



Delta Media Server

Delta Composition Mode

User Guide



Delta Composition Mode : User Guide

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Display Configuration: Composition Mode

Composition Mode is a Delta Licence option for managing multiple flat screens that do not form a contiguous geometric shape. This may be a complex video wall, or large-scale LED modular panels, distributed on a building or buildings, or LED backdrops to entertainment. Essentially, it is a means of placing separate output channels independently within an overall canvas.

The principle: placing parts of a media frame into distributed channels

Media is usually designed for the shape and dimensions of the display canvas: a fisheye for a dome, panoramic for wide screen, rectangular and so on. Each channel (projector or display panel) addresses one part of the total canvas with just that part of the total media frame. This situation can be optimised for bandwidth or processing capacity by carving the media down to only the part of each media frame required for each channel, but the parts remain channel-mapped and the channels all fit together with overlap and blend.

However, in the case of distributed LED panels that do not form a contiguous geometric canvas, the media design can itself be pre-optimised, and the separate rectangles packed far more economically into a frame that minimises empty pixels. Take this simple example where an arrangement of display panels is used to display a single piece of media:

The media could be rectangular:



Even though the LED display array is not:



But that is far from optimal. So taking only the media area (viewport) required by each display panel channel, the elements can be packed tightly:

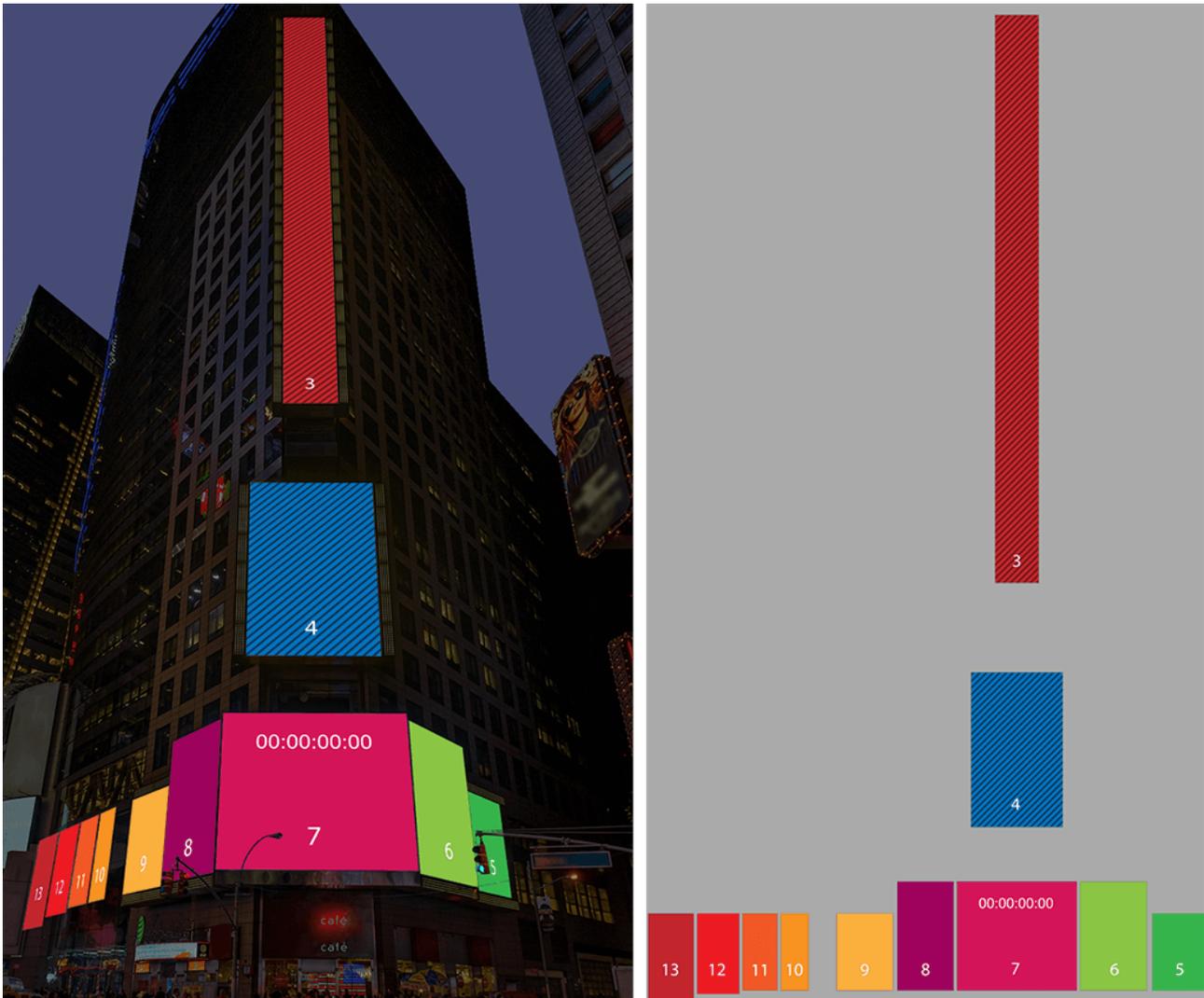


Using mapped co-ordinates, Delta composition mode extracts each element of the media, rotates and/or positions it to address each channel (LED panel) appropriately:

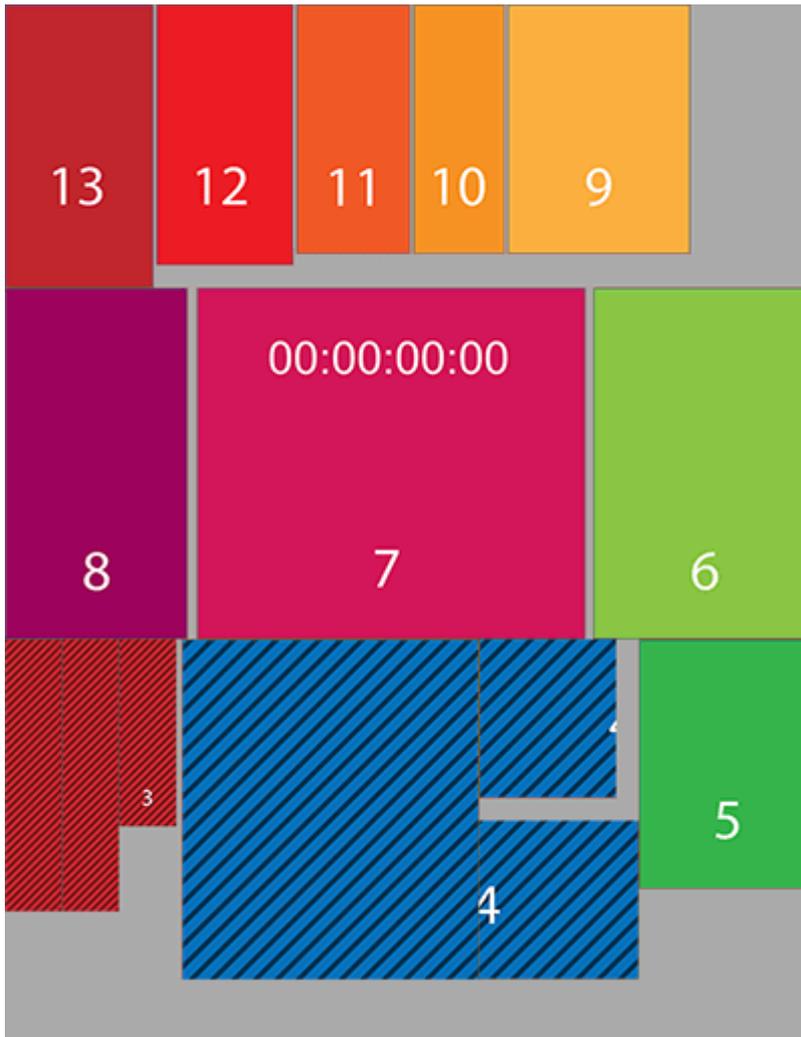


Multiple Distributed Displays

In other cases, different media might be addressed to the various channels in a more complex or really big array. Compare the real array (left) with its logical layout (right):



Again, there is a lot of unused area, when treated as a whole, which wastes a lot of bandwidth. The media can be sliced and packed more efficiently in the frame; we then unpack it on the Delta canvas. Note how a single LED display (the long thin one) can itself be sliced. Pieces can also be rotated in the packed file, and rotated back on the Delta canvas. Here is the packed frame:



Output Blocks

The size of the media frame is dramatically reduced, but an LED processor is still limited to what it can process (often up to HD 1920 × 1080 pixels) and so this format may still be too big for an individual processor.

To break the media up further, the *unpacked* media can be planned on a Delta canvas of 4 × 1920 × 1080 HD blocks:



All we need to do now is to find the coordinates and dimensions of each LED panel in the packed artwork, make each a channel, and then place the viewport for each channel in the output, according to this plan.

Delta will place the elements in the output, and the LED processor will be programmed to map the outputs onto the displays.

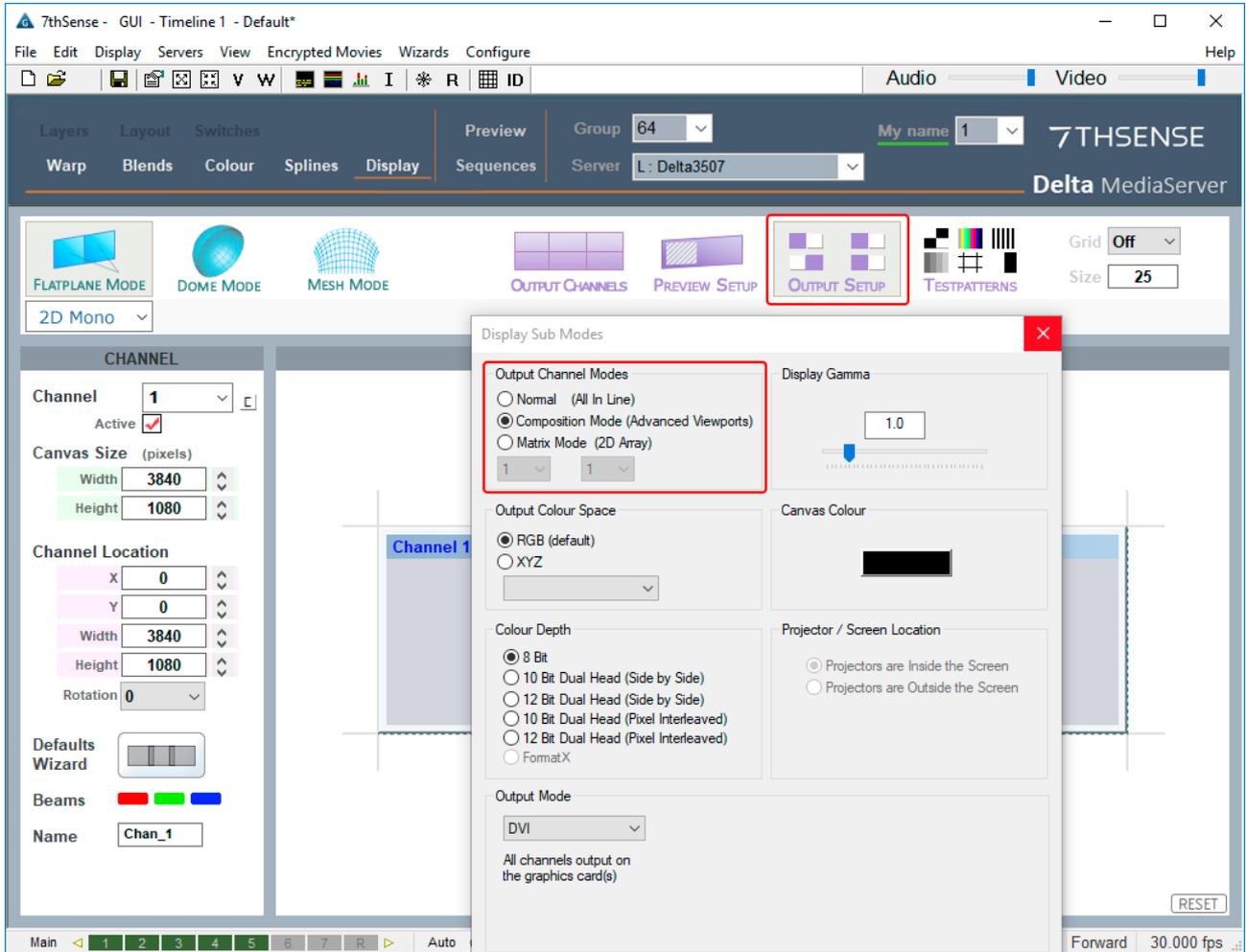
Important Note:

Prior to creating your show in Delta, you must prepare your media (as above) and ensure that you calculate the size and position of each LED output screen in relation to a rectangular canvas:

- Note your canvas size in terms of required outputs (total height × total width in pixels).
- Establish the coordinates of the LED display elements within the media.
- Draw up a diagram to show position and size of each viewport within the canvas.

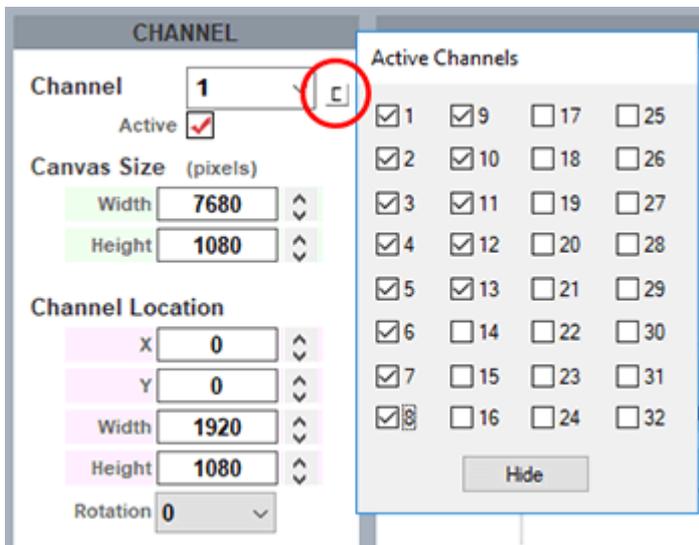
Composition Mode in DeltaGUI

In DeltaGUI, set the Output Setup to Composition Mode.



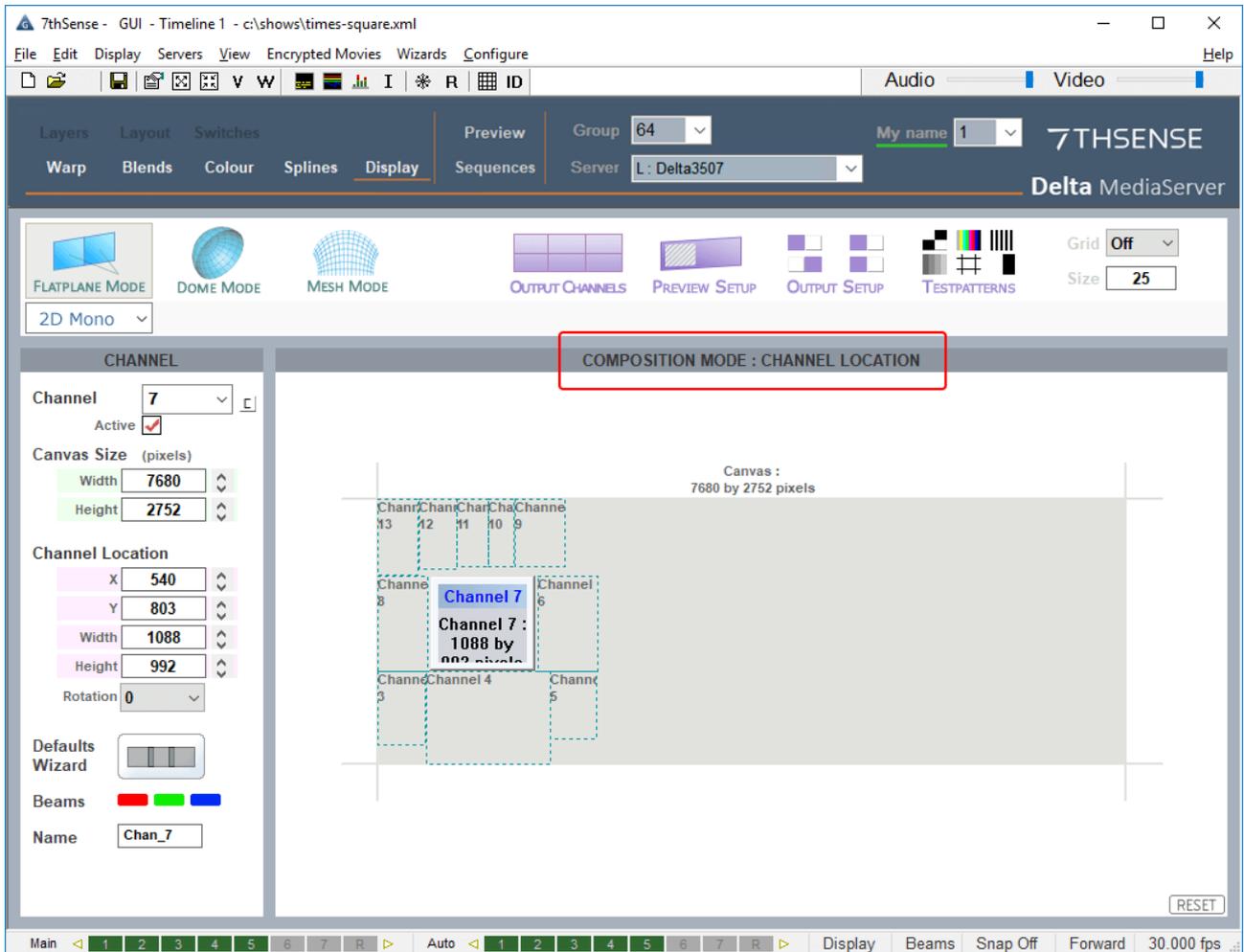
Set up Channels and Canvas Size

It is recommended to set one channel per viewport (LED screen). Click the **C** button to activate a channel for each LED display:



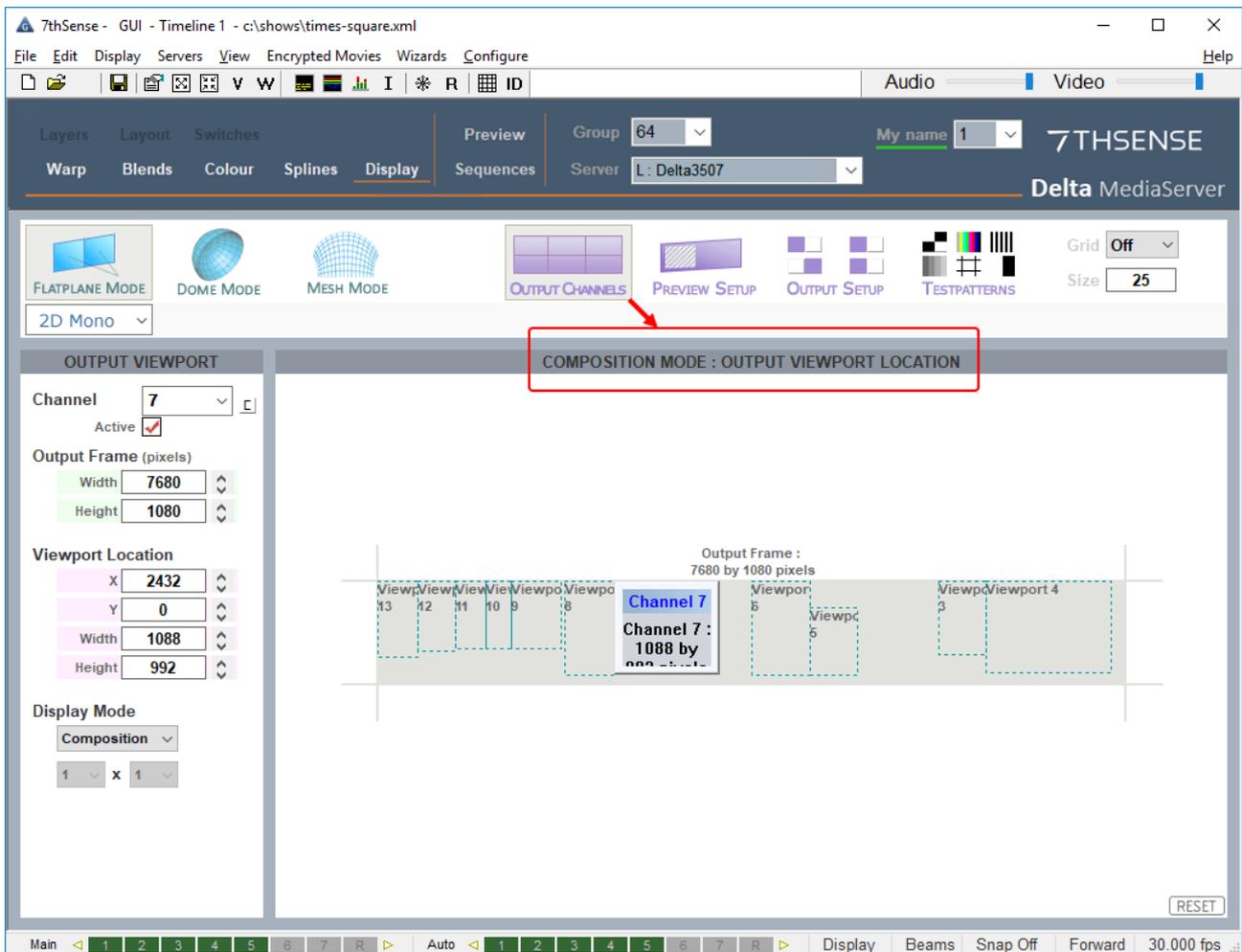
Enter the Width and Height of the total canvas (to match the total media pixels, here 4 × HD outputs), then selecting each channel (LED display) in turn, enter its width and height, and XY location. Whilst channels can be dragged to position in this view, you must know the numbers and will have to enter these anyway. You may find it easier to activate, locate and place each channel in turn. These illustrations show the finished result.

Note here how all the channels have been located, and now look the same as the packed artwork. Channel 7 is selected, showing its position in the media frame, and dimensions. If a display has been rotated in the media to better fit, correct the rotation here.



Next position this channel (area of the packed media) on the output.

Click 'Output Channels'. Width and height will be the same as for the channel, the Viewport Location will be as shown in the HD output blocks (see above).



This completes the composition; the rest is up to the LED processor to render the outputs to the display panels. (The Delta Playback window will not make much sense in this mode.)

Document Information

Date	Document edition	Software version	Revision Details	Author/Editor
July 2016	1	Delta 2.4	New release	Helen Ward
July 2017	2	Delta 2.5	New release	Andie Davidson
November 2018	3	Delta 2.6	Updated examples	Andie Davidson
July 2020	4	Delta 2.6 and 2.7	Revised Leader-Follower terminology	Andie Davidson

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