

‘VIRTUALLY REAL - INTERACTIVE 3D ENGINEERING’

HoloVis ApolloWALL solution delivers rapid prototyping & reverse engineering at Warwick Manufacturing’s latest research facility

HoloVis, through their close working partnership with Warwick University and Warwick Manufacturing Group (WVG), won the contract to design and deliver their latest ApolloWall visualisation technology – an ultra-high-resolution rear-projection interactive 3D virtual reality solution for use as a key part of the Premium Vehicle Customer Interface Technology (PVCIT) research facility.

The PVCIT facility is a dedicated setup at the Universities Warwick campus consisting of range of leading-edge technologies from the latest CT and 3D X-Ray scanning systems to vehicle paint lighting and analysis solutions. The facility will focus on non-destructive reverse engineering research and the need to create a unique workflow from data capture through to virtual analysis/manipulation of data and back to rapid prototyping.

The ApolloWALL was designed as the photo-realistic visualisation ‘tool’ within the process using the very latest JVC 4K 10Megapixel projectors, setup in a dual-stacked passive-stereo configuration on a HoloVis OptiRIG, to deliver the UK’s highest resolution 4K VR wall to date. The projectors were custom-fit with Infitec switchable filters to allow the seamless change-over from crystal sharp immersive 3D visualisation to 2D presentation mode as required onto a 5m-wide fabric rear-projection screen setup.

When running in fully immersive 3D mode, the system has an integrated camera-based motion tracking system that allows the users head and hands to be tracked in real-time to ensure natural interaction with the visualisation and datasets. A dedicated rack-mounted HoloVis visualisation PC cluster controls the imagery via two NVidia Quadroplex units, specifically configured to drive the 4 graphic channels of very high resolution imagery required per projector.

For the visualisation software packages, HoloVis has integrated both the Autodesk Showcase and WorldViz Vizard solutions. The Autodesk Showcase 2010 software allows rapid data-handling and high-end photo-realistic visualisation of datasets and is used with the *Aurora* Showcase plugin software, written by HoloVis, that enables Showcase to operate in immersive and tracked environments.

The WorldViz Vizard software is a specialist virtual-reality toolkit allowing the rapid development of immersive applications and will be used by WMG to create the ideal workflow setup for 3D data captured in the CT and X-Ray scanning systems through to the interactive visualisation wall.

HoloVis is not just a technology provider as part of the project, but is a key partner on the PVCIT program and has contributed as an industry partner to the program with matched funding. Stuart Hetherington, Managing Director of HoloVis, comments “We are proud of our relationship with WMG both in delivering our expertise to create a world-leading visualisation facility as a central part of their facility, but also as a program partner going forward, contributing to the research and development goals this project has set out to achieve”

