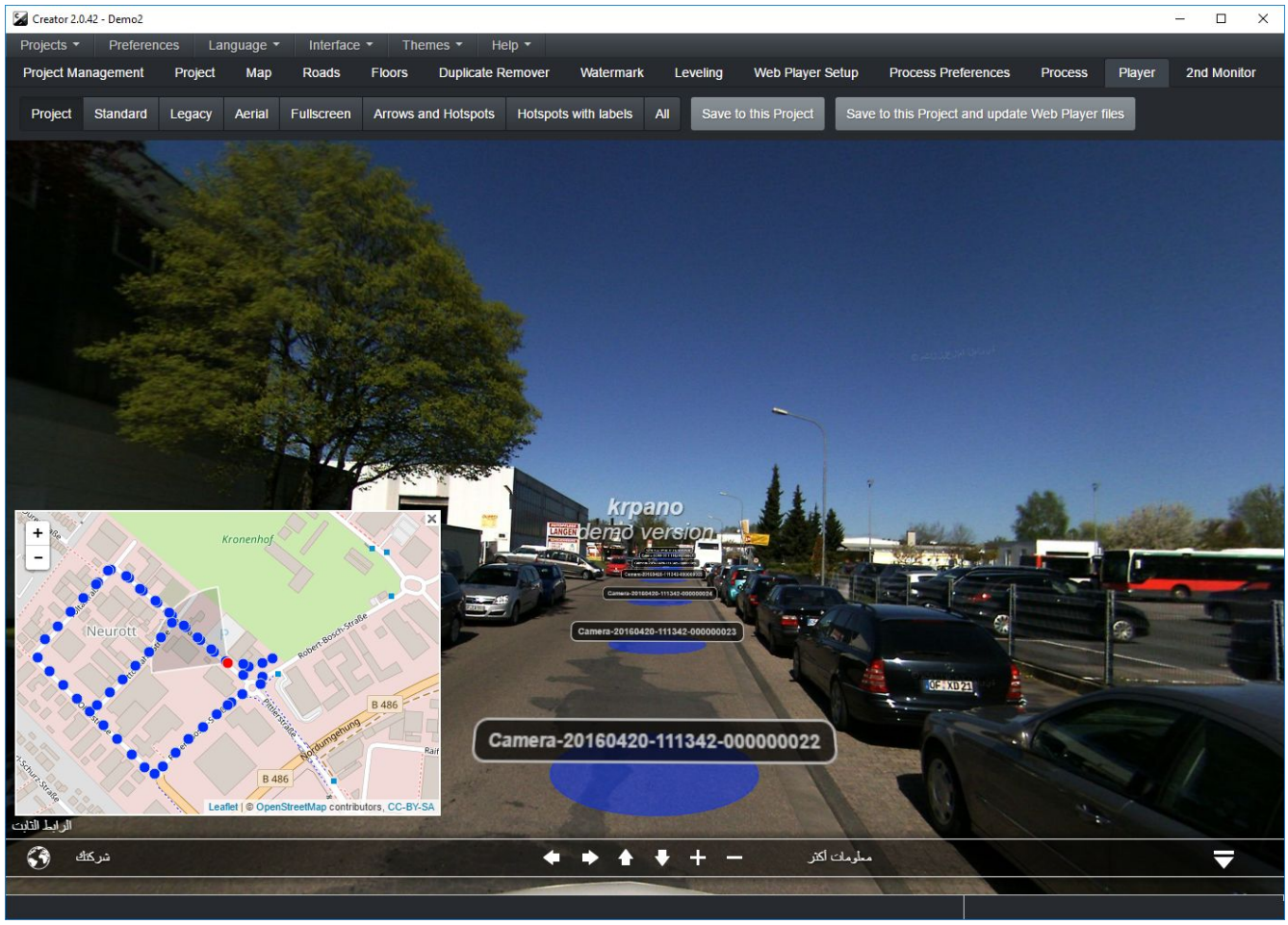
APPLIEDSTREETVIEW

Creator 2

Manual



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Introduction

The Creator program is made by Applied Streetview.
It processes streetview footage recorded by the Applied Streetview Camera.

Output

- A folder with leveled, geo-referenced, equirectangular streetviews.
  The streetview picture size is 8192 x 4096 pixels.
- A krpano-based player for the internet or your company's intranet.
- Data for the optional Android Player, which works 100% offline.

Installation

First download and install the CUDA 8.0 drivers.
Do not use CUDA 9.
https://developer.nvidia.com/cuda-80-ga2-download-archive

Then download and install the newest Creator program:
http://applied-streetview.com/project/creator/

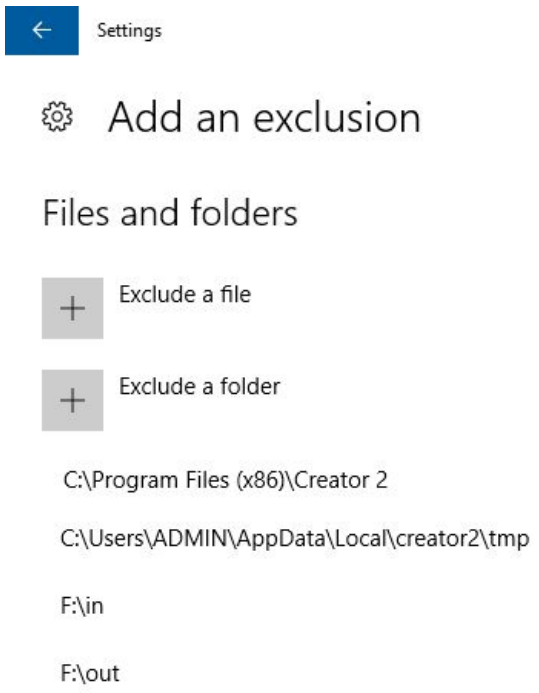
Speed it up

Virus Scanners
Deactivate any 3rd-party Virus-Scanner you might have installed.
Deactivate for **Creator**, all folders it uses (including **in** and **out**) and the **.jpg** file format.

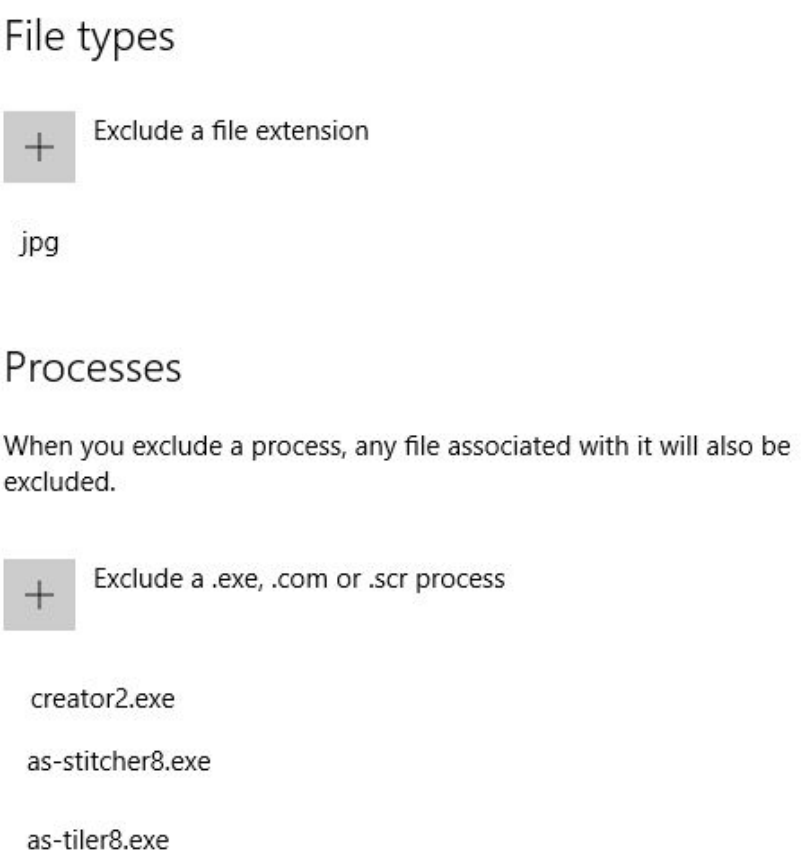
Windows Defender
Exclude the Creator **installation folder**:
C:\Program Files (x86)\Creator 2

Also **in** and **out** folders for the data:
F:\in
F:\out

And the **temporary data** folder:
C:\Users\USERNAME\AppData\Local\creator2\tmp



Exclude .jpg files and the Creator programs:

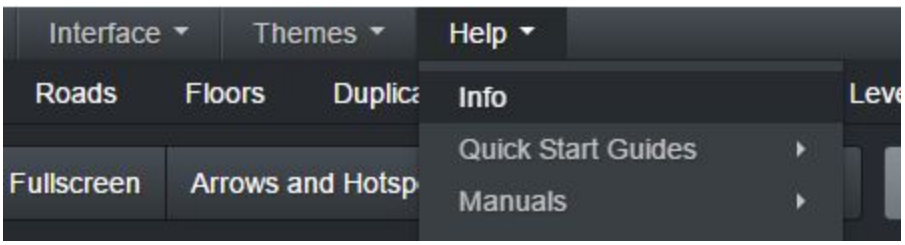


Additional Manuals

Additional manuals are available at our website:
http://www.applied-streetview.com/

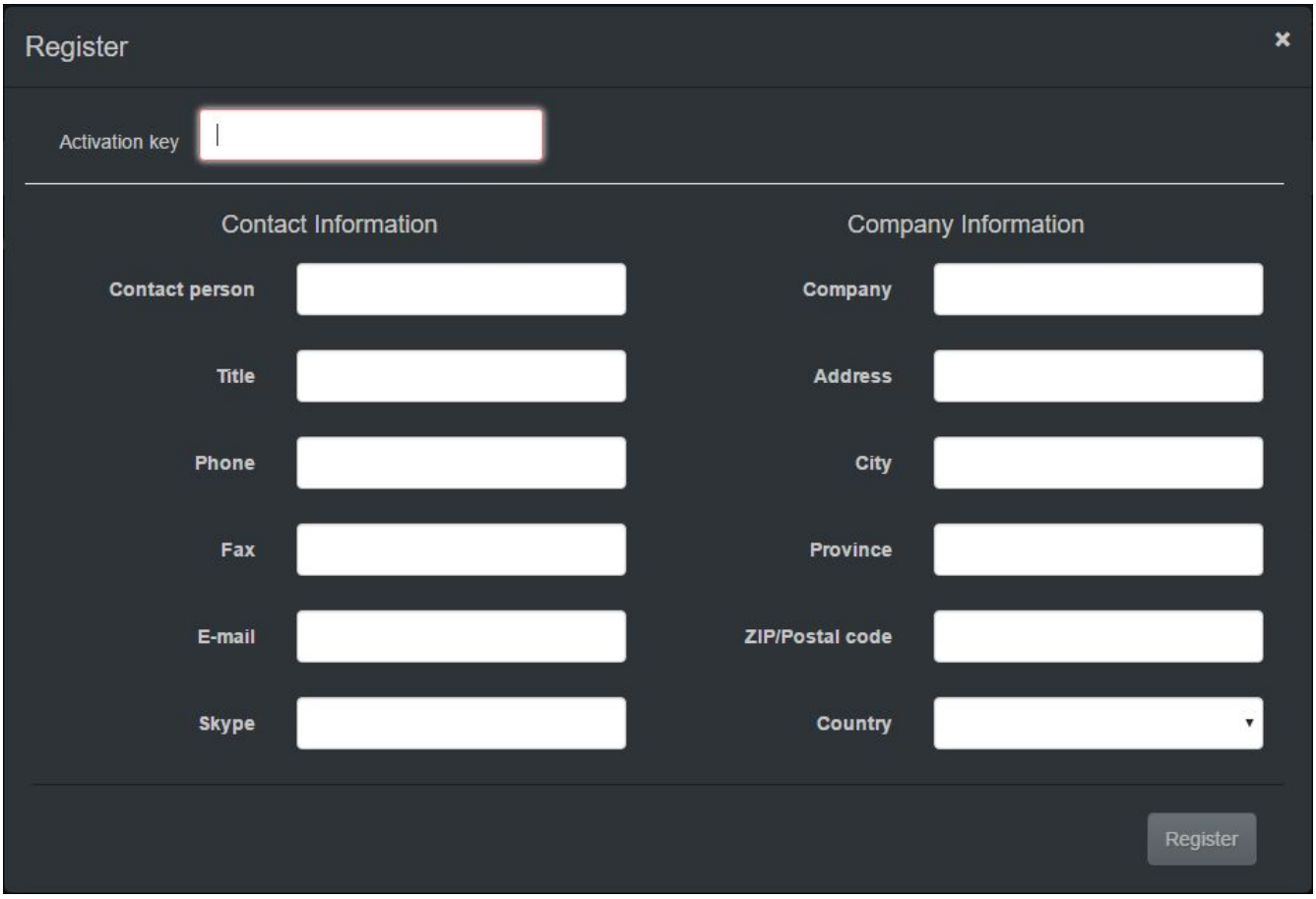
HOW-TO video

Shown automatically when you first open Creator, and later can be found in **Help -> Demo Video**



Licensing

Creator will work for 21 days as a trial with all the features available.
There are no limitations at all.



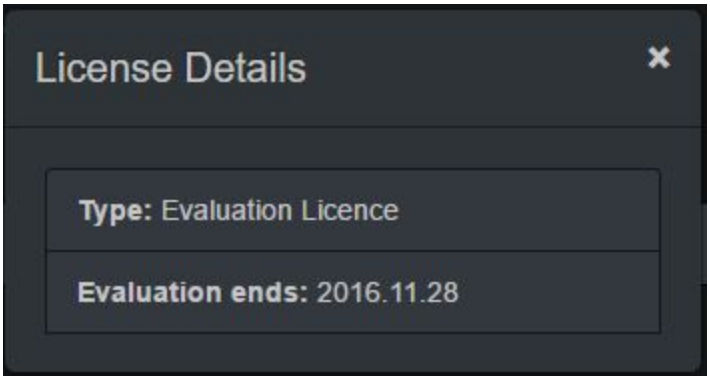
When starting Creator for the first time, the **Register** popup will be displayed.
Fill it in and click the **Register** button.

Permanent activation key
With the purchase of a camera you will get a permanent activation key for Creator.
In the menu click **Help -> Add activation key**.
Paste in the activation key and click the **Register** button.
Additional activation keys are available. Contact us.

Offline registration
If the PC you would like to use for Creator has no internet connection, instead of the Register button you will see a **Register Offline** button.
Click on the Register Offline button and follow the on-screen instructions.

Menu - Help - License Details
Shows the type of the licence and the end of the trial period.

Evaluation Licence:



Paid licence:
A purchased Creator licence never expires.

Menu - Help - Add activation key
Opens the license Register popup. Use this to update your evaluation license to a purchased license or replace a license.

User Interface

Language

English, French, Spanish, German, Arabic, Russian, Chinese, Romanian and Czech are available.

Interface

Standard
Everything it needs to process a project.

Advanced
For more complex projects and experienced users.

Menu entries for Advanced Features have a **bold font**.

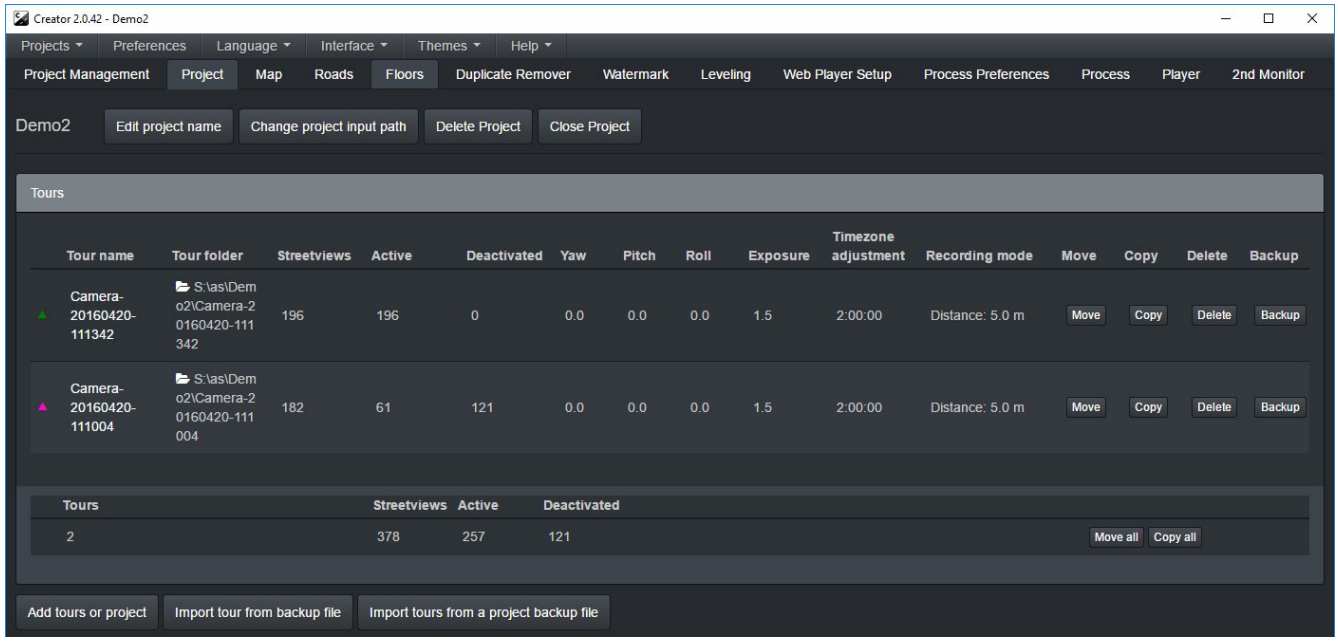
Main Window
Tools

Menu
Timeline
Separate by Distance
Individual Optimizing

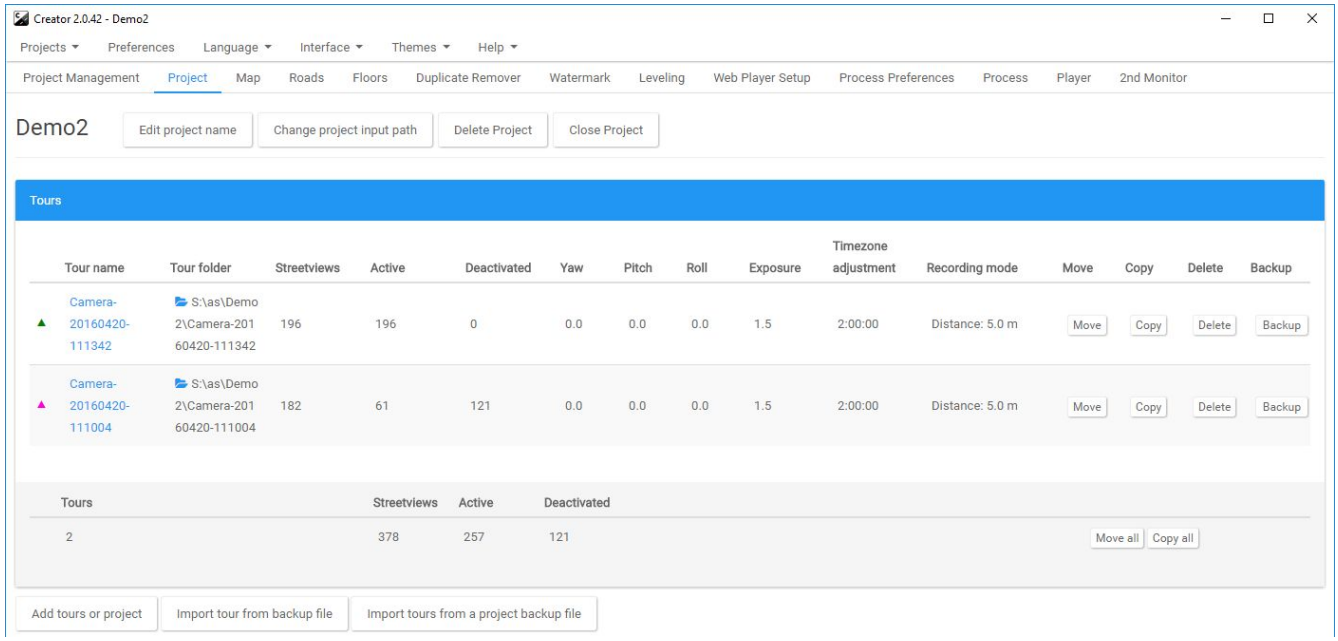
Preferences
For all projects -> Expert Mode
For all projects -> Troubleshooting

Themes

Dark



Light



Recommended Operating System

Windows 7, 8 or 10.

64-bit, any language.

32-bit Windows is not supported and will not work.

Recommended Hardware

Minimum requirements:

A must-have for production:
NVIDIA GTX 1080 graphics card with 8GB VRAM.

With the NVIDIA GTX 1080 graphics card, about 75.000 datasets can be processed every 24 hours.

Other components:
CPU with 4 cores and 8 threads, minimum 3.4 GHz.
16 GB RAM
250 GB SSD, or larger. For the Windows operating system.
2TB HDD for small data-sets.
Network drives (NAS) are recommended for larger data-sets.

Testing
You can try Creator with any 64-bit Windows 7, 8 or 10 PC.
However, without an NVIDIA graphics card and at least 8GB PC RAM processing will be extremely slow.

Example Data
Download and unzip the Example Data footage to process it:
http://aplsv.s3.amazonaws.com/Demo2/Demo2.zip

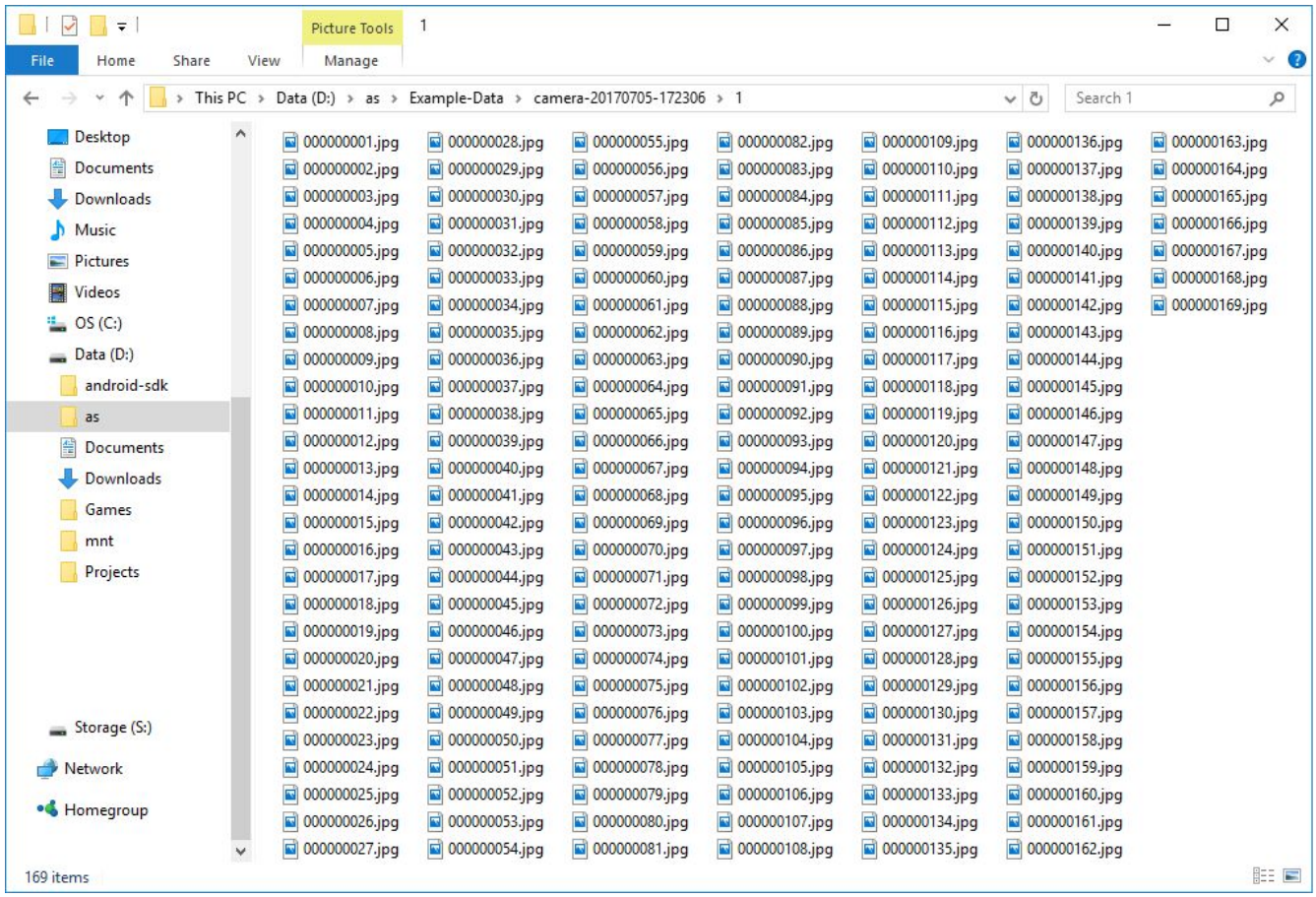
Check out the Creator Video, Manual and Quick Starter Guide:
http://applied-streetview.com/project/creator/

Projects & Tours

What is a Project?
To do any recording you first need to enter a **Project** name into the camera's Remote Control.
The Remote Control creates a **Project folder** on the SSD.

What is a tour?
When you press the **Start** button on the camera's Remote Control a new
Tour folder is created as a subfolder of the **Project folder**.

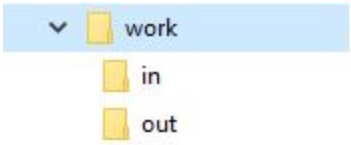
Here you see the **Example-Data** Project folder.
It has three Tour folders.
The screenshot shows Tour folder **camera-20170705-172306**.
Each Tour folder then has 7 sub-folders:
1 to 6 for the images and **7** for the log data.



Folder Structure

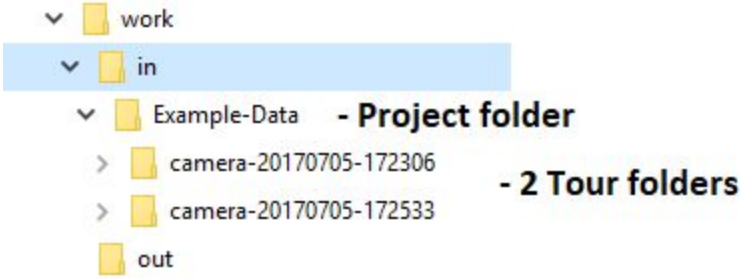
The Creator needs the following Folder Structure on the processing PC to work:

Create an empty **in** and **out** folder. **Work** is just an example parent folder, this could be any folder on any drive or NAS.

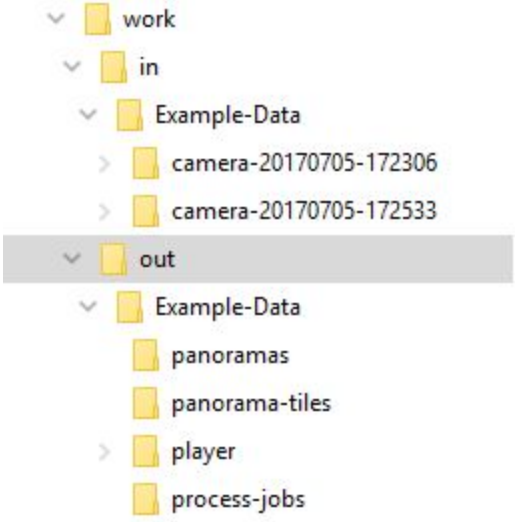


Do not process directly from the SDD. Always copy the data to a PC first. Disconnect the SSD before starting processing. It will act as your backup copy.
Make a backup copy of the recorded data for safekeeping.

Copy the Project folder from the **cameras SSD** to the **in** folder.



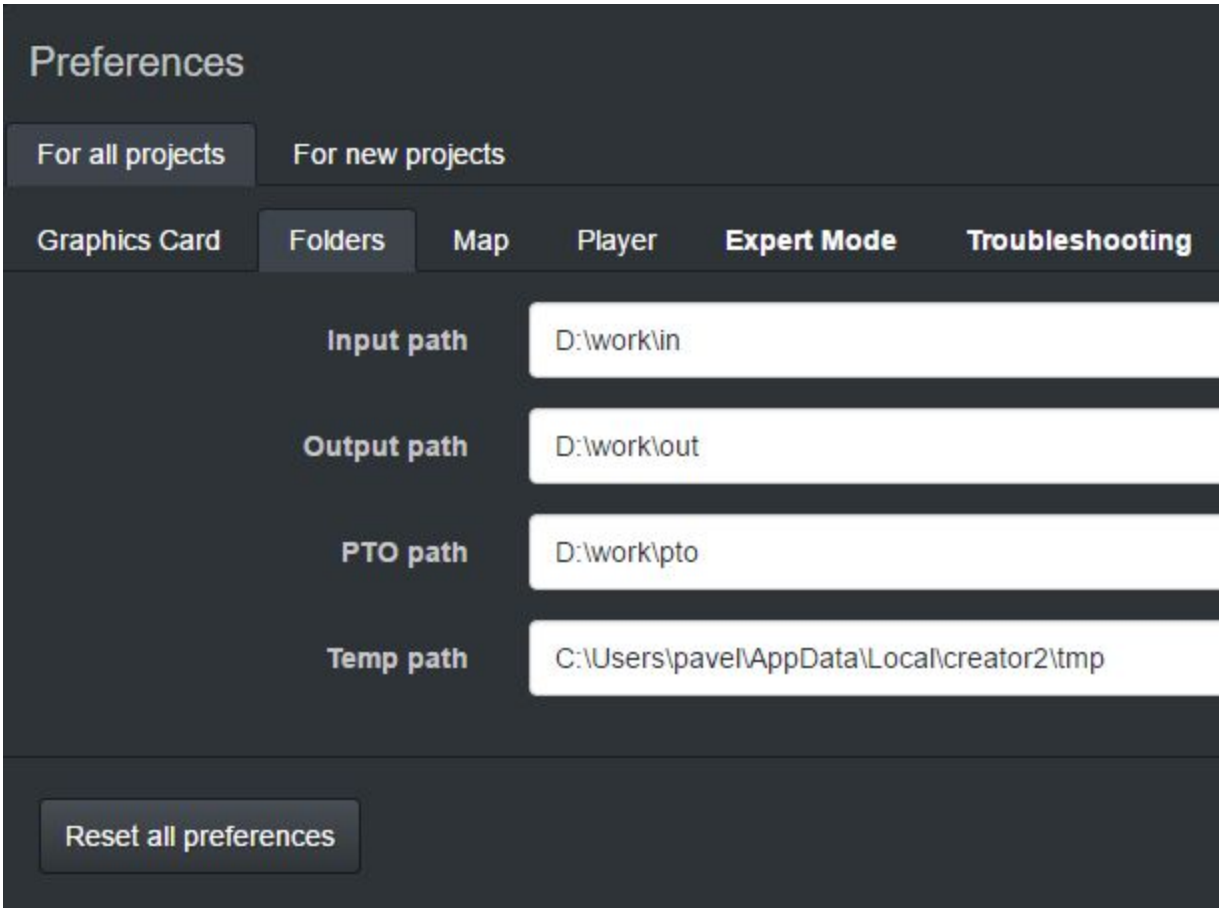
Creator saves its output to the **out** folder.
It automatically creates the Project name (Example-Data) in the out folder.



You can have the **in** and **out** folder on the same HDD or SSD.
Or on different drives.
Or on network drives.
Or mixed.

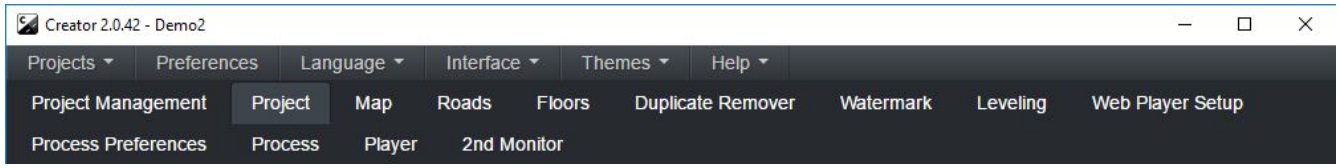
The **out** folder should be a local drive for speed reasons.

You need to set the **in** and **out** folders in Creator.
Creator will ask you for the folders when necessary.



Workflow

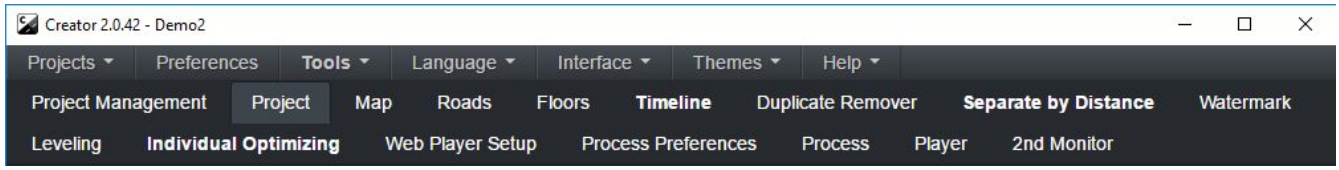
Just work through the tabs from left to right:



Of course, at any time you can go back to a previous tab and apply changes.

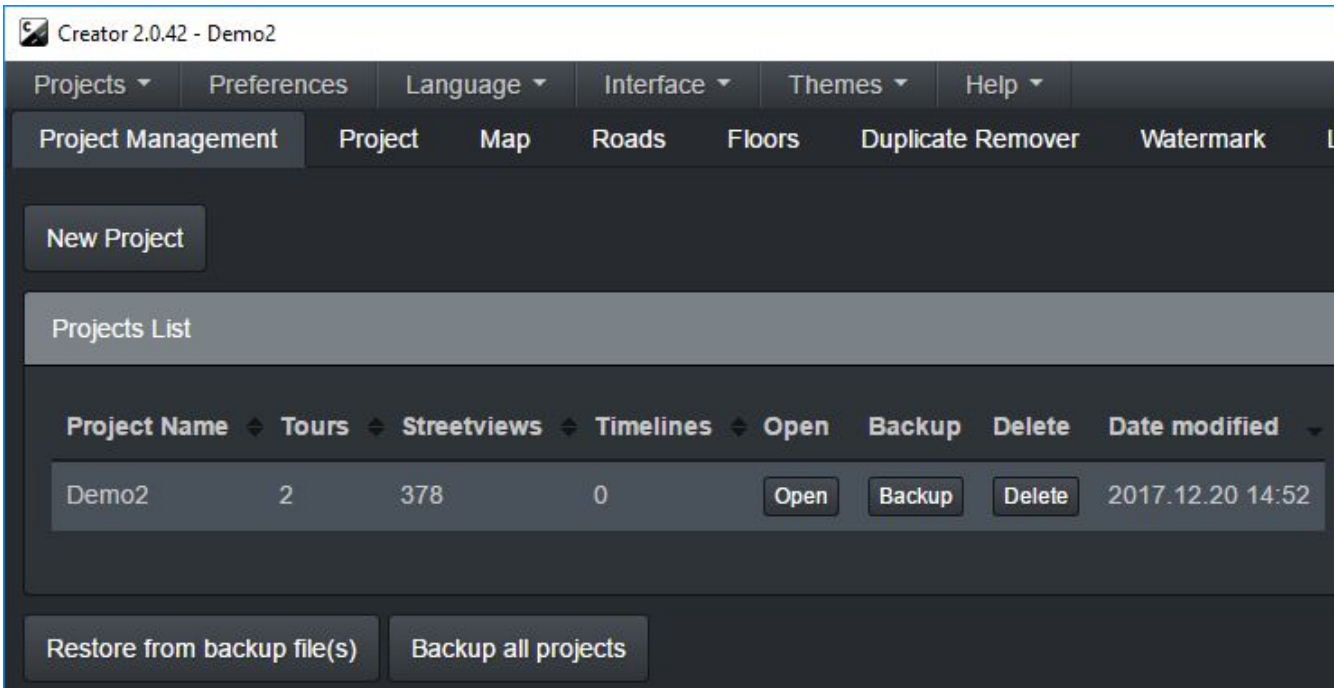
To enable additional tabs go to **Menu** - **Interface** and click **Advanced**.

Advanced tabs appear in bold.



Project Management

Projects list



The Projects list
For each project you see:
- Number of tours
- Number of streetviews
- Number of timelines

New project button
Open a project folder with at least one tour folder to add.
You can select and deselect tours in the pop-up.

Restore from a backup file button
Restore a project from a backed-up file.

Backup all projects
Backup **all** projects. The source photos are **not included** in the backup.

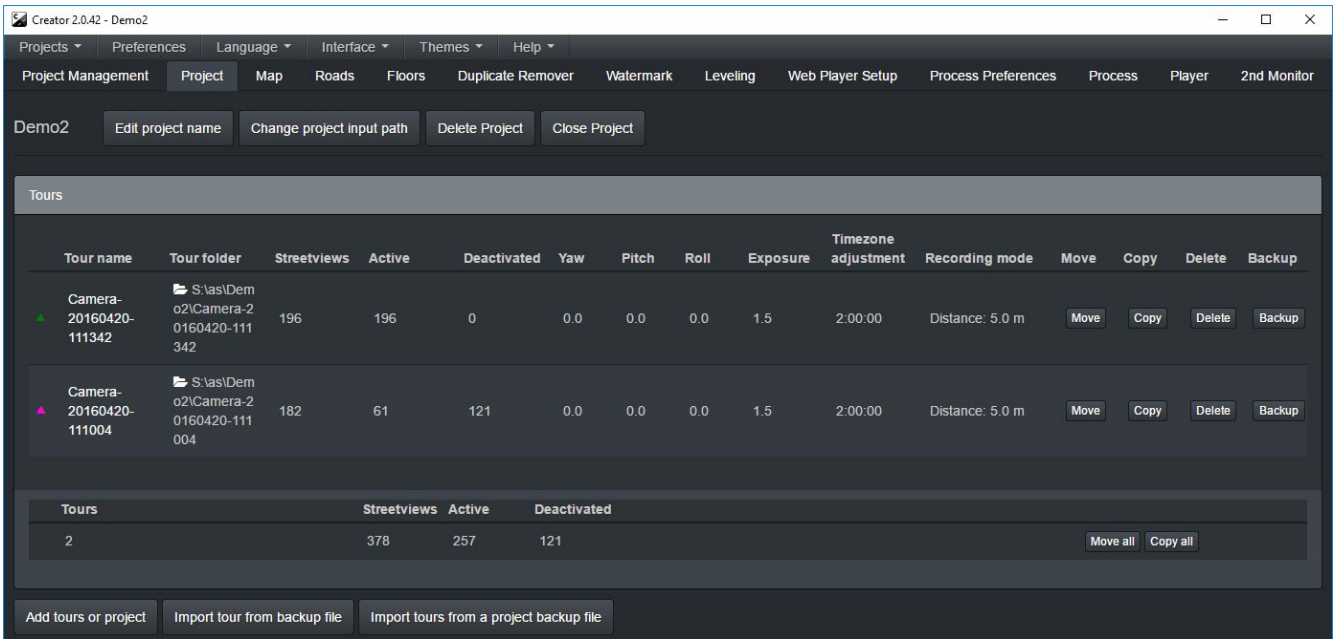
Open button
Open the project.

Backup button
Backup the project. The source photos are **not included** in the backup.
Delete button
Delete the project from the Creator program. The source photos are **not deleted**.

Date modified
The date of the last edit made to the project.

Project

Tours list



Edit project name
Change the project name.

Change project input path
Change the project input path, if a project has been moved.

Delete project
Delete the project from the Creator program.
The source photos will not be **not** deleted.

Close project
To open another project or shut down the Creator program.

Tour name
Click a tour name to open it on the Map. The map will zoom in on the tour.
Good to find a tour quickly on the map.

Tour folder
Where the source-data is.
Edit icon**:** The path to a tour folder can be changed individually.

Timeline

Timeline title. This column is visible only if a timeline has been assigned to a tour in the Timeline tab.

Streetviews
Number of recorded data-sets.

Active
Number of active streetviews.

Deactivated
Number of deactivated streetviews. On the map tab you can deactivate streetviews to not process them, for example when a road has been recorded twice.

Yaw, Pitch, Roll
Settings from the Leveling tab.

Exposure
Setting from the Leveling tab.

Timezone adjustment
Unnecessary if the **Tablet is set to the local time**.
Manually adjust the GPS date and time by the time zone value to fix the local (recording) date and time.

Recording mode
Mode used when recording the streetviews. Either Interval, Distance or Manual.

Move button
Move the tour to a different project.

Copy button
Copy the tour to a different project.

Delete button
Deletes the tour from the project.
The source photos are **not** deleted.

Backup button
Backup the tour.
The source photos will not be **not** backed up.

Move All button
Moves all tours to a different project.

Copy All button
Copies all tours to a different project.

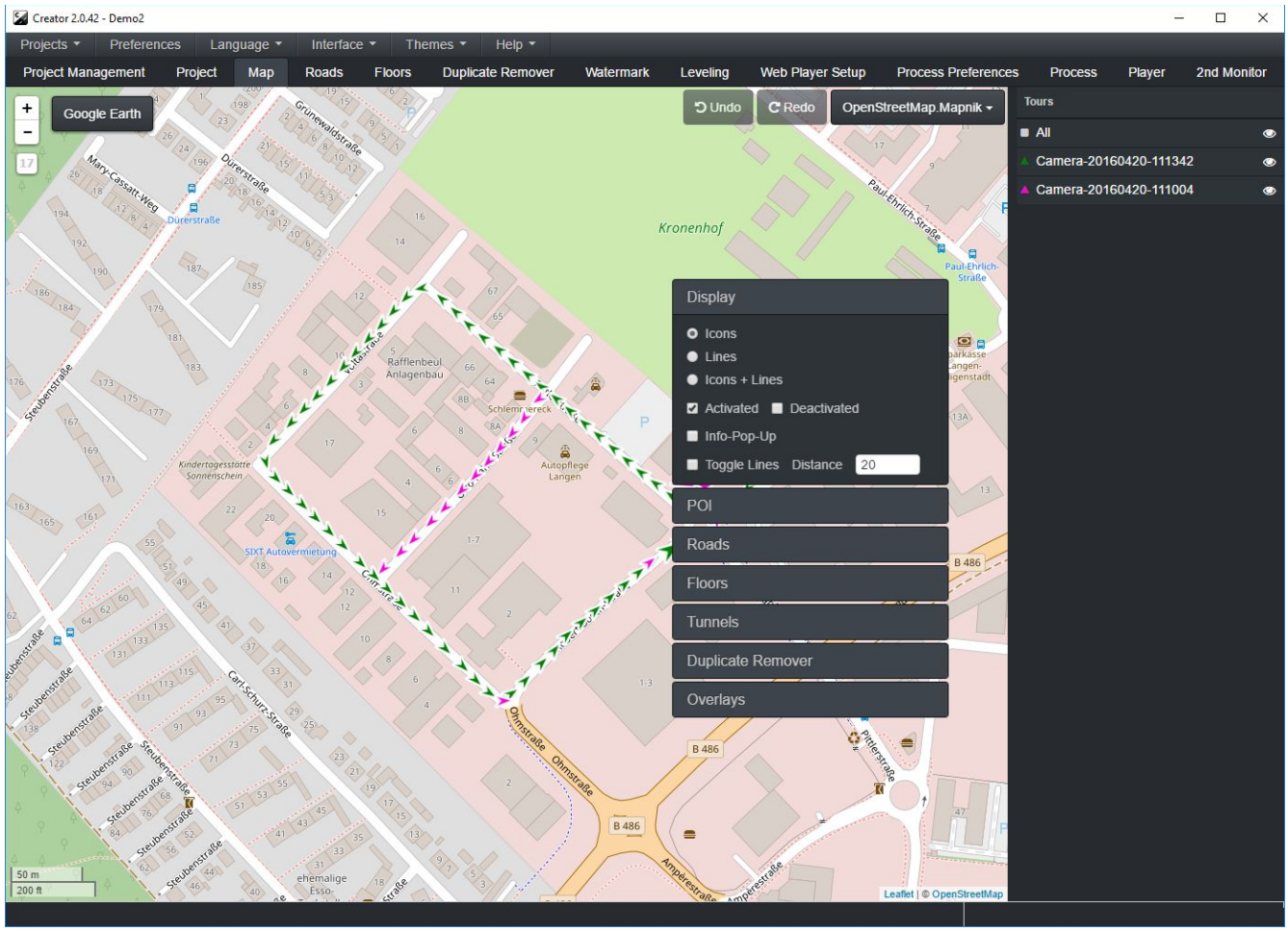
Add tours or project button
Add one or multiple tour folders to this project.
E.g. when additional roads have been recorded three months later.

Import tour from backup file button
Add a tour from any tours backup file

Import tours from a project backup files button
Add one or more tours from any project's backup file.

Map

Right click on the Map for the menu:



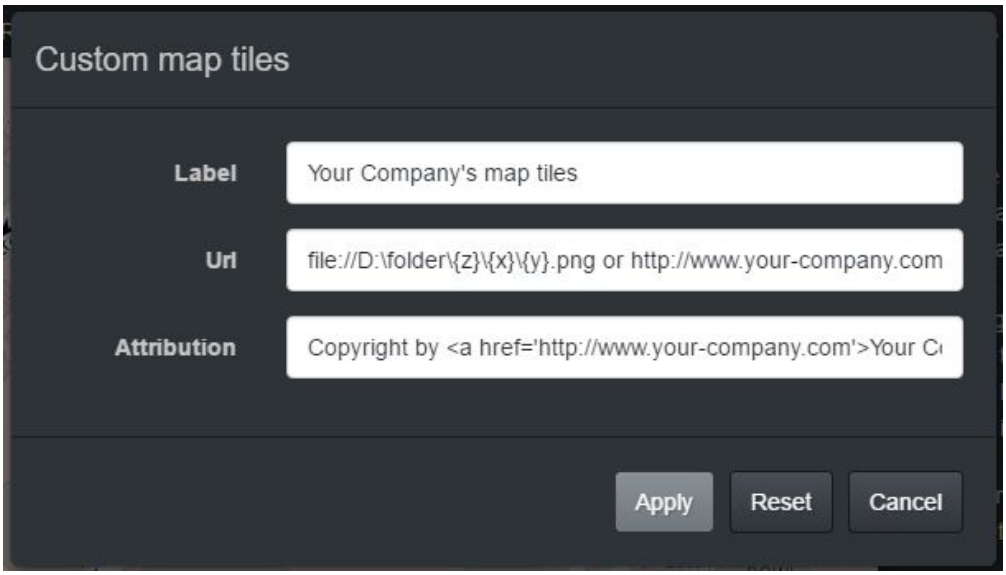
Maps

The Screenshot shows the **OpenStreetMap.Mapnik** map.
Select any online map provider from the dropdown list, or use your own custom set of map-tiles.

To select your own custom map-tiles click on the first item in the list:
Your Company's map tiles. This opens the **Custom map tiles** popup.
Label, **Url** and **Attribution** properties can be adjusted in this popup.
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

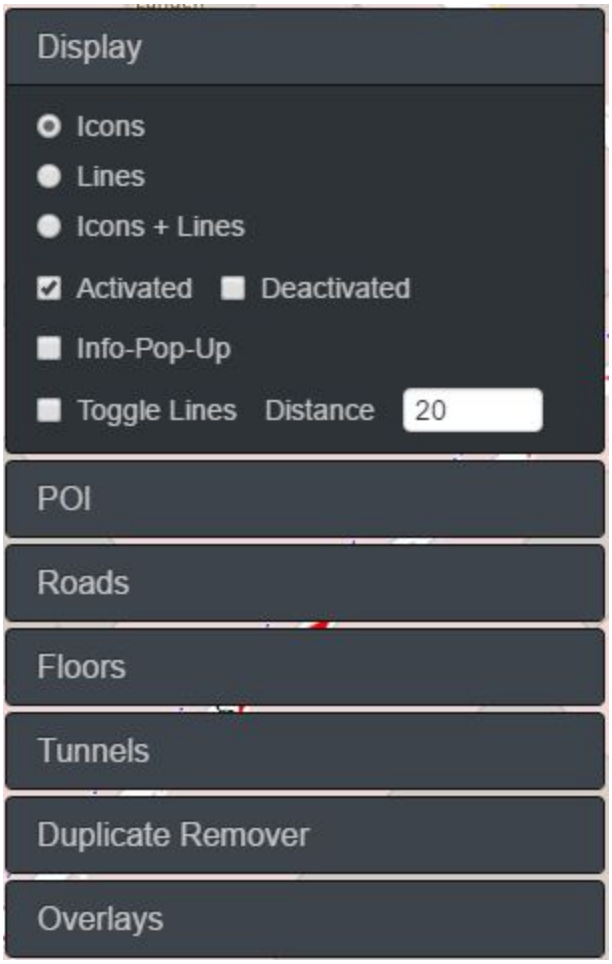
where {z} is the zoom level, and {x} and {y} are the coordinates of the top left corner of the tile in web mercator projection.



Main Map menu

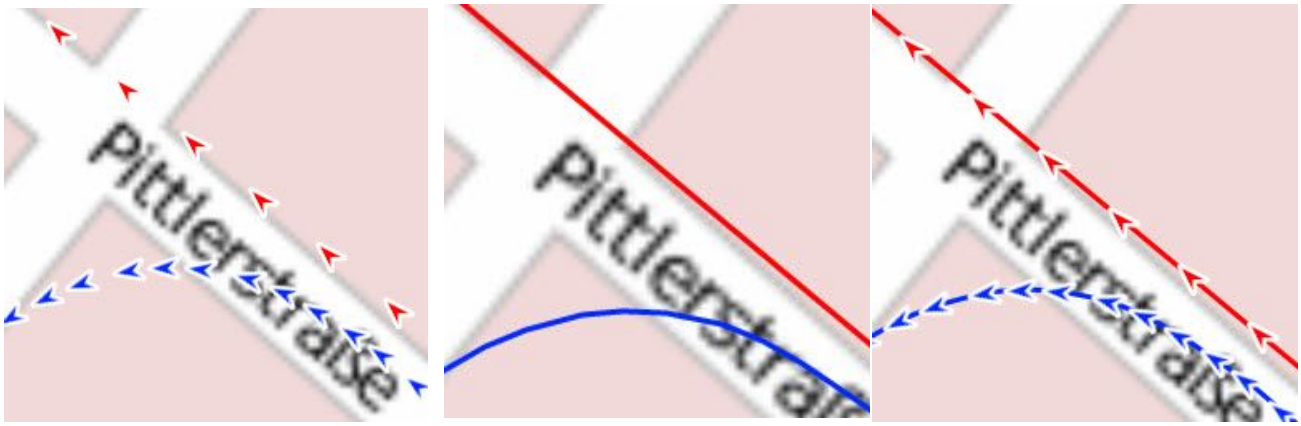
Right-click on the map to access it.

Move the mouse outside the menu to close it.



Display

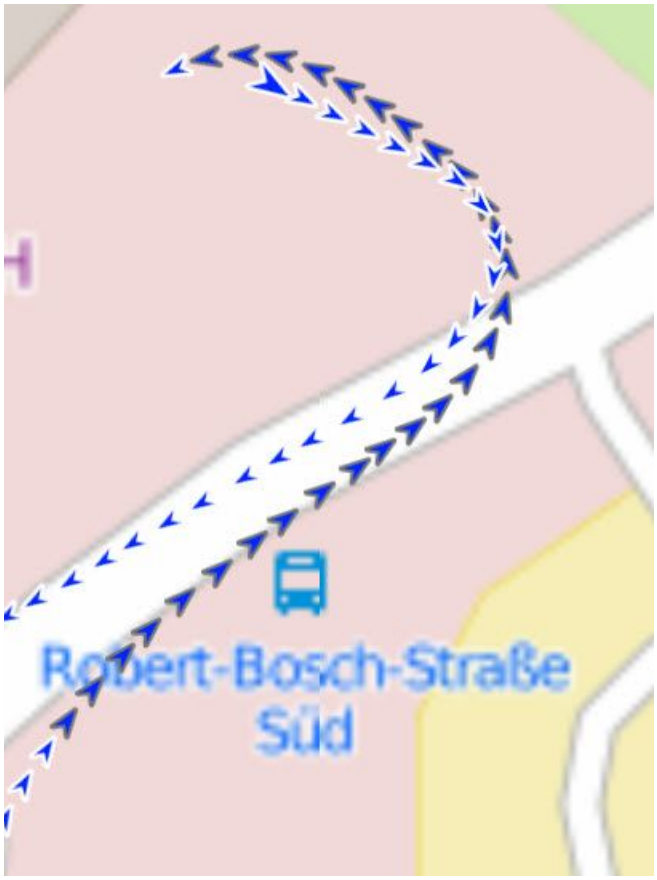
Icons Lines Both



Show or hide active and deactivated streetview icons.

Usually more footage than needed is recorded.
Using the **Duplicate Remover**, **Separate by Distance** (Interface -> Advanced), as well as manual deactivation on the map tab this can be reduced.

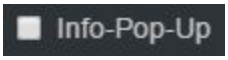
The Map tab is where you can check which streetviews are left active for processing.



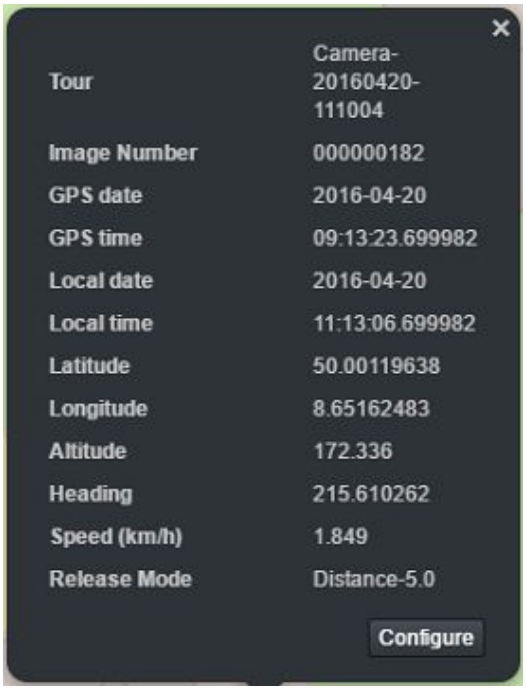
Deactivated streetviews are shown in a different color.

For this tour it is dark blue.

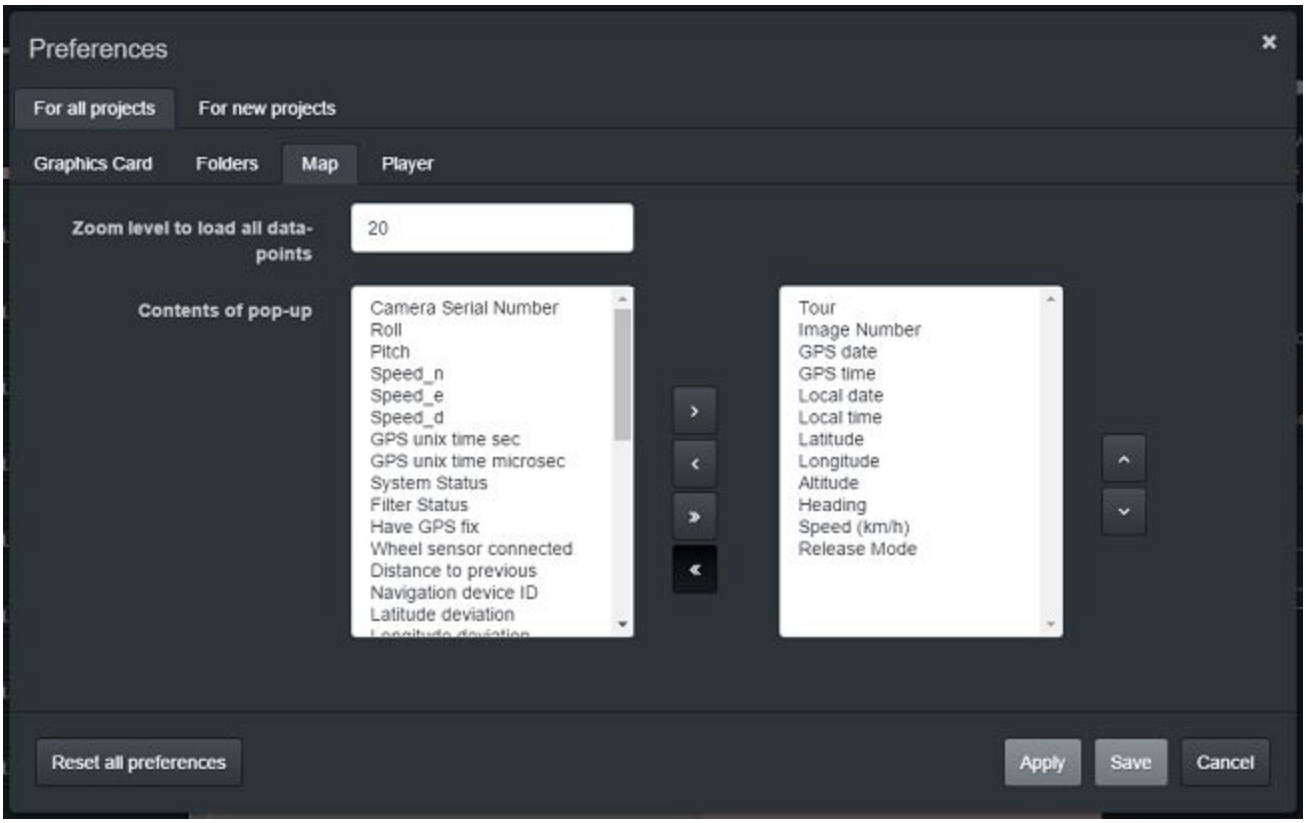
Info-Pop-Up



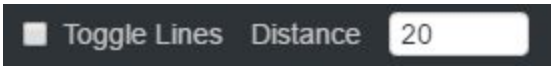
See the data for that streetview. See the default selection in the image below.



Configure button
Customize what data to display using the pop-up

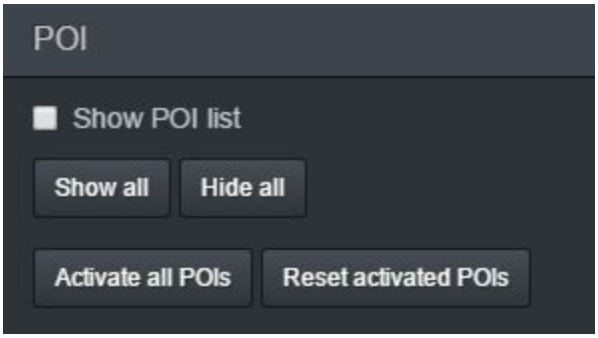


Toggle Lines

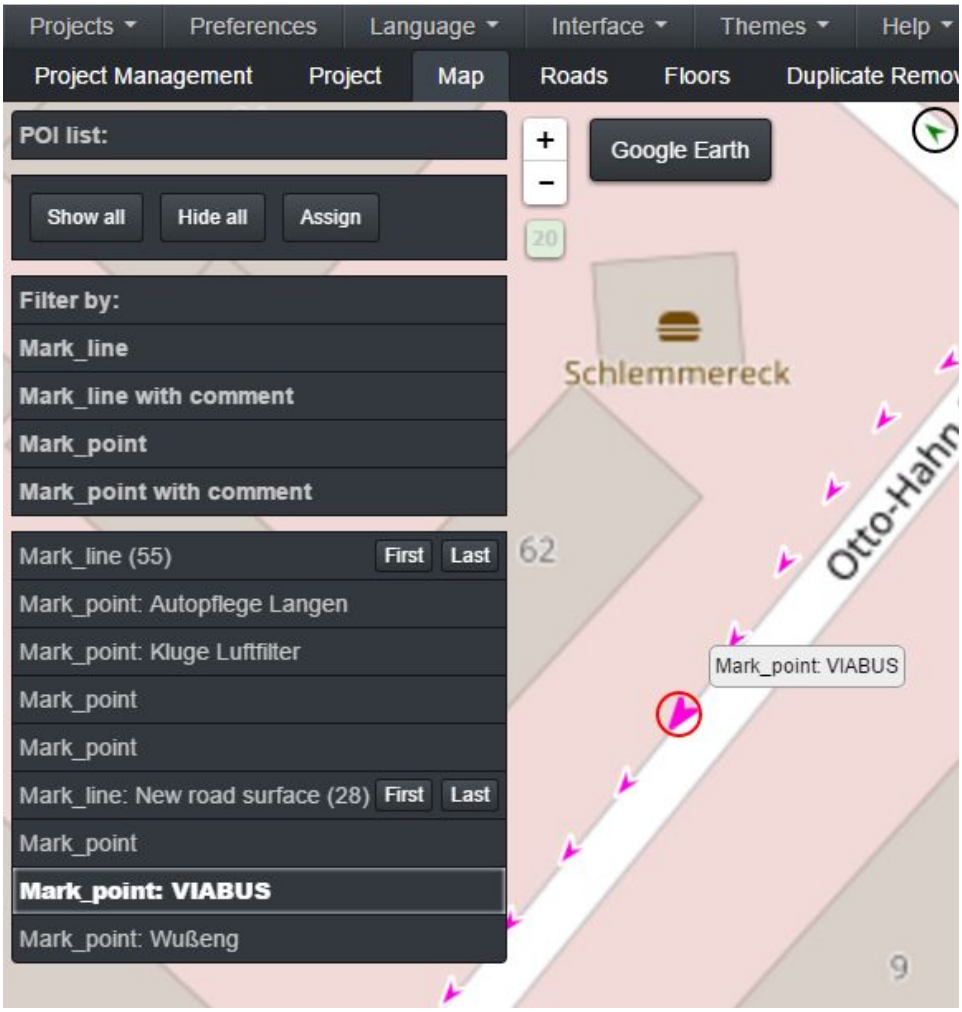


When displaying streetviews as lines, do not draw a line between streetviews if distance between them is more than the set **Distance.**

POI



Display **Points Of Interest** recorded using the POI tab in Remote Control. Black circles around a streetview icon indicate that it's a POI. A label with the POI name is displayed to the right of the streetview icon.



Show POI left panel top section (**Filter By**):

In this list all unique POI names are displayed. By default all POI are activated. Click on a POI name to deactivate it. Click again to activate. Multiple POI names can be deactivated at the same time.

Show POI left panel bottom section (**POI list**):

Click on a POI name to zoom into it on the map. The selected POI will have a red outline. If the POI was recorded in sticky mode, only 1 entry will be displayed in the list with the ability to zoom into the first and last streetviews of the sticky sequence by clicking on the **First** and **Last** buttons.

Show all - Check all **Filter by** items.

Hide all - Uncheck all **Filter by** items.

Activate all POIs - Reset all automatically deactivated streetviews (this includes Duplicate Remover and Separate by Distance),

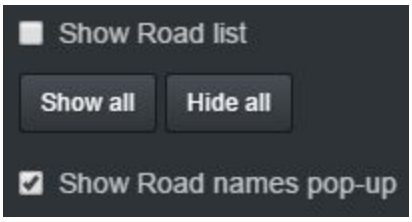
then deactivate all streetviews and activate only the streetviews containing a POI.

This action will not overwrite manually activated or deactivated streetviews.

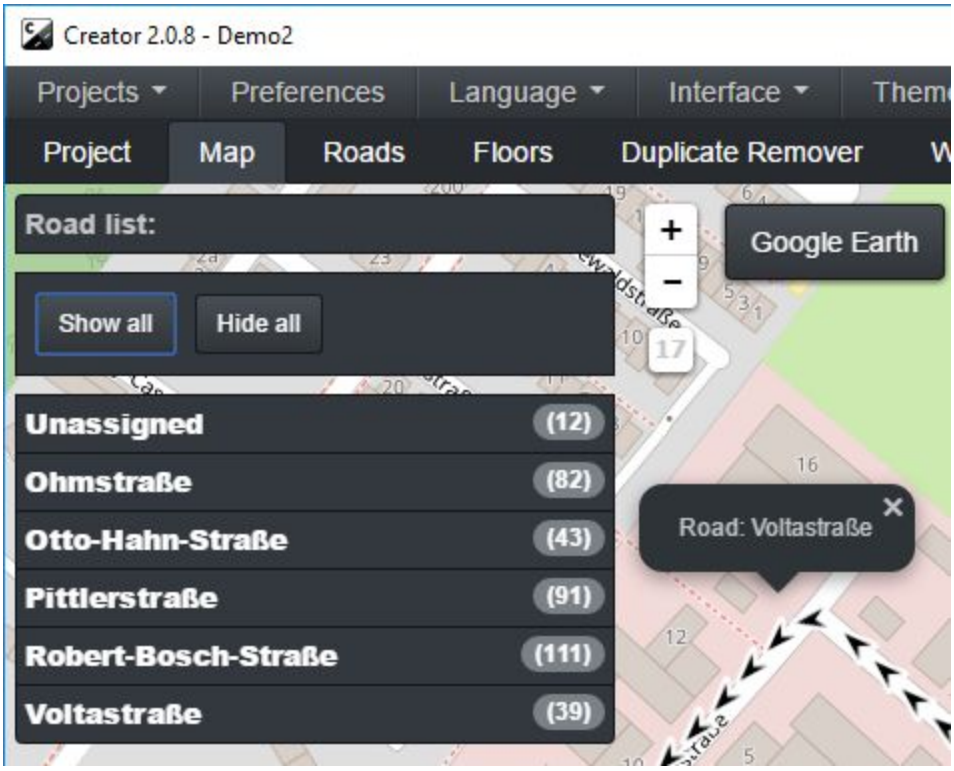
Reset activated POIs - Reset all automatically deactivated streetviews (this includes Duplicate Remover and Separate by Distance).

This action will not overwrite manually activated or deactivated streetviews.

Roads



Show Roads assigned in the Roads tab.

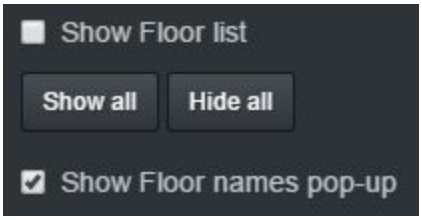


Show all - Check all **Road list** items.

Hide all - Uncheck all **Road list** items.

Show Road names pop-up - Moving the mouse over a streetview will display thes Road name instead of the Info-Pop-Up.

Floors



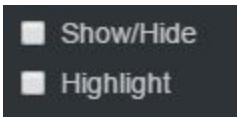
Show Floors assigned in the Floors tab.

Show all - Check all **Floor list** items.

Hide all - Uncheck all **Floor list** items.

Show Floor names pop-up - Moving the mouse over a streetview will display the Floor name instead of the Info-Pop-Up.

Tunnels

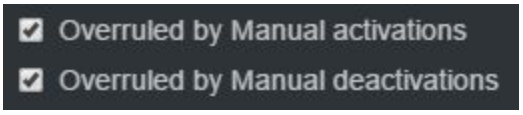


Show/Hide - Show only streetviews which are considered a tunnel.

Highlight - Highlight streetviews which are considered a tunnel.

A streetview is considered in a tunnel when GPS HDOP and VDOP values are above 10 meters, which typically only happens when the camera is inside a tunnel.

Duplicate Remover



Overruled by Manual activations: Panoramas activated manually will override values set by the duplicate remover.

Overruled by Manual deactivations: Panoramas deactivated manually will override values set by the duplicate remover.

Display all the data-sets at any zoom level

When viewing the map at a zoom level 20 in order to improve performance, not all streetviews and tracks will be shown.

If you need to view the entire data-set without any optimization, click on the zoom level button (top left corner of the map), a warning popup will be displayed to warn about performance implications, then click the **OK** button.

Undo and Redo
Either undo or Redo the last edit action. Works on theoretically unlimited levels.

Keyboard Shortcuts

Icons

Key	Function
Ctrl + z	Undo
Ctrl + y	Redo
Ctrl + a	Select all visible icons (even outside the map)
Ctrl + q	Deselect all visible icons (even outside the map)
Delete	Deactivate selected icons
Insert	Activate selected icons
Home	Rotate selected icons right
End	Rotate selected icons left
Page-Up	Next streetview
Page-Down	Previous streetview
Ctrl + l	Line-up selected icons. From first to last selected icon.
Ctrl + R	Assign a Road name to a selected Streetview(s)
Ctrl + F	Assign a Floor name to a selected Streetview(s)

Map

Key	Function
4 arrows	Move map up, down, left, right. Additional you can left-click with the mouse, then hold and move the map.
Mouse-wheel	Zoom in and out
+	Zoom in
-	Zoom out

Select single icon
Click it with the mouse.

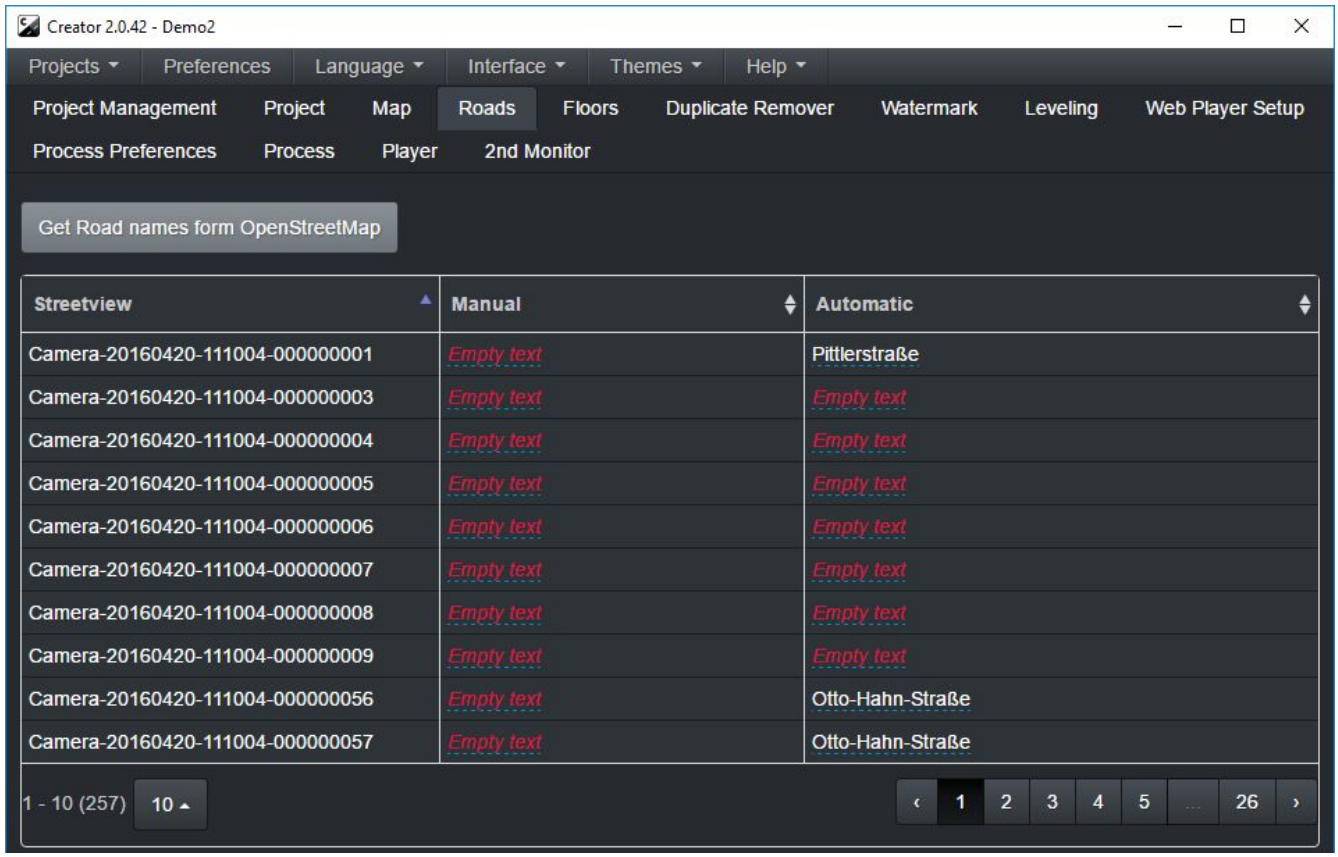
Select many icons
Select first icon with the mouse. Press and hold the **Shift** key.
Select last icon with the mouse.

Move one or many icons
Select, then move with the mouse.

Road Names

Automatic

To assign road names automatically using OpenStreetMap, click on **Get Road names from OpenStreetMap** button.



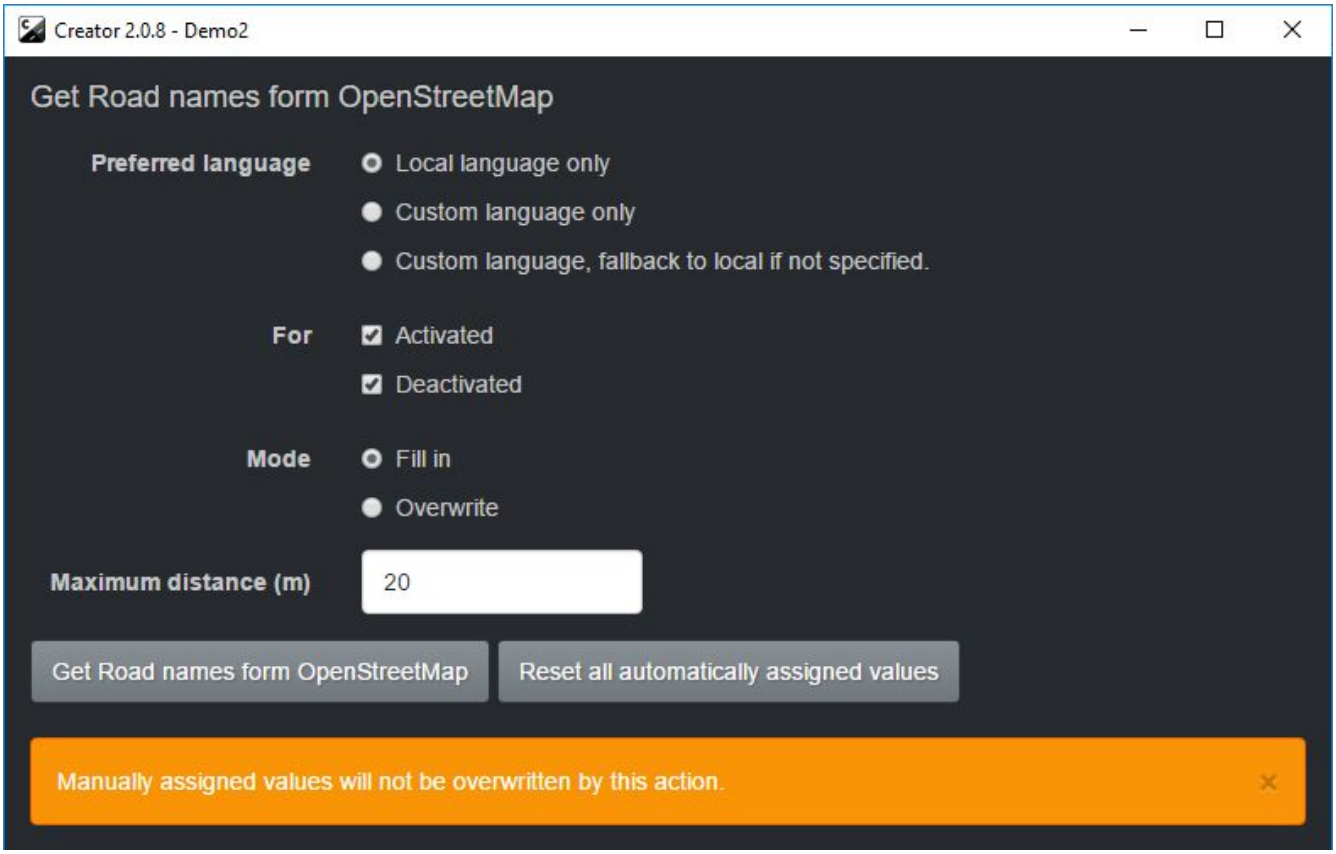
Manually

Click on a cell in the **Manual** or **Automatic** column to edit its content.

Manually assigned Road names will always overwrite automatically assigned Road names.

Map tab:

Select one or multiple streetviews on the map.
Click CTRL+R, enter the Road name and click **Save**.



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

- Activated streetviews
- Deactivated streetviews

Mode

- Fill in - Only update empty values in streetviews
- Overwrite - Overwrite all existing geocoded values in streetviews

Maximum distance (m)
Maximum Distance to the closest point on a road and a streetview to be considered for geocoding.

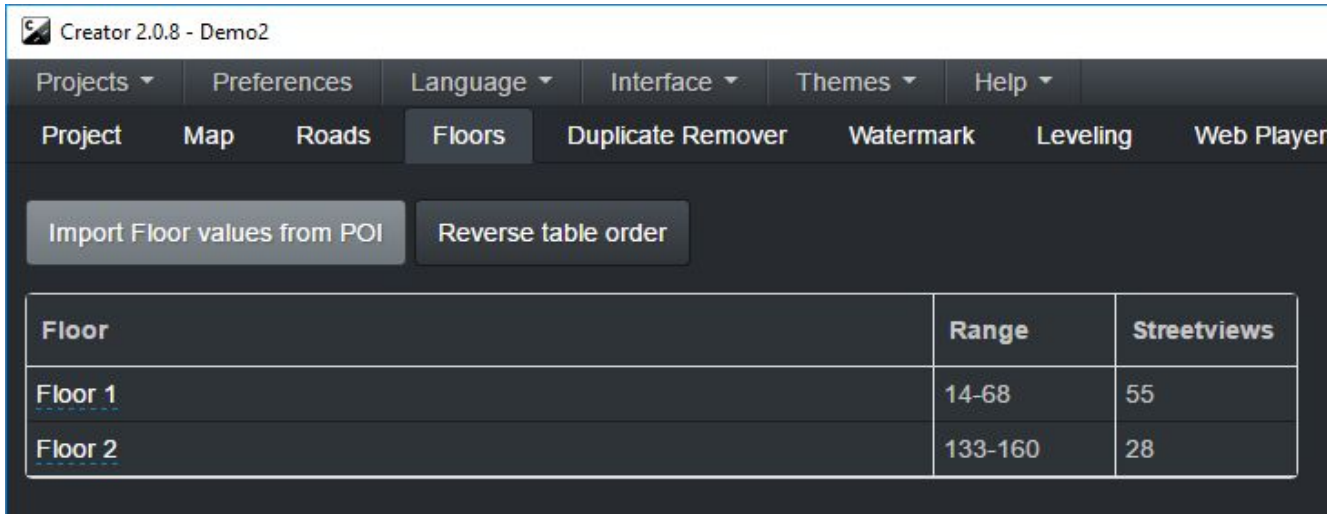
Get Road names from OpenStreetMap

Reset all automatically assigned values

Floors

Floor names are created from **POIs**
Click on the **Import Floor values from POI** button to get the Floor names.

For this feature to work, you need to assign Floor names as **POIs** while recording., using the **Mark point with comment** or **Mark line with comment** action in the Remote Control's **POI tab.** Set the comment as the name of the Floor.



Manually
Click on a cell in the **Floor** column to edit its content.

To assign a Floor name to a streetview from the Map tab: Select one or multiple streetviews, click **CTRL+F**, enter the Floor name and then **Save**.

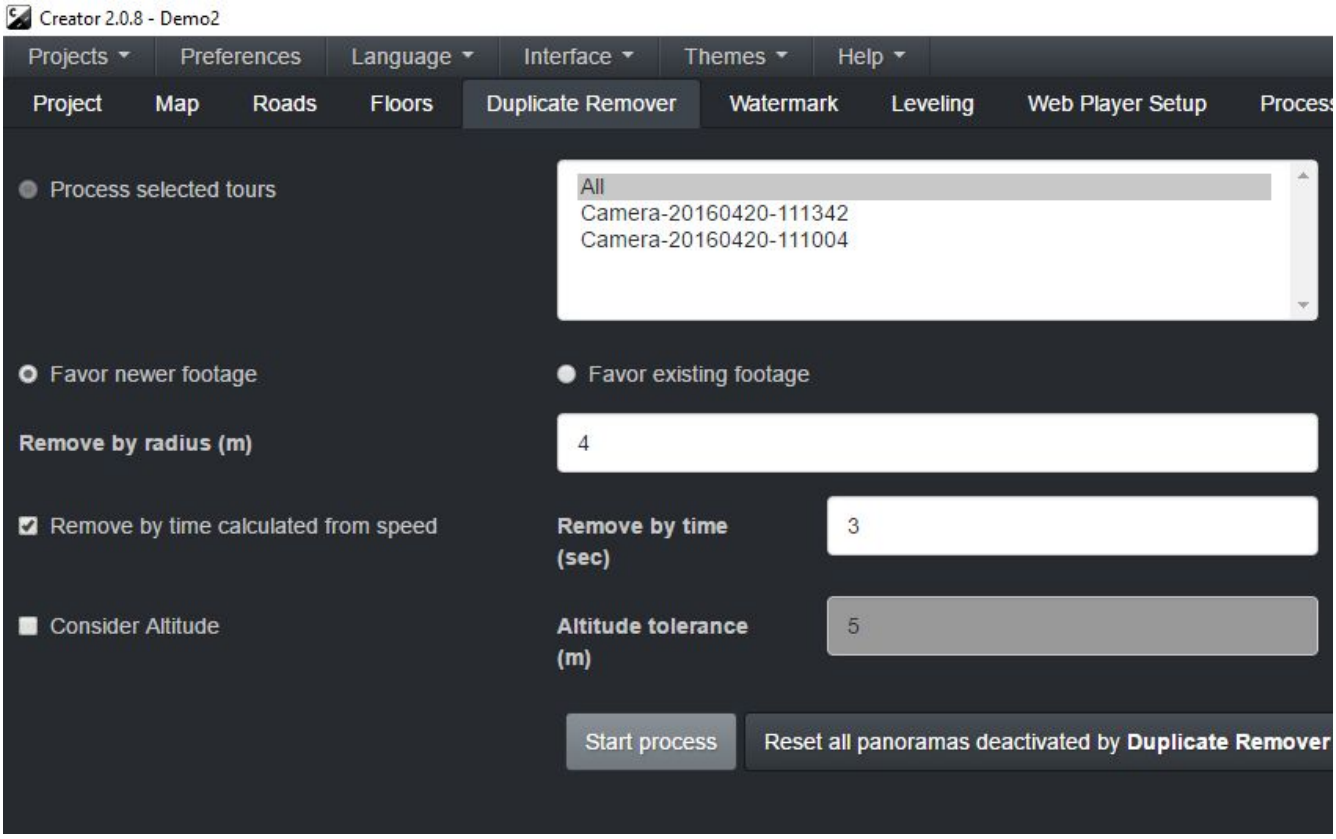
The order of the floors is important and should follow the original layout. An example of a valid order would be: -1, Ground floor, 1, 2, 3, 4, 5.

Click on the **Reverse table order** to sort the table **upside down**.

Drag and drop rows in the table to reorder.

Duplicate Remover

Removes duplicate recordings from roads recorded more than once..



Options:

Process selected timelines:

(Visible only when there are timelines)

Process only selected timelines.

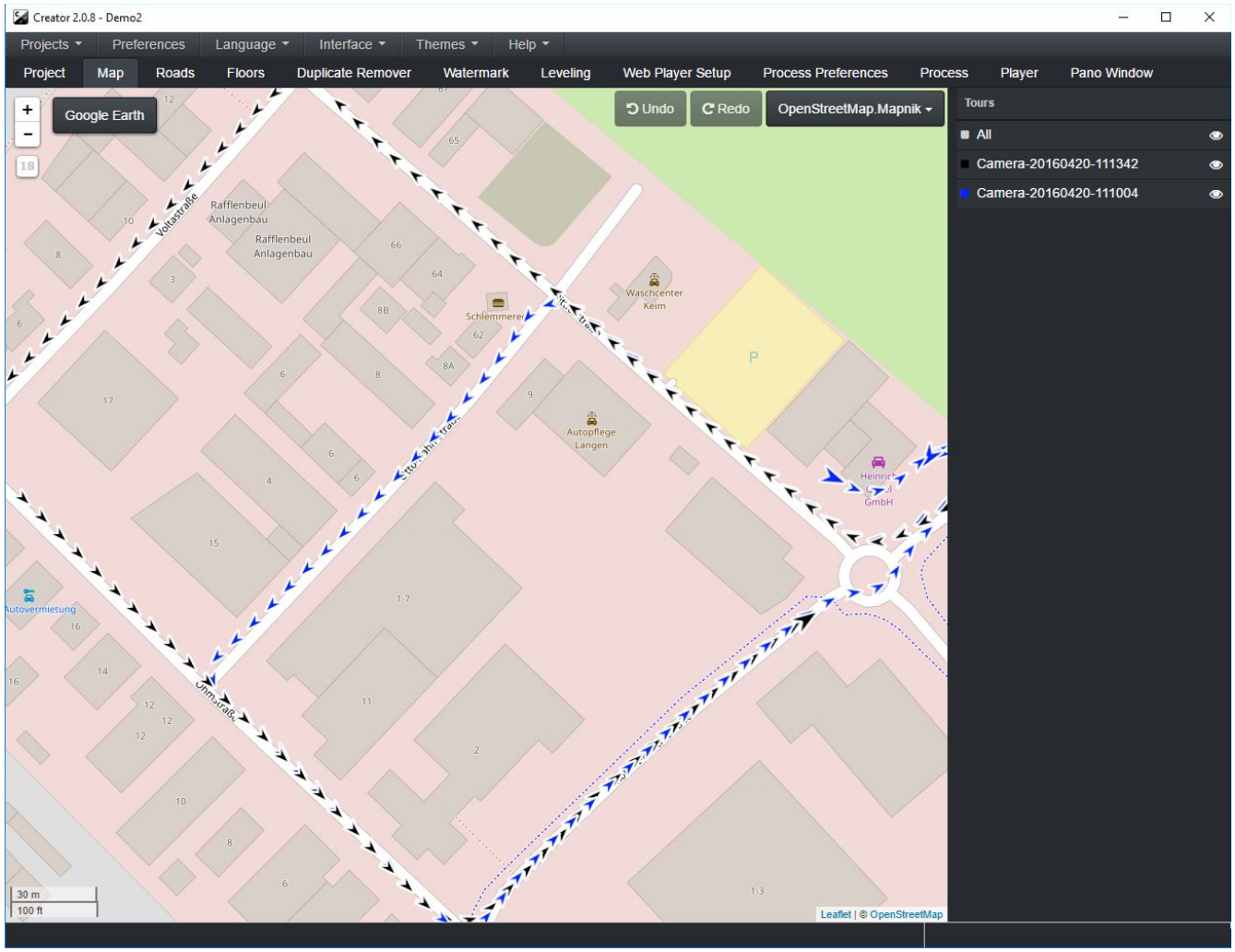
Press **CTRL** and then click on a timeline to select multiple timelines.

Process selected tours:

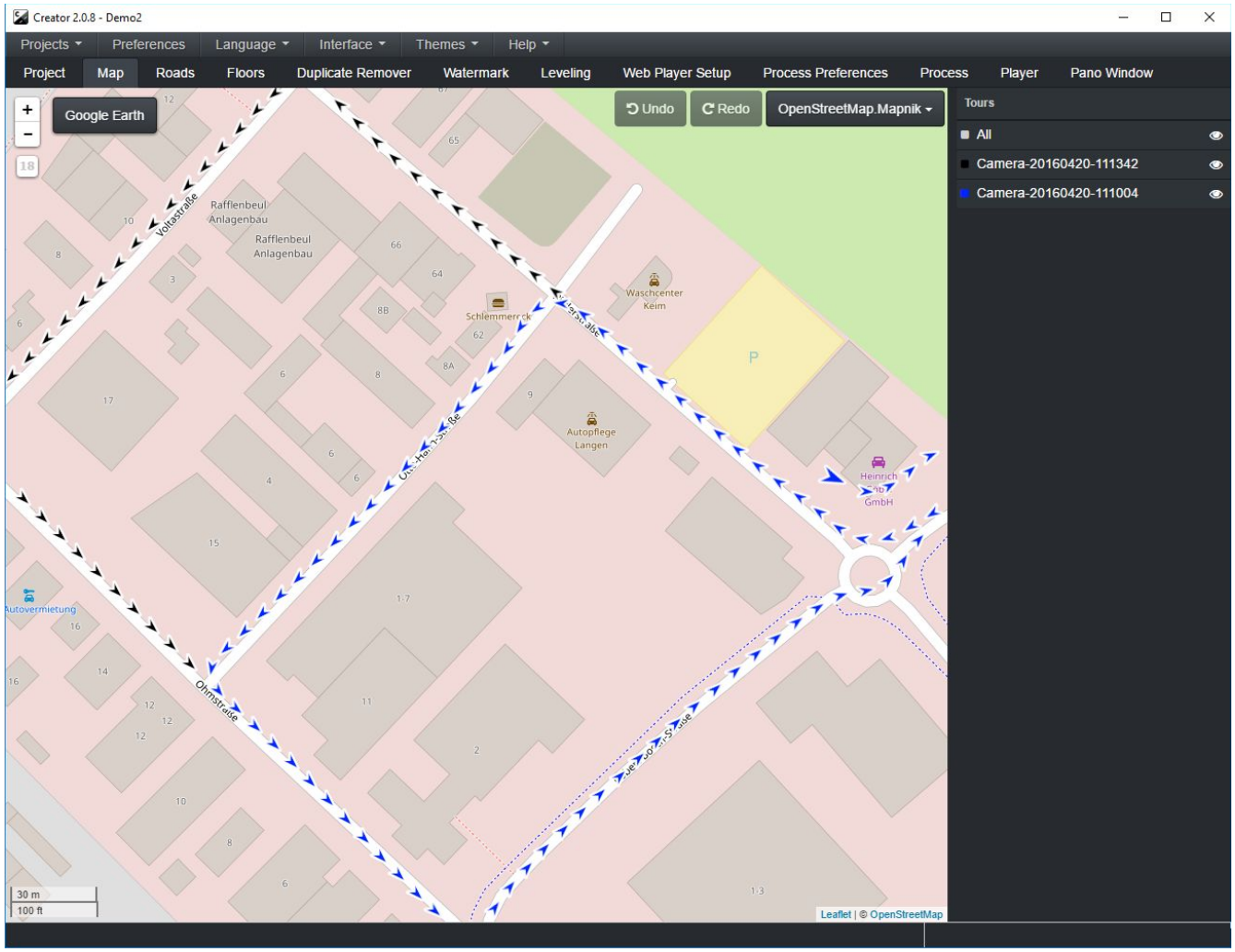
Process only tours selected from the list.

Press **CTRL** and then click on a tour to select multiple tours.

Favor newer footage:
Add streetviews for new roads, and replace existing streetviews.



Favor existing footage:
Keep existing streetviews, add streetviews for unrecorded roads:



Remove by radius
Remove all streetviews within x meters of this streetview.

Remove by time calculated from speed / Remove by time
But only if the streetview to be removed is at least x seconds newer or older than this streetview.

Remove by time calculated from speed option
This default option gives good results for most situations, to take care of huge speed differences. Depending on which value is bigger it uses either the **calculated time** or the **Remove by time**.

Remove by time
Gives you total control for special situations.

Consider Altitude
By default the altitude is not used to determine what is or is not a duplicate.

You will have to try a few times to find the optimum settings for your footage.

These three options allow you to try again and again:

Reset all streetviews
Reset all streetviews deactivated by **Duplicate Remover** and **Separate by Distance**

Check the Duplicate Remover results on the Map tab.

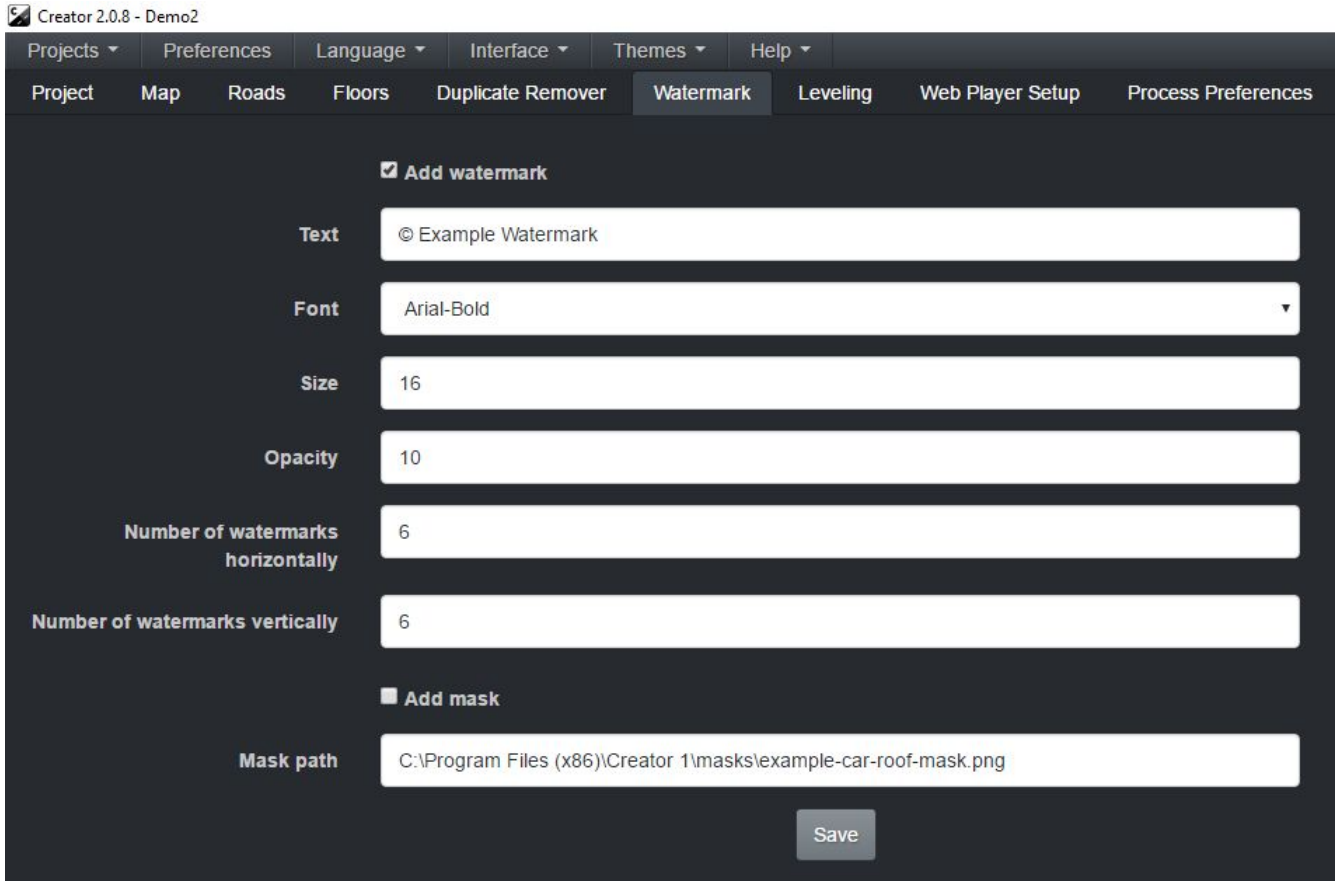
You then can fine-tune this by manually activating or deactivating streetviews.

Manual changes will be kept when running the Duplicate Remover again.

By default, manual edits are set to overrule results from the Duplicate Remover.

Watermark

Add watermarks to the streetview. The changes in this tab can be previewed in the **Leveling** tab.



Add watermark
Add watermarks to the resulting streetview.

Text
Watermark text.

Font
Watermark font name, font list 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).

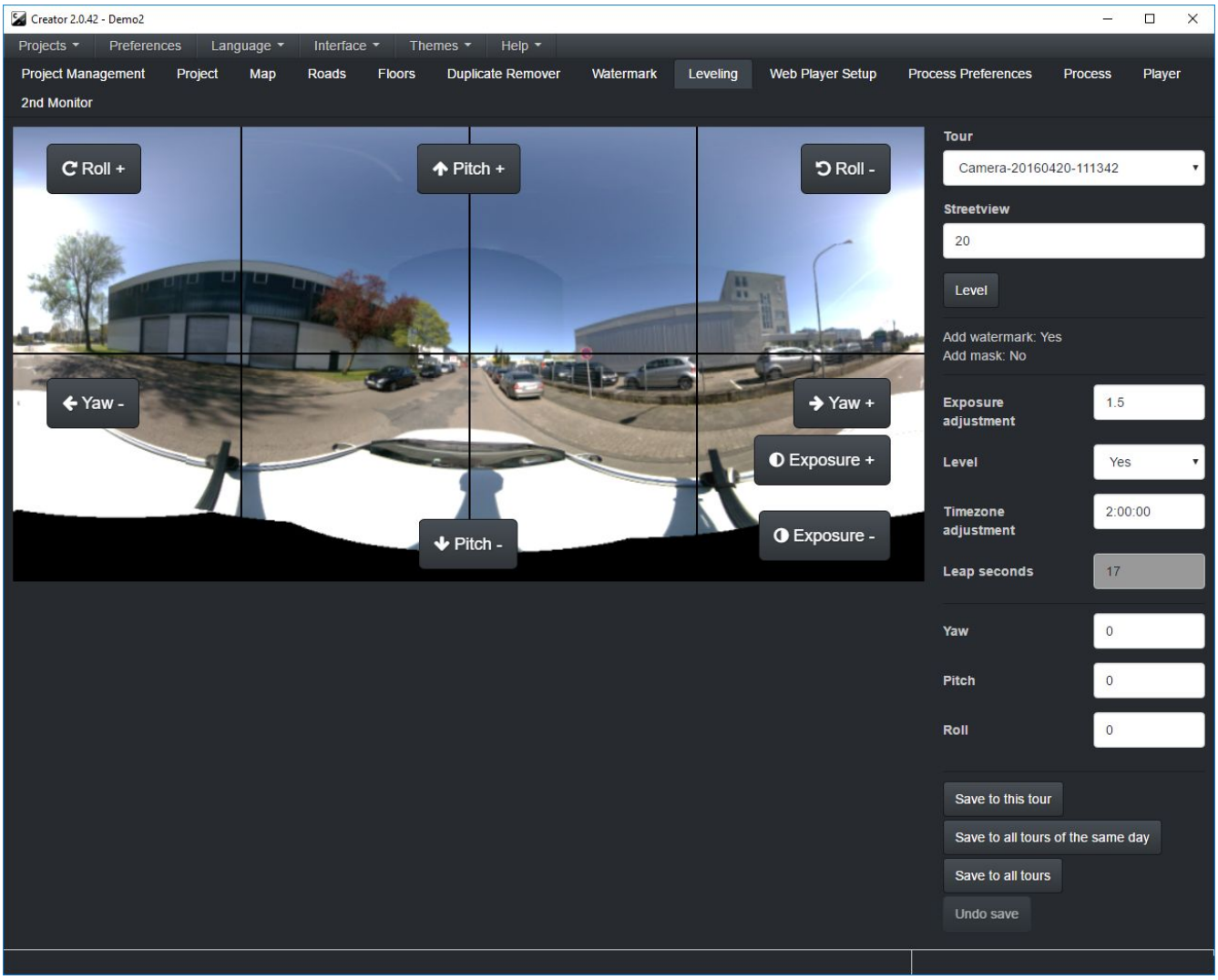
Number of watermarks vertically
How many watermarks to place vertically (up-down).

Add mask
A mask will cover the car's rooftop.
It is a transparent PNG image overlaid on top of the streetview.
A sample mask can be found in
C:\Program Files (x86)\Creator\masks\example-car-roof-mask.png

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

Leveling

Adjust for the difference between the camera and the leveling sensor.



In perfect world
- the camera would be mounted 100% vertical.
- the leveling sensor would be mounted 100% horizontal.
- both would look exactly forward, and in 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 name into the **Panorama** filed.

Click the **Save to this tour** button to save the values to this tour only.

If the camera mount and the leveling device mount have not been removed from the car in between tours, you can use the same settings for all tours in the project.

Click on **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.

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

Otherwise adjustment will need to be done once for each tour and saved with the **Save to this tour** button. You can select the tour at the top-right hand.

You can see the **Yaw, Pitch and Roll** values of all tours at once on the Projects tab.

It's possible to undo any saved values by clicking on the **Undo save** button

Exposure adjustment
Default is 1.5. This makes all the images a bit brighter than the source images.
If you want no change, set it to 0.

Level
Yes: The most commonly used set-up.
Level with the log value and the values from the Adjust tab.
No: No leveling at all.
Adjust: Use values from the Adjust tab only. Ignore the log data.

Timezone adjustment
Creator automatically calculates the local time from
- the tour name, which includes the tablets time
- the camera's log data, which has the GPS time.

In case the tablet time was not set to local time, you can adjust it here.

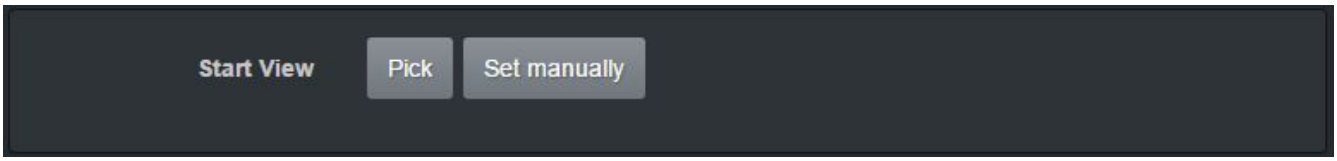
Web Player Setup

Preferences sub-tab

Set all the player preferences for the player.xml file.

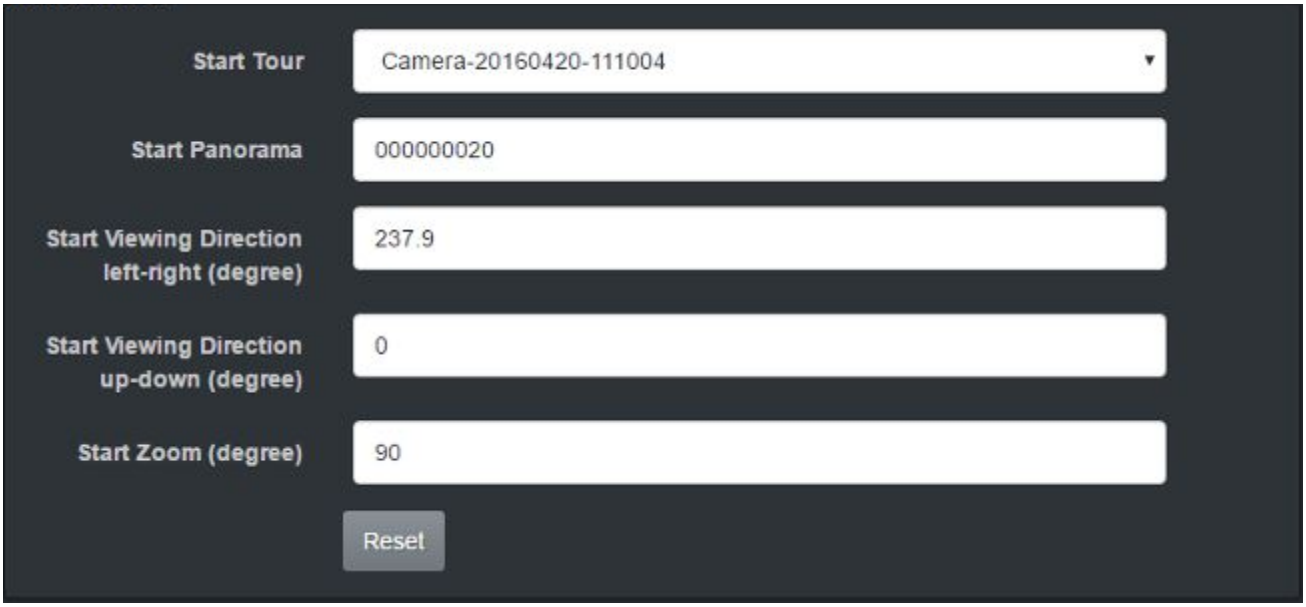
Alternatively you can change this by editing the **player.xml** file.
Manual edits made to the player.xml file will not be shown here.

Basic



Pick
Pick the start view from the **Player** tab

Set manually



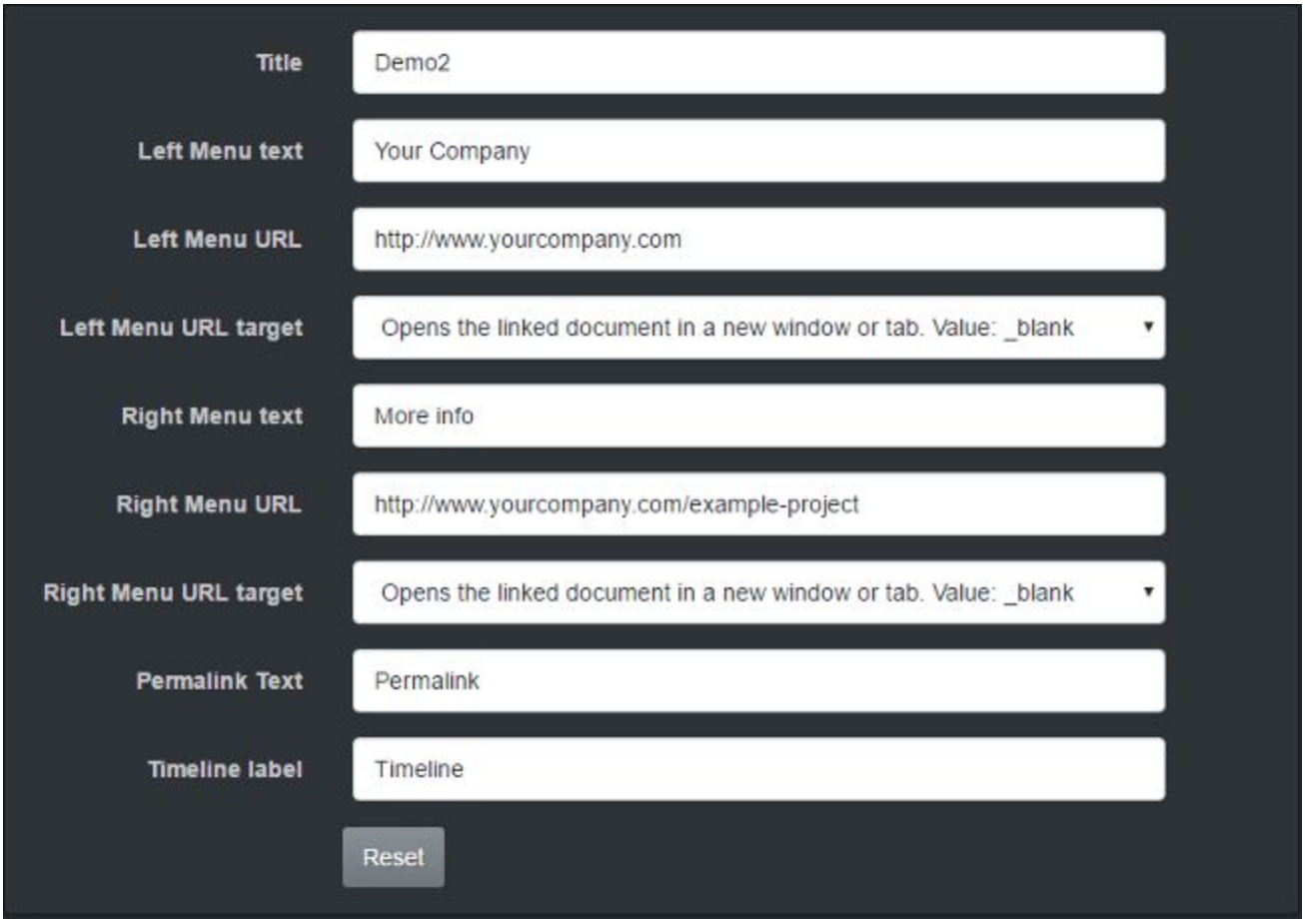
Start Tour

Start Panorama

Start Viewing Direction left-right (degree)

Start Viewing Direction up-down (degree)

Start Zoom (degree)



Title
The project name will be suggested by default. You can overwrite it.

Left Menu text

Left Menu URL

Left Menu URL target

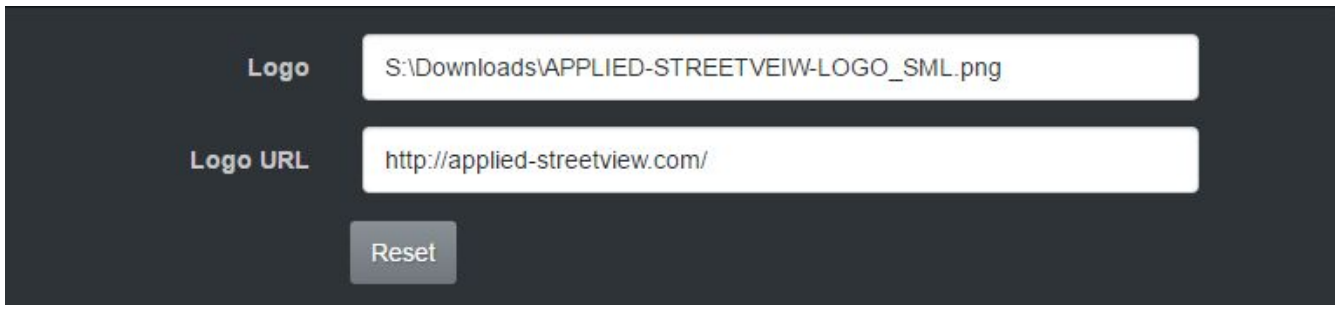
Right Menu text

Right Menu URL

Right Menu URL target

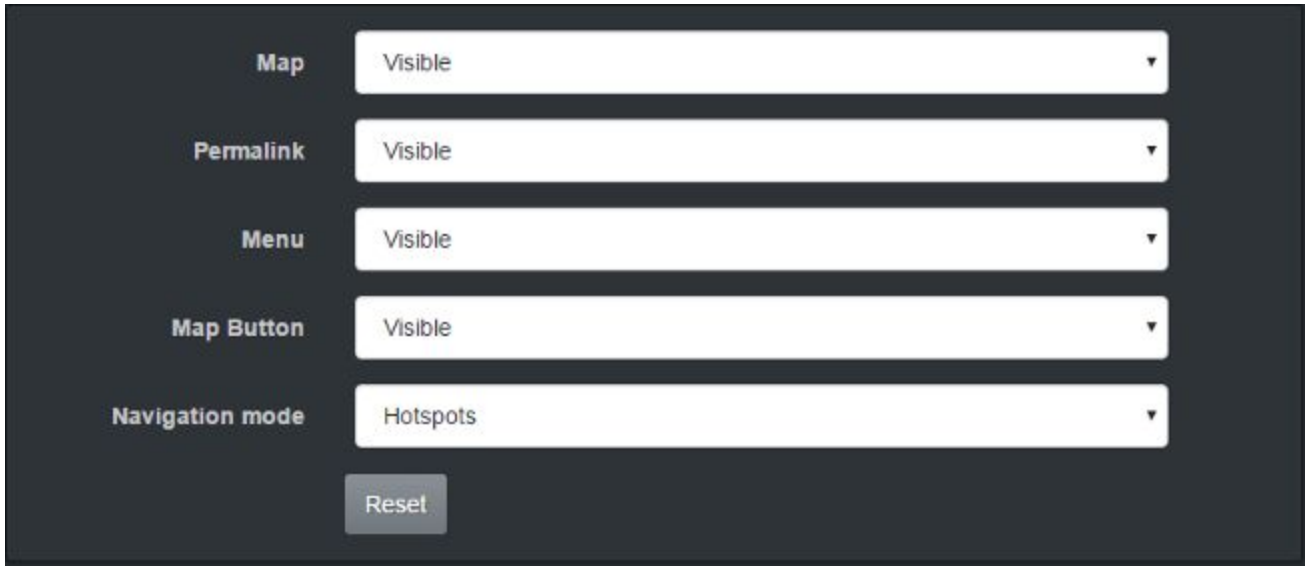
Permalink Text

Timeline label



Logo
Path to a logo image in PNG format to be displayed in the top right corner of the player.

Logo URL
Clicking on the logo will open the specified URL.



Map
Show/Hide Map

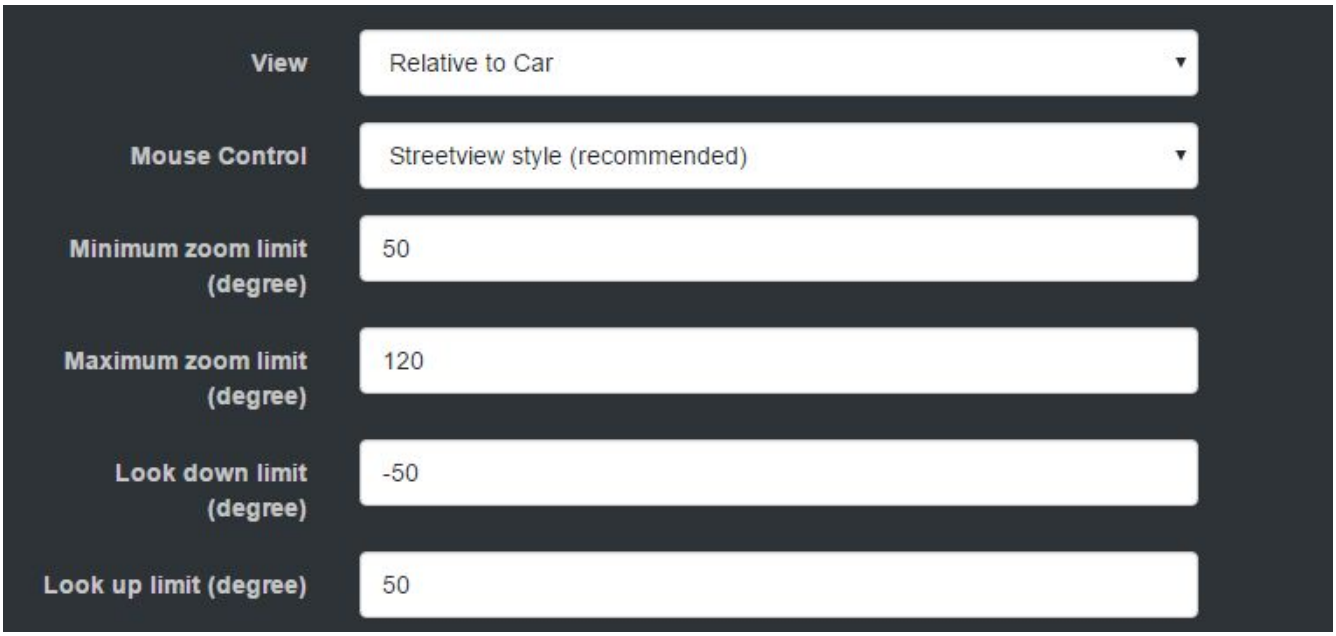
Permalink
Show/Hide Permalink

Menu
Show/Hide the Menu

Map Button
Show/Hide the Map button

Navigation mode
Arrows/Hotspots/Arrows and Hotspots

Streetview



View
Relative to Car/Forward

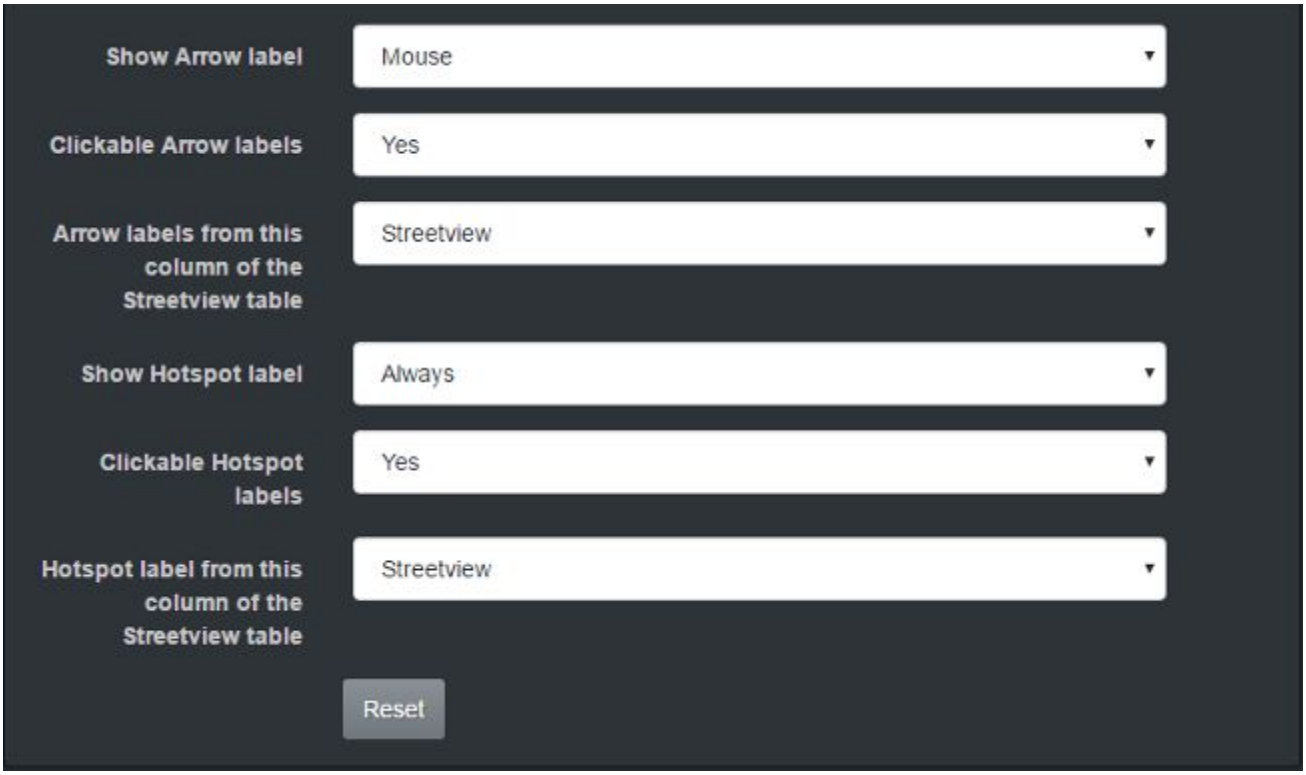
Mouse Control
Streetview style (recommended) / Old-school streetview style

Minimum zoom limit (degree)

Maximum zoom limit (degree)

Look down limit (degree)

Look up limit (degree)



Show Arrow label
Mouse/None/Always

Clickable Arrow labels

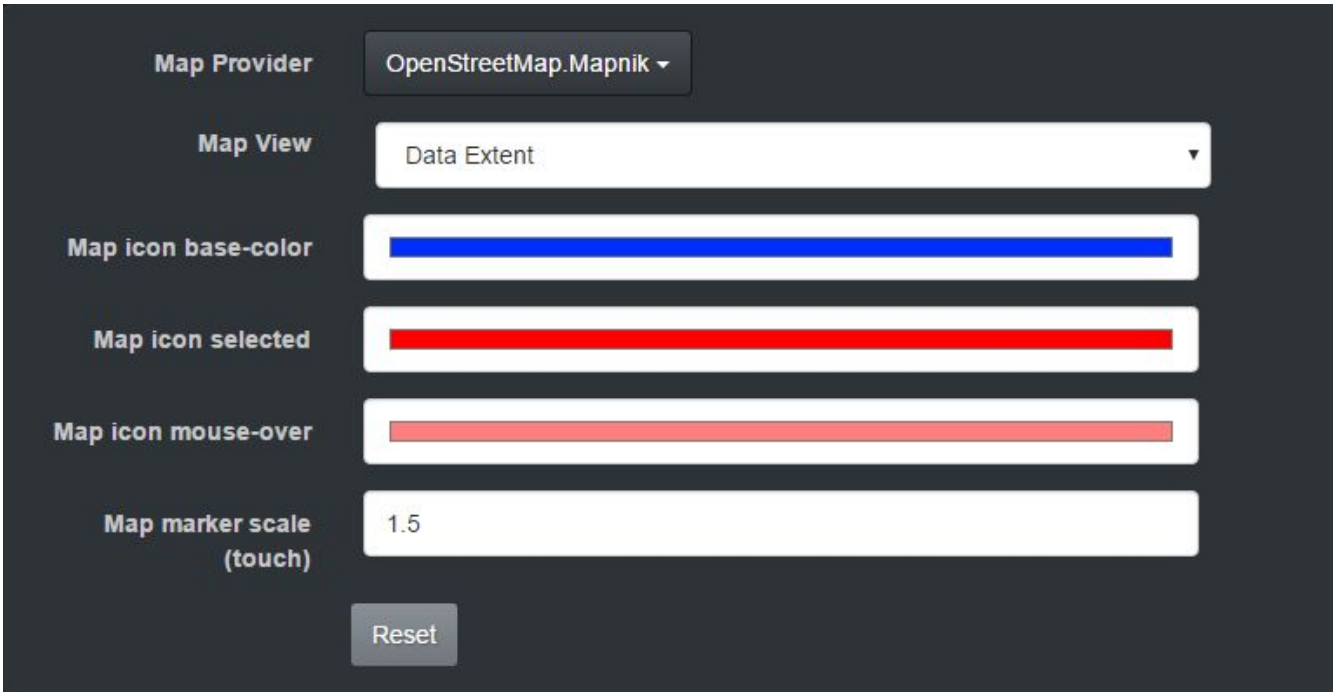
Arrow labels from this column of the Streetview table
Road/Streetview/Description

Show Hotspot label
Mouse/None/Always

Clickable Hotspot labels

Hotspot label from this column of the Streetview table
Road/Streetview/Description

Map



Map Provider
Select any online base layer from the dropdown menu or define your own custom map tile set.

Map View
Start Panorama/Data Extent/Lat,Lon

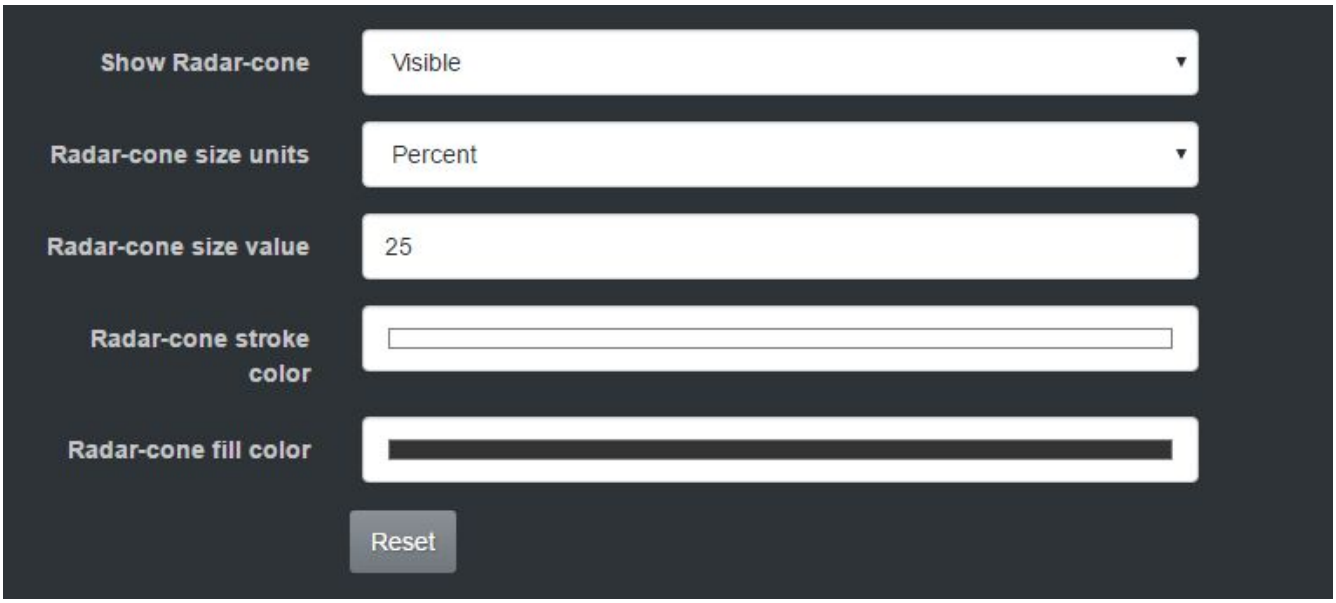
Map icon base-color
Color of the default map icon

Map icon selected
Color of the selected map icon

Map icon mouse-over
Color of the map icon when the mouse cursor is on it

Map marker scale (touch)
Adjust marker scale on touchscreen devices

Radar-cone



Show Radar-cone
Show/Hide Radar-cone

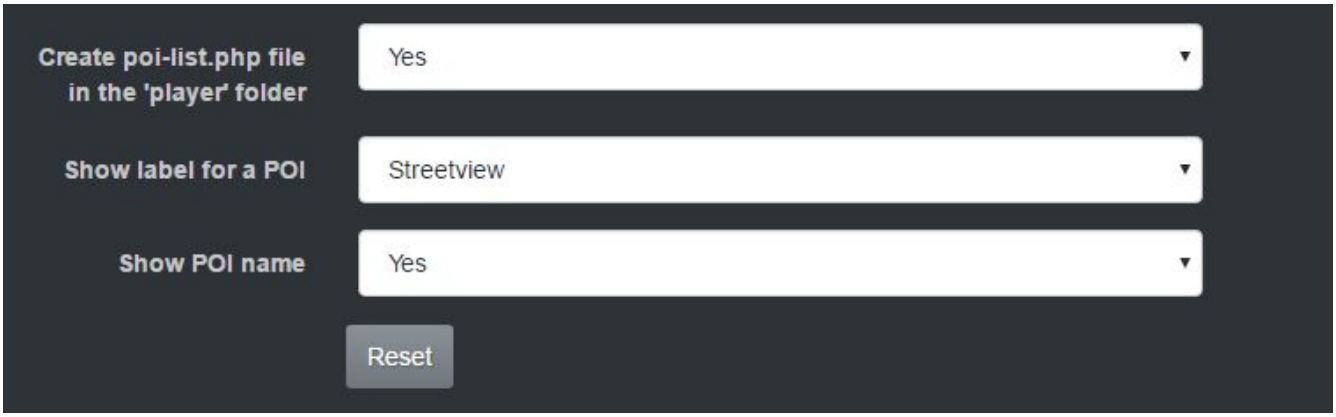
Radar-cone size units
Units used to resize the Radar-cone. If percentage option is selected, the percentage refers to the total map height.

Radar-cone size value
Radar-cone size value

Radar-cone stroke color
Color of the Radar-cone border

Radar-cone fill color
Color of the Radar-cone

POI



Create poi-list.php file in the 'player' folder

Show label for a POI

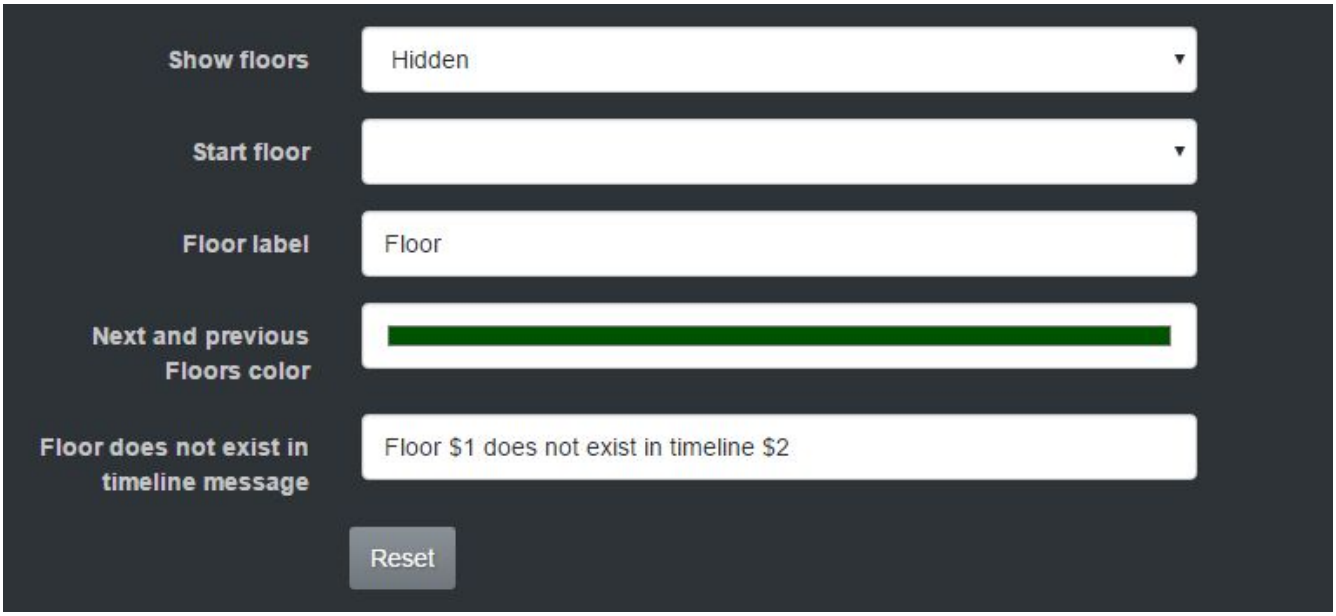
None	Do not display a label for the POI
Streetview	Use the streetview name as the label for the POI
Road	Use the road name as the label for the POI

Show POI name

Comment only	Display the POI comment only
Yes	Display the POI name and the comment
No	Do not display the POI name

In case you need to create a more advanced POIs file, set **Interface** to **Advanced**, then use **Tools -> Export**, for example in .csv format.
You can then construct any kind of links easily with the free Libre Office Calc or with MS Excel by chaining the desired values together.

Floors



Show floors
Show floors arrows and hotspots

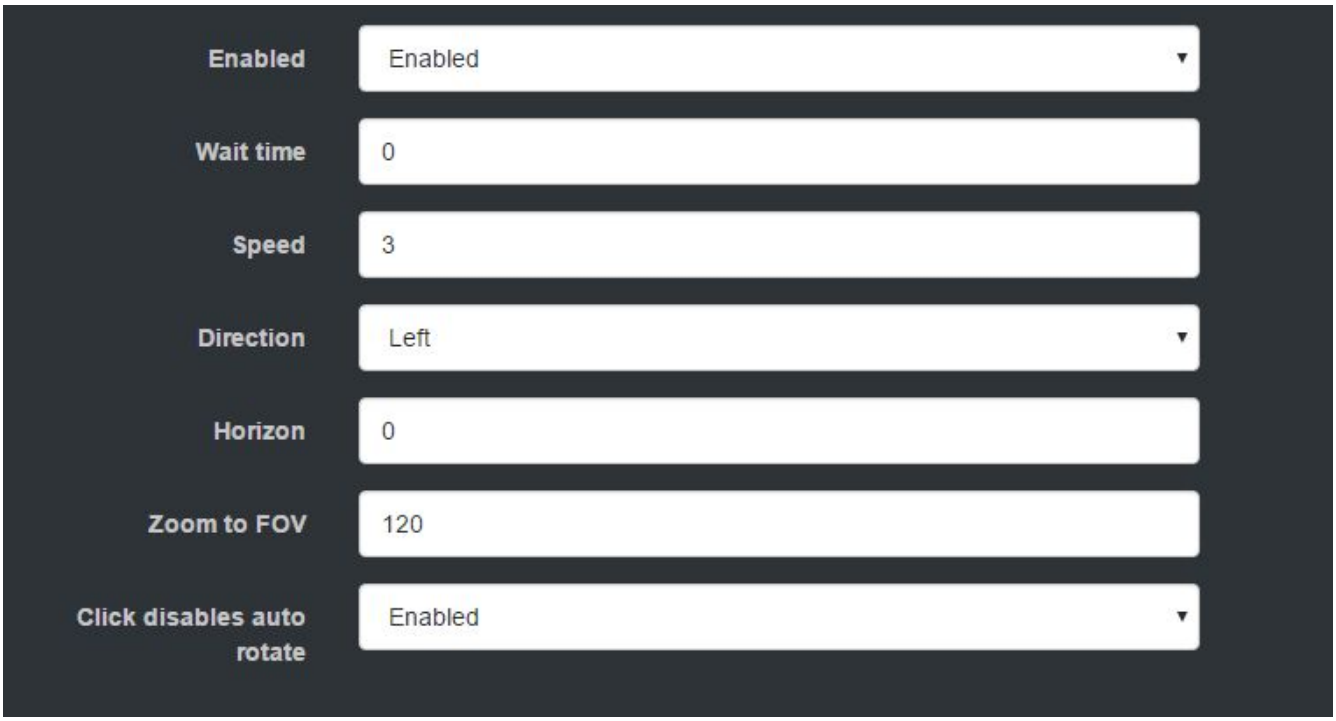
Start floor
Default floor to start the Player with

Floor label

Next and previous Floors color

Floor does not exist in timeline message

Automatic rotation



Enabled

Wait time
Time in seconds before the rotation starts

Speed
Rotation speed

Direction
Automatically pan streetview either to the right or left

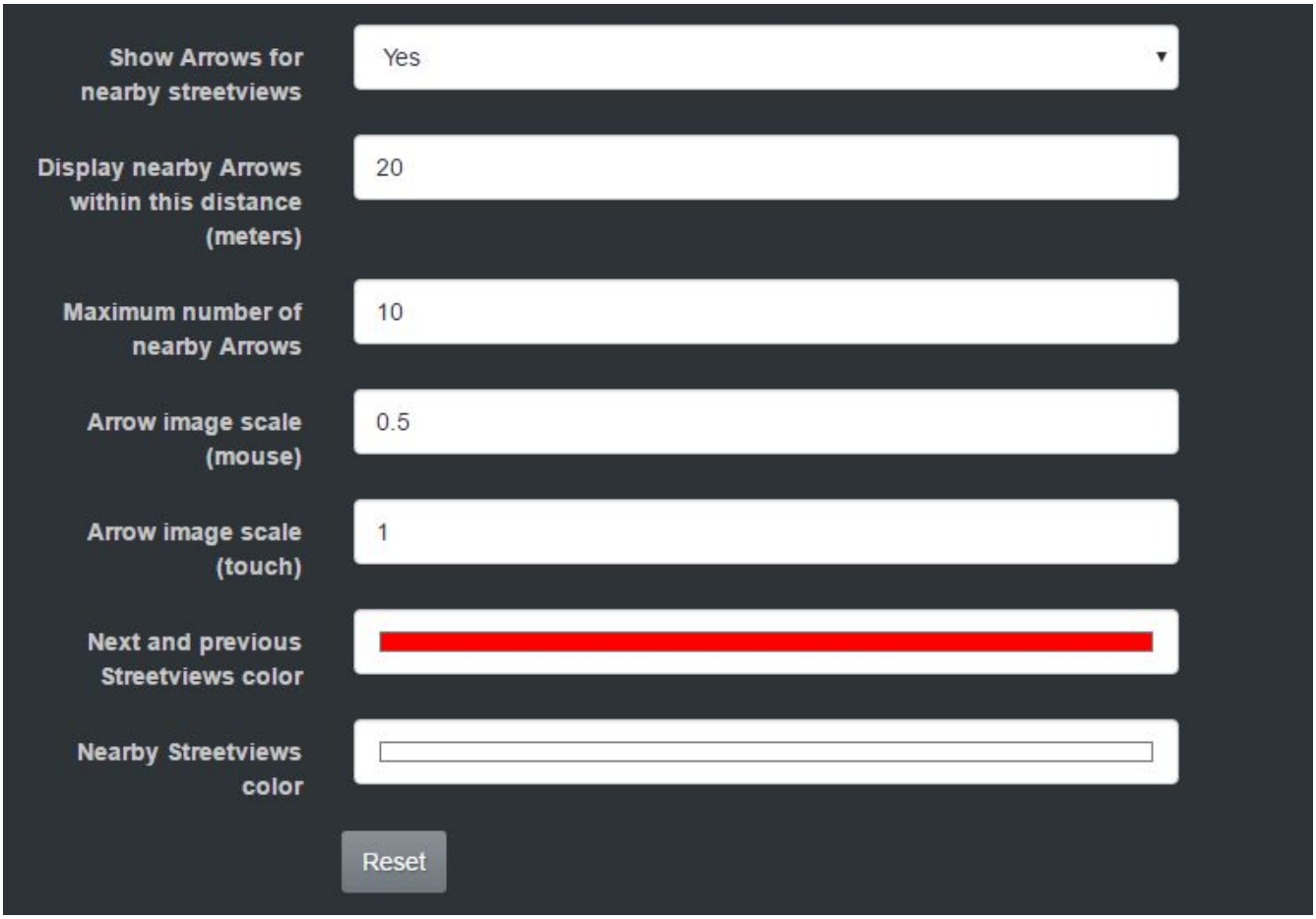
Horizon
Automatically pan streetview to match a specific horizon

Zoom to FOV

Click disables auto rotate

Expert

Arrows



Show Arrows for nearby streetviews

Display nearby Arrows within this distance (meters)

Maximum number of nearby Arrows

Arrow image scale (mouse)

Arrow image scale (touch)

Next and previous Streetviews color

Nearby Streetviews color

Hotspots

Camera height offset from ground level (meters)

Show nearby Hotspots

Display nearby Hotspots within this distance (meters)

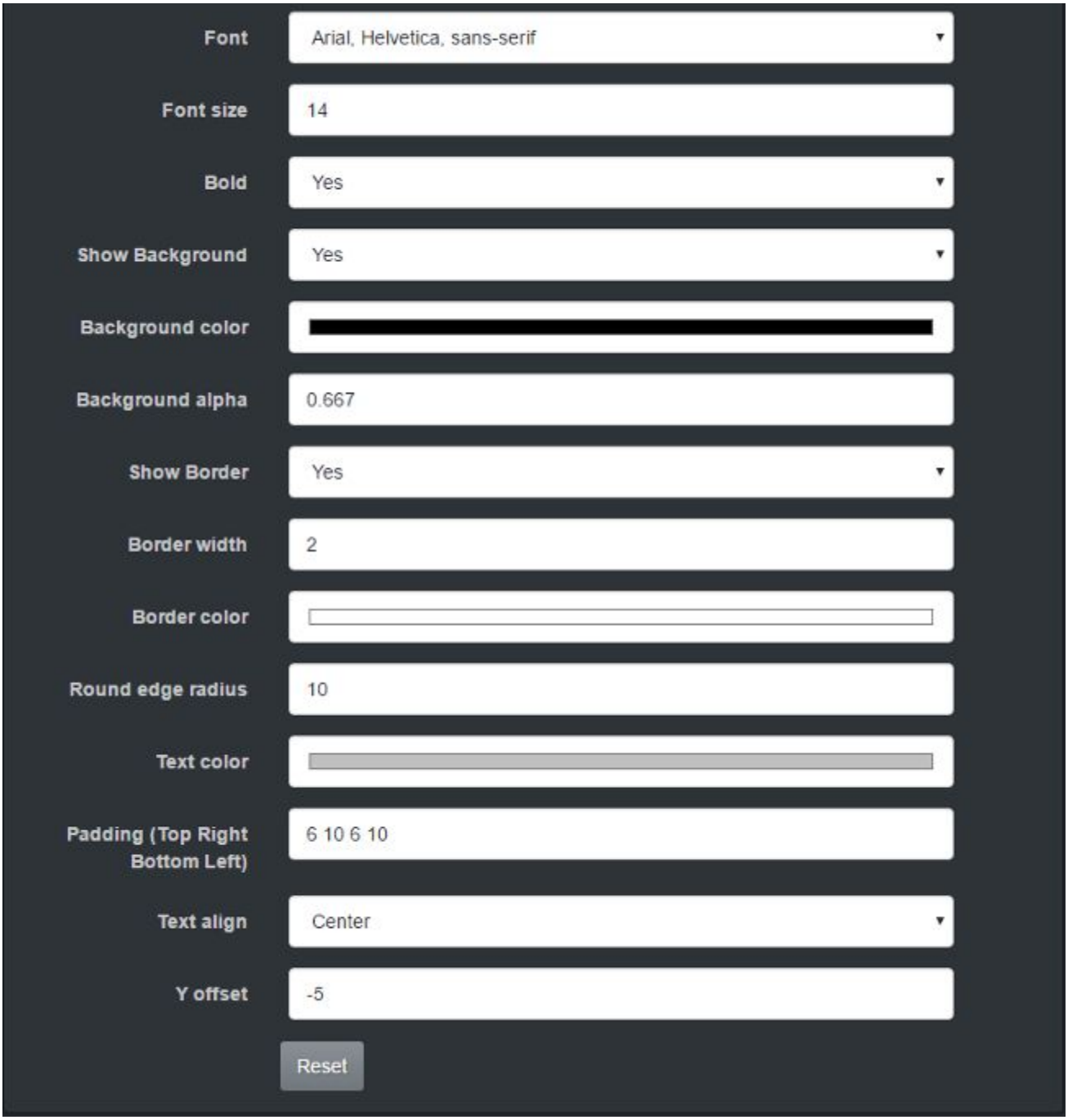
Maximum number of nearby Hotspots

Hotspot width (pixels)

Hotspot color

Hotspot opacity

Arrow label style



Font

Font size

Bold

Show Background

Background color

Background alpha

Show Border

Border width

Border color

Round edge radius

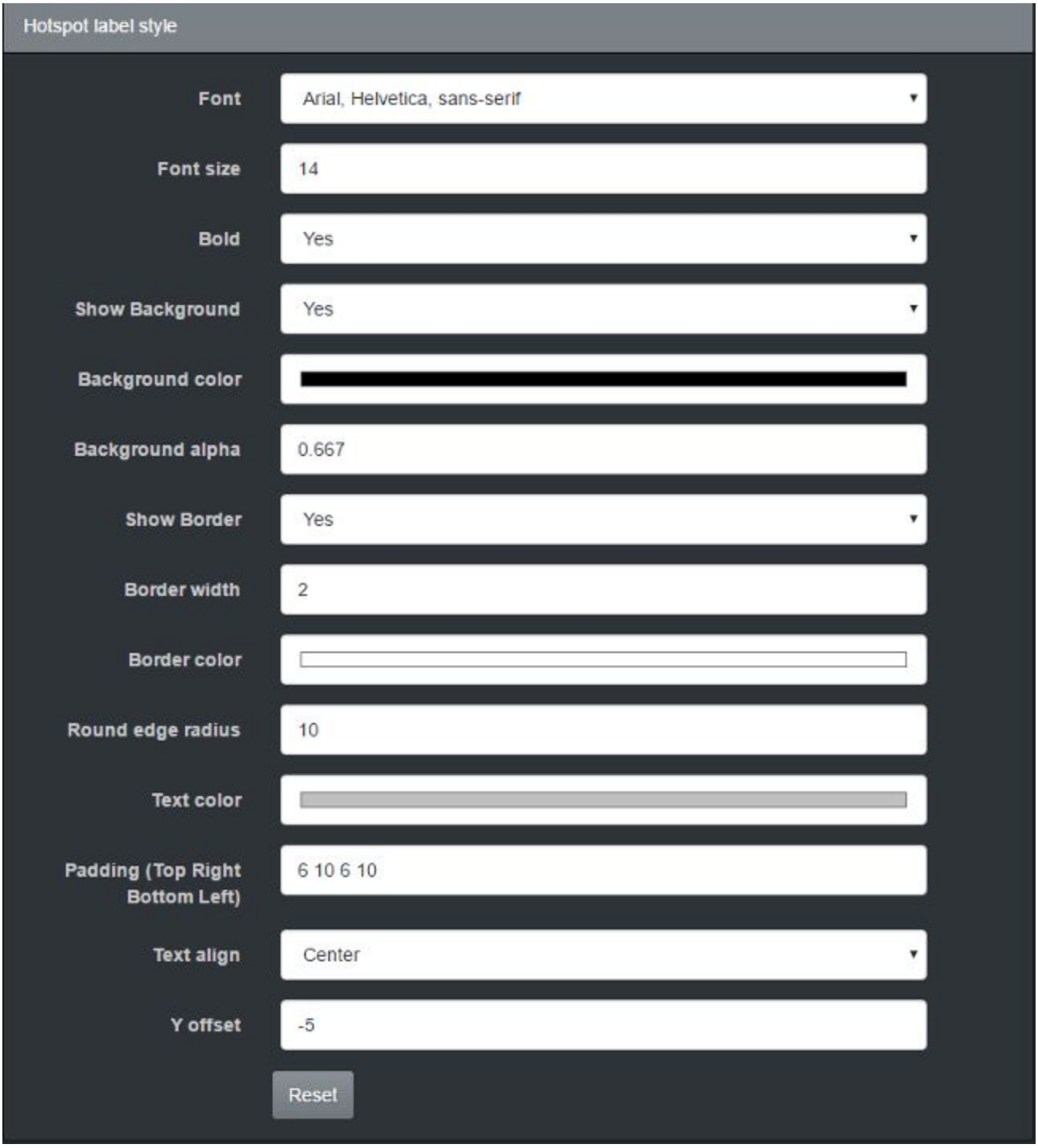
Text color

Padding (Top Right Bottom Left)

Text align

Y offset

Hotspot label style



Font

Font size

Bold

Show Background

Background color

Background alpha

Show Border

Border width

Border color

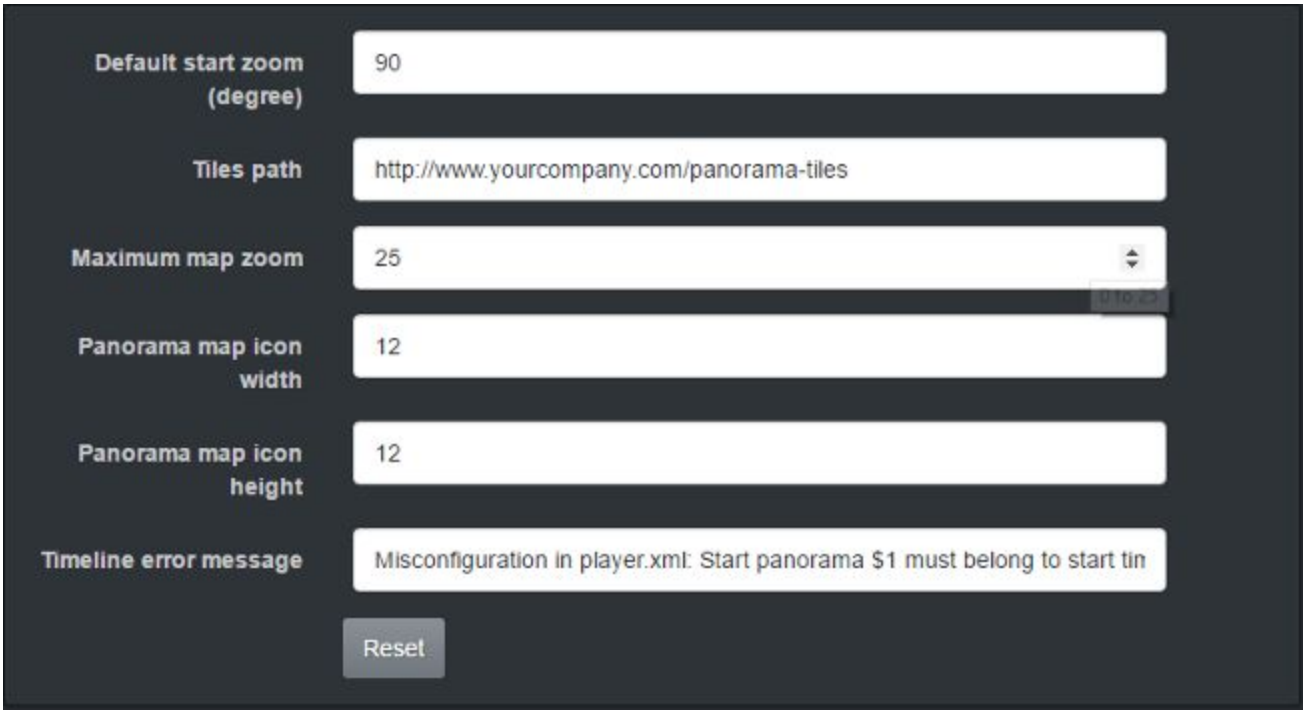
Round edge radius

Text color

Padding (Top Right Bottom Left)

Text align

Y offset



Default start zoom (degree)

Tiles path
The Panorama-tiles url should point to the streetviews-tiles folder uploaded to a web-server. There is no need to add a \ at the end of the url.

Maximum map zoom

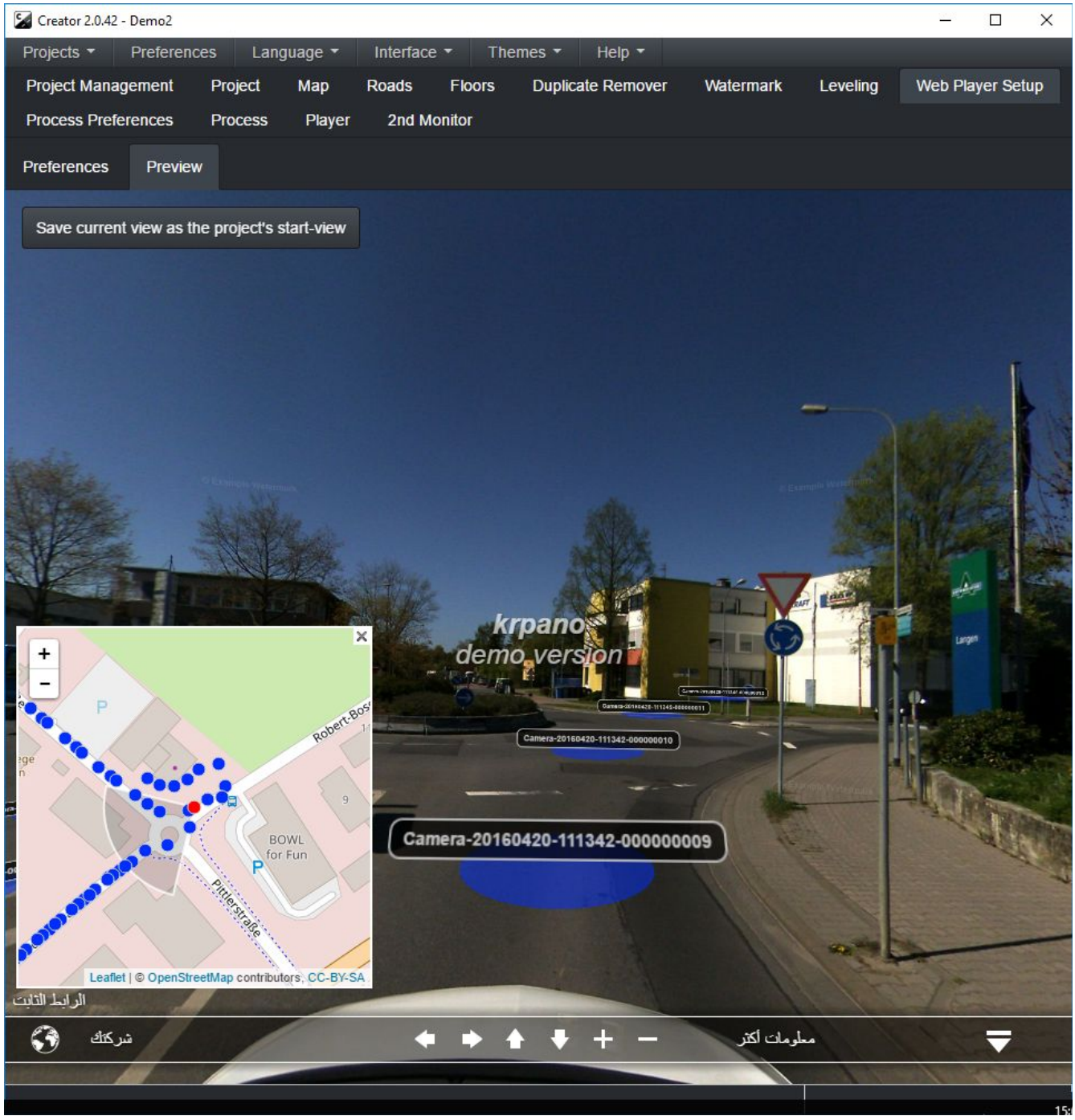
Panorama map icon width

Panorama map icon height

Timeline error message

Preview sub-tab

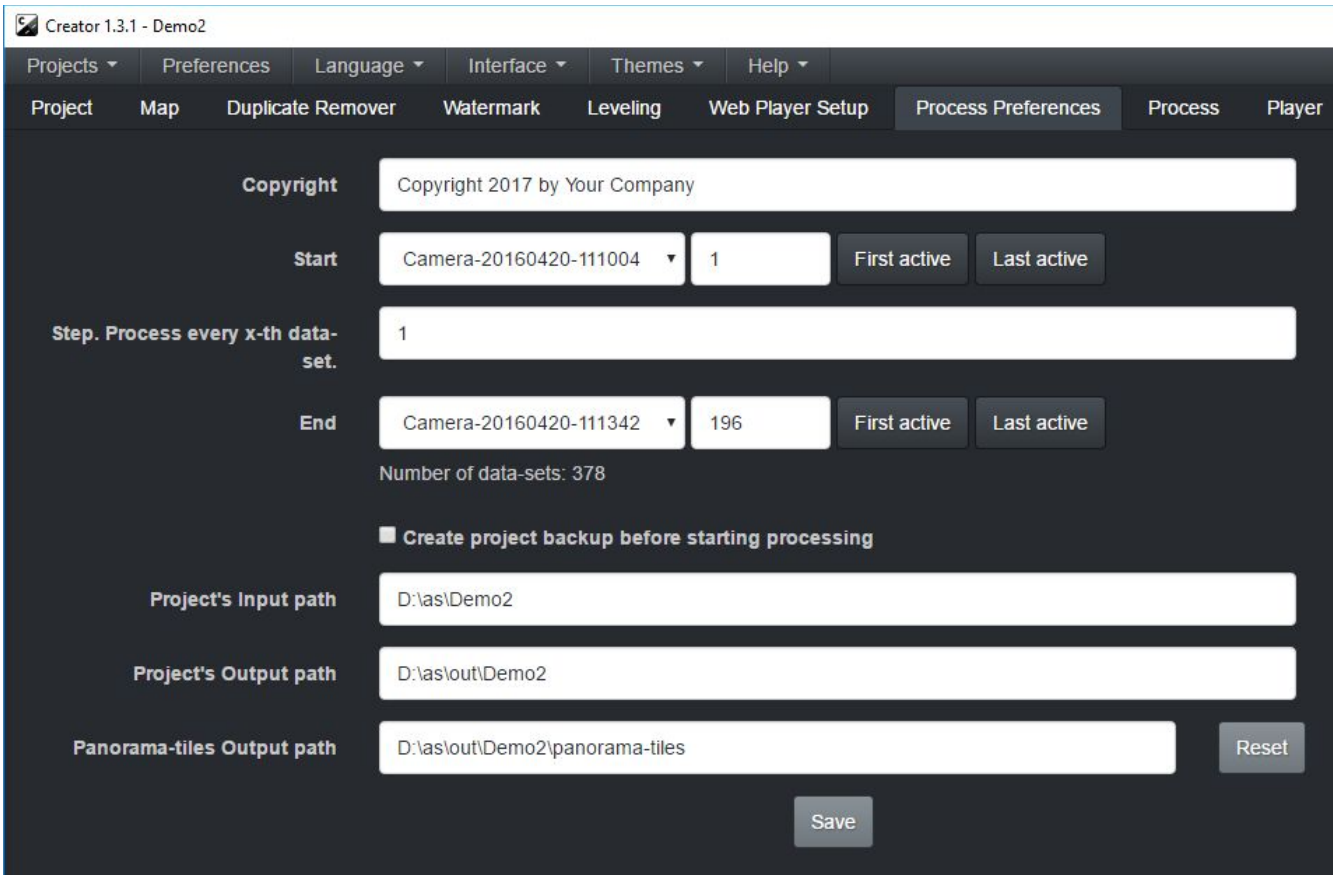
See a preview of what the Player and the Panorama will look like.



After adjusting the view (Start Tour, Start Pano, Start Viewing Direction, Start Zoom) click on **Save current view as the project's start-view** to make the current view the start-view of the project.

You can go back and forth between **Preferences** and **Preview** until you are happy with the resulting player.

Process Preferences



Copyright
This is written into the EXIF metadata of the equirectangular .jpg streetviews that have been created.

Start, **Step** and **End** allow for quick adjustments independent of the Map tab.
Very useful to create a project overview quickly.

Start
Start processing with this tour and streetview.

Step. Process every x-th data-set

For example if the total number of streetviews is 100.000 then:
Step 100 will process 1% of the active streetviews only: 1000 streetviews.
Step 1.000 will process 0.1% of the active streetviews only: 100 streetviews.
Step 10.000 will process 0.01% of the active streetviews only: 10 streetviews.

End
End processing with this tour and streetview.

Number of data sets
Calculated based on Start, Step, End and the streetviews active on the map tab only.
Already existing output and eventual **Skip** settings on the Process tab will not be considered.

Create project backup before starting processing
If ticked before processing, a backup of the project will be created in the Output path folder.

Project's Input path
Path to this project's source folder.

Project's Output path
Path to this project’s output folder.

Panorama-tiles Output path
Path to the streetview-tiles output folder.
Allows you to save tiles directly to a USB-HDD for shipping to, for example, a datacenter.

Process

Web-Player

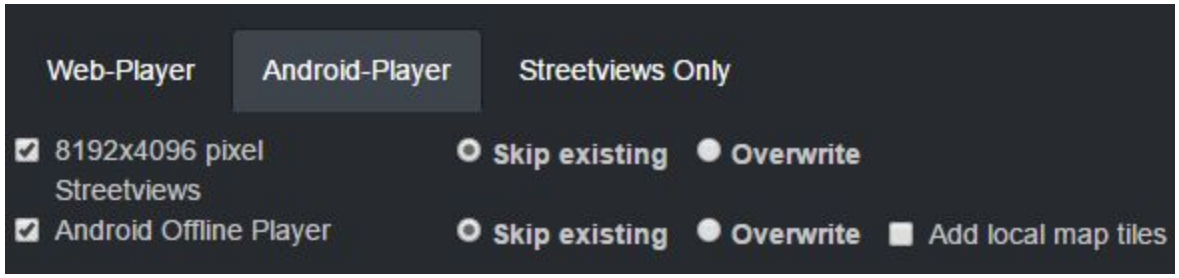
Creates a working web-player that you can install to a web-server.

From X existing streetviews only:
Do not create new streetviews. Create tiles from already existing streetviews only.

Add local map tiles:
If **custom map tiles** are set up in the map tab.

Android-Player

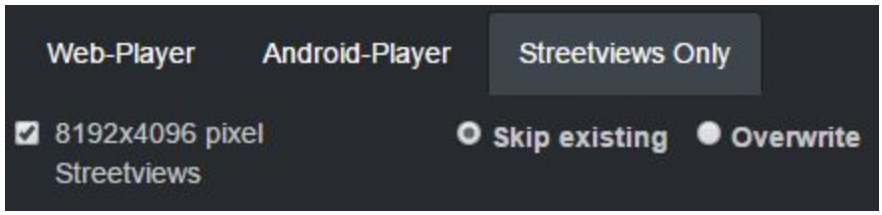
Generate a ZIP archive that can be opened with the Android Player App.
It works offline, without Internet connection.



Add local map tiles:
If **custom map tiles** are set up in the map tab.

Streetviews Only

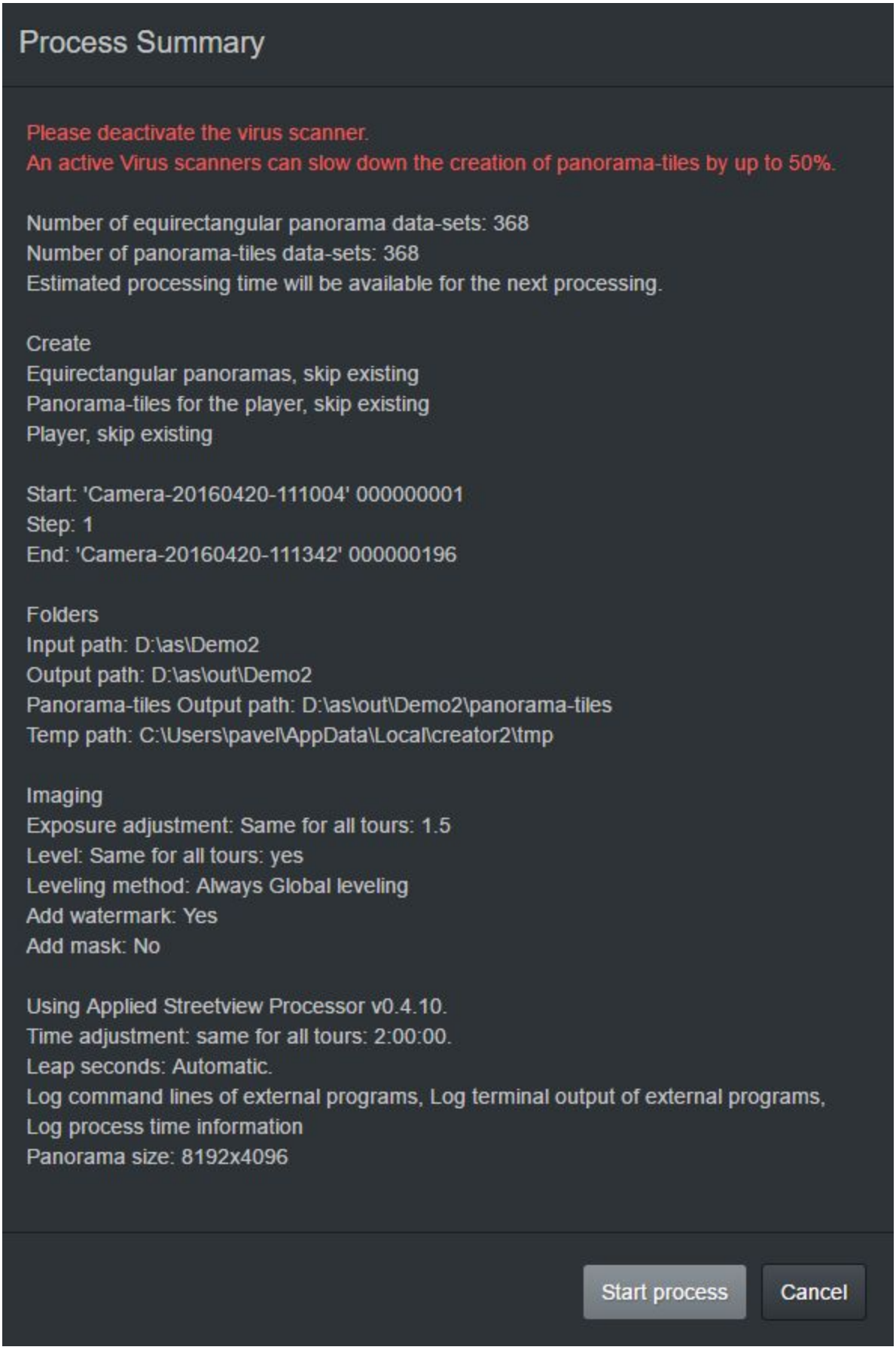
Generate 8192 x 4096 pixel Streetviews only.
Use this mode for generating streeviews for either the Photogram or your own workflow.



Process
When starting to process, a pop-up appear and will summarize the settings.
Click **Start process** or **Cancel** to make adjustments.

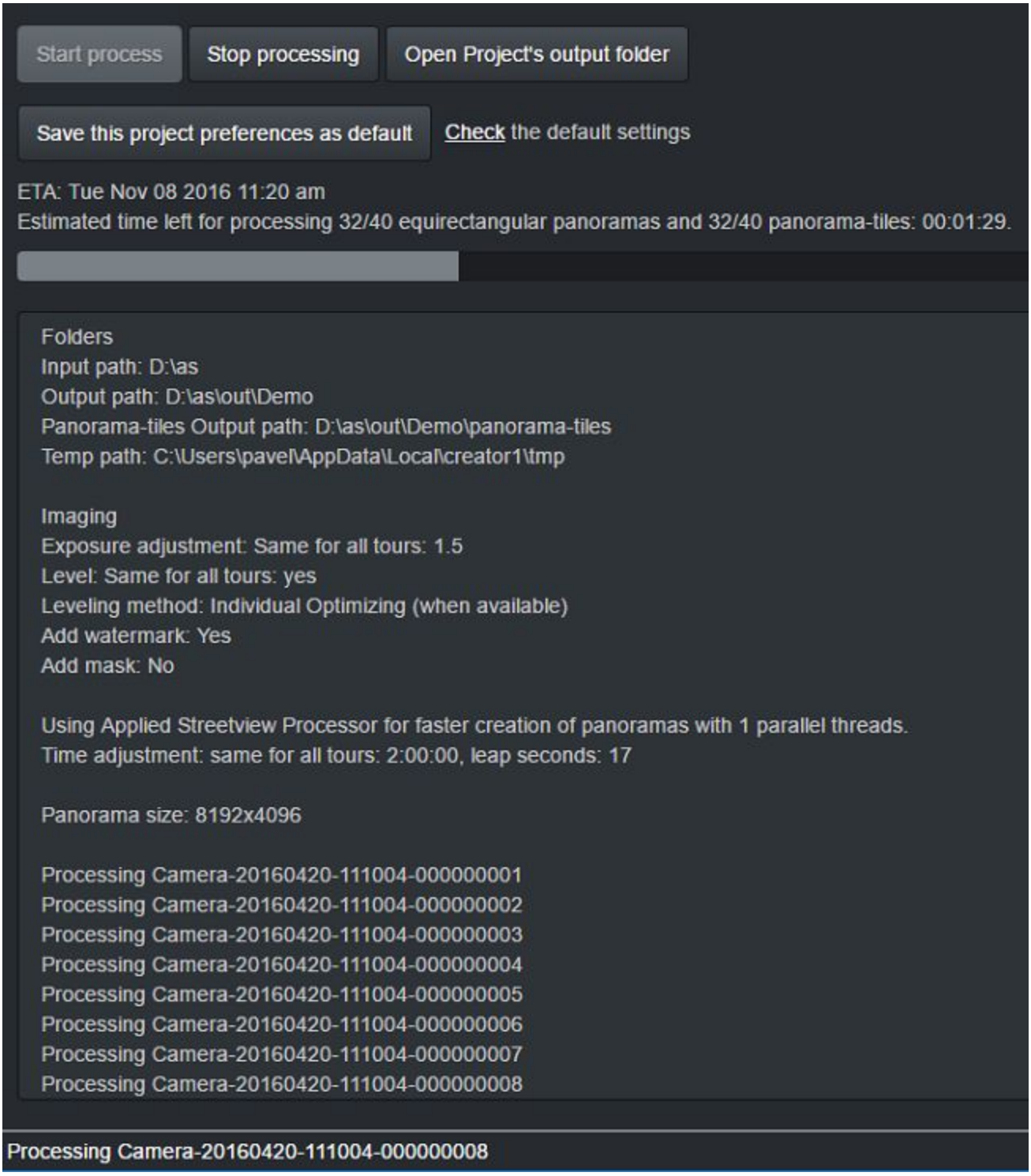
Open Project's output folder
Click to Open the project's output folder in the Windows Explorer.

Save this project preferences as default
Save these project preferences as a default for new projects.
Click on **Check** to open the **Preferences - For new projects** window.


Process Summary
Please deactivate the virus scanner.
An active Virus scanners can slow down the creation of panorama-tiles by up to 50%.
Number of equirectangular panorama data-sets: 368
Number of panorama-tiles data-sets: 368
Estimated processing time will be available for the next processing.
Create
Equirectangular panoramas, skip existing
Panorama-tiles for the player, skip existing
Player, skip existing
Start: 'Camera-20160420-111004' 000000001
Step: 1
End: 'Camera-20160420-111342' 000000196
Folders
Input path: D:\as\Demo2
Output path: D:\as\out\Demo2
Panorama-tiles Output path: D:\as\out\Demo2\panorama-tiles
Temp path: C:\Users\pavel\AppData\Local\creator2\tmp
Imaging
Exposure adjustment: Same for all tours: 1.5
Level: Same for all tours: yes
Leveling method: Always Global leveling
Add watermark: Yes
Add mask: No
Using Applied Streetview Processor v0.4.10.
Time adjustment: same for all tours: 2:00:00.
Leap seconds: Automatic.
Log command lines of external programs, Log terminal output of external programs,
Log process time information
Panorama size: 8192x4096
Start process
Cancel

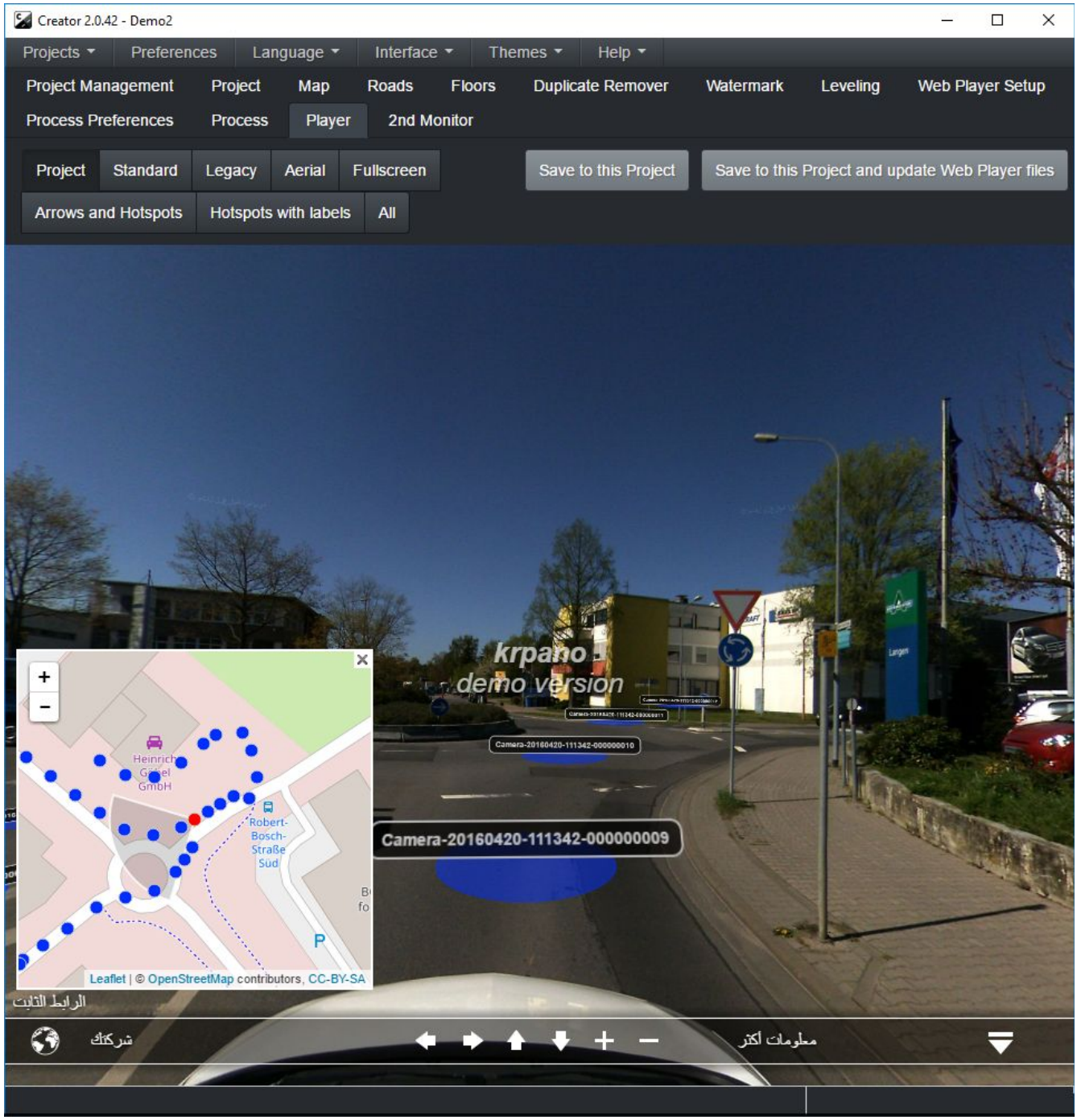
During processing you can click the **Stop processing** button at any time.
It might take a short time for the processing to stop, as processing is done in batches.

See the log displayed below.



Player

When the processing has finished, open the Player tab to see the fully functioning player:



You can easily check what the player would look like using the **Standard**, **Legacy, Aerial Fullscreen, Arrows and Hotspots, Hotspots with labels, All** layouts:

Click **Save to this Project** to save the current Layout of your project.

Please note that you will then need to re-create the Web Player on the Process tab.
Set **Web Player** to **Overwrite**.

Layouts:

Project
Show the project according to its settings.

Legacy
Navigation mode - Arrows
Base Layer - OpenStreetMap.Mapnik
Map - Visible
Permalink - Visible
Menu - Visible
Show Arrow label - Mouse
Show Hotspot label - None

Standard
Navigation mode - Hotspots
Base Layer - OpenStreetMap.Mapnik
Map - Visible
Permalink - Visible
Menu - Visible
Show Arrow label - Mouse
Show Hotspot label - None

Aerial
Navigation mode - Hotspots
Base Layer - HERE.satelliteDay
Map - Visible
Permalink - Visible
Menu - Visible
Show Arrow label - Mouse
Show Hotspot label - None

Fullscreen
Navigation mode - Hotspots
Base Layer - OpenStreetMap.Mapnik
Map - Hidden
Permalink - Hidden
Menu - Hidden
Show Arrow label - Mouse
Show Hotspot label - None

Arrows and Hotspots
Navigation mode - Arrows and Hotspots
Base Layer - OpenStreetMap.Mapnik
Map - Visible
Permalink - Visible
Menu - Visible
Show Arrow label - Mouse
Show Hotspot label - None

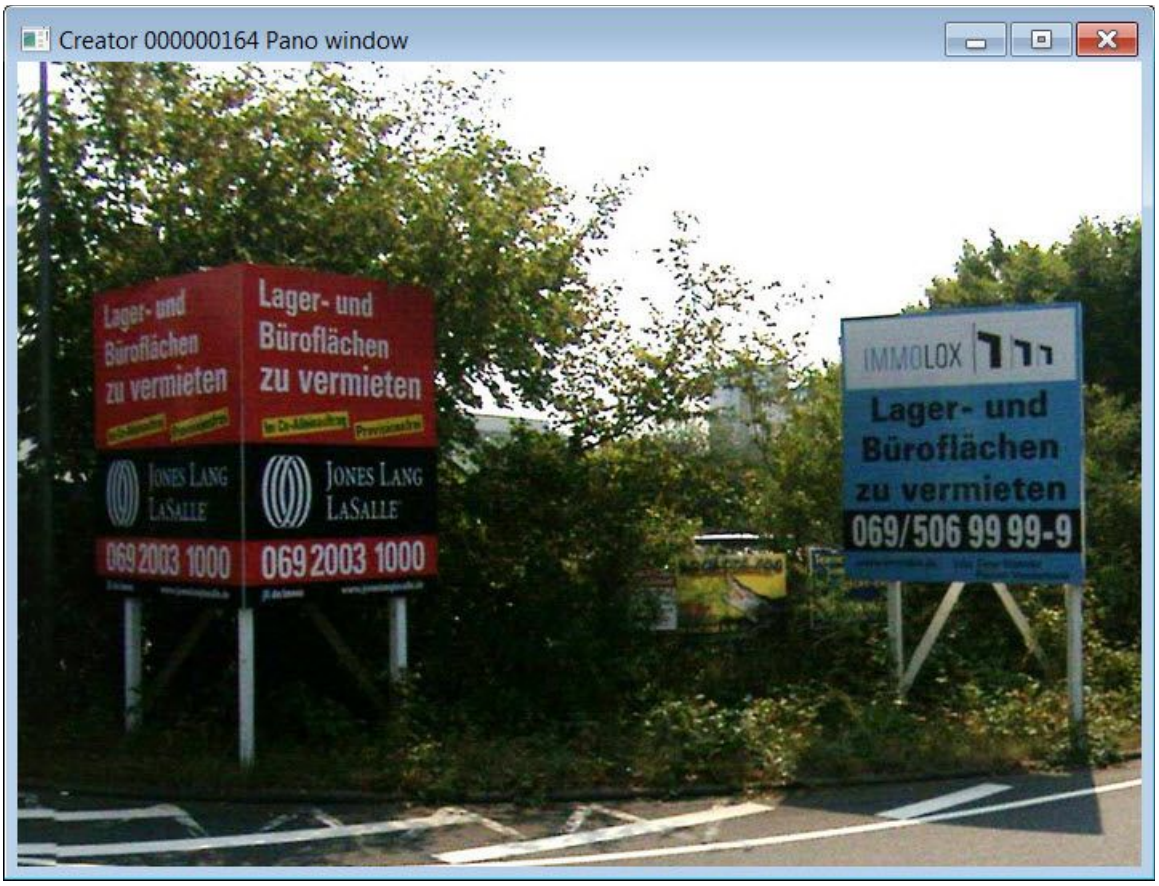
Hotspots with labels
Navigation mode - Arrows and Hotspots
Base Layer - OpenStreetMap.Mapnik
Map - Visible
Permalink - Visible
Menu - Visible
Show Arrow label - Mouse
Show Hotspot label - Always

All
Navigation mode - Arrows and Hotspots
Base Layer - HERE.satelliteDay
Map - Visible
Permalink - Visible
Menu - Visible
Show Arrow label - Mouse
Show Hotspot label - Always

Save to this Project
Save the current Layout as the Web Player preferences for this project.

Pano Window

A second monitor is recommended for this feature.

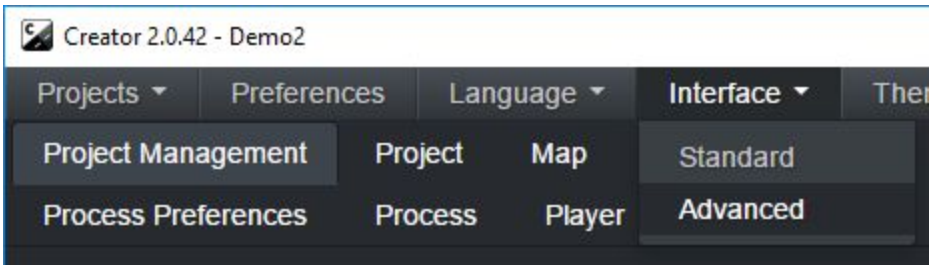


Shows the streetviews. You can zoom in and out on them.

Great to move streetviews manually on the Map tab.

If the streetview has already been processed, it will be displayed right away.
If not, it will be processed and displayed.

Advanced Features



Timeline

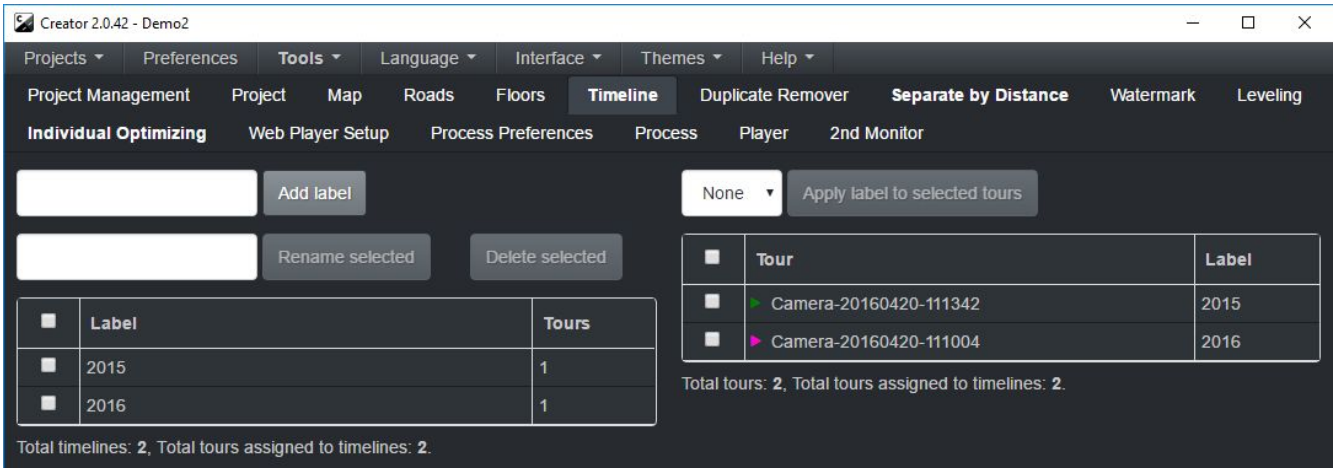
Record the same road or area multiple times to document change.

It looks like this:
http://players.applied-streetview.com/Timeline/

Create a few timeline labels, such as **Before** and **After** or dates like **2015** or **2016.** Assign one or many tours to each timeline label.

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



Labels table

Add label button
Enter the timeline label into the text box to the left of the button, then click the button.

Rename selected button
Click on the checkbox next to the timeline that needs to be renamed, then enter the new timeline label into the text box to the left of the button and click the button.

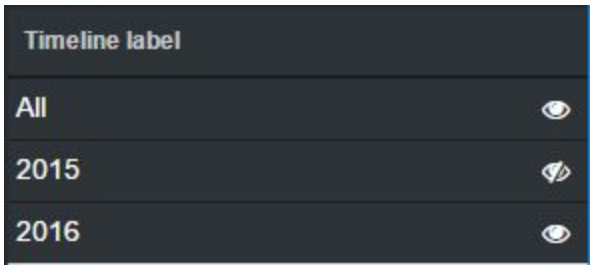
Delete selected button
Click on the checkbox next to the timeline that needs to be deleted, then click the button. Note that multiple timelines can be selected at once.

Tours table

Apply label to selected tours button
In the drop down list to the left of the button, select the timeline to which the tours will be assigned to, select the tours by clicking on the checkboxes next to them, then click the button to assign them tours to the selected timeline.

To remove a tour from a timeline label select **None** in the drop down list.

Timeline list (Map tab)



Click a timeline label to zoom in on it.

Click a timeline eye icon to toggle visibility.

In this example, the 2016 timeline has been hidden.

Hiding timelines is great when used with the **Ctrl+A** key-combination that selects streetviews in all visible timelines.

Note that this list is displayed only when at least one tour is assigned to a timeline.

Separate by Distance

To convert tours recorded in **Interval Mode** to **Distance Mode** recordings.
This greatly reduces the number of streetviews to process.

Options:
Minimum distance between streetviews:
About the same as the distance when recording with Distance Mode.

Process selected timelines:

(Visible only when there are timelines)

Process only selected timelines.

Press **CTRL** and then click on a timeline to select multiple timelines.

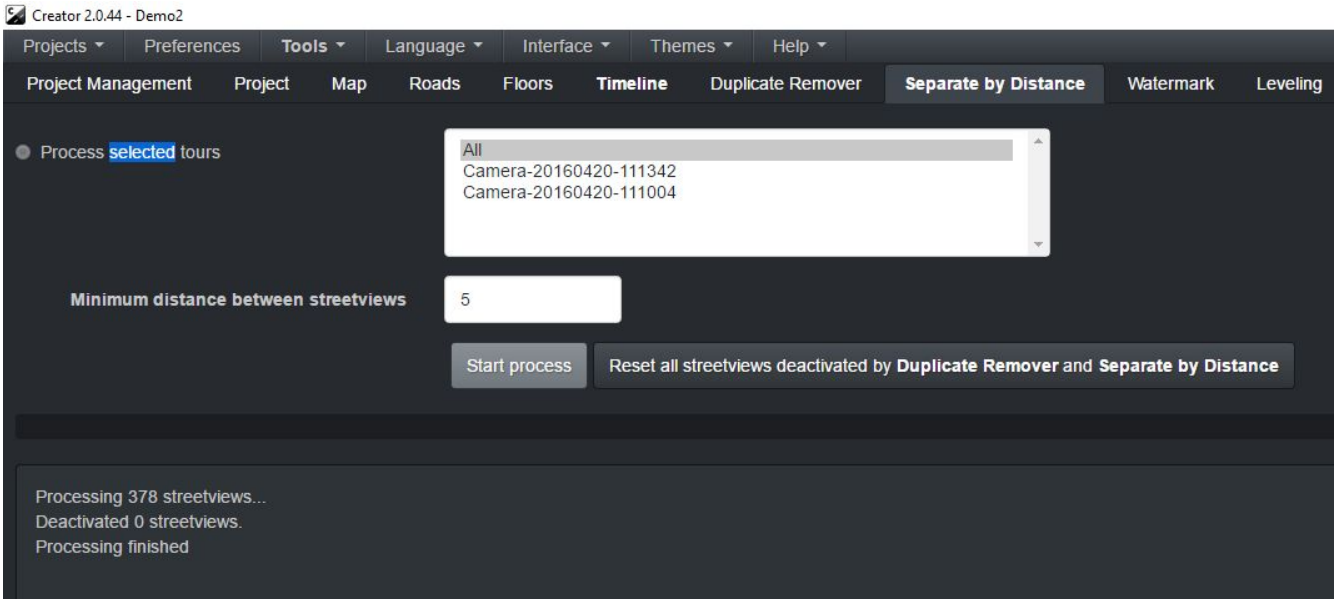
Process selected tours:

Process only tours selected from the list.

Press **CTRL** and then click on a tour to select multiple tours.

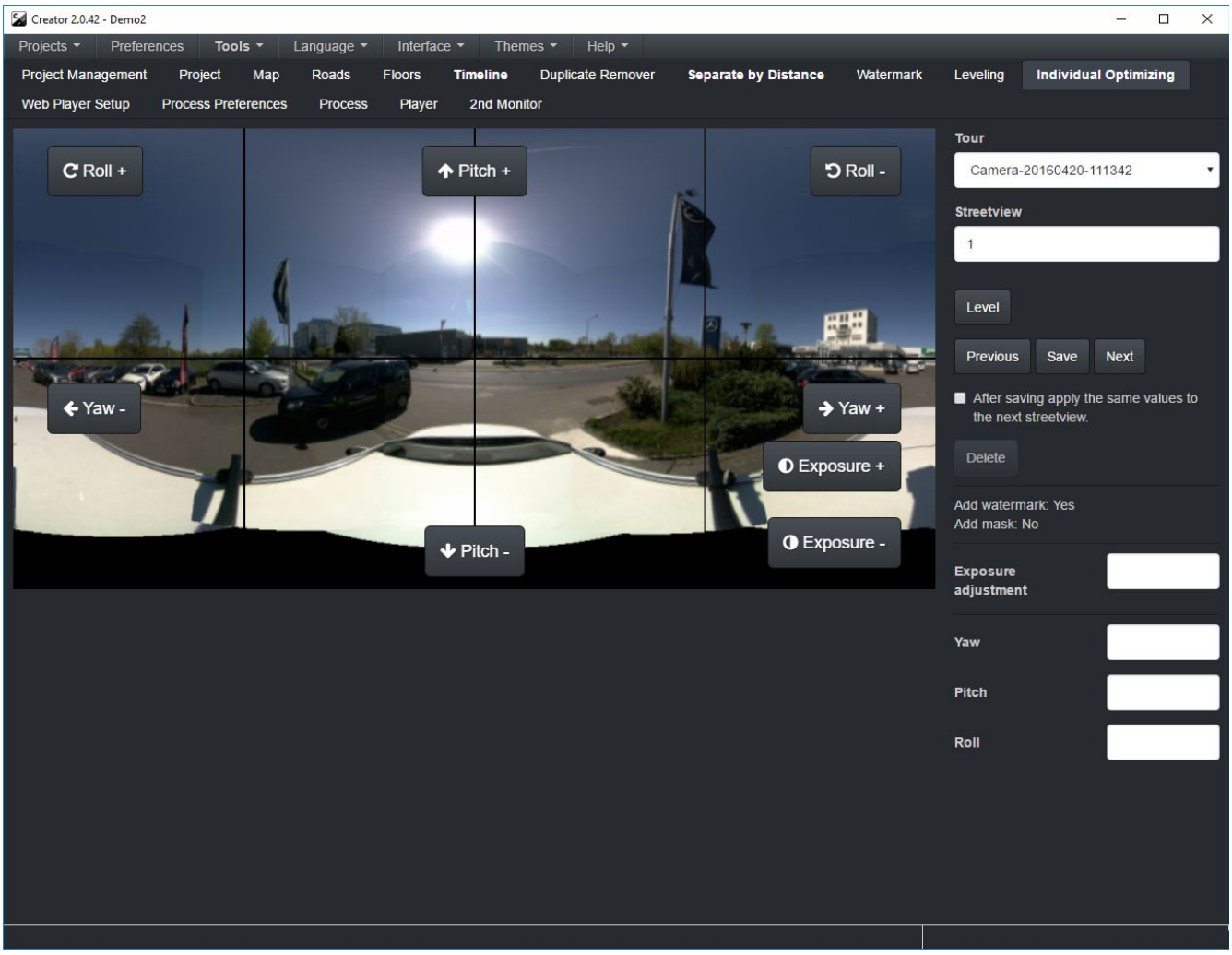
Start process
Start processing

Reset all streetviews
Reset all streetviews deactivated by **Duplicate Remover** and **Separate by Distance**



Individual Optimizing

Adjust for camera and leveling sensor setup individually for specific streetviews.



The adjustment is the same as in the Leveling tab, so read the section about the Leveling tab first.

Previous
Go to the previous streetview. Does **not** save anything.

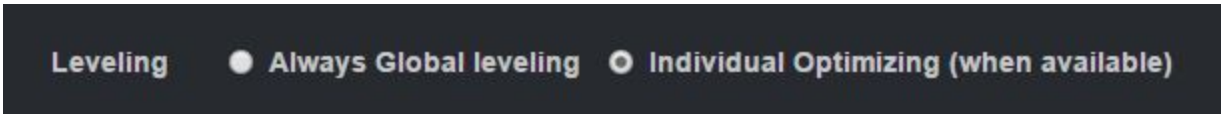
Save
Save the individual adjustment options (Exposure Adjustment, Yaw, Pitch, Roll) to the current streetview. Load the next streetview and apply the same values.

Next
Go to the next streetview. Does **not** save anything.

After saving, apply the same values to the next streetview.

Delete
Delete the individual adjustment options (Exposure Adjustment, Yaw, Pitch, Roll) for the current streetview.

On the **Processing Preferences** tab, check that **Leveling** is set to **Individual Optimizing (when available)**.



Then start processing.

Map-tiles

There are many ways to get map-tiles suitable for the Creator App.
As an example for the format we provide the “Langen2” map tiles as a .zip file for you:
http://updates.applied-streetview.com/Remote-Control/Langen-OSM.zip (1.1 MB)

Map tiles format info:
http://wiki.openstreetmap.org/wiki/Slippy_map_tilenames

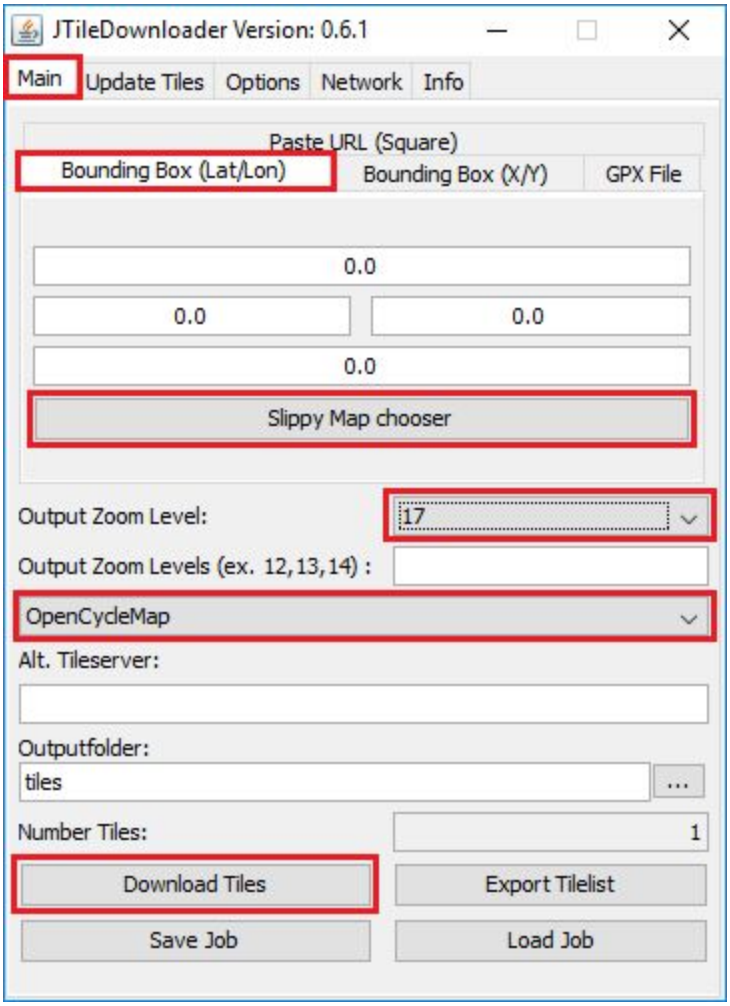
Download using JTileDownloader

For small areas you could just download the map-tiles.
One of the programs suitable for downloading map tiles is

JTileDownloader

http://wiki.openstreetmap.org/wiki/JTileDownloader
Use it with a Windows PC, not the tablet!

It is recommended to remove the microSD card from the tablet, then connect it to the PC using a USB 3.0 card reader and the included microSD to SD-card adapter.



Go to **Main** - **Bounding Box (Lat/Lon)** and click on **Slippy Map chooser**. This will open a new window and you will be able to choose the area for download.

Choose the **Tile Provider**. Consider OpenCycleMap, since the other tile providers tend not to work.
Consider saving it directly to the microSD card.
At least one zoom level is needed, zoom level 17 works well for recording by car.
Choose the **Output folder** to download the map tiles, preferably a new folder, named e.g. "Town-name".

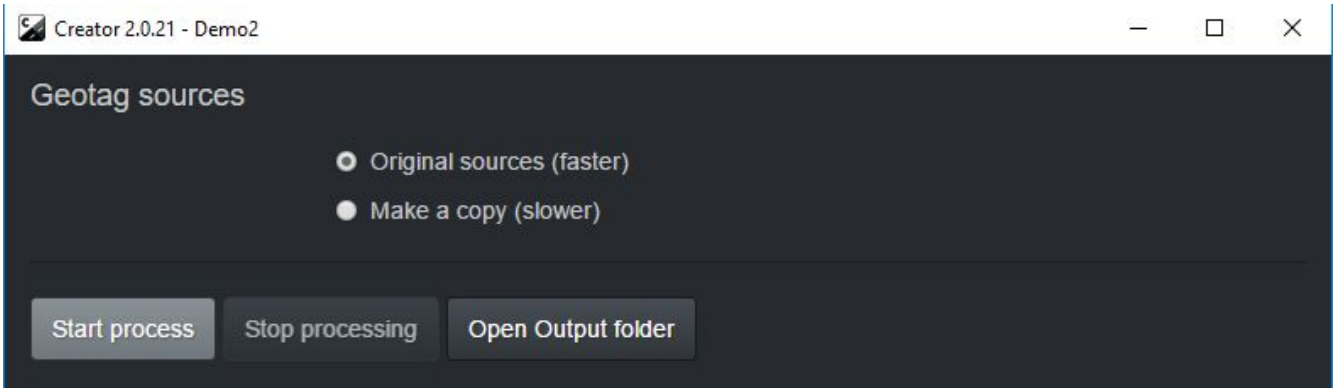
Afterwards, insert the microSD card back into the tablet then use the map tiles directly from the microSD card.
Do not copy the map-tiles to the tablet.

Tools

Geotag sources

Geotag source images.

In case you want to process the source images with a totally different software.



Original sources (faster)
Modify EXIF data of the original images

Make a copy (slower)
Copy images to **Output folder** and then modify EXIF data of the original images

Output folder
Set the output folder.

Click the **Start process** button.

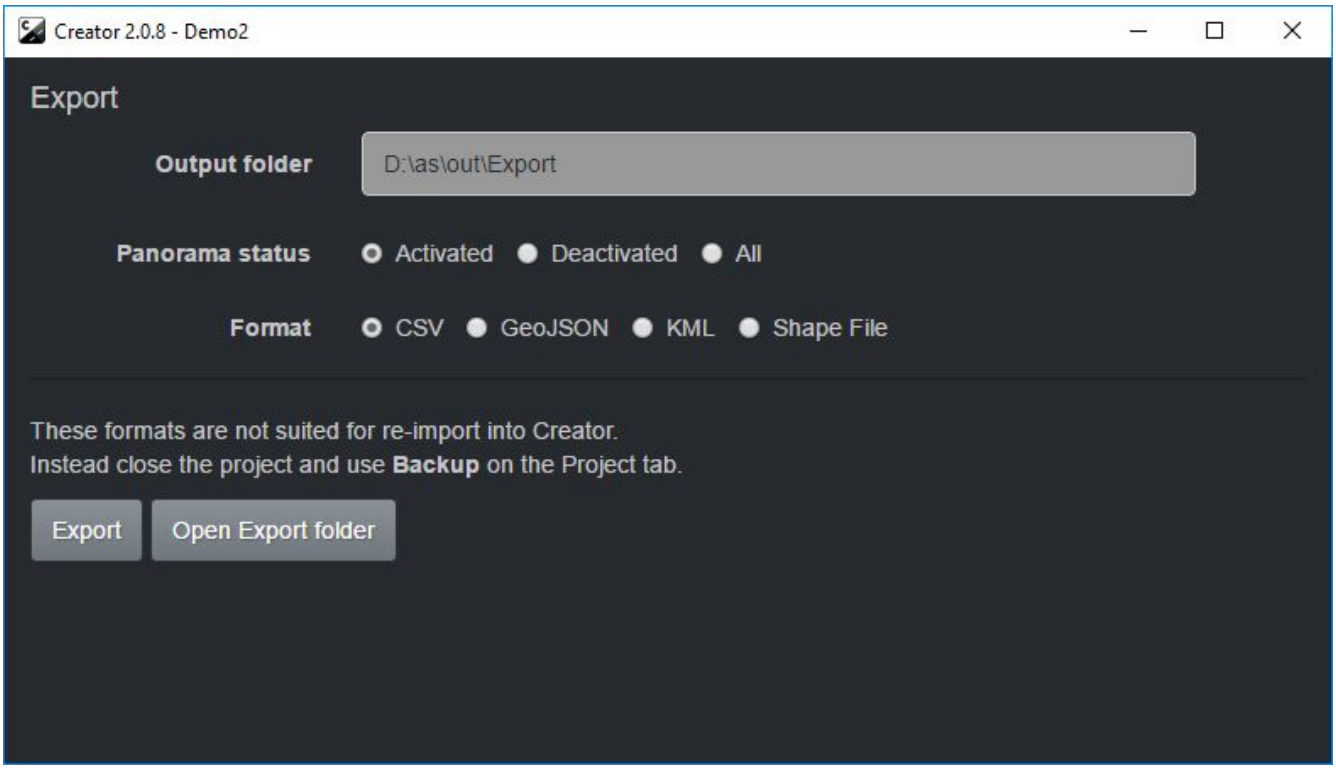
The current project source images will be copied to output folder.
The following EXIF data will be added:

- Orientation
- DateTimeOriginal
- GPS:GPSDateStamp
- GPS:GPSTimeStamp
- GPS:GPSLatitude
- GPS:GPSLatitudeRef
- GPS:GPSLongitude
- GPS:GPSLongitudeRef
- GPS:GPSAltitude
- GPS:GPSAltitudeRef
- GPS:GPSImgDirection
- GPS:GPSImgDirectionRef
- Orientation
- FocalLength
- FNumber
- Make

- Model
- SerialNumber
- FocalPlaneXResolution
- FocalPlaneYResolution
- FocalPlaneResolutionUnit

Export

Export the Creator data to use with a 3rd-party program.



Output folder
Where to save the exported data to.

Panorama status
Choose the status of exported streetviews: Activated (Default), Deactivated, All.

Format
Choose export format: CSV, GeoJSON, KML, Shape File

Click **Export** button to export the data.

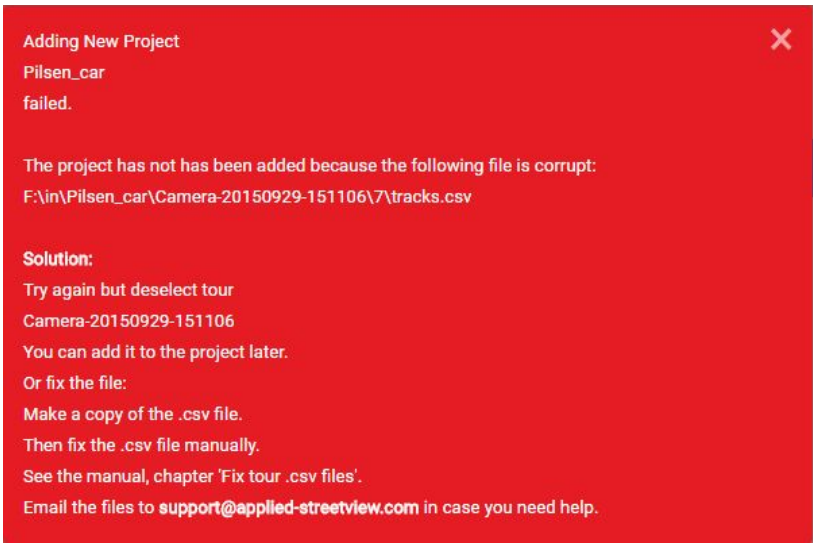
Click **Open Export folder** to open the **Output Folder** in Explorer.

WARNING:
These formats are NOT suited for re-import into Creator.
Instead, close the project and use the Backup on the Project tab.

Fix a Tours .csv files

Tour log-data is saved to the panoramas.csv and tracks.csv files in folder 7.
In case these files are corrupt, Creator will refuse to add the project.

Instead this pop-up will be displayed:



Simply add the Project again, but this time **deselect the corrupt tour**.

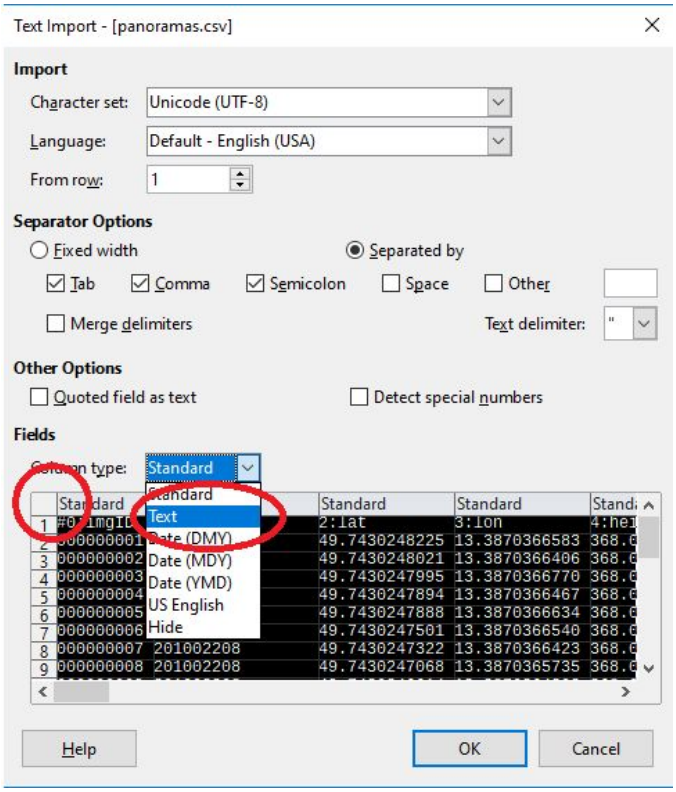
This allows you to continue your work with the remaining tours of the project.
The missing tour can be added to the project after it has been fixed.

Manually fixing the corrupted .csv file(s) is the next step, then you can add the skipped tour.

We recommend the free Libre Office Calc program for this.

First make a backup copy of the file you are going to edit.

When opening the .csv file with Libre Office Calc make sure to select all columns and set them to **Text**. This ensures no automatic formatting changes the values.



Afterwards scroll through the data, find the problem line and edit it to look like all other lines.

For panoramas.csv the numbers in #0:imgID must be in sequence.
Duplicate entries in #0:imgID are not allowed.
Empty lines are not allowed.

Save the file and add the tour to your project:
Open the project in Creator.
On the **Project page** press the **Add tours to project** button to add the fixed tour.

Install the player to a web-server

There are 3 components:

The player, the MySQL database and the streetview tiles folder.

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.

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

MySQL database

Create a new MySQL database.

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

Panorama Tiles

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

Player

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 the Apache web-server.

More Info on the Player:

http://updates.applied-streetview.com/player/Player_Quick_Installation_Manual.pdf

Embed the player into any page

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 folder
http://www.your-server.com/players/Demo/

In your page, add this code:

```
<div id="demo"></div>
<script src="http://www.your-server.com/players/Demo/player.js"></script>
<div id="player" style="width: 100%; height: 700px;">
<script>
var settings = {};
settings.files_path = "http://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>
```

Adjust the URL.
You will need to remove the line breaks from the code above for it to work.

Remove the 'krpano demo version' logo

What it looks like:

The **krpano demo version** watermark is visible in the:

- Web Player Preview sub-tab
- Player tab
- All generated Players

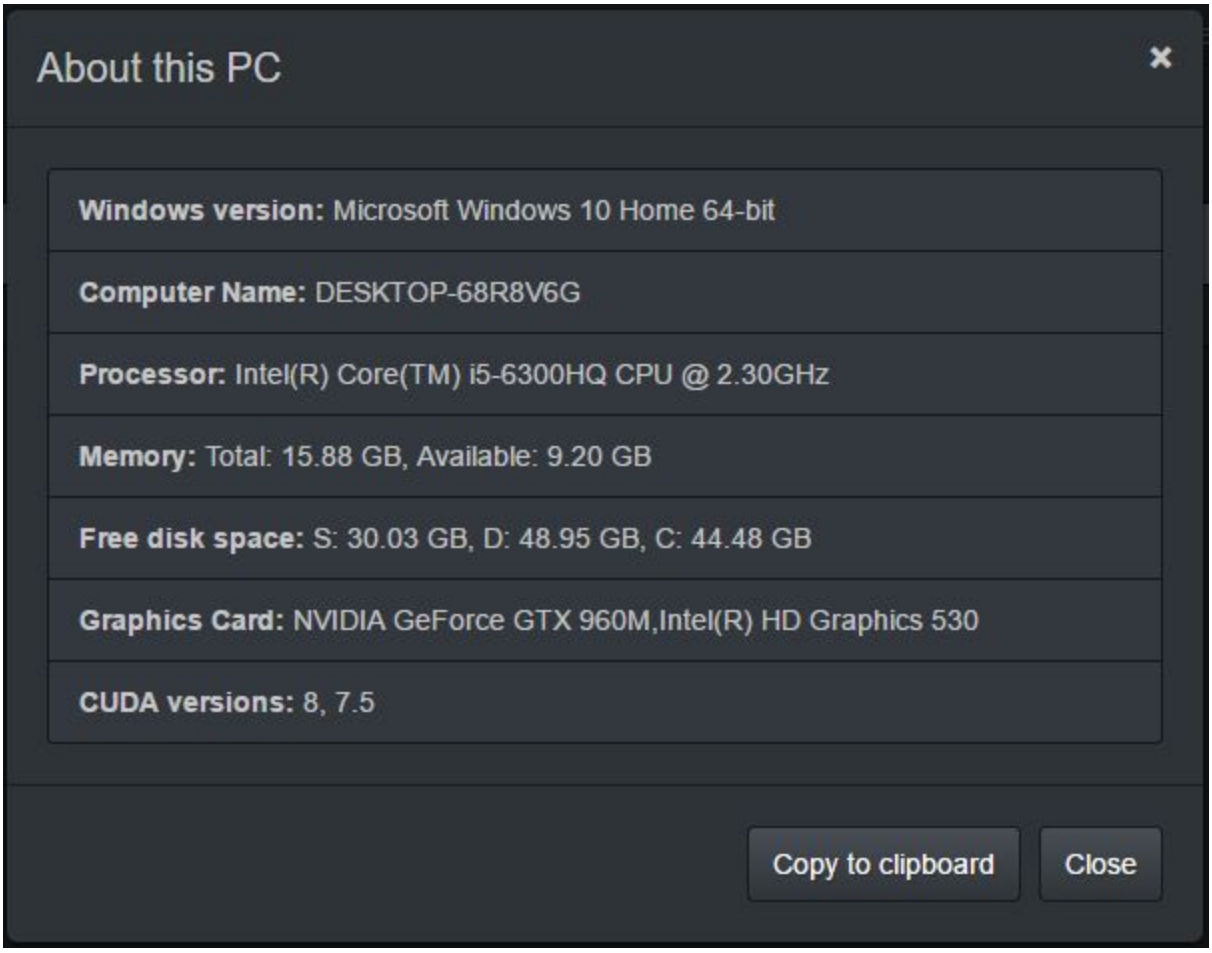
Get a krpano license for 129 Euro from http://www.krpano.com/buy

Then go to **Menu - krpano - Add activation key**. Paste your key into the field and click **Add**. If the key is valid you should see a confirmation message that the key is registered. **Restart Creator**.
In **Menu - krpano - License details** you can check your krpano activation key details:

Obviously you will see your own license information, the above is just an example.

Help

Help - About this PC



Click on **Menu - Help - About this PC** to display helpful information like Windows version, Computer Name, Processor, Memory, Free disk space, Graphics Card, CUDA versions, etc.

Click on **Copy to clipboard** to copy the information about this PC to the clipboard, then save it elsewhere..

Preferences

Menu - Preferences
- For all projects
    - Graphics Card
    - Folders
    - Map
    - Expert Mode
    - Troubleshooting

- For new projects
    - Map
    - Duplicate Remover
    - Watermark
    - Leveling
    - Player
    - Imaging
    - Process

New projects get their default values from the **For new projects** preferences.
You can then make project-specific changes in the project tabs.

Reset all preferences
Reset all preferences for new and all projects to their defaults.

Menu - Preferences - For all projects - Graphics Card

Graphics Card found
Graphics cards found in the system.

Applied Streetview Processor
For fastest processing.

A NVIDIA graphics card is needed. We recommend: NVIDIA GTX 1080 with 8GB VRAM.
Legacy graphic cards with 4GB VRAM that are known to work: NVIDIA GTX 960, 960M, 965M, 970, 980.

AS-stitcher for stitching - Batch size
How many data-sets to pass to AS-stitcher for processing at one time.

AS-tiler for tiles creation - Batch size
How many data-sets to pass to AS-stitcher for processing at one time.

Legacy solution
Works with and without a graphics card, many graphics cards should be supported.
The Legacy solution for streetview-tiles creation needs a krpano licence.

Enable graphics card
Speed up the processing by enabling the use of a graphics card, many graphics cards should be supported.

Parallel processes
How many datasets to process in parallel. Should be set automatically to the number of CPU threads - 1. Check and adjust if necessary.

Menu - Preferences - For all projects - Folders

Input path
At this location the Creator looks for the project source folder, when creating a new project. You can switch it to any other location.

Output path
At this location the Creator automatically creates a project folder with the same name as the project.
Then the sub-folders for the data are created: streetviews, streetview-tiles, player, map-tiles.

PTO path
All of the cameras **.pto** files should be copied to this location.

Temp path
For temporary files. To improve speed in legacy mode the path should be on a SSD or RAM-disk.

Menu - Preferences - For all projects - Map

Zoom level to load all data-points
At this level all the data-sets are displayed on the map.

Contents of pop-up
Left list contains all the available fields, the list to the right contains the list of fields that are displayed in the popup.

To add a value from the left list to the right list, click on an item in the left list then click **>** button. To remove a value from the left list, click on an item in the right list then click **<** button.
Click on **>>** button to move all the items from the left list to the right list.
Click on **<<** button to move all the items from the right list to the left list.
Click the **Up** or **Down** buttons to change the order of items displayed in the pop-up.

Menu - Preferences - For all projects - Expert Mode
Only use these options when the Applied Streetview support asks you to.

Do not delete temporary files

Skip vig_optimize program and exposure adjustment

In legacy mode skip the vig_optimize and exposure adjustment steps.

Log command lines of external programs

Log terminal output of external programs

Log process time information
In legacy mode log information about each processing step.

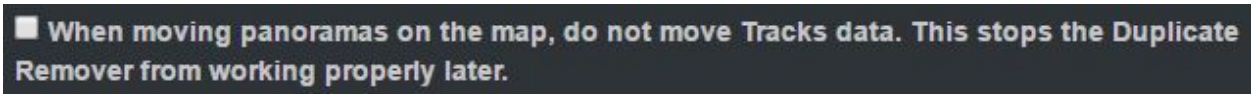
AS-stitcher CUDA 8 options
Additional command line arguments to pass to as-stitcher8.exe

AS-tiler options
Additional command line arguments to pass to as-tiler.exe

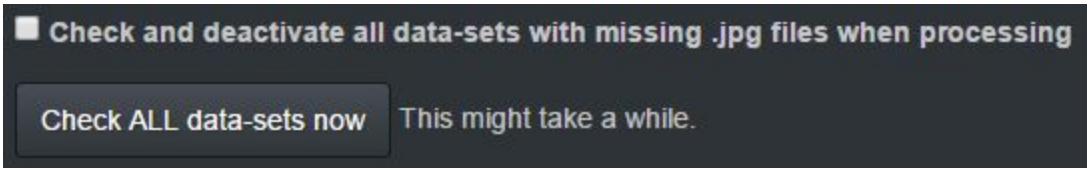
Menu - Preferences - For all projects - Troubleshooting

Fix Camera accidentally mounted looking backwards. Click again to undo.

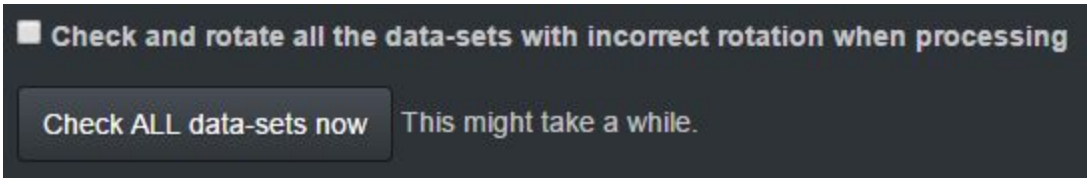
Show Tracks in the Map tab. Enabling this feature may slow down or crash Creator.



When moving streetviews on the map, do not move Tracks data. This will stop the Duplicate Remover from working properly later on.
After this feature is enabled, in the Map tab the tours list will have an additional column “tracks” to control track visibility. It is recommended to enable this feature on a larger zoom level, 16 and up.

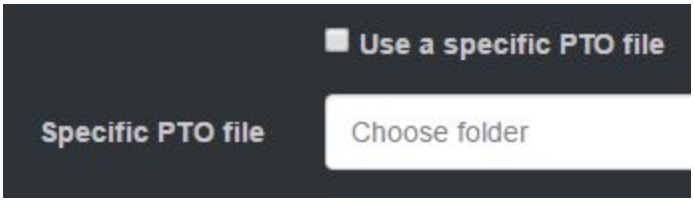


Check and deactivate all data-sets with missing .jpg files when processing.
Click on **Check ALL data-sets now** to check now.
If images are missing for any reason,this will deactivate the affected data-sets to nsure the remaining data processes well.



Check and rotate all the data-sets with incorrect rotation when processing.

Click on **Check ALL data-sets now** to check now.
Sometimes users have a look at the source images and rotate them upright for a better view. Unfortunately some programs save these rotated source images without warning. This feature rotates the source images back to ensure that the data processes well.



Use a specific PTO file
By default, the .pto files name is taken from streetviews.csv 1:CamSN field.

This option allows you to override this functionality and always use a specific .pto file.

Menu - Preferences - For new projects - Map

Duplicate Remover overruled by

- Manual activations - streetviews activated manually will override values set by duplicate remover.
- Manual deactivations - streetviews deactivated manually will override values set by duplicate remover.

Default Base Layer

Menu - Preferences - For new projects - Duplicate Remover
Default preferences for the **Duplicate Remover** tab.

Menu - Preferences - For new projects - Watermark
Default preferences for the **Watermark** tab.

Menu - Preferences - For new projects - Leveling
Default start streetview

Exposure adjustment
Default is 1.5. This makes all the images a bit brighter than the source images.
If you want no change, set it to 0.

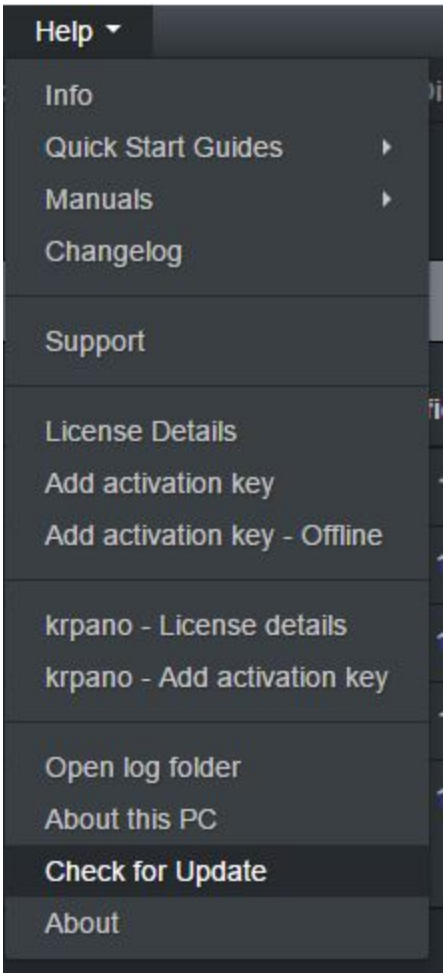
Level
Yes: The most commonly used set-up.
Level with the log value and the values from the Adjust tab.
No: No leveling at all.
Adjust: Use values from the Adjust tab only. Ignore the log data.

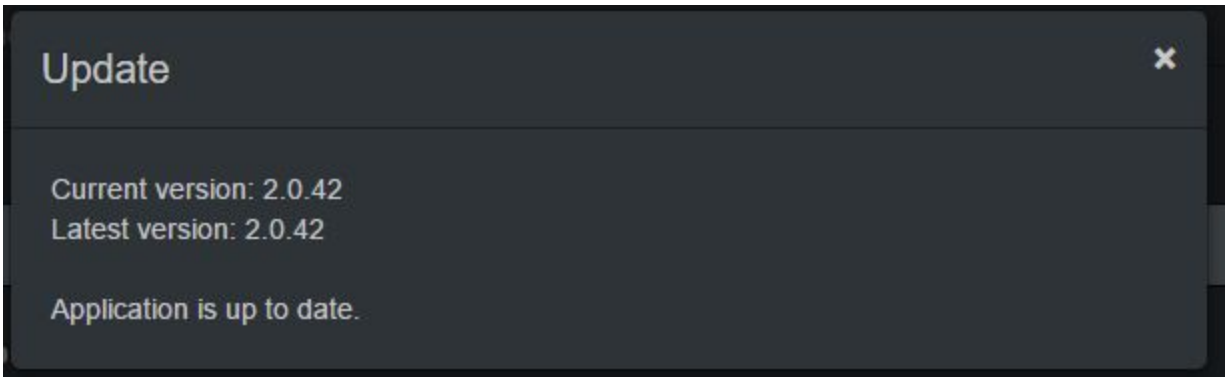
Menu - Preferences - For new projects - Player
Default preferences for the **Player Preferences** tab.

Menu - Preferences - For new projects - Process
Default preferences for the **Process Preferences** tab.

Support

Please check for a new Creator version first:
Menu -> Help -> Check for Update.





Support is provided for the newest Creator version only.

Support is available in **English language** only.

To report an error, please use this form:
Menu → Help → Support
You can **enter text** and **attach files**.
The log-file is automatically attached.
You can attach extra screenshots.

Contact
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