

# HELIOS

## One Step Closer to Integrated LWS Capability

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The HELIOS LWS, under prime contract with Lockheed Martin, is Increment 1 of the multi-increment Surface Navy Laser Weapon System (SNLWS) acquisition program that leverages mature technology to deliver proven laser weapon capability to the Fleet for a more lethal force. The ultimate goal of SNLWS is integrated counter-anti-ship cruise missile (C-ASCM) defense capability, in accordance with the Chief of Naval Operations (CNO) NAVPLAN.

While not limited to Aegis, HELIOS will initially be integrated in USS Preble (DDG 88), a Flight IIA Arleigh Burke Class destroyer, during an on-going Aegis Modernization process in San Diego, California before operating at-sea in FY23. HELIOS is designed for continuous operations using available ship power without the need for an energy magazine. HELIOS is fully integrated into the Aegis Combat System for improved layered defense and will

provide Commanding Officers with new “Gray Zone” response options to prevent conflict escalation while defending their ship.

According to Rear Adm. Seiko Okano, the Navy’s program executive officer for Integrated Warfare Systems, at the Surface Navy Association’s annual conference in 2021, integrating HELIOS into Aegis “is a pretty big deal...We’ve realized over time that the capability that we’re giving to the fleet is actually more capable than what we initially had thought.”

“Combat system integration enhances overall system effectiveness and is the key to unlocking the full potential of a laser weapon system like HELIOS,” said Jon Rambeau, Lockheed Martin vice president & general manager, Integrated Warfare Systems & Sensors.

The Mk 5 Mod 0 HELIOS was originally designed to address Anti-Surface Warfare (ASUW) and Counter-Intelligence, Surveillance and Reconnaissance (C-ISR) warfighting gaps with the scalability to dazzle and destroy Unmanned Aerial Systems (UAS) and defeat Fast Inshore Attack Craft (FIAC).

During testing, HELIOS demonstrated that it provides a solid foundation for incremental delivery of SNLWS C-ASCM capability by repeatedly hitting a high-speed target at tactically extended ranges—closing the fire control loop on a track provided by the Surface Combat System Center’s Aegis Combat System after achieving coarse and fine optical tracking.

“HELIOS has now demonstrated potential for this additional capability due to the design flexibility in its scalable system architecture,” said Rambeau.

HELIOS can scale to 120kW and higher within existing LWS allocations for space, weight, and power, or “SWaP,” which presents viable back-fit opportunities for today’s Fleet as well as for future new construction ship classes such as FFG-62 and DDG(X).

Procurement of additional higher-power, land- and sea-based HELIOS systems will:

- Provide critical risk reduction for future SNLWS increments
- Strengthen the industrial base and facilitate increased warfighter learning
- Refine concept of operations (CONOPS) and tactics, techniques, and procedures (TTPs)
- Enhance combat system integration

HELIOS is a transformational new weapon system, providing deep magazine, low cost per kill, speed of light delivery and precision response. HELIOS will be the first tactically integrated laser weapon system, with both dazzle and destroy capability, fielded to the U.S. Department of Defense.