USS Benfold Departs U.S. 7th Fleet after 10 years of Forward-Deployed Service

YOKOSUKA, Japan (Sept. 29, 2025) – Sailors assigned to the Arleigh Burke-class guided-missile destroyer USS Benfold (DDG 65) man the rails as the ship departs Commander, Fleet Activities Yokosuka, Japan, Sept. 29, following 10 consecutive years of forward-deployed service in the U.S. 7th Fleet area of operations. Benfold is forward deployed and assigned to Destroyer Squadron (DESRON) 15, the Navy's Largest DESRON and U.S. 7th Fleet's principal surface force. (U.S. Navy Photo by Chief Mass Communication Specialist Taylor DiMartino)

By Lt. Victor Murkowski, Destroyer Squadron 15 Public Affairs

YOKOSUKA, Japan – The Arleigh Burke-class guided-missile destroyer USS Benfold (DDG 65) departed Commander, Fleet Activities Yokosuka, Japan, Sept. 29, following 10 years of forward-deployed service to U.S. 7th Fleet.

Benfold's decade of service was recognized by senior leadership at a farewell ceremony with Commander, Destroyer Squadron (DESRON) 15. "Benfold successfully stood the watch in the Western Pacific for 10 years," said Capt. Dave Huljack, commodore, DESRON 15. "This ship leaves with an amazing legacy as a workhorse for the fleet and a stalwart friend to our allies and partners. Over the last decade, Benfold and her crew have executed our nation's tasking with strength and excellence. We will miss Benfold's grit and determination but look forward to her crew's continued success in DESRON 31."

Benfold is scheduled to relocate to Everett, Washington, to support U.S. 3rd Fleet operations. Benfold will also shift from DESRON 15 to the "Ke Koa O Ke Kai" (The Warriors of the Sea) of DESRON 31 after its transit across the international date line.

Benfold arrived in Yokosuka and joined Forward-Deployed Naval Forces – Japan (FDNF-J) in October 2015. During the ship's decade-long tenure, it participated in numerous multilateral maritime exercises, such as: Malabar, Maritime Counter Special Operations Forces Exercise, Pacific Griffin, Valiant Shield, Keen Sword, Annual Exercise, and Resolute Dragon, working alongside allies and partners to ensure a free and open Indo-Pacific.

"Through tenacity and teamwork, Benfold's decade assigned to the Western Pacific has allowed our crew to build on the ship's great accomplishments," said Cmdr. Rich Mayer, commanding officer of Benfold. "Benfold is leaving the 7th Fleet family on a high note. Our families will miss Japan, and we will miss sailing alongside one of our nation's strongest allies."

Throughout the tenure, Benfold maintained uncompromised combat readiness, conducting numerous patrols and demonstrating U.S.

commitment to the region.

While assigned to FDNF-J, Benfold earned three Battle Efficiency "Battle E" Awards, the Marjorie Sterrett Battleship Fund Award, the Arleigh Burke Fleet Trophy, the CNO Afloat Safety Award, multiple Retention Excellence Awards, and 10 consecutive Fleet Health Promotion and Wellness, or Green "H," awards. While assigned to DESRON 15, Benfold sailed more than 4 million miles across the Indo-Pacific.

"Operating alongside partners and allies in 7th Fleet has been a highlight for Benfold crewmembers over the past decade," said Mayer. "Our Sailors have made lasting memories, and Benfold's successes are a testament to the U.S. Navy's long-term commitment to a free and open Indo-Pacific."

U.S. 7th Fleet, the U.S. Navy's largest forward-deployed numbered fleet, routinely interacts and operates with allies and partners in preserving a free and open Indo-Pacific region.

General Dynamics Electric Boat Awarded $642M for Virginia-Class Submarine Work

Release From General Dynamics Electric Boat

GROTON, Conn. (September 26, 2025) – General Dynamics Electric Boat, a business unit of General Dynamics (NYSE: GD), announced today it has been awarded a $642 million contract modification to a previously awarded contract supporting submarine production. This modification is for a cost-plus-fixed-fee modification to a previously awarded contract (N00024-20-C-2120) for Lead Yard Support and Development Studies and Design efforts related to Virginia-class submarines, as detailed in the U.S. Department of War contract award.

“This contract modification supports our efforts to deliver the submarines our Navy needs as quickly as possible,” said Mark Rayha, president of General Dynamics Electric Boat. “This funding allows us to continue our design and development efforts in order to sustain and extend our nation’s operational overmatch against any potential adversaries. With the support of the administration, the Navy and Congress, we are prepared to deliver the advantage to protect our sailors, our families and our freedom.”

CTF-66 Showcases RAS Capabilities With Partners in Unmanned Systems Demonstration

By Mass Communication Specialist 1st Class Cameron C. Edy

TROIA, Portugal – Commander, Task Force (CTF) 66 conducted a live robotic and autonomous systems (RAS) demonstration with Allies and partners during the experimentation exercise Robotic Experimentation and Prototyping with Maritime Unmanned Systems (REPMUS) / Dynamic Messenger 2025, in Troia, Portugal, Sept. 25, 2025.

Nations that participated in the live RAS demonstration include Belgium, Denmark, Estonia, France, Germany, Norway, Portugal, Spain, Sweden, Ukraine, United Kingdom, and United States.

“We continue to advance our robotic and autonomous systems through ongoing testing and combined training with partners and their unmanned systems,” said Adm. Stuart B. Munsch, commander, U.S. Naval Forces Europe and Africa (NAVEUR/NAVAF). “We deeply appreciate our Ally, Portugal, for their leadership in maritime experimentation and unmanned systems. Our collective capability is only getting stronger.”

Taking place near the Portuguese Navy’s Operational Experimentation Centre (CEOM), the live RAS demonstration deployed two groups of unmanned surface vessels (USVs) simulating a swarming attack, with CTF-66 deploying three Global Autonomous Reconnaissance Crafts (GARC) in response to

disrupt the attacking USVs and protect critical infrastructure from harm.

This routine demonstration tests and validates U.S. and partner robotic and autonomous systems' ability to protect critical infrastructure, and enhances interoperability within the NATO's allied and partner nations in employing unmanned systems to execute national tasking.

"CTF-66 is focused on adaptation, which enables a warfighting edge and warfighting advantage," said Rear Adm. Michael S. Mattis, commander, CTF-66. "Sharpening that warfighting edge is pushing the capabilities and limits of our RAS with Allies and partners, and that's exactly what we're doing during REPMUS/Dynamic Messenger 2025."

REPMUS 2025 is a Portuguese-led experimentation exercise that focuses on maritime unmanned systems experimentation, capability development and interoperability, highlighting NATO's ability to trial and integrate uncrewed systems into the operational environment.

REPMUS 2025 is combined with exercise Dynamic Messenger (DYMS), an operational experimentation exercise led by NATO's Allied Maritime Command to promote adaptation of capabilities, support agile modernization of Allied Maritime forces, and gain operational advantage across the Alliance.

REPMUS / Dynamic Messenger 2025 integrates unmanned systems into NATO's standing Naval Forces, resulting in both national maritime capability development and an exponential growth in RAS capability across the Alliance. The exercise also supports NATO's broader Digital Transformation goals by improving information sharing, data management, and the integration of advanced technologies into command structures.

Established in 2024 to deploy and employ RAS with Navy, joint, and NATO partners, CTF-66 utilizes RAS in conjunction with conventional manned platforms and spaced-based capabilities to

expand Maritime Domain Awareness, develop defense measures against adversarial use of RAS, innovate asymmetric fighting, and in the future, deliver lethal effects, if necessary.

Commander, U.S. 6th Fleet, headquartered in Naples, Italy, conducts the full spectrum of joint and naval operations, often in concert with allied and interagency partners to advance U.S. national interests, security and stability in Europe and Africa, and freedom of navigation in and around the Mediterranean.

For over 80 years, NAVEUR/NAVAF has forged strategic relationships with Allies and partners, leveraging a foundation of shared values to preserve security and stability. Headquartered in Naples, Italy, NAVEUR/NAVAF operates U.S. naval forces in the U.S. European Command and U.S. Africa Command areas of responsibility.

U.S. Navy to Christen Future USS Louis H. Wilson Jr.

From the U.S. Department of War, Sept. 26, 2025

The U.S. Navy will christen the future USS Louis H. Wilson Jr. (DDG 126), during a ceremony at General Dynamics Bath Iron Works (BIW) on Saturday, September 27, at 10:30 a.m. (EST).

The principal address will be delivered by Commandant of the Marine Corps, Gen. Eric Smith; Additional speakers include Governor of Maine, Janet Mills; U.S. Senator of Maine Angus King; Assistant Secretary of the Navy for Research, Development, and Acquisition, Jason Potter; Deputy Chief of Naval Operations for Integration of Capabilities and

Resources, Vice Adm. Brad Skillman; Medal of Honor Recipient, Col. Harvey C. Barnum, Jr.; and President of General Dynamics Bath Iron Works, Chuck Krugh.

In a time-honored tradition, ship sponsors Janet Wilson Taylor, daughter of the namesake and Susan J. Rabern, former Assistant Secretary of the Navy for Financial Management and Comptroller, will christen the ship by breaking a bottle of sparkling wine across the bow.

The ship is named after Gen. Louis Hugh Wilson Jr., a World War II and Vietnam War veteran who was awarded the Medal of Honor for his heroism during the Battle of Guam. Following his service in Vietnam, he served as the 26th Commandant of the Marine Corps from 1975 to 1979.

The christening of DDG 126 symbolizes the Navy's 250-year commitment to innovation and maritime dominance. From seabed to space, the Navy delivers power for peace – always ready to fight and win. This milestone marks the Navy's enduring legacy and commitment to shaping the future of maritime power.

Arleigh Burke-class Flight III destroyers feature the AN/SPY-6(V)1 Air and Missile Defense Radar and incorporate upgrades to the electrical power and cooling capacity plus additional associated changes to provide enhanced warfighting capability to the fleet. Future destroyers Harvey C. Barnum Jr. (DDG 124), Patrick Gallagher (DDG 127), William Charette (DDG 130), Quentin Walsh (DDG 132), John E. Kilmer (DDG 134), Richard G. Lugar (DDG 136), and J. William Middendorf (DDG 138) are also in production at BIW.

HII Successfully Completes Builder’s Sea Trials for Destroyer Ted Stevens

From HII

PASCAGOULA, Miss., (Sept. 27, 2025) – HII’s (NYSE: HII) Ingalls Shipbuilding division successfully completed builder’s sea trials for guided missile destroyer Ted Stevens (DDG 128), marking a major milestone in the construction of the second Flight III destroyer built at Ingalls. The trials were conducted over several days in the Gulf of America, and tested the ship’s engineering, navigation, and combat systems to ensure readiness for the future acceptance trials and eventual delivery to the U.S. Navy.

“The Ingalls and Navy team worked diligently to get DDG 128 ready for sea, and I want to recognize the team’s determination in reaching this major milestone,” Ingalls Shipbuilding DDG Program Manager Ben Barnett said. “Their efforts reflect the urgency we all share in delivering these

ships with the highest quality and technological advancements needed to support the U.S. Navy fleet and to protect our national security."

During builder's trials, the Ingalls test and trials team completed a full range of hull, mechanical and electrical tests, as well as Flight III AN/SPY-6 (V)1 radar array testing. These tests are designed to validate critical system performance and ensure the ship meets or exceeds Navy requirements.

Flight III Arleigh Burke-class destroyers represent the next generation of surface combatants for the U.S. Navy and incorporate a number of design modifications that collectively provide significantly enhanced capability. Upgrades include the AN/SPY-6(V)1 Air and Missile Defense Radar (AMDR) and the Aegis Baseline 10 Combat System required to keep pace with the threats well into the 21st century.

Ingalls has delivered 35 Arleigh Burke-class destroyers to the U.S. Navy including the first Flight III, USS Jack H. Lucas (DDG 125), in June of 2023 and currently has five Flight IIIs under construction including Ted Stevens (DDG 128), Jeremiah Denton (DDG 129), George M. Neal (DDG 131), Sam Nunn (DDG 133) and Thad Cochran (DDG 135).

Earlier this month, HII announced that the company would be partnering with several shipyards and fabricators in multiple states to grow its throughput and meet the requirements of increased demand for ships by the U.S. Navy. This effort included Ingalls Shipbuilding selecting outfitted structural units for Arleigh Burke-class destroyers to be constructed, inspected and accepted at partner locations and later delivered to Ingalls for final integration.

As the largest manufacturing employer in Mississippi, Ingalls Shipbuilding has designed, built and maintained amphibious ships, destroyers for the U.S. Navy for over 86 years.

U.S. Navy Decommissions Avenger-class Mine Countermeasures Ships in Bahrain

MANAMA, Bahrain (Sept. 3, 2025) U.S. Sailors man the rails of the Avenger-class mine countermeasures ship USS Dextrous (MCM 13) during a decommissioning ceremony for the ship in Manama, Bahrain. The recently decommissioned Avenger-class mine countermeasures ships USS Sentry (MCM 3), USS Dextrous (MCM 13) and USS Gladiator (MCM 11), and their crews, were recognized during the final decommissioning ceremony for USS Devastator (MCM 6) on board Naval Support Activity Bahrain, following nearly 40 years of active service. (Official U.S. Navy photo)

From Commander U.S. Naval Forces Central Command Public Affairs, Sept. 25, 2025

After nearly 40 years of active service, three recently decommissioned U.S. Navy Avenger-class mine countermeasures ships and their crews were recognized in conjunction with a final decommissioning ceremony for USS Devastator (MCM 6) on board Naval Support Activity (NSA) Bahrain, Sept. 25.

“As you carry the plank you own of Douglas fir away with you today, remember that with it you carry the legacy of the thousands of Sailors who come before you,” said Lt. Cmdr. Alex Turner, commanding officer, USS Devastator. “Today, Devastators’ watch has ended; her service is complete, but her legacy will endure… and in every Iron Man who is honored to call this wooden ship home, there are truly no greater heroes.”

U.S. Navy Vice Adm. George Wikoff, commander, U.S. Naval Forces Central Command (NAVCENT) and U.S. 5th Fleet (C5F) presided over the final decommissioning ceremony that recognized the proud history of not only Devastator, but also USS Sentry (MCM 3), USS Dextrous (MCM 13) and USS Gladiator (MCM 11).

“For more than three decades, USS Devastator, USS Dextrous, USS Gladiator and USS Sentry have been critical to maritime missions around the globe – defending the freedom of navigation, promoting stability and deterring and defeating efforts by adversaries to harm the innocent,” said Wikoff. “To all, past and present, who have served on [these ships], thank you for standing the watch, being true trailblazers in the fleet and maintaining a constant presence in our area of operations… what a proud legacy you leave in your wake.”

Avenger-class ships were designed as mine sweepers/hunter-killers capable of finding, classifying and destroying moored and bottom mines. The ships used sonar and video systems,

cable cutters and a mine detonating device that could be released and detonated by remote control. They were also capable of conventional sweeping measures. The ships were a fiberglass-sheathed, wooden hull construction.

U.S. 5th Fleet's Task Force 55/Destroyer Squadron (DESRON) 50, responsible for surface forces across the U.S. Central Command area of responsibility, including patrol craft, independently deploying ships and now, littoral combat ships, is charged with the mine countermeasures mission.

Four littoral combat ships (LCS) are slated to deploy to Bahrain to replace the decommissioned MCM ships that have operated forward in 5th Fleet area of operations for decades.

USS Canberra (LCS 30) was the first Independence-variant LCS to deploy with the mine countermeasures mission package to the region and arrived at NSA Bahrain, May 22. Canberra has an integrated suite of unmanned maritime systems and sensors, and is designed to locate, identify and destroy mines while increasing the ship's standoff distance from a threat.

NAVCENT/C5F is the maritime component commander of U.S. Central Command, whose area of responsibility encompasses about 2.5 million square miles of water area and includes the Arabian Gulf, Red Sea, Gulf of Oman and parts of the Indian Ocean. This expanse, comprised of 21 countries, includes three critical chokepoints at the Strait of Hormuz, the Suez Canal, and the Bab al-Mandeb Strait at the southern tip of Yemen.

US, French In-Flight

Refueling Extends Advanced Hawkeye's Reach

This summer, the French Navy and Air Force conducted qualitative aerial refueling testing with French Rafale, MRTT and A400M tankers as a part of a collaborative effort between the E-2/C-2 Airborne Command & Control Systems Program Office (PMA-231) and France's Direction Générale de l'Armement.
From Naval Air Systems Command, Sept. 25, 2025

NAS PATUXENT RIVER, Md. – The E-2D Advanced Hawkeye (AHE) achieved a breakthrough in global airpower this summer, successfully refueling mid-air from three French-made tankers – a historic first that dramatically extends the Advanced Hawkeye's reach and for seamless joint operations while providing unprecedented airborne surveillance capabilities.

The French Navy and Air Force conducted qualitative aerial refueling testing with French Rafale, MRTT and A400M tankers as a part of a collaborative effort between the E-2/C-2 Airborne Command & Control Systems Program Office (PMA-231) and France's procurement agency, known as Direction Générale

de l’Armement (DGA).

DGA and the French Navy will continue additional aerial refueling testing and pilot training in France as they replace their E-2Cs beginning in 2028. France became the second international customer of the E-2D AHE in December 2020, procuring three French variant E-2D aircraft from the U.S. Navy.

The E-2D AHE represents a two-generation leap in technology compared to its predecessor, the E-2C Hawkeye. The aircraft features a state-of-the-art radar and upgraded aircraft systems that improve supportability and increase readiness. The centerpiece of the E-2D AHE is the APY-9 radar system, designed specifically to provide enhanced surveillance detection and tracking capability against advanced threat aircraft and cruise missile systems in the overland, littoral and open ocean environments.

With the addition of aerial refueling capabilities, the E-2D remains the most advanced command and control platform in the world. Aerial refueling increases the range and endurance of the platform, and enhances its ability to provide continuous, long-range surveillance and battlefield management.

Navy’s NEPTUNE Program Energizes Innovation from Lab to Fleet

Bridging University Research and Naval Needs

From the Office of Naval Research, Sept. 24, 2025

The Office of Naval Research's Naval Enterprise Partnership Teaming with Universities for National Excellence (NEPTUNE) program is aligning academic innovation with naval energy needs. Launched as a pilot in 2015, NEPTUNE connects top universities with Navy and Marine Corps problem sponsors to tackle energy challenges ranging from power management to next generation fuels.

"The NEPTUNE program exemplifies the kind of innovative

partnerships we need to accelerate defense technology development," commented Dr. Scott Higgins, ONR program officer, and NEPTUNE lead.

By funding university research teams that include military or veteran students, and focusing on energy-related domains like energy storage, power generation and micro-grids. NEPTUNE rapidly transitions lab concepts toward operational naval solutions. The program has established strategic partnerships with institutions including Stanford, MIT, Purdue University, UC Davis, and others. The results of such partnerships align with the Secretary of the Navy's priorities of people, capabilities, and processes.

NEPTUNE's approach emphasizes moving research along the technology readiness scale by advancing basic science (TRL 2-4) to prototype demonstrations in real-world environments (TRL 7). This is done by fostering connections between the Department of the Navy, colleges and universities, and industry.

"These collaborations are proving instrumental in rapidly transitioning innovative technologies from laboratory concepts to operational naval assets" said Dr. Jeff Decker, managing director of Stanford's Tech Transfer for Defense and a Hacking for Defense program director.

Programs like NEPTUNE are accelerating the time between the lab and real-world impact," said Justin Fanelli, chief technology officer for the Department of the Navy. "By embedding operational needs directly into university projects, we're not just moving new technologies forward, we're ensuring it's deployable where it matters most – at sea and in the field."

From Purdue Lab to Startup: EnergyMind Takes Flight

A prime example of NEPTUNE's impact is the technology transition from Professor Vikas Tomar's lab at Purdue

University into a new startup called Primordis, Inc. Supported by NEPTUNE-funded research at Purdue, Dr. Tomar's team developed a suite of artificial intelligence algorithms for energy management of autonomous systems, mobile robots, and data centers. His work has resulted in three related patents and now forms the core of Primordis' EnergyMind platform. Founded in late 2024, Primordis.ai is bringing Purdue University technology to market, targeting applications in both defense and industry.

"This is about bridging the gap between what we demonstrate in the lab and what the warfighter needs on the field," explains Dr. Tomar, a professor of aeronautics and astronautics and Primordis co-founder.

Primordis describes EnergyMind as a new form of Autonomous Energy Intelligence (AEI) – essentially, a real-time AI decision agent for operators and platforms. Unlike conventional monitoring systems that merely track usage or give static forecasts, EnergyMind proactively guides decision-making on energy use in dynamic environments. It integrates mission timeline goals, operational range priorities, and immediate power consumption into a single predictive gauge. Backed by machine learning, the system continuously learns from context and predicts energy bottlenecks before they occur, suggesting or automatically executing adjustments in real time.

At the individual asset level (say, an unmanned vehicle or a server), EnergyMind can reschedule tasks or rebalance loads to extend runtime without sacrificing performance. At the fleet or enterprise level, it manages charging cycles, route planning, and load distribution across multiple assets to optimize overall energy availability and resilience. Crucially, the platform is hardware-agnostic as it is compatible with any battery chemistry and neutral to OEM, and works in standalone devices or networked across an entire operation. By blending predictive energy "survivability"

analytics with the commander’s intent, EnergyMind aims to extend operational reach, reduce downtime, cut sustainment costs, and enhance the endurance of systems ranging from autonomous drones to data centers.

Transitioning this technology out of academia was enabled by NEPTUNE’s support, noted Dr. Tomar. “NEPTUNE allowed us to de-risk the early research and focus on a solution for real naval problems.”

The NEPTUNE framework connected his team with Navy stakeholders who provided feedback during development, ensuring the resulting technology addresses operational pain points like limited battery life and unpredictable power demands in the field. With ONR’s backing, what began as a basic research project on AI-driven battery health monitoring quickly evolved into a deployable capability. In November 2024, Dr. Tomar and colleagues launched Primordis to commercialize EnergyMind and related innovations. The startup is already securing pilot contracts, including with Navy and Marine Corps end-users to integrate EnergyMind into next-generation platforms. This trajectory from lab to spin-off exemplifies how NEPTUNE accelerates the naval “innovation pipeline,” turning university research into products for Sailors and Marines.

AI Power Management for the Fleet

Primordis’s technology is arriving at a pivotal moment, as the Navy and Department of Defense push to electrify platforms and improve energy efficiency across the board. The EnergyMind platform provides a critical piece: AI-powered energy management that can dramatically extend the endurance and reliability of electrically propelled systems. Military and commercial stakeholders are taking note of its potential.

Jeff Wright is CEO of SplashOne Robotics, and the former CTO of Special Operations Command Pacific (SOCPAC), where he led

the development of INDOPACOM's un-manned systems strategy. "We believe this integration [EnergyMind on drones] will create a decisive edge in contested environments where energy autonomy is just as critical as speed, agility, and firepower" he stated. "Single digits of improvement in system life can be decisive: 20% increases are quantum leaps and a 'no brainer' to include in our designs."

Kevin Murray, senior director of Strategic Growth at Anduril Industries shared, "As the former director of S&T and CTO for the U.S. Marine Corps, I see application of this technology across numerous DoD robotic and autonomous system programs at all levels, all the way down to soldier borne mission command and FPV drone operations. I'm unaware of anything similar that could be as impactful."

Front-line requirements are driving interest as well. A Program Executive Officer at NAVWAR, the Navy's warfare systems command, underscored the need for greater endurance in unmanned systems. "I need on-station time doubled or tripled for certain USVs. EnergyMind is the type of solution we are looking for," the PEO remarked. Even industry partners echo this enthusiasm – the CEO of one UAV manufacturer noted that a mere 2% range increase in their drones would be game-changing, so "a 20% increase using Primordis' technology will be phenomenal." Such testimonials highlight how advanced energy-management AI could fundamentally improve combat effectiveness: longer loiter times for uncrewed vessels, more patrol hours per battery, and reduced logistics for fuel or battery resupply.

Primordis is positioning EnergyMind to support a wide array of defense systems. In the near term, the company is working with original equipment manufacturers (OEMs) of battery-powered unmanned aerial, surface, and underwater vehicles to embed AI energy controllers in their platforms. The technology is equally relevant to operational energy at the enterprise level – for example, managing the micro-grids powering expeditionary

bases, command-and-control hubs, or even directing energy usage for high-power systems like radar and directed-energy weapons. By extending battery life and optimizing power use, tools like EnergyMind can bolster concepts such as Expeditionary Advanced Base Operations (EABO) by reducing the logistics burden and increasing platform uptime. Navy and Marine Corps initiatives that depend on swarms of autonomous systems or long-endurance sensors could see immediate benefits. As one Air Force special operations architect observed, an AI energy management layer can dramatically extend the performance of emerging technologies like high-density batteries and wireless power beaming – multiplying the impact of those innovations in the field. In short, the EnergyMind solution born from NEPTUNE research is poised to give U.S. forces a tactical advantage: the ability to outlast and outmaneuver by intelligently managing every watt.

A Broader NEPTUNE Impact

The Purdue-Primordis story is just one illustration of NEPTUNE's broader impact on naval technology. Across the country, NEPTUNE-sponsored projects are yielding tangible results in surprisingly short timeframes. A standout example comes from the Massachusetts Institute of Technology, where Professor Steven Leeb's team, also part of NEPTUNE, developed a groundbreaking Combat Power Monitor (CPM) for shipboard use. Leveraging advances in energy sensing and analytics, Leeb's group created a system to continuously monitor a ship's electrical consumption and power quality, enabling real-time insights for condition-based maintenance and fuel economization. With NEPTUNE backing, the MIT researchers moved this concept from the lab to a prototype installed on active Navy and Coast Guard vessels in only 24 months.

"With Professor Leeb's work, the ability to monitor and manage energy usage on ships ensures that our vessels can operate longer, with greater endurance, and with reduced logistical footprints," noted Fanelli. "Put simply, Leeb's work improves

naval readiness by keeping ships afloat and out of drydock, which is a focal point for the chief of Naval Operations."

Such enhancements are crucial in scenarios where at-sea resupply is challenging or when minimizing energy signatures is vital for stealth[19]. The CPM's rapid transition to ship trials, made possible by NEPTUNE's university partnerships, underscores how this program speeds up innovation.

As the NEPTUNE initiative continues, it represents a strategic investment in future naval capabilities. By funding promising ideas in academia and teaming scientists with warfighters early, ONR is compressing the timeline from discovery to deployment. Dr. Scott Higgins emphasizes that its mission is not just to invent new technologies but to ensure those innovations make a difference for sailors and marines. The program's success stories – from smart battery AI at Primordis to MIT's combat power sensors – are proving the model.

"We stand at an inflection point – an era marked by great power competition, proliferating threats, rapid technological convergence and an increasingly contested maritime domain. To prevail, we must build and sustain a Navy that is ready to fight and win – today, tomorrow and well into the future." said Admiral Daryl L. Caudle, United States Navy, 34th chief of Naval Operations. "NEPTUNE's university partnerships are answering that call, delivering energy-smart solutions to the Fleet and fueling a culture of innovation that will help the Navy sail stronger into the future."

"The unique construct of the NEPTUNE program allows Navy and DoD stakeholders to share capability gaps and technology needs with academic researchers and engages veteran, active duty, reserve and ROTC students in mission-focused research," noted Corey Love, senior science and technology manager for Power and Energy at the U.S. Naval Research Laboratory and former NEPTUNE program officer. "The positive impact on workforce development hits on two levels: first it provides

opportunities to support advanced degrees in science and engineering for veterans, with many who will go on to military civilian or defense industry research positions; and second, it exposes our future military leaders with an appreciation of energy challenges and the importance of making energy-informed decisions on the battlefield. Combined with the focus on advancing technology to promote entrepreneurship to develop the industry required for the future Navy, the tenants of NEPTUNE address Navy priorities outlined by senior leadership."

To learn more about the ONR NEPTUNE program, visit onr.navy.mil; for more information on the Technology Transfer for Defense program at Stanford University, visit techtransferfordefense.stanford.edu or on the Hacking for Defense Program, visit h4d.stanford.edu.

Boeing to Relocate F/A-18 Service Life Modification Work to Support St. Louis Site Expansion

The program will be relocated starting in 2026 with all St. Louis based work ending in 2027

From Boeing

ST. LOUIS, Sept. 24, 2025 – As part of Boeing's [NYSE: BA] expansion and transition plans to support future programs, the company is relocating its F/A-18 Super Hornet Service Life Modification (SLM) work out of the St. Louis region and will sunset the St. Louis based work in 2027.

Boeing is considering multiple sites to transfer the work to with case studies starting at the San Antonio and Jacksonville

sites. Boeing currently performs SLM work in San Antonio and in partnership with the U.S. Navy at Fleet Readiness Center (FRC) Southwest in San Diego, Calif. Additional F/A-18 modification work also occurs in Jacksonville, Fla.

An upgraded SLM F/A-18 Super Hornet departs St. Louis heading back to the U.S. Navy fleet. This fighter is equipped with Block III capabilities.
Photo Credit / Art Credit: Boeing

“Our expansion plans across the St. Louis site triggered the execution of a multi-year strategic plan, requiring the relocation of some work,” said Dan Gillian, vice president and general manager of Air Dominance and senior St. Louis site executive. “Given we are already successfully conducting SLM at other locations, this move is logical so we can continue to meet our customers commitments while ensuring we are well poised for future work.”

The St. Louis region is home to F-15EX, T-7A and MQ-25 production as well as JDAM and other munitions production lines. In March, the U.S. Air Force announced Boeing will design, build and deliver the F-47 6th generation fighter. Current St. Louis SLM team members will support these programs.

Super Hornet is the backbone of the Navy’s strike fighter inventory, and SLM is critical to supporting the U.S. Navy’s readiness needs. SLM adds Block III capabilities and 4,000 flight hours to existing Navy Super Hornets. Since the program began, Boeing and the Navy have increased inductions each year while improving the turnaround time of the fighters. This work is projected to continue through the mid-2030s. All Block II Super Hornets can be upgraded to the Block III capability suite through SLM.

“We have worked with the Navy for years to improve SLM while growing in San Antonio and FRC Southwest. Delivering multiple

fighters and capabilities from multiple locations is what we do, and we will continue that work on the Super Hornets for the life of the fleet," said Mark Sears, Boeing Fighters vice president.

Raytheon, Avio USA Expand Collaboration to Accelerate Mk 104 Rocket Motor Production

Release From RTX

ARLINGTON, Va. (September 24, 2025) – Raytheon, an RTX (NYSE: RTX) business, and Avio USA have executed a purchase order for funding of up to $26 million for continued engineering work on the Mk 104 dual-thrust rocket motor to support Raytheon's Standard Missile franchise.

The purchase order comes 13 months after the businesses signed a contract for preliminary engineering work on the Mk 104 rocket motor. This project secures funding through the Critical Design Review phase, procurement of long lead material for qualification, and will enable increased and accelerated capacity for solid rocket motor production.

"This purchase order represents an important step in expanding our supply chain to ensure the resilience and availability of the Mk 104 rocket motor," said Barbara Borgonovi, president of Naval Power at Raytheon. "By strategically implementing second sourcing for critical materials, we are not only enhancing our ability to meet customer demand but also strengthening our

production capacity for the Standard Missile franchise.”

Prior to this purchase order, the companies successfully completed both a System Requirements Review and Preliminary Design Review, establishing a solid foundation for the next phases of development and production.

“We are proud to continue our work on Mk 104, which is so critical to the United States and our allies,” said VADM (Ret.) James Syring, CEO, Avio USA. “We look forward to advancing the motor through full qualification and into production in the future.”

“Avio is happy to support Avio USA on the Mk 104 activities, providing its longstanding expertise on SRM engineering, material characterization, laboratory and fire testing, sourcing and motor integration with the aim to ultimately support Raytheon’s accelerated ability to deliver to their end customers,” said Giulio Ranzo, CEO of Avio SpA.