

Protecting Maritime Mobility: Defending Infrastructure and Supply Chains from Uncrewed Threats



Overview: CACI's C-UxS solutions are a critical piece of securing seaports and infrastructure

Since October 2023, beginning with events spurred by Houthi rebel attacks within the Red Sea, the U.S. Navy has been thrust into a dangerous, dynamic maritime threat environment not seen since the Persian Gulf “Tanker War” of the 1980s. The use of inexpensive, yet capable, uncrewed aerial and surface platforms have sharply escalated maritime challenges, especially for our seagoing logistics fleet and the entire U.S. military logistics supply chain. More than a year later, military and commercial maritime operations are continuing to experience severe disruption and damage in the Red Sea due to Yemen-based Houthi attacks.

For the U.S. military — which moves more than 90% of its equipment, personnel, ammunition, and other supplies on maritime transport through ports and harbors — the proliferation of inexpensive drones represents the most extreme threat to military infrastructure since the invention of air power.

The challenge: The global maritime supply chain and UxS threats

Protecting U.S. military bases and shipping hubs against this threat is critical to avoiding major disruption to military troop movements, supply and ammunition delivery, and further impacts to an already stressed infrastructure. Yet, due to the nature of the threat, there is no ready single solution. Fully defending ports, harbors, and critical waterways from drones requires a layered defense using sensors, networks, and both kinetic and non-kinetic UxS intercept capabilities — but this starts with locating the threat. Advanced sensors are required to detect, identify, and track the threat.

Defending modern ports, harbors, and logistical vessels is a complex task, and threats can originate from any domain. With their often-massive size and role in servicing vessels and vehicles — U.S. Fleet Activities Yokosuka naval base in Japan covers more than 560 acres, for example — the largest challenge is fielding capabilities that can identify threats early to allow an effective response. For example, traditional air defense radars aimed at piloted aircraft may not detect drones that can often be the size of a 1:24 scale model airplane, requiring fixed or mobile systems specifically designed for this fast-evolving threat.

Early detection is essential to put additional assets in place. For facilities and undefended logistical vessels, transiting ports or choke points around the globe are periods of heightened vulnerability. The Red Sea is currently an environment where logistics platforms face great risk, and the U.S. Navy is seeking to rapidly field solutions that can deliver more responsive protection for port and maritime logistics elements.

BY THE NUMBERS

800

KNOWN THREAT
SIGNALS

400

SYSTEMS GLOBALLY

6+

C-UxS TECHNOLOGIES
AND VARIANTS

“As General Omar Bradley once said, ‘Amateurs talk strategy; professionals talk logistics.’ In today’s world of inexpensive drone technology, coupled with underdefended logistical fleets, there is a great risk to our overall U.S. and partner nation objectives. The Red Sea situation is an ongoing example of the challenges faced by transiting vessels. The Houthis are using very cheap missiles, very cheap drones, and creating disruptions within a major maritime transit point that has a big role in the global trade system and potential impacts to global military operations.”

Keith Denton

CACI C-UxS subject matter expert

The results: Fixed and mobile C-UxS – from ship to shore

CACI is a proven innovator in layered drone defense, which requires multiple interoperable solutions to defeat threats before incursion and damage occurs. Our C-UxS experts design solutions to deter a range of maritime threats, from supporting in-port defense concepts of operations to assisting at-sea operations. This includes integration of a range of kinetic- and non-kinetic systems into shipboard systems or enterprise networks to form a layered defense, including the BEAM 3.0 and the CORIAN fixed-site system, plus strategic capabilities that address threats from Group 3-5 aerial platforms.

The integration of these systems expands the reach of operations to detect, identify, and track UxS threats. For example, CORIAN provides land-based protection at naval bases, transit points, and other critical sites. It can then pair with BEAM 3.0 units to defend against sea-based threats. At sea, BEAM 3.0 can also collaborate to detect, identify, and track operations against a UxS threat, while its operator has the option to engage in link-jamming mitigation or create a safe drone landing zone. All of CACI’s C-UxS products are interoperable and utilize the same government off-the-shelf software baseline.

Furthermore, a single BEAM can be deployed, or multiple BEAMs can be connected through a mesh network which a single user can operate. BEAM can also integrate with other sensors, command and control software, and kinetic effectors to provide a deeper-layered defense for critical areas and sites. A BEAM operating from a vessel can also work in tandem with an installation or port’s CORIAN system to provide extended protection as ships are entering or exiting a harbor.

“Understanding the threat environment, and having the expertise to tie it all together, is vital in this moment. We’re not just experienced in understanding UxS threats, we have a very developed understanding of the maritime environment and the associated challenges, and we’re working to answer the question of what it will take to help the Navy modernize and operate in evolving, uncertain environments.”

Keith Denton

CACI C-UxS subject matter expert

The future: Trusted technology in a rapidly changing maritime landscape

As a trusted national security leader in countering uncrewed systems on land and at sea, CACI has developed and deployed more than 700 systems around the world that protect naval and maritime assets. The company’s experts have analyzed a full range of maritime threats and worked to support customers such as the Navy to better detect, identify, track, and disable even the most sophisticated UxS. Working with our customers, CACI’s experts have built up expertise and insight into the maritime environment and the unique challenges disruptive technology like UxS present to the Navy, Marine Corps, and maritime forces.