

Department of the Navy SBIR/STTR Transition Program

DISTRIBUTION STATEMENT A. Approved for public release. Distribution is unlimited.

NAVSEA #2021-0417

Topic # N171-076

Agnostic Display Environment (ADE)

Holochip Corporation

WHO

SYSCOM: NAVSEA

Sponsoring Program: IWS 1.0

Transition Target: Future 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



Copyright 2021 Holochip Corporation

WHAT

Operational Need and Improvement: As the available information provided to C2 centers increases, 3D displays can improve situational awareness and response time as well as reduce the potential for human error. Navy needs: i) render and display massive volumes of information, (e.g. Future Combat System); ii) collaboration between remote operators over many different display types

Specifications Required: SWAP-C reduction in hardware, Ingest / display complex and massive quantities of data, Collaboration in a shared 3D environment, Support for most types of display hardware

Technology Developed: ADE - Agnostic Display Environment for virtual collaboration and 3D display. Performs real-time light field rendering without additional processing requirements, Compatible with any type of display, 60 FPS refresh rate, Integration with Unity, Conformant to OpenXR, Rendering API compatible with any rendering engine, Enables multiple operators to collaborate in same environment

Warfighter Value: Decreased risk of error, faster response times, Increased situational awareness, Collaboration and rendering on all display devices (Commercial AR/VR/MR headsets, IGs for flight simulators, Commercial light field displays (e.g., Looking Glass Factory, Leia Inc., etc.)

WHEN

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

Milestone	Risk Level	Measure of Success	Ending TRL	Date
75% reduction in SWAP-C requirements for light-field-rendering computation components with synthetic Data	Low	Demonstrate real-time parallel multi-view rendering with stated reduction in computation requirements in a relevant environment	TRL 6	April 2022
75% reduction in SWAP-C requirements for light-field-rendering computation components with Operational AEGIS Data	Low	Demonstrate real-time parallel multi-view rendering with stated reduction in computation requirements in an operational 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 with numerous display types in operational environment	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 Future 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 apps development services available

Contact: Robert Batchko, CEO
rgb@holochip.com (650) 906-1064