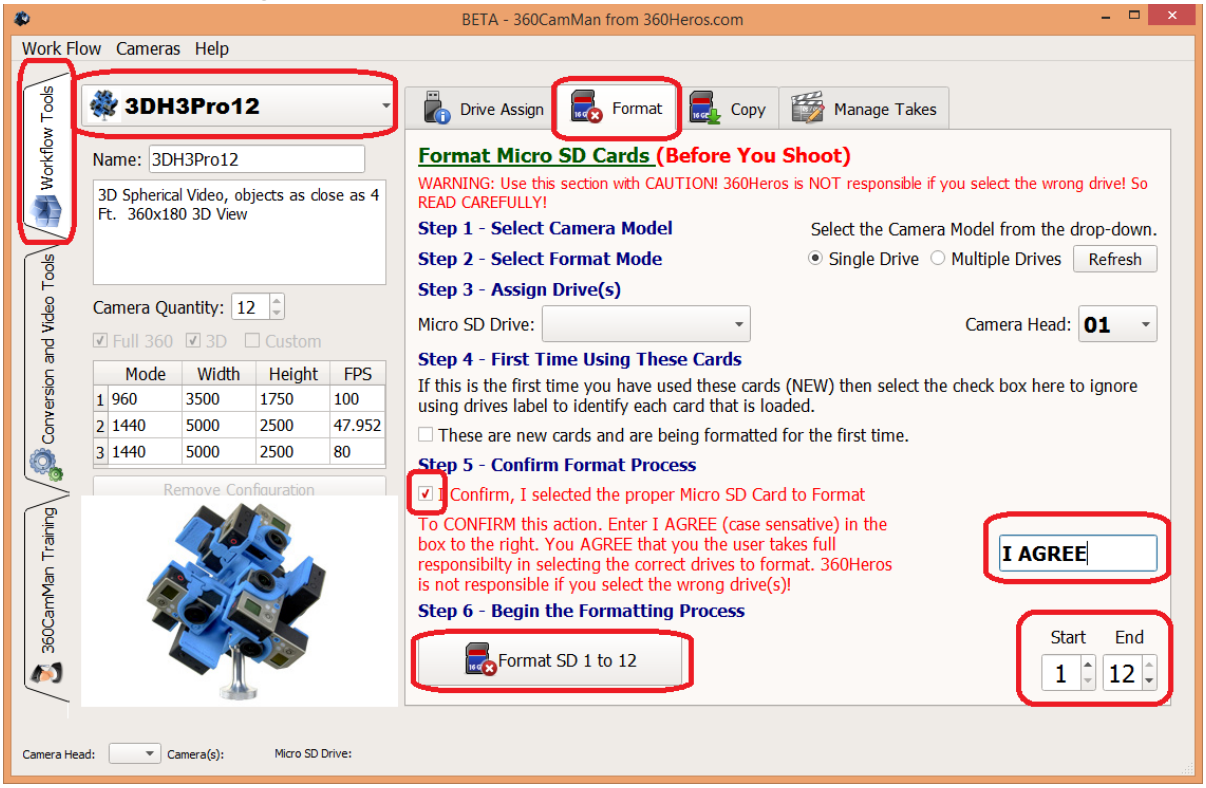
360 Video Making

Revision date: 27/08/2015

Part one: formatting the microSD cards.



-To format the microSD cards, use the software called '360CamMan v2'. (Note: it will prompt you to select a workspace, this is not important when formating; click "OK")
-In the workflow tools tab (on the left), select the appropriate type of camera (usually the '3DH3Pro12' when using the 12 camera mount or the '360H6' when using the 6 camera mount).
-Go to the 'Format' tab, you can then select:

-'Single Drives' if you want to use one port to format all the microSD cards

-'Multiple Drives' if you want to use a multi port usb hub to format all the camera.

- Follow the instruction, if you selected multiple drive: make sure that all the microSD card you want to format are already connected when you select Format X to Y (where X and Y are the first and last card to format. ALL CARD IN BETWEEN WILL ALSO BE FORMATED)

Part two: preparing the camera

It is very important to have the right settings for the go pro cameras to be able to make a proper 360 video.

-The cameras must ALL have the same setting, here are the recommended settings:

-Resolution:1440
-fps:30
-FOV: wide (W)
-low lite: N/A
-Spot meter: off
-Protune: off

We recommend to not change any of these settings unless you are experimented in 360 video capturing.

-Place the microSD cards in the camera.
-Place the camera on the rig appropriately.
-Synchronize the cameras with the wifi remote (when the camera are not in use and will not be for a certain amount of time, it is preferable to keep the cameras' wifi off).

To turn on or off the wifi hold down the settings button on the side of the camera for approximately 3 seconds until you see the blue light flash.

Part three: filming

Filming 360 video is a new way to use this media, therefore you are free to explore some alternate ways. However, we have some recommendations:

-Use a tripod to elevate the Camera to eye level (or as close as possible). This will help to immerse the viewer. It will also help in the stitching process (if the cameras are too close to the floor it will be distorted in the final video).

-Film in area with good lighting

-Do not move the camera or the mount (unless it is in a moving vehicle) as it might make the viewer motion sick.

-Keep a good distance between the cameras and any other object if possible

-Try to keep the center of interest/moving object in the center of the view of one camera

-When deciding how many takes and how long the takes will be, consider that the size of the files will be multiplied by the number of camera used and that each takes will require it own time of stitching and rendering.

-Once you are ready to film, turn the cameras' wifi on by holding the side button untill a blue light flashes (around 3 seconds).

-Pair the cameras to the Wifi remote if they are not already paired

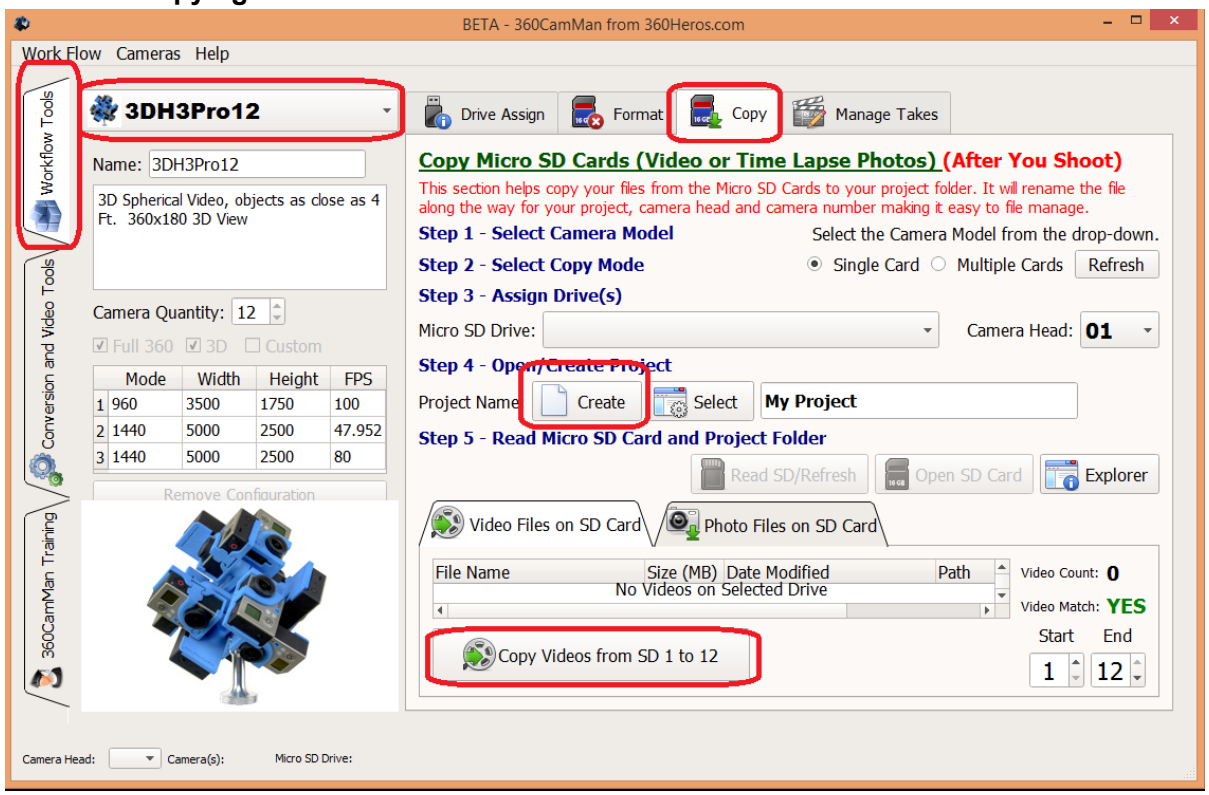
-Start the video by using the wifi remote to make all cameras start recording.

-make sure that all cameras are filming.

-Once the video started, make a loud sharp noise (usually by clapping your hand close to the cameras). This will later be used for synchronising the videos.

-Leave the cameras filming a few extra seconds of at the beginning and the end of the video, this will help to properly edit the videos.

Part four: copying the files



-To copy the content microSD cards, use the software called '360CamMan v2'. (Note: it will prompt you to select a workspace, you need to select the destination folder of your files)

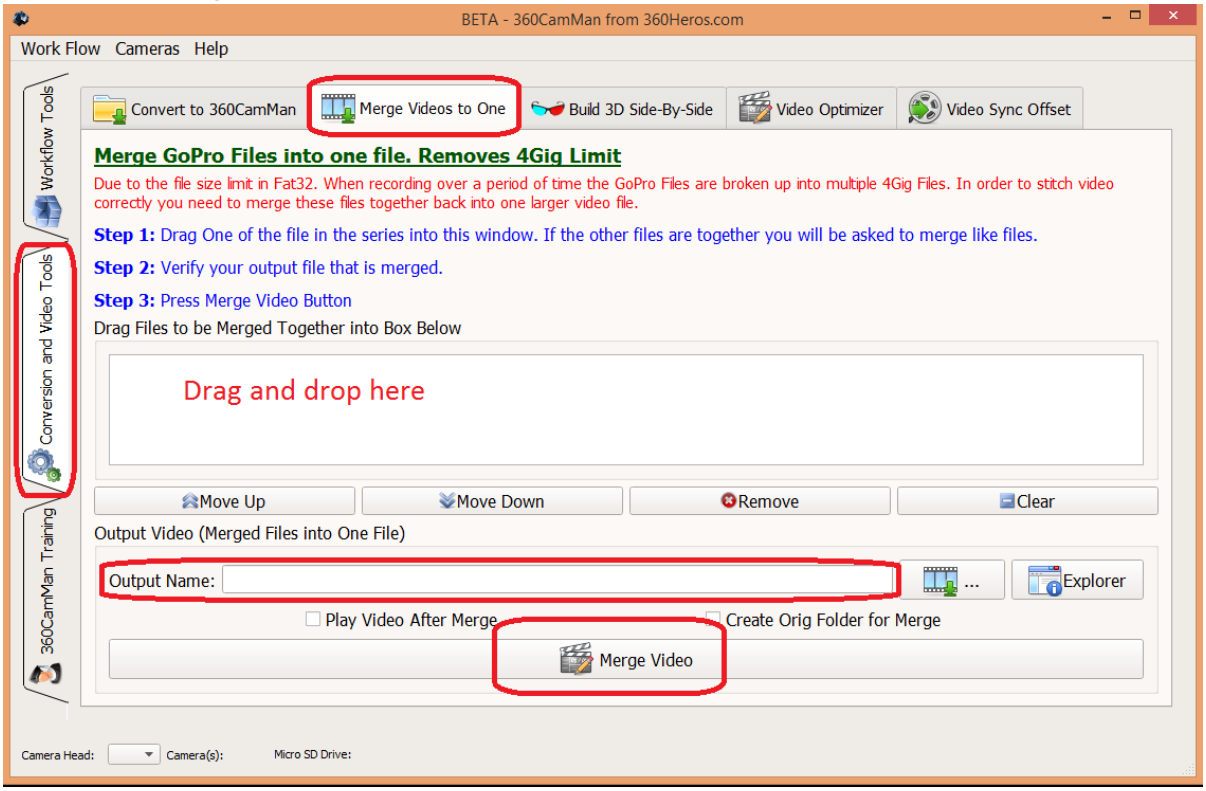
-In the workflow tools tab (on the left), select the appropriate type of camera (usually the '3DH3Pro12' when using the 12 camera mount or the '360H6' when using the 6 camera mount).

-Go to the 'Copy' tab, you can then select:

-'Single Drives' if you want to use one port to copy the files from all the microSD cards

-'Multiple Drives' if you want to use a multi port usb hub to copy the files from all the microSD cards..
-Create a project
-Select to copy video files or photo files.
- Follow the instruction, if you selected multiple drive: make sure that all the microSD card you want to copy files from are already connected when you select Format X to Y (where X and Y are the first and last card to copy, all cards in between will also be copied)
IMPORTANT: if this process does not work, you will need to manually import the files from the different microSD cards, this process is not recommended as the files will not be named appropriately and it will take more time but it is sometime necessary.

part five: Editing the videos.

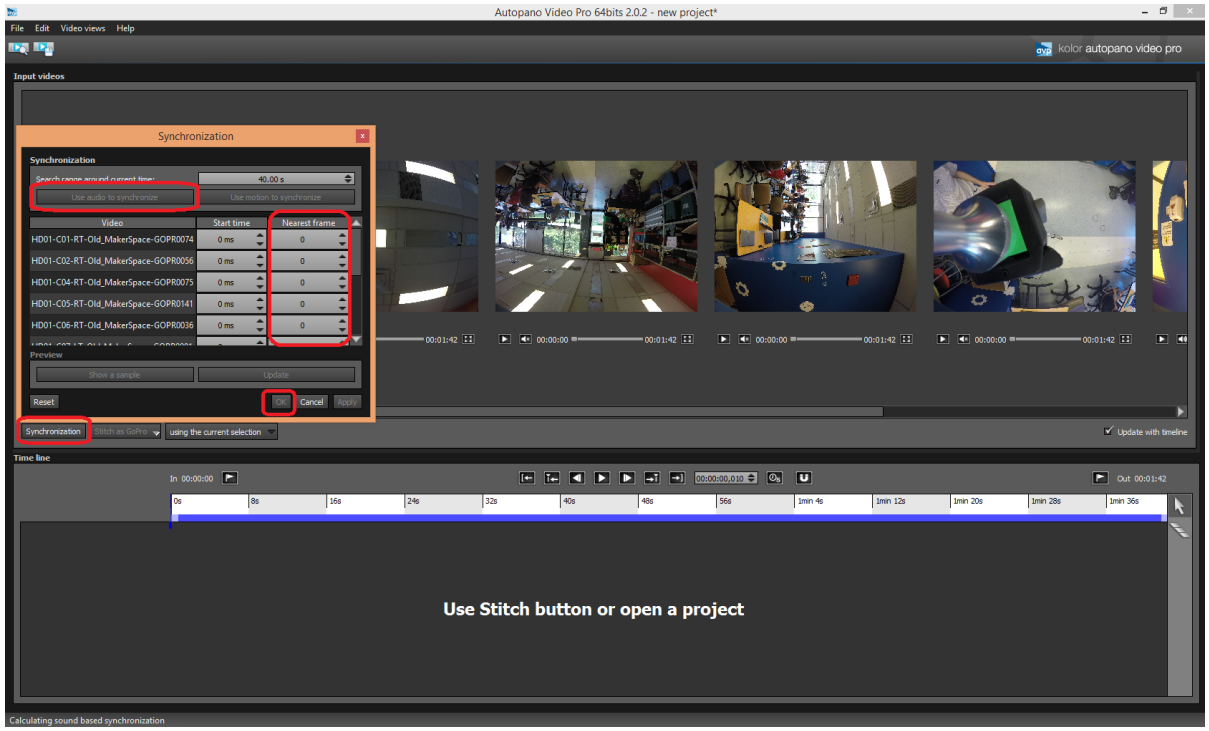


(***optional***) Due to limitation, the gopro cameras do not make video files that are bigger than 4 gigabyte, therefore, if you make a video that is larger than 4GB (usually around 15 minutes of filming), the video will be divided into multiple files. If this is the case, you can merges these files into a single one once it it transferred to your computer:

-To merges those videos, you will need to use the software '360CamMan v2'

-In ‘Conversion and video tools select the tab called ‘Merge videos to One’
-Drag and drop one of the files among those that you wish to merge.
-Follow the instructions on screen.

Once all your files are on the computer, you will need to combine all the videos into a 360 video:
-Open the software called ‘Autopano Video pro’
-Drag and drop all the files from one of the video you filmed (do not include files from different shots)

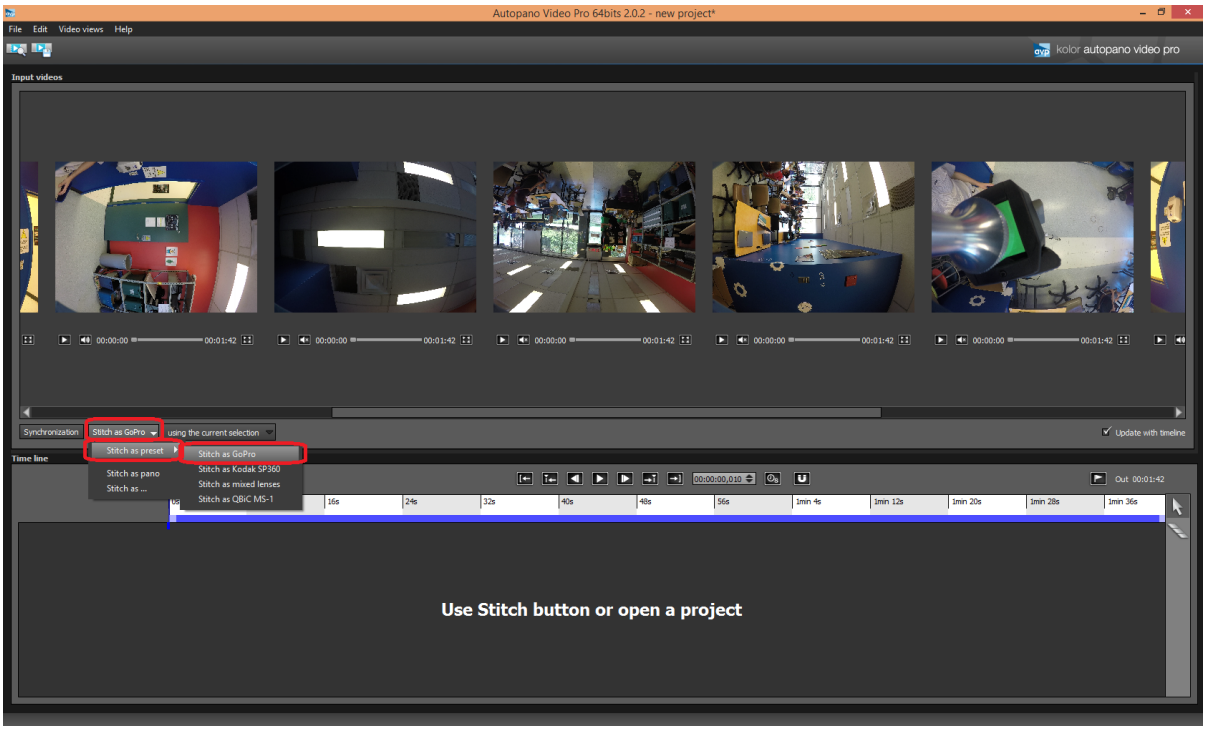


-Click “Synchronization” then select “Use audio to synchronize”. The software will then try to search for a similar sound recorded by all the cameras and synchronize them accordingly, this is why it is recommended to make a sharp noise (such as a hand clap) at the beginning of the recording.

NOTE: you can select “Use motion to synchronize” but it is only recommended if all the cameras are moved at the same time at the beginning of the video.

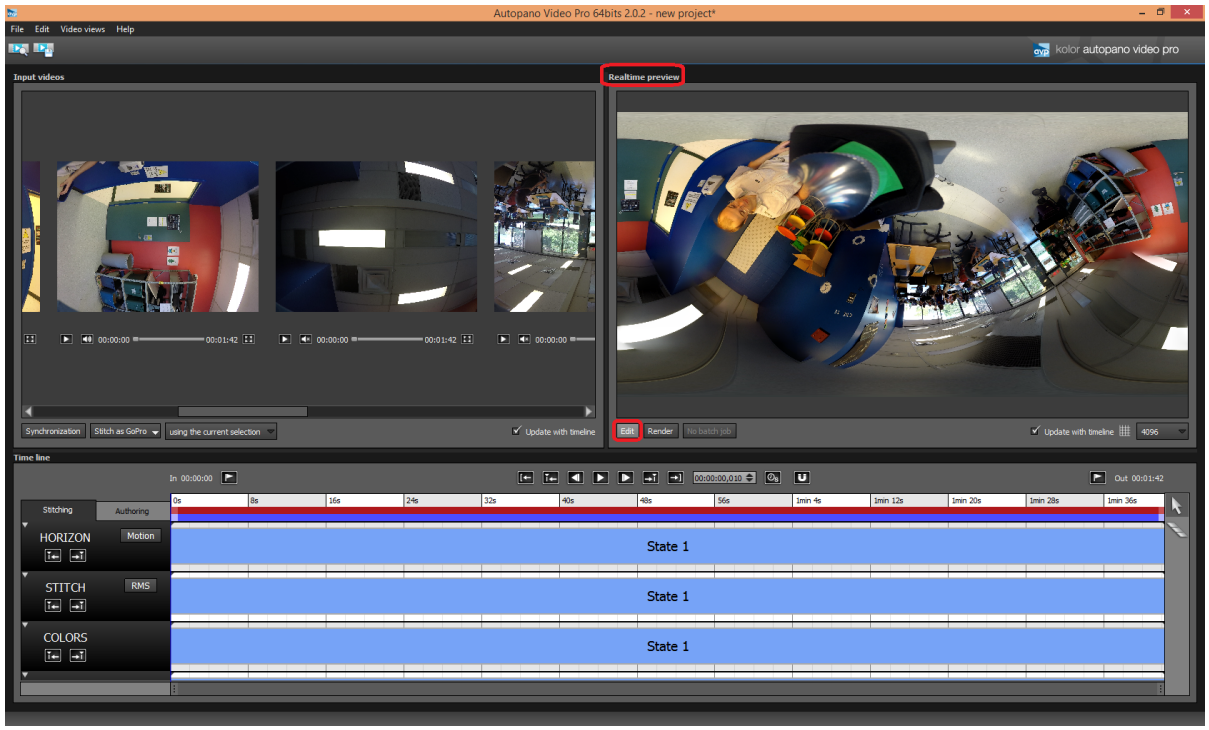
-If you used the wifi remote to simultaneously start all the cameras, they should already almost be synchronised, therefore, the “nearest frame” column should not have a value much larger than 30 (or start time over 1000). If those value are far larger, press cancel and try to synchronise again (using audio and/or motion). If this does not work, you can try to use another software such as adobe premier and manually match the audio from the different videos then manually entering those values in the synchronization window of Autopano Video Pro.

-Press ok



-Press “Stitch as GoPro” next to the synchronization button (if the button does not say stitch as GoPro, press the arrow on that button and select “Stitch as GoPro”). This process can take several minutes.
-A new panel callled “Realtime Preview” will apear. this is a preview of what your video will look like. It will probably not look the way you want it to be.

NOTE: If the video already look the way you want it to look, skip to the rendering section



-Click “Edit”, this will open the software called Autopano Giga.
-Again click “Edit”

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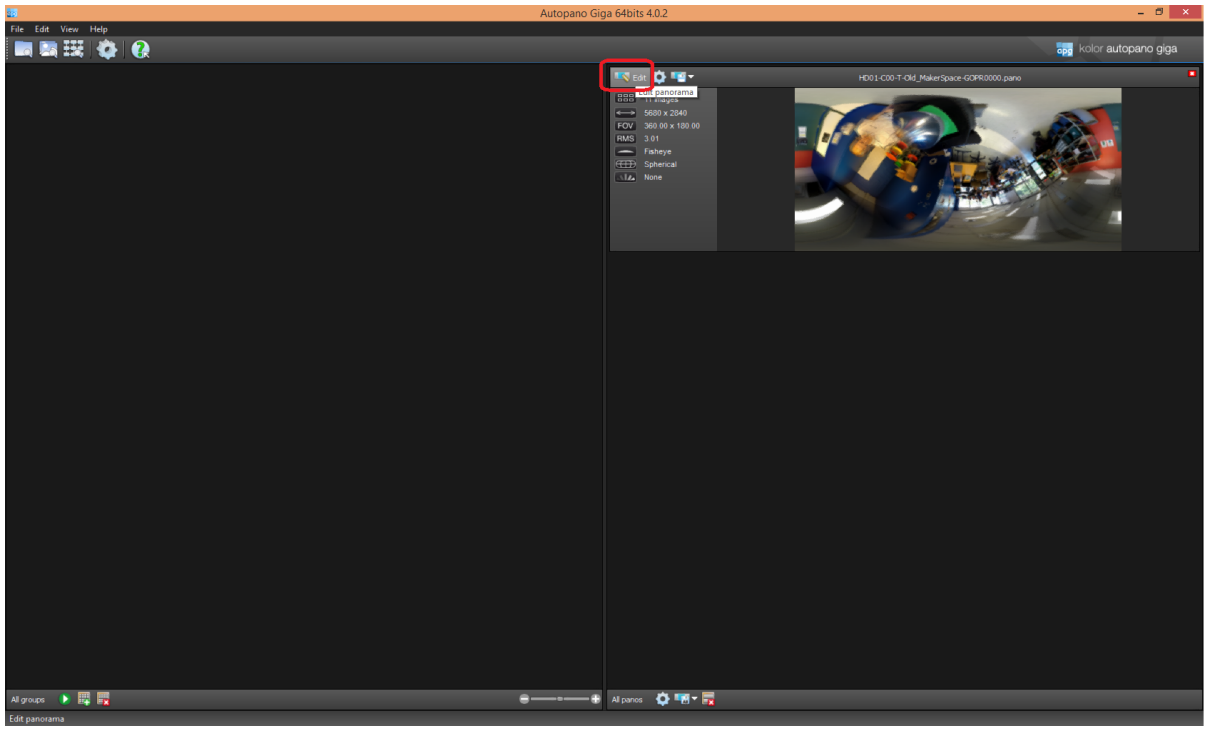
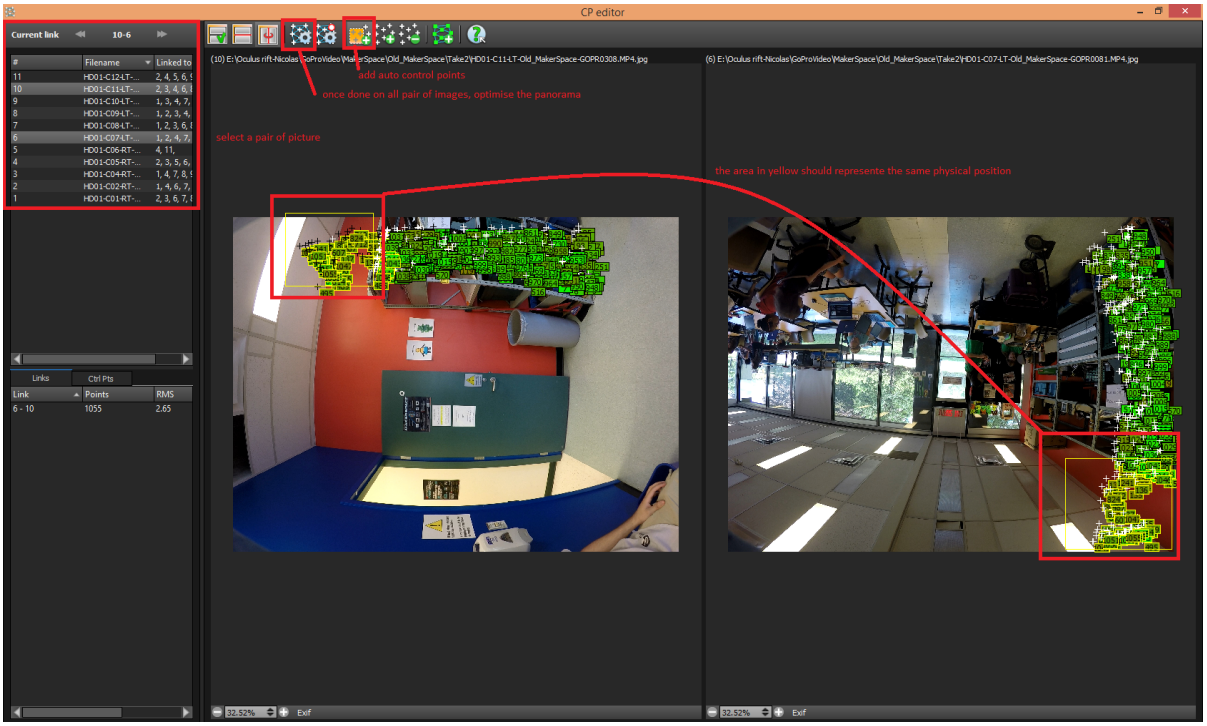


IF THE IMAGES DID NOT STITCH PROPERLY (they do not overlap properly):

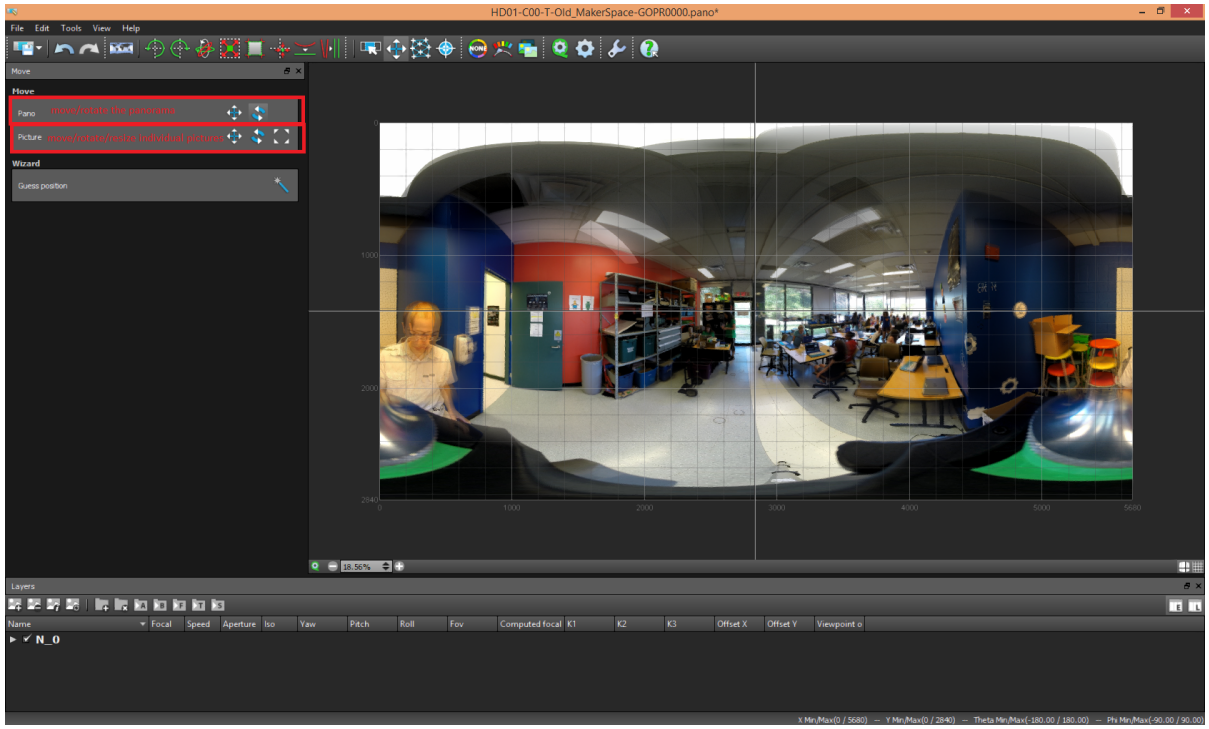


-Select “Tools” then “Editors” then “Ctrl Pts” (control points)
-On the top bar, select “Add control points using geometric analysis”(this may take several minutes)
-On the top bar, select “optimize the panorama”
-close the window.

IF THE IMAGES IS STILL NOT STITCHED PROPERLY:
-select “Tools” then “Editors” then “Ctrl Pts” (control points)
-on the top bar, select “Add auto control points”
-select 2 images from the left panel (by clicking on one then while holding the control button, click on the next image)
-if the 2 images do not overlap at all, no action needed. (each video should only have one other video without overlap)
-If the images do overlap, drag a box over a section that appears in the two images in both images. (the boxes should represent the same physical section). This will automatically generate control points. If it does not automatically generate control points, try making smaler/bigger boxed. You can also use the “add manual control points” then select a point in

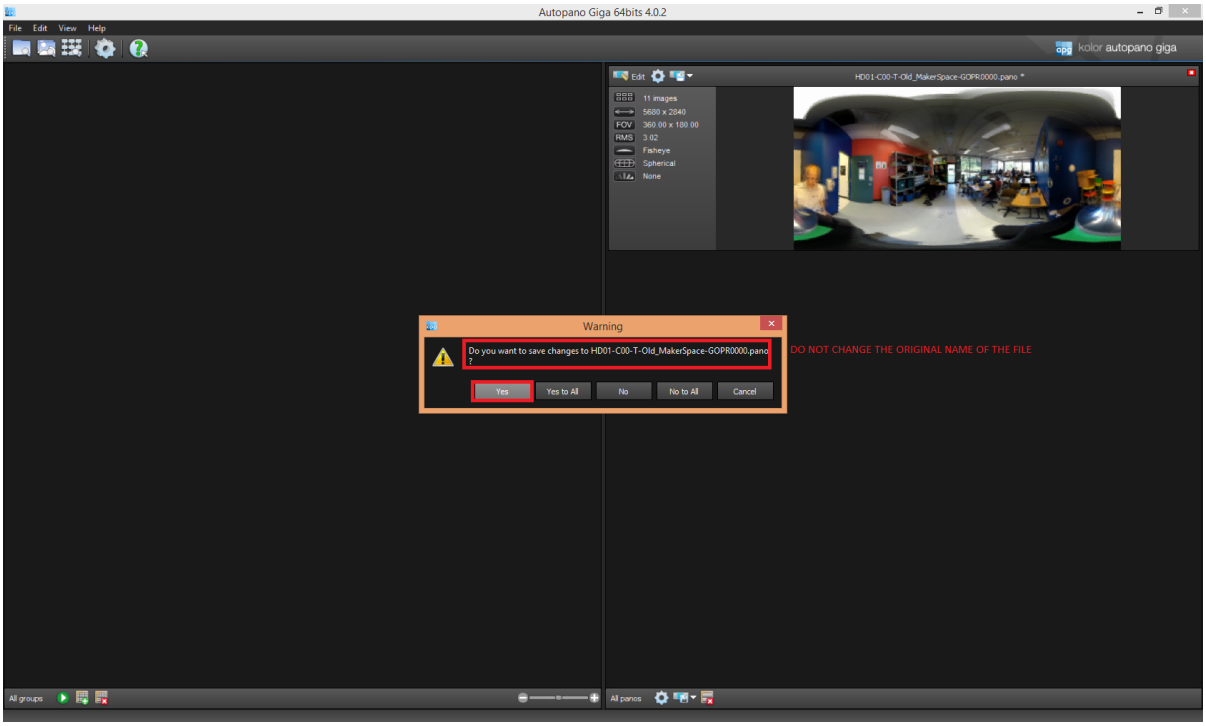
one image and match it in the next (this option require more time and precision and can have mixed result).
-you will need to repeat these steps for every pair of images.
-on the top bar, select “optimize the panorama”
-close the window.

IF THE IMAGE IS NOT PROPERLY CENTERED/THE HORIZON IS NOT LEVELED:

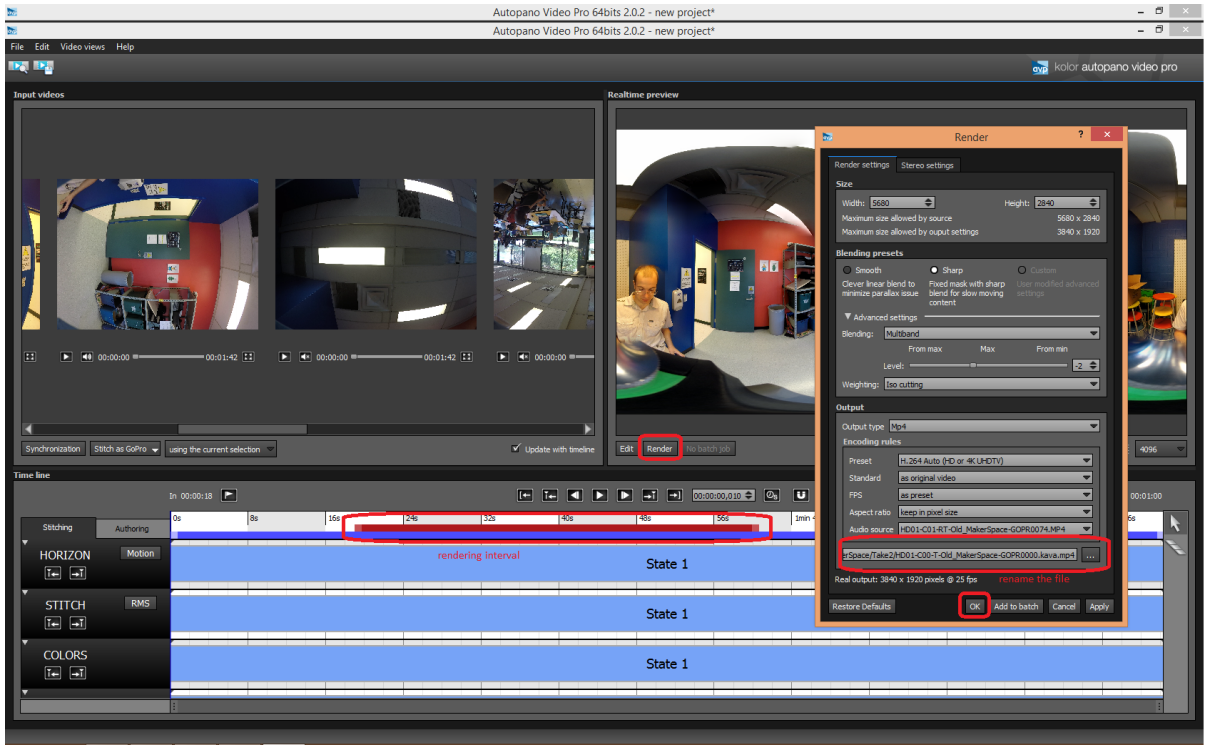


-select “Tools” then “Editors” then “move”
-Click and hold the image and move your mouse in different direction to change the center of the image. Try clicking on different part of the image as it will affect it in different ways.
-Once you are satisfied with the image, close all window of “Autopano Giga”
-when ask if you want to save the changes, select “yes”

IMPORTANT: do not change the name of the save file, if you do, your work will not be updated into “Autopano Video Pro”.



Part 6: Rendering



-In the “Timeline” window of “Autopano Video pro” define the rendering interval (what part of the video will be rendered) by dragging the front and back of the red line to the start and end of the desired rendering interval.
-Select “Render”
-In the render window, you can edit the settings as you wish.
-give a proper name to the video
-click “OK”

IF YOU ARE USING 12 CAMERAS AND WANT TO MAKE A 3D VIDEO:

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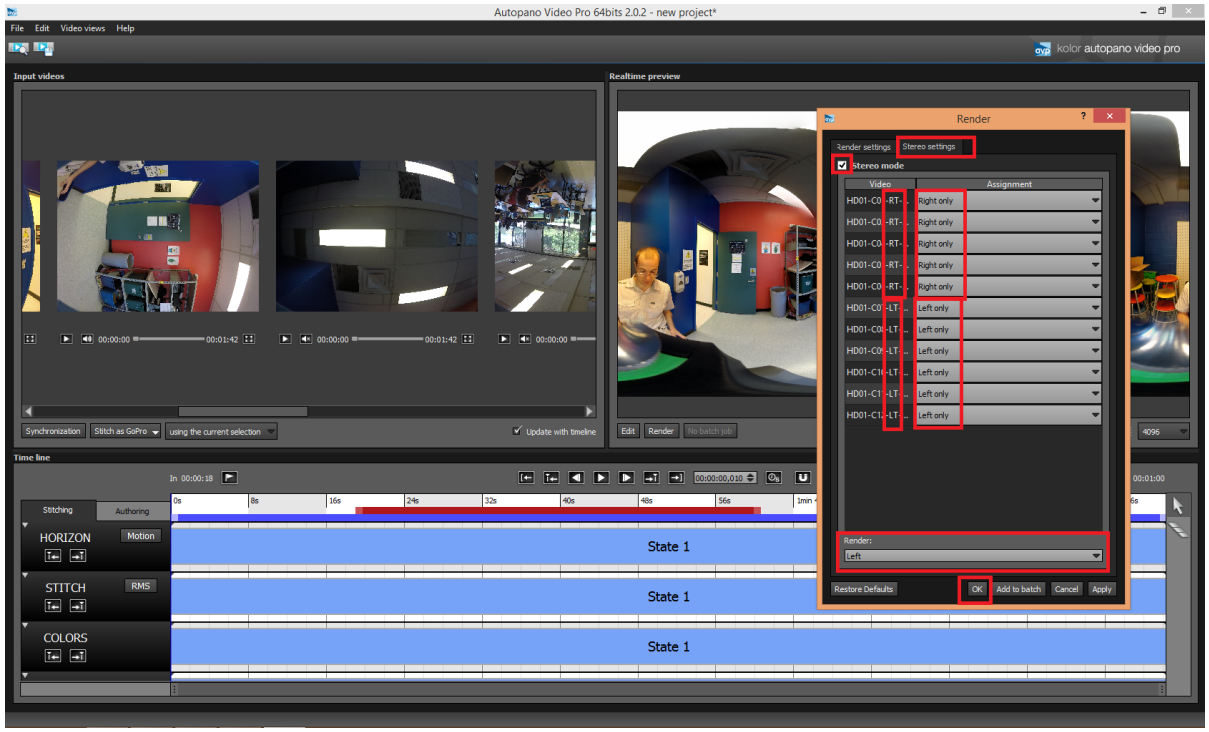

-(Recommended) add left or right to the name of the rendered video depending on what eye you will be rendering for easier reference.
-go to the “Stereo settings” tab of the “Render” window
-check the “Stereo mode” box
-Under “Assignment” select which eye is represented by the videos(if the video were transferred properly using “360CamMan v2”, the video, the name of the video should include RT (for right) or LT (for left), use this to help in the assignment). resize
-at the bottom of the of the window, select which eye to render (Left or Right)
-click “OK”
-Do the same steps for the other eye
-Once the 2 videos (Left and Right eye) are rendered, open “360CamMan v2”
-go to the “Conversion and Video Tools”
-Select the “Build 3D Side-By-Side” tab
-Drag the left eye video into the left box and the right video into the right box
-Select “Build 3D Side-By-Side Video in Equalrectangular Format” You will now have a 3D Side by side video

Important note:

The 360 video you have created is in the MP4 format. Therefore it can be edited like a regular video in software such as adobe premiere.

Part 7: viewing the video

-you can view your 360 video in many different way

-you can upload it to youtube

https://support.google.com/youtube/answer/6178631?hl=en

-you can view it using a particular videoviewer such as “LiveView Rift” or “Kolor Eye”