KYMETA™

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Kymeta, in collaboration with **Eutelsat America Corp.** and **OneWeb Technologies,** enables smooth operations and Sailor connections aboard the **USS Abraham Lincoln**

Image Source: Wikimedia Commons

SITUATIONAL STATEMENT

Limited access to connectivity has long posed challenges for Sailors serving aboard ships, impacting both their missions and personal lives. The lack of secure and reliable communication paths can severely debilitate the transit of critical data, compromising situational awareness and decision-making capabilities, posing significant risks to the safety and effectiveness of naval operations.

Being disconnected can also represent challenges to what is often referred as an invisible enemy: the impact on Sailors' mental well-being and functional capacity from being unable to communicate with loved ones, access news, and stay connected to the outside world. This isolation could result in decreased morale, increased stress, and reduce overall performance and readiness.

Ensuring reliable connectivity at sea is not just a mission requirement—it is essential for both operational success and the well-being of Sailors while they are deployed.

Image Source: Wikimedia Commons

ENHANCING LIFE AND MISSION ABOARD THE USS ABRAHAM LINCOLN

During the USS Abraham Lincoln (CVN 72) deployment, the U.S. Navy conducted the Sailor Edge Afloat and Ashore pilot program (SEA2), designed to enhance the digital lives of Sailors by providing reliable and secure internet access both at sea and onshore.

The sea trial is a combined effort by the Naval Information Warfare Systems Command (NAVWAR); Commander, Naval Air Force, U.S. Pacific Fleet (COMNAVAIRPAC); Program Executive Office for Digital and Enterprise Services (PEO Digital); and Program Executive Office Command, Control, Communications, Computers and Intelligence (PEO C4I).

This initiative leverages Proliferated Low-Earth Orbit (P-LEO) satellite capabilities to deliver high-speed internet and improve access to data for personal and tactical use aboard the USS Abraham Lincoln naval aircraft carrier that is often compared to a small city, with approximately 5,000 Sailors and Marines serving onboard.

Photo credit: Petty Officer 1st Class Jeremy F

KYMETA COMBINED SOLUTIONS WITH EUTELSAT AMERICA CORP. AND ONEWEB TECHNOLOGIES

In 2024, two Kymeta u8 terminals operating on LEO satellites were installed aboard the USS Abraham Lincoln, delivering resilient, high-bandwidth, low-latency SATCOM connectivity over the Eutelsat OneWeb network.

Kymeta transforms mission-critical communications with durable and easy-to-use multi-orbit and multi-network user terminals for uninterrupted connectivity even in rough conditions for land mobility, open ocean, inland waterways, or near shore.

Kymeta, in collaboration with Eutelsat America Corp. and OneWeb Technologies (EACOWT), the U.S. proxy company and subsidiary of Eutelsat Group, assisted the U.S. Navy's efforts to showcase how a ship connected to the internet via commercial satellite constellations can enhance operational effectiveness. Their combined solutions demonstrated a host of benefits when it comes to training, maintenance, and crew morale.

According to Capt. Kevin White, then the USS Abraham Lincoln's Combat Systems Officer (CSO): "You lose all access to your personal life, and that affects people – they're concerned about how the issues in their personal lives that they just kind of left behind will be handled. With Sailor Edge Afloat and Ashore, we can maintain the continuity of our personal lives." He added: "What we've been able to do is transition Navy life to be more like home, and we can see onboard the ship that everybody is happier."

Kymeta u8 LEO terminal aboard the USS Abraham Lincoln. Photo credit: Eutelsat America Corp. and OneWeb Technologies.

The sea trial also represented a breakthrough in critical communications at the tactical level. During the CVN-72 deployment, F-35 Joint Strike Fighters assigned to the carrier were able to take on critical mission data file updates in record time, providing the critical capabilities needed for pilots to identify and counter threats in specific operational environments. The USS Abraham Lincoln's internet innovations, comprised of a mix of commercial and defense network solutions, represented a significant enhancement to the F-35 jets' survivability and tactical efficiency.

"The U.S. Navy reported that they delivered F-35 mission data file updates in record time," said Capt. White. He later added, "And then they (Navy) reported the first combat strikes in Yemen from F-35s. The enhanced nature of those strikes was because we were able to do this."

Kymeta's innovative line of intelligent communications platforms leverage advanced processing at the edge, software-defined solutions, and hybrid multi-network capabilities to provide continuous transport layers of data across the Eutelsat OneWeb LEO network and several GEO satellite constellations to increase combat readiness.

"Accessible, resilient and reliable communications are essential to every facet of life at sea for the U.S. Navy and Marine Corps team. Enabling the Sailors and Marines on the USS Abraham Lincoln to conduct Operations, Logistics, Moral and Welfare while underway at sea is critical to the commander's ability to project combat power and ensure informed decision making in support of our national interests," said Nick Oren, Strategic Solutions Director at Kymeta, and a retired U.S. Marine, Master Gunnery Sergeant with 30 years of service.

From the mix of network solutions aboard the USS Abraham Lincoln, Capt. White reported that the "Lincoln averaged four to eight terabytes of transferred data a day, 50 times greater than the fleet's previous capabilities." His team managed 7,000 IP addresses, with two full-time system administrators working day and night shifts.

A F-35C Joint Strike Fighter on the flight deck of the aircraft carrier CVN-72. Photo credit: U.S. Navy.

The Kymeta u8 terminals make it simple and easy to deploy, operate, and manage hybrid-SATCOM solutions to support maritime operations. The Kymeta u8 low-profile, electronically steered arrays offer unparalleled performance, empowering maritime operators with real-time data exchange and communication capabilities in even the most challenging environments, with minimal to no training required and without cranes and heavy equipment needed for installation.

"It was an honor to be included in the evaluation of our products by the CSO and his team. Having the opportunity to tour the vessel and complete the site survey allowed us to create two custom mounting options for the crew to utilize on the deployment. Developing the mounts took our fabrication lead Adam Nonis about 2 days from light bulb to shipping a finished product. Reviewing how the USS Abraham Lincoln's crew was going to utilize the services over our product to close the communications needs on the ship for both mission and morale was inspiring. This allowed the Carrier Strike Group to project power as well as keeping Sailors in touch with family and friends," stated Mark Garretson, Senior Solutions Engineer at Kymeta, who served as a U.S. Marine, Staff Sergeant.

"EACOWT was honored to showcase the capabilities of the Eutelsat OneWeb constellation and support the USS Abraham Lincoln deployment" said Jonathan George, Senior Director of Business Development, EACOWT. "It was a game-changer for their operations and greatly improved morale and the combat capabilities of Abe."

The ease of use and low detectability made possible with Kymeta's terminals and Eutelsat OneWeb's secure LEO network also added an extra layer of protection for Sailors aboard the USS Abraham Lincoln. Operators could easily switch networks or turn-off Wi-Fi signals completely when needed in engagement zones, drastically improving operational survivability.

All the integrated systems aboard the CVN-72 brought numerous advantages and unveiled limitless possibilities to maximize efficiency. Capt. White noted that during a stopover in Guam, the aircraft carrier used cellular antennas to connect to local cellular sites and that this capability was also tested at sea, achieving cellular connectivity 100 miles from shore.

The Kymeta u8 terminals, equipped with embedded global-SIM capability, provided an additional data path via cellular connectivity. For added security, this feature can be disabled based on mission requirements to prevent unauthorized access.

Capt. White also revealed that the trial demonstrated the importance of enabling these capabilities at scale, fleet-wide and back to ashore commands. The reliable and continuous access to bandwidth while deployed allows for more remote training and maintenance, reducing logistical inconveniences and operational costs.

Capt. Kevin White poses with an Italian counterpart during a video call made possible by the carrier's enhanced internet bandwidth. Photo credit: U.S. Navy.

From personal well-being to tactical improvements, the program demonstrated the critical need for a modernized and optimized mix of integrated communications structures while deployed at sea. Kymeta and EACOWT's solutions for mission-critical preparedness empower armed forces with seamless, secure communication across land and sea, ensuring that vital information reaches decision-makers swiftly and securely, enhancing tactical advantage and mission success.

SOURCES

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12277 134th Ct. NE, Redmond, WA 98052, USA | Phone: +1.425.896.3700 | www.kymetacorp.com

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