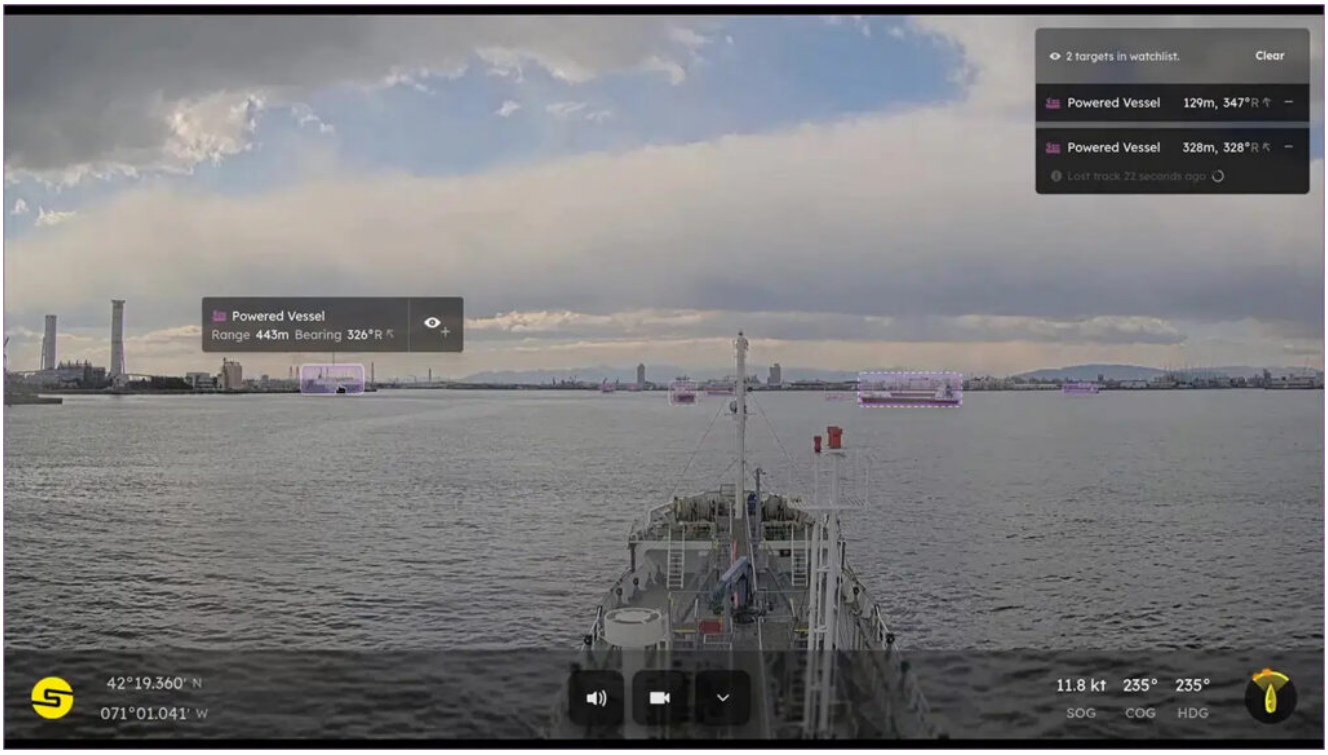
Sea Machines Unveils Advancement in Vessel Navigation Instrumentation



The AI-ris marine computer vision navigation sensor's view. *SEA MACHINE ROBOTICS*

BOSTON – Sea Machines Robotics Inc., a developer of autonomous command and control and advanced perception systems for the marine industries, has unveiled AI-ris, a new marine computer vision navigation sensor designed to improve safety and performance while vessels are underway, the company said June 21.

The company revealed this new technology during Seawork2022, the largest European commercial marine exhibition. Sea Machines' AI-ris, (artificial intelligence recognition and identification system) uses digital cameras and AI-processing to detect, track, classify and geolocate objects, vessel traffic and other potential obstacles in the majority of operational conditions, day or night, to equip crew with best-in-class situational awareness. Computer vision helps improve

safety for vessels and is also a critical technology for the advancement of autonomous command and control systems.

Boats and ships operate in the planet’s most dynamic environment and the limitations of conventional navigation sensors leave the bulk of perception work to the human eye and brain for continuous scanning of the waterway. Fatigue, distraction, and confusion can lead to misses and mistakes. The U.S. Coast Guard reported that in 2020, 36% of boating accidents were collisions and allisions, with the primary cause being improper lookouts and operator inattention. The commercial marine industry suffers from similar challenges. Sea Machines designed AI-ris to be ever alert, with the ability to deliver predictable operational results that can improve vessel reliability, as well as eliminate liabilities caused by human error.

“Sea Machines is dedicated to building the future of ocean mobility. We envision a future with fewer accidents at sea. We are revolutionizing marine navigation with data-driven intelligence, autonomy and connectivity,” said CEO Michael G. Johnson, Sea Machines. “AI-ris enables a tremendous performance and safety increase. The superior capabilities of computer vision and AI will ensure a safer, more productive voyage.”

“AI-ris is always scanning for obstacles and can alert the operator of potentially dangerous situations. It also labels objects very small in size, like swimmers, kayakers or animals, to those very large, like another ship,” said CTO Trevor Vieweg, Sea Machines. “With the ability to detect, classify and geolocate such targets via optical sensors, AI-ris augments and surpasses the capabilities of existing marine sensor technologies, like radar and automatic identification system, enabling greater performance and achieving the highest levels of safety. In the future, this technology may also help responders detect marine oil spills.”

AI-ris is commercially available now and can be installed aboard existing vessels, as well as new builds.

Fairbanks Morse Defense Becomes Exclusive Naval Field Service Provider for Ideal Co. Electric Motors & Generators

BELOIT, Wis. – Fairbanks Morse Defense, a portfolio company of Arcline Investment Management, has finalized an agreement with The Ideal Electric Company, an American manufacturer of high-power, specialty electric motors, generators, and related equipment, to serve as IDEAL's exclusive naval field service provider, FMD said in a June 21 release.

FMD will provide maintenance and global field services for The Ideal Electric Company's motors and generators that are already installed or will be installed on naval ships worldwide.

"Fairbanks Morse Defense is constantly seeking new opportunities to expand the range of turnkey services that we can offer our marine defense customers and teaming up with The Ideal Electric Company to service their motors and generators while we're already on board servicing our engines and other equipment makes this a great value add for the Navy," said Jamie McMullin, president of FMD Services.

The agreement reinforces FMD's ability to build, maintain, and

service naval power and propulsion systems worldwide through six strategically located domestic centers and resources deployed globally.

“Fairbanks Morse Defense’s extensive field service network and focus on supporting naval customers coupled with The Ideal Electric Company’s legacy of rotating electric expertise and American-made product range is a perfect match for us. We are excited to leverage this in-place capability and provide unparalleled support to our customers when and where they need it,” said Nic Phillips, vice president of IDEAL. “We see this as a great fit with two American manufacturers coming together, strengthening the domestic defense industrial base, and we feel confident that our customers will be well-served by FMD.”

Austal USA Wins Navy Contract for Auxiliary Floating Dry Dock

MOBILE, Ala. – Austal USA was awarded the detailed design and construction contract on June 17 valued at $128 million for the U.S. Navy Auxiliary Floating Dry Dock Medium (AFDM). The competitively awarded contract marks Austal USA’s second steel vessel program for the U.S. Navy and demonstrates the shipyard’s growing capability to meet the Navy’s needs for aluminum and steel vessels.

The AFDM will be constructed in Austal’s modern steel panel line in Mobile, Alabama. The design incorporates features to improve operability and maintainability based on the company’s experience and lessons learned from owning, operating, and

maintaining a similar dry dock at its repair facility at Austal West Campus.

“I am proud of our Austal USA team for developing a winning proposal,” Austal USA President Rusty Murdaugh said. “Combined with our contract for the T-ATS program, the AFDM award is evidence of our expanding capability and focus on delivering a diverse portfolio of solutions to our customers, from combatants to dry docks. We are looking forward to providing the U.S. Navy with an exceptional floating dry dock using our lean manufacturing approach.”

The AFDM is a “Rennie”-type floating dry dock with an 18,000-long ton lifting capacity and a clear deck working area of 90,800 square feet. The craft has an overall length of 694 feet, overall pontoon breadth of 157 feet, and a height of 65 feet from baseline to wing deck.

CNO Visits Germany to Attend BALTOPS, Meets with Navy and Government Leaders

Chief of Naval Operations Adm. Mike Gilday arrives at the BALTOPS22 closing reception aboard the Blue Ridge-class command and control ship USS Mount Whitney (LCC 20) in Kiel, Germany, June 17. *U.S. NAVY / Mass Communication Specialist 2nd Class Scott Barnes*

KIEL, Germany – Chief of Naval Operations Adm. Mike Gilday traveled to Kiel, Germany June 15-18 for the conclusion of BALTOPS 22, The CNO's Public Affairs office said June 18.

In its 51st iteration, BALTOPS is an annual coordinated exercise that reinforces interoperability with allies and partners and provides collective maritime security in the Baltic Sea.

Gilday visited the guided-missile destroyer USS Porter (DDG 78) at sea during the final days of the exercise.

"Our Sailors are our asymmetric advantage against any threat," said Gilday. "Watching the incredible multi-domain coordination with our international partners, and seeing Sailors in action, is always inspiring."

This year, 14 NATO allies, two NATO partner nations (Finland and Sweden), more than 45 ships, 75 aircraft, and

approximately 7,000 personnel participated in BALTOPS 22.

“The United States’ strong defense relationships with our Northern European allies and partners constitute our greatest strategic advantage in the region,” said Gilday. “BALTOPS achieves a multitude of objectives by demonstrating NATO interoperability, interchangeability, and readiness.”

He added that naval forces are participating in this exercise and are focused on interoperability with Sweden and Finland, as well as the other allied nations of NATO. “We are trained, proficient and ready, BALTOPS demonstrates just that and our commitment to defending NATO is ironclad.”

While in Kiel, Gilday met with Vice Adm. Jan Kaack, chief of the German navy, as well as Vice Adm. Frank Lenski, vice chief of the German navy, to discuss operational areas of mutual interest, NATO operations, and Transatlantic security.

“I sincerely welcome the continued commitment of the U.S. Navy in Europe. Since 1972, the BALTOPS exercise has been taking place in the Baltic Sea under US leadership – this year for the 51st time,” said Lenski. “Our ties with the U.S. Navy are strong and will remain so because the Baltic Sea is part of NATO’s northern flank. It is our vital interest to guarantee freedom and security in this area.”

The trip culminated with a BALTOPS reception aboard the U.S. 6th Fleet flagship USS Mount Whitney (LCC 20), where Gilday met with U.S and foreign naval leadership as well as members of the local community. This was Gilday’s first visit to Germany.

Iranian Vessels Conduct Unsafe, Unprofessional Actions Toward U.S. Naval Forces, Navy Says

Iran’s Islamic Revolutionary Guard Corps Navy operating in an unsafe and unprofessional manner in close proximity to patrol coastal ship USS Sirocco (PC 6) and expeditionary fast transport USNS Choctaw County (T-EPF 2) in the Strait of Hormuz, June 20. *U.S. NAVY*

MANAMA, Bahrain —Three vessels from Iran’s Islamic Revolutionary Guard Corps Navy interacted in an unsafe and unprofessional manner as U.S. Navy ships transited the Strait of Hormuz on June 20, U.S. Naval Forces Central Command Public Affairs said June 21.

Patrol coastal ship USS Sirocco (PC 6) and expeditionary fast

transport ship USNS Choctaw County (T-EPF 2) were conducting a routine transit in international waters when three Iranian fast inshore attack craft approached.

One of the vessels approached Sirocco head-on at a dangerously high speed and only altered course after the U.S. patrol coastal ship issued audible warning signals to avoid collision. The Iranian vessel also came within 50 yards of the U.S. Navy ship during the interaction, and Sirocco responded by deploying a warning flare.

The full interaction among all vessels lasted one hour and ended when the Iranian craft departed the area. U.S. Navy ships continued their transit without further incident.

The Islamic Revolutionary Guard Corps Navy's actions did not meet international standards of professional or safe maritime behavior, increasing the risk of miscalculation and collision. U.S. naval forces remain vigilant and will continue to fly, sail and operate anywhere international law allows while promoting regional maritime security.

Lockheed Martin Partners with U.S. Indo-Pacific Command in Successful Multi-Domain Experiments

Aircraft from Carrier Air Wing (CVW) 9 fly over the Nimitz-class aircraft carrier Abraham Lincoln (CVN 72), front left, America-class amphibious assault ship USS Tripoli (LHA 7), front center, Nimitz-class aircraft carrier USS Ronald Reagan (CVN 76), front right, Ticonderoga-class guided-missile cruiser USS Mobile Bay (CG 53), middle left, Arleigh Burke-class guided-missile destroyer USS Benfold (DDG 65), middle center, Ticonderoga-class guided-missile cruiser USS Antietam (CG 54), middle right, Arleigh Burke-class guided-missile destroyer USS Spruance (DDG 111), back left, and Arleigh Burke-class guided-missile destroyer USS Fitzgerald (DDG 62), back right, as they sail in formation during Valiant Shield 2022. *U.S. NAVY / Mass Communication Specialist 3rd Class Thaddeus Berry*

BETHESDA, Md. – Lockheed Martin paired its DIAMONDShield battle management system with four Virtualized Aegis Weapon System nodes deployed across hundreds of miles to successfully demonstrate multi-domain operations during a recent U.S. military exercise, the company said June 21.

The exercise, Valiant Shield 2022, is a biennial training activity involving thousands of U.S. military personnel and

more than 200 ships, aircraft and ground vehicles with a focus on integrating forces in multiple domains, and is a cornerstone of the U.S. Indo-Pacific Command's integrated deterrence strategy to prevent conflict in the region.

During the 12-day event in Guam and other locations in the Pacific, Lockheed Martin partnered with the U.S. Indo-Pacific Command to experiment with using artificial intelligence to enable rapid decision-making – in seconds or minutes compared to hours – at strategic, operational and tactical levels of missions across air, land, sea and space.

"We recognize our customers' need to rapidly integrate emerging technologies into mission-focused solutions," said Joe Ferrara, Lockheed Martin's advanced concepts director supporting the exercise. "Through experiments like Valiant Shield, we are learning collaboratively with our customers to advance Joint All Domain Operations, with the intent of delivering capability faster to the warfighter."

With 14 Lockheed Martin engineers in the field, the company introduced DIAMONDShield and VAWS into a series of offensive and defensive scenarios involving Lockheed Martin's High Mobility Artillery Rocket System and PAC-3 Missile Segment Enhancement. DIAMONDShield's artificial intelligence technology analyzed operational command and control data in real-time during dynamic fires, and provided commanders with decision aids to recommend assets to respond to incoming threats.

After commanders decided how to engage, the VAWS next-generation combat system routed precision targeting data and detailed orders to front-line assets like the PAC-3 MSE and HIMARS. Using machine-to-machine interfaces, VAWS transmitted the information digitally across existing military service data stovepipes, a concept known as coordinating "digital force orders." In this case, the Marine end user was able to execute a commander's intent without having to manually

translate the order into Marine doctrine, regardless of whether the order came from an Air Force, Army, or Navy commander. This also saved users time because they no longer had to read coordinates over a radio, and it reduced room for error by eliminating the risk of misinterpreting spoken instructions.

The team will use the experience and feedback to optimize training and improve the systems for the next exercise.

This is the fifth military exercise in which the company has partnered with the U.S. Indo-Pacific Command. Beginning in 2019 with Talisman Sabre and as part of the command's Pacific Deterrence Initiative, Lockheed Martin has participated in a series of exercises that have each demonstrated progressively expanded capabilities: Talisman Sabre 2021 and 2019, Northern Edge 2021 and Valiant Shield 2020.

Cutter Offloads More than $99M in Illegal Narcotics at Base Miami Beach

U.S. Coast Guard Cutter Thetis' (WMEC 910) crew offloads approximately 5,237 pounds of illegal narcotics on June 17 at Coast Guard Base Miami Beach. *U.S. COAST GUARD / Petty Officer 3rd Class Vincent Moreno*

MIAMI – U.S. Coast Guard Cutter Thetis' crew offloaded more than $99 million in illegal narcotics at Base Miami Beach, June 18, the Coast Guard 7th District said in a release.

Coast Guard and partner agency crews seized approximately 5,237 pounds of cocaine in the Caribbean Sea.

The drugs were interdicted in the international waters of the Caribbean Sea by crews from Coast Guard Cutter Donald Horsley, His Netherlands Majesty's Ship Friesland and His Netherlands Majesty's Ship Groningen.

"Interdicting drug traffickers on the open ocean is challenging work and every interdiction is complex and unique," said Cmdr. Justin Nadolny, commanding officer of Thetis. "This offload is a testament to the teamwork and devotion of every crew assigned to carry out this mission, and

it showcases the strength of the valuable international partnerships united to combat transnational organized crime.”

The fight against drug cartels in the Caribbean Sea requires unity of effort in all phases from detection, monitoring and interdictions, to criminal prosecutions by international partners and U.S. Attorneys’ Offices in districts across the nation.

During at-sea interdictions, a suspect vessel is initially detected and monitored by allied, military or law enforcement personnel coordinated by Joint Interagency Task Force-South based in Key West, Florida. The law enforcement phase of operations in the Caribbean Sea is conducted under the authority of the Seventh Coast Guard District, headquartered in Miami. The interdictions, including the actual boardings, are led and conducted by members of the U.S. Coast Guard.

The Thetis, a 270-foot Famous-class medium-endurance cutter, is homeported in Key West and patrols the Caribbean Sea and the Gulf of Mexico, performing counter-drug operations, migrant interdiction operations, search and rescue, and fisheries enforcement.

Coast Guard’s Force in Middle East Supports National Security Mission

Commandant of the U.S. Coast Guard Adm. Linda Fagan speaks to Coast Guardsmen assigned to Patrol Forces Southwest Asia in Bahrain, June 15, as part of her first official visit overseas after assuming her new role as the service's top officer. *U.S. COAST GUARD / Petty Officer 1st Class Brandon Giles*

MANAMA, Bahrain – U.S. Coast Guard Patrol Forces Southwest Asia (PATFORSWA) conducted a change of command ceremony on Thursday, June 16 at Manama, Bahrain, as Capt. Eric Helgen relieved Capt. Benjamin Berg.

Presiding over the ceremony was Adm. Linda Fagan, Commandant of the Coast Guard.

"PATFORSWA has a unique area of operations and mission," Fagan said. "The cutters homeported here are attached to Commander, Task Force 55 to support U.S. Naval Forces Central Command and Combined Maritime Forces strategic objectives. They provide a constant and reliable presence to maintain maritime domain awareness, deter acts of maritime piracy and smuggling, protect critical maritime infrastructure, and ensure the safe flow of goods and materials. There is no other Coast Guard unit that has a stronger link to the joint force in support of

the national defense mission."

Fagan said the cutters have participated in many high-impact operations. "They were on scene for tense boardings of commercial vessels; they navigated interactions with the Iranian Revolutionary Guard Corps Navy; and they conducted extensive interdiction operations."

Fagan recognized the 110-foot Patrol Boats that served in PATFORSWA. "Adak, Aquidneck, Maui, Monomoy and Wrangell stayed on mission to the very end with operations in the Arabian Gulf and Gulf of Oman."

One remains, USCGC Baranof, which will be decommissioned soon. "The Baranof is out conducting critical missions as we speak," Fagan said.

The 110-foot patrol boats are being replaced by the new Fast Response Cutters. "Taking the baton from the 110s, the Fast Response Cutters have proven to be an exceptional platform to project the Coast Guard's regional expertise to national and coalition forces," said Fagan.

The four FRCs now in PATFOR SWA are USCGC Charles Moulthrope (WPC 1141), USCGC Robert Goldman (WPC-1142), USCGC Glen Harris (WPC 1144) and USCGC Emlen Tunnell (WPC 1145). Two more FRCs, USCG John Scheuerman (WPC 1146) and USCGC Clarence Sutphin (WPC 1147) arrive in PATFORSWA soon.

While operating with CTF-150, a task force within the Combined Maritime Forces, newly reporting FRCs conducted boardings in the Gulf of Oman that resulted in seizures of heroine, methamphetamine and hashish with a U.S. street value of 17 million dollars.

PATFORSWA provides shoreside teams to support the cutter crews with antiterrorism/force protection, naval engineering, supply and personnel administration along the way. Training teams also support the Navy and partner nations. The Advanced

Interdiction Teams embark on the U.S. warships to conduct boardings and seizures of illicit cargos. Several months ago, AITs aboard USS Tempest and USS Typhoon seized 1,400 AK-47 rifles and 226 thousand rounds of ammunition from a stateless fishing vessel in the North Arabian Sea.

“That illegal arms shipment would have contributed to violence and instability in the region had it reached its destination,” Fagan said.

“Any illegal activity at sea – whether it is drug smuggling, weapons shipments, or illegal, unreported or unregulated fishing – erodes the rule of law and regional stability,” Fagan said. “The United States Coast Guard is the global model for maritime governance, the positive force that protects maritime safety, security and economic prosperity.”

Critical Partnerships

In today’s connected world, maritime governance is a collaborative effort. Fagan said partnerships are critically important.

“PATFORSWA leads the way with international engagement throughout the region. The Maritime Engagement Team supports CENTCOM’s theater campaign plan through participation in multi-lateral, interagency exercises and subject matter expert exchanges with foreign militaries. This year the team engaged with more than 350 people from 16 partner nations, sharing expertise on boarding tactics and small boat operations,” she said.

And the Shoreside team contributed in this area, too. “In addition to supporting the 110s and FRCs, they provided electronics and engineering assistance to the Yemeni Coast Guard, and the Lebanese Armed Forces – Navy, a critical 5th Fleet partner who will soon receive three 87-foot Coastal Patrol Boats.”

Additionally, the Shoreside team deployed 25 people for three weeks of support to Operation Allies Refuge, the DoD and DHS operation to safely vet, protec, and transport more than 7,000 evacuees from Afghanistan to Bahrain.

“They were the first people the non-combat evacuees encountered on the flight line after arriving direct from Kabul,” Fagan said.

Helgen is reporting from the 7th Coast Guard District in Miami where he served as the deputy of the Office of Maritime Enforcement.

“I’m exceptionally honored and deeply humbled to have the opportunity to be part of a team whose members sacrifice a year away from their families to execute such a vital mission in support of the United States,” Helgen said.

“PATFORSWA excelled under Captain Berg’s leadership because this crew trusted him, they responded to his vision and leadership, and they rose to the challenge,” said Fagan.

“It has been my absolute pleasure to serve with the outstanding Coast Guard women and men of Patrol Forces Southwest Asia. The dedication and professionalism was evident in every patrol, repair and forward deployment,” Berg said. “I’m certainly pleased of the operational accomplishments of our cutters, crews and partner nation engagements, but I was more energized each day to observe the crews taking pride knowing their work was bringing stability and rule of law to the region.”

Navy Orders Third Constellation-Class Frigate from Fincantieri Marinette Marine

An artist’s rendering of the Constellation-class guided missile frigate. *U.S. NAVY*

ARLINGTON, Va. – The U.S. Navy has exercised a contract option to order the third Constellation-class guided-missile frigate (FFG) from Fincantieri Marinette Marine.

The Naval Sea Systems Command awarded Marinette Marine Corp., Marinette, Wisconsin, was awarded a $536.9 million “fixed-price incentive (firm target) and firm-fixed-price modification to previously awarded contract” for the future USS Chesapeake (FFG 64), the Defense Department announced June 16.

The order follows the $553.8 million contract option exercised on May 20, 2021, for the second ship of the class, the future USS Congress (FFG 63).

The Marinette Marine shipyard is currently working on the detailed design for the first ship of the class, the future USS Constellation (FFG 62). Cutting of first steel is scheduled for later this year.

The Navy has a requirement for 20 frigates. Marinette Marine is now under contract for the first three FFGs with options for seven more.

The Constellation class FFG is based largely on the Italian FREMM frigate.

Work on the latest contract option is expected to be completed by August 2028.

HSM-79 Establishes New Detachment in Rota, Spain

NAVAL STATION ROTA, Spain – Helicopter Maritime Strike Squadron (HSM) 79 established a new detachment stationed at Naval Station Rota, Spain, June 16, 2022, Petty Officer 3rd Class Devin Randol said in a release.

Rear Adm. John F. Meier, Commander, Naval Air Force Atlantic, attended the ceremony along with Cmdr. Brett Elko, the commanding officer of HSM-79, and Cmdr. Nikolas Rongers, HSM-79's executive officer.

“The establishment of HSM-79’s European presence exemplifies our commitment to our allies and partners and provides ready naval helicopter forces to support our collective defense in a vital region of the world,” Meier said. “My charge to all of you is to sustain and strengthen deterrence¸ while being prepared to prevail in conflict if necessary. I have the utmost confidence in this detachment’s success.”

This new detachment marks the first time an HSM squadron has been stationed at Naval Station Rota. The “Griffins” operate the MH-60R helicopter, capable of conducting various missions including antisubmarine warfare, anti-surface warfare, vertical replenishment, search and rescue, humanitarian relief and medical evacuation operations.

The HSM squadron will augment Forward Deployed Naval Forces-Europe, providing support to FDNF-E guided-missile destroyers stationed in Rota. The helicopter enhances the ships’ capabilities by increasing range and mobility for anti-submarine warfare and search and rescue, while providing increased logistics and medivac capability, enabling allied ships to maintain at-sea operations.

The FDNF-E destroyer force, commanded by Commander, Task Force 65 and Destroyer Squadron 60, includes USS Arleigh Burke (DDG 51), USS Porter (DDG 78), USS Roosevelt (DDG 80), USS Ross (DDG 71) and USS Paul Ignatius (DDG 117).

The squadron adopted its name from two decommissioned squadrons that focused on aircraft carrier-based anti-submarine warfare: Helicopter Anti-Submarine Squadron (HS) 9 “Sea Griffins” and the Sea Control Squadron (VS) 38 “Red Griffins.”

The “Griffins” have continued their legacy since 2016.