Spherical Panoramic Virtual Reality
- navigating the world digitally

“Human vision is essentially a spherical panorama…”
“Dragging up so the view is directly up and then dragging right again will cause the view to spin round anticlockwise with the apparent centre of rotation in the middle of the frame, look (drag) right down and drag right and the view spins clockwise.

This is how it is in the real world too if we stand on a spot and turn the right while looking up, ahead and down.”

Murphy 1999
High Dynamic Range Imaging
- what human eye can actually see

“In high contrast condition, you do not get a photographic picture of what your brain can see the complete range of highlights and shadows of human vision.”

Austin 2007

“HDRI or High Dynamic Range Imaging is a photographic process that allows the photographer to capture an extreme range of lights. This process creates an image that is not only closer to the dynamic range the human eye is but also can supercede the dynamic range of lights that a human eye is capable of seeing.”

Fitzgerald 2008
Spherical High Dynamic Range Virtual Reality

adapting High Dynamic Range photography technique into spherical panoramic virtual reality mimic how human see and explore his world.
Kellie’s Castle - an unfinished dream

History and significance
Procedures of Producing The Spherical HDRVR

- digital capture of images.
  - camera lens equal to 50mm to avoid image distortion.

“...our eyes see the world much like a wide-field; panorama camera captures it on film, *minus the distortions*.”

- small field of view, more images needed, closer degree of rotation.
- 3 different exposure for each rotation angle to capture HDR image.
- keeping everything in focus and sharp.
Procedures of Producing The Spherical HDRVR cont...

Camera rotation on a pan head.
Procedures of Producing The Spherical HDRVR cont...

3 different exposures for HDR image.
Procedures of Producing The Spherical HDRVR cont...

organizing captured images –

Organizing images according to exposure sequence.
Procedures of Producing The Spherical HDRVR cont…

- creating HDR image from 3 exposure sequence with Photomatix.

Batch processing of producing HDR images from 3 different exposure sequences.
Procedures of Producing The Spherical HDRVR cont...

– spherical panoramic image stitching using PTGui.

*HDR image stitching process using PTGui.*
Procedures of Producing The Spherical HDRVR cont...

- exporting single node spherical HDRVR to QuickTime movie from PTGui.
Thank you.