

# Advanced Radio Frequency Exploitation System (ARES)

Open hosting platform (OHP) for rapid integration and deployment



## Achieving information dominance by accelerating system upgrades and development of next-gen capabilities

CACI experts have identified key cost and schedule drivers for system of systems (SoS) integration across many “open systems.” With this, CACI developed the Advanced Radio Frequency Exploitation System (ARES) open-host platform (OHP) software, which enables rapid integration of mission applications from any authorized provider with easy deployment across a broad range of hardware components. ARES helps customers respond to an urgent need in multi-mission operations by migrating from stove-piped systems with disparate hardware to hosted mission applications with shared hardware and common user interfaces. This improves resource utilization and operator productivity while reducing training demands.

Many national security systems are technically compliant to open systems architecture (OSA) standards but remain siloed due to vendor lock, which slows third-party application integration and increases cost and risk. ARES provides a truly open vendor agnostic alternative to these limitations. As of early 2023, ARES is now transitioning from prototype to production and deployment in several U.S. Army and U.S. Navy programs, accelerating upgrades for deployed systems, improving productivity, reducing cost, and enabling integrated cross-application workflows to counter advanced threats.

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For more information about our expertise and technology, visit:

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## Features

- Rapidly integrate mission applications from all authorized capability providers
- Maintain system architectural coherence and performance for multi-tenant systems with diverse application sets
- Dynamically manage resources during missions to ensure prioritized tasks are effectively executed
- Self-healing capability to automate fault identification and recovery to maintain operations in the presence of hardware/software failures
- Automate system configuration and deployment through repeatable processes across multiple deployment environments
- Track and manage technical debt throughout the program life cycle to maintain agility and avoid obsolescence
- Improve cybersecurity with zero-trust architecture by implementing OHP and applying it to all mission apps during integration

## Benefits

- ARES enables third-party mission apps to provide as much or as little of their own control capabilities as desired to improve usage
- Mission apps can use as many or as few ARES hosting services as needed to optimize scaling and elasticity of customer missions
- Concurrently operate mission apps that can be integrated as containers, virtual machines, or bare metal installs allowing packages to be shared hardware

OSA (Industry Standard)	ARES (CACI Solution)
Heavy modification required to fit mission apps into OSA framework, adding time and cost for both initial integration and future upgrade cycles as program evolves	Minimal modification required for integration, with flexibility for third-party mission apps without sacrificing security
Only the developer can modify the OSA, creating potential bottlenecks for integrating mission apps that require changes to the OSA itself	Third-party providers can extend ARES OHP components to fit their mission apps, with guidelines and tools provided to maintain architectural coherence and overall system performance

## ARES – Converging and Enhancing EW, Cyber, and Intelligence Capability

ARES enables the convergence of EW, cyber, and intelligence capabilities that advance modern solutions to respond to the needs of multi-domain operations in a joint and coalition environment. CACI uses advanced technologies to support various missions and leverages the latest commercial technologies and open standards to respond to threats at the pace of the mission. ARES is a cost-effective way to quickly field EW and intelligence solutions for our customers.

ARES complies with many open standards, including commercial, Department of Defense (DoD), and Intelligence Community (IC) standards, such as:

- Commercial: World Wide Web Consortium web components and web sockets for UI; Open Geospatial Consortium for data architecture and mapping; IEEE VITA-49 for signal data distribution (SIGINT/EW/cyber systems)
- DoD: C4ISR/EW, Modular Open Suite of Standards, and Sensor Open Systems Architecture
- IC: All-Domain Overhead Cooperative Operations Joint Interface Control Document, NSA, and other security policies and standards for zero-trust architectures and data marking/tagging



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