CAPABILITIES

- Research and Development Support
- Engineering, System Engineering and Process Engineering Support
- Modeling, Simulation, Stimulation, and Analysis Support
- Prototyping, Pre-Production, Model-Making, and Fabrication Support
- System Design Documentation and Technical Data Support
- Software Engineering, Development, Programming, and Network Support
- Reliability, Maintainability, and Availability (RM&A) Support
- Human Factors, Performance, and Usability Engineering Support
- System Safety Engineering Support
- Configuration Management (CM) Support
- Quality Assurance (QA) Support
- Information System (IS) Development, Information Assurance (IA), and Information Technology (IT) Support
- Interoperability, Test and Evaluation, Trials Support
- Logistics Support
- Supply and Provisioning Support
- Training Support
- In-Service Engineering, Fleet Introduction, Installation and Checkout Support
- Program Support
- Functional and Administrative Support

WHO WE ARE

IN-DEPTH ENGINEERING is a leading small business provider of combat systems solutions; development, integration and test services, and waterfront support to the United States Navy.

Our programs and efforts span the development and deployment lifecycle including applied research, 6.3 advanced development programs, engineering development programs, system integration and test, hardware design and integration, ship integration and waterfront installation and test support, and logistics and training systems.

In-Depth has a rich combat system development legacy that encompasses designing and delivering real-time mission critical "weapons-safe" software systems to the Department of the Navy. Solutions include geo-spatial visualization and fusion products, tactical-control and weapons-control solutions for heavyweight, lightweight and anti-torpedo torpedoes, real-time image rendering and augmentation solutions, tactical decision aids, algorithms/ estimation theory, and system infrastructure products. Our ongoing applied and advanced research and technology programs drive the state of the art and lay the groundwork for next generation warfighting capability.

Incorporated in 2006 as a Maryland company, In-Depth is a veteran owned, small, disadvantaged business with headquarters in Virginia, and facilities in Maryland, Rhode Island, New Jersey, and California. Visit us online at **www.indepth.com**



INNOVATION AND EXCELLENCE







WHAT WE DO

Integrated Undersea Surveillance System (IUSS)

IUSS is composed of fixed, mobile, and deployable acoustic arrays that provide detection, localization, and tracking of guiet diesel and nuclear submarines.

The IUSS Program is introducing advanced automation, low frequency active bistatic sonar technology, as well as common software and hardware components of the submarine and surface AxB community.

In-Depth Engineering provides automation and HIS products to the IUSS Program and provides technical leadership to the team.

Torpedo Warning System (TWS)

The Surface Ship Torpedo Defense System, composed of the Torpedo Warning System (TWS) and the Anti-Torpedo Torpedo (ATT) provides a high reliability hardkill countermeasure for Aircraft Carriers.

TWS consists of the Ready-Stow-Group (RSG), the Towed Array Group (TAG), and the Tactical Control Group (TCG) – developed and delivered by In-Depth Engineering.

TCG algorithms and software provide proper ATT placement, preset computations, sequencing and control required to launch the ATTs at incoming threat Torpedoes, and recommend ship maneuvers.



AN/SQQ-89 Undersea Warfare Combat System

In-Depth executes 6.3 Advanced Capability Build (ACB) efforts under the direction of Navy Program Executive Officer (PEO) Integrated Warfare Systems (IWS) 5A.

Our efforts focus on Pulsed and Continuous Mid Frequency Active Sonar, the Undersea Warfare Fire Control System, and integration of Variable Depth Sonar for the Littoral Combat Ship Anti-Submarine Warfare Mission Module.

Augmented Reality Environment for Submarine (ARES)



Submarine sailors cognitively integrate Electronic Chart Display and Information Systems (ECDIS) maps (e.g. Voyage Management System - VMS) with contact information (e.g. combat system information) and their direct visual perception of the world (e.g. optical

periscope imagery) to make safety-critical navigation decisions.

The process of cognitively integrating information is frustrating and tiring, which can lead to missed opportunities and errors.

ARES uses augmented reality techniques to visually present an integrated navigation decision to an operator as an overlay to periscope imagery. Our innovative technology reduces workload and frustration, and improves speed and safety.

Cortical Detection and Classification Technology

In Depth conducts R&D efforts that apply a novel biomimetic approach to decomposition of sound into spectrotemporal modulations - we refer to this as Cortical Processing.



Aegis Combat System Engineering Agent (CSEA)

To fulfill the Navy's Integrated Air and Missile Defense requirement, DDG 51 Flight III will be equipped with the a new Air and Missile Defense Radar referred to as the AN/SPY-6.

Flight III Aegis ships with the AN/SPY-6 radar will have 30x more sensitivity, greater range, and greater accuracy across numerous simultaneous missions, than the SPY-1D(V). In-Depth Engineering conducts systems and software engineering solutions for the CSEA Program.

Adaptive CBT Competency Trainers

In-Depth conducts R&D to develop adaptive competency training systems for the warfighter.

Our adaptive technology couples high fidelity sim/ stim with tactical displays to create scenario driven training and feedback that



permits each trainee to learn underlying principles of domainspecific warfare.

IRT-based adaptive navigation technology tailors navigation through course material to keep operators in the "flow" (ref. Mihály Csíkszentmihályi). Adaptive technology should improve student engagement, improve operator skill development, and retention.

AEGIS Ship Integration and Test (SI&T)

Ship Integration and Test engineering and technical efforts deliver fully integrated and tested combat systems in support of DDG 51 class new construction ships, as well as modernized in-service DDG 51 and CG 47 class AEGIS ships. In-Depth is pleased to support the AEGIS SI&T Team.

