Delta Media Server

Setting up VIOSO to work with Delta Media Server

User Guide

Setting up VIOSO to work with Delta Media Server : User Guide

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Installation and Setup

This guide takes you through using VIOSO autoalignment software with an IDS camera for aligning a flat screen projection, exporting alignment data as MPCDI and importing it into Delta. Whilst the worked example here is a flat-screen, VIOSO autoalignment is available for any projection.

Requirements

7thSense software: DeltaServer / DeltaGUI 2.6

VIOSO software: Setup_VIOSO_Integrate_x64.exe

IDS camera with driver v4.82.2: uEye64_48202_WHQL.exe

Power over Ethernet (PoE) injector

Camera Mounting

Mount the IDS camera on a sturdy tripod.

For a dome, the (fisheye) lens needs to be facing normal to the pole of the dome, close to the dome spring line, so that it can see the whole display – but as little more as possible.

Unwanted light should be minimised to achieve best light contrast, and kept constant.

N**ote** that the tripod thread was on the **top** of the camera used for this guide, so the image is flipped.

Connect the camera to the PoE injector and the PoE injector to the network and power.

Installation on Control PC

1. Install VIOSO Calibrator.
2. Install IDS camera driver (uEye).
3. Install DeltaGUI.

IDS Camera Driver Configuration

1. Run IDS Camera Manager.

2. Select the NIC that is connected to the same network as the PoE camera.
3. Select the camera from the Camera list.
4. Select Automatic ETH Configuration.
5. Close the software.

IDS Camera Driver Testing

1. Test the picture by running uEye Cockpit.
2. Select Optimal colours.
3. Click on the play icon with the camera in the top-right corner (under the ‘File’ menu).

   Note that the image may be rotated 180 degrees if the camera is mounted inverted, which can be fixed by clicking on the wrench icon, selecting the Size tab, and mirroring the Left/right and Up/down under the Format section.

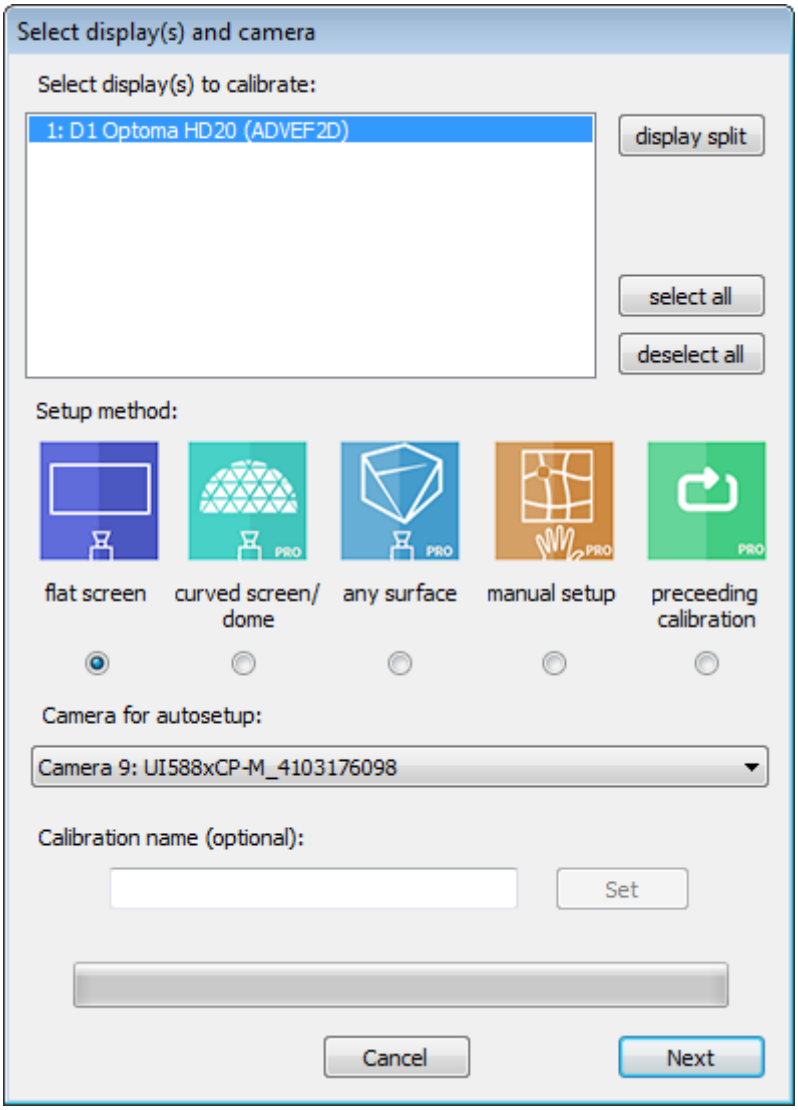
4. Adjust the zoom and iris settings by loosening the screw locks counter-/anti-clockwise, positioning them appropriately using the camera feed for preview, and tightening to lock them into place.
5. Close all windows when testing is complete.

VIOSO Integrate

A. Select Displays and Camera

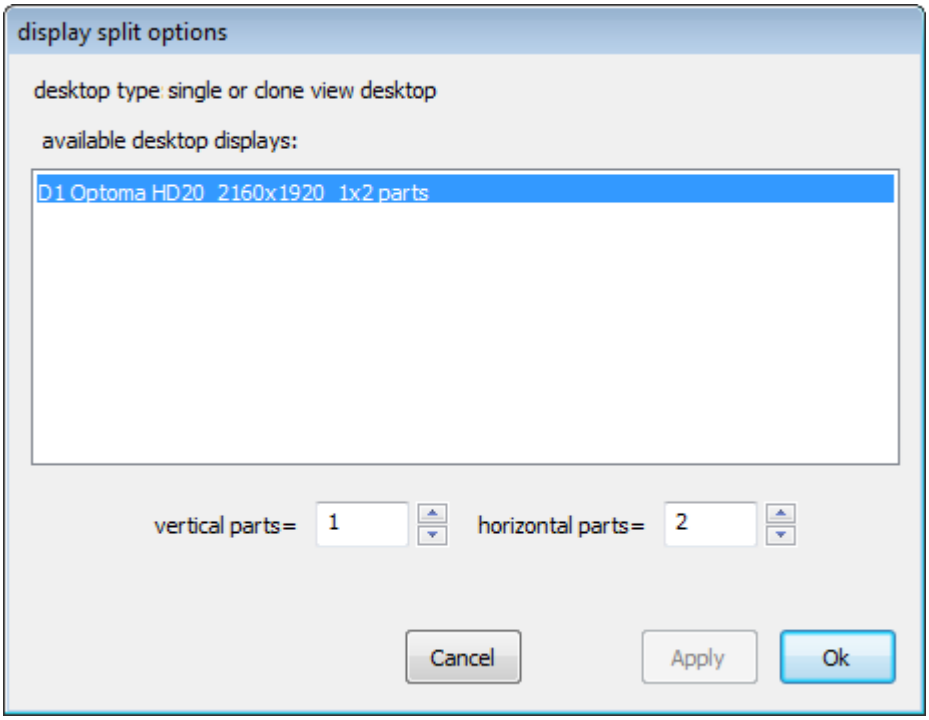
1. Launch VIOSO Integrate from the desktop.
2. On opening, you may see a prompt stating ‘Overlap detected’. Click Yes.
3. Select Calibrate to begin.

4. Select single client calibration and then you should see a window like this:

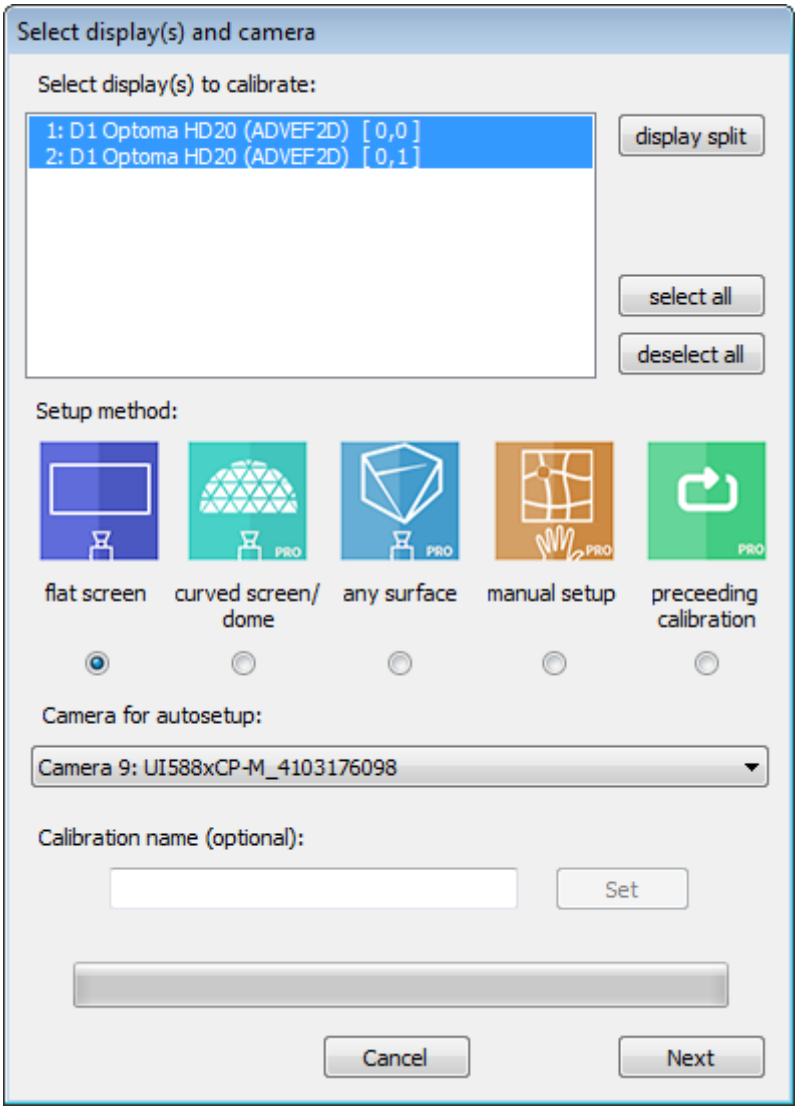


5. Select ‘display split’.

6. Set the number of vertical parts/horizontal parts to match the Eyefinity or Mosaic group and apply:

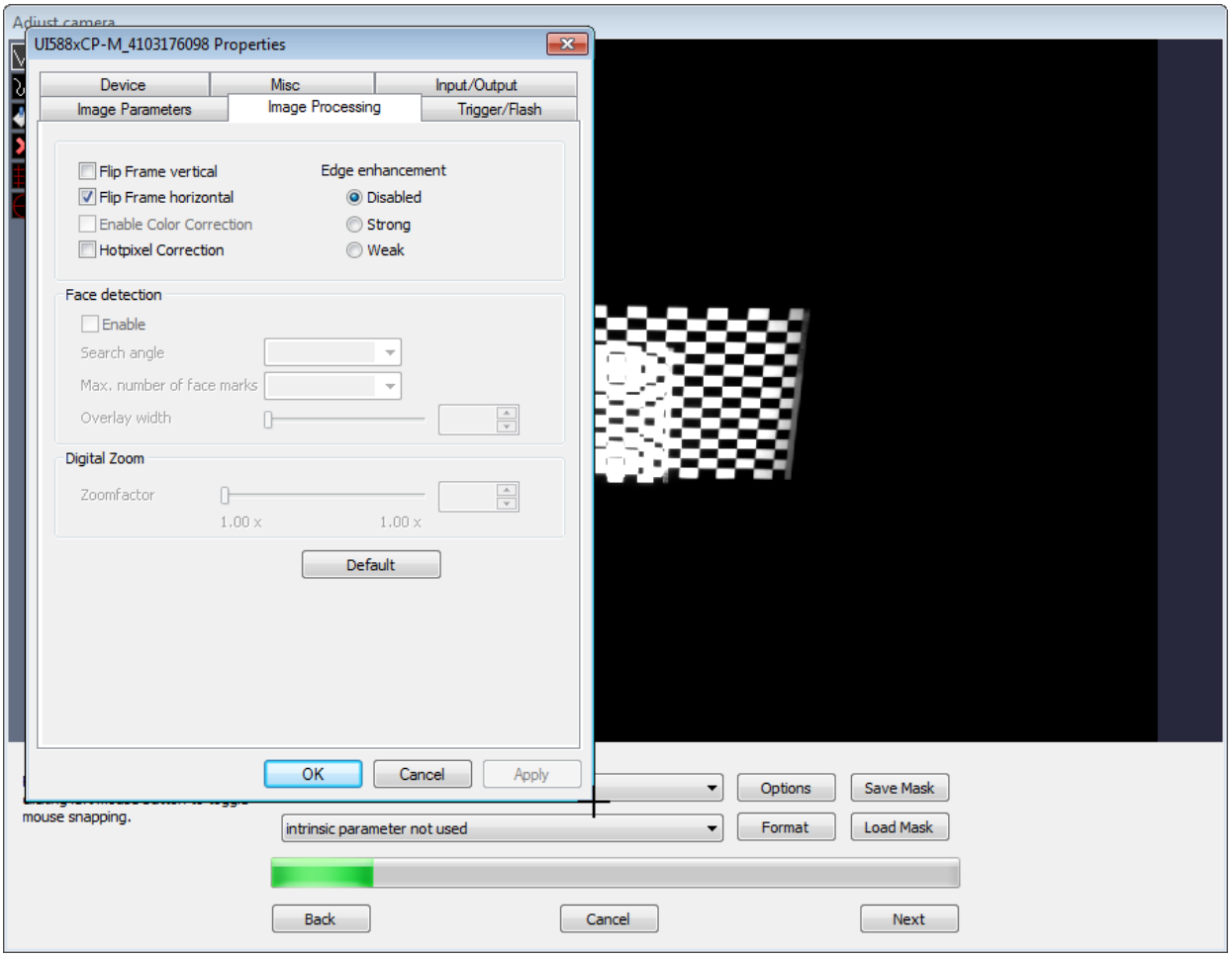


7. Select all displays for the calibration and the screen type for Setup method:

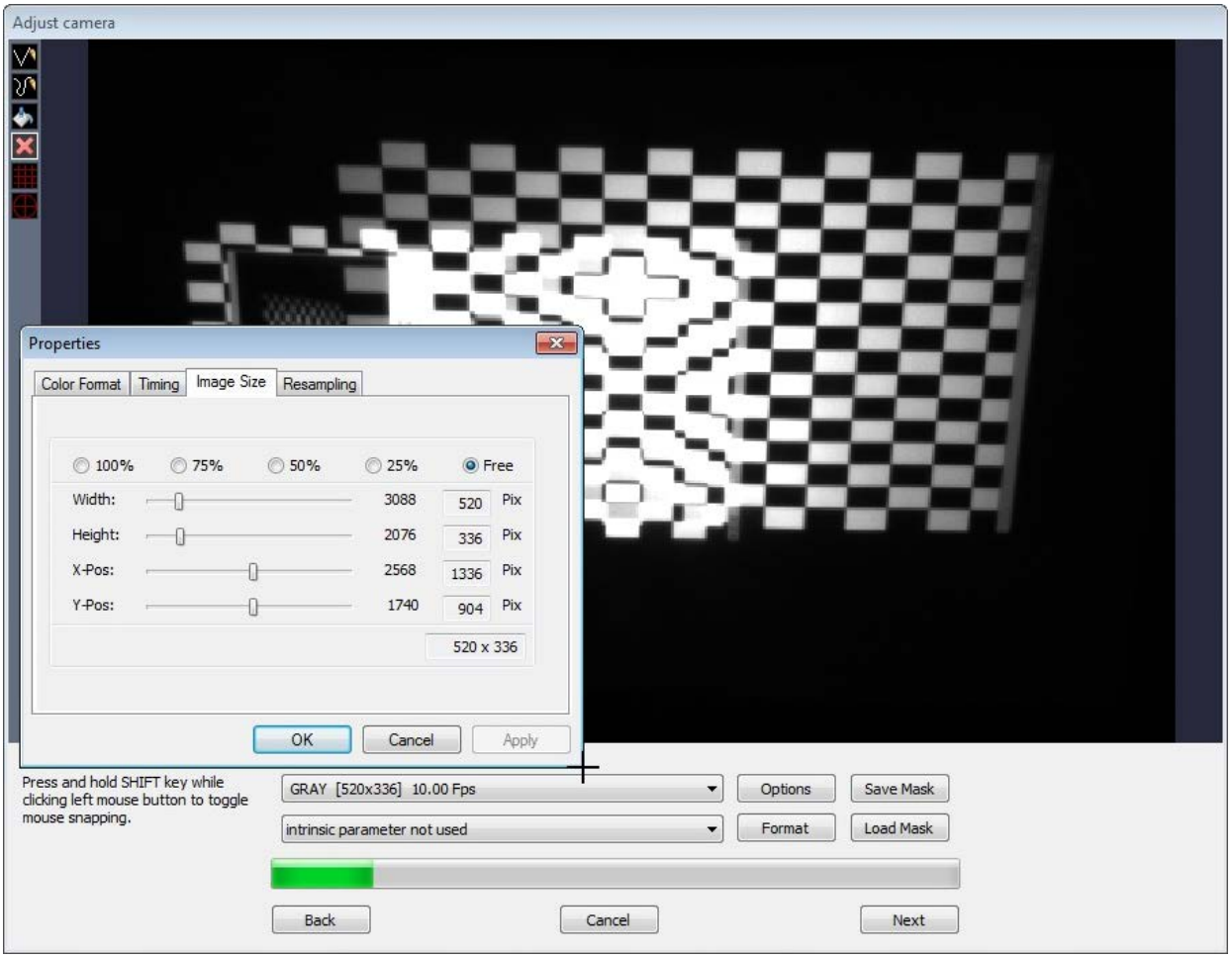


8. Set the projector arrangement to match the arrangement on screen.
9. Set any Extended Options as desired, or use defaults.

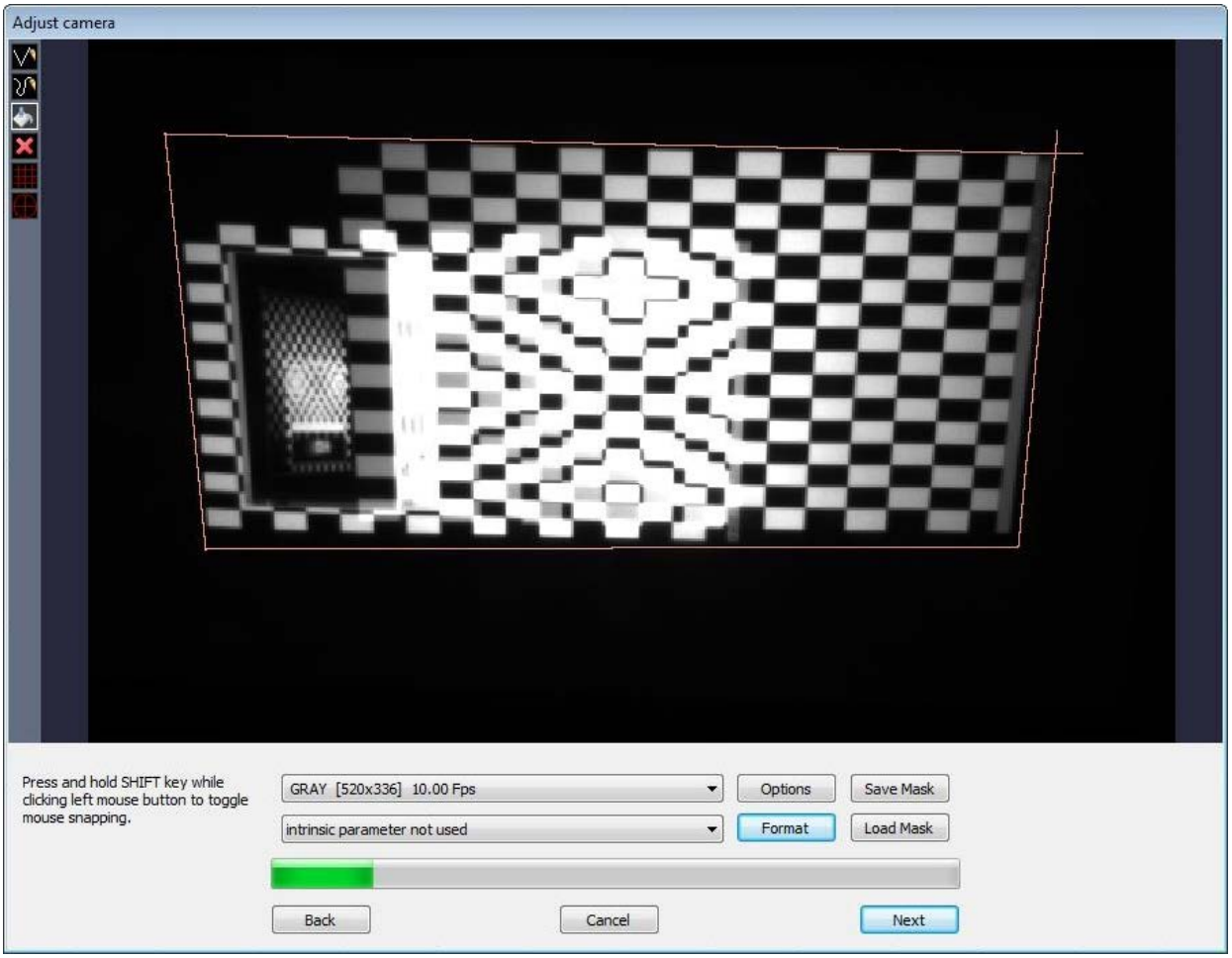
10. Adjust the camera rotation as necessary under *Options* > *Image Processing*:



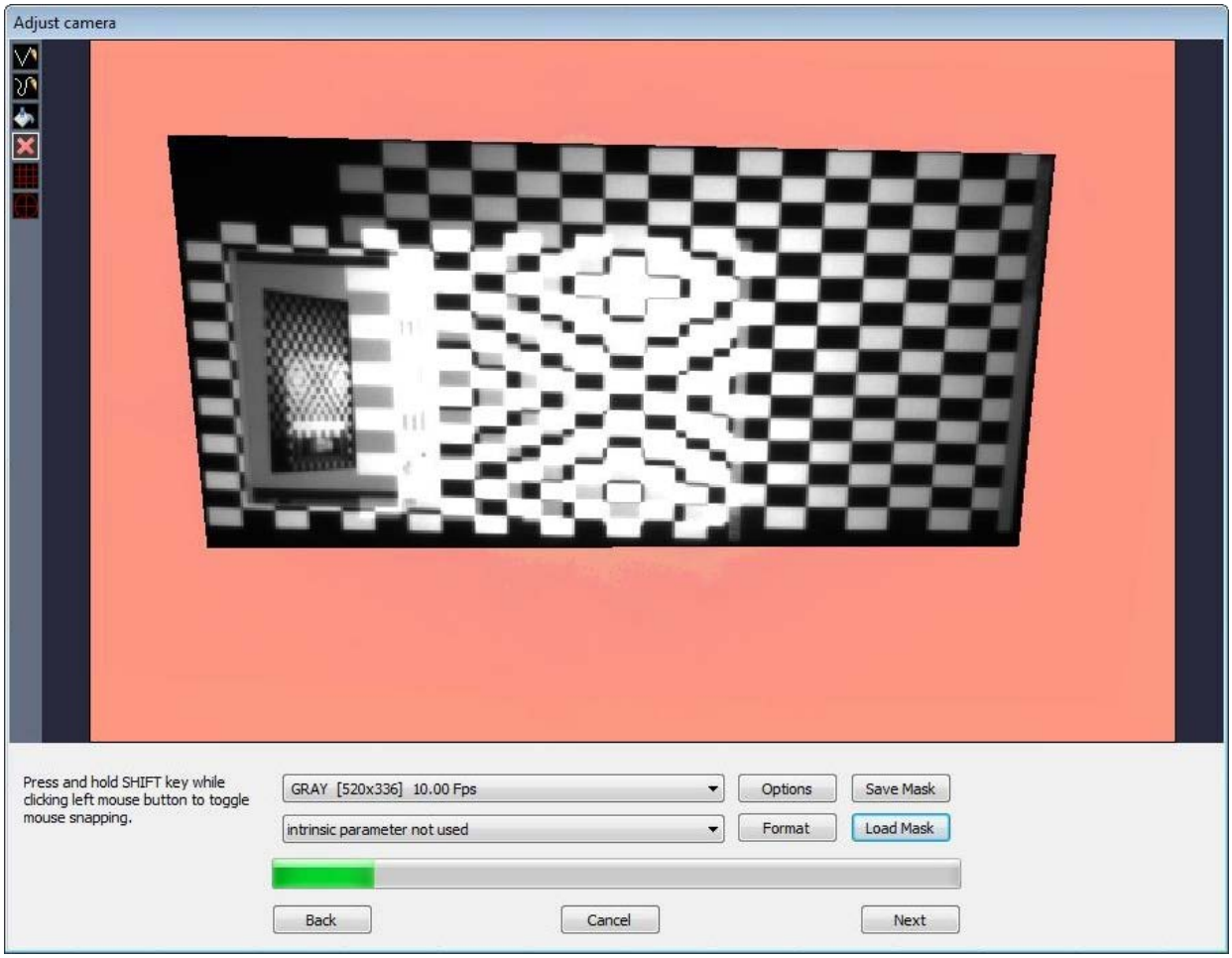
11. Adjust the camera zoom under the Format menu to zoom into the screen shape, which reduces processing time:



12. Draw a mask around the screen area. Single click to set the first point, double click to end a line making sure to overlap your lines:



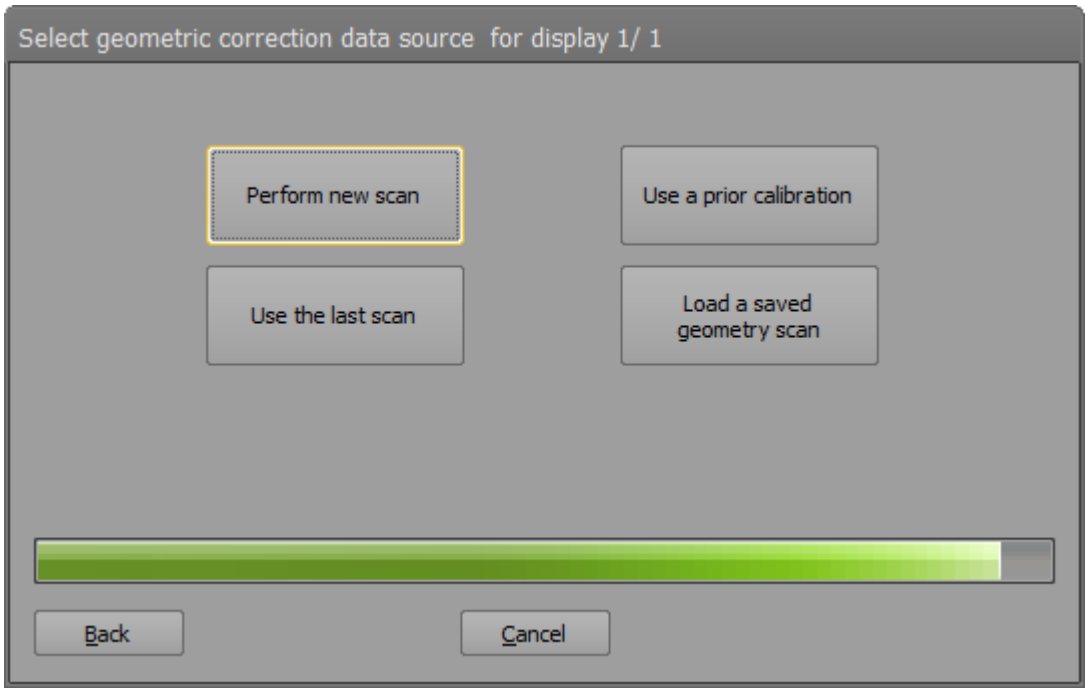
13. Fill the unwanted region of the image with the paint bucket tool and optionally save the mask:



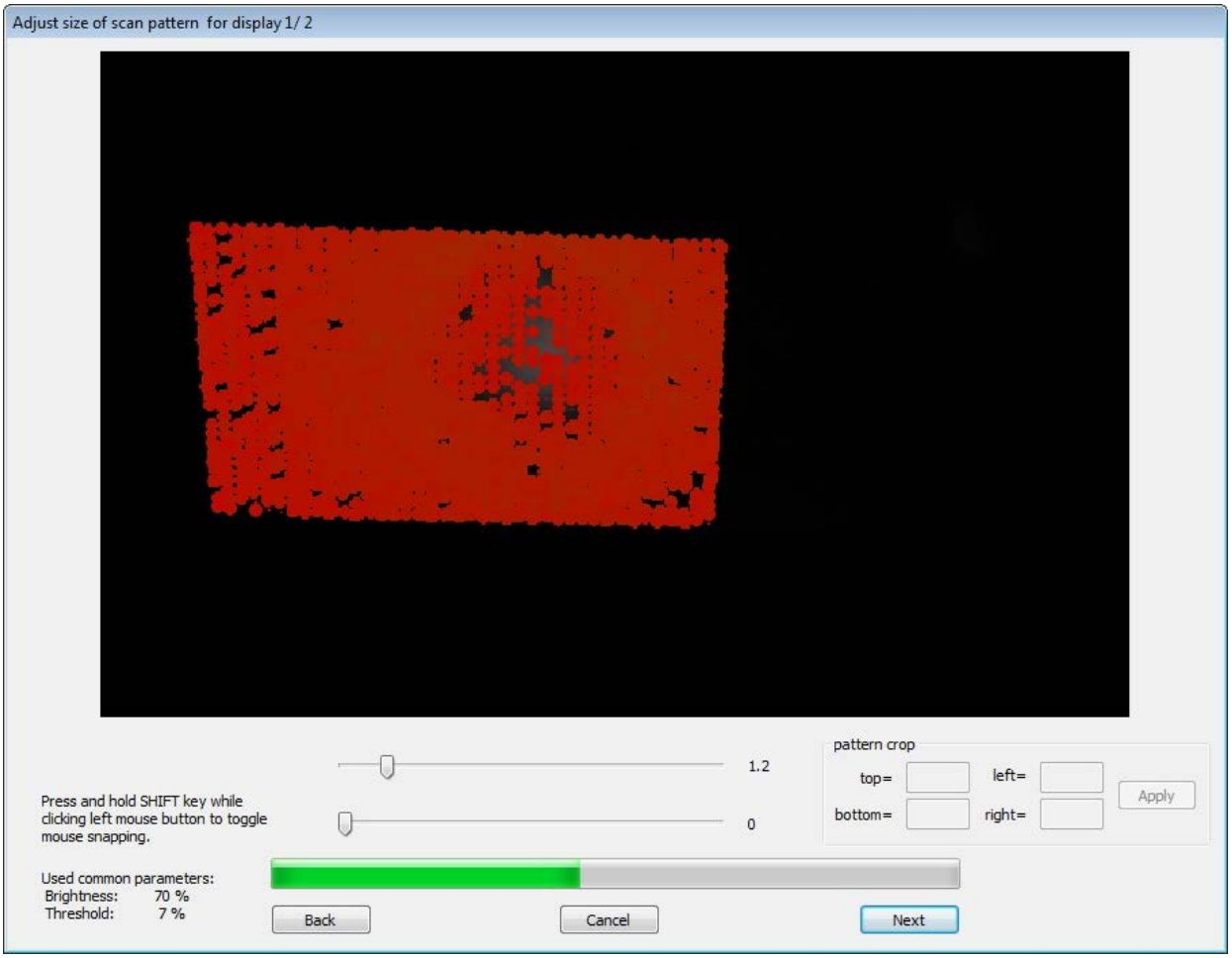
14. Select Next

B. Geometric Correction

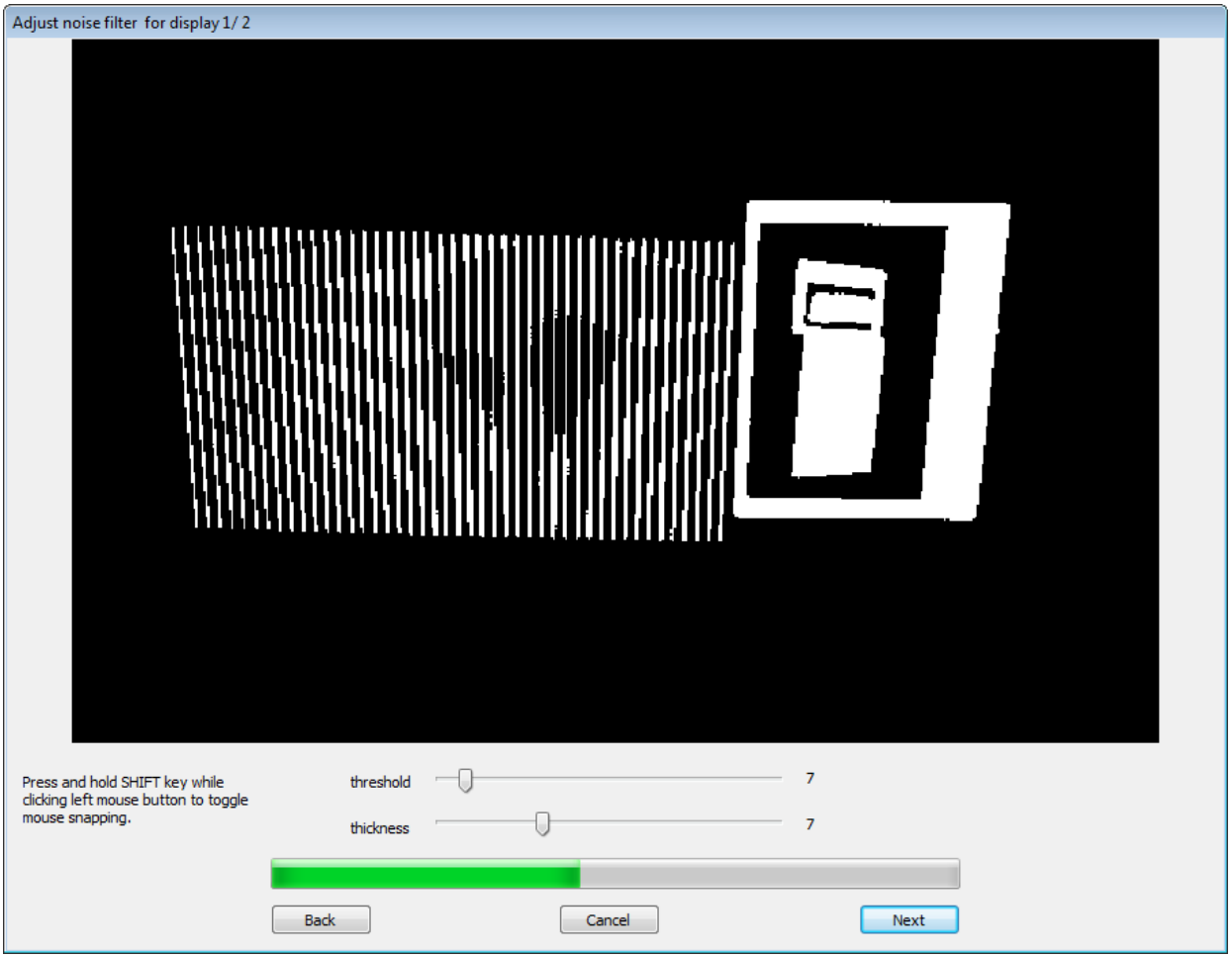
1. If asked which set of geometric correction data source to use, select Method: ‘Perform new scan’.



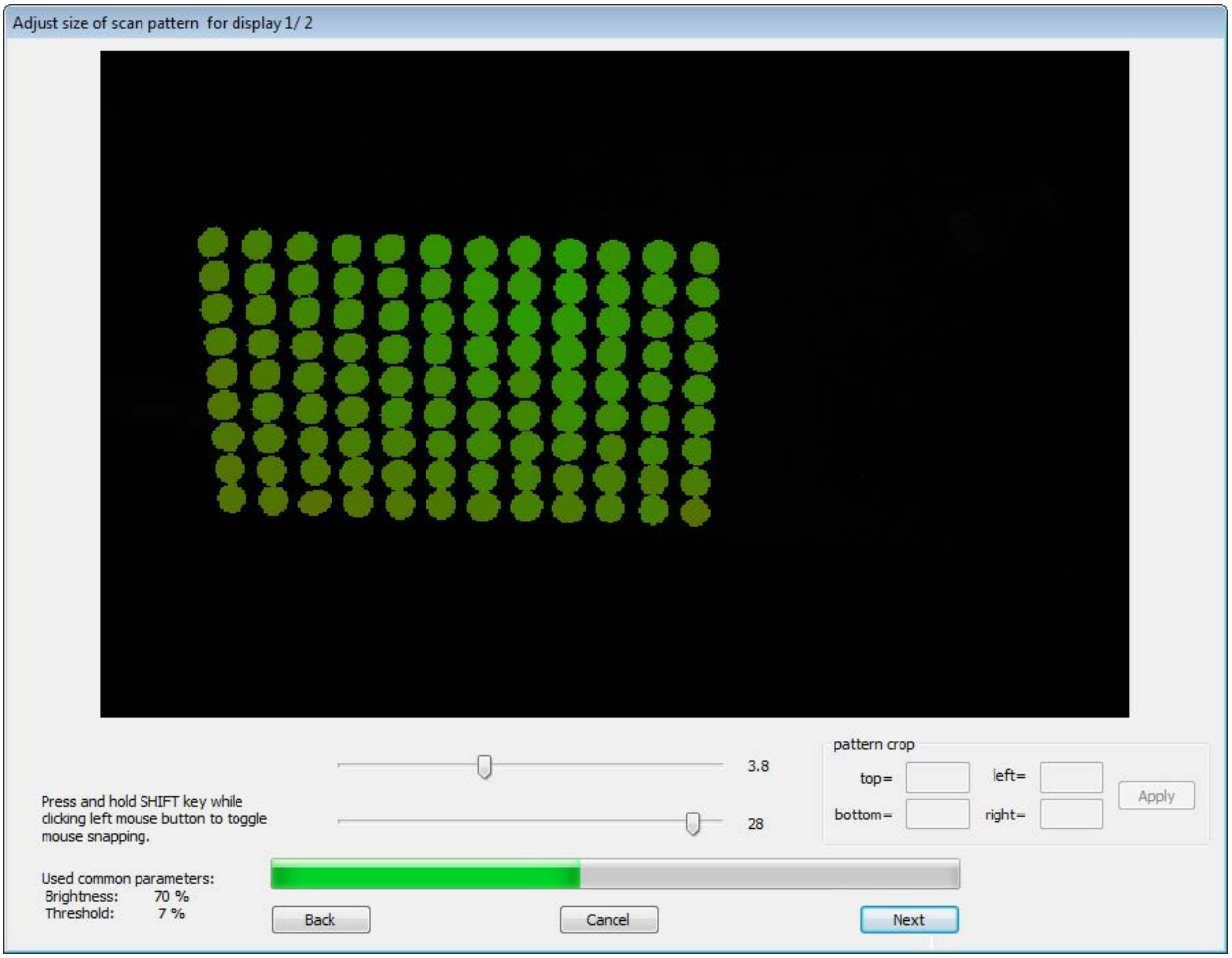
2. If the initial result does not yield bright green circles, press back to adjust the noise filter, otherwise, proceed to step 5, ‘Adjust geometry scan inspection options’.



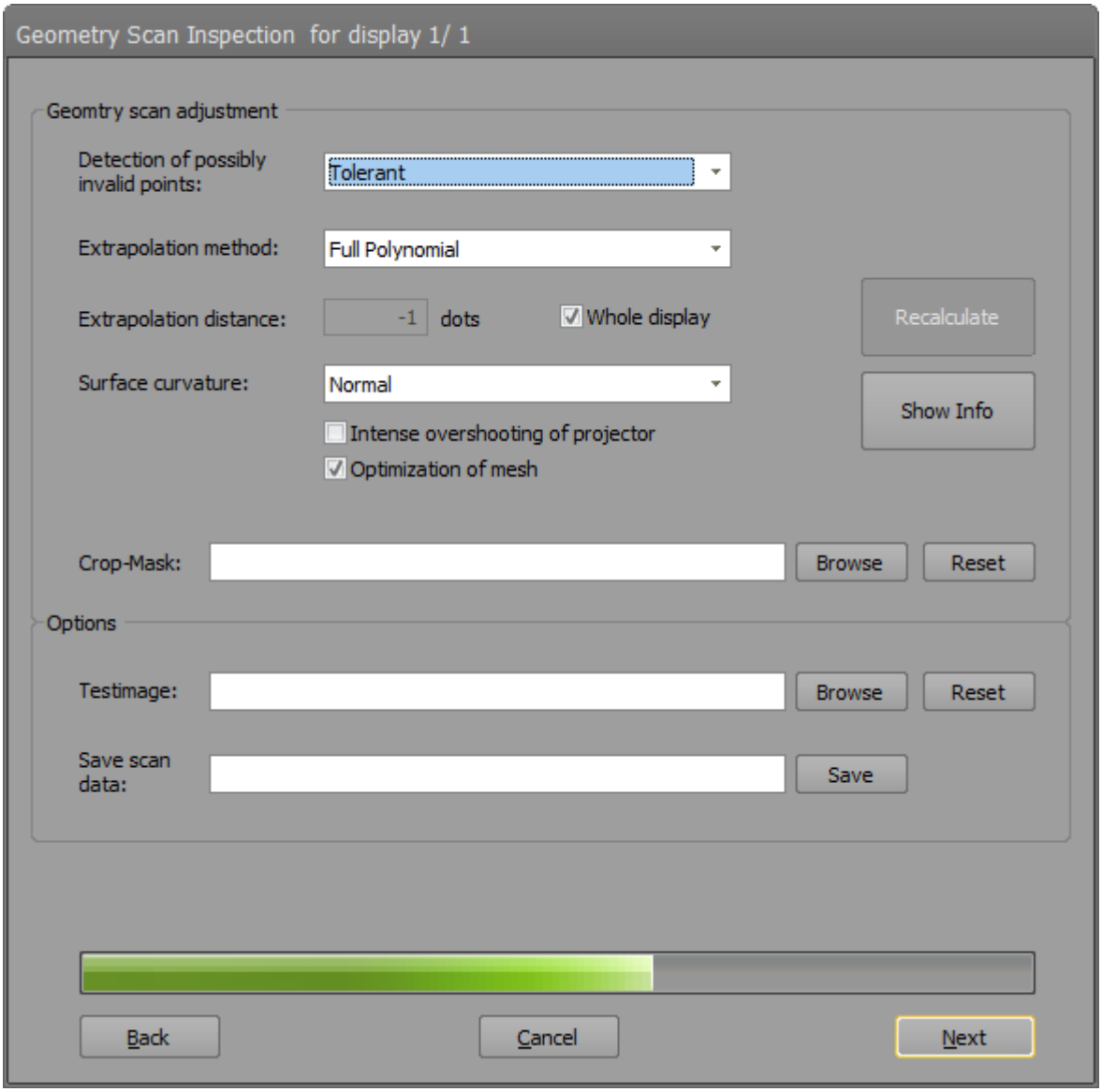
3. Adjust the threshold and thickness until you have thin, distinct lines across your entire projected surface and click Next.



4. Adjust the sliders to change the circle size and spacing until you have distinct green circles, then select Next.



5. Adjust geometry scan inspection options.



a. You can control extrapolation and geometry fitting.

b. If you change something, press recalibrate and check on screen.

c. Press ‘Show Info’ to get extended information about measurements.

d. You can adjust strictness on outliers.

e. Select ‘Full Polynomial’ (standard extrapolation method / preferred) if all points are on a simple geometry, like sphere or cylinder.

f. Select ‘Partial Polynomial’ (alternative extrapolation method / use geometry does not match in overlaps – adds unwanted waviness on corners) for arbitrary shapes (but still the shape needs to be continuous [no corners]).

g. Number of points that must be extrapolated (-1 = whole display). Check if needed area is covered by projection.

h. Change ‘Surface curvature’ for extreme screens.

i. Check ‘Intense overshooting of projector’ if a big part of the projection is not displayed on the screen.

j. Uncheck ‘Optimization of mesh’ if the shape does not match the real screen.

k. You can use cropping masks to cut parts of the projectors and change blending zones.

l. Load your own test image.

m. Save calibration for further use or for debugging send to VIOSO.

6. Once the calibration is complete for the first display, click Next and repeat stage **3. Geometric Correction** for remaining displays.
7. Adjust the points – adding more as necessary – to define your screen bounds.

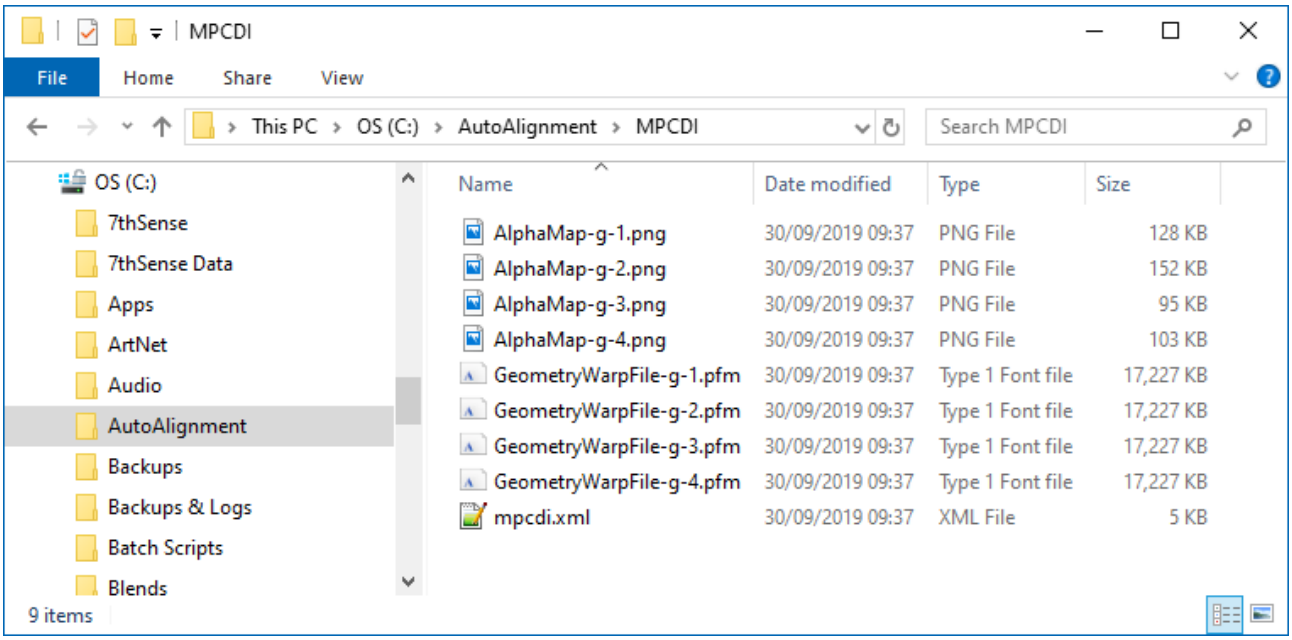
C. Export MPCDI Data

1. In the Calibrator software, select *File* > *Export Mapping*.
2. Select the target display (not the individual displays) and your desired format from the dropdown.
3. Tick ‘Individual split export’.
4. Tick ‘Virtual content rects’ in case you want to let VIOSO do the slicing; you’ll find a ~_def.txt containing optimal content size and scanouts.
5. Set your file name. To change the folder, use the ‘Browse’ button.
6. Click ‘Export’.

Load Mapping into Delta Media Server

Delta incorporates VIOSO autoalignment data as MPCDI (Multiple Projection Common Data Interchange v.2, 2013). This common standard for exchange of channel blends and warps and projector positional data as defined by VESA (see VESA Standards).

On Delta Media servers, MPCDI files are stored in the standard folder for Delta: C:\AutoAlignment\MPCDI.

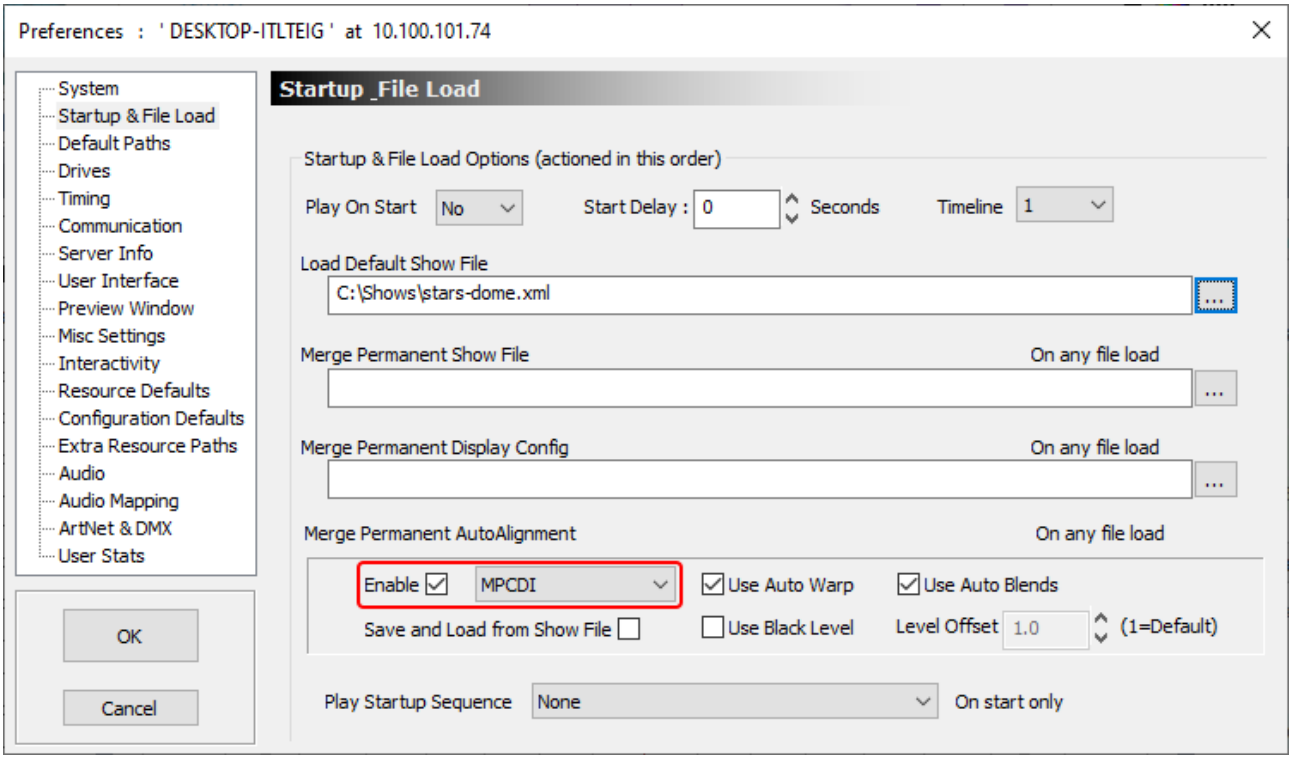


Copy the alignment data to this folder. The size of these files and the corresponding load that they add to Delta is a function of their resolution.

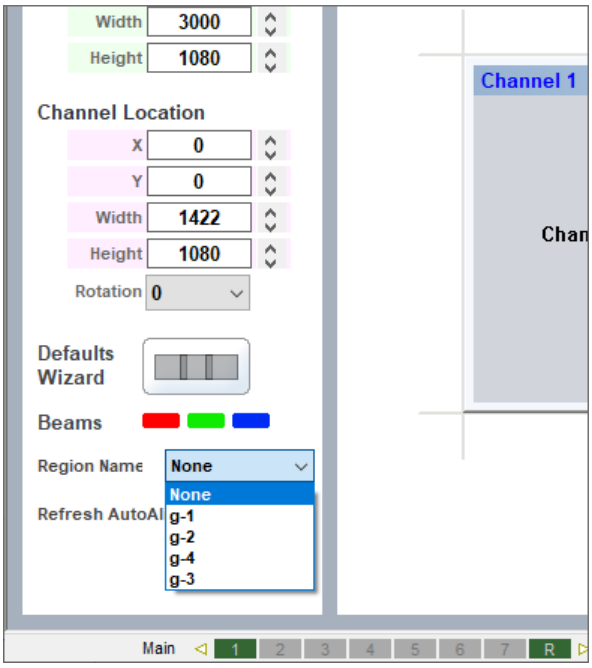
Note the file-naming standard, using the prefixes AlphaMap~ for the blend images, and GeometryWarpFile~ for the warps. The matching suffixes after a hyphen (in this example, g 1 to g 4) is what you will see in DeltaGUI. These are the MPCDI regions (Delta: channels). You need to know how these regions correspond to your Delta channel numbers so that you can match them up.

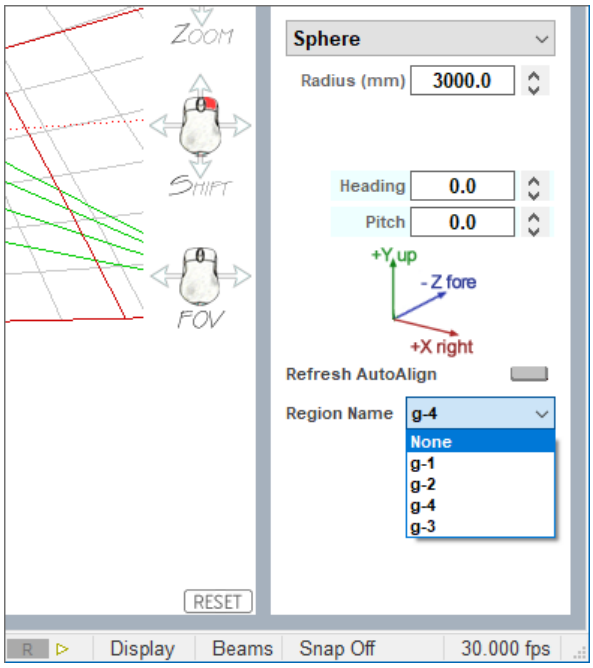
Configure Delta to Use MPCDI

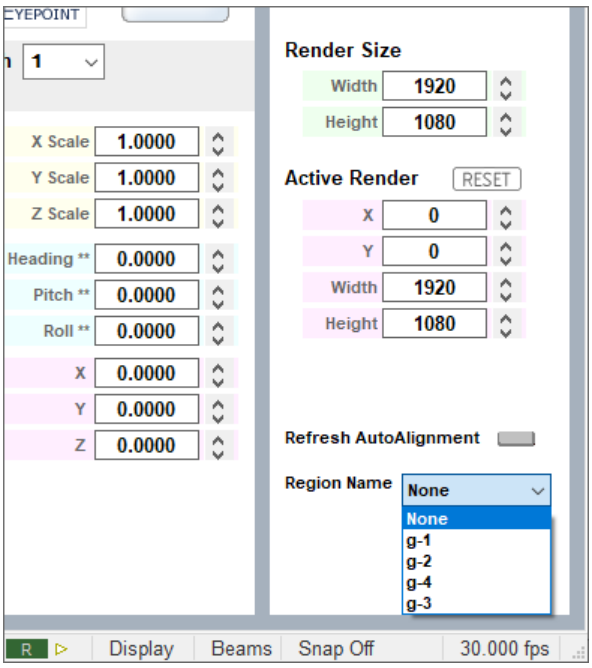
Enable MPCDI and check the required/available data, in DeltaGUI > Preferences > Startup & File Load:



In DeltaGUI > *Display* > *[Flatplane / Dome / Mesh] Mode*, you may need to click the Refresh Autoalign button. If at the top of the main window you see 'Autoalign Active - Error reading files', make sure you have enabled the right selections and that all MPCDI files are present. You should then see the MPCDI Region Names listed in the dropdown menu (left to right: Flatplane, Dome, Mesh):







Assign your output channels to MPCDI regions by selecting in turn the Delta output channel (top of left panel), then the MPCDI region. You should see the channels come live in Channel View, outlined in the colour of the channel.

Document Information

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