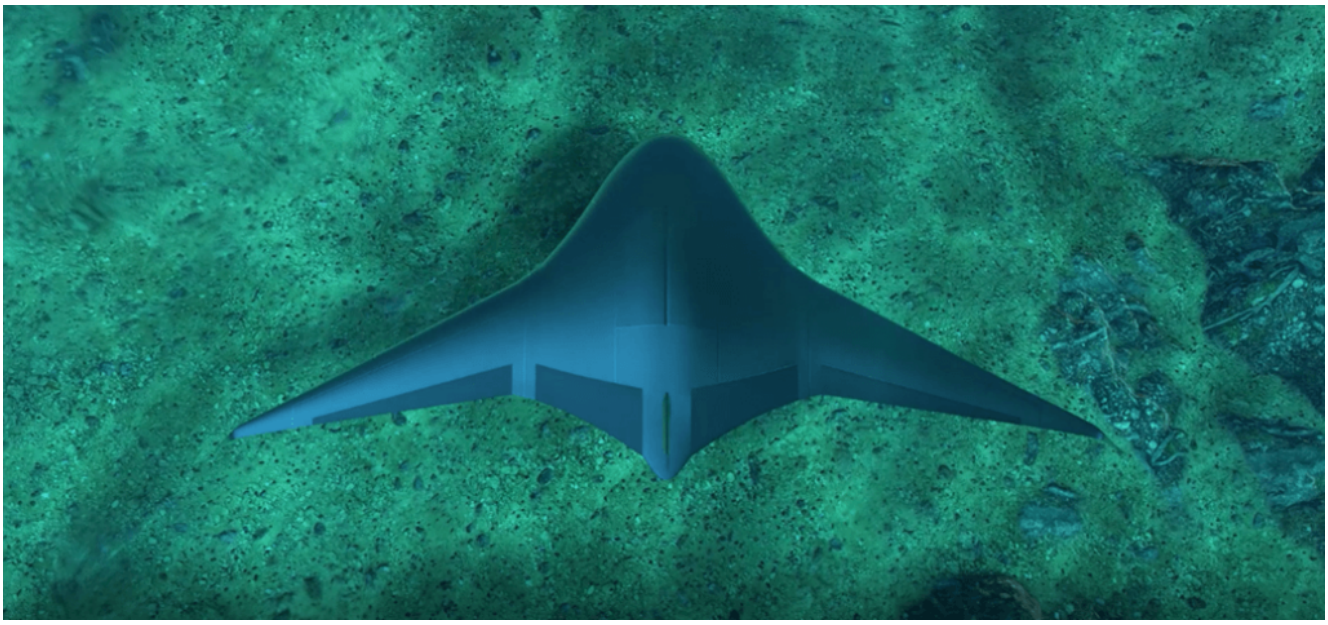
Martin Defense to Develop Amphibious Autonomous Vehicle for Expeditionary Fuel Delivery



An artist’s conception of Martin Defense Group’s Manta Ray autonomous underwater vehicle. *DARPA*

ARLINGTON, Va. — A defense company in Hawaii has been tapped by the Office of Naval Research to develop an autonomous vehicle to deploy a fuel delivery system to support amphibious systems.

Martin Defense Group LLC of Honolulu has been awarded a $15 million cost-plus-fixed-fee contract for the development of an Amphibious Vehicle for Unmanned Surface Mobility, the Defense Department said April 6.

“The AVUSM system provides the capability of autonomously delivering a lay-flat fuel line hose from a floating embarkment platform, through the surf-zone, to above a high-water mark line for fuel delivery in support of expeditionary advanced base operations,” the announcement said. “This is also known as a reach-to-the-beach capability. This contract

provides for technology development and maturation with the objective of transitioning the technology/capability to Navy and/or Marine Corps acquisition programs.”

Martin Defense also is the developer of the Manta Ray autonomous underwater vehicle for the Defense Advanced Research Projects Agency. Work expected to be completed by April 5, 2025.

JADC2 Panelists Express Fears of ‘No Joint Process’

Rear Adm. Susan BryerJoyner said as the Navy continues its

move to distributed naval operations and cannot mass its ships together, it further complicates command and control. *LISA NIPP*

NATIONAL HARBOR, Md. – The biggest problem with the effort to develop a joint all-domain command and control system that would integrate all the sensors and communication devices of the U.S. armed forces and our allies and partners may be that there really is no joint process. That was the situation described by a panel of experts at the Navy League's Sea-Air-Space expo on April 5.

The challenge for the Navy alone was how do the forces operate beyond line of sight when they know they will not have uncontested communications, "how does the Navy do that when we have a proliferation of sensors" and how do they leverage the sensors on one platform with those on another "in order to get the effects that we need," said Rear Adm. Susan BryerJoyner, director of the Naval Cyber Security Division. And as the Navy continues its move to distributed naval operations and cannot mass its ships together, it further complicates command and control, she said. The Navy needs to do more exercises to begin testing solutions to those problems, she advised.

Andrew Mara, executive vice president of the Center for Naval Analysis, asked how with the aggregation of different sensors does anyone achieve effects, and how do they assure the logistical needs are met. "All of those pieces will have to come together," he said.

And Todd Harrison, Director of the Aerospace Security Project at the Center for International and Strategic Studies, noted that the issue becomes more complex when you try to bring together allies and partners in the desired coalition operations, when each of them have their own unique systems.

Harrison suggested adopting the model of the F-35 Joint Program Office that has allied users of the F-35 included from the beginning of discussions.

Harrison warned, “This is not the first time we tried to do this,” listing a host of supposed joint programs that failed to produce compatible communication systems among the U.S. forces. “It didn’t work. I fear it won’t again.”

BreyerJoyner shared Harrison’s concern about the allies. Asking how would the Navy be able to fight as a joint and coalition force, which would be needed against China or Russia. “How would we share targeting information to get weapons on targets?”

Margaret Calomino, senior director of Strategy at L3Harris, one of the contractors that provide electronic systems to the U.S. and allied militaries, said it “would be good” if all the services would come together to determine what they needed. She also called for exercises to develop solutions.

BAE Systems’ San Diego Shipyard to Modernize the Destroyer USS Mustin

The modernization of USS Mustin will occur from May 2022 to November 2023. *U.S. NAVY*

SAN DIEGO – BAE Systems has received a $89.4 million contract from the U.S. Navy to perform major modernization work aboard the Arleigh Burke-class guided-missile destroyer USS Mustin (DDG 89), the company said in an April 5 release. The value of the competitively awarded contract could reach $95.2 million if all options are exercised.

Under the depot maintenance period availability contract awarded, BAE Systems San Diego Ship Repair will dry-dock the ship, perform underwater hull preservation work, recondition the engineering spaces, upgrade its command-and-control equipment and refurbish the crew's living spaces. The DMP work is expected to begin in May 2022 and be completed in November 2023. The company expects to dry-dock the ship at the San Diego Naval Base and then complete the remaining work at its Barrio Logan facility.

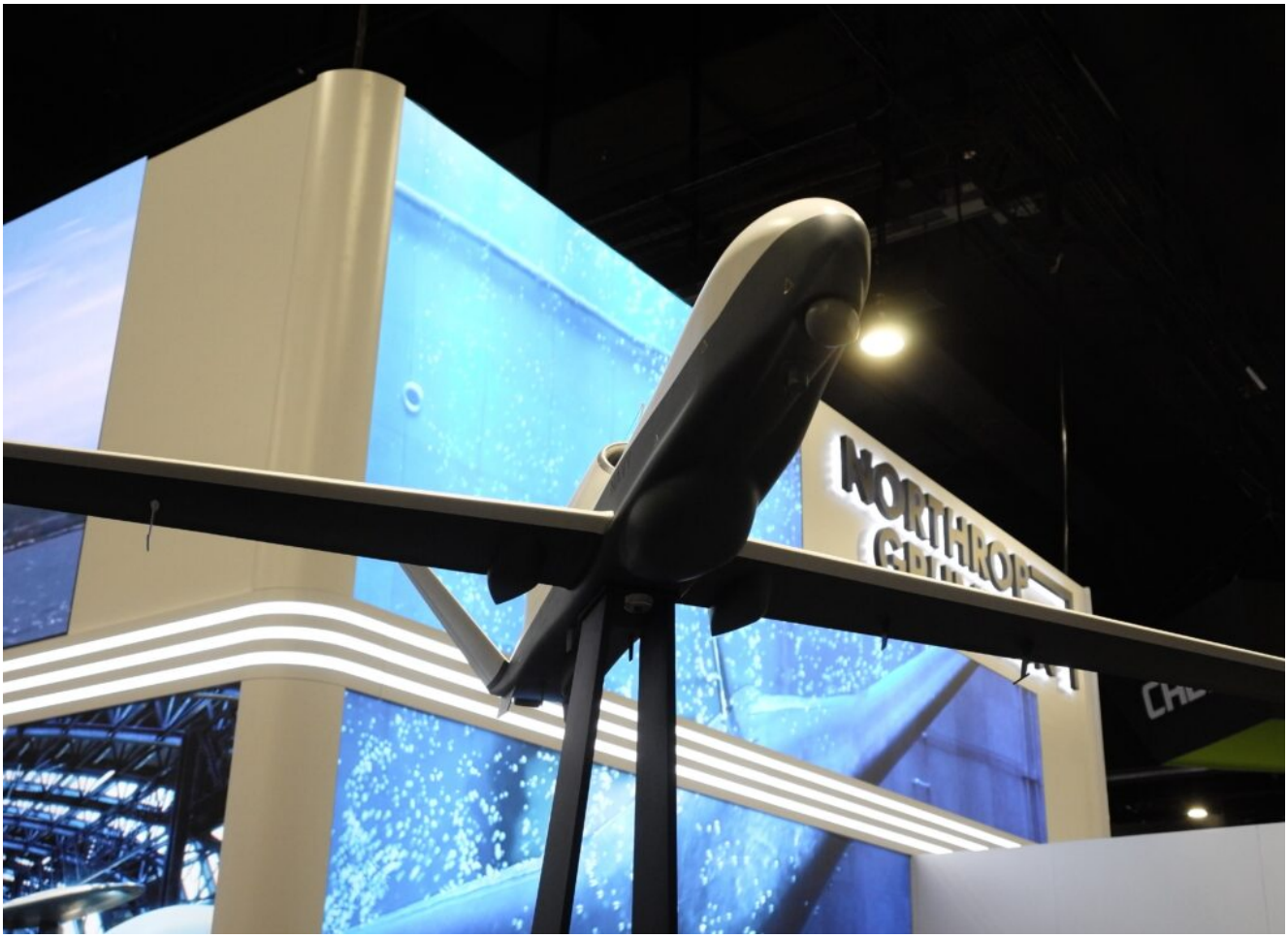
"A depot maintenance availability is a significant project for

upgrading the capability of Aegis destroyers," said David M. Thomas Jr., BAE Systems San Diego Ship Repair's vice president and general manager. "Our ship repair team has the critical know-how for repairing DDGs from our prior work. The DMP availability we'll perform on the USS Mustin will usher the ship into a higher phase of fleet readiness."

BAE Systems' San Diego shipyard is completing similar work aboard the guided-missile destroyer USS Preble (DDG 88) and has previously completed a DMP availability aboard USS Shoup (DDG 86).

USS Mustin is the 39th ship in the Arleigh Burke class and was commissioned in July 2003. The ship is named in honor of the Mustin family who has more than a century of service in the U.S. Navy. One other U.S. Navy combatant has carried the family name, USS Mustin (DD 413).

Navy's MQ-4C Triton UAV Back on Track With New Capability, Planned Orders



A model of the MQ-4C Triton at Northrop Grumman's booth. *Seapower*

NATIONAL HARBOR, Md. — The Navy's MQ-4C Triton high-altitude, long-endurance unmanned aerial vehicle is on track for initial operational capability with the new Integrated Functional Capability 4 (IFC-4) with a full orbit of four aircraft in fiscal 2023, a senior official said.

Speaking April 4 to reporters in a roundtable at the Navy League's Sea-Air Space expo, Rear Adm. Brian Corey, program executive officer for Unmanned and Strike Weapons, said IFC-4, which began flight testing in February, will give the Triton — built by Northrop Grumman (Booth 1300, Dock Space 2) — the capabilities needed to reach IOC and begin to replace the EP-3E Orion maritime reconnaissance aircraft.

The Navy has had the MQ-4C with the baseline IFC-3 capability deployed in 2020 to the Western Pacific in an early operational capability. One aircraft assigned to Unmanned

Patrol Squadron (VUP-19) remains deployed while a second has returned to the United States to give maintenance personnel more hands-on experience.

Corey said with IFC-3 “the Navy was not ready to get the network right. We weren’t allowed to connect to the network. We’ve come a long way to an operationally relevant environment.”

The number of planned regional orbits for the Triton originally was planned to be five, with four aircraft each. Beyond the first orbit, the future location and structure of the orbits is less defined and will be determined with regional combatant commander input.

The Navy paused planned procurement of the MQ-4C for two years in 2021 and 2022, but the production line was sustained with an order of three Tritons for Australia and one for the U.S. Navy added in 2021 by Congress, followed by another congressional addition in 2022. The Navy has requested procurement of three Tritons for fiscal 2023.

VUP-19, headquartered at Naval Air Station Jacksonville, Florida, moved its maintenance detachment to nearby Naval Station Mayport, Florida, last year from NAS Point Mugu, California. The future of Point Mugu as a future Triton base is yet to be determined. The second squadron, VUP-11, will be based at NAS Whidbey Island, Washington, but the location of its Tritons there or at Point Mugu or elsewhere will be decided later.

The EP-3E aircraft has a large crew of signals intelligence analysts, and the Triton IFC-4 represents a significant change in the analysis, with onboard processing largely replaced by a wide distribution of the intelligence information across many sites of the intelligence community, Corey said.

Corey said the RQ-4A Global Hawk Broad-Area Maritime Surveillance – Demonstration aircraft which have supported the

U.S. 5th Fleet since 2009, remain in service, with Congress having funded the BAMS-D for 2022 despite the Navy's plan to divest it. The Navy again in the 2023 budget request targets the BAMS-D for retirement, with budget pressures overcoming the utility of the aircraft.

Admiral on EMALS and AAG Programs: 'It Works'

Chief Aviation Boatswain's Mate (Equipment) Louis Mountain Jr., from Seat Pleasant, Maryland, assigned to USS Gerald R. Ford's (CVN 78) air department, signals the EMALS to launch during no load testing on the ship's flight deck. *U.S. NAVY / Mass Communication Specialist 3rd Class Zachary Melvin*

A Navy admiral says that despite reports to the contrary, the Electromagnetic Aircraft Launch System and Advanced Arresting Gear systems aboard the USS Gerald R. Ford (CVN-78) are working just fine.

Rear Adm. Shane G. Gahagan, program executive officer for tactical aircraft programs (PEO-T) at Naval Air Systems Command, said Monday, April 4 at Sea-Air-Space that the system had achieved 8,500 “cats and traps” on the Ford over the past two years.

The EMALS system has struggled with reliability issues over the years, but Gahagan insisted that it is performing well today.

“It works,” Gahagan said. “I read in the press … that it doesn’t work. It works day in and day out with cats and traps, and now it’s like every other program: How are we going to sustain it for the fight we need?”

He said the EMALS and AAG systems have a “lot of great capability” and that Sailors “love it.”

Bell Offers Manned, Unmanned Tiltrotors for Navy’s Next Rotorcraft

The Bell 280 Valor is currently offered as a replacement for the U.S. Army's H-60 helicopters, and Bell proposes they would be an ideal component of the Navy's DMO concept. *Bell*

NATIONAL HARBOR, Md. — Bell, a Textron company, is marketing its manned and unmanned tiltrotor aircraft to be the eventual replacements for the Navy's MH-60R/S helicopters.

Carl Forsling, Bell's senior manager for military sales and strategy, told *Seapower* April 4 at the Navy League's Sea-Air Space expo that the Bell tiltrotors would be ideal for implementation of the Navy's Distributed Maritime Operations concept because of their speed, range and payload.

The two tiltrotors are the versions of the unmanned Bell 247 Vigilant and the manned Bell 280 Valor.

The Valor, currently offered as a replacement for the U.S. Army's H-60 helicopters, is larger than the 247 and is designed to carry 8-12 passengers. It has two engines, one each at the wingtips driving a tiltrotor. Unlike those on the Bell-Boeing V-22 Osprey, the engines do not pivot, simplifying the mechanics of the movement and reducing cost. The marinized Valor would have a pivoting wing like the V-22 for storage in a ship's hangar. The aircraft would be hardened for

electromagnetic protection and be marinized for corrosion control in the salt-water environment. It would assume the roles of the MH-60S, including plane guard, rescue, medical evacuation and logistics.

The marinized unmanned Vigilant would replace the MH-60Rs on surface warships such as guided-missile destroyers. The folding rotors and pivoting wing would allow storage in a warships' small helicopter hangars. The Vigilant could be used for roles including surveillance, antisubmarine warfare, precision strike and aerial refueling.

With both aircraft replacing helicopters, the speed and range advantage would allow the tiltrotors to cover more area at a faster rate, Forsling said, while carrying heavier payloads.

Navy's CVM-22B Aircraft Adds Medevac Speed to Carrier Strike Group

A CVM-22B Osprey, from the “Sunhawks” of fleet logistics multi-mission squadron (VRM) 50, lands on the flight deck of the aircraft carrier USS Nimitz (CVN 68). At a Sea-Air-Space briefing, the V-22 program manager discussed the aircraft’s usefulness as a medevac solution. *U.S. Navy / Mass Communications Specialist 3rd Class Joseph Calabrese*

NATIONAL HARBOR, Md. — The U.S. Navy’s new CMV-22B Osprey tiltrotor carrier-onboard delivery aircraft’s capabilities have been a game-changer for medical evacuation from a carrier strike group, the Navy’s V-22 program official said.

The CMV-22B, which is replacing the catapult-launched C-2A Greyhound COD aircraft in the fleet, takes off and lands vertically. It is less dependent on carrier launch-and-recover cycles and, therefore, more flexible in its ability to quickly launch from the aircraft carrier and carry a medical patient to facilities ashore.

In addition to quicker launch capability, the range of the CMV-22B — which can be refueled in flight—give it an added ability to reach land-based medical facilities from farther

out.

Marine Col. Brian Taylor, the Navy's V-22 program manager, speaking April 4 to reporters at a Naval Air Systems Command (Booth 947) briefing the Navy League's Sea-Air Space expo at National Harbor, Maryland, spoke of a medevac from the one of the two CMV-22B detachments from that have deployed on aircraft carriers to the Indo-Pacific region so far from Fleet Logistics Multimission Squadron 30 (VRM-30). A CVM-22B launched from the carrier with a medevac patient and was able to land in a helicopter landing pad at the naval hospital in Camp Foster, Okinawa, a feat that the C-2A would not have been able to accomplish.

Taylor MV-22B integrated well with carrier operations. He also said the Marine Corps' MV-22B Osprey has qualified to operate from the hospital ship USNS Mercy.

The Osprey is operated by the U.S. Marine Corps, Air Force, and Navy and by the Japanese Self-Defense Force.

Taylor said the Osprey is expected to be in service through 2055. It reached initial operational capability in 2007. Under current contracts, production is expected to end in late 2024. The program office is focusing on sustainment and keeping the flow of parts and other resources necessary to keep the Osprey fleet operational through its service life.

Last year the Marine Corps deactivated one MV-22B squadron – VMM-166 – as part of Commandant Gen. David Berger's Force Design 2030 initiatives. Faced with the possibility of excess MV-22Bs in inventory, Taylor said his office is looking at inventory management of the fleet to develop a long-term plan, with an option that some Ospreys may be placed in storage, available as attrition aircraft.

Navy’s Flight I/II DDGs Get UAS Capability with Textron’s Aerosonde

The Aerosonde UAS has been deployed on a Navy Arleigh Burke-class guided missile destroyer in the 7th Fleet. *TEXTRON SYSTEMS*

ARLINGTON, Va. – The Aerosonde unmanned aerial system has been deployed on a U.S. Navy Arleigh Burke-class guided-missile destroyer serving in the U.S. 7th Fleet, giving the Flight I/II DDG – which does not have the organic helicopter facilities of the Flight IIA and subsequent versions of the DDG – an organic aerial surveillance capability.

Wayne Prender, Textron Systems’ vice president for Air

Systems, told *Seapower* March 31 the DDG – which he was not at liberty to name – deployed with an Aerosonde system on board in March. The system is being operated under a contractor-owned/contractor-operated arrangement.

Prender said a second DDG would deploy with an Aerosonde system later this year. He also said that for three years an Aerosonde system has been operational on board the Lewis B. Puller-class expeditionary sea base ship USS Hershel "Woody" Williams in support of the U.S. 2nd Fleet.

Prender said the deployments are "helping to set the calculus for real-world operations."

The Aerosonde can carry a variety of sensors including an electro-optical camera, an Automatic Information System receiver, and other special payloads. The UAS can perform wide-area search, expanding the search horizon of the host ship. The system is fully integrated into the ship's combat information center.

The UAS uses less fuel – about one pound per hour – than an MH-60 helicopter, which burns about 1,000 pounds per hour. The Aerosonde uses heavy fuel, the same fuel used by the ship's turbines, so no provision for a different fuel is needed.

An Aerosonde can be operated by a team of three contractor personnel. The fixed-wing version can be launched and recovered in Sea State 4 and is recovered by a net rigged on the host ship. A vertical takeoff and landing version, which carries a lighter payload but can be launched more quickly, will be deployed on a ship later this year.

President, First Lady Celebrate Commissioning of USS Delaware

President Joe Biden and First Lady Jill Biden, the ship sponsor, celebrated the commissioning of the Virginia-class fast attack submarine USS Delaware (SSN 791) Saturday, April 2. *U.S. NAVY*

WILMINGTON, Delaware – President Joe Biden and First Lady Jill Biden, the ship sponsor, celebrated the commissioning of the Virginia-class fast attack submarine USS Delaware (SSN 791) Saturday, April 2, in a ceremony in Wilmington, Delaware.

Biden previously represented the state of Delaware for 36 years in the U.S. Senate.

Due to COVID restrictions in place at the time, there was no traditional commissioning ceremony held when USS Delaware was

commissioned administratively on April 4, 2020. On that day, the submarine was underway and became the first U.S. Navy ship commissioned while submerged.

Saturday's ceremony followed the script of a traditional commissioning and was held in commemoration of the milestone.

"This latest Navy ship to carry the Delaware name is part of a long tradition of serving our nation proudly and strengthening our nation's security," Biden said. "Not just us, but our allies and partners around the world as well."

As the ship sponsor, Jill Biden performed the traditional honor of calling for the crew to man the ship and "bring her to life," a ceremonial procession following the commemorative setting of the first watch.

"This vessel will always uphold the First State's motto of 'Liberty and Independence,'" she said. "It's difficult to put into words what it means to be a part of the USS Delaware family. It's an incredible honor that I take seriously. I've seen the heart of this crew and it makes me proud and humbled to be your shipmate for life."

USS Delaware is the 18th Virginia-class submarine built, as well as the eighth and final Block III Virginia-class sub. The Block III submarines are notable for replacing 12 vertical launch tubes for Tomahawk Land Attack Missiles with two larger, 87-inch diameter launch tubes, capable of carrying larger payloads, among other advancements.

"The men who serve – and will serve – aboard the USS Delaware will bear our state's name for decades to come as they defend our nation," said U.S. Sen. Tom Carper of Delaware, the event's keynote speaker. "Through their sacrifice and service, may we grow even closer to that more perfect union."

USS Delaware is homeported at Submarine Base New London in Groton, Connecticut, where it operates under Submarine Squadron 12 and its Commodore, Capt. Matthew Boland.

The submarine is the seventh U.S. Navy ship to be named for the First State, but first in more than a century. The first ship to be named Delaware was a 24-gun frigate launched in July of 1776, the month the Continental Congress adopted the Declaration of Independence.

With SPY-6, Navy Has Radar to Match the Range of its Missiles

The SPY-6(V)1 is being installed on Flight III Arleigh Burke-class DDGs. This air-and-missile-defense radar has been installed on the future USS Jack H. Lucas (DDG 125), shown here, scheduled to join the fleet in 2024. *HII*

ARLINGTON, Va. – The SPY-6 air and missile defense radar, the

first of which has been installed on a guided-missile destroyer, will give the Navy a sensor worthy of its long-range Standard SM-3 Block IIA surface missiles, Raytheon officials said.

Briefing reporters April 1, Ken Spurlock, Raytheon's Strategic Missile Defense Requirements & Capabilities director, said the SM-3 missile "out-shot" the capabilities of earlier radars – presumably the SPY-1 on earlier DDGs. With the SPY-6, the SM-3 "can engage at the maximum range possible" for the missile.

Spurlock said the SPY-6 allows a ship to provide air and missile defense simultaneously, provide regional defense organically, offer greater clarity of the battlespace, give more defense in depth, reduce the risk of fratricide and reduce the number of missiles needed to defeat a target.

Also briefing was Michael Nulk, Raytheon's associate director, Requirements and Capabilities – Naval Power, said the SPY-6 will give commanders the discrimination capability to make better decisions and to "change their shot doctrine."

"There is no other radar with the surface maritime capabilities of SPY-6," Wes Kremer, president of Raytheon Missiles & Defense, said in a March 31 release. "SPY-6 is the most advanced naval radar in existence, and it will provide our military a giant leap forward in capability for decades to come."

Raytheon Missiles & Defense was awarded a $651 million Naval Sea Systems Command contract, with options totaling $2.5 billion, for "hardware, production and sustainment for full-rate production" of the SPY-6 family of radars. The contract provides for five years of production for radars for up to 31 U.S. Navy ships of seven types.

Scott Spence, naval radars executive director at Raytheon Missiles & Defense, also briefing reporters, said the company had 46 SPY-6 shipsets under contract, with six of those in

work at the Raytheon plant. He said the enlarged footprint of the SPY-6 production will help reduce sustainment costs.

Spence noted the last transmitter that Raytheon builds for the SPY-1 radar will be delivered in April, concluding 41 years of production for the SPY-1.

The SPY-6 family includes the SPY-6(V)1, being installed on Flight III Arleigh Burke-class DDGs. The (V)1 has four flat antenna faces each with 37 radar module assemblies. This air-and-missile-defense radar has been installed on the future USS Jack H. Lucas (DDG 125), scheduled to join the fleet in 2024. The second shipset has been delivered for installation on the future USS Ted Stevens (DDG 128).

The SPY-6(V)2 Enterprise Air Surveillance Radar (EASR) has a rotating face with nine RMAs. The (V)2 will equip the America-class and Wasp-class amphibious assault ships, San Antonio-class amphibious transport dock ships, and Nimitz-class aircraft carriers.

The SPY-6(V)3 EASR has three fixed faces each with nine RMAs. The (V)3 will be installed on Ford-class aircraft carriers and Constellation-class guided-missile frigates.

The SPY-6(V)4 EASR will have four fixed faces each with 24 RMAs. The (V)4 will be back-fitted on some Flight IIA Arleigh Burke-class DDGs.