



## Press Information

Date: September 2016

### North Carolina State University Institute for Transportation & Education has invested in a FORUM8 Driving Simulation System

Japanese 3D VR Simulation specialists FORUM8 are delighted announce a new sales contract with North Carolina State University (NCSU) of Raleigh, North Carolina, USA for the provision of a 6DOF hexapod based Driving Simulator system for the assessment of safety and geometric designs for Diverging Diamond Interchanges (DDI).

NCSU invested in a **FORUM8** Driving Simulator along with VR-Design Studio DS (*formerly UC-win/Road DS*) as part of this Transport Research Board funded project. The aim of the project is to investigate certain features of driver behaviour when confronted by a Diverging Diamond Interchange.

Chris Cunningham, the Director of the Highway Systems Group at the Institute for Transportation Research and Education at NCSU commented "*We are going to use the FORUM8 driving simulator to look at various unique geometric design components of these Diverging Diamond Interchanges, such as the crossover design and the right and left turn movements at the off ramp, we believe that this is where drivers must look down an approach which may not be intuitive.*"

The use of Diverging Diamond Interchanges (DDI), also referred to as Double Crossover Diamonds (DCD), has become more prevalent throughout the United States over the past 3 to 5 years. Overall, DDIs are gaining momentum within the interchange design community. However, only a limited amount of guidance on the design of these types of interchanges exists.

The NCSU research objective is to identify, review, and evaluate the geometric design features and the associated safety and operational performance of in-service DDIs across the US. This information will then be utilized to develop recommendations for the AASHTO Technical Committee on Geometric Design for consideration as future geometric policy and guidelines. Two basic questions will be addressed: (1) What are the essential design characteristics of a DDI and how should an engineer utilize this information in the design of a DDI and (2) What are the safety and operational benefits of utilizing a DDI and how might the designer utilize this information in their design?

The first DDI in the US was constructed in 2009 by the Missouri Department of Transportation (MoDOT). The DDI design accommodates left-turning movements at signalized, grade-separated interchanges of arterials and limited-access highways, while eliminating the need for left-turn phasing.



## FORUM8 Background

FORUM8 is the leading Japanese producer of state-of-the-art 3D VR Engineering software. It's premier product in the west, VR-Design Studio (*formerly known as UC-win/Road*), is at the forefront of Real-time Interactive 3D VR Simulation & Modeling technology.

FORUM8 Driving Simulators benefit from the comprehensive 3D visual and interactive attributes of VR-Design Studio. The software allows users to create multiple driving scenarios and re-create them with complete control of all environmental conditions, as well as being able to set individual vehicle dynamics from either within VR-Design Studio or in collaboration with such industry standard 3<sup>rd</sup> party products like CarSim and CarMaker.

FORUM8 Drive Simulators are used widely for human factors research, vehicle development and research, driver training and many other aspects of road safety research and training.

Driving Simulators range from basic desk-top units (VR-Drive), to multi-million dollar hexapod systems, with up to 8 degrees of freedom. In addition, FORUM8 can supply other hardware systems including both rail and ship simulators.

Established in 1987, this award-winning company has offices and partners on every continent and is a member of the US ITE, is an associate of the TRB visualization group and a member of the MIT Industrial Liaison Program (ILP).

### More information:

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