Abstract

Through our multidimensional world, our actions and the methods which we solve problems are based on our knowledge and experience. Moreover, the knowledge and methods used to develop and engineer products follow this same principle.

For product design and engineering, the enabling technologies provided by a host of virtual reality hardware and software have provided marked efficiencies. These efficiencies are realized not only by replicating the physical world virtually, but by creating efficient virtual evaluations that go beyond what is possible in the physical world.

However, challenges do exist. There are gaps in functionality in hardware, software and in methodology. These gaps are significant and do leave room for an evaluator to question the accuracy of a virtual evaluation.

If specific tenets are adhered to regarding virtual assessments, trust in the results increases. Also, as technology improves, realism improves. Correlation with the natural world directly relates to believability in the results.

Baron will explain the VR systems used at Ford and the successes and challenges of virtual reviews. She will relay the practical principles Ford employs regarding conducting virtual assessments, as well as the types of assessments that are used in vehicle development and engineering. And she will also provide insight on where gaps exist in the current suite of VR tools, and thoughts on the future of human/computer interaction for vehicle engineering and design.

Bio

Elizabeth Baron is a Technical Specialist in Virtual Reality and Advanced Visualization at Ford Motor Company. She manages the VR Center in Product Development, and provides immersive virtual reality evaluation systems used for industrial design and product development. She is part of the Digital Innovation Group at Ford. Her goal is to deploy immersive systems at Ford that address the unique challenges of automotive design and engineering. She has led the development of several VR systems for vehicle development that satisfy evaluation criteria for engineering, packaging and aesthetic design of vehicle interiors and exteriors by allowing different disciplines in product development to communicate in a common environment.

Elizabeth began her career at Ford in 1988 working as a software developer for Ford’s product design software, later specializing in visualization and solid modeling software. She has created a virtual environment which combines a physical scalable vehicle model with virtual data to evaluate discrete vehicle exterior and interior alternatives, with animated scalable characters and animated vehicles. She has conducted research within Ford on the best use of VR tools for customer clinics and marketing and engineering. Recently, Elizabeth’s work was highlighted in Ford’s ‘Drive One.’ TV ad campaign.