

From Screens to Subs to AI: Scenes From the Show Floor



Jacob Nibali uses a FLAIM Systems Virtual Reality firefighting tool at the LEIDOS booth. *SOLARES PHOTOGRAPHY*

NATIONAL HARBOR, Md. – From hands-on demos to stadium-quality video screens, more than 300 exhibitors are presenting the latest defense technology to Sea-Air-Space attendees. Here are some of the highlights from the Prince George's Exhibit Hall, which will be open today from 9 a.m. to 3:30 p.m.

General Dynamics (Booth 1023) is showcasing its Columbia-class nuclear submarine. This replacement for the aging Ohio class of ballistic submarines is scheduled to be delivered to the U.S. Navy in 2027, said Greg Rose, General Dynamic's chief of public affairs.

The Columbia class, which will be built into the 2040s, is similar in design to the Ohio class, but with some significant

changes, Rose said. At 560 feet long with a displacement of nearly 21,000 tons, the Columbia-class fleet will be the largest submarines ever built in the U.S. They also will have a fuel core that lasts the life of the ship, eliminating the need for a mid-service refueling.

At Booth 737, **Leidos** has a replica of Sea Hunter, which along with Sea Hawk, are the first autonomous unmanned surface vessels used by the U.S. Navy.

The carbon-fiber craft have software that allows them to navigate the “rules of the road on the sea,” said Leidos representative Matthew Garner. Sea Hunter recently completed a trip from San Diego to Pearl Harbor in Hawaii, completely unmanned. Together, Sea Hunter and Sea Hawk have logged more than 40,000 autonomous miles, Halley said.

There will likely be future iterations of Sea Hunter, Garner said, noting the U.S. Navy is calling for 150 ships in its 500-ship fleet to eventually be unmanned.

SAIC (Booth 803) conducted a demonstration of its virtual mission center Tuesday afternoon, communicating entirely virtually with a mission center in Aurora, Colorado.

“Traditional operations centers need people to perform the functions, but our mission center allows networking in a virtual environment across the entire planet,” said Gardner Congdon, SAIC’s director of extended realities domain.

SAIC uses virtual reality and tactical software for its virtual mission center, which is currently a use case for the Space Force, Congdon said.

L3Harris Technologies (Booth 1037) is giving demonstrations of its new BNVD Fused Binocular Night Vision Goggle. The goggles fuse image-intensified tubes with a thermal camera to help detect heat and overlay. This is particularly useful for identifying hidden targets like someone in camouflage in the

woods, said Leith Ames with L3Harris.

Visitors to the booth can see the goggles in action, with both visual and thermal images captured on a screen in real time.

HII (Booth 1322) is using its booth to showcase its rebranding from Huntington Ingalls Industries to HII. Along with models devoted to the company's traditional background in shipbuilding, there are also exhibits of autonomous vehicles and other technologies.

Director of Communications Greg McCarthy pointed out displays of Odyssey, HII's new suite of advanced autonomy solutions that can turn any ship or vehicle in any domain into an intelligent, robotic platform.

HII is also debuting integrated digital shipbuilding. USS Enterprise CVN-80 is the company's first digitally designed aircraft carrier. Enterprise is currently in the keel-laying phase of construction, McCarthy said.

Assistant Commandant: Marines Must Be Ready to Fight China, Other Adversaries Directly



Sgt. Maj. Troy E. Black speaks during a panel discussion at the Marine Corps Force Design session. *SOLARES PHOTOGRAPHY*
NATIONAL HARBOR, Md. – The assistant commandant of the Marine Corps said the service must always be prepared for a direct war with China or any other adversaries during a panel discussion at the Navy League’s Sea-Air-Space symposium here on Tuesday.

In initial comments while moderating a panel including three other top service officials on the subject of Marine Corps force design, Gen. Eric Smith said it is not wise to assume the United States won’t go to war with China.

“The pacing threat is China,” Smith said. “People will say, ‘Well, you’re not going to fight China.’ Hey, that’s not for you to say. That’s not for me to say. There’s a plan required to fight the adversaries who may threaten this country – North Korea, China, Russia, violent extremists. We don’t get to say, ‘Hey, we didn’t think that was going to happen, so we didn’t build a plan.’ You always pace off the fastest runner even if you don’t think that’s who you’re going to beat in the final

match. You pace off the faster runner and then you pivot to the runners who may not be that fast, and then you're good."

Smith said it is vital the Marines continue to be the nation's naval expeditionary force. "We are still America's crisis response force," he said. "We will seize or defend advance naval bases and conduct land campaigns in the furtherance of fleet operations."

A naval expeditionary force is vital to provide an alternative to deterrence besides nuclear weapons, Smith argued.

"Our part of the joint warfighting concept [is] we deter," he said. "When you're talking about a nuclear-armed peer adversary, you don't want nuclear deterrence to be your only deterrence. ... You want to deter forward [and] thwart every nefarious action that's happening. You want to thwart it from its infancy. You have to be forward deployed from a naval expeditionary force to do that."

Controversial EABO Concept Has Potential but Will Be Vetted, Speakers Say



Brig. Gen. David Odom, Director of Expeditionary Warfare, OPNAV N95 addresses questions during the Expeditionary Advanced Base Operations session. *SOLARES PHOTOGRAPHY*

NATIONAL HARBOR, Md. – The Marine Corps’ concept of deploying small, lightly armed but highly mobile units into isolated locations within an adversary’s weapons engagement zone – called Expeditionary Advanced Base Operations – has the potential of quickly getting forces into a strategically vital area in response to an evolving threat when no other U.S. military assets are available, a senior Marine officer said April 5.

In addition to being a response to a threat, the concept also could serve as a deterrent by making an adversary stop to think before taking offensive actions, Maj. Gen. Benjamin Watson, Commanding General, Marine Corps Warfighting Laboratory, told an audience at Sea-Air-Space 2022.

Although the EABO proposal has been controversial, partly because Marine Corps Commandant Gen. David Berger is executing a dramatic restructuring of Marine forces to facilitate it,

sharply cutting heavy weapons like tanks and towed artillery, and reducing total end strength.

But Watson emphasized EABO is “a naval concept,” which was approved by both Berger and Chief of Naval Operations Adm. Michael Gilday, and would directly involve Navy assets, including aircraft carrier battle groups.

And EABO “is a concept. It’s not proven yet,” and will be tested repeatedly and in increasing detail in the future, Watson said, which was reinforced by other officials on the panel.

Brig. Gen. David Odom, director Expeditionary Warfare on the Navy staff, echoed both the naval aspects of EABO and the intensity of the experimentation process that lies ahead. Odom cited a number of recent exercises, including Nobile Focus, which involved two Marine expeditionary units, Navy surface action ships and Japanese Self Defense Forces. That exercise and further trials tested one of the critical challenges of the EABO concept – how to support and sustain these isolated units.

The sustainment and support question must be addressed by substantial “engineering” work, including procuring new amphibious ships and unmanned systems, Odom said.

The Marines are strongly urging production of a light amphibious warfare ship, which would be much smaller and more nimble than existing amphibs. The new Navy budget proposed delaying starting the LAW program.

Tim Kao, vice president of data science at the Center for Naval Analysis, noted the challenge of sustainment is created by the development of precision anti-ship missiles and other systems by potential adversaries such as China, which prohibit past supply procedures like those used in Operation Desert Storm.

And Kao said in considering EABO, “You really have to think through how we contribute to deterrence.”

Retired Rear Adm. Jamie Barnett, vice president of Global Communications Solutions at Viasat, said his firm’s extensive and growing fleet of communications satellites could help the EABO units by providing the secure connections to keep them from being isolated.

Small Businesses Present Ideas to OSBP



(Left to right) Hanani Wade and William Lash with Chirality Capital Consulting present their business during the Navy is Open for Business session. *SOLARES PHOTOGRAPHY*
During the Tuesday afternoon Navy is Open for Business forum,

11 small businesses had the opportunity to pitch their products and ideas to a panel of Department of the Navy procurement experts. The companies, which were chosen from a group of applicants to the Department of the Navy Office of Small Business Programs, included:

Chirality Capital Consulting

Chirality, from the Greek word for hand, is based on mirror images. The concept behind Chirality Capital Consulting is that the left hand (the company) is a mirror image of the right hand (the federal government). Chirality provides program and product management; organizational design and development; technology modernization; data analytics; training logistics; and diversity, equity and inclusion capabilities to clients inside and outside the defense space.

Chitra Productions

CEO Vibhaa Vermani came to the U.S. as a bride in an arranged marriage 30 years ago. In 2008, she launched Chitra Productions. Products include risk management framework support. The typical Department of Defense RMF process takes 12 to 18 months to achieve, Vermani said, but Chitra products help make approvals faster and less expensive.

Giesler

In the private sector, Geisler has developed technologies that help secure the power grid and can network and encrypt data in fractions of a milliseconds. Working with the Department of Defense, it can also encrypt sensors around Navy vessels in real time without interrupting any systems.

International Trade Management Group

There's a need to automate, secure and create resiliency in our supply chains. ITM creates logistic strategies to enhance global supply-chain assets and ensure visibility and

accountability in the physical supply chain.

JA Moody

Seawater is a highly corrosive substance that can shorten the life of a ship. This family-owned business creates fluid products that use cold-spray technology that don't heat metal to the melting point, and can double the lifecycle of a bow. In 2021, it introduced the Vanessa Hardened Seat Next Generation TOTS Valve to the U.S. Navy.

Maritime Arresting Technologies

This company sees itself as an evangelist for nonlethal weapons. Products include prophylactic maritime port security barriers that can detect security breaches and determine the intent. Maritime also manufactures the Stingray counter unmanned water vehicle net, which forms a barrier from the sea surface to seabed and captures hostile divers and UUVs. The company's newest product is a recoilless launcher that can deploy non-kinetic effectors from small, unmanned platforms.

Maureen Data Systems/FylaxCyber

Nearly six ransomware attacks occur every minute. Maureen Data Systems is partnering with Black Kite to develop the Ransomware Susceptibility Index to help both defense and private clients understand how likely they are to experience an attack, provide continuous system monitoring and identify which vendors are most susceptible to attacks.

Metamagnetics

This company spun out of the Northeastern University Center for Microwave Magnetic Materials and Integrated Circuits in 2009, and now designs and manufactures microwave and millimeter-wave components. Its products are designed to enhance the effectiveness of mission-critical radar, communication and power-supply systems, and its flagship

technology can mitigate high-powered jamming that affects a signal of interest.

Mistral

This systems integrator and ideas company works with warfighters and first responders. Its products include the C-Master Diver Navigation System, which allows up to 15 combat divers to securely communicate with each other, and provides the divers with mission-specific crucial data.

Physical Sciences

This company creates powerful, next-generation lithium-ion battery technology for maritime systems. Its manufacturing process creates more energy and power in the batteries. It also uses nonflammable electrolytes, making the batteries safer to handle than traditional lithium-ion batteries. The batteries are operationally deployed, and in use today.

Vision Engineering Solutions

U.S. warfighters need more imagery and intelligence from space. At the same time, data products from space are increasing in number and complexity. Optical communications can increase bandwidth over RF networks and are more secure, but there are a lack of optical-communication ground stations to communicate this data. Vision has a Phase II Small Business Innovation Research contract with the Navy to provide these optical ground stations.

CMS Breakfast Speakers: New

Strategy, Posture Focus on Integrated Deterrence



Dr. Mara E. Karlin (middle), Assistant Secretary of Defense for Strategy, Plans and Capabilities, speaks during a panel discussion at the CMS breakfast. *SOLARES PHOTOGRAPHY*

NATIONAL HARBOR, Md. – An essential aspect of the recently released National Defense Strategy is that it was developed in conjunction with the Nuclear Posture Review, which creates a focus on “integrated deterrence,” a top Defense Department official said April 5 at the Center for Maritime Strategy breakfast.

“So, when you think about the national security challenge, you also think about the nuclear challenge. It seems so obvious,” said Mara Karlin, assistant secretary of defense for strategy, plans and capabilities.

That scenario forces a more rigorous and integrated process,

which also includes cyber and can apply to our pacing challenge of China and the threat of Russia, Karlin said. That leads to an “integrated deterrence” that can bring together actions that can work across all these challenges.”

Retired Adm. James Foggo, session moderator and dean of the Center for Maritime Strategy think tank, which hosted the breakfast, said he did not agree with the strategy’s description of Russia as an “acute” challenge.

Karlin explained that “China poses a geopolitical challenge and Russia does not.” Although the Pentagon is focused on Russia’s invasion of Ukraine and its actions in other regions, “that does not pose a geopolitical challenge in the same way as China.”

Also speaking at the session, Adm. Samuel Paparo, commander of the U.S. Pacific Fleet, said his first year in that command has been a “very dynamic” time. Much of the fleet is now operating in the Pacific, after the withdrawal from Afghanistan allowed it to refocusing its effort on the U.S. Central Command region to the Pacific, where it deals with the challenge from both China and Russia.

Paparo stressed how Pacific Fleet is part of a joint naval force that includes extensive involvement of Navy, Marine Corps and Coast Guard elements.

“The morale of the naval forces is high, and it is operating on a high operational level,” he said.

Paparo noted that a Russian naval group operated in the Hawaiian area last year, which warranted a “very robust U.S. response.” But asked about China as the “pacing threat,” the admiral said the fleet “operates every day as if the PRC [Peoples Republic of China] is going to attack Taiwan.”

Along with the other U.S. forces, the fleet operates in a way that “any potential adversary would look out and say, “today

is not the day,” to take aggressive action.

Lt. Gen. Karsten Heckl, commanding general Marine Corps Combat Development Command, echoed Karlin’s and Paparo’s statements, calling for a “tri-service” naval force and for more integration of the national deterrence strategy.

“Everything hinges on the national defense strategy and the integration piece, [which] I think is critical,” Heckl said. “I think we need to do a better job of integrating” so it has real applicability to day-to-day operations.

Decker, Jenkins Among Those Honored at SecNav Luncheon Awards Ceremony



Jo Decker of BAE Systems won the Nimitz award for industry leadership. *LISA NIPP*

The Secretary of the Navy Luncheon on Tuesday, April 5 was capped by an awards ceremony, where the Navy League of the United States and Secretary Carlos Del Toro doled out the year's top honors.

The Fleet Admiral Chester W. Nimitz Award, which honors a leader of industry who has made a major contribution to our nation's maritime strength or enhanced our national security, went to Jo Decker, vice president of business winning and strategy at BAE Systems, for her decades-long career "in driving solutions to critical technology challenges in the national security and public safety environment."



Saildrone CEO Richard Jenkins won the Michelson award for civilian innovation. *LISA NIPP*

The Albert A. Michelson Award, which honors a civilian scientist, technical innovator or technical organization for scientific or technical achievement, was given to Richard Jenkins, founder and CEO of Saildrone. Last year, the company sent its flagship autonomous platform into the eye of Hurricane Sam, a Category 4 that stayed off the East Coast in the Atlantic Ocean. The company took scientific measurements and HD video “that could transform our understanding of hurricane forecasting,” according to the award citation.

The award ceremony, which also included the Navy and Marine Corps’ group and individual Safety Awards, closed with the Secretary of the Navy’s Distinguished Public Service Award, which went to Navy League Past National President William A. Stevenson III for his efforts to reshape the organization’s board of directors and overseeing the implementation of active-duty membership during his tenure.

Safety Awards

Adm. Vern Clark Award Winners

Helicopter Training Squadron 28, Naval Air Station Whiting Field, Milton, Florida

AWF1 Carlos M. Gomez, San Diego

Gen. James L. Jones Safety Award Winners

1st Radio Battalion, 1 Marine Expeditionary Force, Camp Pendleton, California

Benjamin M. Lebidine, Camp Pendleton, California

JADC2 Panelists Express Fears of 'No Joint Process'



Rear Adm. Susan BryerJoyner said as the Navy continues its move to distributed naval operations and cannot mass its ships together, it further complicates command and control. *LISA NIPP*

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

The challenge for the Navy alone was how do the forces operate beyond line of sight when they know they will not have uncontested communications, “how does the Navy do that when we have a proliferation of sensors” and how do they leverage the sensors on one platform with those on another “in order to get the effects that we need,” said Rear Adm. Susan BryerJoyner, director of the Naval Cyber Security Division. And as the Navy

continues its move to distributed naval operations and cannot mass its ships together, it further complicates command and control, she said. The Navy needs to do more exercises to begin testing solutions to those problems, she advised.

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

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

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

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

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

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

Navy Budget Should be Driven by Strategy, Not the Reverse, Del Toro Says



In his speech Del Toro reiterated his support for Adm. Mike Gilday's vision for distributed maritime operations. *LISA NIPP* NATIONAL HARBOR, Md. – The U.S. Navy budget “should be driven by strategy and not the strategy driven by the budget itself,” said Navy Secretary Carlos Del Toro at the April 5 luncheon keynote at Sea-Air-Space 2022. “That’s why we’ve put together a clear strategy to deliver the lethal, resilient, sustainable, survivable, agile and responsive course called

for in the 2022 National Defense Strategy.”

The budget faces likely headwinds in Congress, where some lawmakers say it doesn't do enough, but Del Toro emphasized the importance of maintaining the trust and support of American taxpayers so each dollar reaches the American warfighter in the most efficient and effective way, while also ensuring the warfighter is equipped with the most effective platforms and equipment.

Del Toro said the Navy Department's strategy is rooted in three guiding principles.

The first, he said, is to maintain and strengthen the nation's maritime dominance, so forces can deter potential adversaries and fight and win if necessary. The second deals with empowering U.S. Sailors and Marines by fostering a culture of warfighting excellence founded on treating each other with dignity and respect. Del Toro said the third principle is to strengthen strategic partnerships across the Joint Force with industry and with international partners around the globe.

“It's clear, it's direct, it's concise,” Del Toro said. “In order to maintain our maritime dominance, we have to be serious about building and maintaining the right capabilities to win tomorrow's wars. The National Defense Strategy for integrated deterrence requires us to campaign forward from the South China Sea to the Arctic to the Mediterranean and to the Gulf. And that is indeed what we are doing.”

Del Toro said right now the Navy has 74 ships deployed around the globe, including four aircraft carriers and two assault ships. Furthermore, he said, every one of these ships operates as part of a fully networked, agile and survivable fleet capable of delivering coordinated, long-range fires and unmatched lethality from many points at once.

“That's the power of distributed maritime operations,” said Del Toro. “I strongly support, let me be clear, I strongly

Industry Must Change the Way It Communicates During Contract Process

NATIONAL HARBOR, Md. – The F/A-18 and EA-18G recently found a way to shrink a complex contract to a 90-day turnaround by changing their approach to contracting entirely, and it's the kind of approach the Navy needs in order to work better and more efficiently with industry, a Navy official said during comments at the Navy League's Sea-Air-Space conference April 4.

Capt. Jason M. Denney, F/A-18 and EA-18G program manager (PMA-265) at Naval Air Systems Command, said that the program had figured out a way to dramatically shrink the contracting process in an experiment, and it involved doing a few things fundamentally different to how they had been done in the past.

"[We asked] can we do a contract with industry, a full-up complex contract from start to finish in 90 days?" Denney said. "Yeah, we can. On the industry and government side at the beginning there was a lot of naysaying, a lot of folks saying it's not possible, we can't do it and here's why. But then you say, 'Well, let's challenge those assumptions.' Instead of saying why you can't, turn those into what barriers need to be removed so that you can."

As the program began to answer those questions, they discovered new processes and a new way of interacting with industry and government that shortens those time frames, he said.

"And this can't be a stunt," he said. "It can't be something we do once, work overtime and weekends, get it across the finish line, and say, 'Oh my God, that was terrible. Let's never do that again.' We need to work on normal working hours

per day. It can't be something that completely consumes us because it's not sustainable."

So what the program did is rather than go back and forth between prime contractors and subcontractors over emails or through contracting letters, they brought everyone in at the beginning of the contracting effort – not just the prime contractor.

"We brought everyone ... to the kickoff meeting to ensure alignment," he said. "So we can ensure everyone had the same mental model of what we are trying to accomplish rather than a telephone game two or three steps down. I told them to bring your concerns and questions.

"For example, one of the things the prime said when we started discussing the timeline for the proposal, they said, 'Well, we have a lot of assumptions,'" Denney continued. "OK, have you discussed those with your sub? 'No.' Well, they're sitting right next to you right now. Talk about assumptions and turn them into facts."

Instead of hashing those things out over email over a period of months, the program believes they were able to accomplish most of what they needed in an afternoon, Denney said.

Improving communication between the government, the prime contractor and the subcontractor also helps to resolve barriers that come up, Denney argued.

"We need to identify the barriers early and ask for that help so that leadership can get engaged and remove the barrier before it stops forward progress on it, so it's not a weakness," he said. "We've been taught our entire professional careers, 'Hey, handle this at your own level and take it to a point where [you can't go any further] and then elevate it.' Well, that's too late."

Coast Guard's Atlantic Commander Says More Attention to South Atlantic Nations Needed



Vice Adm. Stephen Poulin discusses what the changing security environment in Europe means for the U.S. Coast Guard. *LISA NIPP*

NATIONAL HARBOR, Md. – The widening political and economic effects of Russia's invasion of Ukraine may help focus attention on the strategic significance and strategic needs of the Atlantic Basin, a top U.S. Coast Guard commander says.

“The security environment in Europe has changed. I believe with that change will come a broad demand for the U.S. Coast

Guard,” Vice Adm. Stephen Poulin told a panel discussion of the maritime security needs of the region April 4 at Sea-Air-Space 2022.

“Most of our Arctic partners are in the Atlantic. We have to maintain strong relationships with our European neighbors,” said Poulin, commander of the Coast Guard’s Atlantic Area. There is “a growing thirst” for U.S. Coast Guard presence “in certain parts of Europe, especially in the Mediterranean.”

There is an interconnectedness between Mediterranean security and Atlantic security, Poulin said, noting the Coast Guard has built ties with maritime services in Greece, Malta, Italy, Lebanon, Jordan, Israel, Algeria and Tunisia. Four of six Fast Response Cutters have been delivered to Bahrain, where they are based with Patrol Forces Southwest Asia, the Coast Guard’s largest unit outside of the United States. The final two FRCs are slated for delivery this summer.

The Biden Administration’s \$13.8 billion fiscal 2023 Coast Guard budget includes \$40 million to support maritime security issues in the Atlantic Basin, including illegal, unregulated and underreported fishing, illegal trafficking and transnational crime.

Poulin said that move would allow him to achieve more persistent engagement with all the Atlantic nations “but in particular our African partners.”

“This isn’t just about IUU fishing,” Poulin said, noting as much as 5% of illegal narcotics flow leaves South America and winds up going through Africa or Europe. There is a growing threat of armed robbery and piracy in West Africa’s Gulf of Guinea, he said, adding “that is happening where there is a growing expectation in the future of higher offshore energy production.”

Another panelist, Lyston Lea II, principal adviser to the U.S. National Maritime Intelligence Integration Office, said the

prime security challenges facing the Atlantic Basin are climate change, illicit activities such as IUUF, and great power competition. Solutions, he said, include “meaningful unclassified data sharing and more partnerships between government, the private sector and allies.”

Lea, who said IUUF was a bad acronym and he prefers calling it “evil fishing,” said he was pleased to see so many policy makers taking IUUF seriously as an economic, political and environmental issue and not simply about “dead fish,” as one lawmaker told him in a contentious meeting in 2014.