

APPLICATIONS OF AUGMENTED REALITY IN 6300

DATA VISUALIZATION

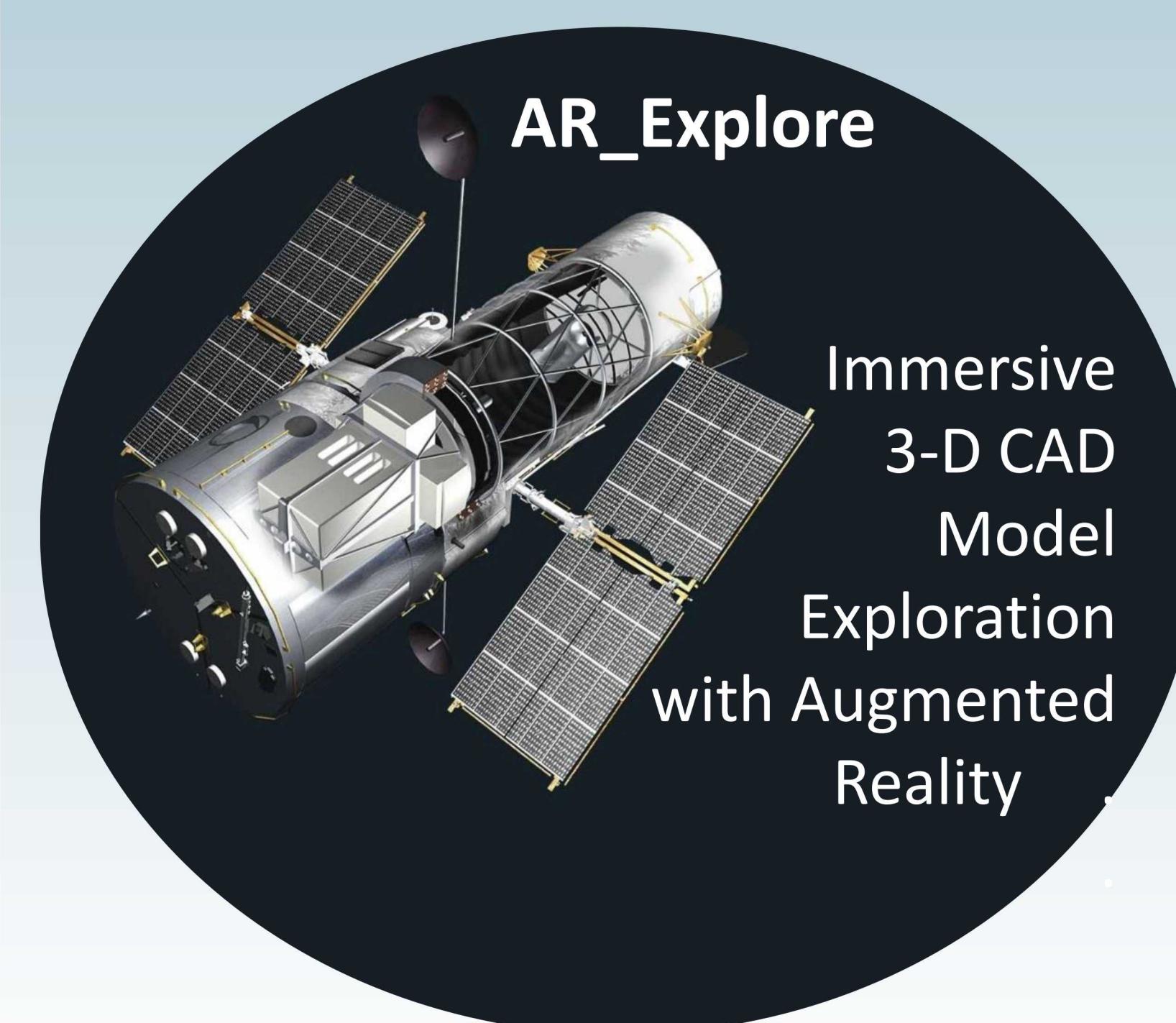
- Visualize space-based assets trajectories and field of views
- Integrate with other advanced visualization displays such as Omni Globe
- Visualize complex calculation results rapidly, and provide user with intuitive visual and audio feedback



Image Source: Sandia AR Space Visualization System

AR_EXPLORE: CAD EXPLORATION FRAMEWORK

- General purpose Augmented Reality (AR) framework provides immersive 3-D interaction functionality
- Import CAD models, designs, assemblies and explore in intuitive and immersive ways
- Deployments
 - CAD Models
 - Facility walk-throughs



Model Source: nasa.gov

TRAINING

- Step-by-Step instructions via Sandia custom framework and/or commercial off the shelf (COTS) sequential training frameworks
- Ideal for Assembly/Disassembly/Part replacement/Maintenance procedure training
- Deployments: Weapon assembly training, Z-Machine Mechanical System Assembly and Disassembly, Experiment Test Setup Training

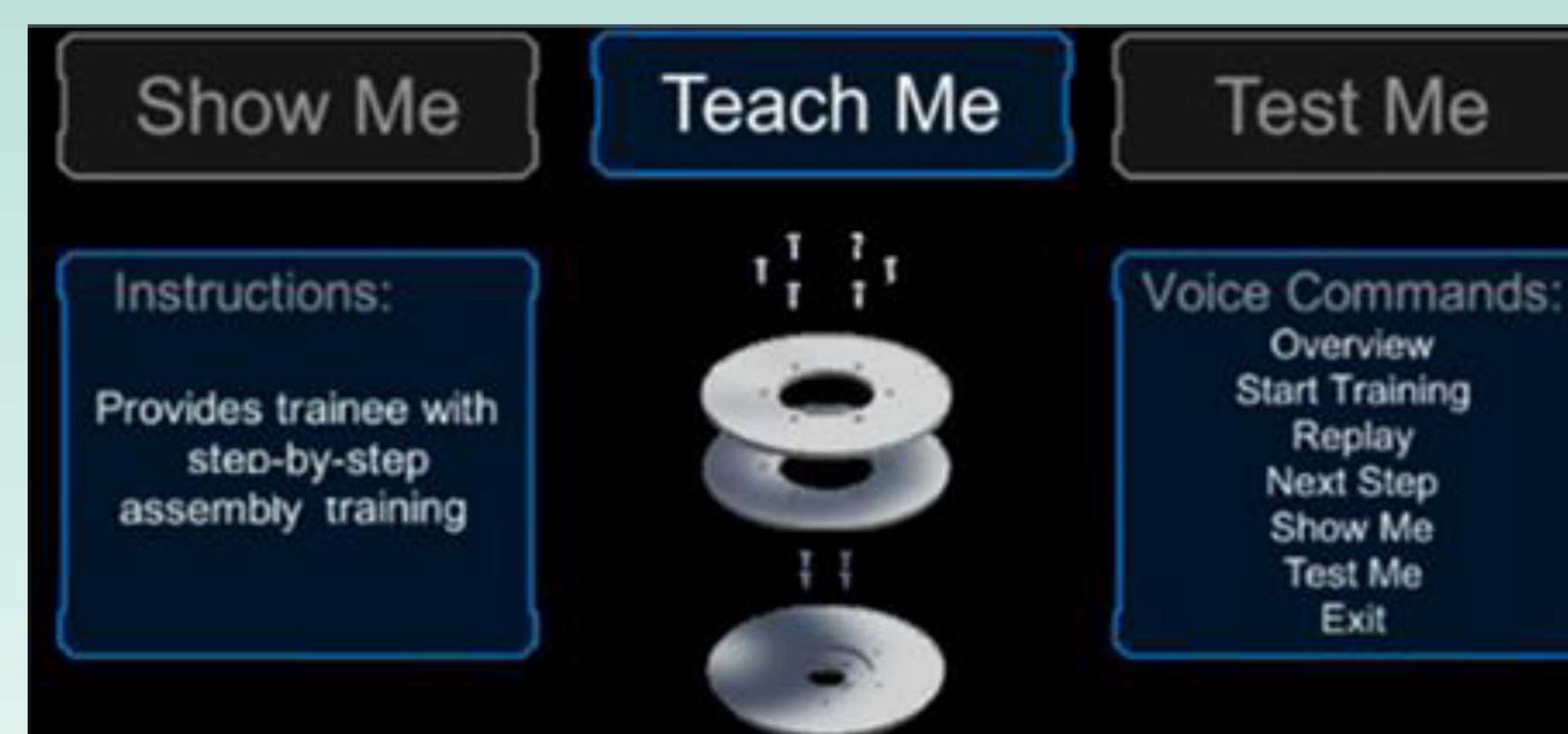


Image Source: custom Sandia Sequential Training Framework

IMAGE/TARGET RECOGNITION

- Microsoft's HoloLens and PTC's Vuforia target recognition provide real-world image recognition and context-specific interactive training
- Applications: Dynamic, immersive training with real-world object alignment and object detection for inspectors and hands-on training in real-world environments

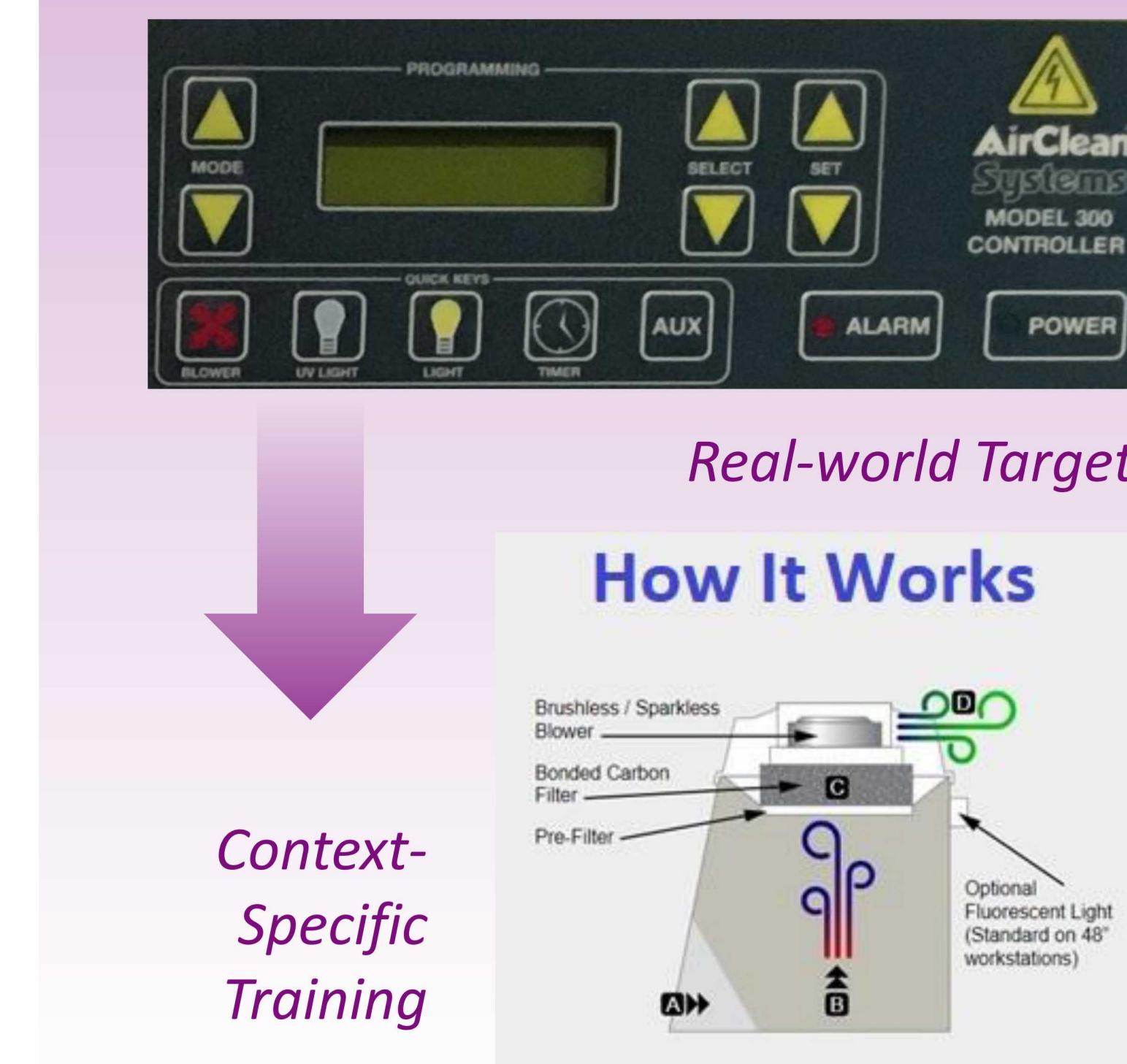


Image Source: aircleansystems.com

Contact: Nadine E. Miner, 6300 Augmented Reality Project Lead



APPLICATIONS OF AUGMENTED REALITY IN 6300

Description for Virtual Poster Showcase Web Site

Organization 6300 is a leader in the technology area and applications of Augmented Reality. Augmented Reality allows a participant to interact with 3-D graphics in an intuitive, immersive, dynamic way not possible with other display paradigms. Graphics can be overlaid onto the real-world providing an opportunity for graphically-augmented, hands-on training and facility walk-throughs. Real-world-independent graphics can also be displayed, taking participants out of their environment and allowing them to visualize and explore 3-D information in a way not possible otherwise. Org. 6300 is a leader in AR development and has on-going efforts in data visualization, CAD model exploration with the Sandia-developed AR_Explore framework, and several applications in training, including sequential training framework development, and facility walk-through/training.

For more information, please contact the Org 6300 AR Project lead: Nadine Miner, PhD, neminer@sandia.gov