RE2 Robotics Receives $3 Million to Develop Dexterous Underwater Robotic Hand for U.S. Navy

RE2 Robotics, developer of human-like robotic manipulator arms, has a new deal with the Office of Naval Research to develop an underwater robotic hand. RE2 Robotics
PITTSBURGH – RE2 Robotics, developer of human-like robotic manipulator arms, has received $3 million from the Office of Naval Research to develop a dexterous, underwater robotic hand with tactile feedback, the company said in a release.

The program, called Strong Tactile mARitime hand for Feeling, Inspecting, Sensing and Handing (STARFISH), will create an advanced end-effector for mine countermeasures and explosive ordnance disposal for expeditionary forces.

> *RE2 Robotics has received $3 million in funding from the Office of Naval Research to develop a dexterous, underwater robotic hand with tactile feedback. @USNavyResearch #robotics #Pittsburgh #Roboburgh https://t.co/H6BeLhB3GS pic.twitter.com/YYEEn53N26*
>
> *— RE2 Robotics (@re2robotics) May 20, 2019*

Using next-generation tactile sensing technology and a multifinger, electromechanical design, STARFISH will allow operators to locate,

identify and neutralize hidden and visible explosive threats on land and underwater. STARFISH-enabled manipulators will be deployed on both ground-base and underwater robotic system to defeat explosive threats.

“The development of STARFISH takes underwater robotic technology to the next level by providing operators with the ability to ‘feel’ and sense the environment around them while remaining at a safe distance,” said Jorgen Pedersen, president and CEO of RE2. “The use of advanced tactile sensing and intelligent grasping will improve operational performance by removing operators from dangerous areas and allowing them to quickly and accurately respond to explosive threats.”

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>
> *Jorgen Pedersen, president and CEO of RE2*

RE2 will work with researchers at UCLA and the University of Washington to develop the hand, which will use state-of-the-art tactile skin and sensorized fingertips that are capable of sensing normal and shear forces.
Operators will command the hand using information provided by external sensing, such as cameras, sonar or LIDAR, which will then be processed with machine-learning algorithms to assist the operator in manipulating the object.

“Tactile sensing at the end effector can provide a wealth of information about the environment to a robotic system and its operator,” said Dr. Andrew Mor, RE2’s principal investigator. “Using a rich network of sensing, machine learning and assisted manipulation, STARFISH will be able to perceive and then share its interpretation of the environment with the operator, allowing naval expeditionary forces to manipulate and control the robot at human speed.”

Coast Guard Cutter Resolute Returns Home From 60-Day Deployment

The Coast Guard Cutter Resolute. U.S. Coast Guard/Public Affairs Spc. Kathy Yonce

ST. PETERSBURG, Fla. – The crew of Coast Guard Cutter Resolute (WMEC-620) returned home on May 19 following a 60-day patrol in the eastern Pacific Ocean, the Coast Guard 7th District said in a release.

Upon getting underway, Resolute patrolled south to the Panama Canal, transiting the 51-mile canal and passing through three separate locks over the course of 10 hours to

reach the Gulf of Panama and the Pacific Ocean. After reaching the Pacific, Resolute transitioned to conducting law-enforcement operations in support of the Joint Interagency Task Force South counter-drug mission under the tactical command of the 11th Coast Guard District.

Resolute embarked an aviation detachment from the Coast Guard helicopter interdiction tactical squadron to assist with counter-drug missions. With the aid of the aviation detachment, Resolute interdicted seven suspected drug-smuggling vessels, seizing or disrupting over 4,000 kilograms of cocaine, worth an estimated $129 million in street value. Additionally, Resolute detained 23 suspected narcotics traffickers and ensured they received proper care and proper disposition to various agencies.

Resolute’s cases ranged from high-speed interdictions of go-fast vessels to fishing vessels concealing contraband in hidden compartments. Many of these cases lasted more than 20 consecutive hours and some required detailed operational planning and partnership with additional assets, including Canadian navy and Central American coast guard assets.

This patrol was one of Resolute’s most successful counterdrug patrols in recent years. Resolute disrupted transnational criminal organizations through the interdiction and apprehension of seven

separate vessels, ensuring more than $130 million of illegal narcotics were
seized prior to making it to the United States.

Resolute is a 210-foot Reliance class
cutter and has a crew of 78. The cutter was commissioned in 1966 and has been
homeported in San Francisco, California, Astoria, Oregon, and now St.
Petersburg. Resolute has a decorated past, including patrols in both the
Atlantic and Pacific oceans, participating in the cleanup of the Exxon Valdez
disaster in Alaska, the response to the Deepwater Horizon oil spill and the
search-and-rescue efforts for the El Faro. The ship’s recent patrols have
focused on law-enforcement missions of drug-and-migrant interdiction.

Boeing Garners Second U.S. Navy Contract for F/A-18 Service Life Modification

An F/A-18F Super Hornet launches off the flight deck of the aircraft carrier USS Abraham Lincoln (CVN 72). Boeing has received a one-year contract, with an option for a second year, to continue modernizing the F/A-18. U.S. Navy/Mass Communication Specialist 3rd Class Jeff Sherman
ST. LOUIS –
Boeing has received a one-year contract to continue

modernizing the U.S. Navy's F/A-18 fleet under the Service Life Modification (SLM) program, the company said in a May 17 release.

The $164 million contract for fiscal 2019, which also includes a one-year option for 2020, funds the standup of a second SLM line in San Antonio, Texas, complementary to the line established last year in St. Louis.

> *"The [SLM] program is making great strides as we've already inducted seven Super Hornets into the program and will deliver the first jet back to the Navy later this year."*
>
> *Dave Sallenbach, the program's director at Boeing*

"The Service Life Modification program is making great strides as we've already inducted seven Super Hornets into the program and will deliver the first jet back to the Navy later this year," said Dave Sallenbach, the program's director. "This program is crucial in helping the Navy with its readiness challenges and will continue to grow each year with the number of jets we induct."

The San Antonio SLM line is scheduled to receive its first Super Hornet in June and a total of 23 Super Hornets over the course of this contract. The U.S. Navy fleet consists of more than 550 Super Hornets.

The SLM program extends the life of existing Super Hornets from 6,000

to 10,000 flight
hours.

In the early
2020s, Boeing is scheduled to begin installing initial updates to the aircraft
that will convert existing Block II Super Hornets to a new Block III
configuration.

The Block III
conversion will include enhanced network capability, longer range with
conformal fuel tanks, an advanced cockpit system, signature improvements and an
enhanced communications system. The updates are expected to keep the F/A-18 in
active service for decades to come.

Contract Awarded to Sikorsky for 12 CH-53K Heavy-Lift Helos

A CH-53K King Stallion lifts a Joint Light Tactical Vehicle (JLTV) at Naval Air Station Patuxent River, Maryland. U.S. Marine Corps/Lance Cpl. Shannon Doherty

WASHINGTON – Naval
Air Systems Command has awarded a $1.3 billion contract to Sikorsky for 12 U.S.
Marine Corps CH-53K King Stallion helicopters, the command said in a release.

“The Marine Corps is very appreciative of the efforts by the Navy and our industry partners to be able to award the LRIP 2/3 contract,” said Lt. Gen. Steven Rudder, deputy commandant for aviation. “This is a win for the Marine Corps and will secure the heavy-lift capability we need to meet future operational requirements and support the National Defense Strategy. I’m very confident in the success of the CH-53K program and look forward to fielding this critical capability.”

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>
> *Lt. Gen. Steven Rudder, deputy commandant for aviation*

The Pentagon’s most powerful helicopter, the King Stallion is a new-build helicopter that will expand the fleet’s ability to move more material more rapidly throughout the area of responsibility using proven and mature technologies. The CH-53K is the only aircraft able to provide the Marines with the heavy-lift capability it needs to meet future operational requirements for the vertical-lift mission.

“This contract award reflects close cooperation and risk sharing between the government and industry teams to deliver critical capabilities to the

Marine Corps,”
said James Geurts, assistant secretary of the Navy for research, development
and acquisition. “Working with our industry partners, the team ensured
that solutions for technical challenges are incorporated into these production
aircraft.”

The CH-53K carries
triple the baseline CH-53E capability, having demonstrated the ability to lift nearly
14 tons at a mission radius of 110 nautical miles. The CH-53K has proven the
ability to lift up to 36,000 pounds via an external cargo hook.

Sikorsky is a Lockheed
Martin company based in Stratford, Connecticut.

Naval Research Lab Debuts Newly Acquired Aircraft for Airborne Research

The U.S. Naval Research Laboratory’s science and technology research squadron has added the twin engine DHC-6 Twin Otter aircraft to its versatile fleet. U.S. Navy/Daniel Parry
WASHINGTON
— The U.S. Naval Research Laboratory (NRL) and the Navy’s premier science and
technology research squadron, Scientific Development Squadron

ONE (VXS-1), unveiled on May 11 the UV-18 “Twin Otter” as the newest addition to the squadron’s fleet of aircraft research platforms.

The UV-18 is the military equivalent of the DeHavilland DHC-6 – a high-wing, unpressurized twin engine turbine powered aircraft with fixed tricycle landing gear.

“The Twin Otter is a safe, highly maneuverable and extremely versatile aircraft,” said Cmdr. Erik Thomas, commanding officer of VXS-1. “The fact that it is unpressurized simplifies modifications and will accelerate our ability to get projects airborne for the Naval Research Enterprise.”

The aircraft compliments the VXS-1 “Warlocks” fleet by providing an affordable and stable research platform with slow flight capabilities and an operational payload of up to 3,000 pounds.

> *“The fact that [Twin Otter] is unpressurized simplifies modifications and will accelerate our ability to get projects airborne for the Naval Research Enterprise.*
>
> *Cmdr. Erik Thomas, commanding officer of VXS-1*

The performance capabilities of the UV-18 aircraft offer customers a slow flight speed of 85 mph, a maximum cruise speed of 190 mph, a nominal service ceiling

of 13,000 feet (higher with supplemental oxygen) and a six-hour flight duration, depending on payload and flight configuration.

In addition to the UV-18, VXS-1 operates a varying range of aircraft that include three NP-3C and P-3C Orions, an RC-12 King Air and 12 TigerShark unmanned aircraft systems.

The fleet of squadron aircraft are operated and maintained by the men and women of VXS-1 and contain an S&T framework to provide power, Ethernet and GPS feeds as required for temporary project installations and to quickly conduct airborne research. The squadron has a self-contained configuration and project shop to assist prospective customers with rack designs, gear installations and flight clearances.

“Using our squadron’s aircraft, scientists and engineers can install and test the latest technology they are developing in an operational environment anywhere in the world. We truly turn their ideas into reality,” Thomas said.

Providing proof of concept for the latest technology, VXS-1 enables operational fleet commands to receive time pertinent technological advances to better execute their missions and fill critical capability gaps in their

theater.

Historically,
the squadron has supported a broad spectrum of research projects, which include
magnetic variation mapping, hydro-acoustic research, bathymetry, electronic
countermeasures, gravity mapping, electro-optical and radar research and remote
measuring of water contained in snow for NASA.

Alion Opens System Sustainment Center in Support of NSWC Crane Division

MCLEAN,
Va. – Alion Science and Technology has opened a system sustainment center
supporting the Crane Division of the Naval Surface Warfare Center (NSWC), the
company announced in a release.

By
combining its current facilities footprint in Odon, Indiana, Alion has created
a 57,000-square-foot campus that provides research, development, production and
sustainment of advanced weapons systems, soldier-carried systems, electronic warfare
(EW) and intelligence, surveillance and reconnaissance systems.

Alion's WestGate facilities recently obtained ISO:9001 and AS9100 certifications and house a series of laboratories for design and integration of hardware, firmware and software for secure radar, EW, communications and processing systems.

Alion recently added a complete prototyping/fabrication capability and an on-site light electronics and cable assembly laboratory to reduce schedule dependencies. The company also is adapting new technology – like artificial intelligence – to solve challenging problems including cyber-resilient mission processors and autonomous system payloads.

"We are proud to offer this innovative one-stop system sustainment center to support NSWC-Crane," said Dino Cencetti, vice president of ISR systems and sensors operations for Alion.

"This provides our fighting forces with a competitive edge by bringing all these capabilities together to create a center that can rapidly respond to today's needs and invest in the future of NSWC-Crane. Alion has been supporting NSWC for over 10 years providing new equipment design, redesign for obsolescence and technology insertion bringing new technology to the warfighter."

Navy Secretary Names New Destroyer in Honor of U.S. Senator From Georgia

An artist rendering of the future Arleigh Burke-class guided-missile destroyer USS Sam Nunn. U.S. Navy photo illustration

WASHINGTON — Secretary of the Navy Richard V. Spencer named a future Arleigh Burke-class guided-missile destroyer, DDG 133, in honor of former U.S. Sen. Sam Nunn, who represented Georgia from 1972 to 1997, the secretary's public affairs office said in a release.

"Senator Nunn's impact on the Navy and Marine Corps team cannot be overstated," Spencer said. "His leadership in the Senate, specifically as the long-serving chairman of the Senate Armed Services Committee, helped streamline the military chain of command and strengthen our Navy and Marine Corps team. I am pleased that Senator Nunn's legacy of service to our nation will continue in the future USS Sam Nunn."

> *Nunn's "leadership in the Senate… helped streamline the military chain of command and strengthen our Navy and Marine Corps team."*

Secretary of the Navy Richard V. Spencer

Nunn served in the U.S. Coast Guard 1959 to 1960 and remained in the Coast Guard Reserve until 1968. A Democrat, he was elected to the Georgia House of Representatives in 1968 and in 1972 was first elected to the U.S. Senate. During his tenure as a senator, Nunn served as chairman of the Senate Committee on Armed Services and the Permanent Subcommittee on Investigations. He helped draft the Department of Defense Reorganization Act and the Nunn-Lugar Cooperative Threat Reduction Program, which helped Russia and the former Soviet republics to secure and destroy their excess nuclear, biological and chemical weapons.

Arleigh Burke-class destroyers conduct a variety of operations, from peacetime presence and crisis response to sea control and power projection. USS Sam Nunn will be capable of fighting air, surface and subsurface battles simultaneously, with offensive and defensive weapons systems designed to support maritime warfare, including integrated air and missile defense and vertical launch capabilities.

USS Sam Nunn will be constructed by Huntington Ingalls Industries in Pascagoula, Mississippi. The ship will be 509 feet long, have a beam of 59

feet and be
capable of traveling in excess of 30 knots.

U.S., Philippine Coast Guards Conduct Joint Search-and-Rescue Exercise

The U.S. Coast Guard Cutter Bertholf (left) moves in formation with Philippine coast guard vessels Batangas (center) and Kalanggaman during an exercise on May 14. U.S. Coast Guard/Chief Petty Officer John Masson

MANILA,
Philippines – The U.S. Coast Guard Cutter Bertholf (WMSL 750) and vessels from
the Philippine coast guard conducted joint search-and-rescue exercises May 14 in
the South China Sea west of Manila, the Coast Guard Pacific Area said in a
release.

The Bertholf,
a 418-foot national security cutter based in Alameda, California, worked
together with the Philippine coast guard vessels Batangas and Kalanggaman on
small-boat search-and-rescue tactics to conduct the mock rescue of a person in
the water. The Bertholf is in the midst of a Western Pacific deployment under
the tactical control of the U.S. Navy’s 7th Fleet.

In training
with and learning alongside partners in the Philippines on search and rescue,
maritime law enforcement and small-boat tactics, Bertholf's crew enjoys the
benefits of the strong, often personal ties between the countries, the release
said.

Capt. John J. Driscoll (left), Bertholf's commanding officer, enjoys breakfast aboard the Philippine coast guard vessel Batangas along with Batangas' commanding officer (right foreground) and other officers prior to the search-and rescue exercise on May 14. U.S. Coast Guard/Chief Petty Officer John Masson

The work also
strengthens one of the most enduring partnerships in the Indo-Pacific region,
between the United States and the Republic of the Philippines and supports both
countries' commitment to a free and open Pacific, governed by international
maritime law that promotes peace, security and prosperity of all nations.

"Bertholf
completed an at-sea search-and-rescue exercise today with our counterparts from
the Philippine coast guard. This engagement proved an excellent opportunity to
compare techniques, maintain proficiency and build a friendly relationship
amongst professional mariners and coast guards," said Capt. John J. Driscoll,
Bertholf's commanding officer.

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techniques, maintain proficiency and build a friendly relationship amongst professional mariners and coast guards.”

Capt. John J. Driscoll, Bertholf’s commanding officer

The crew of Bertholf also will participate in other joint events with members of the Philippine coast guard during the ship’s Manila port call. The events include a series of engagements on operational subjects such as damage control and search and rescue as well as sporting and social events. The activities are designed to improve interoperability and strengthen the ties between the two countries.

“The U.S. Coast Guard is proud to operate with our Pacific counterparts, and together we are dedicated to enhancing our capabilities and strengthening maritime governance and security while promoting individual sovereignty,” said Vice Adm. Linda Fagan, commander of the U.S. Coast Guard’s Pacific Area. “Today’s exercise is a great opportunity to share our experiences and learn from our partners in the Philippine coast guard.”

Future USNS John Lewis Keel Authenticated

SAN DIEGO, Calif. – The keel for the future USNS John Lewis (T-AO 205), the Navy's first John Lewis-class fleet replenishment oiler, was ceremonially laid at General Dynamics-National Steel and Shipbuilding Co. on May 13, Naval Sea Systems Command said in a release.

A keel laying is the ceremonial recognition of the start of a ship's construction. It is the joining together of a ship's modular components and the authentication or etching of an honoree's initials into a ceremonial keel plate. The ship's namesake, Rep. John Lewis (D-Ga.), and the ship's sponsor, actress Alfre Woodard, etched their initials into the keel plate.

> *"These ships are steadfast, reliable and allow our warships to defend our freedoms for which Representative Lewis has dedicated his life to protecting."*
>
> *Mike Kosar, Support Ships, Boats and Craft program manager, Program Executive Office-Ships*

"We're honored to have Representative Lewis and Ms. Woodard with us today as we lay the foundation for recapitalizing our nation's critical fuel-replenishment-at-sea capabilities," said Mike Kosar, Support Ships, Boats and Craft program manager, Program Executive Office-Ships. "These ships are steadfast,

reliable and allow our warships to defend our freedoms for which Representative Lewis has dedicated his life to protecting.”

The John Lewis-class ships are based on commercial design standards and will recapitalize the current T-AO 187-class fleet replenishment oilers to provide underway replenishment of fuel to U.S. Navy ships at sea. These ships are part of the Navy’s Combat Logistics Force.

John Lewis will be operated by the Navy’s Military Sealift Command and is the first ship named after the civil rights leader and Presidential Medal of Freedom recipient. Construction of John Lewis began in September 2018, with delivery planned in late 2020.

Mercury Systems Receives $2.1 Million Order for RF Amplifiers Required for Navy Program

ANDOVER, Mass. — Mercury Systems Inc. received a $2.1 million order from a leading defense prime contractor for custom-engineered radio frequency (RF) amplifiers required

for an advanced naval electronic support program, the company said in a release.

The order was booked in the company's fiscal 2019 third quarter and is expected to be shipped over the next several quarters.

Mercury Systems offers a broad range of RF and microwave product offerings designed and manufactured in its scalable Advanced Microelectronics Centers (AMC) located throughout the United States.

"With co-located engineering and manufacturing resources, our AMC facilities are the ideal solution to deliver highly differentiated custom RF microelectronics with affordable, long-term supply continuity," said Kevin Beals, vice president and general manager of Mercury's RF and Microwave group.

"Receiving this order from our valued defense prime contractor customer further validates the power of Mercury's next-generation business model to support our military forces with sophisticated microelectronics that are second to none."