DIU Is Vehicle for Boosting Navy Technology

A team of Department of Defense drone operators and experts test the technical capabilities of various uncrewed aerial systems during a Defense Innovation Unit led prize challenge to identify platforms, components, and capabilities for Blue UAS, which clears and validates flying platforms are safe to fly, cyber-secure, and meet DOD requirements, at Marine Corps Air Ground Combat Center, Twentynine Palms, California, on Nov. 2-6, 2024. *Photo credit: DIU | Devon Bistarkey*

As the U.S. Navy and Department of Defense race to develop more innovative offensive and defensive capabilities to deter China and other adversaries, most agree that greater engagement with the private technology sector is needed.

That’s in part the impetus behind the Replicator initiative, a DoD effort started in 2023 to speed adoption of commercial military and national security technology, particularly lower-

cost uncrewed capabilities. This is also key to realizing the goals of the new 2024 Navigation Plan, released in September by Admiral Lisa M. Franchetti, then the 33rd chief of naval operations. The plan focuses on faster integration of robotics and autonomous resources.

Enter the Defense Innovation Unit, a once “experimental” DoD office that in 10 years has become a central player in the Pentagon’s push to adopt and scale commercial technology for military applications.

Since its start in 2015, the office has pioneered deep relationships with Silicon Valley and the tech sector nationwide and a process for quickly prototyping military applications of commercial technologies. This has led to 450 prototype contracts and $68 billion in private investment, according to DIU’s fiscal 2023 annual report. These investments translated into 62 contracts for commercial solution transitions to the warfighter, the DIU report says.

Although DIU is a small office, with a fiscal 2024 budget of $983 million (compared to the nearly $875 billion in annual authorized defense spending), its influence is growing and getting attention. In 2023, the Pentagon elevated DIU in the organization chart to report directly to the office of the defense secretary. Now, DIU Director Douglas A. Beck serves on or provides leadership and staff support to various entities driving Pentagon innovation, including the Deputy’s Innovation Steering Group and Defense Innovation Working Group, both of which have oversight roles in implementing Replicator.

This puts “DIU at the forefront to deliver future capabilities at speed and scale,” Beck said in Feb. 15, 2024, testimony before the House Armed Services Committee.

DIU-Navy Collaboration

To learn more about how DIU works with the Navy to bring about innovation, Seapower spoke late last year with Alex Campbell,

a highly decorated Navy captain who is director of the Maritime portfolio at DIU. Campbell, who has a master's degree in business administration from Georgetown University, is a designated officer in explosive ordnance disposal, diving and salvage, and surface warfare and a naval parachutist. He supported the conflicts in Iraq, Afghanistan and others around the globe and, throughout his career, earned multiple service and campaign awards.

Campbell is also experienced in defense procurement. He ran the counter weapons of mass destruction portfolio for Special Operations Command and programs to build uncrewed, underwater systems and software. At DIU, Campbell connects Navy and combatant commanders with commercial firms to address complex military maritime needs.

The condensed and edited discussion follows.

How does DIU leverage relationships with the tech sector to develop solutions for the military?

DIU has this really unique, within the DoD, understanding of the commercial technology space. A really important part of DIU is our commercial operations team, and they essentially live, eat and breath where investment is happening in the commercial tech space and the defense tech space and also live, eat and breathe where these early and midstage startup companies are and [where] even more mature companies [are]. They have what I would call a real-time market survey, so that when we work through these problems of a service or combatant command, we're able to then pair them with certain parts of the commercial tech sector or the defense tech sector [to develop needed capabilities].

What's one example of a Navy-DIU partnership?

Project Overmatch is an important partner with DIU and has been for the last two or three years. And they have a remit to build basically a modernized tactical communications grid

across ships and aircraft and in the joint world … to bring forth the best in [artificial intelligence] and autonomy capabilities for these tactical use cases, which makes them a great partner for DIU. [This is essentially to] do digital transformation for ships, submarines and aircraft, [which is] really, really, really difficult.

Why is this transformation so challenging?

Because you have all of these weapons systems [on a destroyer] – whether it's radars or missile systems or torpedoes or electronic warfare systems – and they all generate just terabytes and terabytes of data in any given day. And there's a lot of room to improve essentially saving that data and finding a way to get that data into a cloud repository so that both government engineers and commercial companies can access that data so that they can build software capabilities that improve a warfighter's ability to do their job. You really can't create AI capability if you can't find a meaningful way to bring in all of the data that these Navy platforms generate on the day to day.

What is the fundamental importance of data in building naval autonomy, whether on a drone boat or on a destroyer?

If I have a drone boat and it's driving through the ocean and it encounters some big tanker on the ocean, it needs to be able to ingest data from a camera or from a radar system. It needs to know where that tanker is out in front of it, and it needs to know, "Hey, I have to turn left or I'm going to crash into the tanker."

It may sound like a very simple example, but you have to collect data over hundreds and hundreds of hours of running these drone boats out in the ocean in order to essentially have examples to train algorithms so that they know … whatever it is they need to do. This must all be in accordance with Coast Guard regulations for how a boat would behave if a human

were driving it. And so, on the autonomous-system side, you have to collect all of that data to help inform how that drone boat will behave on the ocean. In that regard, data is fundamental.

And how is data functioning to render a destroyer more autonomous?

On a destroyer, you have these radar systems that do a whole range of things. But if you want to, for example, train a machine-learning capability to automatically sense specific targets, you need to collect a whole lot of data from those radar systems. And then you have to have a human being basically watch the playback from those radar systems and say, "OK, this particular signal in my radar data, that's a commercial airliner. This particular signal on my radar data is a seagull. This particular piece of data is a military aircraft."

And then you train an algorithm to automatically detect those things based on all the different data signatures …. and so, in that regard, data is just as fundamental to the drone boat as it is to the destroyer.

But humans still make the critical decision in the field?

You're not removing the human being from a lethal decision-making process; you're creating tools so that they can make better decisions faster.

What are the even steeper challenges in operationalizing autonomous capabilities for maritime military missions?

On the [more] difficult end of that spectrum [from navigation of a single drone boat], you have to figure out how to get hundreds or thousands of those craft to not only turn left, turn right, speed up and slow down – to avoid a tanker or an island or whatever – now you have to have all of those platforms doing it in concert with one another. And

communicating in concert with one another, and creating effectively what I'll call a model of the world around them.

So, if I have hundreds of these platforms on the surface of the ocean, or in the air, or under the sea, I need all of those platforms to understand where all of their partners are in the world. And then I need them to sense the world around them such that they can accomplish very specific missions. And that mission autonomy is very complex.

I think those are the areas we're looking to push into. That's sort of the next frontier of employing autonomous systems at scale. And that's something the commercial world hasn't even really figured out.

Then-Deputy Secretary of Defense Kathleen H. Hicks and staff members participate in interactive demonstrations during a DIU capabilities brief at the DIU, Mountain View, California, Dec. 12, 2023. *Photo credit: Department of Defense | U.S. Navy Petty Officer 1st Class Alexander Kubitza*

How does DIU work with the Navy and the larger military community to address these complicated issues?

DIU spends time understanding a problem set from both the military's and the commercial technology sector's perspective. By understanding both sides of the coin, we are able to say, "OK, we've identified this problem, we've spent time with you to understand the left and right limit of these problems." Regardless of where the problem starts from – whether it's a program office or from a fleet – we like to get that entire team of stakeholders together. Because what we've found is that if we don't do that, we can probably go run a really fun prototype, but the likelihood that that prototype is going to turn into a production contract and actually get fielded to a Sailor in a way that is integrated with other capabilities around it is very low.

How does the "commercial solutions opening" process work to develop those capabilities?

The central value proposition of DIU is this thing called a commercial solutions opening, which is a business and an acquisition process. We take a really thorough understanding of the problem, and we take a really thorough understanding of the tech and commercial space, and we forge that into a plan to go execute a project [in collaboration with government technology, warfighting and program management offices in the Navy or other services]. And in this commercial solutions opening, we put a solicitation or a request for proposal on our website. And then companies can bid on that proposal or bid on that request and provide a proposal for how they would go about solving for this problem.

How is DIU's process different from the traditional acquisition process?

In the traditional defense acquisition process, when you put a request for proposal or a solicitation out, it's usually this 10-, 20-, 30-page, very detailed document that really specifies solutions in many cases. When we put a solution or an RFP out it's usually one-and-a-half to three pages [that's]

just a problem statement. It very rarely specifies a specific solution. And what we find is we really open the door to compelling solutions that you might not otherwise get when you specify a solution in your RFP.

And this process is faster. We do this pretty quickly. We post these solicitations for 10 days at a time, sometimes up to 15 days at a time, and then we move really quickly. Let's say we get 100 proposals, we move really quickly to … pick the best paper proposals, and then bring those teams in to do a live pitch and live Q and A, and sometimes we actually do live demonstrations depending on what the problem is and what the intended capability is.

How does the other transaction authority funding mechanism speed things up?

The other transaction authority is a contracting authority and nothing more. There's no financial authority tied to it. It is a mechanism to do contracting that is outside of the federal acquisition regulation, which is what most contracts in the DoD are done through.

But in the context of the Navy, almost every contracting shop in the Navy could choose to write and conduct more OTA-based contracts. So, it's not an authority issue, it's an adoption issue. We usually award one to five OTAs within 120 days of that solicitation going out. Which is three to five times faster than a traditional prototype contract … using the FAR as their guidebook and as their authority. And so that speed really makes a big difference in terms of getting companies to start solving warfighter problems faster and also keeping pace with technology … and then getting those prototypes out there as quickly as possible.

What happens in the prototype process?

Our protypes usually last 12 to 24 months. At the end of that 12- to 24-month period, we're going to try and field some

viable product of that capability and ideally transition it to that traditional program office. [And Congress has in recent years given DoD more authority to quickly produce successful prototypes developed via competitively awarded OTAs.] So, I can take a successful prototype capability awarded through a competitively sourced OTA, and I can use that to do a sole-source production award immediately thereafter.

Is DIU willing to work with the prime defense contractors (e.g., Boeing, Lockheed Martin and Raytheon)?

We're not anti-prime in any way, shape or form. But, at the same time, DIU exists with a specific remit to expand the industrial base for commercial dual-use tech companies, for new defense performers and for nontraditional defense performers. Part of the reason that DIU was stood up originally, around 10 years ago, was to essentially rebuild a bridge that had atrophied with commercial tech and Silicon Valley to create opportunities [and] to create space for that tech to be applied and leveraged by the DoD in ways that [weren't] happening.

Why wasn't that happening?

Part of the reason [is that a] 50-person startup can't afford to hire five people just to do military business development and to navigate the somewhat complex maze and pathway of a FAR-based contract. Or [know] how to leverage Congress to put an earmark in for the defense budget. All of these things that the defense primes have hundreds and hundreds of people doing every day.

DIU exists to really simplify the process so that a 50-person startup … can essentially provide the same
sort of proposal for any customer. OTA contracts are much simpler and much more like a commercial contract than what you're going to see through the FAR.

Do you expect the Navy to conduct more projects with DIU in

the future?

We have been seeing an absolute increase in demand signal from the Navy, both for software and for hardware applications. So, I feel like that's a growth area. And I think the Navy is increasingly aware of DIU's ability to move quickly and to bring in commercial companies and commercial performers that may not have otherwise bid in the traditional FAR-based contracting process on SAM.gov.

Erika Fitzpatrick is an award-winning writer living in Washington, D.C. With more than 20 years of experience in public policy journalism and communications, she specializes in covering issues affecting service members, veterans and military families. This story originally appeared in the April edition of Seapower *magazine.*

Sea-Air-Space: Textron Offers the Tsunami USV Family for Multi-Purpose Navy Use

Tsunami, a small USV, is a joint effort by Textron Systems and Brunswick Corp. *Photo credit: Textron Systems*

Textron Systems (Booth 1827, D1), originator of the Common Unmanned Surface Vehicle (CUSV) in U.S. Navy service, has developed a less expensive USV that could be used for a variety of missions and could even be considered attritable.

Textron is teamed with Brunswick Corp., a small craft manufacturer, to offer Tsunami, family of deployable, small, scalable, gasoline-powered outboard-engine craft, with hull lengths ranging from 14 to 42 feet long. Certain of the models have a payload capacity of 1,000 pounds, ranges between 600 and 1,000 nautical miles, and operable in Sea State 4.

“We are the originator of the common uncrewed surface vehicle, the CUSV, for the Navy which was successfully adapted to become the Navy’s first unmanned surface vehicle program of record and which is being fielded to the littoral combat ship fleet now [for mine countermeasures],” said David A. Phillips, senior vice president, Air, Land & Sea Systems, Textron Systems, in a briefing to reporters. “Surface warfare that

doesn’t necessarily require the power and the weight necessary in a mine countermeasure system.”

Phillips noted several mission sets that an inexpensive unmanned craft could take on, including port security, port surveillance, escort and training.

“We have been in constant collaboration with Navy and commercial customers as to what a system like this might bring them in terms of operational flexibility [and] emerging mission sets,” he said. We continue discussion with the Navy – all elements of the Navy to include fleet as well as our particular programs in which we work. And we’ve been hearing an increased expression of interest in a small, rapidly deployable, unmanned surface vehicle that can support a variety of missions beyond mine countermeasures.”

Brunswick, builder of recreational watercraft of such product lines as Boston Whaler, Bayliner and Mercury Marine, has craft adaptable to Textron’s vision and has established supply lines.

“Brunswick’s portfolio of reliable high-performance vessels – their watercraft, propulsion systems, control systems – and manufacturing capacity and their global footprint along with our mature autonomy technology and systems integration capability was really the perfect combination to allow us to develop an accessible, rapidly deployable, and what I call a modular open systems architecture oriented family of vehicles or systems,” Phillips said.

“Brunswick’s technologies are already in mass commercial production and globally available. That allows us to reduce costs, risk, and production time when integrating and ultimately delivering these vessels. Their global footprint and mature resilience supply chain provides our customers with an unmatched support and aftermarket service.”

Brunswick “has invested in and developed a built-in drive-by-

wire system for us to ramp our higher levels of operationally relevant autonomy that we've developed and delivered to the U.S. Navy and that we've proven through mine countermeasure unmanned surface vehicles and that we fielded operationally with the Navy and demonstrated through exercises like RIMPAC and FLEX," he said.

Phillips said the Tsunami could be fielded rapidly.

"We recognize the need for a ready-now solution that harnesses the capability and capacity of the U.S. industrial base," he said. "That's important at being able to scale and being able to rapidly deploy systems when our customer wants them. … Speed. Speed to market. Speed to contract. Speed to delivery. Leveraging this mature production capability enables rapid production without the costs and risks of developing boutique manufacturing capability and scaling mass production. These watercraft are already in production."

The Tsunami craft is adaptable to swarming tactics, according to Textron.

"We've also done some testing in that realm," Phillips said. "Although I'm not going to go into certain mission scenarios, the swarm is important and controlling multiple systems is important. We've done that for many years with our aircraft systems. We understand swarming of systems. We also understand the complexity associated with that. We have designed this system and we have demonstrated this system to operate multiple watercraft. I won't get into how many."

The low cost of the Tsunami is key to the craft being attritable, Phillips said.

Asked by *Seapower* if the USVs used by Ukraine against the Russian navy were part of the inspiration for the Tsunami, Phillips replied that "it certainly informed us of that emergent need. … I am not presupposing what one of our customers might use our system for."

Aircraft Carrier Suppliers Warn of Production Going Cold

The world's largest aircraft carrier, USS Gerald R. Ford (CVN 78), sails in formation with Japan Maritime Self Defense Force (JMSDF) Hatakaze-class guided missile destroyer JS Shimakaze (TV-3521) while conducting routine operations in the Atlantic Ocean, Sept. 23, 2024. (U.S. Navy photo by MC2 Jacob Mattingly)

By Richard R. Burgess, Senior Editor

ARLINGTON, Va. — The coalition of industrial base suppliers for aircraft carrier production is warning that some suppliers' production lines are going "cold" or soon will do so in there is further delay in starting procurement for the

next Gerald R. Ford-class aircraft carrier, (CVN 82).

The Aircraft Carrier Industrial Base Coalition (ACIBC) is looking for a $600 million commitment from the Congress in advance procurement toward the construction of CVN 82. Last week ACIBC leaders and members met with members of Congress to discuss carrier funding.

“We’re asking for $600 million of advance procurement funding so that we can start long-lead material and get that ball rolling [for CVN 82],” said Lisa Papini, chair of the ACIBC. “We’re looking for a commitment to start CVN 82 no later than Fiscal Year 2029.”

Papini said the situation is worse for suppliers this year than last.

“Last year when we were here, we were warning that companies in our coalition without a new ship award would start to go cold, specifically, people that are doing continuous production lines would start to have those production lines go cold in the near future,” she said. “This year we have companies that are saying they have gone cold, or they will be cold – and by cold, I mean that that production line has ceased continuous operation.”

According to an ACIBC fact sheet with the results of a survey of 219 suppliers, 73% of member critical or single-source material supply lines are cold or will go cold in 2026 without the advance funding. Those percentages would increase in 2027 and 2028 to 83% and 96%, respectively, without the advance funding. A majority of the suppliers also provide products and materials for submarine construction as well.

To deal with the business delays, suppliers are reassigning workforce to other business or exploring other business outside of shipbuilding, the fact sheet said.

Papini said that the worsening situation does not match with

the nation’s demand for aircraft carriers around the world, noting that in recent years carrier deployments have been extended numerous times and that longer deployments result in more need for supplier support and maintenance.

“The companies who support and who provide products to the new construction [carriers], so CVN 82, are the companies who provide the service and parts to sustain carriers and overhaul carriers as well, so as production lines start to go cold, the ability to support carriers in service and support overhauls decreases,” Papini said. “We’re at this inflexion point.”

She stressed that the industrial base “has such a significant role in supporting the ships when they are in service, helping them achieve their actual service life, keeping them running. It’s the companies across the country who have supplied the equipment, the parts, the services when something needs repair.”

The ACIBC would like to see Congress authorizing a two-carrier procurement, CVN 82 along with CVN 83. CVN 80 and CVN 81 were procured in such a manner.

“We know that that’s the best way to procure ships, to specifically procure aircraft carriers – so a two-carrier buy with three years of advanced procurement funding for long-lead material and four-year centers,” Papini said.

The Navy has stated that the optimum procurement profile for CVNs is two-ship procurement with at least three years of advance procurement and construction at four-year intervals.

A MUSt DO: REPMUS is Primary Means for NATO to Develop Maritime Uncrewed Capability

At Robotic Experimentation and Prototyping using Maritime Uncrewed Systems 2024, the Portuguese Navy tested a prototype of an offshore artificial island, designed to provide a base for forward deploying and sustaining autonomous capabilities. *Photo credit: Lee Willett*

NATO navies are steadily increasing their use of maritime uncrewed systems, or MUS, aided by an extensive exercise process that covers the development of vehicles, payloads, capabilities and supporting architecture through various phases.

These phases include research and development, test and

evaluation, operational experimentation and integration into frontline assets and task groups.

One exercise that has evolved to cover at least the first three phases in this process is the Portuguese navy-led Robotic Experimentation and Prototyping using Maritime Uncrewed Systems, which takes place annually off the Tróia peninsula in southern Portugal. Established in 2010, it is hosted by the navy's Tróia-based Navy Operational Experimentation Center, or CEOM.

REPMUS originally focused on the research and development and test and evaluation phases. However, in recent years, especially due to the accelerating requirement to integrate MUS capabilities into frontline operations, the operational experimentation phase has become an equally crucial part of the REPMUS process.

The exercise's operational importance is underlined by the fact that NATO's Allied Maritime Command has developed and attached Dynamic Messenger – the alliance's first and primary MUS operational experimentation exercise – to REPMUS.

The two exercises were run in tandem in 2022 and 2023, co-hosted by CEOM and MARCOM; Dynamic Messenger will return to Tróia for REPMUS 2025.

The significance of REPMUS is underlined by the fact that several other major international MUS development activities now seek to support, draw on or understand the REPMUS process:

• Representatives from the Australia-U.K.-U.S. strategic partnership are focused on advanced maritime technology capability.

• NATO's Defence Innovation Accelerator for the North Atlantic construct assesses, tests and develops startup technology to demonstrate potential defense capability and deliver it more quickly to frontline operators.

• The European Defence Agency is developing concepts and capabilities tested in and around REPMUS.

• NATO’s Norfolk, Virginia-based Allied Command Transformation branch and La Spezia, Italy-based Centre for Maritime Research and Experimentation’s in-house laboratory have been testing concepts, technologies and capabilities at REPMUS for several years.

The increasing importance of REPMUS was demonstrated in the 2024 exercise as more than 100 MUS vehicles were involved, more than 700 experimentation serials were conducted, and 30 countries participated, NATO allies and partners alike.

One partner of note was the Ukrainian Navy. Ukraine’s experience of operating and countering uncrewed systems in both offensive and defensive operations in its ongoing war with Russia underscores the role uncrewed systems play today in conflict.

Thus, REPMUS has become a more important tool for NATO and its navies, providing capability development from research and development and test and evaluation to operational experimentation and accelerating the generation of MUS capabilities for operations.

“The NATO defense planning process is the primary means for identifying NATO’s minimum capabilities requirements, the apportionment of those capabilities among allies and progress assessment,” Captain António Mourinha, the Portuguese Navy’s CEOM director and REPMUS chief of staff, told Seapower in an interview in December.

“Through this process, NATO allies are working together to develop and procure innovative maritime solutions and applications to increase operational effectiveness, limit risk to human life and reduce operational costs. In this context, and in the evolving landscape of maritime operations, MUS are seen as revolutionary and a dynamic force multiplier in the

composition of our future fleets.

“These systems may increase, at fast pace, the mass, reach and flexibility of our maritime capabilities, improving operational effectiveness, efficiency and safety and thereby maximizing the potential of these fleets in a new manned-unmanned teaming construct,” Mourinha said.

The role REPMUS plays here is in capability development, evolving and improving the MUS systems to meet operational requirements, including for interoperability between the MUS vehicles themselves, building creweduncrewed teaming and supporting multidomain operations.

“REPMUS provides a cooperative environment where academia, industry, national armed forces and NATO can work together to foster advances in MUS capabilities, with a focus on interoperability … [it] allows for an exchange of innovative ideas and knowledge, thereby accelerating the development of new capabilities and the testing of such systems in a realistic operational setting,” Mourinha said.

Uncrewed air vehicles work with crewed surface vessels at Robotic Experimentation and Prototyping using Maritime Uncrewed Systems 2022. REPMUS is an exercise in which NATO navies build capacity to deliver crewed-uncrewed teaming in multidomain operations. *Photo credit: NATO | Fran S. Dzioba*

Rolling Process

REPMUS is a rolling process, with capability developments and lessons learned taken forward into the following year's exercise.

REPMUS 2024 addressed national and NATO MUS capability development through focusing on technology, doctrine, training, interoperability and crewed-uncrewed teaming.

The REPMUS process also focuses on MUS use in all major warfare domains, including anti-air, anti-surface and anti-submarine operations, plus more specific taskings like mine countermeasures, force protection, harbor security, maritime security and critical undersea infrastructure protection.

At REPMUS 24, MUS use was tested in various conceptual and

technological contexts, and Mourinha highlighted several examples.

The exercise tested and developed the requirements for NATO Standardization Agreement 4817, a mainstay STANAG for underwater communications in particular, building multidomain command and control for underwater operations involving, for example, uncrewed underwater vehicles.

“STANAG 4817 is a key feature for allied interoperability in using MUS,” Mourinha said. Alongside being used for sharing the common operational picture, 4817 was used at REPMUS 24 to conduct MUS command and control for the first time, he said.

Several of the serials focused on underwater tasks. Reflecting what was an emerging operational requirement for NATO, but now is an enduring one, critical underwater infrastructure protection serials were conducted using maritime uncrewed systems.

Here, “blue force” surface ships, uncrewed surface and underwater vessels and acoustic sensors were used to detect and prevent “red force” disruption activities.

For mine warfare, the exercise tested the use and coordination of MUS alongside the development of a visualization and command and control tool that enables holographic presentation of the mine threat area.

With Russian submarine activity continuing to increase across the Euro-Atlantic theater, MUS – especially uncrewed surface vehicles and uncrewed underwater vehicles – are central to NATO’s development of its anti-submarine warfare barrier concept, for which multistatic acoustic detection was tested in REPMUS 24.

“The barrier is a defensive ASW concept, using MUS extensively to detect, track and, if necessary, neutralize adversary submarines attempting to penetrate strategic areas, like naval

bases, choke points or shipping lanes," Mourinha said.

The impact of Russia's invasion of Ukraine on NATO operational requirements is reflected in the REPMUS work on countering uncrewed systems. At REPMUS 24, counterdrone work encompassed testing capabilities and tactics in all maritime domains.

"This is an important area of development, since many actors can cause disruptive effects, even with the simplest of uncrewed systems," Mourinha said.

REPMUS also tests NATO navies' ability to integrate other concepts and technologies to enhance MUS capabilities, such as through exploiting artificial intelligence. In this context, a concept called "silicon sailor" was tested, involving experimenting with how AI can assist with accessing naval operational manuals and protocols, providing fast access to critical information, supporting decision-making processes and enhancing personnel training. Scenarios included maritime navigation and rescue tasks.

A notable REPMUS 24 development was the establishment of an artificial island – located in the Sado Estuary Natural Reserve, offshore from the main exercise base and CEOM headquarters at Tróia – designed as a prototype for a future, larger island construct designed to support MUS operations and wider surveillance and ocean monitoring.

"The structure was created … to test the requirements for MUS operation, ocean sensing, energy production and management, and efficient data processing and storage, with the testing of an underwater computer and server," Mourinha said. Drawing on data gathered and lessons learned from the prototype, the navy intends to develop the larger artificial island to deploy it close to the deep waters of the Setubal Canyon on the peninsula's seaward side.

Experimentation around these themes will continue at REPMUS 2025, with additional focus areas of persistent surveillance

and data exploitation – reflecting Dynamic Messenger.

At REPMUS 2022, a REMUS UUV is deployed from a Royal Canadian Navy Kingston-class maritime coastal defense vessel. REPMUS is a core exercise process for developing NATO maritime uncrewed systems capabilities. *Photo credit: Estonian navy | NATO*

Testing Zone

The testing conducted at REPMUS is enabled and supported by the fact that CEOM and the wider Tróia exercise area sit in the middle of a Portuguese government “technological free zone,” which the navy and Portugal’s naval industry can exploit.

The zone covers more than 1,000 square miles and permits testing and operational experimentation of new technology in a secure, at-sea space free from other users, enabling technology readiness levels to be developed to the point where the technologies can be presented to regulatory authorities for certification.

“The idea is to increase the use and efficiency of CEOM in a more cooperative way, by bringing more countries, international industry and research centers to experiment at CEOM in a concept closer to the one used in REPMUS, Mourinha said. The zone provides capacity for multiple stakeholders to be present at the same time to conduct testing, with this combined presence enabling synergies to be achieved and information to be exchanged, he said.

In 2025, CEOM will increase engagement with both Portuguese industry and NATO allies to increase their experimentation presence around the peninsula.

Allied presence at REPMUS 25 may also increase, possibly including one of the U.S. Navy’s latest MUS capability and operational development organizations, the U.S. 6th Fleet’s Task Force 66.

Dr. Lee Willett is an independent writer and analyst specializing in naval and maritime matters. With a 25-year professional background,he has spent time at sea on submarines,aircraft carriers and other craft. This article was first published in the February-March issue of Seapower.

DON Authorizes Attendance at Sea-Air-Space 2025 for Military, Civilian Personnel

FOR IMMEDIATE RELEASE
March 25, 2025

ARLINGTON, Va. – Travel for the Navy League's Sea-Air-Space Symposium has been authorized for all Department of Navy military speakers, moderators, and panelists, and attendance at the event has been approved for all National Capital Region (local) Navy federal civilian employees and uniformed military personnel.

A memo released by acting Under Secretary of the Navy Terrence

Emmert, dated 20 March 2025, says, “I approve the Department of the Navy’s attendance at the Navy League’s Sea-Air-Space Symposium, 6-9 April 2025, at National Harbor, Maryland.”

Sea-Air-Space, the nation’s largest maritime national security symposium, is critical, as it “provides a platform for the professional development of Department of the Navy personnel on the latest developments in naval warfare, as well as an opportunity for Navy engagement with representatives from a broad cross-section of government, industry, academia, and the international community.” (GENADMIN released 24 MARCH 2025).

The Navy League of the United States, the host for Sea-Air-Space, is offering federal active-duty and civilian employees admission and transportation to the event, as well as one complimentary meal event. The Navy League also offers them discounted parking and meals for purchase at a discounted rate. Local bus services to and from the Gaylord National Harbor is also available for all federal civilian employees and uniformed military. Please see website, www.seaairspace.org for further details. Attendees not opting for these services are responsible for their own commuting costs to the event.

Newly confirmed 79th Secretary of the Navy, the Honorable John C. Phelan, will address Sea-Air-Space attendees on his priorities for the Department, including ways to revitalize U.S. shipbuilding, strengthen warfighting culture, and recruit America’s best and brightest. Top speakers also include acting Commandant of the United States Coast Guard Admiral Kevin Lunday, Acting Chief of Naval Operations Admiral Jim Kilby, and Commandant of the Marine Corps General Eric Smith.

To register for Sea-Air-Space, click here.

Nimitz Carrier Strike Group Departs Bremerton for Regularly Scheduled Indo-Pacific Deployment

Sailors man the rails on the flight deck of the aircraft carrier USS Nimitz (CVN 68) in the Puget Sound after getting underway for a regularly scheduled Indo-Pacific deployment, March 21, 2025. (U.S. Navy photo by MCSN Japeth Carter)

From Commander, U.S. 3rd Fleet Public Affairs, March 24, 2025

The Nimitz Carrier Strike Group (NIMCSG) departed Naval Base Kitsap in Bremerton, Washington, for a regularly scheduled deployment to the Western Pacific, March 21. For five decades, the Nimitz Carrier Strike Group has upheld the U.S. Navy’s commitment to a forward presence while ensuring maritime

security, deterring aggression, and protecting the American way of life. Nimitz, in its 50th year of service, continues and celebrates its legacy of strengthening alliances and partnerships, demonstrating the power of teamwork and cooperation in maintaining peace and security.

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The strike group's deployment will focus on protecting security, freedom, and prosperity for the United States, our allies and partners, and demonstrating the U.S. Navy's unwavering commitment to a free and open Indo-Pacific.

NIMCSG consists of the Nimitz-class aircraft carrier USS Nimitz (CVN 68), Carrier Air Wing (CVW) 17, and Destroyer Squadron (DESRON) 9.

The embarked air wing consists of nine squadrons flying F/A-18C/E/F Super Hornets, EA-18G Growler, E-2D Hawkeyes, C-2A Greyhounds, and MH-60R/S Sea Hawks; Squadrons are the "Fighting Redcocks" of Strike Fighter Squadron (VFA) 22, "Mighty Shrikes" of VFA-94, "Kestrels" of VFA-137, "Blue Diamonds" of Strike Fighter Squadron (VFA) 146, "Cougars" of VAQ-139, "Indians" of Helicopter Sea Combat Squadron (HSC) 6, "Bluetails" of Carrier Airborne Early Warning Squadron (VAW) 121, "BattleCats" of Helicopter Maritime Strike Squadron (HSM) 73, and the "Rawhides" of Fleet Logistics Support Squadron (VRC) 40.

DESRON 9 consists of the Arleigh Burke-class guided-missile destroyers USS Curtis Wilbur (DDG 54), USS Gridley (DDG 101), USS Wayne E. Meyer (DDG 108) and USS Lenah Sutcliffe Higbee (DDG 123).

An integral part of U.S. Pacific Fleet, U.S. 3rd Fleet operates naval forces in the Indo-Pacific and provides the realistic and relevant training to ensure the readiness necessary to execute the U.S. Navy's timeless role across the full spectrum of military operations. U.S. 3rd Fleet works together with our allies and partners to advance a shared vision of a free, open, and secure Indo-Pacific in which all nations are secure in their sovereignty and free from coercion.

Coast Guard Teams Deploy to American Samoa to Patrol Border, Conduct Boardings

A U.S. Coast Guardsman assigned to a Coast Guard Sector Honolulu boarding team, National Oceanic and Atmospheric Administration Office of Law Enforcement officer and American Samoa Department of Marine and Wildlife Resources officer speak to the master of a foreign-flagged fishing vessel during a boarding offshore Pago Pago, American Samoa, Feb. 26, 2025. (U.S. Coast Guard photo, courtesy Sector Honolulu)

From Coast Guard District 14 External Affairs, March 4, 2025

HONOLULU — Coast Guard Maritime Safety and Security Team Honolulu personnel and a boarding team from Coast Guard Sector Honolulu deployed to American Samoa from Feb. 10-27 to protect the U.S. maritime border, enforce U.S. laws and regulations, enhance maritime domain awareness and coordinate with agency partners.

During the deployment, team members boarded six U.S.-flagged commercial fishing vessels, six foreign-flagged commercial fishing vessels, and five recreational boating safety boardings, resulting in the termination of one recreational voyage due to deficient safety equipment.

Crews patrolled the U.S. territorial maritime border and the

U.S. Exclusive Economic Zone surrounding American Samoa, which extends up to 200 miles offshore.

Additionally, MSST Honolulu and Sector Honolulu personnel conducted over 26 hours of training with the American Samoa Department of Homeland Security and American Samoa Marine Patrol, a law enforcement unit within the **American Samoa Department of Marine and Wildlife Resources**. Training primarily focused on boarding procedures and weapons proficiency.

“Working closely with partners in American Samoa heightens our awareness of any illicit activities in the area and hones our combined ability to safeguard the maritime border,” said Lt. Cmdr. Nic Iannarone, enforcement division chief, Sector Honolulu. “Teamwork is a key component of taking a stand against threats to our ports and waterways.”

In accordance with the President’s Executive Orders and direction from Adm. Kevin Lunday, the acting commandant of the Coast Guard, the Coast Guard is increasing cutter patrols and operations in American Samoa. The Coast Guard is surging assets to increase presence in key areas to protect America’s maritime borders, territorial integrity, and sovereignty.

Maritime Safety and Security Team Honolulu is a specialized unit of the Coast Guard dedicated to enhancing maritime security and safety in the Pacific region. With a highly trained personnel team equipped to conduct law enforcement operations, port security assessments, and emergency response activities, MSST Honolulu collaborates closely with local, state, and federal agencies to safeguard vital maritime infrastructure and natural resources.

Sector Honolulu serves a broad expanse of the Pacific that includes 200 nautical miles surrounding the State of Hawaii, the islands and atolls of the Hawaiian Island Chain and American Samoa. The sector’s primary missions include ensuring

maritime security, conducting search and rescue operations, enforcing environmental protection laws, and facilitating law enforcement activities.

Navy CNO Franchetti Fired

Chief of Naval Operations Admiral Lisa Franchetti presents an award to a Sailor at Naval Support Activity (NSA) Crane, in Crane, Indiana, Feb. 10, 2025. Photo *Credit: U.S. Navy | Senior Chief Petty Officer Elliott Fabrizio*

Secretary of Defense Pete Hegseth announced he was firing Chief of Naval Operations Admiral Lisa Franchetti on Friday, the same day as he relieved Air Force General Charles Q. Brown as chairman of the Joint Chiefs of Staff, according to the New York Times.

According to the Times and other reports, Hegseth said

Franchetti and Air Force General James Slife, the service's vice chief of staff, also fired, had "distinguished careers," and "we thank them for their service and dedication to our country."

Franchetti was the 33rd chief of naval operations, the first woman to be CNO and the first woman to serve on the Joint Chiefs of Staff. She entered the Navy after earning a degree in journalism at Northwestern University and joining the Naval ROTC program there.

She later commanded the destroyer USS Ross, commanded U.S. Naval forces in Korea, served as commander of the U.S. 6th Fleet in the Mediterranean and director of strategy, plans and policy for the U.S. Joint Chiefs of Staff.

Navy Retires Last EP-3E Electronic Reconnaissance Aircraft

EAST CHINA SEA (Sept. 24, 2020) An EP-3E Airborne Reconnaissance Integrated Electronic System (ARIES) II, assigned to the "World Watchers" of Fleet Air Reconnaissance Squadron 1 (VQ-1), transits over the East China Sea. (U.S. Navy photo by MC3 Andrew Langholf)
By Richard R. Burgess, Senior Editor

ARLINGTON, Va. – The Navy has retired its last EP-3E Aries II electronic reconnaissance aircraft after the type's 45 years of service to the fleet.

In an informal Feb. 12, 2025, ceremony, at Naval Air Station Whidbey Island, Washington, Fleet Air Reconnaissance Squadron One (VQ-1), the sole remaining operator of the EP-3E, farewelled the last EP-3E. The aircraft was flown away on Feb. 13 for the last time.

The aircraft, BuNo 159893, was the last of 26 EP-3Es that served the fleet beginning in 1970. Ten P-3A Orion patrol aircraft were converted to EP-3Es for operation by VQ-1 and VQ-1, joining two earlier EP-3B versions in service. This batch of EP-3Es were replaced beginning the 1990s by a new generation of EP-3Es converted from P-3C Orions, with ultimately 17 aircraft converted to sustain an operational

fleet of 12 aircraft.

The EP-3E fleet provided multi-intelligence support to the fleets and to theater combatant commanders with near-real-time signals intelligence and full-motion video, the Naval Air Systems Command said. The aircraft was equipped with sensitive electronic receivers and high-gain dish antennas. The large crew was able to fuse the intelligence it collected with offboard intelligence and provide threat warning and situational awareness in support of suppression of enemy air defenses, anti-air warfare, anti-submarine warfare, and anti-surface warfare.

The EP-3E has been succeeded by the MQ-4C Triton high-altitude, long-endurance unmanned aerial vehicle operated by Unmanned Patrol Squadron 19.

VQ-1 has one P-3C remaining, which it used as a utility training and transport aircraft. The aircraft, BuNO 161588, will be retired in an informal ceremony to be held at NAS Whidbey Island on Feb. 20, 2025.

VQ-1 will hold its deactivation ceremony at Whidbey Island on March 28, 2025. The official date for the deactivation is March 31.

Marine Corps Updates F-35 Procurement, Transition Plan

Marine Fighter Attack Squadron (VMFA) 314 launch and recover F-35C as they work to renew their carrier qualifications onboard the USS Abraham Lincoln (CVN 72) (U.S. Marine Corps photo by 1stLt. Charles Allen)

By Richard R. Burgess, Senior Editor

ARLINGTON, Va. – The U.S. Marine Corps has adjusted its procurement and transition plan for its F-35 Lightning II strike fighter fleet. While the overall program of record remains at 420 F-35s, the balance between the numbers of short takeoff and vertical landing F-35B and the carrier launch capable F-35C has changed, with the number of F-35Cs increasing and the number of F-35Bs decreasing.

According to the 2025 Marine Corps Aviation Plan released Feb. 3, the Corps plans to procure a total 280 F-35Bs and 140 F-35Cs, as compared with the earlier program of record of 353 F-35Bs and 67 F-35Cs. These numbers will allow the Corps to support 12 F-35B fighter-attack (VMFA) squadrons and eight F-35C VMFA squadrons.

Before, the Corps had planned to support only four F-35C squadrons, VMFAs 314, 311, 251, and 115. With the change in the procurement profile, four other F/A-18 Hornet squadrons also will make the transition to the F-35C: VMFAs 232 and 323 and reserve VMFAs 112 and 134.

Currently, all but two operational F-35 squadrons are allowed to be equipped with 10 aircraft, with the other two, both based at Marine Corps Air Station Iwakuni, Japan, being allowed 12 aircraft each. Under the new plan, all operational F-35 squadrons will be equipped with 12 aircraft each beginning in 2030.

The Marine Corps F-35C squadrons will continue to support the TACAIR Integration Plan, in which they deploy as units of Navy carrier airwings.