Augmented Reality Training for CBRN Platforms

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Introduction

MRIGlobal, in partnership with ForgeFX Simulations, developed a simulation-based augmented reality (AR) training tool for warfighters to aid in chemical, biological, radiological, and nuclear (CBRN) device familiarization. This tool utilizes a Microsoft Hololens 2 platform to provide a user with interactive device training that can be used anytime, anywhere providing a flexible option to typical user learning.

The use of AR enables users to learn new procedures, assess their skills, troubleshoot issues, and enhance refresher training by mixing hands-on device training with a virtualized environment.

AR Training Benefits

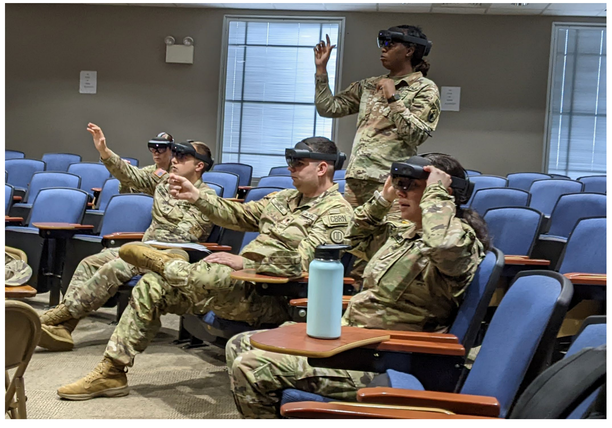
Typical device training involves users reviewing operators manuals with additional in-person classroom lessons, but can be limiting depending on size of class and number of physical devices. Virtual trainers such as AR can accelerate and enhance comprehension of equipment functionality and operational procedures. Using AR gives users a "hands-on" experience which is a valuable tool for learning retention.

VR training has the following benefits:

Location independent – Headset can be used anywhere for users to train on a variety of devices

Safety - Allows users to practice sampling "virtual" hazardous substances safely

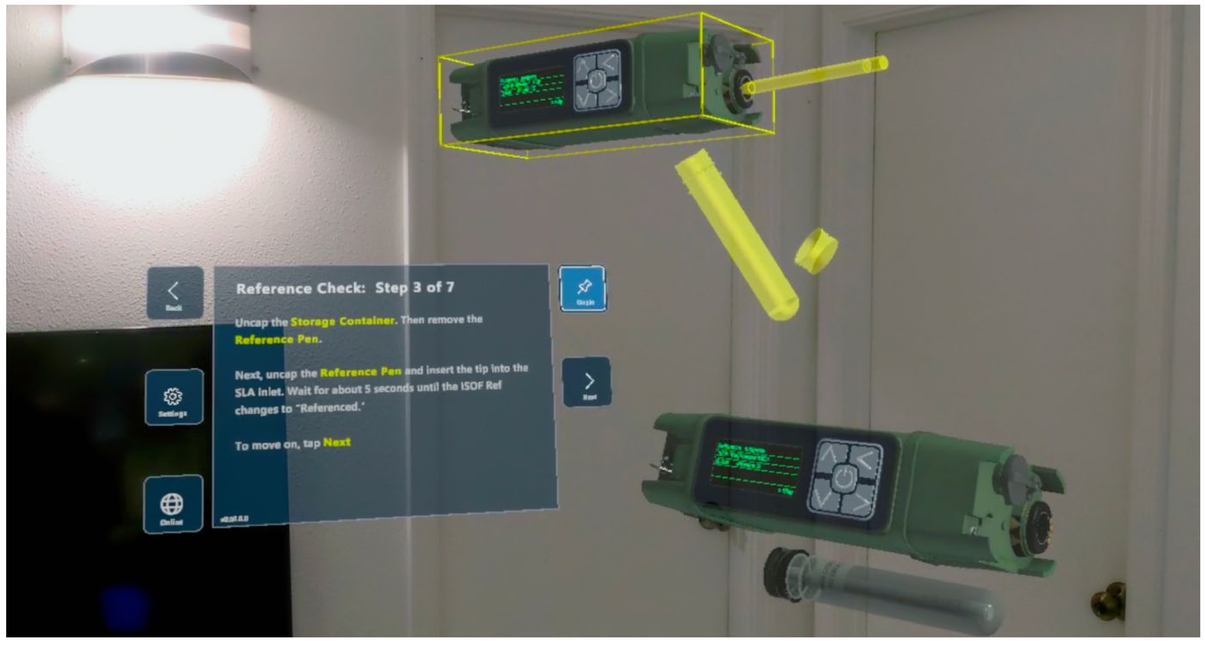
Consumables – Users can practice device sampling with an infinite amount of sampling tools such as swabs, caps and pens without the typical costs of replacement



AR Trainer Interface

The AR training interface allows for any number of device trainers to be loaded onto the Microsoft HoloLens. A user navigates the virtual menu by using hand gestures to select menus and interface with the virtual devices. The AR Training platform is developed in the Unity game engine allowing for high resolution graphics and realistic models of the handheld devices. The interface is very intuitive and most users gain basic proficiency with the first few minutes of interaction after becoming comfortable with the steps to use AR.

Each device trainer has a familiarization module to acquaint a user to the different components they will encounter with the lessons. Other modules comprise of steps a user would need to complete to go through start-up, confidence checks, and different user settings. All training modules can be custom developed to a specific handheld device.



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