



ADE by Holochip

Collaborative Visualization

The Agnostic Display Environment (**ADE**) is a software solution which enables any number of user to simultaneously and collaboratively view complex 3D visualizations such as weapons-targeting pairing, potential threats, air traffic control, flight simulation, oil and gas extraction, biological and chemical visualizations, and other applications.

The ADE includes next-generation rendering capabilities which support nearly any display device. Holochip's advanced rendering technology enables the use of glasses-free 3D light field displays (ala "Avatar"), stereoscopic displays, 2D monitors, and more. Additionally, conformance with the OpenXR open standard enables support for nearly all commercial AR/VR headsets.

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HOLOCHIP 

WHO

SYSCOM: NAVSEA

Sponsoring Program: N96 Surface Warfare Division

Transition Target: AEGIS Combat System

TPOC: (240)412-8095

Other transition opportunities:

NAVAIR –MFS (AR for flight simulators)

NAVAIR –PMA-260 (AR for maintenance)

- USAF 12th Flying Training Wing (VR flight training)
- USAF Air Education and Training Command (virtual aircraft maintenance)
- USAF Virtual Enhanced Reality Training 58th Airlift Squadron (VR training)
- USAF Global Strike Command and 307th Bomb Wing (VR B-52 training)

Notes: ADE - Agnostic Display Environment for virtual collaboration and 3D display

WHAT

Operational Need and Improvement: Today's 2D display monitors cause information overload, resulting in increased human error, slower response time, reduced situational awareness. Navy needs: rendering / displaying massive volume of information (e.g., Aegis Combat System); collaboration between remote operators over many different display types

Specifications Required: 75% SWAP-C reduction in hardware, Ingest / display complex and massive quantities of data (e.g., AEGIS), collaboration in a shared 3D environment, and support for most types of display hardware.

Technology Developed: ADE. Real-time 3D rendering API to enable compliance with nearly any type of display, including light field displays without additional processing requirements. Compatible with OpenXR, and any rendering engine. Provides 60+ FPS refresh rate. Enables multiple operators to collaborate in same environment.

Warfighter Value: Decreased risk of error, faster response times, increased situational awareness. Enablers collaboration on all display devices (Commercial AR/VR/MR headsets, Aechelon and other IGs for flight simulators, Commercial light

WHEN

Contract Number: N68335-19-C-0212 **Ending on:** November 3, 2022

| Milestone | Risk | Level Measure of Success | Ending TRL | TRL Date |
|---|------|---|------------|---------------|
| 75% reduction in SWAP-C requirements for light-field rendering computation components | Low | Demonstrate real-time parallel multi-view rendering with stated reduction in computation requirements in a simulated lab environment. | TRL 6 | April 2022 |
| 75% reduction in SWAP-C requirements for light-field rendering computation components | Low | Demonstrate real-time parallel multi-view rendering with stated reduction in computation requirements in a relevant environment | TRL 7- 8 | November 2022 |
| Capable of performing real-time rendering on stereo HMD, volumetric and extreme multi-view light-field displays | Low | Demonstrate stated interoperability of ADE with numerous display types | TRL 7- 8 | November 2022 |

HOW

Projected Business Model: Transition Paths:

- Provide ADE (OpenXR) software for virtual collaboration/training
- Provide ADE/OpenXR HW and SW development services
- Work with Navy IWS / Primes on Aegis Display System upgrades
- Provide light field displays for AEGIS display consoles and C2 applications

Company Objectives: Provide ground-breaking solutions for advanced 3D collaborative visualization environments which support next-generation AR/VR, light field, volumetric, holographic, variable collimation and other display technologies.

Potential Commercial Applications: - Information display consoles, Air traffic control and other C2 applications

- Light Field Display - petro/geo chemical, pharmaceutical, virtual prototyping, architecture

- Remote Collaboration Tools - ADE provides API + framework for custom apps. API licenses and custom application development services available

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