

Exhibitor Directory

REPTX Expeditionary Sustainment & Repair (ESAR) Workshop

Norfolk, Virginia



Welcome From NCMS President and CEO

I'm honored to warmly welcome all the government, industry, and academic participants at this REPTX Expeditionary Sustainment and Repair Workshop, the third REPTX event NCMS has facilitated. We are delighted to partner with Naval Systems Command (NAVSEA) and their Naval Systems Engineering and Logistics Directorate Technology Office—also known as NAVSEA 05T—on this initiative.

This workshop brings innovative maintenance and sustainment technologies directly to those who strive to keep our warfighters at maximum readiness levels. The unique structure of the event offers multiple opportunities for technology providers to collaborate and innovate on-the-fly. Workshop activities will immerse providers' solutions in a live repair environment, enabling them to demonstrate their effectiveness through practical work.

NCMS's goal is to facilitate a vibrant exchange of knowledge, assist in filling unmet needs, and promote and accelerate technology implementation to the US Armed Forces and onward to commercial markets. Through our Commercial Technologies for Maintenance Activities (CTMA) Program, NCMS thoughtfully brings together industry and government to achieve this purpose. Likewise, NCMS's goals are fully aligned with this workshop's objectives. We look forward to continuing to facilitate future REPTX opportunities NAVSEA 05T continues to plan. These collaborative events are a great example of what we can achieve working together.

Sincerely,

A handwritten signature in black ink, appearing to read "Lisa Strama". The signature is fluid and cursive, with a long horizontal flourish at the end.

Lisa Strama
NCMS President and CEO

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About NCMS

The National Center for Manufacturing Sciences (NCMS) is a cross-industry technology development consortium, dedicated to improving the competitiveness and strength of the US industrial base. As a member-based organization, it leverages its network of industry, government, and academia partners to develop, demonstrate, and transition innovative technologies efficiently, with less risk and lower cost.

NCMS enables world-class member companies to work collaboratively with other members on new opportunities—bringing together highly capable companies with providers and end users who need their innovations and technology solutions. NCMS members benefit from an accelerated progression of idea creation through execution.

NCMS was formed in 1986 to strengthen North American manufacturers and respond to global competition. The balance between long-standing experience and fresh innovation requires a unique intersection of highly capable companies, access to efficient, effective contracting vehicles and relationships built on credibility and trust.

Through NCMS, companies with innovative technologies can collaborate with end users and develop solutions to meet their requirements. NCMS has long-established relationships, a stellar reputation, and credibility among end users. Coupled with our collaborative power to partner small R&D companies with top-tier OEMs, the results are innovations and opportunities to develop and refine and provide user-centric solutions.

For more information about NCMS, our various contract vehicles, or our membership information, please visit www.ncms.org.



About the CTMA Program

The Commercial Technologies for Maintenance Activities (CTMA) has a relentless focus on defense maintenance, sustainment, and logistics. Created in 1998, CTMA is a partnership with the Office of the Deputy Assistant Secretary of Defense, Materiel Readiness (ODASD-MR) and NCMS. Its objective is to ensure American warfighters and their equipment are ready for any situation, with the most up-to-date and best-maintained platforms, data, and tools available. CTMA provides technology demonstrations, evaluations, and validations in support of reliability and sustainment to benefit the US military, industrial base, and the public good.

CTMA offers an agile and streamlined contracting vehicle in partnership with industry and academia to advance the development, integration, and use of commercial sustainment technologies and processes which can improve warfighter readiness.

CTMA Benefits:

- **Agile Collaboration:** A proven way of quickly organizing initiatives that meet the need of the government sponsor.
- **Risk Reduction:** The CTMA project model validates requirements prior to acquisition—delivering project results directly to the government sponsor and end user.
- **Streamlined Implementation:** A unique platform for industry and the DOD to work in collaboration to find and evaluate technologies at best cost.
- **Technology Showcases:** Delivering the latest commercial technology breakthroughs directly to the DOD's doorstep.

CTMA Focus Areas:

- Advanced / Additive Manufacturing
- Business IT and Analytics
- CBM+ / Predictive Maintenance
- Coatings and Corrosion Prevention
- Energy, Environmental, Health and Safety
- Enhanced Inspection
- Facilities and Industrial Process Modernization
- Reliability Improvement (Hardware)
- Workforce Development / Visualization

About REPTX Expeditionary Sustainment and Repair (ESAR) Workshop

Ever since the Naval Sea Systems Command Technology Office (NAVSEA 05T) announced the first Repair Technology Exercise (REPTX) in 2022, industry and academic partners have enthusiastically joined in these new opportunities to assess, grow, and field technology-based solutions in live environments.

NAVSEA 05T has continued to plan REPTX events throughout 2024 to identify ready-to-field sustainment and repair capabilities. This current exercise, the REPTX Expeditionary Sustainment and Repair (ESAR) Workshop, is intended to evaluate the viability and efficacy of products and services that expand the Navy's ability to perform expeditionary maintenance operations for participation at fleet events/exercises. NAVSEA ultimately intends to lease and/or purchase solutions for supporting forward deployed Navy assets.

Over the next 5 days, NAVSEA 05T will evaluate portable solutions that can perform hull, mechanical and electrical (HM&E) sustainment/maintenance, repairs, and/or manufacturing

capabilities. Workshop activities will immerse the solutions in a live repair environment, enabling providers to show their effectiveness through practical work. On-site evaluations will assess each solution's capacity to fulfill the requirements, and constructive feedback will be shared.

Later in the month (February 23, tentatively) the NAVSEA ESAR team will provide feedback from their demonstration reviews of industry and government participants. Selected solutions will receive invitations to follow-on events.

Event sponsor NAVSEA 05T comprises one of 16 groups within the NAVSEA Engineering & Logistics Directorate, which is responsible for providing the engineering and scientific expertise, knowledge, and technical authority necessary to design, build, maintain, repair, modernize, certify, and dispose of the Navy's ships, submarines, and associated warfare systems. All NAVSEA directorates together work to meet the NAVSEA mission, to repair, maintain, and modernize the US Navy fleet.

Participant Schedule, January 30

0600					0600
0630					0630
0700			Advanced Ceramic Fibers, LLC (ACF) (Brett)	Nabors Energy Transition Solutions (Mathew)	0700
0730					0730
0800	ATE Corp (Ben)				0800
0830					0830
0900		3M COMPANY (Bryan)	Direct Dimensions, Inc. (Ben)	TDA Research (Mathew)	0900
0930					0930
1000	Fiber QA (Bryan)				1000
1030				Atmospheric Plasma Solutions, Inc (Phillip)	1030
1100		Atlasat (Bryan)	Endura Lock (Brett)	DUST Identity, Inc. (Jeff)	1100
1130					1130
1200					1200
1230					1230
1300		ENFASCO INC. (Bryan)	ENRX Corporation (Phillip)	Fairlead (Dan)	1300
1330					1330
1400	Huntron (Bryan)				1400
1430				G.C. Laser Systems Inc (Phillip)	1430
1500		Flora Coatings (Bryan)	GasTOPS Inc. (Brett)	IS4S (Dan)	1500
1530					1530
1600	KITCO Fiber Optics (Bryan)				1600
1630				HyVal Industries, Inc. (Dan)	1630
1700					1700

Participant Schedule, January 31

0600					0600	
0630					0630	
0700		Electronics Service, LLC (Ben)	Hytorc (Brett)		Laser Photonics (Phillip)	0700
0730						0730
0800	Keyport - St. Juliens Creek Detachment			Penn State Applied Research Laboratory (Jeff)		0800
0830						0830
0900		Oros / Solar Core (Bryan)	Layher (Phillip)		Mactech (Dan)	0900
0930						0930
1000	KSARIA Service Corporation (Bryan)			RPB Safety (Phillip)		1000
1030						1030
1100			Newport News Shipbuilding (Brett)		VRC Metal Systems, LLC (Jeff)	1100
1130						1130
1200						1200
1230						1230
1300	Sciperio (Bryan)				FireIce Solutions w/RVA Fire Chief (Phillip)	1300
1330						1330
1400		Sunrez Corp. (Bryan)	PPEDM (Brett)	SPEE3D (Jeff)		1400
1430						1430
1500	Symbiosis (Bryan)					1500
1530						1530
1600		Ombra (Brett)				1600
1630						1630
1700						1700

**Exhibitor Directory
for REPTX Expeditionary
Sustainment and Repair Workshop**

ADHESIVES


3M Company

3M Science Allied to Life, Abrasives, Adhesives and Tapes, PPE

3M has a long history of helping the Department of Defense solve their toughest challenges. Our resources, technology, and expertise help create advanced solutions to keep military’s assets mission ready, keep people safe and help improve productivity and reduce costs. Whether working directly with the DOD or with the defense industrial base, we have solutions across the entire continuum of tactical military platforms and warfighter.

Contact

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<p>Problem</p> <p>MRO, and speed of MRO, of US Navy assets has been a continuous issue, especially in contested / battlefield situations. Being able to repair a Navy asset enough to continue to stay on station is of paramount importance. Final, or better repairs at port can be made at a later date.</p>	<p>Benefits</p> <ul style="list-style-type: none"> • Our expertise and technology have helped create advanced solutions to keep the military’s platforms mission ready while reducing costs and minimizing down time. Most importantly, we help keep our military’s most critical assets safe.
<p>Technology Solution</p> <ul style="list-style-type: none"> • 3M has a long history of helping the DOD stay ahead of the competition. • We bring 120 years experience working with commercial industry to help solve design and manufacturing challenges for the defense industrial base. • From signature management, to bonding & assembly, surface protection, lightweighting, noise/vibration/harshness, thermal management, robotics, and more you can trust our experts to do everything they can to help. 	

ADHESIVES

Enfasco Inc.

ESAR Adhesive Mounted Fastener Repair Kit

Click Bond Adhesive Mounted Fasteners have been utilized in the Aerospace, Naval and Marine, and industrial marketplace for over 30 years. In December 2022, NAVSEA issued drawing 803-8436636A allowing the use of adhesive mounted studs to secure items (with restrictions) to all US Navy Combatants. ENFASCO has expanded upon the current NAVSEA approval into a more comprehensive portable kit that provides ship personnel the flexibility they need to secure critical infrastructure to the ship, or a grappling hook to a drone. It is also usable for repairing cracks, or securing emergency berthing or COVID-19 HEPA filters. Our adhesive fastener technology has gone through rigorous testing such as Mil901D Grade A Shock, MIL-STD-167A vibration testing, and many different salt fog and fluid immersion testing.

Contact

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Problem

The risks of welding and hot work on US Navy ships have led to catastrophic fires, schedule delays, and bodily injury. Welding incurs burdensome hot work costs, fire watches, and gas-freeing of tanks, all of which can delay the readiness of the ship.

Benefits

ENFASCO’s ESAR Adhesive Mounted Fastener Repair Kit solution allows faster installation of critical systems while providing greater flexibility to ship personnel to make repairs on demand and save schedule without HOT WORK.

Technology Solution

ENFASCO’s ESAR Adhesive Mounted Fastener Repair Kit will allow ship personnel to provide emergency repairs at sea or at port with structural adhesive fasteners without incurring the risk of hot work or gas-freeing of fuel tanks.



ADHESIVES


Sunrez Corp.

Sunrez Prepreg Repair Patches

Our prepregs can be used in the field to repair structural components of a wide variety of military equipment. They come premixed and measured and can be applied with minimal training. No mixing or measuring need be done on site. They have been used to repair vehicles during Desert Storm and to address cracks in the superstructure of Ticonderoga class ships.

Contact

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<p>Problem</p> <p>Damage occurs regularly during normal and unusual operations creating a need for field repairs.</p>	<p>Benefits</p> <p>Our patches are an extremely easy to use structural repair with no special storage requirements, no special training required and excellent mechanical properties. They have good adhesion to steel and aluminum substrates. They cure fully with post-cure, are usable at a wide variety of ambient temperatures and have a shelf life of a year.</p>
<p>Technology Solution</p> <p>Sunrez Patches are preimpregnated fiberglass cloth with a non-flammable resin system pre-formulated with UV initiators to cure rapidly and completely in sunshine or with a UV light.</p>	


ADVANCED MANUFACTURING (MOBILE/DEPOT)

Dante Valve
Relief Valve Repair and Testing

Relief valve repair and testing in a mobile environment is available for systems currently in use in a variety of industries. This is primarily used on smaller valves that have lesser capacity requirements for certification. Navy valves have larger capacity requirements that offer challenges for testing. Tank capacity for tests is a concern.

Contact

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<p>Problem</p> <p>Is mobile testing the right solution? With offices on both coasts, Dante Valve can offer fast turnaround service to the fleet. We have hundreds of valves onboard every platform in the US Navy. How do we partner with NAVSEA to streamline procurement and support the warfighter?</p>	<p>Benefits</p> <p>Benefits for any and all these solutions include less down-time, quick turnaround, and reduced cost as emergent repairs are minimized.</p>
<p>Technology Solution</p> <p>Working with the Navy, offering a rotatable pool for our products is one solution. Mobile repair platforms either operated by Dante Valve or sold to the Navy is an additional solution. Seminars and training modules for the repair departments onboard ships would increase the competency. Preventive maintenance is critical to ensure the safety of each system and the personnel that operate in these environments.</p>	

ADVANCED MANUFACTURING (MOBILE/DEPOT)


Direct Dimensions, Inc.

Portable 3D Scanner for Documentation and Analysis

Direct Dimensions is proposing the use of a unique portable handheld 3D scanning technology for use for any repair and sustainment activity where documentation of geometry is needed. This solution is extremely easy to use, fully developed and available, and provides an accurately measurable 3D model of the object or scene. This solution is TLR & MLR 9, meaning it is completely ready to deploy in the field today by any personnel in any situation in any location.

Contact

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<p style="text-align: center;">Problem</p> <p>Direct Dimensions, Inc. (DDI) has been a world leader in 3D scanning solutions for nearly 30 years. We help solve 3D problems using a wide variety of 3D scanning and measurement technology. Essentially we can help you digitize almost any real-world physical object, part, assembly, site, or person in 3D for subsequent use in design, fabrication, analysis, or visualization—specifically for sustainment and repair.</p>	<p style="text-align: center;">Benefits</p> <p>No question documentation is needed for any sustainment or repair related process. Accurate dimensionally measurable documentation, or an as-built 3D CAD model, is extremely beneficial for the design and analysis of any repair. As a company that has been providing solutions to 3D problems for almost 30 years, we know full well how critical 3D documentation is and how easy and low cost this solution provides. The result of this scanner really is almost too good to believe and can be deployed across so many Navy applications.</p>
<p style="text-align: center;">Technology Solution</p> <p>This proposed 3D scanning solution is ideal for field use by technicians in almost any situation—on a ship, in the shop, in the field, at a vendor, etc. It is extremely portable and very easy to use. No setup is required and no warm up time. You simply turn the scanner on and start scanning. It can run in almost any light situation. It is extremely fast in acquiring data, and all operations are self contained on the scanner including power, data collection and storage, and operational controls. The onboard screen even provides a preview of the area captured to confirm completeness. With all our years of 3D scanning in extremely challenging situations, we can safely say this is by far the best scanning system we have ever used.</p>	

ADVANCED MANUFACTURING (MOBILE/DEPOT)

DUST Identity, Inc.

DUST-in-a-Box

The Diamond Unclonable Security Tag (DUST) Solution is a physical authentication technology that extracts an unclonable identity layer from the random configuration of microscopic diamond crystals. These DUST object markers are discreet, durable, clone-proof, and can ensure part authenticity, provide tamper evidence for enclosures, and create a secure binding between physical parts and their digital data.

In the context of the US Navy, this capability will enable maritime operators to mark, scan and catalog critical military components and parts and ensures that these components can be tracked through both maintenance and operational custody chains. This new capability will also serve to link critical, controlled components and parts to the objective quality evidence (OQE) associated with them, so that their pedigrees, fabrication and testing certifications, and assembly and

maintenance repair records are readily available to fleet operators and system maintainers through a secure database.

Contact

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Problem

The US Navy requires a secure method to trace the pedigree and provenance of Navy asset parts and components and to allow fleet operators and system maintainers to rapidly access Ready for Issue (RFI) status, sensor and instruments calibration data, electronic sensor data, assembly instructions, maintenance repair, and configuration management records. Without such unique, unclonable serialization, operators and In-Service Engineering Agents (ISEA) are unable to capture the identity needed to accurately track the provenance of individual components and maintain near-real time configuration management.

Benefits

The DUST Solution will allow operators and maintainers to accurately authenticate, verify, and easily retrieve the life cycle history of every asset in a secure and unattributable manner. Not only do the DUST markings themselves provide operational efficiency in the field when trying to identify parts, track launch system configuration, and manage spares, but the digital systems behind DUST’s persistent non-attributable markings can provide a centralized database to track valuable data points over time, which can be utilized to derive valuable insight to optimize launch system performance and increase efficiency of managing spares across supply chain.

Technology Solution

The DUST-in-a-Box is a comprehensive solution that provides fleet operators the ability to securely access all pertinent maintenance and repair, configuration, and full life cycle data of assets within a single, portable device. It is flexible enough to be applied to an asset during its manufacturing process, within a shipyard, or on mission. DUST-in-a-Box is an air gapped, federally approved Panasonic Toughbook imaged with DUST Identity’s proprietary software, DICE, used for tag reading and asset/configuration management. The toughbook’s image is DISA STIG compliant, and was designed to maximize capability while minimizing stowage with all contents of the system contained in a single pelican box.



ADVANCED MANUFACTURING (MOBILE/DEPOT)


Elementum 3D

Reactive Additive Manufacturing

Reactive Additive Manufacturing (RAM) is a patented material technology from Elementum 3D that enables 3D printing of high performance alloys that would otherwise suffer from major cracking issues during processing. In addition to making materials printable, RAM also strengthens alloys to exceed wrought alloy performance in many cases.

Contact

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<p style="text-align: center;">Problem</p> <p>The Navy seeks to use additive manufacturing, or 3D printing, to quickly print reliable spare parts for maintaining critical legacy shipboard systems and reduce down time, but the range of applications is limited by the small range of printable metal materials with the required properties.</p>	<p style="text-align: center;">Benefits</p> <p>The benefits of RAM are enhanced material strength and hardness, increased ease of printing by making materials more forgiving to process variations, and the ability to use familiar legacy alloys with predictable, consistent material properties for spare parts. Print speed and surface finish are also enhanced in RAM-containing alloys.</p>
<p style="text-align: center;">Technology Solution</p> <p>Elementum 3D's RAM technology solves cracking issues during 3D printing of common high performance aluminum and nickel superalloy materials such as Al6061, Al2024, Al7050, and Haynes 230, thereby expanding the range of materials available for additive manufacturing. RAM can also be used to strengthen printable materials like Inconel 625 to reduce the complexity of post-processing heat treatments and expand their application range.</p>	

ADVANCED MANUFACTURING (MOBILE/DEPOT)
Penn State Applied Research Laboratory
MARS – Multifunctional Automated Repair System

The Multifunctional Automated Repair System (MARS) provides an automated, turn-key, fully portable preparation, repair, and inspection capability for emergent facilities including forward operating bases, ships, and shipyards. The MARS is configurable for a variety of applications from in-theatre battle damage repair and shipyard maintenance to in-theatre use at forward-deployed locations and features video tutorials for quick, effective training and fielding.

Contact

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<p>Problem</p> <p>There is more work than workforce and time in traditional depots. In battle scenarios, sailors need more adaptable and functional tools to solve problems. The cost of corrosion mitigation and Navy asset repair and routine maintenance exceeds \$3B annually. Assets are being used beyond design life and deployments last longer which increases the maintenance cycle. Only a limited amount of maintenance and repair is performed in-situ and much of the work is labor intensive. Typically, components must be removed from assets for repair. Innovation and new technologies are needed to reduce maintenance cost and time.</p>	<p>Benefits</p> <p>MARS combines a number of maintenance technologies, allowing one person to perform several different operations. This reduces time and costs and greatly improves the ability to perform forward maintenance. Mobile and magnetic bases allow the robot to operate in horizontal, vertical or inverted positions. MARS places new technology in the hands of next generation sailors to develop new skills and provides benefits to future automation across Navy maintenance via end effectors, programming, fielding, and training. The system is easily scalable to address a wide range of sustainment and repair processes and can be integrated with existing robots to reduce implementation costs and reduce development time expanding the system.</p>
<p>Technology Solution</p> <p>A suite of COTS tools and end effectors have been integrated with the MARS system including grinding, plasmablast, cold spray, welding, non-destructive evaluation, and paint touch up. Individual components are man-portable meeting the Navy's 50-100 lb requirements. Additionally, many parts of the system have been designed to fit through a 22" round hatch. The MARS has been used to successfully perform two Navy expeditionary repairs. The system features video-style training modules for quick and effective instruction. The system is easily-configurable for a variety of solutions and ships in as few as 4 Pelican cases with the full system shipping in a 20' Conex container with cold spray support equipment, including nitrogen generation in additional 10' Conex container.</p>	

ADVANCED MANUFACTURING (MOBILE/DEPOT)

SPEE3D

XSPEED

XSPEE3D is the largest format metal 3D printer offered by SPEE3D. Developed based on field trials with the Australian Army, this expeditionary model is ruggedized for field deployment. It has the ability to print large parts up to 88 lbs. or \varnothing 35"x30" in hours, not days. The XSPEE3D provides a containerized and robust metal additive manufacturing capability that contains all the necessary functions to make strong, durable metal parts on demand and at the point of need.

Contact

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Problem

Defense organizations can eliminate reliance on global supply chains fraught with delivery risks and long wait times when sourcing critical replacement parts for maintenance and repair in the field. Proven and tested with the US, UK, and Australian militaries, SPEE3D's automated Cold Spray Additive Manufacturing (CSAM) process supports military self-reliance by enabling defense organizations to manufacture strong, durable metal parts on-demand at the point of need. With XSPEE3D, military forces and organizations can enhance productivity and improve inventory management by producing critical metal parts quickly, exactly where and when they're needed.

Benefits

The XSPEE3D integrates the company's patented Cold Spray Additive Manufacturing (CSAM) process with ruggedized hardware, making it ideal for military use to support maintenance and repair in remote locations. It delivers a metal manufacturing capability that until now has been unachievable. XSPEE3D offers a reliable solution for rapid prototyping and producing metal parts in a wide range of materials, including copper, stainless steel, and high-strength aluminum.

Technology Solution

XSPEE3D includes the metal printer and all auxiliary equipment within a single unit, making it as easy to transport as a standard 20ft shipping container. XSPEE3D can print metal parts up to 35 inches in diameter and 30 inches in height, weighing up to 88 lbs. With a build rate of 3.5 oz per minute and a deposition spot size of 0.24 inches, the XSPEE3D can manufacture industrial-grade metal parts in minutes or hours, rather than days.



ADVANCED MANUFACTURING (MOBILE/DEPOT)

VRC Metal Systems, LLC
High-Pressure Cold Spray


CAMP Site (Coldspray Advanced Manufacturing Portable Site) is a self-supporting portable cold spray facility providing all the necessities to perform high pressure cold spray applications in the field. The system provides a fully functioning cold spray booth with robotics, dust collection, cold spray system, power generation, process gas generation, tools, and space to produce top-quality cold sprayed parts. The only thing required is a water source for the dust collector.

Active Leak Repair is a technique developed and patented by VRC which can be utilized to repair metal piping that has developed a leak through battle damage, corrosion, or other failure. Utilizing the VRC Dragonfly system and associated accessories, VRC will perform a leak repair

demonstration on a pipe with an active leak under pressure using high pressure cold spray.

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<p style="text-align: center;">Problem</p> <p>CAMP Site:</p> <ul style="list-style-type: none"> • DOD needs additive repair capability in forward locations. <p>Active Leak Repair:</p> <ul style="list-style-type: none"> • DOD needs simple solutions for quick repairs on battle damage, corrosion, and wear and tear. • Larger vehicles and vessels have a need for in-situ repair on parts that are very difficult to remove. 	<p style="text-align: center;">Benefits</p> <p>CAMP Site:</p> <ul style="list-style-type: none"> • Can provide forward-deployed cold spray capability to remote areas. • Enough gas storage to spray continuously for up to 8 hours. • Can be used in conjunction with other forward deployed repair technologies to ease burden on supply chains. <p>Active Leak Repair:</p> <ul style="list-style-type: none"> • Having the ability to repair an active leak on a ship while underway has the potential to save lives as well as reduce burden on supply chains depots/ports. • In-situ repair creates a reduction in labor and materials costs.
<p style="text-align: center;">Technology Solution</p> <p>CAMP Site:</p> <ul style="list-style-type: none"> • Provides forward deployable cold spray additive technology. • Cold Spray facility in a box. • Onboard power and gas generation. • Built into ISO-standard sea containers for simple shipping. <p>Active Leak Repair:</p> <ul style="list-style-type: none"> • VRC Dragonfly was designed to get inside tight spaces and reach the unreachable. • Provides in-situ repair capability to hard-to-reach places. • Simple to operate and maintain. 	

ELECTRICAL

Altair Engineering Inc.
Altair Engineering – EEVision


Altair Engineering Inc. has applied its advanced visualization technology used in the semiconductor industry to the public sector. This has resulted in an online, system and wire harness debug and visualization tool called EEVision, which incorporates Google-style search and multiple functions for rapid issue resolution. This innovative approach interactively uses key details as input and presents just the component of interest, together with surrounding wiring and connected parts. Irrelevant clutter is eliminated. The visual appearance is crisp and clear, highlighting key detail and making effective use of space and color.

Additional information may be brought up on the schematic, such as part detail and numbers, descriptions, key attributes, etc. A key aspect of any visualization and debug system is search speed. Google has shown us the power

of successful searches based on incomplete input, and the same approach works here. The automated connectivity search allows quick tracing through the wiring and components, ignoring irrelevant connections to track down the problem sources rapidly. Finding problem source that used to take hours and days can now be traced in seconds. All service schematics are automatically generated from a digital twin database, eliminating any error-prone manual drawing of diagrams for manuals.

Contact

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<p style="text-align: center;">Problem</p> <p>The complexity of modern electrical systems has dramatically increased over the last decade. Maintenance experts often need to manage hundreds of advanced processing units and miles of wiring harnesses when they repair or upgrade complex systems. However, this renaissance in complex electronic systems has not spread to the tools and methods being used for system maintenance. Engineers and technicians must often wade through 100s of pages of paper schematic diagrams. Tracking intricate issues through a maze of hard-to-read, irrelevant, and often out-of-date electrical schematics requires hours of wasted effort, which translates to delayed service schedules and poor service department performance.</p>	<p style="text-align: center;">Benefits</p> <ul style="list-style-type: none"> • Saves development, manufacturing, and test time. • Reduces errors providing auto-generated correct-by-construct pictures. • Offers easy access to any system function with on-the-fly visualization or incremental system exploration. • Enables more dependable and faster development process for complex electrical systems. • Supplies easy and instant access to consistent design data for development, manufacturing, and test teams.
<p style="text-align: center;">Technology Solution</p> <ul style="list-style-type: none"> • Smart service and repair platform using digital twins. • Automatic document generation from digital twins. • Easy exploration and repair of even the most complex electrical systems. • Auto-generated compact schematic diagrams allow rapid understanding of electrical functions, harnesses structures, and system behavior. • EEvision runs as PCs applications or as a cloud app (on-prem or off-prem). • For engineers who maintain, repair, refurbish or upgrade electrical systems. 	


ELECTRICAL

Electronics Service, LLC
ES Grounding and Bonding Solution

Electronics Service has designed both an ES Ground Adapter (ESGA) and a Junction Box Adapter (JBA) in conformance with current standards. The sealed system within the ESGA and JBA conserves the neutral environment within a stuffing tube or junction box, making sure corrosion does not occur at the cable penetration point. Finally, the ESGA and JBA provide an effective means of preserving the ship’s faraday cage, making sure that topside electromagnetic signals are unable to propagate to below deck systems and below deck signals are unable to escape the ship. This results in reduced EMI and improved EMCON.

Contact

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<p style="text-align: center;">Problem</p> <p>The presence and density of electromagnetically radiating systems installed on surface ship topsides has led to a complex electromagnetic environment. If precautions are not taken, the systems’ operational availability may be affected in the form of electromagnetic interference resulting in degraded electromagnetic compatibility. These environmental variables are generally controlled by a cable shield ground adapter (CSGA) or conduit system. Currently, when these systems fail cables need to be de-pinned, pulled, and potentially replaced. This results in more cost and longer repair times, especially if the system under repair will require a series of SOVTs upon completion.</p>	<p style="text-align: center;">Benefits</p> <ul style="list-style-type: none"> • The reliability of the ships capacity to navigate, launch, defend, and communicate is achieved. • The establishment of a Hardness Maintenance / Hardness Surveillance (HMHS) protocol and database for topside points of entry baseline. • Shipboard personnel are safeguarded from electric shocks when topside penetrations are properly grounded and installed correctly. • Protects unwanted information from being captured by adversaries using RF as a cyber-attack.
<p style="text-align: center;">Technology Solution</p> <p>ES manufactures its own custom grounding and bonding technologies that can be implemented in the design phase or on the current active surface fleet, guaranteeing compliance with MIL-STD-1310H. Additionally, the ES components are flexible enough to be utilized during repair if a topside penetration is found to be deficient with respect to the platform’s invoked requirements. Repairs can be conducted on an existing cable penetration without pulling the cable or de-pinning its associated connectors when utilizing the ES split shield ground adapter out junction box adapter (JBA). This allows the Navy to avoid costly SOVTs.</p>	

ELECTRICAL
FiberQA
AVIT-RH

Automatically inspects and cleans installed circular plugs and receptacles. Compact system that fits into constrained spaces. Operates independently without active human operation, eliminating issues caused by traditional handheld probes, such as poor stability, poor focus, risk of part damage as well as operator stress

Contact

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Problem

Fiber optic networks performance is highly dependent on cleanliness and surface finish of optical interconnects. Inspection and cleaning is required when connections are opened, regardless of reason, which adds to maintenance time. Manual process is time consuming, requires high levels of training, is subject to operator-dependent results, lacks archival documentation and potentially incurs re-contamination or damage. Current manual fiber optic inspection & cleaning processes waste funds due to time, labor and human error that may adversely impact warfighting readiness.

Benefits

FiberQA Automated Visual Inspection Tool (AVIT) increases quality of inspection and cleaning of fiber optic end faces while lowering the overall cost resulting in faster turn-around time for the weapons systems. It eliminates operator subjectivity when passing or failing an inspection or cleaning. The AVIT systems also increases inspection/cleaning throughput, reduces labor costs and damage to installed equipment. Software provides documented and reproducible results.

Technology Solution

Provide highly automated inspection and cleaning systems for use in commercial and government and defense (GAD) fiber optic manufacturing, assembly and sustainment for cables, chassis, and modules.



ELECTRICAL


KITCO Fiber Optics

Fiber Optic Shipboard Cable Repair Solutions

Demonstration will include two methods to repair damaged fiber optic cable in shipboard cableways. One method is a kit that consists of pre-terminated emergency jumper cables and tools to bypass the damaged cableway area and reconnect the network thereby restoring communication and system function. The other is focused on a permanent cable splice repair system that can fully restore a broken or damaged section of cable by fusion splicing the optical fibers and encasing them in a permanent, waterproof, rugged jacket protection sleeve. This fusion splice repair kit is self contained, doesn't require external power and is man portable throughout all sections of the vessel. This kit can also splice on pre-terminated multi-channel fiber optic pigtails to replace damaged fiber optic connectors at the equipment.

Contact

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<p style="text-align: center;">Problem</p> <p>Broken fiber optic in cable in cableways, workspaces, at equipment interfaces and near fiber optic junction boxes.</p>	<p style="text-align: center;">Benefits</p> <p>This solution offers significant time and cost savings by allowing the technician to splice any fiber configuration using pre-terminated pigtails. Systems may be made functional in 20 minutes or less even in battlefield environments.</p>
<p style="text-align: center;">Technology Solution</p> <p>The Quad EL Fusion Splice Kit. Any kind of fiber the warfighter may encounter may be spliced and protected utilizing this kit. The splicer is designed to splice single, dual, or even all four fibers simultaneously. It is compatible with both singlemode and multimode fibers in a single jacket and up to four fibers can be spliced all at once.</p>	<p>This kit contains the following items:</p> <ul style="list-style-type: none"> • Quad EL™ Fusion Splicer • Tweezers • Wrenches • Pliers • Ruler • Dual Splice Protection Sleeves • Quad EL™ Splice Protection Sleeves • Visual Fault Locator (VFL) • Torx Driver • Stripping Tools • Kevlar Shears 


ELECTRICAL

**kSARIA Service Corporation
Fiber Optic Tool Kit**

The Fiber Optic Tool kit is used to terminate and repair fiber optic cable and connectors.

Contact

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<p>Problem</p>	<p>Benefits</p>
<p>Technology Solution</p>	

ELECTRICAL

**Naval Undersea Warfare Center Keyport, Norfolk Field Office
Organic Circuit Card Repair**


The Miniature/Micro-Miniature (2M) and Module Test Repair (MTR) program provides the DOD with a standardized method to test and repair electronic assemblies such as circuit cards (CCA), electronic modules (EM) and smaller electronic assemblies (EA) that fit on a bench along with wiring and cabling repairs.

The capability provided is a variety of non-destructive passive and active test systems used for in-circuit fault isolation testing. MTR Test Systems use diagnostic test routines commonly referred to as “Gold Disks” to maintain testing capability and repair support of electronic equipment and systems as well as soldering and desoldering standards, systems and associated tools, work benches, and accessories. Every warship in the surface/CVN fleet have the same capability with the exception of LCS. LCS is

receiving a smaller subset in FY24. This capability also exists at all of the regional maintenance centers and numerous other sites world wide.

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<p style="text-align: center;">Problem</p> <p>Perform circuit card/cable repairs in a forward deployed conex box.</p>	<p style="text-align: center;">Benefits</p> <p>Using one of the 7900+ “Gold Disk” test routines, technicians can troubleshoot and repair in just about any space. Unsupported items can be troubleshot and repaired in the absence of a test routine. Cable and wire repairs are also in the swim lane of our technicians.</p>
<p style="text-align: center;">Technology Solution</p> <p>2M/MTR has the capability to be deployed to support this effort. Various configurations could be used.</p>	

ELECTRICAL
nScript, Inc.
nRugged™

A Facotry in a Tool (FiT) which can mill, print, 3D print, pick and place and then heat. It is possible to repair circuits with this system. We have demonstrated this with Army in Djibouti, with DOD partners in Norway, with NASA on parabolic flights and the international space station and recently in -40°C for OSD’s Point of Need Challenge.

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<p>Problem</p> <p>Take a PCB that needs to be repaired and repair it. We can add/change traces. We can remove components but will need replacement parts to pick and place.</p>	<p>Benefits</p> <p>The primary benefit is to repair a PCB using a single system. Additional benefits are to make mechanical parts from plastic from a CAD file.</p>
<p>Technology Solution</p> <p>Using precision milling, it is feasible to remove traces or components. Using precision microdispensing and silver paste, it is feasible to print conductive traces. Using pick and place, it is feasible to place components that are damaged. The system also can 3D print polymers and included carbon filled polymers to make mechanical parts.</p>	

FASTENERS


Advanced Ceramic Fibers, LLC (ACF)

Ultra-High Temperature Fasteners for Aeronautical, Shipboard, Stationary Power and Space Applications

The unique qualities of our extreme environment fasteners begin with the conversion of the base carbon fiber core of the fastener, Fi-Bar™, fiber that acts like re-bar in materials. This highly scalable and lower-cost fabrication method, along with the unique combination of ultra-high temperature materials, and base carbon-core strength, are optimized to enable the warfighter to achieve greater speeds, longer operational times, less down-time, and enhanced survivability in extreme environments.

Contact

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<p style="text-align: center;">Problem</p> <p>The warfighter is constantly challenging the capability of their platforms, pushing the limits of the known materials used in engines, airframes, superstructures, space vehicle structures, and hypersonic platforms, and missile structures. Understandably so, their performance expectations of their equipment are constantly being challenged to reach higher levels of speed, strength, resistance to extreme environments, temperatures, corrosion, and abrasion, thus giving our warfighters a significant competitive advantage in the aeronautic and space battlefield.</p>	<p style="text-align: center;">Benefits</p> <p>The challenges faced by our warfighters will require higher performing materials, using more advanced material solutions and fabrication techniques. ACF is a 100% US based company. And although higher performance sits center-stage to achieving these objectives, cost and supply chain issues can have a damaging impact on our ability to respond to the needs of the warfighter, and ultimately the nation. Toward this end, ACF is focusing on the key performance benefits of higher operating temperatures, enabling longer flight times, improved airframe structural enhancements, and greater resistance to foreign object damage during greater MACH operating environments.</p>
<p style="text-align: center;">Technology Solution</p> <p>One of the first technologies developed by ACF under the Navy's Phase II SBIR program to challenge this level of enhanced performance is our ultra-high temperature ceramic matrix composite fasteners used for airframe and turbine engine assemblies. The unique qualities of our fastener begin with the conversion of the base carbon fiber core of the fastener, Fi-Bar. Fiber that acts like re-bar in materials. This highly scalable and lower-cost fabrication method, along with the unique combination of ultra-high temperature materials, and base carbon-core strength, are optimized to enable the warfighter to achieve greater speeds, longer flight-times, less down-time, and enhanced survivability in extreme environments.</p>	

FASTENERS

Enduralock

Enduralock Fasteners and Connectors

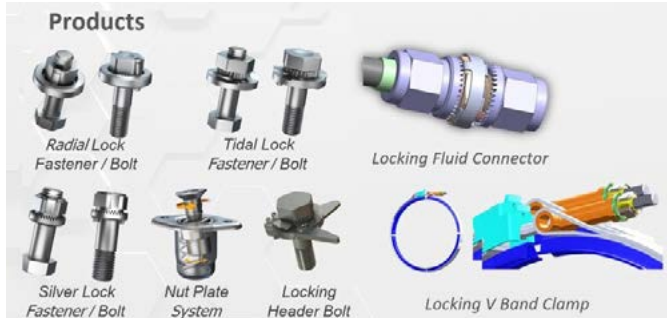
Five years ago, Dr. Harold Hess, CEO and founder of Enduralock, spent his days helping his patients. As a neurosurgeon, Dr. Hess devoted his career to performing cutting-edge procedures, and he specialized in implanting interspinous process devices. Becoming frustrated with the long surgery and recovery times his patients underwent, he began to actively explore a more efficient way to achieve the same patient results. For that reason, he developed an interspinous-interlaminar fusion device, which incorporates a proprietary locking mechanism. This locking mechanism allowed the device to survive 5 million cycles of compression and 5 million cycles of torque without signs of loosening. The device has FDA approval and a CE Mark and is used across the US and Europe.

Seeing the revolutionary results of the medical device, he wondered where else this locking

mechanism could be useful. He realized the infinite potential, and Enduralock was born. A nut and bolt are simple things, but we forget that our lives often depend on a nut remaining attached to a bolt. The car you drove to work has tires which depend on a nut remaining attached to a bolt. An airplane engine, a tank tread, armor...the examples are limitless! As a physician, Dr. Hess was committed to saving the lives of his patients. Now as an entrepreneur, he is committed to saving the lives of everyone. We sincerely hope you will join Enduralock on that quest.

Contact

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<p style="text-align: center;">Problem</p> <p>There are many access panels on aircraft, spacecraft, and other flying objects, which are secured to the structure by bolts. The panels often have complex three-dimensional shapes, so hole-to-hole misalignment becomes a significant factor. This can result in unnecessary additional labor and time-consuming efforts to align the bolts. Current nut plates leave the major issue of axial misalignment unresolved, as the nut element cannot “tilt” to accommodate an off-axis bolt. With the increased focus on modular architecture for in-space robotic construction and maintenance, there is a greater need for an ideal fastener construct incorporating a locking nut plate that can also be reused for structure repurposing and for maintenance.</p>	<p style="text-align: center;">Benefits</p> <ul style="list-style-type: none"> • The bolt’s strength is not affected by the locking mechanism. • High vibration resistance is provided by the positive mechanical lock. • During installation and removal, the locking mechanism is disengaged, which allows for a free-running bolt. • No wear of the locking mechanism occurs during installation. • The nut and locking mechanism are axially and radially floating. • The design allows for a fixed position bolt retaining ring, which reduces the chance of foreign object debris. • Accommodation exists for +/-8° angular misalignment.
<p style="text-align: center;">Technology Solution</p> <p>Enduralock proposes a novel nut plate system for panel-substructure assembly in aircraft, space vehicles, rockets, and missiles. The proposed solution is axially self-aligning, which enables engagement of the bolt with the nut plate, even when the axis of the nut plate and the axis of the bolt are not aligned. Enduralock’s nut plate is axially spring-loaded and features a positive mechanical lock, which can significantly reduce the maintenance time involving removal and reapplication of large panels with retained bolts.</p>	<p style="text-align: center;">Products</p> 


FASTENERS

Hytorc
Bolting Technology

HYTORC’s mission is to optimize safety, quality and schedule in industrial bolting through innovative solutions and an unyielding commitment to world class customer service.

Contact

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<p>Problem</p> <p>Incorrect bolting and torquing can lead to overtightened bolts, which can break, or under tightened bolts, which can cause an entire system can fail. Incorrect maintenance can lead to failures as well, causing downtime and even injuries.</p>	<p>Benefits</p> <p>We are consistently improving upon existing products, and developing new tools, based on feedback from the people that use our tools every day. Our latest product line features patented industry-firsts like hands-free operation to keep tool operators at a safe distance from the application, on-board documentation systems to provide job accountability and assurance, and industry-leading bolt load accuracy to reduce nut loosening and joint failure.</p>
<p>Technology Solution</p> <p>HYTORC works with our clients from project inception and engineering to follow up maintenance and scheduling for field use.</p>	

FASTENERS

**Newport News Shipbuilding
Confined Space Mag-Drill**

Portable drill that is capable of drilling through over 6.5” of steel (mild and high strength), in a confined space less than 9” in height.

Contact

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Problem

There is no commercial off-the-shelf drill that can fit inside of a height constrained space (less than 9" in height) and drill over 6.5" deep without having multiple set-ups. Clearance for current portable drilling equipment and length of drill bits prevents a standard set-up from being used. Current drilling process requires two or more individuals, for two days, to drill one hole (total of approximately 600 holes).

Benefits

The confined space mag drill developed, reduces the current drilling process down from 2 days to drill a hole, to less than 2 hours to drill a hole, as well as eliminates rework.

Technology Solution

A portable, low-profile drill was developed that reduces drilling time, decreases potential injury, and improves first time quality, to support drilling production schedules.



FLAME RETARDENT

Firelce Solutions VA, Consultant to MLR Holdings 2020 LLC
Firelce Shield® and Firelce® XT

Firelce Shield® is used to prevent fires incident to hot work from sparks, flames or falling slag. The product is available in spray bottles, 64 ounce pressurized canisters, 2.5 gallon pressurized canisters, 55 gallon drums and various sizes of Firelce Shield welding blankets, which are intended for protection of assets that cannot be moved, wireways and cabling, etc. It instantly cools, is capable of withstanding extremely high heat, prevents heat transfer, provides a protective layer for adjacent surfaces and reduces the risk of accidental charring, burning or igniting for hot work jobs large and small. Firelce® XT, formulated from the same base polymer as Firelce Shield, is a powerful PFAS-free fire suppression suite of products that are also available in a number of deployment methods. Firelce works by effectively eliminating two sides of the fire triangle. It instantly cools, thus eliminating the heat from the fuel source. This demonstration will use the Firelce XT 20-ounce

canister and urge its wide adoption as a personal suppression device at a minimum, for every hot worker, whether part of ships force, or as a required piece of equipment for third party hot worker. A longer term objective would be for every member of a ship’s personnel to have one. There are many other deployment methods of Firelce, including education, fire suppression “sprinkler systems”, 30 gallon wheeled extinguishers, rapid response units that can be mounted on a gator or other skid unit-capable vehicle, and Firelce 2.5 gallon UL A Rated Fire Extinguishers.

Contact

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<p style="text-align: center;">Problem</p> <p>We will address four problems:</p> <ul style="list-style-type: none"> • Health hazards caused by cancer causing fire suppression products that are banned as of 2024. • Fire incidents due to hot work. • Fire risks associated with lithium battery storage and from devices using lithium batteries. • Reliance on fire watch personnel who do not always carry a full 2.5-gallon fire extinguisher weighing nearly 30 pounds. 	<p style="text-align: center;">Benefits</p> <ul style="list-style-type: none"> • Firelce® is the ideal replacement for current hazardous fire suppression products that are harmful to both people and the environment. • Using Firelce Shield® to prevent fires from starting illustrates the old adage that an ounce of prevention is worth a pound of cure. Firelce Shield will drastically minimize fires incident to hot work • Firelce XT will not only extinguish a lithium battery fire, it will prevent reignition and propagation. • Giving Firelce XT to every person doing hot work will prevent fire from accelerating beyond the incipient stage and empowering all ship personnel to be “first responders”.
<p style="text-align: center;">Technology Solution</p> <ul style="list-style-type: none"> • Use Firelce® PFAS-free products for fire suppression of small- and large-scale fire incidents. <ul style="list-style-type: none"> • Routine use of Firelce Shield® to prevent fires from starting in the first place. • Equip all hot work personnel with a 20-ounce aerosol canister of Firelce to enable immediate intervention, thus preventing fires from accelerating beyond the incipient stage. • Firelce will suppress lithium battery fires and also prevent propagation and reignition. 	

FLUID SYSTEM ANALYSIS/CLEANLINESS



Aurora Supply – Triple 7

Triple 7 – Sanitary System Remediation, Maintenance, and Blockage/Corrosion Prevention

Triple7 products were specifically developed and codified for the Australian Navy offering a total package “shop-in-a-box” solution of main onboard consumable chemicals giving zero corrosion, ultimate worker safety, and complete asset protection for the fleet. Directives established clear rules to enable efficient liquid waste treatment and disposal whilst eliminating serious stoppages and saving the Navy up to \$11,000,000 in system asset replacement per vessel.

Contact

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<p style="text-align: center;">Problem</p> <p>Sewer and general effluent system issues abound throughout the DOD, creating the need for costly sustainment activities that often result in added asset damage and increased maintenance expenditure.</p>	<p style="text-align: center;">Benefits</p> <ul style="list-style-type: none"> • Reduce the annual cost to the DOD of system blockages and urgent defect remediation, asset damage, and many other associated issues such as corrosion, hydrogen sulphide and carbon monoxide generation. • Extend the service life and performance of systems, pipework and associated equipment and other damage to sensitive equipment. • Enable in situ cleaning operations reducing downtime and manhour requirements. • Protect personnel from dealing w/toxic health issues and acid burns.
<p style="text-align: center;">Technology Solution</p> <p>New technology has finally produced a worksafe “shop-in-a-box” package of biobased chemicals that doesn’t rely on a proliferation of dangerous products that both damage assets and create emulsions and deposits that block waste systems. Triple7 chemicals do not create off gassing, will not erode or corrode metal surfaces or damage rubbers or elastomers. They are safe to use within all effluent systems (black and grey water) on pumps and pipework in situ, saving enormous time, effort, and money by not having to remove equipment from cooling towers, ship systems, heat exchangers or other water-operated machinery. The group of 100% biobased chemicals from renewable plant-based sources protect assets, people, and the environment.</p>	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>CABIN 967 ACCESS POINT</p> </div> <div style="text-align: center;">  <p>CABIN 967 ACCESS POINT</p> </div> </div>

FLUID SYSTEM ANALYSIS/CLEANLINESS


Aurora Supply – Triple7 EnviroScale

Triple7 EnviroScale – Zero Corrosion Chemicals for Descaling and Surface Rust Removal

Triple7 EnviroScale was specifically developed for the Australian Navy offering zero corrosion, ultimate worker safety, and complete asset protection for the submarine fleet. The product is now written into work procedures including EGIS radar cooling system flushes, multiple seawater cooling systems, sewage flushes etc. Triple7 EnviroScale is also proven as a radiation removal chemistry (refer BHP report).

Contact

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<p style="text-align: center;">Problem</p> <p>Scale and calcium growth issues abound throughout the DOD creating the need for costly sustainment activities that often result in added asset damage and increased maintenance expenditure. Standard descalers are corrosive. Additionally, the servicing of onboard equipment requires costly disassembly and refit procedures (especially submarines) whereas the Triple7 technology allows for in-situ cleansing.</p> <p>Dangerous goods (corrosive acids) also involve complex management and reporting programs as traditional cleaning substances used are composed of hydrochloric, sulphamic and phosphoric acids, which are toxic and require extensive personal protective equipment.</p>	<p style="text-align: center;">Benefits</p> <ul style="list-style-type: none"> • Reduce the DOD’s annual cost of corrosion, asset damage, rubber deformation because of acidic chemical attacks. • Extend the service life and performance of systems, pipework and associated equipment and other damage to sensitive equipment. • Enable in situ cleaning operations reducing downtime and manhour requirements. • Protect personnel from dealing w/toxic health issues and acid burns. • Able to operate within sensitive radar system cooling. • Product has radiation reduction properties.
<p style="text-align: center;">Technology Solution</p> <p>New technology has finally produced a worksafe limescale removal system that doesn’t rely on highly corrosive chemicals to dissolve away deposits. Triple7 descalers will not erode or corrode metal surfaces or damage rubbers or elastomers. They are safe to use on pumps and pipework in situ, saving enormous time, effort, and money by not having to remove equipment from cooling towers, ship systems, heat exchangers or other water-operated machinery. 100% biobased acids from renewable plant-based sources protect assets, people, and the environment.</p>	

FLUID SYSTEM ANALYSIS/CLEANLINESS


Clarus Fluid Intelligence

Oil Flushing/Fluid Processing/Chemical Cleaning

The “technology” is a mixture of equipment, materials, and technicians, custom built and trained to support the Navy’s systems. Fly-away ready kits for either specific systems (e.g., a DDG MRG) or specific technologies (e.g., vacuum dehydrators) would be sequestered and maintained for the purposes of this contract.

Contact

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<p>Problem</p> <p>To assist in the accelerated recovery of ship’s systems, the acquisition timeline of reliable entities for flushing and chemical cleaning ship’s systems is currently too long to be able to support the Navy’s stated needs for this discussion. Shortening that interval and improving reliability is the challenge.</p>	<p>Benefits</p> <p>The benefit is accelerated, reliable fluid system recovery across the fleet in environments where the Navy truly needs it.</p>
<p>Technology Solution</p> <p>To compress the interval between recognizing the need for the recovery of fluid systems, and achieving that recovery, reliable personnel, available and appropriate equipment, and targeted preparedness are necessary. Supporting the full breadth of needs for the Navy to recover fluid systems means sequestering equipment and maintaining readiness, both CONUS (for larger systems’ needs), and OCONUS (for targeted systems). This means a contract to provide that readiness.</p>	

FLUID SYSTEM ANALYSIS/CLEANLINESS

GasTOPS Inc.


ChipCHECK – At-Line Chip Debris Analysis

ChipCHECK, powered by Gastops’ proprietary laser spectroscopy technology, swiftly conducts on-site equipment maintenance decisions through the fastest and most reliable analysis of chips. This automated and field-deployable solution ensures conclusive, lab-quality chip analysis within minutes, providing maintainers with detailed information on chip size, count, and metal alloy identification through innovative laser spectroscopy. The comprehensive analysis verifies component damage and wear location by cross-referencing data with an extensive metal alloy library. By enabling maintenance operators to instantly make crucial decisions, ChipCHECK not only reduces laboratory testing costs but also streamlines logistics, facilitating the prompt return of mission-critical engines and gearboxes

into service. This eliminates delays and costs associated with sending chips to a laboratory, empowering maintenance technicians to promptly generate shipboard lab-quality chip analysis reports. ChipCHECK’s technological solution empowers forward-deployed assets to implement condition-based maintenance and non-destructive inspection practices for the US Navy, even in challenging or hostile environments.

Contact

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<p style="text-align: center;">Problem</p> <p>The Navy currently faces significant limitations in its non-destructive inspection methods for monitoring engine and gearbox wear, affecting both portability and fidelity of information. These limitations hinder the prevention of mishaps and obtaining comprehensive insights into the condition of engines and gearboxes, crucial for optimizing maintenance activities.</p> <p>The existing challenges arise from the inadequacy of current techniques and technologies for shipboard use, either due to their size or sensitivity. Therefore, shipboard methods often resort to subjective visual analysis, leading to conservative assessments and premature removal of crucial components.</p>	<p style="text-align: center;">Benefits</p> <p>The integration of GasTOPS’ ChipCHECK technology into the US Navy’s shipboard maintenance program promises to bolster military capabilities and cut sustainment costs significantly. By equipping shipboard maintenance crews with non-destructive inspection-driven data, it enhances overall engine and gearbox health insights, improving data availability and facilitating prompt, objective Go or No-Go decisions for increased safety. The on-site access to maintenance data eliminates dependence on the home station oil analysis lab, empowering data-driven decisions and enabling condition-based maintenance, even in contested environments. Importantly, the application of GasTOPS’ technology dramatically reduces the risk of Class A/B bearing-related mishaps.</p>
<p style="text-align: center;">Technology Solution</p> <p>ChipCHECK employs a cutting-edge combination of digital image capture and innovative spectroscopy technology to autonomously identify and examine chip debris. Through this analysis, the system assesses the quantity, size, shape, composition, and alloy type of all particles, utilizing embedded diagnostic rules to initiate maintenance decisions indicating either Go or No-Go. Specifically designed for ease of use by front-line maintainers, ChipCHECK offers automated analysis at the press of a button, eliminating the need for specialized training to operate or interpret results. Furthermore, its rapid deployability makes it an ideal choice for expeditionary operations.</p>	


FLUID SYSTEM ANALYSIS/CLEANLINESS

HyVal Industries, Inc.
Hydraulic Flushing

A determined pump/motor combination is selected based on size and length of piping being flushed in order to achieve a Reynolds number (temperature and flow) specified for the equipment/system being flushed.

Contact

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<p>Problem</p> <p>An oil sample is taken to see if system is contaminated with foreign material which may cause premature failure if not removed.</p>	<p>Benefits</p> <p>A clean hydraulic system will allow the equipment/system to operate properly and protect the internal components from unnecessary wear and tear.</p>
<p>Technology Solution</p> <p>The hydraulic equipment/system MUST be flushed to remove the contamination until an acceptable oil sample is achieved through meeting a predetermined standard.</p>	 <p>HyVal Industries, Inc.</p>

FLUID SYSTEM ANALYSIS/CLEANLINESS


Ombra

BugCount Fuel Tester and Ballast Water Monitoring Equipment Set

BugCount Fuel Tester measures Adenosine Triphosphate (ATP) through a PhotonMaster and PhotonMaster Bluetooth Module (PBM) Equipment Set to accurately quantify total living cells present in a fuel sample. The Ballast Water Monitoring System is the special version of the PhotonMaster and PBM Equipment intended for ship operators to meet ballast water regulatory requirements with a rapid, trusted, onboard testing solution.

Contact

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<p style="text-align: center;">Problem</p> <p>Microorganisms in fuel tanks of naval vessels can lead to microbial contamination. Microbes cause various problems, such as clogging fuel filters, corroding fuel tanks, and degrading the fuel quality. This contamination can affect the performance and reliability of naval vessels. Also, the introduction of harmful aquatic pathogens to new environments through ships’ ballast water is a significant threat to the world’s oceans, posing severe environmental, economic, and public health risks.</p>	<p style="text-align: center;">Benefits</p> <p>BugCount Fuel Tester follows a standard fuel testing process, where the user draws samples, performs the test, and the system returns results within minutes. Results are available locally on the instrument and are uploaded via network connectivity into a centralized software for analysis and review. The result is a vastly simplified method for gathering fuel quality data, ultimately making it easier for early identification of anomalies and changes within a system.</p>
<p style="text-align: center;">Technology Solution</p> <p>Both technologies are portable to be used directly in the field, and results are available within minutes. The solutions have been trusted within water-related industries for 15+ years. With their rapid measure of total bioburden using a simple test protocol, they can facilitate timely risk assessments to identify areas of concern. The technology’s results drive immediate action (i.e., more specific assays and/or adjustments to treatment strategies).</p>	

FLUID SYSTEM ANALYSIS/CLEANLINESS

Solarcore

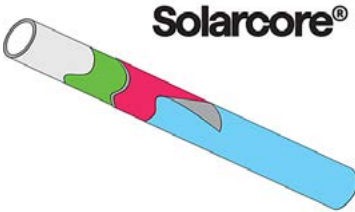
Solarcore Chill Water Pipe Lagging

Solarcore chill water pipe lagging is used for rapid repair and prevention of corrosion under insulation.

Solarcore produces advanced aerogel materials with super insulating properties, low density and low bulk, which can be incorporated into Navy vessels with domestic, Berry-compliant manufacturing. This technology is exclusively licensed from NASA and extensional intellectual property has been developed for hydrophobicity, durability, and manufacturability. Using this solution improves thermal efficiency, which equates to less use of energy to maintain proper temperatures, space savings from a thinner, more efficient layup, and easily installed in the event of needed repairs.

Contact

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<p style="text-align: center;">Problem</p> <p>There is a need for a replacement to chill water pipe lagging on Naval assets. Current solutions are not adequate and do not properly insulate from austere environments. Rapid repairs are cumbersome and time consuming and not always effective. A common problem associated with chill water pipe lagging is corrosion under insulation, or CUI. When chill water runs through piping on ships condensation builds up and drips on pipes as well as fittings and other components in the vicinity, causing costly corrosion to equipment requiring further work and repairs.</p>	<p style="text-align: center;">Benefits</p> <ul style="list-style-type: none"> • Eliminates damage caused by CUI. • Easy installation for rapid repairs. • Materials are easy to work with and integrate with standard manufacturing practices for lagging components. • Up to 30F temperature differential from bare pipe to insulation surface. • Application and benefits can be used for all DOD branches as well as public domain. 																								
<p style="text-align: center;">Technology Solution</p> <p>Solarcore’s lagging alternative offers an easy to install solution that is fast and effective. The low-profile aerogel material eliminates the thermal transfer of energy with only a few millimeters of thickness attached directly to the surface of piping, elevating the surface temperature above the dew point, preventing the pipe stopping condensation from forming and damaging surrounding equipment. In addition to chill water pipe lagging, Solarcore’s aerogel solutions are used for high temperature heat applications in heat shields as well as thermal barriers, which minimize heat signatures in areas where elevated temperatures are generated. Such areas include boiler room components, cold spray equipment, and high temperature equipment boxes on deck.</p>	 <table border="1" data-bbox="1201 1663 1485 1900"> <thead> <tr> <th colspan="2">Dual Sided Adhesive</th> </tr> </thead> <tbody> <tr> <td>Avery Dennison</td> <td>Acrylic/Polyester</td> </tr> <tr> <td>Commercially Available</td> <td>Dielectric Carrier</td> </tr> <tr> <td>UL 94 FR Compliant</td> <td>High Tack</td> </tr> <tr> <th colspan="2">Solarcore Textile Aerogel Composite</th> </tr> <tr> <td>TRL 5</td> <td>Durable</td> </tr> <tr> <td>MRL 4</td> <td>Flexible</td> </tr> <tr> <td>Thermal Break</td> <td>Non-shedding</td> </tr> <tr> <th colspan="2">Outer Barrier</th> </tr> <tr> <td>Avery Dennison</td> <td>Acrylic/Aluminum</td> </tr> <tr> <td>Commercially Available</td> <td>Felt matte finish</td> </tr> <tr> <td>AM Adhesive</td> <td>Made in USA</td> </tr> </tbody> </table>	Dual Sided Adhesive		Avery Dennison	Acrylic/Polyester	Commercially Available	Dielectric Carrier	UL 94 FR Compliant	High Tack	Solarcore Textile Aerogel Composite		TRL 5	Durable	MRL 4	Flexible	Thermal Break	Non-shedding	Outer Barrier		Avery Dennison	Acrylic/Aluminum	Commercially Available	Felt matte finish	AM Adhesive	Made in USA
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MECHANICAL


ENRX Corporation

ENRX Minac Mobile Induction Heater

Rapid localized hand held induction heating with induction coil.

Contact

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<p>Problem Needing localized heat without open flame. Debonding with localized induction heat for coating or rubber without sandblasting.</p>	<p>Benefits ENRX Minac is safe, green, efficient, effective, and contains an ergonomic heating source.</p>
<p>Technology Solution ENRX Minac is a proven technology already in shipyards and used offshore on vessel or sub-sea.</p>	 A photograph of the ENRX Minac Mobile Induction Heater. It is a large, grey, industrial-grade metal cabinet with a control panel on the right side. The control panel has a digital display and several buttons. A vertical label on the right side of the cabinet reads "USNU 015309 6". The heater is situated in a workshop or industrial setting, with a table and other equipment visible in the background.

MECHANICAL


Mactech

Portable Machining Solutions

Mactech’s technology and equipment is driven by field experience dating back 40 years in the on-site machining field. Tools are designed to incorporate maximum rigidity and power while maintaining a low weight and size profile wherever possible. Precision equipment is designed in house with field experience on the input team and all built, assembled and tested within our ISO 9000 registered framework. Core processes and procedures bring the experience of how best to approach the project along with using the best in class gear to achieve results. Mactech’s portable machining (line boring, mag drills, portable mills, gantry mills, clamshells, portable lathes) provide you with portable onsite solutions for your repair needs. Our highly adaptable equipment can be configured to suit your many applications.

Contact

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<p style="text-align: center;">Problem</p> <p>Parts of a vessel are damaged or not functioning to required standards during operations. The ship can not be taken into a shop for repair many times and time is integral to success to bring specific components back on line. Similarly, it may be much more efficient to find a safe port in the world rather than returning “home”. Mactech equipment and personnel can be expedited to site for the project.</p>	<p style="text-align: center;">Benefits</p> <p>Experienced support at all times to unforeseen problems and working out a method to remain efficient in the role the ship is carrying out. Vast range of equipment available. We have experienced technicians on staff (for training if you require it).</p> <p>Having partnered with many facilities has provided us the experience and knowledge on proper equipment needed to accomplish onsite repairs in various ship classifications. We ARE experienced in not only working on various naval vessels, but providing the correct equipment needed to solve the onboard challenge.</p>
<p style="text-align: center;">Technology Solution</p> <p>Over forty years of experiences encompassing thousands for projects coupled with a wide array of highest caliber machines for in situation repair. Experienced technicians on the team bring the most qualified game plan to the situation to design, test, and provide procedure definition, training and or actual on-site service contracting. Mactech’s Proven Process exemplifies this. Mactech’s highly adaptable and precision machining are an ideal solution for those people who need on site machining in tight areas and workspaces that make it challenging to remove. Our lightweight, portable equipment retains rigity during operation to allow you to meet your tolerance level expectations.</p>	

SERVICES


Fairlead

Mission Modules/Containerized Solutions

We specialize in the integration of commercial power & controls technologies into surface combatants and containerized solutions. We have built containerized solutions for: LCS mission modules (all variants), airfield damage repair kits, remote relay stations, hybrid power systems in 3kW, 60kW, 120kW, and several others.

Contact

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<p>Problem</p> <p>Sustainment and repair technologies have a need for custom protective packing for transporting purposes.</p>	<p>Benefits</p> <p>We have been designing and building containerized solutions for 15 years and therefore have the expertise to handle any foreseeable configuration.</p>
<p>Technology Solution</p> <p>We believe the vendors demonstrating their various sustainment and repair technologies will need to someone package their equipment (or several vendors into one assembly) for transporting purposes and therefore will need an integrator like Fairlead to design and build such ISO containers.</p>	 <p>The logo for Fairlead, featuring a stylized blue wave or anchor shape above the word "FAIRLEAD" in a bold, blue, sans-serif font.</p>


SERVICES

Nabors Energy Transition Solutions LLC
Power Generation and Portable Repair Solutions

Nabors is very experienced with conducting remote oil & gas drilling operations in harsh environments all around the world. These operations require self-sustaining repair and maintenance capabilities. Over time, we have utilized various shop designs to support standard repairs. The next generation of technology in development is to power these shops with hydrogen electrolyzer/fuel cell units, which reduce the need for as much diesel on site. Nabors’ focus is to build and deploy low-cost, efficient, and durable energy solutions that can power a variety of equipment with electricity.

Contact

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<p style="text-align: center;">Problem</p> <p>Diesel at the front line is expensive and relies on a targeted supply chain. Nabors is focused on utilizing the hydrogen found in water to produce the required electricity, with a reduced reliance on diesel.</p>	<p style="text-align: center;">Benefits</p> <p>Electricity production at the front lines by using water, facilitating a reduced reliance on diesel.</p>
<p style="text-align: center;">Technology Solution</p> <p>Nabors’ experience with remote repair operations and our R&D centered around developing highly-efficient electrolyzers and fuel cells will create a unique, effective, reliable, and cost-effective energy delivery solution at the front lines.</p>	<p style="text-align: center;">Hydrogen Production Electrolyzer – Pressurized O2 & H2, 4kg/day production</p> 

SERVICES


TDA Research

Portable Oxygen Generator

TDA Research offers a portable oxygen generation system that generated high purity oxygen (93-99%) for welding and torching applications. The OxyGEN units uses air as the feedstock and separates the N₂ from O₂ to deliver high purity oxygen product. The system is activated on demand and starts delivering the target oxygen flow within 30 secs. It only consumes power (25-30 W/LPM O₂ delivered). All units are offered with a compressor option that can fill oxygen cylinders (if desired). In addition to the industrial use, TDA also offers a version that can provide medical grade oxygen.

Contact

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<p style="text-align: center;">Problem</p> <p>High concentration oxygen is used in torching and welding operation, where the oxygen is stored in high pressure tanks. The supply of these tanks is a logistics problem (receiving the full tanks and returning the empty cylinders). At the storage pressure of 2,200 psig, these high pressure oxygen tanks also pose a safety risk.</p>	<p style="text-align: center;">Benefits</p> <p>The proposed device will reduce the logistics burden and risks associated with the supply of oxygen in cylinders. The proposed systems are very compact, highly energy efficient and easy to use. Operation is highly automated with customized to HMI to best serve the operator’s needs.</p>
<p style="text-align: center;">Technology Solution</p> <p>TDA Research offers a portable oxygen generation system that generated high purity oxygen (93-99%) for welding and torching applications. The OxyGEN units uses air as the feedstock and separates the N₂ from O₂ to deliver high purity oxygen product. The only consumable is electricity.</p>	

SURFACE PREPARATION

**Atmospheric Plasma Solutions, Inc.
PlasmaBlast 7000-M**


APS’s solution provides an innovative sustainment tool that can be easily deployed in contested logistical operations amongst all forces. Having the ability to expedite field fixes, overhaul, or maintenance becomes more challenging especially with battle damaged combat systems. The PlasmaBlast 7000-M system is easily deployed to austere environments, equipping the warfighter the ability to decrease repair cycle times. Large scale combat operations would benefit with cost savings, reduction in resources (manhours), and quick turnaround enabling combat systems to return to field operation faster. Additionally, the PlasmaBlast 7000-M system has shown significant improvement in scheduled and unscheduled maintenance which improves the overall combat systems readiness.

Needle guns (aka scalers) are used to remove

coatings and corrosion from small or convoluted areas, prior to repairing corrosion damage and before recoating the surface to protect from subsequent corrosion. In addition to being very loud, needle guns create such intense vibrations that only 20 minutes of needle gun operations are allowed per person per day in order to limit occupational hazards to one’s health. APCR leaves the surface undamaged and clean, reducing overall time for repair and enhances adhesion of re-coat which subsequently increases longevity of the repair.

Contact

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<p style="text-align: center;">Problem</p> <p>Protecting and maintaining assets in highly corrosive environments has been a challenge for centuries. Assets that require precision coating removal around compromised structures need a precision tool that does not impact the structure leading to failure. Removal of any metal or damage to surfaces must be avoided in these scenarios, which disqualifies highly abrasive removal methods such as blast cleaning, needle-gunning, and water-jetting. In the naval engineering industry, there is a significant need for a tool that will accelerate small scale coating removal operations without negatively impacting the health of the operator or the underlying substrate.</p>	<p style="text-align: center;">Benefits</p> <p>The core benefits to the technology are as follows:</p> <ul style="list-style-type: none"> • Removes coatings, cleans surfaces, promotes adhesion. • Requires only compressed air and electricity to operate. • Media and chemical free. • Safer for the operator, environmentally friendly, requires minimal containment and clean-up. • Significant job cost reductions. • Fast to train, simple to operate, low maintenance requirements. • Lightweight, 5-minute set-up.
<p style="text-align: center;">Technology Solution</p> <p>The Atmospheric Plasma Coating Removal (APCR) technology requires no media, generates no waste streams beyond the removed coating, allows for debris capture, presents no undue occupational or environmental hazards to the operators, and can remove partial or whole coating layers across a wide variety of platforms. The complete elimination of media to remove coatings reduces the de-painting waste stream by more than 99% which provides environmental benefits, increases efficiency, and lowers costs. APCR’s value is the ability to set-up quickly, with only electricity and compressed air as inputs (no media or chemicals) and be quickly deployed to forward operating locations.</p>	

SURFACE PREPARATION


G.C. Laser Systems Inc.

G.C. Laser Systems / High-Precision Cleaning Lasers with No Surface Damage

Removes corrosion, debris, grease, coatings and radiation from surfaces with no damage to the asset, even at the microscopic level. USA-made, most compact, powerful, fastest cleaning and surface preparation lasers on the planet (2-3X faster than other lasers).

Contact

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<p style="text-align: center;">Problem</p> <p>The processes and technologies DOD currently uses for systems maintenance and readiness are costly, time-consuming, and resource-intensive. The financial impact to DOD of corrosion alone exceeds \$20 billion annually. New, patented laser technology made in the USA delivers low-cost, long-lasting, quicker, deployable solutions to immediately impact system readiness by reducing down-time for maintenance tasks, quickly restore equipment in long storage, and increase manufacturing process efficiency.</p>	<p style="text-align: center;">Benefits</p> <p>Patented circular scan laser technology delivers low-cost, faster, cleaner solutions for a wide range of uses.</p> <ul style="list-style-type: none"> • Cleans and preps surfaces with no damage to the asset, even at the microscopic level. • Provides better corrosion removal, desalination and decontamination than other cleaning methods. • Offers radiological, chemical, and biological decontamination with no consumables. • Prevents flash rust and does not cause hot spots. • Offers unmatched precision reaching deep into corners/welds. • Powered by a standard outlet or battery.
<p style="text-align: center;">Technology Solution</p> <p>High-speed, game-changing laser technology restores and maintains critical infrastructure and assets.</p> <ul style="list-style-type: none"> • Removes corrosion, debris, grease, coatings and radiation from surfaces with no damage to the asset, even at the microscopic level. • Only laser technology to eliminate hot spots and reduce heat transfer to surfaces. • Most compact, powerful, fastest cleaning and surface preparation lasers available (2-3X faster than other lasers). • Unmatched precision / highly tunable systems. • Made in the USA. 	

SURFACE PREPARATION

**JH Norton Company Inc.
Containerized Blast Booth**

A containerized blast booth is a self-contained and portable system designed for abrasive blasting operations within an enclosed environment. It consists of a blast chamber housed within a shipping container, providing a versatile and mobile solution for surface preparation in various industrial applications, including shipyards.

Contact

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Problem

Often times, there is not sufficient containment or space to sandblast aboard a ship, and parts will need to be sent out to different shops, or subbed out to contractors.

Benefits

The Containerized blast booth will provide: mobility and flexibility for repairs and where they can be performed, cost effectiveness by not having to sub out the blasting of parts, environmental safety due to it being totally enclosed, Versatility in being able to use different types of abrasives for different repairs, and improved quality control by eliminating external effects.

Technology Solution

A containerized blast booth technology solution is designed to revolutionize abrasive blasting operations in shipyards and industrial settings. This innovative solution combines mobility, efficiency, and environmental responsibility to address key challenges, providing a comprehensive and adaptable platform for surface preparation.



SURFACE PREPARATION


Laser Photonics – DefenseTech DT-2000-MRLS

DefenseTech DT-2000-MRLS

The DefenseTech DT-2000-MRLS (Mission Ready Laser Solution) is a handheld laser cleaning, roughing, and surface preparation system tailored to address the Navy’s crucial needs in HM&E maintenance and repair. It excels in tasks such as laser surface roughing, precise coating removal, surface texturing, pre-adhesion treatment, and more on larger surface areas.

Contact

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<p style="text-align: center;">Problem</p> <p>The Navy faces constraints in sustainment and repair operations both at sea and in forward operating locations. There is a need for a product that can enhance the Navy’s expeditionary maintenance capabilities in forward locations and during fleet events/exercises.</p>	<p style="text-align: center;">Benefits</p> <p>The DT-2000-MRLS offers a non-abrasive, cost-effective, and efficient cleaning process adaptable to various conditions. Its eco-friendly design ensures versatility in applications, complemented by a user-friendly interface and air-cooling system, enabling a swift application process.</p>
<p style="text-align: center;">Technology Solution</p> <p>The DefenseTech DT-2000-MRLS is a laser cleaning, roughing, and surface preparation system that boasts dual-axis laser technology, allowing it to manage a wide range of surfaces with surgical accuracy. With a strip rate of 200 ft² per hour, it excels in quickly and thoroughly removing rust, paint, coatings, and other contaminants. The technology is also compatible with a diverse range of materials, including steel, ceramic, aluminum, brass, titanium, and various other metals and non-metals.</p>	 A photograph of the DefenseTech DT-2000-MRLS laser cleaning machine. It is a compact, industrial-grade unit mounted on four red casters. The machine has a grey and black color scheme with a control panel on top featuring a digital display and several buttons. A red laser safety warning label is visible on the side. A vertical light tower with red, yellow, and green lights is positioned on top of the unit.


SURFACE PREPARATION

Laser Photonics – DefenseTech Handheld DT-200-MRLS
DefenseTech Handheld DT-200-MRLS

The DefenseTech DT-200-MRLS delivers accuracy in laser cleaning, paint stripping, and surface conditioning tasks. The laser system is capable of effectively addressing HM&E needs such as laser finishing, pre- and post-weld treatment, degreasing, and corrosion removal, making it an indispensable asset for naval maintenance.

Contact

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<p style="text-align: center;">Problem</p> <p>The Navy faces constraints in sustainment and repair operations both at sea and in forward operating locations. There is a need for a product that can enhance the Navy’s expeditionary maintenance capabilities in forward locations and during fleet events/exercises.</p>	<p style="text-align: center;">Benefits</p> <p>The DT-200-MRLS offers a non-abrasive, cost-effective, and efficient cleaning solution suitable for diverse operational conditions. Its eco-friendly design allows versatile applications, complemented by a user-friendly interface for ease of use. With an air-cooling system ensuring fast application, it combines convenience and effectiveness seamlessly.</p>
<p style="text-align: center;">Technology Solution</p> <p>The DefenseTech Handheld DT-200-MRLS is a laser cleaning solution for the Navy’s maintenance challenges. With a dual-axis laser system, it excels in tasks like cleaning, paint stripping, surface conditioning, and addressing issues in ship pumps, valves, fasteners, electrical components, and more. Its 24-ft²-per-hour strip rate and compatibility with various materials make it a versatile tool for rapid and efficient maintenance operations. The system offers versatility in parts cleaning, rust removal, and surface conditioning, providing the Navy with an indispensable asset for expeditionary maintenance in diverse environments.</p>	

SURFACE PREPARATION


Laser Photonics – WeldTech LPC-1500-LWS

WeldTech LPC-1500-LWS

The WeldTech LPC-1500-LWS (Laser Welding System) is an advanced laser welding solution for the Navy’s HM&E needs, featuring a 1500-watt power output for high performance. Its low required heat input and ability to weld various materials enhances productivity and improves weld quality, operating up to four times faster than traditional methods, providing ROI advantages. The air-cooling system and wide operating temperature range (32°-104°F) ensure flexibility in diverse naval environments.

Contact

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<p>Problem</p> <p>The Navy faces constraints in sustainment and repair operations both at sea and in forward operating locations. There is a need for a product that can enhance the Navy’s expeditionary maintenance capabilities in forward locations and during fleet events/exercises.</p>	<p>Benefits</p> <p>Achieve speeds up to four times faster than conventional welding, boosting productivity. Benefit from automated laser parameter adjustments for specific materials, ensuring precision. Enjoy eco-friendliness with low radiation emissions. Its portable, lightweight design enhances flexibility, while the inclusion of a wire feeder and adjustable rollers accommodates various welding wire widths, providing versatility in every project.</p>
<p>Technology Solution</p> <p>The WeldTech LPC-1500-LWS is a laser welding system tailored to address the Navy’s HM&E challenges. With a 1500-watt power output, it excels in high-performance maintenance and repair applications. Its low heat input and multi-material welding capability enhance productivity in functions such as structural repair or Navy ship hull patching.</p> <p>In essence, the WeldTech is an optimal solution for Navy maintenance. It blends fast application speed, user-friendly features, portability, and safety measures, aligning seamlessly with the demands of efficient at-sea repair operations.</p>	

SURFACE PREPARATION

RPB Safety, DBA GVS-RPB

GVS-RPB Tight- and Loose-Fitting Respiratory Protection

GVS-RPB’s loose-fitting respirators redefine respiratory protection with an impressive Assigned Protection Factor (APF) of 1000, distinguishing them in the marketplace. The incorporation of a Positive Pressure System, facilitated by advanced Powered Air Purifying Respirators (PAPR) or Supplied Air Respirators (SAR), ensures a continuous supply of clean air, creating a positive pressure environment for effective shielding against hazardous particulates.

Committed to comprehensive safety, GVS-RPB includes a bump cap and/or hard hat, hearing protection, eye/face protection, communications systems providing extra layers of protection and support for workers in the Navy. The loose-fitting design not only enhances comfort, making breathing easier and reducing breaks but also proves cost-effective over time. Despite the initial

higher investment, ongoing expenses are minimal, primarily limited to HEPA filter replacements.

GVS-RPB’s adaptability stands out, eliminating the need for fit-testing, shaving, and concerns about skin irritations. Workers experience freedom from constraints, with the design accommodating weight fluctuations, fostering confidence and morale. In essence, GVS-RPB’s loose-fitting respirators represent a comprehensive shift in respiratory protection, setting a new standard of excellence in the marketplace.

Contact

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<p style="text-align: center;">Problem</p> <p>The level of protection offered by tight-fitting respirators isn’t always enough in certain environments. To prevent harmful airborne particulates from being inhaled, tight-fitting respirators must form a tight seal, requiring clean-shaven workers, and fit testing, often done annually or when the wearer’s characteristics change. They can also be uncomfortable, causing skin irritations and labored breathing; their impact on the environment is also devastating.</p>	<p style="text-align: center;">Benefits</p> <p>It’s easier to breathe wearing a loose-fitting respirator, resulting in fewer breaks and increased production. While there are higher initial costs, loose-fitting respirators in the long run are more affordable, with most of the ongoing costs being the replacement of HEPA filters. There are no skin irritations, workers don’t have to shave or get fit-tested, and weight fluctuations are acceptable. Our loose-fitting respirators promote compliance and help protect workers for life’s best moments. A comfortable operator is a safe operator.</p>
<p style="text-align: center;">Technology Solution</p> <p>GVS-RPB loose-fitting respirators offer superior protection, with an Assigned Protection Factor of 1000. Clean air is supplied to the head top via a Powered Air Purifying Respirator or Supplied Air Respirator, with positive pressure helping to keep hazardous particulates out. With the potential to incorporate a bump cap or hard hat, eye protection, and hearing protection, comfort and safety are increased further, providing extra confidence for workers in various hazardous industries.</p>	