

# **Cracking the Code: A Case Study for Converting Road Design Models for Driving Simulator Use**

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## **ABSTRACT**

*While providing recognized value in the fields of research and training, driving simulation application in the field of civil engineering roadway design has been slow to gain acceptance in the U.S. due partly to investment costs, long lead times for content and scenario development, and expertise to support that investment.*

*Within these constraints it becomes necessary to develop a simplified process whereby public Transportation engineers continue to design roadway projects using standard methods, and then integrate those designs into a virtual proving ground simulation – trying the designs in the same fashion the project will ultimately be used – by experiencing it in the four dimensional world of a driving simulator.*

*This paper presents an overview of the uses of driving simulation for highway design and a case study for generating a driving simulator environment compatible with one driving simulator from a road design model. There were two overriding requirements: minimum user interaction, and visualize a wireframe graphical representation of the engineering design. The end product is a tool that has been successfully tested on one grade separated freeway interchange. Future work for increasing the capabilities of the tool will focus on creating textured surfaces and solids and extending junction processing to improve connection curve definition.*