PAPER WORKING TITLE: **Benefits and Considerations of VR/AR applied to Task Training**
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ABSTRACT

CONTEX:
For the past few years there has been much press and marketing hype regarding a future where Virtual Reality (VR) and Augmented Reality (AR) will be commonly used for entertainment, education, and training. This paper will explore the current use of large group immersive displays, along with a mix of personal head mounted displays (HMD) for VR/AR training applications.

OBJECTIVE:
The objective of this presentation is to illustrate benefits and considerations for the use of a mix of displays—a strategy for viewing and interacting with 3D content using a combination HMDs and larger group immersive displays. Example displays and use cases will be discussed.

METHOD:
Methods of using VR/AR displays and 3D content depends on user group requirements, content/task complexity, and technology tolerances. The approach illustrated in this paper will focus on group design review plus training analysis and planning objectives. Examples will show how a mix of VR/AR display systems facilitates collaboration and content sharing to meet these objectives.

RESULTS:
By using VR/AR displays and applications, organizations have achieved ROI with time and cost savings as well as improved collaboration for complex design problems like developing processes for task training. Applied to education and training, this mix of VR/AR displays can support instruction and curriculum design by providing a process to share a wide variety of 2D and 3D media and experiences in a classroom or field settings.

CONCLUSIONS:
This paper discussed examples of how VR/AR display systems are be used to effectively combine 2D and 3D content and applications for improved understanding and insight among stakeholders, faster decision making, and development of more efficient task training.

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Mr. Hoffmeister serves as Chief Technologist for the Mechdyne Corporation since co-founding that company in 1996. Mr. Hoffmeister is a recognized pioneer and worldwide expert in large-screen virtual reality and simulation system design, integration, installation, and operation. A licensed professional engineer with several patents, he has a master's degree in mechanical engineering from Iowa State University. Mr. Hoffmeister's responsibilities include the evaluation and implementation of new AV/IT technology and components into the solutions offered by Mechdyne. Mr. Hoffmeister has been involved in nearly every Mechdyne solution offered for the past 20 years, serving in a variety of capacities, including Researcher, Consultant, Systems Designer and Systems Engineer.

Mr. Hoffmeister's previous experience includes 10 years in technical and management roles with the Michelin Tire Company's North American Research Center as well as being an early employee and consultant at Engineering Animation, Inc. (now a division of Siemens) plus a instructor and research scientist at Iowa State University. Mr. Hoffmeister is a member of InfoComm, the American Society of Mechanical Engineers (ASME), the International Society for Optical Engineering (SPIE), and the Society for Simulation in Healthcare (SSIH). He is also an invited member of the Air Force National Security Forum (NSF).

Kurt resides in Marshalltown, Iowa with his wife, Ellen. He enjoys 3D movies, reading fiction, woodworking, geode hunting, and fishing.

About Mechdyne Corporation

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