User Integrated, Field Installed
Man-Portable SAS

Modular payload easily retrofits to existing Man-Portable Navy AUVs

2cm x 2cm constant resolution, up to a 200m swath

Low power MK III real-time SAS processor reduces PMA and enables onboard features such as embedded ATR

Advanced motion compensation and multipath suppression for superior performance in VSW

Below is the Man Portable SAS installed on a representative 7.5" diameter AUV

Kraken Robotics US Inc.
Boston, MA
www.KrakenRobotics.com
WHO WE ARE
The National Defense Industrial Association is the trusted leader in defense and national security associations. As a 501(c)(3) corporate and individual membership association, NDIA engages thoughtful and innovative leaders to exchange ideas, information, and capabilities that lead to the development of the best policies, practices, products, and technologies to ensure the safety and security of our nation. NDIA’s membership embodies the full spectrum of corporate, government, academic, and individual stakeholders who form a vigorous, responsive, and collaborative community in support of defense and national security. For more than 100 years, NDIA and its predecessor organizations have been at the heart of the mission by dedicating their time, expertise, and energy to ensuring our warfighters have the best training, equipment, and support. For more information, visit NDIA.org

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SCHEDULE AT A GLANCE
TUESDAY, FEBRUARY 2
Explore the Exhibitors
9:00 am – 4:10 pm EST

Keynote Address
10:00 – 10:40 am EST

Networking Chat Lobby
10:40 – 10:55 am EST

Networking Chat Lobby
1:45 – 2:00 pm EST

WEDNESDAY, FEBRUARY 3
Explore the Exhibitors
9:00 am – 4:30 pm EST

Networking Chat Lobby
10:40 – 10:55 am EST

Keynote Address
10:55 – 11:35 am EST

Networking Chat Lobby
1:25 – 1:40 pm EST
Welcome to the National Defense Industrial Association’s 2021 Virtual Expeditionary Warfare Conference! We are pleased and honored that you have chosen to use your valuable time to virtually join us as the conference and speakers explore the timely topic of “Distributed Maritime & Expeditionary Operations in a Peer-Contested Environment.” It has been an unusual and challenging year for the world, the United States, and all of us. Though we cannot attend in person this year, this conference gives us all the opportunity to virtually hear and discuss the views, progress, concerns, and needs of key government, Service, research, and think tank thought leaders in joint and naval expeditionary warfare. We are sure that you will find their views, presentations, and question-and-answer sessions particularly interesting and useful as you and your business seek to help the Department of Defense, Department of the Navy, and the Navy, Marine Corps, and Coast Guard team meet their challenges and bridge their gaps with your timely and affordable ideas and solutions.

To facilitate the conference and assist each of us in our virtual experience, the Expeditionary Warfare Conference is utilizing Convene as our host platform. I ask that you take a few minutes in advance to familiarize yourself with Convene’s many features and operations to ensure that you have a fulfilling and rewarding virtual attendance experience. Our technicians will be standing by to field questions and resolve any connectivity issues. If challenges arise, please contact help@visiond.com.

Special thanks go to both our NDIA team and our conference planning team, led by Conference Chair CAPT Mark Rios, USN (Ret), of ATLAS North America, and Conference Co-Chair Terry McKearney of the Ranger Group. These highly capable teams adeptly shifted from a Fall 2020 in-person Expeditionary Warfare Conference to a Winter 2021 Virtual Expeditionary Warfare Conference without missing a beat. A special note of appreciation goes to our sponsors: Ingalls Shipbuilding, KGM Technologies, and Peraton.

Again, we thank you for your participation, sponsorship, and investment of time and ideas to assist the Department of Defense and the Services in improving their capabilities, forces, and technologies in the execution of distributed maritime and expeditionary operations in a peer-contested environment.

Once more: Welcome to the 2021 Virtual Expeditionary Warfare Conference!

Timothy Carl Hanifen
Major General, USMC (Retired)
Northstar Alternative Solutions, LLC
Releasable presentations will be available to view for 30 days after the conference ends. All registered attendees will be able to access the presentations within the virtual platform by using their personalized link.

You will receive via email a survey and list of participants (name and organization) after the conference. Please complete the survey to make our event even more successful in the future.

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In lieu of speaker gifts, a donation is being made to the Fisher House Foundation.

NDIA is committed to providing a professional environment free from physical, psychological and verbal harassment. NDIA will not tolerate harassment of any kind, including but not limited to harassment based on ethnicity, religion, disability, physical appearance, gender, or sexual orientation. This policy applies to all participants and attendees at NDIA conferences, meetings and events. Harassment includes offensive gestures and verbal comments, deliberate intimidation, stalking, following, inappropriate photography and recording, sustained disruption of talks or other events, inappropriate physical contact, and unwelcome attention. Participants requested to cease harassing behavior are expected to comply immediately, and failure will serve as grounds for revoking access to the NDIA event.

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Inside all REMUS Unmanned Underwater Vehicles (UUVs), the REMUS Technology Platform is the common, core technology that provides consistent, reliable performance across the REMUS family of systems. This platform is scalable across all classes of UUVs, from small to extra-large. The REMUS Technology Platform brings together open architecture, advanced autonomy, and reconfigurable modular payload and energy sections to allow the user to tailor the UUV to their specific mission needs.

OPEN ARCHITECTURE AND ADVANCED AUTONOMY

The REMUS Technology Platform is built on DDS middleware, with the vehicle and mission control system designed to follow Unmanned Maritime Autonomy Architecture (UMAA) standards while maximizing Modular Open Systems Architecture (MOSA) principles. This enables more rapid integration of sensors and capabilities through spiral upgrades. The platform is built off of the core, field-proven REMUS autonomy, allowing for overlay of advanced autonomy behaviors such as advanced mission planning and collaborative autonomy. Hardware and software development kits accelerate third party sensor and algorithm integration, which decrease development costs and timelines.

MODULAR AND RECONFIGURABLE

The REMUS Technology Platform provides advanced modularity, allowing the user to choose the payloads and energy sections that best suit their mission requirements. Reconfigurable hull sections with standard interfaces allow for third party or government payload integration. Compact and efficient core electronics were redesigned with cutting-edge processing capability and lower power consumption. The platform also allows swappable energy modules, a removable hard drive for rapid exfiltration of mission data, and toolless band clamps. The advanced modularity of the REMUS Technology Platform allows for lower development and lifecycle costs with faster and simpler maintenance and upgrades.

ENGINEERED FOR RELIABILITY

The REMUS Technology Platform was designed with reliability as a central requirement. Over 20 years of operation with more than 500 units sold to military, commercial, and academic organizations worldwide have helped to refine both the hardware and software into a solid, dependable platform. Selection of quality components and adherence to rigorous manufacturing and testing standards produce REMUS vehicles ready to endure the harsh operating environments where users need them.

To learn more about Technical Solutions, visit:

ts.d.huntingtoningalls.com
AGENDA

TUESDAY, FEBRUARY 2

9:00 am – 4:10 pm EST VIRTUAL EXHIBIT HALL

9:45 – 10:00 am EST WELCOME REMARKS
Gen Herbert “Hawk” Carlisle, USAF (Ret)
President and Chief Executive Officer, National Defense Industrial Association (NDIA)

MajGen Timothy Hanifen, USMC (Ret)
Chair, Expeditionary Warfare Division, NDIA
Chair, Northstar Alternative Solutions, LLC

10:00 – 10:40 am EST KEYNOTE: BUILDING TOMORROW’S NAVY & MARINE CORPS
Hon Thomas Harker
Acting Secretary of the Navy, U.S. Navy
Includes Q&A

10:40 – 10:55 am EST NETWORKING CHAT LOBBY

10:55 – 11:35 am EST NAVY DMO TODAY TO 2030
VADM Philip Sawyer, USN
Chief of Naval Operations, N3/N5, U.S. Navy
Includes Q&A

11:35 – 11:50 am EST EXPLORE THE EXHIBITORS
TAKE TIME TO VISIT OUR FEATURED EXHIBITORS

11:50 am – 12:30 pm EST DMO & MARINE EXPEDITIONARY OPERATIONS TODAY & TOMORROW (2025 TO 2030)
Gen David Berger, USMC
Commandant of the Marine Corps, Headquarters, U.S. Marine Corps
Includes Q&A

12:30 – 12:45 pm EST EXPLORE THE EXHIBITORS
TAKE TIME TO VISIT OUR FEATURED EXHIBITORS
12:45 – 1:45 pm EST
MARINE EXPEDITIONARY WARFARE GAPS: CHALLENGES & OPPORTUNITIES FOR INDUSTRY
LtGen Eric Smith, USMC
Commanding General, Combat Development Command, and Deputy Commandant, Combat Development & Integration, Headquarters, U.S. Marine Corps
VADM James Kilby, USN
Deputy Chief of Naval Operations, Warfighting Requirements & Capabilities, Office of the Chief of Naval Operations, U.S. Navy

1:45 – 2:00 pm EST
NETWORKING CHAT LOBBY

2:00 – 2:40 pm EST
FULL SPECTRUM MINE WARFARE: OPPORTUNITIES & NEEDS TO 2030 AND BEYOND
CAPT Robert “Bob” Baughman, USN
Director, Mine Warfare, Surface and Mine Warfighting Development Command
Includes Q&A

2:40 – 3:00 pm EST
EXPLORE THE EXHIBITORS
TAKE TIME TO VISIT OUR FEATURED EXHIBITORS

3:00 – 4:00 pm EST
PANEL: SHIPBUILDING PLAN TO SUPPORT EXPEDITIONARY OPERATIONS
Dr. Eric Labs
Senior Analyst, Naval Weapons & Forces, Congressional Budget Office
Ron O’Rourke
Naval Analyst, Congressional Research Service, Library of Congress
Includes Q&A

4:00 – 4:10 pm EST
CLOSING REMARKS
CAPT Mark Rios, USN (Ret)
Conference Chair, Expeditionary Warfare Division, NDIA
Senior Director, Strategy & Business Development, ATLAS North America

WEDNESDAY, FEBRUARY 3

9:00 am – 4:30 pm EST
VIRTUAL EXHIBIT HALL

9:45 – 10:00 am EST
WELCOME REMARKS
MajGen Timothy Hanifen, USMC (Ret)
Chair, Expeditionary Warfare Division, NDIA
Chair, Northstar Alternative Solutions, LLC
10:00 – 10:40 am EST  TECHNOLOGY-DRIVEN CHANGES IN CHARACTER & CONDUCT OF WARFARE TODAY TO 2030  Gen John Allen, USMC (Ret)  President and Chief Executive Officer, The Brookings Institution  Includes Q&A

10:40 – 10:55 am EST  NETWORKING CHAT LOBBY

10:55 – 11:35 am EST  KEYNOTE: CLOSING THE GAPS & BUILDING THE AFFORDABLE N-MC TODAY & TOMORROW TO 2030  E. Anne Sandel, SES  Acting Principal Civilian Deputy to the Assistant Secretary of the Navy for Research, U.S. Navy  Executive Director, Office of Naval Research, U.S. Navy  Includes Q&A

11:35 – 11:50 am EST  EXPLORE THE EXHIBITORS  TAKE TIME TO VISIT OUR FEATURED EXHIBITORS

11:50 am – 12:30 pm EST  DESIGNING THE NEXT-GENERATION SURFACE & AMPHIBIOUS COMBATANT: CAPABILITIES, CHALLENGES, & OPPORTUNITIES  VADM William “Bill” Galinis, USN  Commander, Naval Sea Systems Command  Includes Q&A

12:30 – 12:45 pm EST  EXPLORE THE EXHIBITORS  TAKE TIME TO VISIT OUR FEATURED EXHIBITORS

12:45 – 1:25 pm EST  DISTRIBUTED GLOBAL & THEATER MILITARY LOGISTICS CHALLENGES, TECHNOLOGIES, & SOLUTIONS TODAY TO 2030  MajGen David Maxwell, USMC  Vice Director, Logistics, J4, Joint Chiefs of Staff  Includes Q&A

1:25 – 1:40 pm EST  NETWORKING CHAT LOBBY

1:40 – 2:20 pm EST  DMO & EXPEDITIONARY WARFARE TECHNOLOGY DEVELOPMENT CHALLENGES FOR INDUSTRY TO 2030  BGen Benjamin Watson, USMC  Vice Chief of Naval Research, Office of Naval Research, U.S. Navy  Commanding General, Warfighting Laboratory, U.S. Marine Corps  Includes Q&A
2:20 – 2:35 pm EST

**EXPLORE THE EXHIBITORS**

TAKE TIME TO VISIT OUR FEATURED EXHIBITORS

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2:35 – 3:15 pm EST

**INFORMATION WARFARE & ALL DOMAIN CIVIL & MILITARY DECEPTION TODAY TO 2030**

Dr. David Bray  
Director, GeoTech Center, The Atlantic Council

Dana Hudson  
President and Chief Executive Officer, c6 Strategies, LLC

Alex Ruiz  
Strategic Advisor, Cyber & Information Warfare, Office of the Under Secretary of Defense for Research & Engineering

*Includes Q&A*

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3:15 – 3:30 pm EST

**EXPLORE THE EXHIBITORS**

TAKE TIME TO VISIT OUR FEATURED EXHIBITORS

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3:30 – 4:45 pm EST

**PANEL: IMPACT OF ARTIFICIAL INTELLIGENCE & UNMANNED SYSTEMS ON FUTURE FORCE STRUCTURE & ACQUISITIONS**

Sam Lewis  
President and Chief Operating Officer, Spatial Integrated Systems  
*Moderator*

BGen Eric Austin, USMC  
Director, Capabilities Development Directorate

LtGen Michael Dana, USMC (Ret)  
Industry Advisor, Future Warfare

Dorothy Engelhardt  
Deputy Assistant Secretary of the Navy, Ships & Unmanned Systems, U.S. Navy

Nand Mulchandani  
Chief Technology Officer, Joint Artificial Intelligence Center, U.S. Department of Defense

*Includes Q&A*

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4:45 – 4:55 pm EST

**CLOSING REMARKS**

CAPT Mark Rios, USN (Ret)  
Conference Chair, Expeditionary Warfare Division, NDIA  
Senior Director, Strategy & Business Development, ATLAS North America

MajGen Timothy Hanifen, USMC (Ret)  
Chair, Expeditionary Warfare Division, NDIA  
Chair, Northstar Alternative Solutions, LLC

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4:55 pm EST

**CONFERENCE ADJOURNS**
HON THOMAS HARKER
Acting Secretary of the Navy
U.S. Navy

Thomas W. Harker assumed duties as the Acting Secretary of the Navy Jan. 20, 2021. Previously, he was performing the duties of the Under Secretary of Defense (Comptroller). Mr. Harker was sworn in as Assistant Secretary of the Navy (Financial Management and Comptroller) Jan. 2, 2018.

Tom Harker graduated from the University of California Berkeley in 1990 and received an MBA from the University of Miami in 2000. A 20 year veteran of the U.S. Coast Guard, his career was marked by operational success including multi-ton drug seizures on the high seas. Ashore, he was assigned positions of increasing responsibility in budget, acquisition, internal controls, audit readiness and financial reporting. His leadership of the Coast Guard audit readiness and internal control program contributed to the Department of Homeland Security moving from 10 successive disclaimers to a clean audit opinion. Prior to leaving active duty, Harker served at Office of Management and Budget (OMB) where he led the Campaign to Cut Waste, updated OMB Circular A-136 and drafted government-wide financial policy.

Subsequently, Harker served as an auditor and consultant at a large public accounting firm, auditing CFO Act agencies (including the first audit of the United States Marine Corps). He also assisted the Joint Staff with developing and implementing an audit readiness plan, and improved Coast Guard’s accountability for property as a consultant. Upon his return to government, Harker led the Coast Guard financial reporting, policy, property management and audit readiness efforts. His efforts enabled the Department of Homeland Security to obtain consecutive clean audit opinions. Harker was appointed to the Senior Executive Service at the Department of Veterans Affairs (VA) as the Associate Deputy Assistant Secretary for Financial Policy. While in this position, he served as the Acting Principal Deputy Assistant Secretary for Management at the VA, and as the Acting Deputy CFO for Accounting and Financial Management at the Department of Housing and Urban Development.

STAY UP TO DATE ON CHANGES AND TRENDS IN REGULATORY POLICY WITH NDIA’S POLICY BLOG

The NDIA Policy Team monitors, advocates for, and educates government stakeholders on policy matters of importance to the defense industrial base. Help ensure the continued existence of a viable, competitive national technology and industrial base by keeping up with the latest reforms, rules, and regulations.

Read more at NDIA.org/PolicyBlog
E. ANNE SANDEL, SES

Acting Principal Civilian Deputy to the Assistant Secretary of the Navy for Research, U.S. Navy Executive Director, Office of Naval Research, U.S. Navy

Ms. Sandel assumed the duties of Executive Director, Office of Naval Research in July 2018 where she is responsible for oversight of the coordination, execution, and promotion of science and technology for the United States Navy and Marine Corps.

Ms. Sandel was appointed to the Senior Executive Service during May 2000 for the position of Deputy Program Manager for the newly established Program Executive Office (PEO) Carrier Programs Office (PMS 378) where she was responsible for the CVN 77 Nimitz Class Aircraft Carrier Acquisition Program, the CVNX (1 & 2) Future Carrier Acquisition Programs, (Later the Ford Class) as well as all aircraft carrier technology development.

In October 2002, the ASN(RDA) assigned her to be the founding Executive Director, for the PEO Integrated Warfare Systems (PEO IWS), responsible for realigning all Navy surface ship and submarine combat systems, missiles, radars, launchers, electronic warfare systems, anti-submarine warfare systems, and gun systems from five PEOs into a single integrated organization.

During January 2004, Ms. Sandel was requested by the ASN(RDA) to be the first Deputy Assistant Secretary of the Navy for Integrated Warfare Systems (DASN IWS), exercising advisory and oversight responsibilities for the cost, schedule, and performance of all surface ships, submarines, and Marine Corps combat systems, weapon systems, electronic warfare systems, shipboard radars, and Navy missile defense programs. She was the DASN responsible for initial implementation of Open Architecture within the DON.

Ms. Sandel was requested by ASN (RDA) during August 2008 to be the Program Executive Officer for Littoral, Mine Warfare (PEO LMW). She was responsible for design, development, production, testing, and delivery of all warfighting capabilities for the littoral battlespace as well as lifecycle support. She led eight program offices comprised of over 220 programs, including multiple Acquisition Category I programs and several SOCOM initiatives addressing urgent warfighting needs.

Ms. Sandel was later requested by ASN(RDA) to lead the transformation of PEO LMW into the newly established PEO Littoral Combat Ships (PEO LCS) where she was responsible for establishing the organizational structure, operating precepts, and business processes necessary to integrate Littoral Combat Ship development and construction programs, mission modules, and the newly created Fleet Support Program Office.

In November 2012, Ms. Sandel reported for duty as Executive Director, NAVSEA Surface Warfare Maintenance and Modernization, responsible for Fleet support of all Navy non-nuclear surface ships (surface combatants, amphibious, auxiliary, mine warfare and patrol craft), inactive ships, foreign military fleet support, and ship transfer programs. Her management oversight responsibility for the Surface Warfare portfolio exceeded $15 billion.

Ms. Sandel was later requested to take over the role of Executive Director, Navy International Programs Office in March 2016 where she was responsible for oversight of the development, planning, and implementation of the Department of the Navy’s International Programs, primarily in the areas of Security Cooperation, Cooperative Production, Research and Development, Technology Transfer, and Strategic Planning.

She began her professional career with the Newport News Shipbuilding Engineering Team where she worked aircraft carrier and submarine design & production. She was recruited to join the Naval Sea Systems Command (NAVSEA) Engineering Directorate in 1988. Ms. Sandel served in a series of progressively more responsible positions associated with design and development of surface combatants, aircraft carriers, submarines, polar icebreakers, and mobile offshore base design, construction and management.

Ms. Sandel’s personal awards include the Silver Medal Award, Association of Scientists and Engineers, the Navy Meritorious Civilian Service Award (3 Awards), the Navy Superior Civilian Service Award (3 Awards), and the Navy Distinguished Civilian Service Award (3 Awards).
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KGM Technologies

At KGM Technologies, Our Mission is Innovation. Many of the systems and technologies used by our front-line Military have provided decades of service without significant innovation. Our mission at KGM Technologies is to change that reality.

KGM Technologies is an 07/02 FFL service-disabled veteran owned leading-edge technology and manufacturing company. We specialize in Research and Development, Small Arms Suppressor Technology, Advanced Weapons Systems, Material Science Surface, and Coatings Technologies, as well as having a state-of-the-art 37,000sqft OEM manufacturing facility.

KGM has become the largest weapon suppressor company in the US, currently manufacturing over 25,000+ small arm suppressors and componentry per month for civilian and military use. With a vast range of calibers available from .22LR to .50 BMG.

Bringing 75+ years of high-level R&D experience to the table makes us extremely capable of diving into the deepest-rooted projects for an evolving battlespace.

EXHIBITORS
AN ONLINE COMMUNITY FOR
DEFENSE PROFESSIONALS

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• Foster discussion, promote innovation, and grow your network

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