U.S. Navy Orders 12 MH-60R Helicopters for South Korean Navy

An MH-60R Seahawk helicopter assigned to Helicopter Maritime Strike (HSM) 74, on the flight deck of the guided missile cruiser USS Gettysburg (CG 64) Nov. 24, 2013, in the Gulf of Oman. *U.S. NAVY / Mass Communication Specialist 3rd Class Lorenzo J. Burleson*

ARLINGTON, Va. – The U.S. Navy has ordered 12 MH-60R Seahawk helicopters from Lockheed Martin for the South Korean navy through Foreign Military Sales program.

The Naval Air Systems Command awarded Lockheed Martin a $447.2 million firm fixed-price order for the production and delivery of 12 MH-60R aircraft for the government of the Republic of Korea, an April 12 Defense Department announcement said.

The sale of MH-60Rs to South Korea was approved by the U.S.

State Department in August 2020. The sale “will improve the Republic of Korea Navy’s capability to perform anti-surface and antisubmarine warfare missions, along with the ability to perform secondary missions including vertical replenishment, search and rescue, and communications relay,” the release said. “The Republic of Korea will use the enhanced capability as a deterrent to regional threats and to strengthen its homeland defense. The Republic of Korea will have no difficulty absorbing these helicopters and support into its armed forces.”

In addition to the U.S. Navy, the MH-60R has been operated or ordered by six other nations: Australia (24), Denmark (9), Saudi Arabia (10), India (24), Greece (4) and South Korea (12).

Saildrone USVs to Collect Data on Gulf Stream

A Saildrone craft near Miramare Castle in Trieste, Italy, following a 2010-2020 Atlantic-to-Mediterranean mission. *NATIONAL INSTITUTE OF OCEANOGRAPHY AND APPLIED GEOPHYSICS*

ARLINGTON, Va. — Saildrone Inc., an operator of ocean-going unmanned surface vessels (USVs), has been selected by Google to collect oceanographic data on the Gulf Stream.

"Saildrone has been selected to receive a grant of over €$1 million ($1.2 million USD) from the Google.org Impact Challenge on Climate to collect data in the Gulf Stream that has the potential to transform weather forecasting and our ability to create more accurate global carbon budgets," Saildrone spokeswoman Susan Ryan said in a statement to *Seapower*.

"The Gulf Stream region has a significant impact on weather and climate in Europe and around the globe but is undersampled due to the violent seas and harsh weather in the region," Ryan said. "These treacherous conditions make it too dangerous to send research ships and crew into the area for extended periods, especially in winter. It is shocking

that 70% of the world is covered by oceans, yet only 2% of the ocean has been sampled for critical ocean data."

"Saildrone is a company building and operating unmanned surface vehicles that are powered primarily by solar energy, with wind being the primary propellent for the craft," said Ron Tremain, Saildrone's vice president for Maritime Domain Awareness during an earlier interview with *Seapower*.

The Gulf Stream expedition will be conducted by several of Saildrone Explorers, which are 23 feet long and typically proceed at four knots by sail.

The carbon-fiber sail on each is more like a wing than a sail, but it is a sail that can be controlled mechanically and with the wind. Depending on which direction we want it to sail, the operator can make adjustments to increase the speed, decrease the speed, change course direction as needed, Tremain said.

The Explorer, the smallest of Saildrone's USVs, are fitted with an advanced sensor suite of atmospheric and oceanographic sensors, combined with radar, the Automatic Information System, and a set of electro-optical cameras.

Saildrone will launch six Explorer USVs to spend up to a year continuously collecting critical data in the Gulf Stream while creating no environmental footprint, Ryan said. This mission will collect critical data at a resolution that has not been possible previously, yielding new insights into the transport of heat and carbon around our oceans.

Clock Ticking for Strategy to Maintain U.S. Global Lead in Artificial Intelligence

Naval Information Warfare Center (NIWC) Atlantic's Amazon Web Services (AWS) DeepRacer vehicle is opened up for maintenance and a last minute check before being shipped off to participate in the First Annual virtual Army-Navy AWS DeepRacer Challenge. The challenge is centered around racing autonomous vehicles. U.S. NAVY / Joe Bullinger

ARLINGTON, Va. — U.S. technological advantages over great power competitor China could be lost in less than 10 years without a robust and comprehensive artificial intelligence (AI) security strategy, according to the findings of an independent government commission.

"For the first time since World War II, the United States'

technological predominance – which undergirds both our economic and military competitiveness – is under severe threat by the People's Republic of China," Robert Work, vice chairman of the National Security Commission on Artificial Intelligence, told a live-streamed Pentagon press briefing April 9 on the commission's final report.

And the most important technology "that the United States must master is artificial intelligence and all of its associated technologies," Work added. Likening artificial intelligence to how harnessing electricity opened up a field of fields, Work said AI would affect quantum computing, healthcare, finance and military competition.

Work, who served as deputy secretary of defense in the Obama and Trump administrations, stressed the immediate and long-term risks. He noted China has advantages in data collection, with no privacy restraints like Western democracies have, as well as applications and integration of AI. The United States has advantages in talent, hardware and algorithms.

"Although the Chinese are really pushing hard [on algorithms] and we think they could catch up with us within five to 10 years," he cautioned. However, overall, Work explained, "we do not believe China is ahead right now in AI."

But that could change, said Marine Corps Lt. Gen. Michael S. Groen, director of the Joint Artificial Intelligence Center.

"China's declared intent is to be globally dominant in AI by 2030," he told reporters. JAIC's mission is to transform to accelerate the delivery and adoption of AI to achieve mission impact at scale across the Defense Department. He said there was positive momentum toward implementation of AI at scale. "We certainly have a long way to go, but you can see the needle trending positive."

The Chinese "are far more organized for competition and have a strategy to win the competition," backed by a lot of

resources, Work added. By contrast, the United States is not organized to win the competition for AI dominance. “We do not have a strategy to win the competition,” Work said, adding “We do not have the resources to implement a strategy – even if we had one.”

That’s where the commission’s recommendations come in. They include setting up a steering committee of emerging technology, consisting of the deputy defense secretary, the vice chairman of the Joint Chiefs and the principal deputy director of national intelligence to coordinate all AI activities between the intelligence community and the Pentagon.

Other recommendations include establishing a dedicated AI fund to assist small innovative AI companies bridge the gap between initial research funding and program acquisition; creating a Defense Department digital corps, modeled on the Medical Corps, to identify and utilize digital-savvy warfighters and leaders; and boosting science and technology research and development to 3.4% of the defense budget and spend $8 billion on AI annually.

Groen described the massive NSCAI report as a “760-page to-do list.” With tightened future defense budgets expected, “the productivity gains and the efficiency gains that AI can bring to the department becomes an economics necessity.”

Bahrain Delegation Commemorates Production of

Its First AH-1Z Helicopter

Brig. Gen. Faisal Al Kaabi, Bahrain Ambassador to the U.S. H.E. Shaikh Abdulla Al Khalifa, Bell Executive Vice President, Military Business, Vince Tobin, Bell Vice President and H-1 Program Director Michael Deslatte and Bahrain Defense Attaché to the U.S., Commodore Adm. Jasim Al Jowder, pose in front of an AH-1Z Viper during an aircraft frame signing ceremony at Bell's Amarillo assembly center on 31 March 2021. BELL

AMARILLO, Texas – Bell hosted a delegation from the Kingdom of Bahrain to mark the start of production of AH-1Z Viper attack helicopters built as part of the Foreign Military Sales (FMS) program, the company said in an April 12 release. Delegates toured the Bell Amarillo production facility to observe the production line and ceremoniously sign the aircraft's frame destined to join the Bahrain Air Force.

"We are honored to host the Kingdom of Bahrain and share this milestone in production for the AH-1Z," said Mike Deslatte, Bell H-1 vice president and program director. "Today's

ceremony marks a new milestone in bringing the advanced capabilities of the Viper a step closer to the Kingdom of Bahrain.”

Bell designed the AH-1Z Viper to meet the modern battlefield’s expeditionary requirements across the full spectrum of military operations. The Viper routinely maintains a high operational tempo from forward operating facilities by minimizing its logistical footprint without losing warfighting capabilities.

“Today also signifies the dedication of thousands of Bell and Team Viper employees around the world who are proud to support our international partner,” said Deslatte.

The Department of Defense awarded Bell a contract to manufacture and deliver 12 Lot-16 AH-1Z aircraft to the Kingdom of Bahrain. Bell projects production deliveries to begin in late 2021.

Vigor Begins Work on USS William P. Lawrence

Sailors spray fresh water on the deck after testing aqueous film forming foam sprinklers on the foc’sle of the Arleigh Burke-class guided-missile destroyer USS William P. Lawrence (DDG 110) in this 2019 photo. U.S. NAVY / Mass Communication Specialist 3rd Class Caledon Rabbipal

PEARL HARBOR – USS William P. Lawrence (DDG 110), an Arleigh Burke-class guided missile destroyer, docked at Pearl Harbor Naval Shipyard and Intermediate Maintenance Facility (PHNSY & IMF) for the ship’s docking selected restricted availability (DSRA). Vigor began work that is expected to continue into early January 2022, the company said in a release.

This is the second time Vigor, a Titan company, and Hawaii Regional Maintenance Center (HRMC), responsible for surface ship maintenance at PHNSY & IMF, will partner to complete a surface ship DSRA, following the successful completion of USS Wayne E. Meyer (DDG 108). Vigor’s first partnership with HRMC concluded in January, completing the Wayne E. Meyer’s DSRA 14 days ahead of schedule despite the challenges posed by COVID-19.

“Vigor is grateful for another opportunity to partner with HRMC and serve the U.S. Navy at Pearl Harbor,” said Adam Beck, Vigor executive vice president, Ship Repair. “We are proud of the work to complete our first availability on the Wayne E. Meyer ahead of schedule, allowing an important Navy asset to return to service. Now our skilled workers are honored to be serving the Navy again on the William P. Lawrence. We look forward to a successful availability and the potential growth of our work in Hawaii in the future.”

With its expansion into Hawaii in 2020, Vigor is now serving the U.S. Navy in ship repair across three states, including Oregon, Washington and Hawaii. USS Cape St. George (CG 71) recently arrived at Harbor Island in Seattle, alongside USS Chosin (CG 65), while work continues on USS McCampbell (DDG 85) at Swan Island in Portland, Oregon.

William P. Lawrence’s availability will include routine maintenance, modernization and repair work to keep the ship operating at full technical capacity and mission capability for its entire service life. The contract for the DSRA totals nearly $84 million, with options that could increase the value to more than $85 million. Eighty direct employees supported Vigor’s work on Wayne E. Meyer. A similar number of jobs are projected to be supporting Vigor’s efforts for William P. Lawrence.

“We are thrilled to get underway with William P. Lawrence’s availability and look forward to a successful partnership with ship’s force and Vigor Marine,” said Capt. Daniel Kidd, HRMC deputy commander, first shared by PHNSY & IMF. “The work the team will complete during this scheduled maintenance period will help maintain and modernize this mighty warship so that she can get back to sea executing the Navy’s mission.”

“We all have a sense of excitement as we begin the availability knowing our work directly impacts the Navy’s mission,” said HRMC William P. Lawrence Project Manager J.C.

“Harry” Herrera. “The HRMC and Vigor team is laser-focused on executing first-time quality work that will return the ship back to sea on time for her crew.”

Exercise Arctic Guardian 2021 to Enhance Circumpolar Collaboration

Petty Officer 2nd Class Lauren Butnor, a crewmember aboard the Coast Guard Cutter Polar Star (WAGB 10), climbs aboard Polar Star after participating in ice rescue training in the Bering Strait, Wednesday, Jan. 20, 2020. *U.S. COAST GUARD / Petty Officer 1st Class Cynthia Oldham*

WASHINGTON – The Emergency Prevention, Preparedness and Response (EPPR) Working Group of the Arctic Council and

the Arctic Coast Guard Forum (ACGF) will hold a joint online emergency response exercise from April 12-14, hosted by the Environment Agency of Iceland, the Polar Institute of the Wilson center said in an April 12 release.

The goal of the exercise is to improve Arctic nations' capability to respond to maritime incidents requiring joint search and rescue (SAR) and marine environmental response operations.

The Arctic Guardian 2021 exercise is designed to improve collaboration between Arctic Council and ACGF member states who are signatories of the Agreement on Cooperation on Marine Oil Pollution Preparedness and Response in the Arctic (MOSPA) and the Agreement on Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic (Arctic SAR Agreement). The collaborative exercise will provide public and private operational and policy-oriented SAR and marine environmental response organizations with a means to discuss their communication and coordination processes in the event of a marine SAR and/or oil spill incident in the Arctic.

The Arctic Guardian 2021 exercise follows a scenario where an oil tanker and an expeditionary cruise vessel collide off the North coast of Iceland. Originally intended as a live exercise following a table-top exercise in fall 2020, the virtual format will ensure that all stakeholders can participate, and the global pandemic does not hinder Arctic emergency preparedness.

"As maritime activity in the Arctic increases, it elevates the risk of serious incidents and the need to plan and prepare for emergency and pollution responses," said Jens Peter Holst-Andersen, chair of EPPR. "It is crucial to test and better understand the challenges of a coordinated response that involves many different players in a safe environment. It allows us to not only test response activities, but also build and strengthen the relationships between these diverse

players, which are incredibly important at the time of real emergency."

"As we know, disasters can strike without any previous indication, anytime, anywhere. The Arctic and adjacent regions are incredibly challenging," said RADM Georg Lárusson, chair of the ACGF and director general of the Icelandic Coast Guard. "Therefore, we have to exercise and prepare for major incidents, emphasizing harsh weather conditions, long distances involved and limited infrastructure. That is precisely the purpose of the Arctic Guardian exercise and workshop. We share and cooperate to battle these elements to make the area safer for the inhabitants and guests."

The Arctic Guardian 2021 exercise will engage stakeholders in Iceland, representatives from other Arctic States, key non-government organizations and industry actors involved in search and rescue and marine environmental response. The Wilson Center's Polar Institute will provide overarching facilitation support, panel moderation, and contribute to exercise outcomes. "The Polar Institute team is pleased and honored to participate in this important international effort in support of the ACGF, the Arctic Council, and EPPR as they address the shared challenges brought about by a changing Arctic," said Dr. Mike Sfraga, director of the Polar Institute. The entities jointly designing and organizing the exercise include ACGF Combined Operations Working Group (COWG), EPPR MOSPA Joint Design Team and the Environment Agency of Iceland.

Following the exercise, an evaluation team will develop an after-action report to document lessons learned and possible areas for improvement in regard to preparedness and response capabilities and processes across the Arctic States in relation to SAR and marine environmental response.

Norway’s First P-8A Aircraft Moves into Assembly

Norway’s first P-8A Poseidon aircraft is moved from a rail car through the air to the first step of the assembly process, the Fuselage Systems Installation tool, in Renton, Washington. *BOEING*

RENTON, Wash. – The first P-8A Poseidon fuselage for Norway arrived April 12 at Boeing facilities in Renton, Washington, from Spirit AeroSystems in Wichita, Kansas, marking a major milestone in the production of the first of five Poseidons for the Royal Norwegian Air Force.

A derivative of the Boeing 737 Next-Generation commercial aircraft, the P-8 is first assembled at Boeing Commercial Airplanes’ 737 production line, where the fuselage receives

additional wiring and systems needed to support military components, equipment and operation. The aircraft is then delivered to Boeing's Defense, Space & Security unit for the installation of military systems, testing and delivery to military customers.

"Boeing uses a proven in-line production process to efficiently build the aircraft," said Christian Thomsen, P-8A Europe program manager. "Implementing established best practices and common, commercial production-system tools enables the team to reduce flow time and cost while ensuring quality and on-time delivery to our customers."

Norway is expected to receive its first P-8 later this year. In total, five P-8s will eventually replace Norway's current fleet of six P-3 Orions and three DA-20 Jet Falcons and will provide advanced capabilities to maintain situational awareness in neighboring waters on and below the surface of the ocean.

To date, Boeing has delivered 104 P-8 aircraft to the U.S. Navy and customers in Australia, India and the United Kingdom.

Curtiss-Wright Awarded Contract to Support Ford-Class CVN Elevators

USS Gerald R. Ford (CVN 78) transits the Atlantic Ocean March 20, 2021. *U.S. NAVY / Seaman Jackson Adkins*

SHELBY, N.C. – Curtiss-Wright Actuation Division has been awarded a contract to provide Exlar Electro-Mechanical Actuators to Federal Equipment Co. (FEC) to support its weapons elevator systems for the Ford-class aircraft carrier program, the company said in a release.

Exlar actuators are used in several other mission critical areas on the Ford-class carriers, including the Jet Blast Defector, Integrated Catapult Control Station and Landing Signal Officer station actuation systems.

Exlar's field-proven, commercial off-the-shelf (COTS) actuation products are used in a variety of industries and applications providing robust, reliable and energy efficient solutions. These COTS and modified COTS products and technologies are used in numerous naval and ground defense applications, as well as offering alternatives to fluid power options while providing lower total cost of ownership through energy efficiency, lower maintenance costs and integration

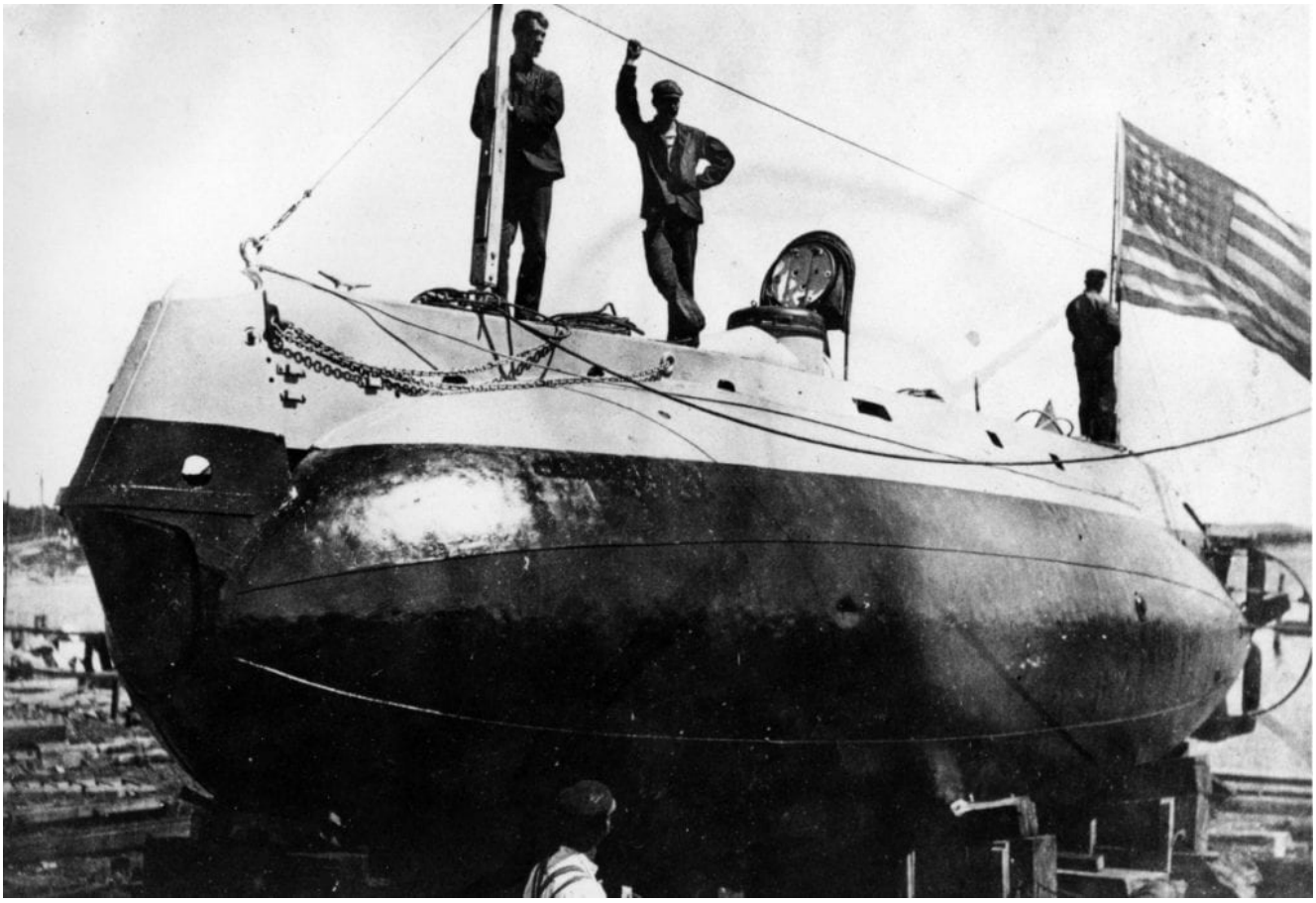
with automated control systems.

FEC also uses the Exlar GSM Series integrated products as lock actuators for the weapons elevator systems they provide to the Ford carrier program on their CVN-78 and CVN-79 ships.

“We are proud to be able to continue to support both FEC, the U.S. Navy and its shipbuilder as the Navy modernizes its carrier fleet,” said Phil Bowker, Curtiss-Wright senior general manager, Actuation Division.

Exlar is a business unit of Curtiss-Wright’s Actuation Division.

Submarine Day Observance Calls Attention to Growing Opportunities in Submarine Construction



USS Holland (SS-1), the U.S. Navy's first commissioned submarine, joined the fleet in 1900. *SUBMARINE FORCE LIBRARY & MUSEUM COLLECTION*

The Southeastern New England Defense Industry Alliance (SENEDIA) is recognizing National Submarine Day with a "TechTalk" featuring senior leaders from General Dynamics Electric Boat, as well highlighting men and women in the region who are employed in submarine construction related careers.

"Southeastern New England is the nation's hub for submarine shipbuilding and undersea technology, and although the COVID-19 pandemic posed challenges for all businesses, our industry remains strong, with more rewarding opportunities ahead for those interested in the high-wage, high-growth, high-demand career pathways that are available across the defense landscape," said Molly Donohue Magee, SENEDIA's executive director. "National Submarine Day is a great opportunity for our colleagues across the industry to come together to celebrate our successes, share innovation, and

grow the talent pipeline we need to continue to thrive."

"National Submarine Day is an opportunity to remember the origins of the nation's submarine shipbuilding industry, and to recognize the critical role that submarines have played in our national defense," Magee said.

National Submarine Day, normally celebrated on April 11, commemorates the acquisition of the U.S. Navy's first modern submarine, USS Holland (SS-1) in 1900. She was designed by inventor John Phillip Holland and built in Elizabeth, New Jersey, and commissioned in the US Navy on Oct. 12, 1900, at Newport, Rhode Island.

Holland was the first submarine with the seakeeping ability and endurance to conduct long transits, and the power to run submerged for any considerable distance. She had a six-man crew and could dive and maintain a depth of 75 feet. After the Navy purchased and evaluated USS Holland, they ordered six more of her type.

The inventor's company, the Holland Torpedo Boat Company, later became Electric Boat.

General Dynamic Electric Boat executives, Sean Davies, vice president of Quonset Operations, and Andrew Bond, vice president of human resources, presented a virtual "TechTalk" on the scope, magnitude and growth of the U.S. Navy's Columbia and Virginia-class submarine programs.

Electric Boat is experiencing significant hiring of trade and industrial skilled employees and growth and expansion at Electric Boat. In 2020, EB hired 2,000 people, mostly in the second half of the year due to earlier COVID limitations. In 2021, Bond said EB expects to hire 2,400 engineers, tradesmen and support personnel.

A network of partnerships of government, academic, nonprofit and business organization in Connecticut and Rhode Island are

helping develop the qualified workforce that design and build the submarines of today and the future.

“We will put more than 1,000 people through those pipelines in Rhode Island, and we have a parallel pipeline in Connecticut,” said Davies. “Our training programs used to focus on either Connecticut or Rhode Island, but SENEDIA brings a cross state and region perspective, so we can expand into Massachusetts and further into New England.”

According to Magee, SENEDIA membership includes 130 companies, mostly in southeastern new England, but beyond as well supporting submarine construction and undersea technology. The organization has a contract from the DoD Industrial Base and Sustainment Office focused on submarine workforce development, specifically related to the trades and industrial skilled employees.

“The shipyards offer high-tech and high-wage jobs, and they are in high demand,” she said. “The Navy wants to make sure there is a strong pipeline of current and future workers for submarine construction and other naval shipbuilding needs. We can solve the need today, but we have to make sure we have the pipeline for tomorrow.”

Elbit Systems Completes the Acquisition of Sonobouy Manufacturer Sparton Corp.

An artist’s conception of a P-8A aircraft dropping Sparton-built sonobuoys. *ELBIT SYSTEMS OF AMERICA*

HAIFA, Israel – Elbit Systems announced April 6 its U.S. subsidiary, Elbit Systems of America, completed the acquisition of Sparton Corp. from an affiliate of Cerberus Capital Management for $380 million. The closing follows receipt of all the required approvals, including U.S. government and regulatory approvals.

Headquartered in De Leon Springs, Florida, U.S., Sparton is a premier developer, producer and supplier of systems supporting undersea warfare for the U.S. Navy and allied military forces. Sparton is well-known as a manufacturer od sonobuoys for anti-submarine search and tracking by aircraft.

“The growing importance of the maritime arena and the market

position and technological strength of Sparton make this acquisition significant to our long-term growth strategy, with a particular focus on the U.S. We believe that the completion of this acquisition will be beneficial for both Elbit Systems' and Sparton's employees and customers," said Bezhalel "Butzi" Machlis, Elbit Systems president and chief executive officer.