

CNO: Thinking on Unmanned Systems Changed by Experimentation



The Sea Hunter medium displacement unmanned surface vessel launches from Naval Base Point Loma for the U.S. Pacific Fleet's Unmanned Systems Integrated Battle Problem 21, April 20, 2021. *U.S. NAVY / Mass Communication Specialist 2nd Class Thomas Gooley*

ARLINGTON, Va. – The Navy's top officer said his thinking about integrating unmanned systems into the fleet has been changed by the observations of the service's recent experimentation during fleet exercises.

"We are learning so fast in fielding these capabilities out to the fleet or potentially fielding them quickly inside the FYDP [Future Years Defense Plan] we may be able to close capability gaps with small, expendable unmanned [systems] off of any

platform rather than thinking we have to build a larger [platform],” said Chief of Naval Operations Adm. Michael Gilday, speaking April 28 in a Maritime Security Dialogue event on the future of the U.S. Navy conducted by the U.S. Naval Institute and the Center for Strategic and International Studies, and sponsored by HII.

Gilday said by the time the DDG(X) program is underway “we will be in a better place with LUSV [large unmanned surface vehicle]. I don’t know if we’ll have an unmanned medium [USV] or not. The stuff that [U.S. 5th Fleet Commander Vice Adm. Brad] Cooper is doing with CTF-59 and using small, unmanned [systems] on the sea and in the air to sense the environment and make sense of it in order to yield a common operational picture for allies and partners as well as the 5th Fleet headquarters has changed my thinking on the direction of unmanned. ... I’m not saying that we don’t need an MUSV [medium USV]; I’m saying it will cause us to consider numbers and what potential payloads they’re going to have.”

Gilday said unmanned systems have “so much potential, coupled with AI [artificial intelligence] software integration that it’s difficult to put a definitive number on the numbers we’re going to have in the air, on the sea, and under the sea. I like the way we’re going with the unmanned task force that has tied together acquisition specialists, requirements folks, scientists from the Navy research labs, and also the fleet with CTF-59 in terms of real-time exercising, experimenting, and developing CONOPS [concepts of operations]. It’s been a powerful awakening experience for us. Also, industry and foreign partners have dived in on this thing.”

Gilday said the Navy’s four experimental large and medium USVs – two Project Overlord vessels and the Sea Hunter MUSV and Sea Hawk USV – have accrued 41,000 nautical miles of autonomous travel so far.

“In terms of the mastery of COLREGS [Convention on the

International Regulations for Preventing Collisions at Sea] and vessel avoidance, we think we're in a really good place with that," he said. "To send an unmanned [vessel] out into the ocean, with a mission, to expect that unmanned to come back and salute and say, 'mission complete,' is a different problem set. That's something that we're working on, but, quite frankly, that's going to be a journey for us."

Gilday said USVs may need to be "minimally manned for a while. I'd like to get to a place with large USVs where we can deploy them with strike groups and ARGs [amphibious ready groups] in the 2027-2028 time frame. A lot of the work we're doing right now with the Unmanned Task Force and CTF-59 hopefully will buy down technical risk, make us an informed customer with respect to what we're going to buy – both in engineering plant and a command-and-control framework – so that we can begin to deploy those things and do the same things we're doing with CTF-59 to earn stuff out there as we're using these LUSVs and perhaps medium USVs. I don't want to wake up in 15 years and say, we bought the wrong kind of LUSV with the wrong engineering plant. ... We're trying to prove ourselves in an evolutionary, deliberate, informed kind of way."

Aboard USS Jackson, MQ-8C Fire Scout Returns to Flight



An MQ-8C Fire Scout, attached to the “Wildcards” of Helicopter Sea Combat (HSC) Squadron 23, assigned to the Independence-variant littoral combat ship USS Jackson (LCS 6), prepares to land aboard Jackson, April 19. *U.S. NAVY / Mass Communication Specialist 3rd Class Charles DeParlier*

PHILIPPINE SEA – The Independence-variant littoral combat ship USS Jackson (LCS 6) completed underway return to flight operations of the Navy’s unmanned helicopter, the MQ-8C Fire Scout, in the Philippine Sea on April 20, commander Destroyer Squadron 7 public affairs said April 27.

The flights at sea were a conclusion of MQ-8 operational testing to return to routine flights on littoral combat ships deployed to the Indo-Pacific. The MQ-8C, assigned to the “Wildcards” of Helicopter Sea Combat Squadron (HSC) 23, attached to Jackson, operated simultaneously with the squadron’s MH-60S Seahawk helicopter.

The completion of the return to flight operations will allow the MQ-8C to continue to operate concurrently with other ships and airborne assets as operations require. In recent weeks, the “Blackjacks” of Helicopter Sea Combat Squadron (HSC) 21 also completed return to flight operations for their MQ-8B

Fire Scout variants, assigned to USS Tulsa (LCS 16) and USS Charleston (LCS 18) on deployment in the U.S. 7th Fleet area of operations.

“It’s great to be flying the MQ-8C again, especially for an extended period with our MH-60S,” said Lt. Cmdr. Richard Mooney, head of HSC-23 detachment attached to Jackson. “Coordinated manned-unmanned operations like these provide numerous advantages to our surface combatants.”

MQ-8B and C Fire Scout variants are designed for suitably equipped ship-based and land-based autonomous systems. MQ-8B and C Fire Scout combined with MH-60S extend Naval Aviation’s capability to support maritime operations providing integrated, over-the-horizon intelligence, surveillance, reconnaissance and targeting, and combat logistics support.

Fire Scout operations are a whole-ship effort, requiring effective coordination between the aviation and surface entities aboard.

“I am extremely proud of our crew and the HSC-23 detachment for their planning and execution in getting the MQ-8C in the air,” said Cmdr. Brian Bungay, commanding officer of the USS Jackson. “We’re excited to build on this success and continue to increase the LCS’s war-fighting capability.”

Attached to DESRON 7, USS Jackson is on a rotational deployment to the U.S. 7th Fleet area of operations in support of security and stability in the region, and to work alongside allied and partner navies to provide maritime security and stability, key pillars of a free and open Indo-Pacific.

Navy to Adjust F/A-18 Service Life Modernization as Needed to Address Strike Fighter Shortfall



An F/A-18E Super Hornet, assigned to the “Vigilantes” of Strike Fighter Squadron (VFA) 151, launches from the flight deck of the Nimitz-class aircraft carrier USS Abraham Lincoln (CVN 72) on April 13 during a U.S.-Japan bilateral exercise. *U.S. NAVY / Mass Communication Specialist Seaman Apprentice Julia Brockman*

ARLINGTON, Va. – The Navy is planning to use a “rheostat” approach to adjust the F/A-18E/F Super Hornet strike fighter Service Life Modernization (SLM) program to mitigate the strike fighter shortfall in the fleet, a senior service official said.

The SLM is a sustainment program designed to increase the

service life of Block II F/A-18E/Fs. The initial SLM phase extended the service life from 6,000 flight hours to 7,000 flight hours. The program beginning in 2023 will increase the service life to 10,000 flight hours. The line also will be used to upgrade many Block II aircraft to the Block III configuration.

During an April 27 hearing of the House Armed Services Committee's subcommittee on Tactical Air and Land Forces, the chairman, Rep. Donald Norcross (D-New Jersey), said in his opening remarks that "two years ago the strike fighter shortfall would have lasted until 2030. However, last year the Navy told us that the strike fighter shortfall would be resolved to zero in 2025, primarily due to the solid justification for terminating the new F/A-18 Super Hornet line."

Norcross said he was skeptical of this year's analysis of the F-35C production rate and the "lackluster" F/A-18E/F SLM program and the "non-rapid development of the Navy's Next-Generation Air Dominance [program]."

He said the Congress authorized the procurement of 12 F/A-18/E Super Hornets in the 2022 budget as "risk mitigation," aircraft the Navy said that it did not want. The Navy also did not request any Super Hornets in the 2023 budget proposal.

He said the Navy's strike fighter shortfall "will not be resolved until six years later [from 2025] in 2031 because of further unplanned reduction in F-35 purchases, reduced aircraft inductions into the F/A-18 [SLM] program."

Frederick "Jay" Stefany, performing the duties of assistant secretary of the Navy for Research, Development and Acquisition, told the subcommittee that said the SLM program had been "stabilized."

Rear Adm. Andrew Loiselle, director, Air Warfare Division in the Office of the Chief of Naval Operations, said the Navy has

drilled down on the issues with the SLM and has begun to turn around the cost of the program.

"In the past year we've seen a 30% percent cost reduction in our Phase One 7,500-hour SLM deliveries due to the implementation of best practices with pre-SLM grooming, engineering reutilization and overall touch-flavor learning and efficiencies," he said.

"We expect continued cost savings as SLM matures and we are executing our planned transition to full-kit, 10,000-hour SLM inductions if fiscal '23," Loiselle said. "Full-kit inductions will provide full Block III capability identical to new production aircraft at one third of the cost, giving us 4,000 additional flying hours, or enough to fly for 13 additional years.

"Right now, our SLM plan is our rheostat that we're using to control availability in the out years, depending on schedules and future budgets that are unknown at this point in time," he said. "Right now, I do not plan to do SLM on the entirety of my Block II force and I do not plan to do it on my Block I force. If there are changes in the future that require additional capabilities [and] I need more Block III aircraft, then I have the ability to dial up that rheostat on SLM and be able to do that for a longer period of time and to potentially use the FRCs [Fleet Readiness Centers] to increase capacity for SLM beyond the currently planned 35 per year."

Loiselle said two Block I Super Hornets were put through SLM but based on the results the Navy decided not to proceed with SLM of Block I aircraft "unless there is some requirement to do so in the future."

Loiselle said the turn-around time of an SLM will be 15 months.

Boeing currently is building Block III Super Hornets to the Navy. At the current production rate, the production is

expected to run to the first quarter of fiscal 2026, Loiselle said.

Navy Proposes Divestment of Special Ops Helicopter Squadron



Sailors assigned to the “Firehawks” of Helicopter Sea Combat Squadron 85 (HSC-85) prepare an MH-60S Seahawk helicopter for flight operations aboard Naval Air Station North Island in August 2020. *U.S. NAVY / Mass Communication Specialist 1st Class Chelsea Milburn*

ARLINGTON, Va. – The U.S. Navy is proposing to retire its only expeditionary helicopter squadron dedicated to support of special operations forces with the service’s 2023 budget

request.

Helicopter Sea Combat Squadron 85 (HSC-85), a reserve squadron based at Naval Air Station North Island, California, is equipped with MH-60S Seahawk helicopters to support “Naval Special Warfare forces and other special operations forces training and readiness,” according to the Department of the Navy’s 2023 budget highlights book.

The drawdown of HSC-85 would begin in 2023 with reduction in manpower and flying hour reductions would begin in 2024. Unless the MH-60S aircraft are needed elsewhere in the fleet, the aircraft would be placed in storage. The Navy estimates the program savings would amount to \$312.5 million over the Future Years Defense Plan.

HSC-85 originally was established as Helicopter Anti-Submarine Squadron 85 (HS-85) in 1970 at NAS Alameda, California, and equipped with the SH-3A Sea King helicopter, later upgrading to the SH-3D and SH-3H versions. The squadron moved to NAS North Island in 1993 and in October 1994 was redesignated Helicopter Combat Support Squadron 85 (HC-85), shifting to the roles of search and rescue, logistics and range support.

The squadron was redesignated HSC-85 in February 2006 and equipped with MH-60S helicopters. In 2011, special operations support became its primary role, and it was equipped with an older version of the Seahawk, the HH-60H. The Navy planned in 2016 to deactivate HSC-85 and its East Coast counterpart, HSC-84, but HSC-85 survived. The squadron in 2018 upgraded to the Block III version of the MH-60S.

NRL Conducts Successful Terrestrial Microwave Power Beaming Demonstration



A demonstration using the MIT Haystack Ultrawideband Satellite Imaging Radar transmitter for higher average power. *NAVAL RESEARCH LABORATORY*

WASHINGTON – A team of researchers from the U.S. Naval Research Laboratory recently demonstrated the feasibility of terrestrial microwave power beaming by transmitting 1.6 kilowatts of power over 1 kilometer, the most significant power beaming demonstration in nearly 50 years, NRL said April 20.

Microwave power beaming is the efficient, point-to-point transfer of electrical energy across free space by a directive microwave beam. The project, Safe and COntinuous Power bEaming – Microwave (SCOPE-M), was funded by the Office of the Undersecretary of Defense for Research and Engineering's Operational Energy Capability Improvement Fund and led by project principal investigator Christopher Rodenbeck, Head of the Advanced Concepts Group at NRL.

Within 12 months, NRL established the practicality of

terrestrial microwave power beaming and beamed 1 kilowatt of electrical power over a distance of 1 kilometer using a 10 gigahertz microwave beam. SCOPE-M demonstrated power beaming at two locations, one at the U.S. Army Research Field at Blossom Point, Maryland, and the other at The Haystack Ultrawideband Satellite Imaging Radar transmitter at the Massachusetts Institute of Technology.

"The reason for setting those targets is to push this technology farther than has been demonstrated before," said Paul Jaffe, power beaming and space solar lead.

"You don't want to use too high a frequency as it can start losing power to the atmosphere," Rodenbeck said. "10 GHz is a great choice because the component technology out there is cheap and mature. Even in heavy rainfall, loss of power is less than five percent.

"In Maryland, the team exceeded their target by 60% by beaming 1.6 kW just over 1 kilometer," he said. "At the Massachusetts site, the team did not have the same peak power, but the average power was much higher, thereby delivering more energy. Jaffe said these demonstrations pave the way for power beaming on Earth, in space and from space to Earth using power densities within safety limits set by international standards bodies.

"As engineers, we develop systems that will not exceed those safety limits," Jaffe said. "That means it's safe for birds, animals, and people."

Jaffe went on to say that during past experiments with laser power beaming using much higher power densities, the engineers were able to successfully implement interlock systems so if something approached the beam it would turn off.

"We did not have to do that with SCOPE-M because the power

density was sufficiently low that it was intrinsically safe," Jaffe said.

Brian Tierney, SCOPE-M electronics engineer, said the Department of Defense is interested in wireless power beaming, particularly wireless power beaming from space, and that a similar rectenna (rectifying antenna) array as used for SCOPE-M could be used in space. A rectenna is a special type of receiving antenna for converting electromagnetic energy into direct current electricity in wireless power transmission systems.

"Although SCOPE-M was a terrestrial power beaming link, it was a good proof of concept for a space power beaming link," Tierney said. "The main benefit of space to Earth power beaming for the DoD is to mitigate the reliance on the fuel supply for troops, which can be vulnerable to attack."

Besides being a DoD priority, Rodenbeck said power beaming is the ultimate green technology. Unlike other sources of clean energy, which provides intermittent and sporadic electrical power, power beamed from space to Earth can provide power continuously, 24 hours a day, seven days a week, 365 days a year.

"That is something no other form of clean energy can do today," Rodenbeck said. "From the standpoint of technology readiness level, I feel we are very close to demonstrating a system we can truly deploy and use in a DoD application."

Navy Proposes Decommissioning 6th Fleet's Command Ship in 2026



The Egyptian navy frigate ENS Alexandria (F911) and the U.S. Navy amphibious command ship USS Mount Whitney (LCC 20) operate in the Red Sea in support of the newly established Combined Task Force 153, April 20. *U.S. ARMY / Cpl. DeAndre Dawkins*

ARLINGTON, Va. — The U.S. Navy has proposed in its 2023 budget to decommission the amphibious command ship USS Mount Whitney (LCC 20) during fiscal 2026.

The Mount Whitney has served as the flagship of the U.S. 6th Fleet since 2005, when it replaced the USS LaSalle (AGF 3).

The Navy is proposing the retirement of the Mount Whitney because its retirement “is mitigated by staff operating ashore,” the service said in its 2023 budget highlights book,

citing a savings of \$179.7 million over the Future Years Defense Plan.

The 6th Fleet staff normally is stationed ashore in Naples, Italy. The Mount Whitney is homeported in nearby Gaeta.

The Mount Whitney is a Blue Ridge-class amphibious command ship. It was commissioned on Jan. 16, 1971, and served until 2005 as the flagship of the U.S. 2nd Fleet. It underwent conversion to a Military Sealift Command ship and is operated by a hybrid Navy/Civilian Mariner crew but remains a commissioned ship under the command of a Navy captain. If retired in 2026, the ship will have served 55 years.

Currently, the Mount Whitney is deployed to the Red Sea and Gulf of Aden where it serves as the flagship of commander, Task Force 153, a new task force of the Combined Maritime Forces, an international coalition operating under commander, U.S. 5th Fleet/Naval Forces Central Command.

**NSWC Dahlgren Engineers
Develop Modernized Low-Cost
Semi-Active Laser Seeker**



From left to right, Naval Surface Warfare Center Dahlgren Division engineers Ryan Littleton and Michael St. Vincent perform seeker calibration on the semi-active laser seeker they helped develop. The new SAL seeker is smaller and lower in cost than previous seekers and will be compatible with the future generations of guided munitions systems. *U.S. NAVY*

DAHLGREN, Va. – Engineers at NSWC Dahlgren Division have developed a new, lower-in-cost, semi-active laser (SAL) seeker, the division said April 25.

SAL seekers are a key enabling technology for guided munitions that allow warfighters to target stationary and moving targets in areas where GPS is unavailable. SAL seekers function in tandem with an operator that directs a pulsing, infrared laser at targets. The seeker, typically in the nose of laser-guided munitions, detects the laser energy reflecting off the target and guides the munition to the operator's mark with high precision. This partnership assures that the correct target is engaged.

The seeker developed by engineers at Dahlgren Division is

smaller, three to five times cheaper than comparable laser seekers and is based on modern electronics designs not only to ensure relevance, but also to improve performance and implement the next generation of signal processing and countermeasures. As precision weapons requirements continue to expand, the design is ready to support integration with imager systems. The upgraded terminal seekers will be instrumental in the development of future guided munition systems.

“In response to the shift in force design, warfighting function and the trends going forward, we’re technologically pivoting to stay ahead of the game,” said program manager for the Enhanced Expeditionary Engagement Capability program Luke Steelman.

Traditional SAL seeker systems use a gimbaled detector element to track the laser spot as it moves relative to the weapon. Engineers at Dahlgren were able to develop a new combination of fixed optics and software algorithms to replicate the capability without the need for those expensive and sensitive moving parts. This has not only led to a smaller and more cost-effective product, but also one that is instrumental in ensuring compatibility with the next generation of system currently under development.

What’s more, the new seeker design also includes an integrated height-of-burst sensor that is able to measure proximity to the ground and signal the weapon’s fuze to create a very precise airburst function without the need of an additional sensor on the guided munition, further saving space and reducing cost.

Dahlgren has produced more than 50 prototypes, 30 of which have been live-fire tested on multiple weapon systems – including the 81-mm Advanced Capability Extended Range Mortar – and successfully guided systems to stationary and moving targets.

Michael St. Vincent, project lead engineer, said that direct feedback from warfighters was critical to the successful development process.

“We would get feedback from warfighters – what kind of targets they are targeting, what they are like, and also what requirements they need to meet,” said St. Vincent. “If they needed more range or more field of view . . . we would do simulations and make some changes and new iterations that moved closer to what they want.”

Dahlgren has long had a hand in terminal seeker technology, but in recent years the focus of the warfighting function has moved to exceedingly longer-range engagements. These long-range engagements keep warfighters and targeting assets far away from adversaries, but often preclude the use of laser-guided munitions.

Despite increasing engagement distances, Steelman says that laser-guided munitions that use the SAL seeker will always be a mainstay in warfighters’ toolboxes for one reason: target assurance.

“If the operator is putting a dot on a target, he is telling me ‘this is your target, not the one to the left, not the one to the right, that one,’” St. Vincent noted. “Laser guidance will always provide that 99.99-percent assurance that a specific truck or boat is your target.”

USS Donald Cook Returns to

Mayport after Surge Deployment



The Arleigh Burke-class guided-missile destroyer USS Donald Cook (DDG 75) arrives at Naval Station Norfolk, April 13. *U.S. NAVY / Mass Communication Specialist Mass Communication Specialist 1st Class Jacob Milham*

JACKSONVILLE, Fla. – The Arleigh Burke-class guided-missile destroyer USS Donald Cook (DDG 75) returned to Naval Station Mayport following a three-month deployment, April 24, the U.S. 2nd Fleet said in an April 25 release.

Donald Cook departed Naval Station Mayport in January on a short-notice deployment to operate with NATO Allies and partners in the Eastern Atlantic, North Sea and Baltic Sea.

The crew spent more than 70 days at sea and conducted three port visits in support of maritime security partnerships in

Copenhagen, Denmark; Rostock, Germany; and the Isle of Portland, England.

“Visiting other countries as a representative of the United States is surreal,” said Fire Controlman (Aegis) 2nd Class Brady Itkin. “People told us how nice Americans are everywhere we went, and we were shown amazing hospitality by the civilians of other NATO countries. There’s no better feeling than making a positive impact on other people’s perspective of America.”

The ship received warfare excellence awards in communications, engineering and ship safety while underway.

“The crew put in a lot of hard work over the past year,” said Ensign Benjamin Steen, electronic warfare officer aboard Donald Cook. “This recognition is definitely a testament to all of our efforts.”

While deployed, Donald Cook participated in NATO Exercise Dynamic Guard 2022 in the North Sea. Dynamic Guard, hosted by Norway, is a biannual, multinational electronic warfare exercise series designed to provide tactical training for the NATO Response Force and NATO national units. For the first time in three years, two U.S. vessels participated to further enhance the ongoing cooperation, strength and interoperability between NATO Allies.

“The crew demonstrated their tenacity by executing multinational exercises and national tasking on short notice during this surge deployment,” said Cmdr. Matt Curnen, commanding officer of Donald Cook. “Our operations over the past few months have demonstrated our proficiency and capability as well as reaffirming our commitment to the NATO Alliance. I could not be more proud of the resiliency and professionalism the crew displayed during this deployment.”

Donald Cook is scheduled to start a major maintenance availability, its first since returning from their former homeport of Rota, Spain, in June.

Future APL 69 Conducts Builder's and Acceptance Trials



The Navy's newest berthing barge, APL 69, recently conducted builder's and acceptance trials in Pascagoula, Mississippi. This is a file photo of APL 67. *U.S. NAVY*
WASHINGTON – The Navy's newest berthing barge, Auxiliary

Personnel Lighter (APL) 69, recently conducted builder's and acceptance trials in Pascagoula, Mississippi, Team Ships Public Affairs said in a release.

Builder's trials consist of a series of in-port tests and demonstrations that allow the shipbuilder, VT Halter Marine, and the Navy to assess the craft's systems to ensure installation in accordance with the original equipment manufacturer's guidelines and that the craft design and configuration meet the contract requirements.

Acceptance trials consist of integrated testing to demonstrate the capability of the platform and installed systems across all mission areas to effectively meet its requirements. These tests and demonstrations are witnessed by the Navy's Board of Inspection and Survey and are used to validate the quality of construction and compliance with specifications prior to delivery to the Navy.

"These vessels improve quality of life for our Sailors during ship maintenance availabilities and inter-deployment training cycles," said Capt. Eric Felder, program manager for U.S. Navy and Foreign Military Sales Boats and Craft, Program Executive Office Ships. "We look forward to delivering more of these vessels to the fleet to provide the necessary berthing, messing, administrative, and leisure facilities to crews while their ships are undergoing maintenance."

APLs are 82-meter-long barges that can berth up to 609 people – 72 officers and 537 enlisted personnel. Mess seating is available for 224 enlisted personnel, 28 chief petty officers and 28 officers in 20-minute intervals, allowing food service for 1,176 personnel with three meals a day.

APLs are used to house duty crews while ships are in maintenance availabilities and can be towed to new bases or shipyards to support changing fleet requirements. Additionally, they offer the potential use for humanitarian

missions and other temporary assignments. APLs are equipped with offices, classrooms, washrooms, laundry facilities, a medical treatment facility, a barber shop and a fitness center.

VT Halter Marine is currently in production of two additional APLs.

Navy Awards Raytheon Up to \$1.68B for Zumwalt DDG Engineering Services



Guided-missile destroyer USS Zumwalt (DDG 1000), right, and amphibious assault ship USS Tripoli (LHA 7) sail behind

amphibious transport dock USS Anchorage (LPD 23) in the Pacific Ocean, April 10. *U.S. NAVY / Mass Communication Specialist 2nd Class Malcolm Kelley*

TUCSON, Ariz. – The U.S. Navy awarded Raytheon Missiles & Defense an activation, sustainment and modernization contract for \$483 million with options, if exercised, totaling \$1.68 billion across five years, the company said April 20.

Under this contract, Raytheon Missiles & Defense will provide the U.S. Navy services and professionals to complete the activation and fleet introduction of the three Zumwalt-class destroyers, while continuing to develop technology and warfare capabilities.

“This contract underscores our role as a systems integrator, which goes beyond offering customers weapons and radars,” said Wes Kremer, president of Raytheon Missiles & Defense. “Our team provides Zumwalt destroyers extensive support, from engineering and cyber protection to software development and upgrades.”

Additional services will include design, integration, test and evaluation, system upgrade and replacement, logistics product development, configuration management and training systems.

The Zumwalt-class destroyers recently achieved initial operational capability in December 2021, with the inaugural fleet employment of USS Zumwalt scheduled for later this year.