Northeast GAS ASSOCIATION
NYSEARCH

Technology Brief

Test Program for HoloLens as Applied to Gas Operations / Training

Description: **A program to explore the capabilities and possibilities of Augmented Reality (AR) for application in gas utility training programs.**

Status: **An exploration and evaluation phase with the Microsoft HoloLens has been successfully completed. NYSEARCH is collaborating with an AR vendor to build applications specific for gas operations training tasks.**

BENEFITS

Augmented Reality (AR) and Virtual Reality (VR) have swept innovation into various industries in recent years. The technology provides a creative solution to add efficiency in workflow and numerous ways to optimize business operations. AR and VR implementation have proven to increase productivity within workforces across industries.

Figure 1. Microsoft HoloLens

The potential benefits of this program are: 1) the ability to advance the timescales required to train gas operators, and 2) the potential for bringing the field experience through AR and real-time instruction into the classroom without the need to wait for or re-create the situation in a live field environment. In addition, as the next generation of gas professionals are becoming more digitally based, the 'gamification' of training using state-of-the-art technologies, would have fast take-up.

BACKGROUND

The gas industry is experiencing a tremendous amount of growth. With that growth is a surge in construction activity to expand the gas pipeline network and to replace aging infrastructure. Simultaneously, retirements of personnel have expanded the need to bring in a new, younger workforce that needs a fast-paced and high degree of training and certification by various entitie. This results in a need for expanding gas operator training programs and a need to innovate on methods for training.

Today, to rise to a fully rated, high level operator, training must be gained in the classroom and in the field. Rarely are gas industry field conditions able to be simulated without actual participation in field activities. The motivation for a HoloLens test program is to bring 3D reality that depicts various tasks to gas company training programs. This accelerates the ability for the trainee to experience the conditions that are required for that task and to make the process for gaining knowledge more accurate and quicker.

Because Microsoft has released the HoloLens device and advertised the ability for users in personal or commercial situations to develop their own applications, NYSEARCH investigated and reported on the possibilities of using HoloLens to address one or more gas training tasks in a hands-free, heads up fashion using Augmented Reality.

TECHNICAL APPROACH

A pilot program began to explore and evaluate the HoloLens at each gas utility funding the NYSEARCH project. Along with providing a HoloLens device and training to an individual or multiple personnel who is/are assigned at the funding company, a test plan was generated for all funders to follow and keep personnel focused on a thorough evaluation of the application(s) of interest and the goals of the NYSEARCH test program.

Following the pilot at each funding company, feedback was collected where funders gathered ideas and preferences for gas operations training tasks at the end of testing.

After receiving and analyzing the feedback from funders during the pilot program, a Phase II development period began. Augmented Reality software development vendors were identified and investigated for this program to evaluate cost and timeline of application development for the HoloLens as applied to gas operations training.

Phase II is anticipated to provide a high impact, effective, and engaging demonstration of Augmented Reality for gas ops training. This would allow the opportunity to further advance the use of AR in other departments across a gas utility.

PROGRAM STATUS

All funders are gaining experience with the HoloLens devices provided to them in Phase I. Phase II is proceeding to address specific gas LDC application development.

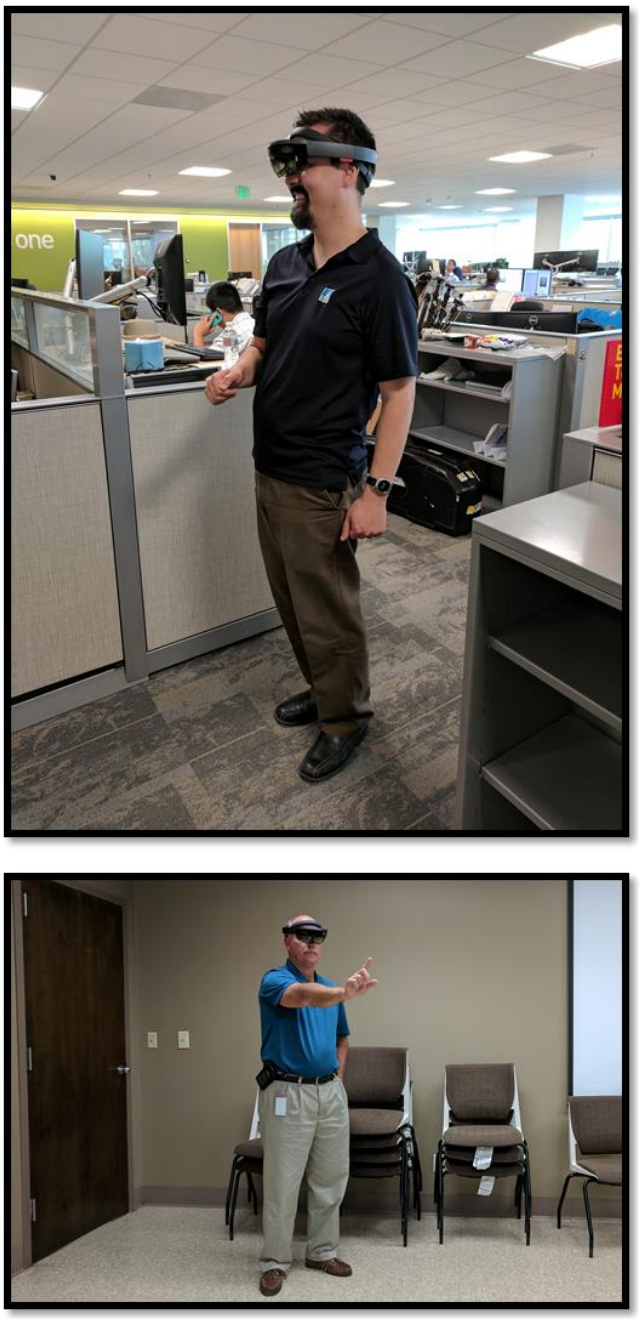

Figure 2. The HoloLens in action

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