Developments in the 3D Visual Interactive Simulation (VIS) market 2011

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FORUM8 Western Region anticipates significant developments within the Western Market for 3D visualisation in all its forms during 2011.

We all appreciate that the UK and American markets have been slow to embrace the use of 3D visual simulation technology, when compared to the Far East and indeed certain European countries. This unwillingness by many to throw away their solid balsa wood models in favour of 3D digital visualisations of streetscapes and cityscapes has led to a frustration among many companies and individuals not least myself. However this attitude is changing and will undoubtedly continue to change until the last piece of 'expensive' balsa wood and cardboard has been confined to the dustbin of modelling history.

The continued rise of highly accurate and freely available aerial imagery, digital terrain models and 3D models through such organisations as Google and our own extensive online 3D CAD library, mean that highly accurate 3D environments can now be produced extremely cheaply, easily and quickly. When such 3D environments are combined with 3D Visual Interactive Simulation modelling technology, like UC-win/Road from FORUM8, the user has the ability to mimic almost any aspect of the real world on their computer screen.

Once you have a virtual 3D model of your target location, new developments in 2011 will enable you to apply this virtual 3D space to a whole host of applications. For example, consider the ability to embed live CCTV camera feeds into your 3D model to study what exactly is happening within your 3D virtual environment. Consider running a Paramics or Vissim micro-simulation within a highly accurate 3D visual environment such as UC-win/Road and being able to compare it in real-time with live feeds from cameras positioned along the road network. Consider producing a range of 'what-if 'development scenarios within your target 3D environment. For example, three different styles of bridge or underpass constructions and then allowing the general public and other stakeholders to view the alternatives, drive along each one, give their opinions of each and all this within the comfort of their own homes or offices via online 3D visual interactive simulation technology. Consider the police, security forces and emergency services being able to plan and train for significant public events – without having recourse to using 2D maps and children's toy cars and model people.

2010 in brief

The 3D Visual Interactive Simulation (VIS) market 2010
FORUM8 the Japanese 3D specialists once more expanded their share of the rapidly growing Visual Interactive Simulation market in the west, through sales of its award winning software UC-win/Road. The company attended many exhibitions throughout Europe and America as well as providing speakers at a number of conferences including: Modelling World 2010 in London, the S-Paramics User Group Conference in Birmingham, the Fall Transport Conference in Las Vegas and also the ITS World Congress in Korea.
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Strategy and technical cooperation
2010 witnessed the development of VR-Drive the road safety system designed to help young people gain a better understanding of eco-driving and general road safety within the safe confines of the school room. Managed out of its London office, FORUM8 has established new Software Distribution Partners in the Netherlands, France, Turkey, Brazil and the USA. The company, it set up Technical Cooperation Agreements with a number of strategically important companies including SIAS of Edinburgh the developers of the S-Paramics traffic micro-simulation technology, Mechanical Simulation Corp., and their leading vehicle dynamics modelling software CarSim and the Australian company 12d, the owners of the specialist terrain modelling, surveying and civil engineering software 12d Model.
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Sustainable driving
2010 saw the first sales of FORUM8 professional Drive Simulators (DS) within the UK and USA. The clients were the University of Sunderland in the UK and VSAT a specialist driver training organisation in the USA. The University of Sunderland is to use the FORUM8 DS plus its VIS software UC-win/Road to investigate a number of research topics including Eco-Driving and Low Carbon Vehicle development.
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The whole area of security and emergency planning and management has been revolutionised by the use of 3D VIS in many countries around the world and this will undoubtedly continue to grow in 2011. The ability to develop a large 3D environment that is identical to the real world in every respect – even to the shadows formed by the sun at any specific geographic location or time of the year – means that only a lack of imagination restricts its application to provide significant benefits in the areas of: urban and transport planning, security and disaster management and improved driver training and education.

FORUM8 also believes that there will be significant improvements in the use of highly accurate pedestrian modelling software, especially when coupled with 3D visual technology like UC-win/Road. Finally the continued development of long distance laser scanning, both terrestrial and aerial, will also ensure that the use of point cloud data will become far more widespread in 3D environmental modelling throughout the coming year. Software plug-ins that allow point cloud data to be automatically imported into 3D VIS products like UC-win/Road will provide significant benefits and assist enormously in the development of this particular market area.

I anticipate that 2011 will be the most exciting year yet in the growth and use of interactive 3D technology within what is undoubtedly a rapidly expanding Geo market worldwide.

FORUM8 and SIAS traffic simulation visualisation

A plug-in link for two market leading technologies. The objective is to facilitate the high resolution and accurate visualisation of complex traffic simulations.

UC-win/Road (from Forum8) and S-Paramics (from SIAS) products are two solutions used for urban and transport planning and design projects. S-Paramics' strength is in predictive modelling, deriving flow patterns and congestion levels from travel demand inputs and driver behaviour. UC-win/Road's key strength is in the quality of its visual representation of the road environment. However, due to the difference in data format for road networks in traffic simulation and in Virtual Reality, a data conversion was required. The latest plug-in for UC-win/Road enables this data exchange allowing modellers to include the results of the simulation in a high quality visual environment and gives users an interactive environment to view the traffic operations.

The Interactive 3D Visual environment of UC-win/Road can be used to visualise landscapes, road designs and traffic as well as to check road conditions from the driver's viewpoint using state-of-the-art Forum8 Drive Simulators. Road network data can be generated in S-Paramics and visualised in UC-win/Road. The whole philosophy behind the development of the plug-in was to minimize the work load by exchanging data between the two systems.
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