%" height="600" frameborder="0" style="border:0"
tabindex="0"></iframe>
```

In case you are using Amazon CloudFront it looks like this:

```
<iframe src="https://dv4r7io68algt.cloudfront.net/index.html"
width="100%" height="600" frameborder="0" style="border:0"
tabindex="0"></iframe>
```

Cloud Player

Open Cloud player

Opens the published Cloud player URL in the browser.

Delete Cloud player

Deletes the published Cloud player from the internet and the Creator project.
The same URL can not be restored.

To only delete the cloud player from the internet, and to keep the URL in the project, use
[AWS Account](#) instead.

Legacy Player

The same player as in Creator 5. Only support for Mapbox.com has been added.

To configure the **Legacy Player**, activate it in Player -> More -> Enable Legacy Player.

Player		Legacy Player
PREFERENCES		PREVIEW
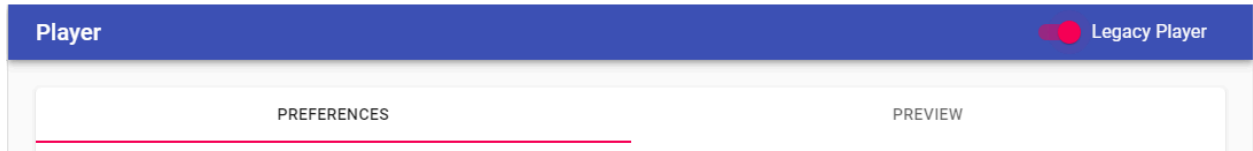
Preferences
Customize the Legacy Player to your needs.
Go back and forth between **Preferences** and **Preview** until you have the desired setup.

General

Title	Demo4-5m
Left Menu text	Your Company
Left Menu URL	http://www.your-company.com
Left Menu URL target	Opens the linked document in a new window or t... ▼
Right Menu text	More info
Right Menu URL	http://www.your-company.com/example-project
Right Menu URL target	Opens the linked document in a new window or t... ▼
Timeline Label	Timeline
Navigation mode	Hotspots ▼

Logo

Enabled	◯
Image path	CHOOSE FILE 📄
Click URL	http://www.your-company.com
Click URL target	Opens the linked document in a new window or t... ▼

Components visibility

Show Map	⬤
Show Menu	⬤
Show Map button	⬤

Streetview

Streetview　　　　　　　　　　　　　　　　　　　　　　　⌃

View	Relative to Car　▾
Minimum zoom limit (degrees)	50
Maximum zoom limit (degree)	120
Look down limit (degree)	-50
Look up limit (degree)	50

Show Arrows	○
Show Arrow label	Mouseover　▾
Clickable Arrow labels	⬤
Arrow labels from this column of the Streetview table	Streetview　▾

Image captured date format

Show image capture date	⬤
Image capture date label	Image capture:
Image captured date format	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

Show Map Providers list	⬤
Default Map Provider	ESRI.WORLDIMAGERY
Map View	Data Extent ▾

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

Mapbox

If you have your own custom data and would like to add it to the Player, Mapbox provides an easy way to do it.

Mapbox

Map provider label	Mapbox streets
Style URL	mapbox://styles/mapbox/bright-v9
Access token	
Map data legal notices	<a href="https://www.mapbox.com/abou

Map provider label

Text for the map provider 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

POI
Points of Interest

Display POI list	
Show label for a POI	Streetview ▼
Show POI name	Yes ▼
Dropdown label	POI list
Dropdown select POI label	Select POI

Report a problem

Enabled	
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

Enabled	
Wait time	0
Speed	3
Direction	Right ▼
Horizon	0
Zoom to FOV	120
Click disables auto rotate	

Automatic play

Enabled	
Loop	
Wait time	3
Direction	Forward

Preview

A preview of what the Legacy Player will look like.
Go back and forth between **Preferences** and **Preview** until you have the desired setup.

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 Visualization

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

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**&vl_showlatlng=no&vl_showalt=no&vl_header=Business%20List%3A&vl_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&vl_showlatlng=no&vl_showalt=no&vl_header=Business%20List%3A&vl_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

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

Export

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 and Facades.
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/backups** 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 8192 x 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.
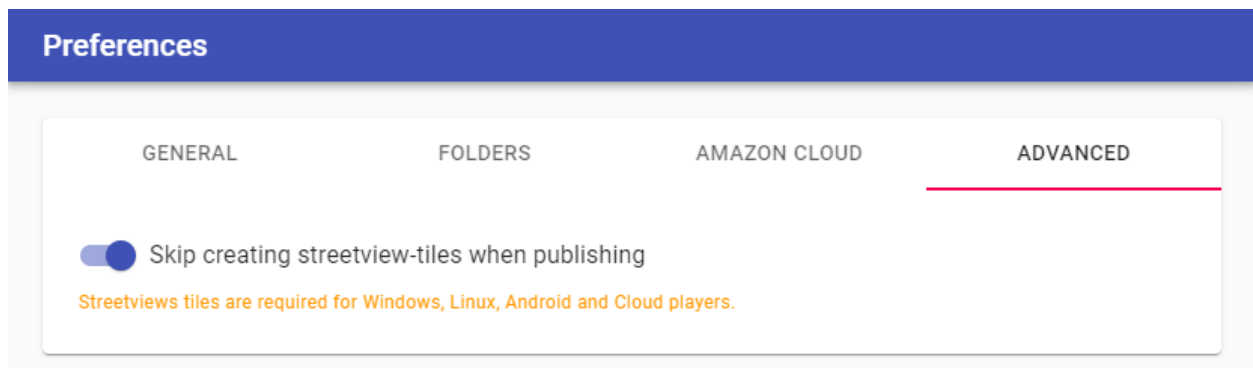
Amazon Cloud
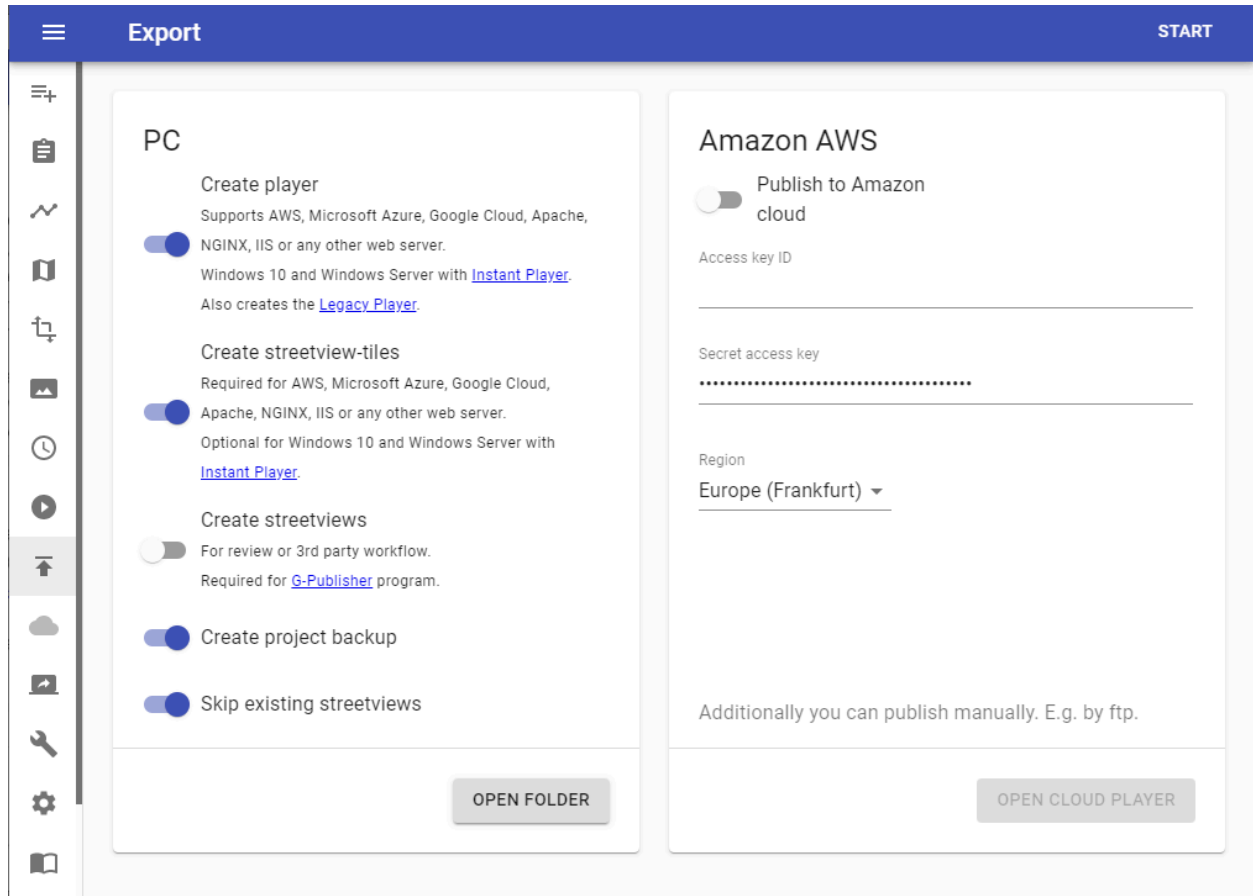
The Cloud Player is the easiest player to publish.
It is the cheapest player to run.
It even scales automatically.

Only active streetview-tiles will be uploaded to the cloud.

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.
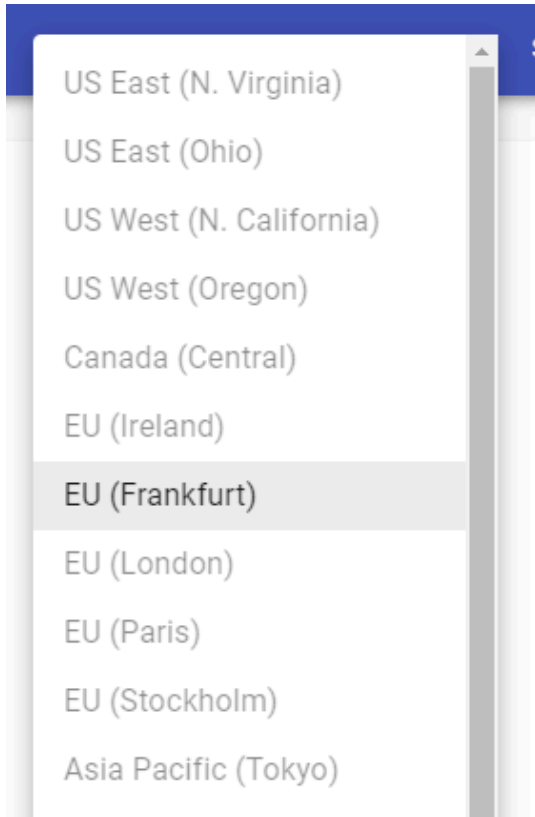
After purchasing Creator 8 more options become available:

3. **Access key ID** and **Secret access key**
   Follow [Amazon Web Services Cloud](#) on how to get your own AWS credentials.
4. **Update existing Cloud player**
   The player URL stays the same.
   It updates the existing cloud player and uploads new streetviews if available.
5. **Publish a new Cloud player**
   Creates a new player and uploads the streetviews into a new S3 bucket.
6. **Any AWS region for publishing**.
   Pick the one closest to your audience.

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)
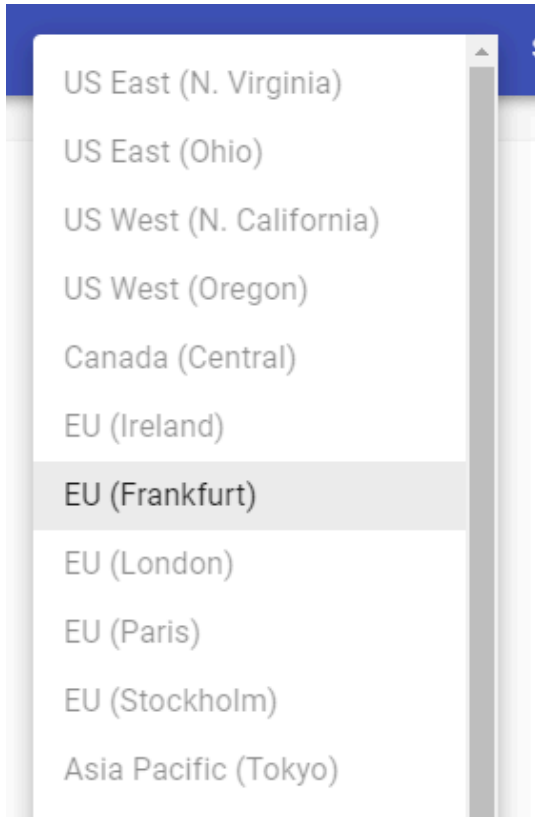
LAMP Player

For the LAMP stack. (**L**inux, **A**pache **M**ySQL, **p**hp).

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 could install each component to its own server.

If you have never worked with FileZilla, cPanel or phpMyAdmin, you should ask your company's IT department to install the LAMP player for you.

To create your own LAMP player with Creator 8 the **Create streetview-tiles** option must be enabled. The player is generated in the **player** folder.

Minimum steps necessary:

Let's assume your project's name is **Demo3**.

Database:
Create a new MySQL database on your LAMP server.
Name it **Demo3**.
Import the **Demo3.sql.zip** file to it.

Panorama tiles:
Copy the **panorama-tiles** folder to your web-server.

Make the following adjustments before uploading the player to the server:

Player:
Adjust the **plugins\streetview\ajax\db.php** file for access to your MySQL database.
Fill in your own access data:

```
$con=mysqli_connect('localhost','user','password','DBname');
```

Adjust the **player.xml** file for the panorama-tiles folder address on your web-server.

Fill in your own URL:
tilespath="../panorama-tiles"

Finally copy the **player** folder to your web-server.

Embed the LAMP player into any webpage

What it looks like:

https://www.applied-streetview.com/players-creator-5-vs-creator-6/#player

First publish the LAMP player to a webserver.

For this example, the player is installed into the **Demo3** folder:

https://www.your-server.com/players/**Demo3**/

In your page, add this code:

```
<iframe src="https://www.your-server.com/players/Demo3/" width="100%"
height="600" frameborder="0" style="border:0" tabindex="0"></iframe>
```

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

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

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.

Copy the URL of the player. (Technically it is a Gateway API URL.)

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

Paste the URL into the **Origin Domain Name** field.
The domain name you are pasting may not exist in the list of available domain names, this is expected.

Set **Viewer Protocol Policy** to **Redirect HTTP to HTTPS.**
Set **Allowed HTTP Methods** to **GET, HEAD, OPTIONS, PUT, POST, PATCH, DELETE**
Set **Cache and origin request settings** to **Use legacy cache settings**
- Forward Cookies: Whitelist
- Whitelist Cookies: lambdaplayerAuth
- Query String Forwarding and Caching: Forward all, cache based on all
- Compress Objects Automatically: Yes

Default Cache Behavior Settings

Path Pattern	Default (*)
Viewer Protocol Policy	○ HTTP and HTTPS ◉ Redirect HTTP to HTTPS ○ HTTPS Only
Allowed HTTP Methods	○ GET, HEAD ○ GET, HEAD, OPTIONS ◉ GET, HEAD, OPTIONS, PUT, POST, PATCH, DELETE
Field-level Encryption Config	[⌄]
Cached HTTP Methods	GET, HEAD (Cached by default) ☐ OPTIONS
Cache and origin request settings	○ Use a cache policy and origin request policy ◉ Use legacy cache settings
Cache Based on Selected Request Headers	None (Improves Caching) ⌄ Learn More
Object Caching	◉ Use Origin Cache Headers ○ Customize Learn More
Minimum TTL	0
Maximum TTL	31536000
Default TTL	86400
Forward Cookies	Whitelist ⌄
Whitelist Cookies	lambdaplayerAuth
Query String Forwarding and Caching	Forward all, cache based on all ⌄

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

Go to **CloudFront Distributions** list, and wait until the distribution is created (**Status** column changes to **Deployed**).

The CDN enabled domain looks like this: dvbgnnizq7nyk.cloudfront.net

The complete URL for the browser or for embedding:
https://dvbgnnizq7nyk.cloudfront.net/latest/

Create Amazon Web Services (AWS) account

Creator 8 (and previous Creator 7) use Amazon Web Services (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 to add a new **IAM user**
   a. **User name**: creator
   b. **Access type**: Programmatic access
   c. Click **Next: Permissions** button

3. Select **Attach existing policies directly**

4. Select **AdministratorAccess** privileges.

✔	▶	📦 AdministratorAccess	Job function

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

Add user

① ② ③

Review

Review your choices. After you create the user, you can view and download the autogenerated password and access key.

User details

User name	creator
AWS access type	Programmatic access - with an access key
Permissions boundary	Permissions boundary is not set

Permissions summary

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

Type	Name
Managed policy	AdministratorAccess

Tags

No tags were added.

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

   To publish to the following four AWs regions please activate them first:
   https://console.aws.amazon.com/iam/home#/account_settings

   Africa (Cape Town)
   Asia Pacific (Hong Kong)
   Europe (Milan)
   Middle East (Bahrain)

Then copy the **Access key ID** and **Secret access key** into the appropriate fields on the **Creator 8 -> Publish** page. (Or **Creator 8 -> 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.

Player API

You can control the player via its API.
By javascript.

See the working examples on our website:
https://www.applied-streetview.com/api-for-player
For your own development, first download Creator 8.

In addition to the player2 Creator 8 also creates working API examples in this subfolder:
out/PROJECTNAME/**player2/examples/**

You can use them to develop your own solution.
Or contact us, we are available for hire.

Map API

Click anywhere on the map, and the player will show you what it looks like.
Navigate 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**.
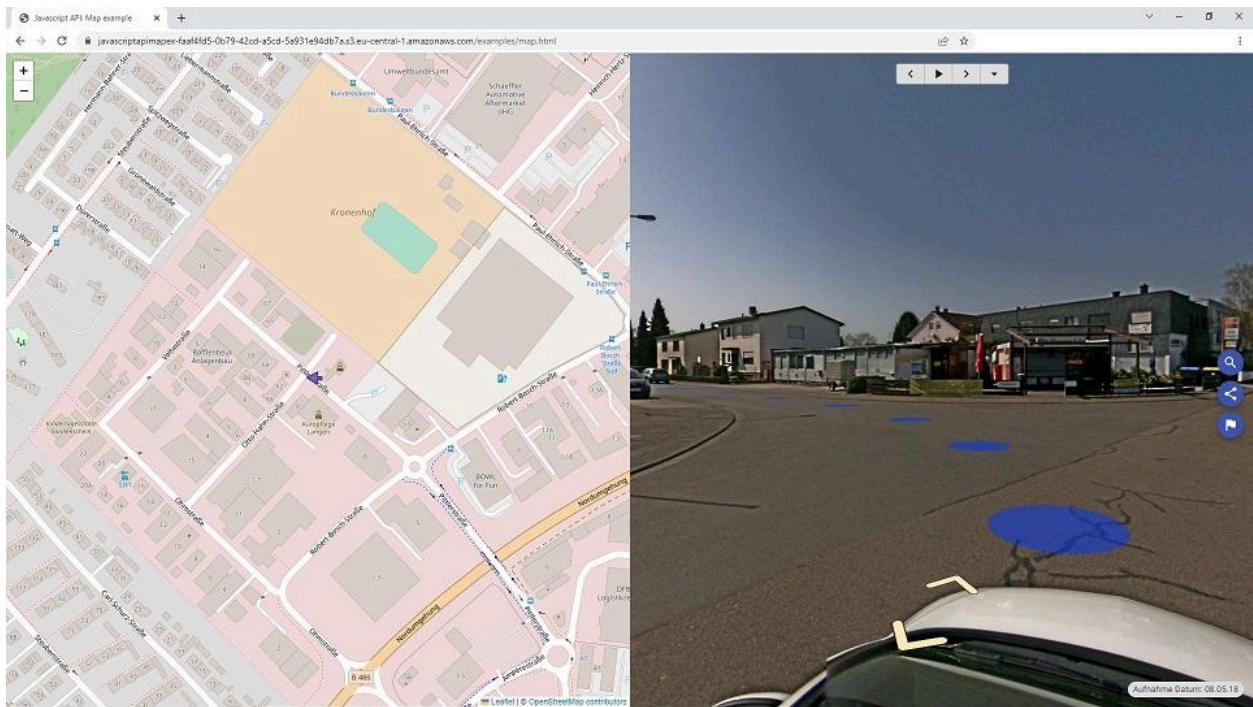
See the working example on our website:
https://www.applied-streetview.com/api-for-player
For your own development, first download Creator 8. See folder /player2/examples/.
Then develop your own solution.

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

Asset API

To view an asset by its Latitude and Longitude.

See the working example on our website:
https://www.applied-streetview.com/api-for-player
For your own development, first download Creator 8. See folder /player2/examples/.
Then develop your own solution.

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

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.applied-streetview.com/api-for-player
For your own development, first download Creator 8. See folder /player2/examples/.
Then develop your own solution.

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

Screenshot API

Take a screenshot 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.
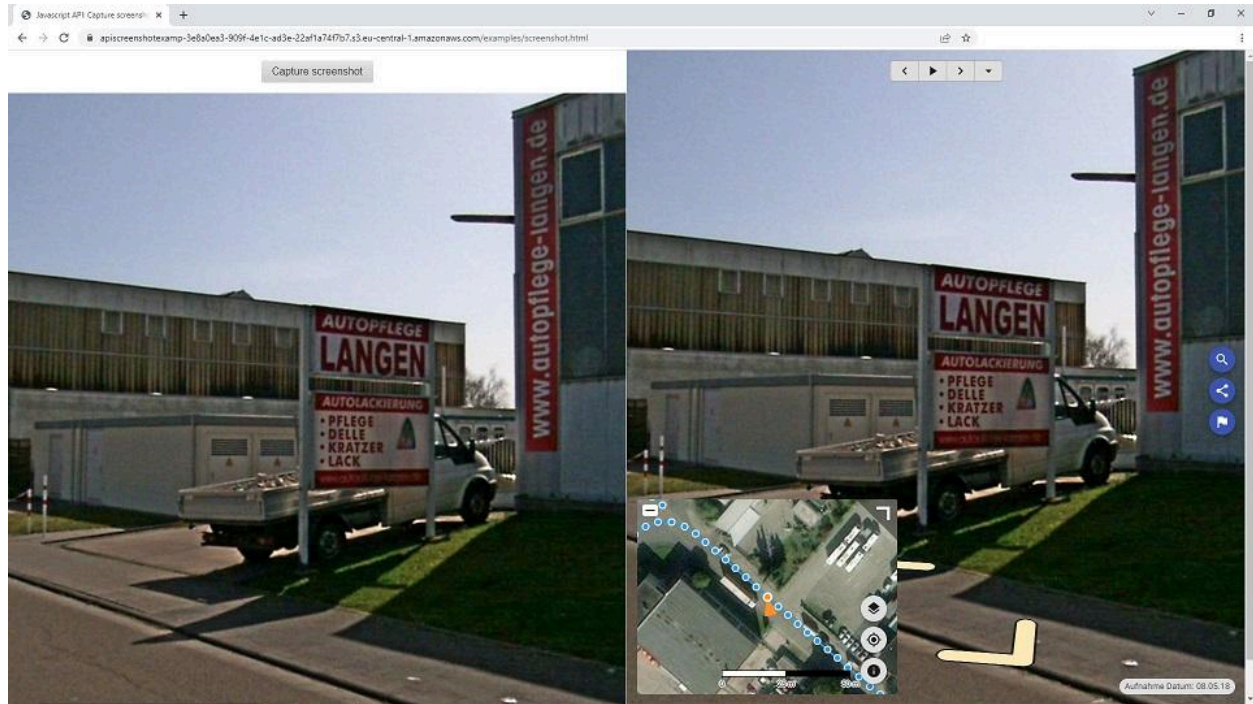
See the working example on our website:
https://www.applied-streetview.com/api-for-player
For your own development, first download Creator 8. See folder /player2/examples/.
Then develop your own solution.

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

Data API

Get all the data available for the street view.
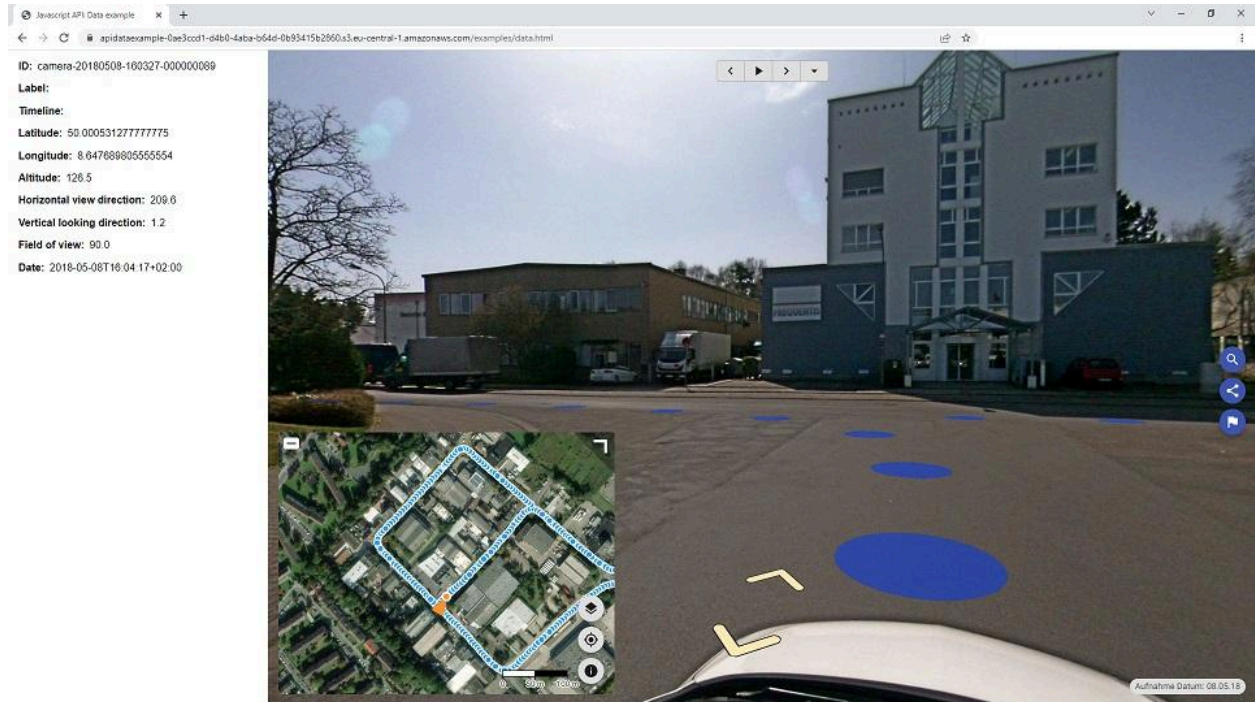
Data shown:
- Streetview ID
- Label
- Timeline
- Latitude, Longitude, Altitude
- Viewing direction (0-360 degree like on a compass)
- Vertical viewing direction (up and down)
- Zoom
- Date and time + timezone

See the working example on our website:
https://www.applied-streetview.com/api-for-player
For your own development, first download Creator 8. See folder /player2/examples/.
Then develop your own solution.

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

Open page on Lat/Lon API

Open any 3rd-party page in a new tab on the current streetviews Latitude/Longitude.
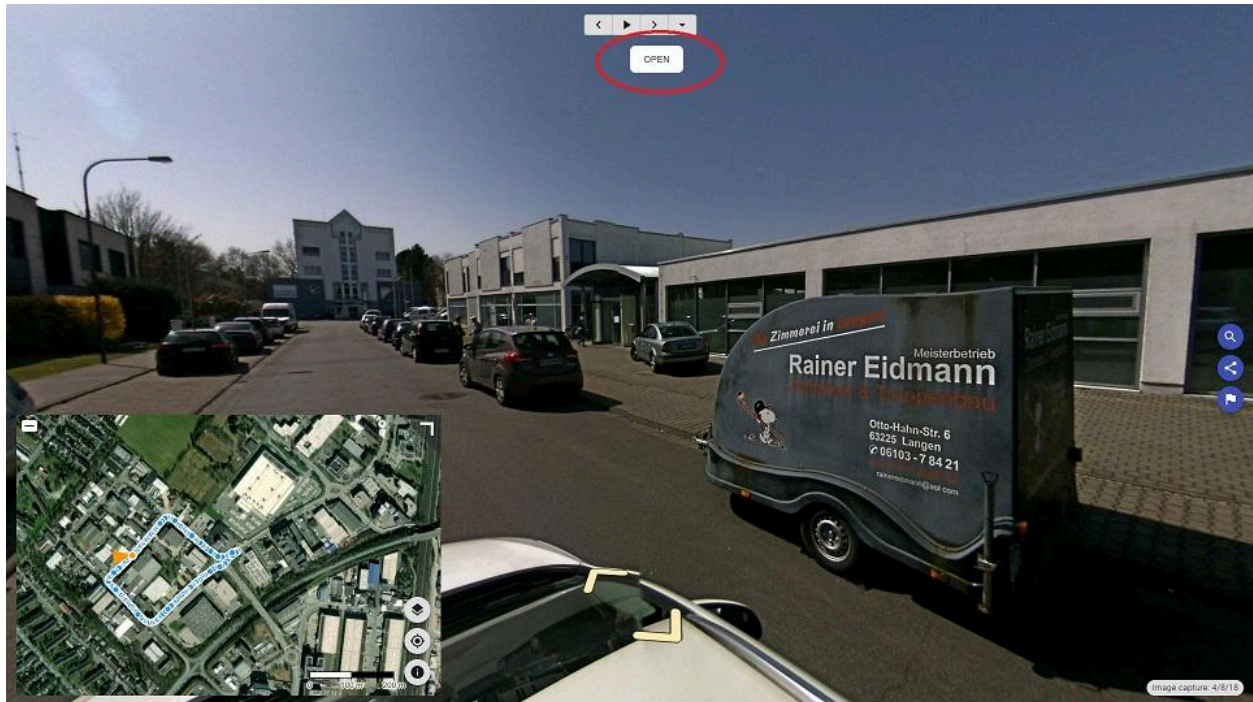
You can
- rename the button
- move the button
- style the button

You can place all 3 components (API file, player2, 3rd-party page to open) on up to 3 different servers. Or all on the same server.

This has been tested with the Chrome, Firefox, and Edge browser.

It then looks like this for e.g. OpenStreetMap and Google:
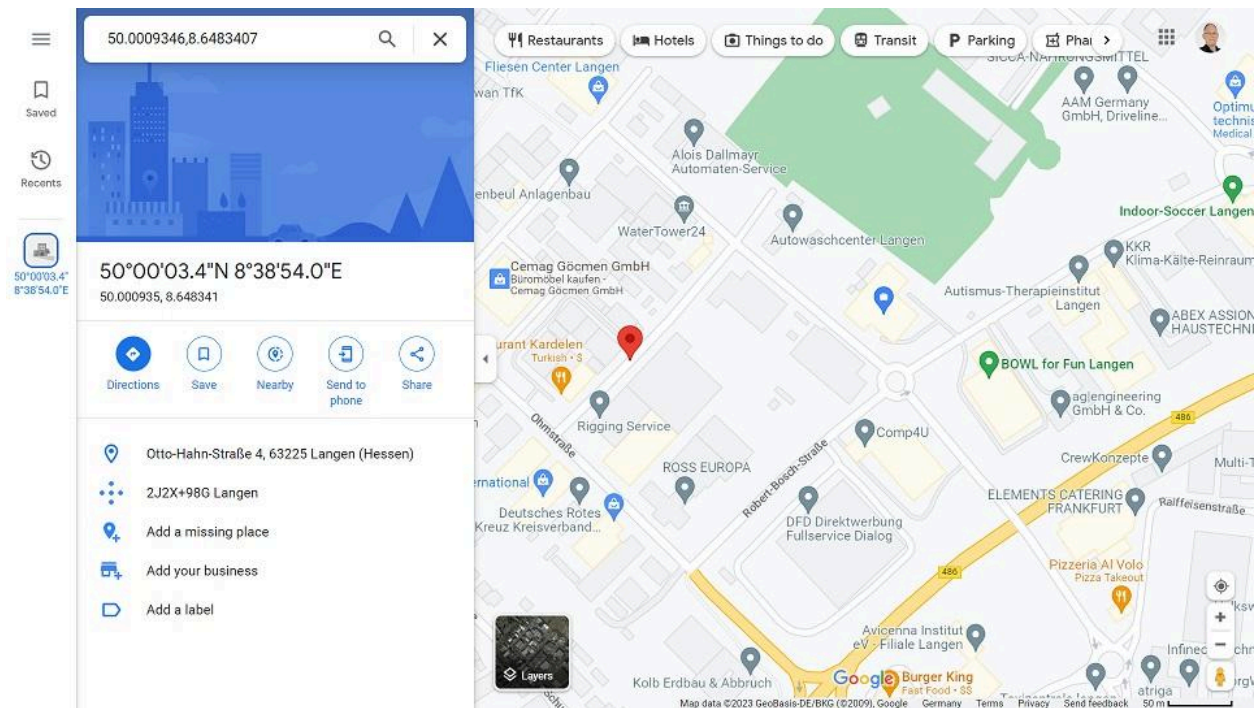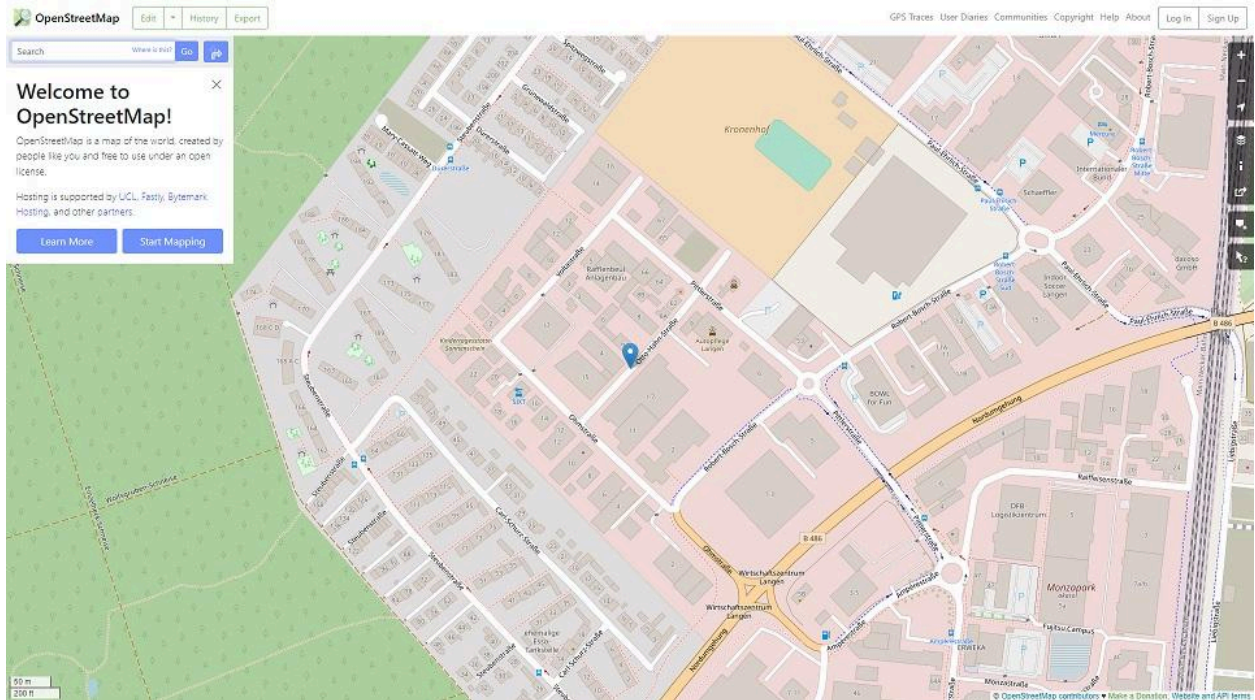
See the working example on our website:
https://www.applied-streetview.com/api-for-player
For your own development, first download Creator 8.
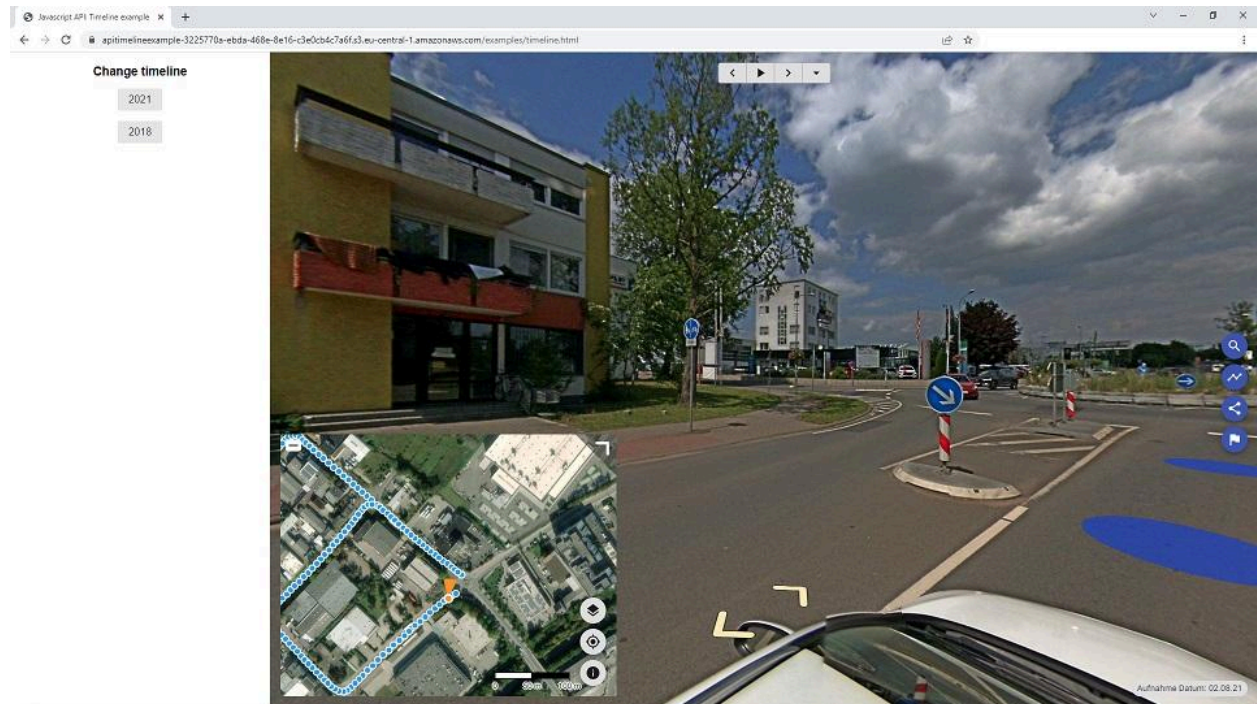Process a project. (Use our example data if you have no camera yet).
See folder /player2/examples/.

Then develop your own solution.

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

Second Monitor

Connect a second monitor to your PC to use this feature in full-screen mode.
It shows the streetview selected on the **Map** tab or in the **Player Preview**.

You can zoom in and out.

Tools

Skip

Tours

camera-20180408-140557, camera-20180408-140357

Type

(●) By Distance   ( ) By Interval   ( ) By Step

Seprate by meters between streetviews

5

[○] Deactivate manually activated streetviews

START   RESET

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 Skip 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
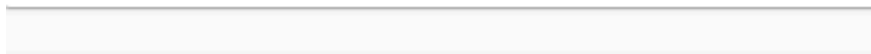
START   RESET

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.

Fix altitude

If the height of streetviews is not correct it's possible to simply calculate the height. 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, Creator 8 will download the digital terrain model for your project location and cache them.
This tool 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.
A challenge might be streetviews deactivated for wrong positions. But they still will be considered for the bounding box. Please move them closer to the active streetviews.

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 (toggle on)

Folders "7" (Small archive size) (toggle on)

Source photos (Large archive size)

☐ Activated

☐ Deactivated

Tour folders "7" always contain all data. They are never changed.

Project backup
Adds the Creator 8 project backup to the archive.

Folders "7" (Small archive size)
Adds position data (tour folders 7) to the archive. No images.
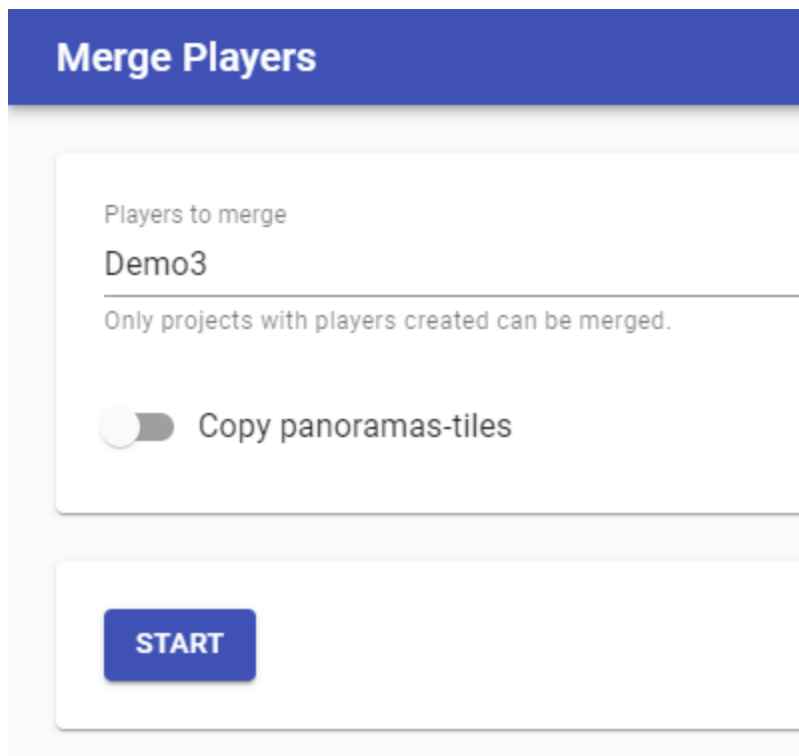
Source photos (Large archive size)
Activated - Include sources photos of the activated streetviews
Deactivated - Include sources photos of the deactivated streetviews

Start
Create the archive

Merge Players

Players to merge
List of the available projects.
Projects without a published player are disabled.
Create players first in all projects you like to merge.

Copy panoramas-tiles
Copy the panoramas-tiles folders of all the players into **Output Folder**/panorama-tiles

Start
Create the merged player in a new folder.
Existing project folders are not changed.
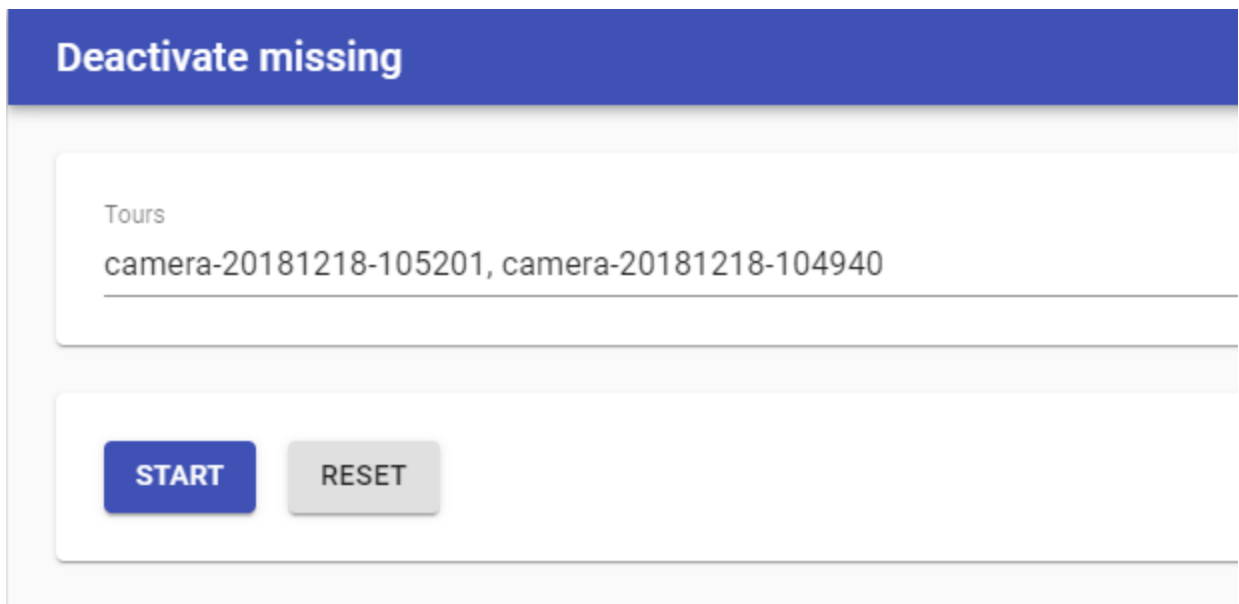
Open Output Folder
Open the output folder of the merged player.
The new folder with the merged player is always saved to the <u>out</u> folder.

Deactivate missing

If the source images of a streetview are missing, this tool will deactivate that streetview and write the result to the log.

Click **Start** to calculate the healing from position.

Click **Reset** to revert the changes. This will also reset the changes done by Skip and Duplicate Remover!

.

Preferences

General

Language
Set the program language.

Automatically send usage statistics and crash reports to Applied Streetview.
Please help us make **Creator 8** better.

Folders

It is strongly recommended to create the following 4 folders to organize your data:
In, Out, Camera calibration files, Creator 8 backups.
Set the folders up in Preferences -> Folders.

Additionally you might want to consider creating two folders named **masks** and **logos** to organize 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 8 looks in the parent folder of a tour. Then in the **Camera calibration files** folder. In case you have many cameras the right file is picked fully automatic. You can even mix footage from different cameras in one project.

Backup folder

Default location for saving project backups.
Weekly or daily backups are recommended.

Amazon Cloud

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

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

Allows to open or delete players published to your **AWS account**.
It does not need a Creator project to do so.

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

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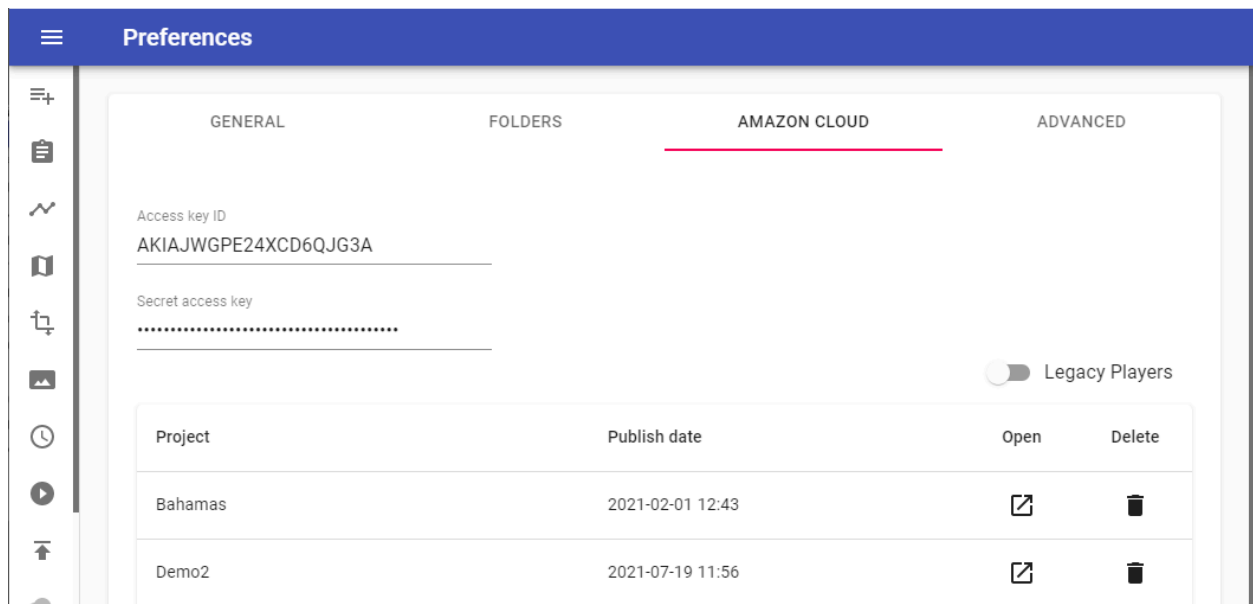
Project
Project name

Published date
Date and time of the upload.

Open
Open the player URL in the browser

Statistics
Display visitor statistics. *Only available in Legacy Player.*

Delete
Delete player (incl. all streetviews) from the Amazon account.
Local Creator projects will not be changed.

Advanced

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

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.

Maximum VRAM (GB)
Maximum amount of VRAM to be used by Creator program when processing streetviews.
Usually this is not set. In certain cases it helps to limit the usage of VRAM to run other programs at the same time on the same graphics card.

Manuals

Open this Creator 8 manual.

License

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

View Software License Agreement.

Help

About

Displays the installed Creator version. Check for updates, view the release notes.

krpano license

Player 2 and the Legacy Player are bundled with a demo version of krpano.
To remove the **krpano demo version** watermark from the player a license has to be purchased and applied.
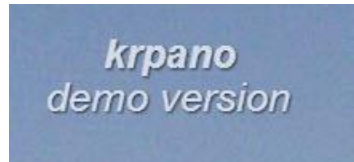
The krpano demo version watermark is visible in the:
- Player - Preview
- Player tab
- All generated players

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

Then 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. Re-create all players to remove the watermarks.

Logs

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

Hardware

Displays the specifications of this PC.

About this PC ∧

Windows version: Microsoft Windows 10 Pro 64-bit

Computer name: DESKTOP-3R08ESO

Processor: Intel(R) Core(TM) i5-3450 CPU @ 3.10GHz

Memory Total: 7.94 GB Available: 1.75 GB

Free disk space: C: 274.20 GB, D: 0.00 Bytes, E: 7.30 GB, F: 94.60 GB, G: 38.34 GB

Graphics Card: GeForce GTX 1650 (4096 MB)

CUDA versions: 10

Copy to Clipboard

Running Creator 8 in a Cloud

Creator 8 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 8 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 10.0
2. Download and install Creator 8.x.x
3. Exclude the **in** and **out** Creator 8 folders from Windows Security.
   https://support.microsoft.com/en-us/help/4028485/windows-10-add-an-exclusion-to-windows-security

Performance & Cost estimate

For 24 hours:
8 Cores, 8 GB Memory, 1 GPU NVIDIA Tesla P100:

Performance

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

Cost

Instance:	48.48 USD
1 Streetview + tiles:	0.00012 USD

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

Performance

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

Cost

Instance:	72.96 USD
1 Streetview + tiles:	0.00015 USD

Your results might vary depending on your exact setup.

DATA handling

In order to run **Creator 8** 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 8** 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 10.0](#)
2. Download and install [Creator 8.x.x](#)
3. Exclude the **in** and **out** Creator 8 folders from Windows Security. https://support.microsoft.com/en-us/help/4028485/windows-10-add-an-exclusion-to-windows-security

Performance & Cost estimate

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:	73.44 USD
1 Streetview + tiles:	0.00015 USD

Your results might vary depending on the AWS Region and your exact setup.

DATA handling

In order to run **Creator 8** 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 8** 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 10.0
2. Download and install Creator 8.x.x
3. Exclude the **in** and **out** Creator 8 folders from Windows Security.
   https://support.microsoft.com/en-us/help/4028485/windows-10-add-an-exclusion-to-windows-security

Performance & Cost estimate

For 24 hours:

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

Performance

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

Cost

Instance:	26.20 USD
1 Streetview + tiles:	0.00014 USD

Your results might vary depending on your exact setup.

DATA handling

In order to run **Creator 8** 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 8** 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.

Update Policy

With the public release of new **Creator 8.0.0** in April 2023 you have the choice to upgrade for a fee. Or to continue using Creator 7 as-is.

Of course you can test Creator 8 for two weeks for free.
It installs additionally to Creator 7.
[How to copy](#) your projects from Creator 7 to Creator 8.

With the release of Creator 8 there will only be security fixes for Creator 7.
All new features and improvements will be added to Creator 8.
In April 2024 we will stop supporting Creator 7.
You can continue using Creator 7 as-is.

Good Housekeeping

Backup

Backup often. In case of a user error you then import the last "good" backup to continue.
It is recommended to back up the whole Creator project.

Make sure your backup files are stored at a safe location.
A real backup should be on a disconnected drive.
Sources and generated data are not part of a Creator backup. Back them up separately.

Data safety

Creator 8 can not edit or delete your source data.
It is best practice to always have up-to-date backups of your source data, Creator project backups and the generated data.
Sources and generated data are not part of a Creator backup.

Free disk space
Make sure there is sufficient free space on the drive Creator 8 is installed to.
Creator 8 checks for 1 GB free disk space at startup and then every 5 minutes.

Various

Change Serial

This feature is only to be used by advice of Applied Streetview support.

Select one or multiple tours.

Set Serial number

Serial number

200000000

CANCEL OK

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

Creator 8 Downloads

Creator 8
[Manual](#)
[Program](#)
[Cheat sheet](#)

Example Data
Demo-2021, recorded with RTK by NTRIP, (3.2 GB)
https://aplsv-new.s3.amazonaws.com/Demo-2021/in/Demo-2021.zip

Demo4-5m (800 MB)
https://s3.amazonaws.com/aplsv-new/Demo4/in/Demo4-5m.zip

Demo4-1m (3.5 GB)
https://s3.amazonaws.com/aplsv-new/Demo4/in/Demo4-1m.zip

Demo3 (980 MB)
https://s3.amazonaws.com/aplsv-new/Demo3/in/Demo3.zip

Support

Please update first.
Support is provided for the newest Creator 8 release only.
Maybe your problem has already been solved?

Contact
Support is available in English and German language.

Helpdesk:	support.applied-streetview.com
E-Mail:	support@applied-streetview.com
WhatsApp:	4915124082072
Skype ID:	applied-streetview
Phone:	+49 6103 - 37 27 494