Delta Media Server

Carving Media for Domes

User Guide

7THSENSE

Carving Media for Domes : User Guide

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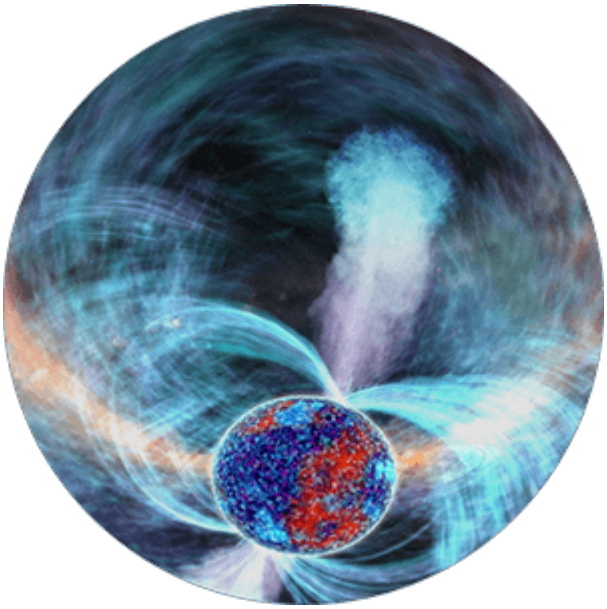
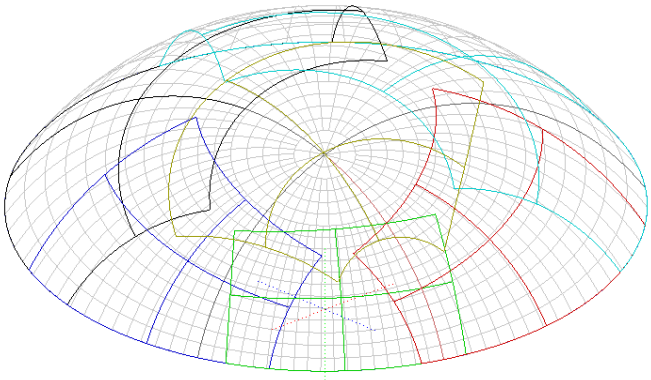
Introduction to Carving Media

The more channels are used to display on a dome, the smaller proportion each channel needs to project. When more than one server is being used, each does not need more than the slice(s) of media required for its channel(s). To lighten server loads, we can carve each frame of the media down to only that part needed for each channel, instead of full frames.

Allowing for overlap and blend, carved frames will tolerate small positional changes from projector maintenance. If projectors are substantially displaced, however, gaps may be introduced, requiring a fresh carving of the media to be done.

To see the saving, compare the complete fisheye media frame with a 6-projector dome map (each colour outline represents a channel's coverage), if spread over several servers (e.g. three servers controlling 2 channels each):





Media credit: NSC Creative

Carving is a process of re-recording each channel's segment of the media in turn, to be run on this, and only this, display arrangement.

> This guide assumes that you have already set up your server network and aligned your channels/projectors, and have the media available on your timeline ready to carve.

Show Setup for Carving

> **Important**

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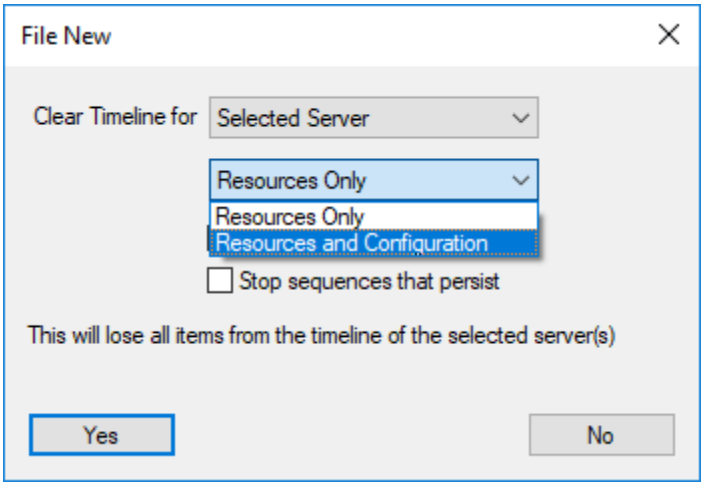
When sharing media across multiple servers, each controls its own channel(s). For media to be carved effectively, the settings for each channel must be set according to the individual projection requirements. If the projectors are subsequently moved, and are realigned, carved channels may no longer overlap and blend correctly. In these circumstances, the media would have to be re-carved with new channel settings.

The instructions show how to carve media on a Leader server then share across Leader/Follower servers, using manual calibration. See the alternative instructions for Domes with Scalable Auto-alignment [12].

Note: if the whole movie is too large to fit on the server disk in a single session, carve your media in 'batches' of files/frames.

Show Setup: DeltaGUI

Create a new show on your Leader server, where you will carve the media:



Click *File* > *New* and Select 'Resources and Configuration' and 'Clear Background' to clear down all previous configurations.

Choose *Display* > *Dome Mode*.

If you are unfamiliar with working in Dome Mode (previously termed Frustum Mode in earlier DeltaGUI versions), please refer to the Delta User Guide in the appropriate version for your system.

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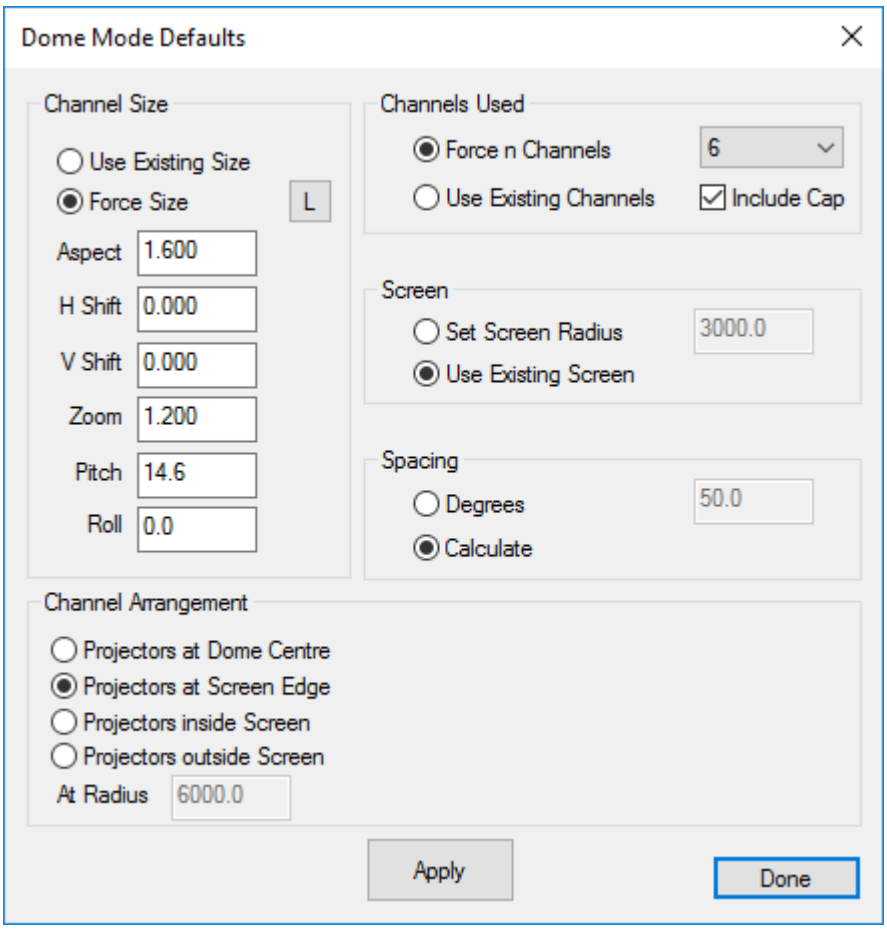
Channel Setup (Manual Alignment)

Follow the normal procedures for setting up your projector channels for Dome Mode (see the main *Delta User Guide*). Click on the Defaults Wizard to set initial Dome Mode Defaults. If aligning manually, the settings you use may come from a CAD 3D model.



Select 'Force n Channels' and the number of channels that you are using, and other settings, then click 'Apply' and 'Done' to close.

When you have finished a manual alignment, with small adjustments in the Dome Mode Channel panel, make a note of these final settings for each channel. Minor movements in projectors from regular maintenance may again be made manually.

When you carve media to these configurations, the result will only apply to them, with a small amount of tolerance. More substantial realignment may require re-carving of the media.

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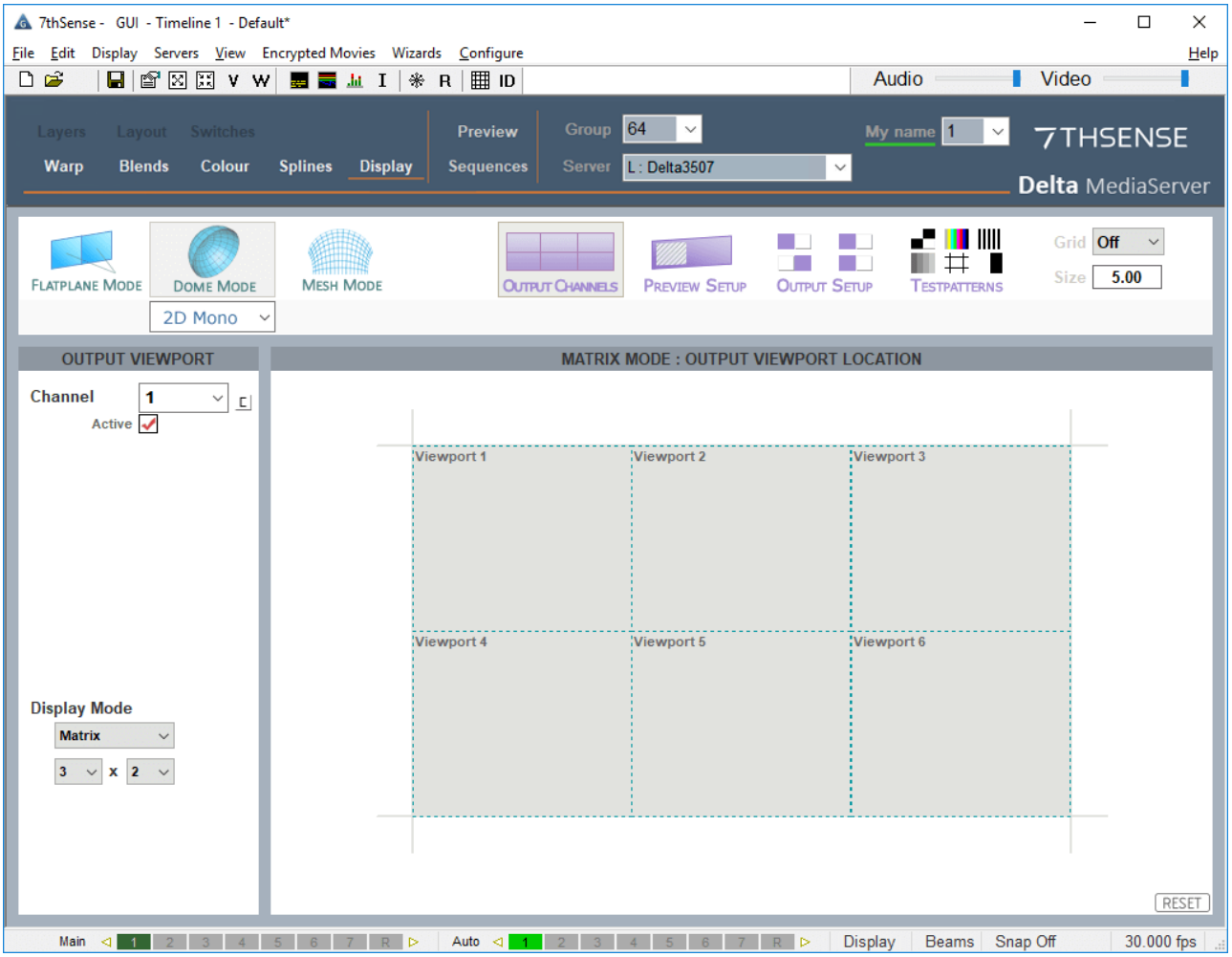
Output Setup: Display Mode

Select ‘Output Channels’ and set the **Display Mode** to Matrix, to match your graphics card desktop: in this case, Matrix Mode (2D Array) of 3 × 2. Matrix mode enables you to have a better view of the channels on the Playback Window rather than seeing channel views all in a row.



Now drop your media onto your timeline. Fisheye media **mapping mode** is normally detected automatically, but check in the timeline resource properties, Screen Location tab:

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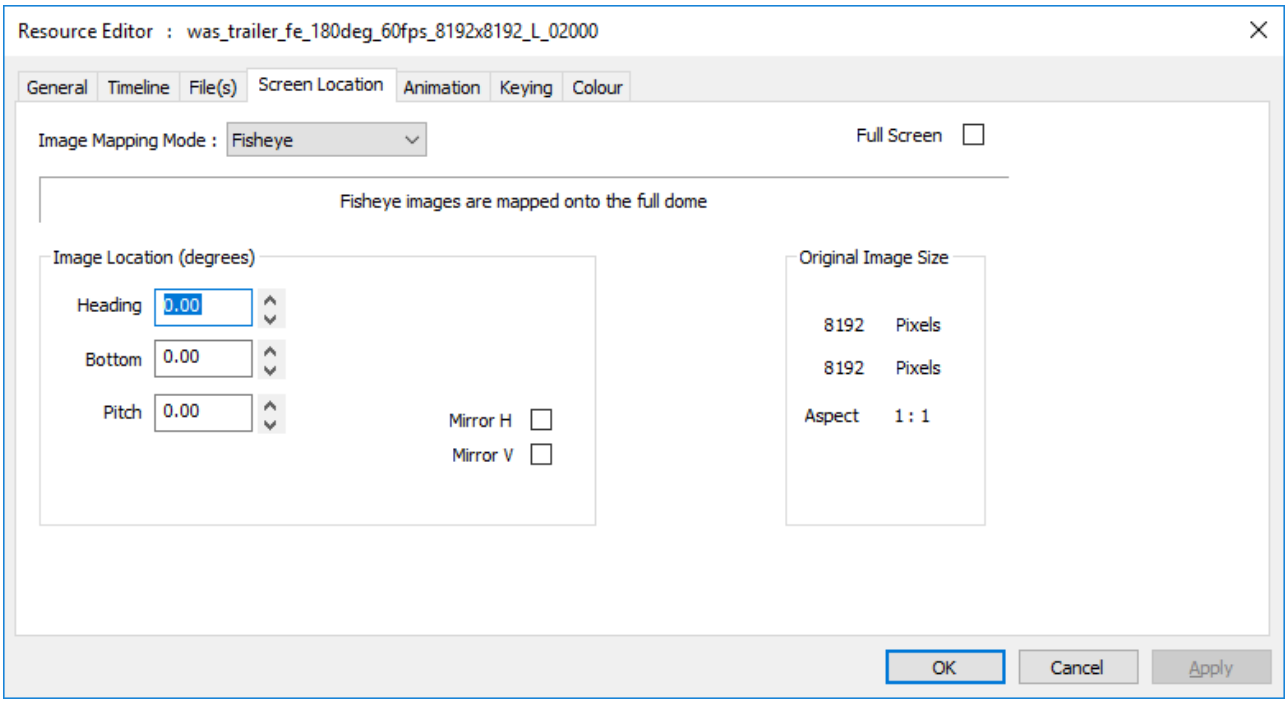

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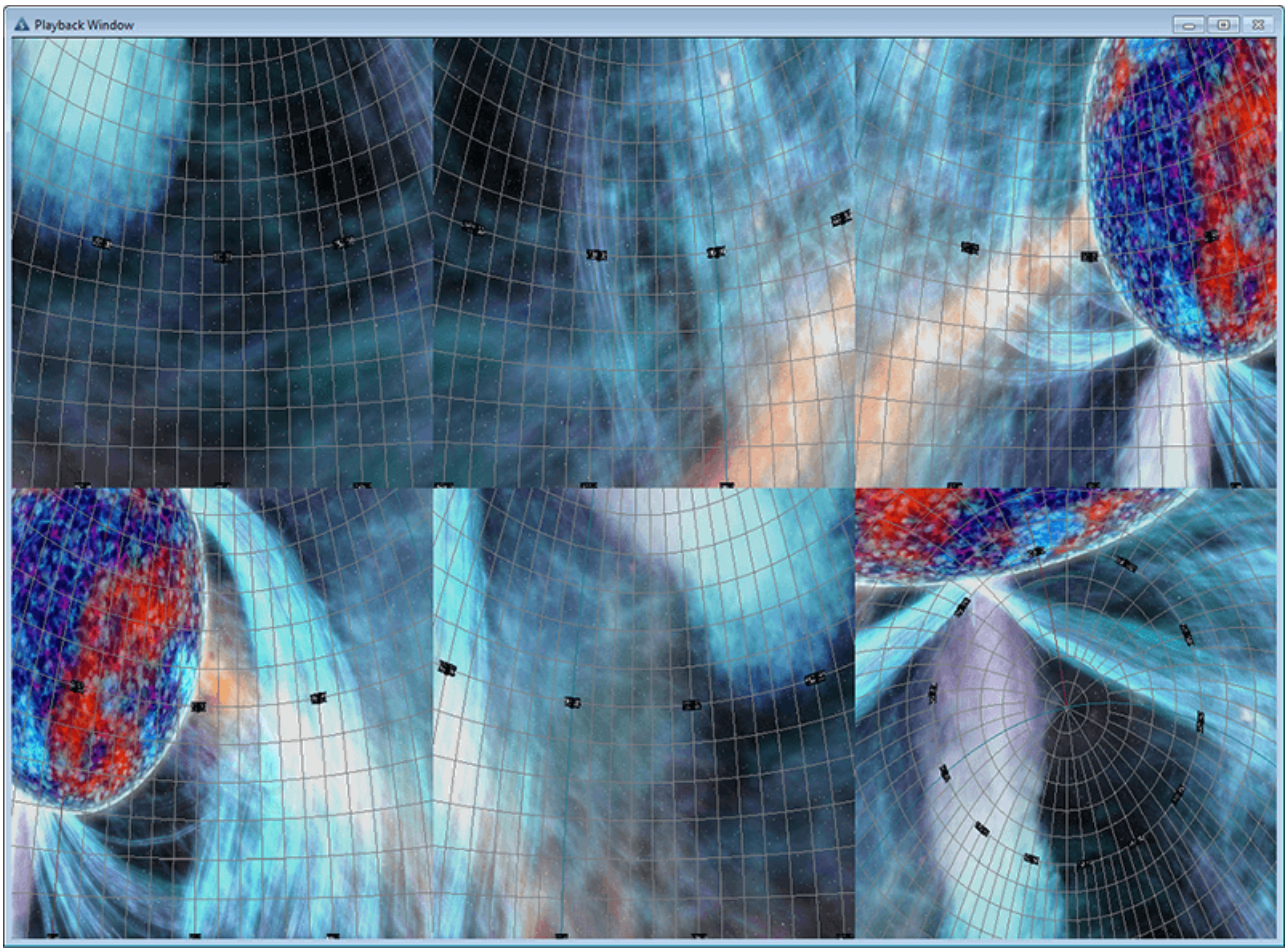
Fisheye media in the Playback window will be now divided like this (same media as in the introduction to this section):



Media credit: NSC Creative

Carving the Media (Leader Server)

Please note: From 2020 7thSense deprecated the terms master and slave for the dependencies between devices. We now refer throughout to 'Leader' and 'Follower' in our products.

To maintain functionality, both terminologies continue to work internally, but our documentation no longer uses the former terms. Users of pre-2020 products will need to observe the equivalence and continue to use the previous legacy terms.

Carving follows the normal method of recording. With the media active (enabled) in the Timeline, click the red Record button (bottom-left in DeltaGUI), and configure the output for each channel, in your movie drive:

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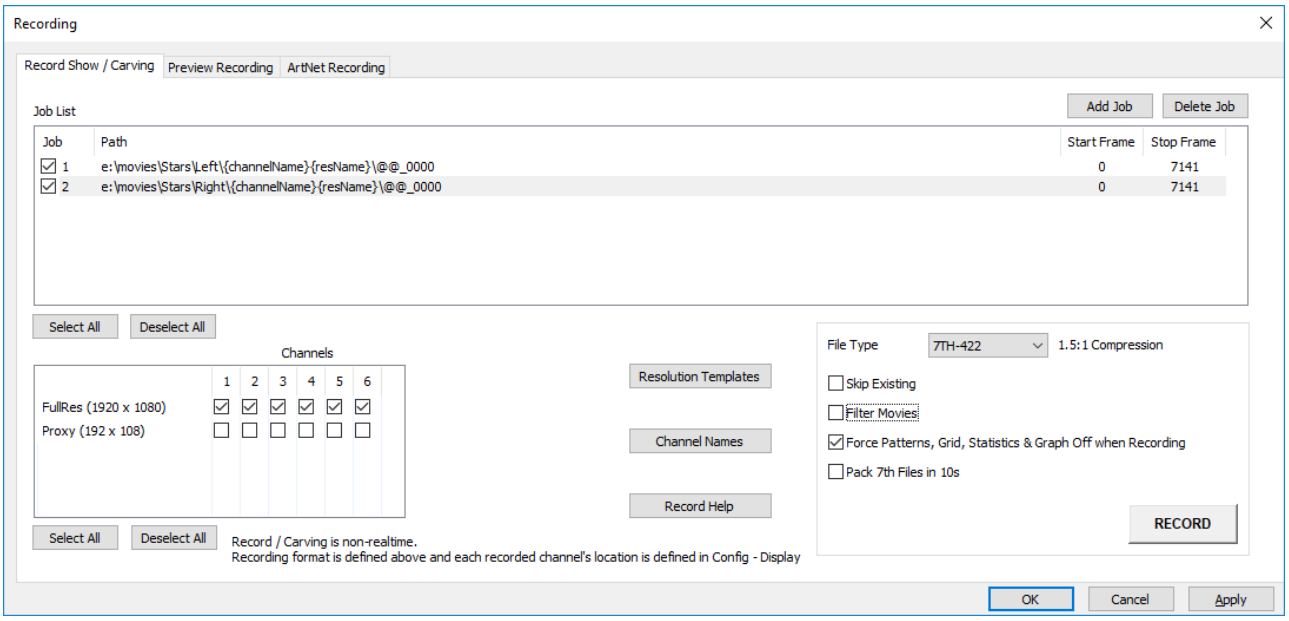

If content is 3D, you will need two Jobs: once for each eye.

Apply the settings and click **RECORD**. This button will turn solid red RECORDING until complete. Click again if you need to stop recording. The process can take some time.

SAVE your show file to maintain the channel settings and use them to project media accordingly from each of the group of servers.

The process will have carved each media file (frame) into channel segments, distributed into individual folders, one for each channel.

You MUST maintain all files/folders for efficient playback, but can now distribute the folders between servers so, when played back from the Leader server, media will appear as if being shown from a single server.

Autoalignment systems and multiple servers

Each server needs the same channel settings to be applied from the server used for show setup and autoalignment. The precision of settings from auto-alignment will be much higher, so it is better to carve media for just those channels controlled by each server, from each server in turn.

Distribute Carved Media to Correct Servers

Start a new show on each server, and copy the original show file settings across to each, so that **all channel settings** are available. (This is more efficient than setting up channels again manually on each server, and enables servers to be swapped in and out more easily if required.)

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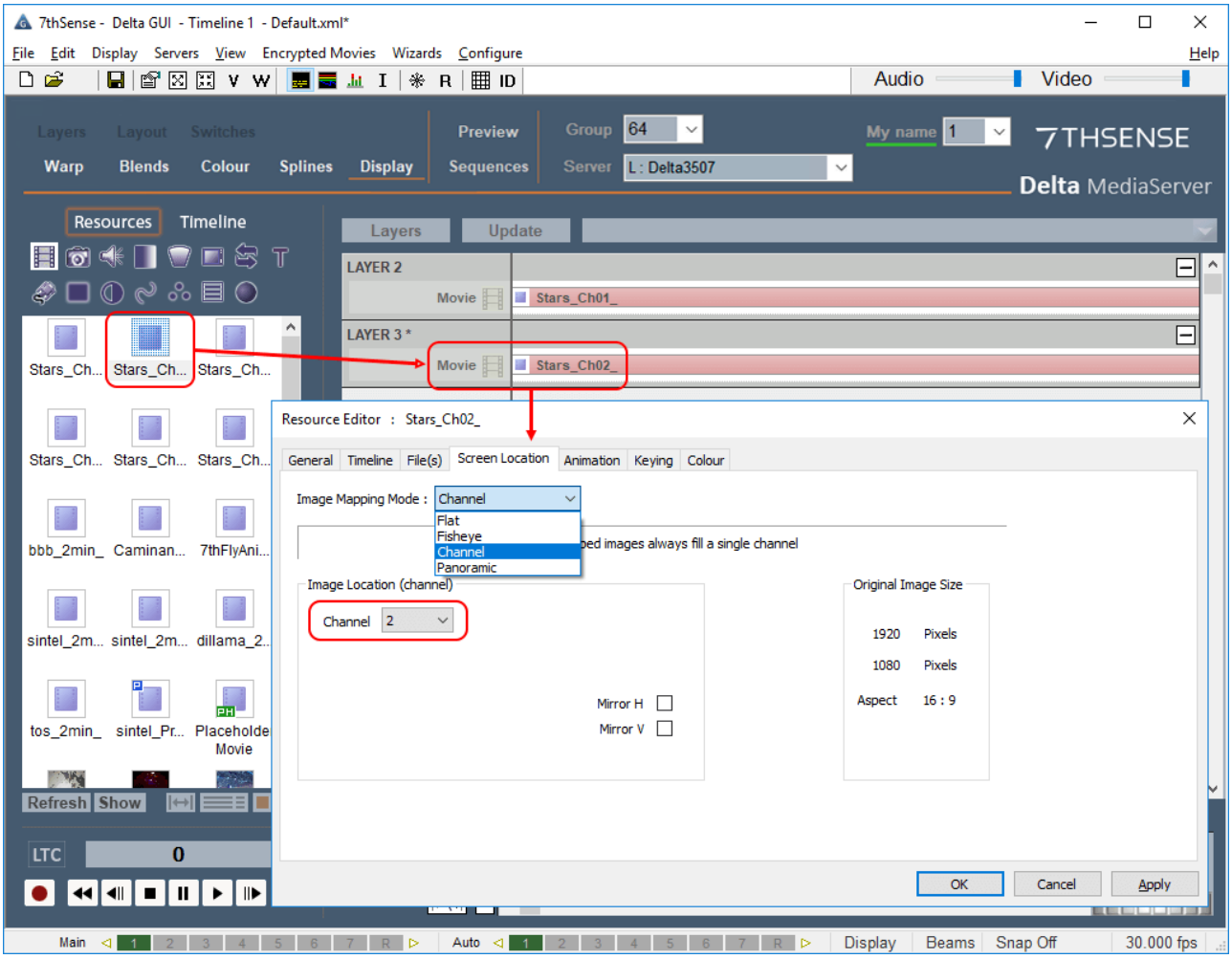
On each server, **activate only the channel(s) that it will use**, e.g. 1 & 2; 3 & 4; 5 & 6 – for 6 channels distributed among 3 servers – and check that the final channel settings are the same as from the server used for the manual alignment.

Each server only requires the carved media for the channels it controls. Copy the relevant folders **from the carving server** and refresh the resources in the **destination server** in DeltaGUI.

Drag the new, carved and channel-specific, movie resource(s) onto the timeline for each server, and access the media properties. Here is the server controlling channels 1 and 2:



In this example, media carved for channel 2 has been assigned Channel mapping mode (not fisheye now), and located in channel 2.

The Playback window will now show just these 2 channels in the correct position. Each other server maps its parts of the dome to display the whole, but now each server is only delivering a fraction of the original media volume.

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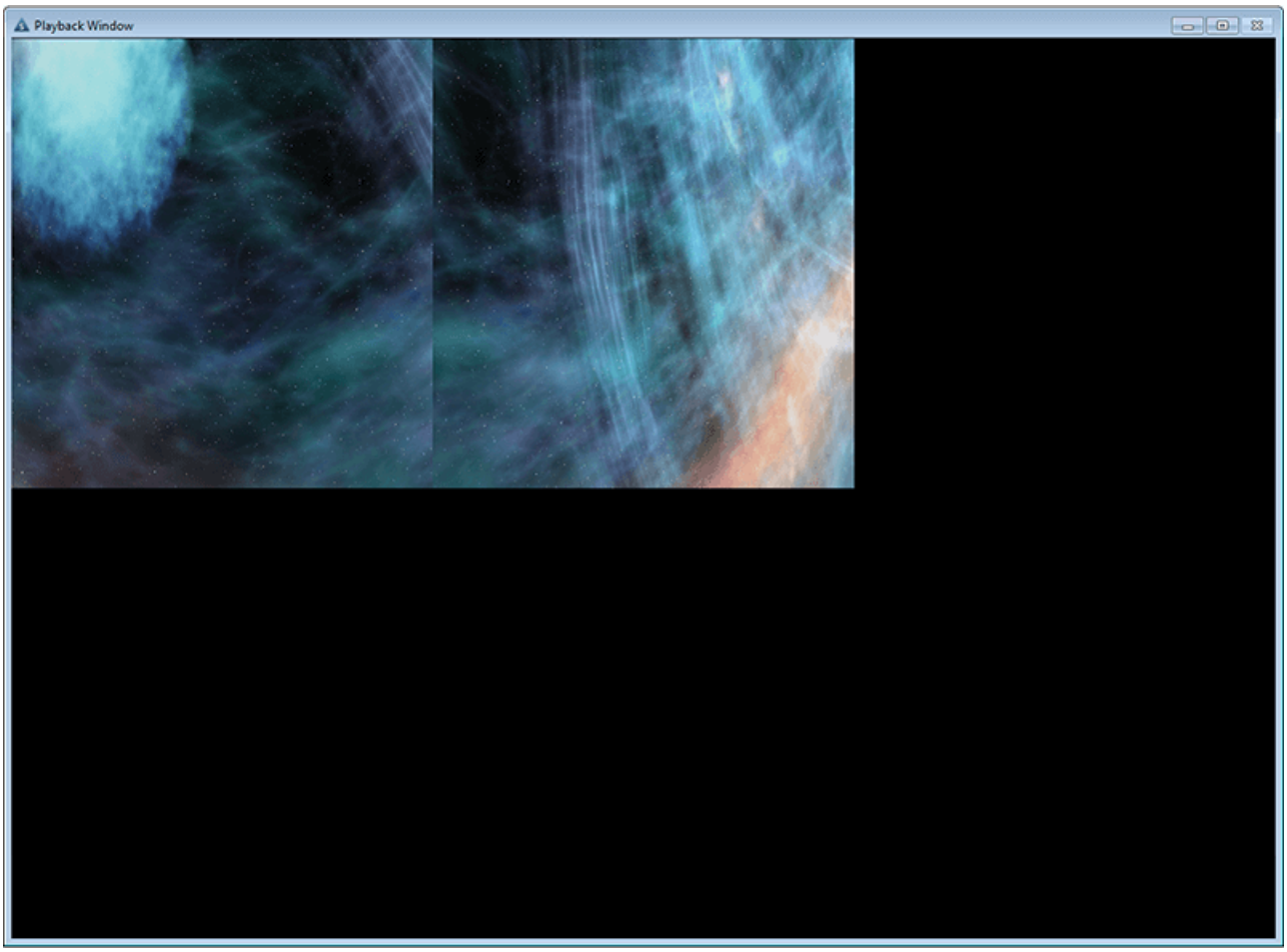

Domes with Scalable Autoalignment

The process is mostly the same as for manually-aligned domes, but it is better to carve channel media from the servers that control them.

Scalable Display Manager, Leader server

- Run Scalable Display Manager as normal.
- Get all settings correct so the dome is mapped.
- In the *Perspective* menu, click 'Override Frustums' and add 5 degrees to all angles: up, down, left and right.
- Click 'Update Calibration'.

Carving media in Delta, for each server

- **Import** Auto-alignment frustums, geometry and blends into DeltaGUI.
- **Fisheye-map** the Leader media properties in the *Resource Editor* > *Screen Location* tab.

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- **Disable** auto-alignment geometry (and blends) in DeltaGUI (*Preferences* > *Startup*), to just leave the over-scanned frustum data in the channel definitions (it will look very wrong on the dome!)
- **Record** out the timeline on each server to a new folder per channel, at the required resolution and format (on the E:\ Movie Drive) as described above for any carving [9].

Reassemble carved media in DeltaGUI

Delete the fisheye media from the timeline (you may want to remove the original media as well, to save drive space).

Drag the newly-sliced carved media onto the timeline, then channel-map (*Resource Editor* > *Screen Location* tab) to match the frustums (separate eye channels, if 3D) as described here [10].

Re-enable 'Use Autoalignment' option in DeltaGUI (*Preferences* > *Startup*).

After subsequent realignments in Scalable

Next time you run Scalable, run as normal, but make sure that the 'Override Frustum' option remains ticked on the perspective page, and click 'Update Calibration' again to take into account the new camera location or projector movements (within the 10 degrees 'padding' that was added for overlap allowance).

Refresh in DeltaGUI

In *Display* > *Dome Mode*, refresh the AutoAlign in the Canvas panel:

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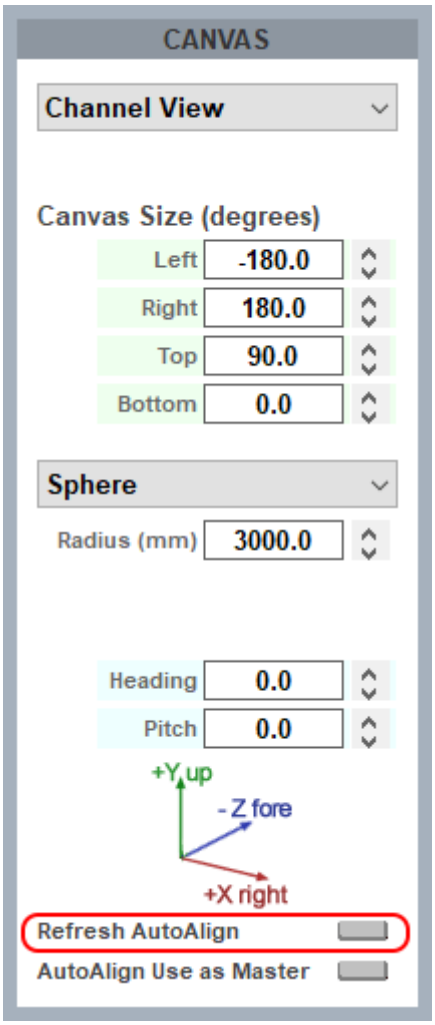

Document Information

Date	Document edition	Software version	Revision Details	Author/Editor
October 2015	1	Delta 2.2	New release	Helen Ward
August 2017	2	Delta 2.5	Revised for Delta 2.5 and Scalable Displays	Andie Davidson
July 2020	3	Delta 2.5 to Delta 2.7	Revised server terminology	Andie Davidson

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