



Exhibitor Directory

NCMS Technology Showcase

Pearl Harbor Naval Shipyard & Intermediate Maintenance Facility



Welcome From NCMS President and CEO

I'd like to warmly welcome all the government, industry, and academic attendees to this Technology Showcase hosted at the Pearl Harbor Naval Shipyard and Intermediate Maintenance Facility (PHNSY & IMF). As one of America's leading strategic assets in the Asia-Pacific Theatre, PHNSY & IMF is a designated Regional Maintenance Center and provides a capable, ready, and "Fit to Fight" fleet. I am confident that this Technology Showcase will introduce our talented maintenance and sustainment leaders and artisans from the PHNSY & IMF, as well as those from neighboring service facilities, to technologies that will enhance and support the unified effort of warfighter readiness.

Our Technology Showcase supports PHNSY & IMF's mission to repair, maintain, and modernize the fleet. The technologies gathered at this showcase were custom chosen because they are commercially available, adaptable, and extremely pertinent to the important work performed at this shipyard.

NCMS's goal is to facilitate a vibrant exchange of knowledge, assist in filling unmet needs, and promote and accelerate technology implementation from US manufacturers to the US Armed Forces. Through our Commercial Technologies for Maintenance Activities (CTMA) Program, NCMS thoughtfully brings together industry and government to achieve this purpose.

A very special thanks to the PHNSY & IMF team who made this event possible through their significant efforts and teamwork, especially Jayme Shimomura, Duane Domingo, Shayla Deitch, and Tinamarie Cura.

Creating an exciting and worthwhile technology showcase, such as this, is one 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.

Lisa Strama
NCMS President and CEO

Table of Contents

ADVANCED/ADDITIVE MANUFACTURING

Astro America	
Defense Supply Chain Development	10
DMG MORI Federal Services, Inc.	
DMG MORI Advanced Manufacturing and Additive Manufacturing Solutions	11
GoEngineer	
3D Printing/Additive Manufacturing.....	12
Siemens Government Technologies	
Ship Availability Overhaul Digital Model	13
T-C Company/Esco Tool	
Round Machining.....	14

BUSINESS IT AND ANALYTICS

IBM Consulting	
IBM Digital Transformation	15
Main Sail	
Industry 4.0 and ERP Integration	16
Moviynt	
Mobilium Edge and Insights - Mobile Solution and Analytics for Supply Chain Execution and Logistics	17

COATINGS AND CORROSION PREVENTION

Adapt Laser	
Laser Ablation Systems	18
BlastOne International	
PEATS - Driving Productivity Through Innovation.....	19

Elinor Coatings, LLC

High Performance Chromate-Free Metal-Rich Primer for Aluminum.....	20
--	----

G.C. Laser Systems Inc.

Laser Cleaning and Surface Prep	21
---------------------------------------	----

Laser Photonics

DefenseTech Handheld Laser Cleaning System	22
--	----

CBM+/PREDICTIVE MAINTENANCE

Edlore

Edlore/Asset Explorer™ - AI-Driven Maintenance Technology Software Platform	23
---	----

ENERGY, ENVIRO, HEALTH, AND SAFETY

American Ceramic Technology, Inc.

Non-Hazardous Radiation Shielding	24
---	----

Aptima, Inc.

Confined Spaces Monitoring System	25
---	----

Greasweep

Greasweep Super Absorbent “Fail Safe”	26
--	----

Phoenix Group

One-Piece Chemical, Biological and Radiological Protective Suit.....	27
--	----

TDA Research

TDA Cooling Shirt.....	28
------------------------	----

ENHANCED INSPECTION

Creaform, a Division of Ametek

3D Scanning Technologies	29
--------------------------------	----

Table of Contents

ENHANCED INSPECTION	RELIABILITY IMPROVEMENT (HARDWARE)
FARO 3D Metrology for Quality Assurance/ Inspection and Reverse Engineering 30	Astronics Test Systems PinPoint Alpha - Circuit Card Diagnostic System..... 39
Gamma Reality Inc. 3D Radiation Mapping, Data Fusion, and Visualization LAMP System 31	Atlas Copco Ergonomic Power Tools..... 40
Hexagon Manufacturing Intelligence Metrology Software - Spatial Analyzer & Inspire 32	DIT-MCO International Wiring Harness Test Solutions 41
Hexagon Manufacturing Intelligence Laser Tracker..... 33	EFCO USA, Inc. 3D Digital Twins 42
Hexagon Manufacturing Intelligence Hexagon – Portable Scanning, Probing, NDT/ NDI, and much more..... 34	Maglogix Switchable Permanent Magnets 43
InfoTech NorthStar, LLC SIMCase and SIMSuite 35	Parhelion, Inc. (dba Stripelight) Stripelight FRT Intrinsic Laser-LED Flashlight...44
Keyence VHX-7000N Digital Microscope/VR-6000 Optical Profilometer 36	WORKFORCE DEVELOPMENT/VISUALIZATION
Skydio Autonomous Drones..... 37	ARSOME Technology AR/VR/XR..... 45
Synergy360 Rapid Onsite Mobile Scanning and 360 Video Capture for Inspection and Asset Management..... 38	Boston Engineering BEEP and Family of Sustainment Assisting Robotics 46

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 effectively 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, refine and provide user-centric solutions.

For more information about NCMS, our various contract vehicles, or 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 Cooperative Agreement in 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 to face 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 sustainment and must always 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. Among its benefits are:

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 Transition: 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.

About Pearl Harbor Naval Shipyard

Pearl Harbor Naval Shipyard and Intermediate Maintenance Facility (PHNSY & IMF) is our nation's largest, most comprehensive fleet repair and maintenance facility between the US West Coast and the Asia-Pacific region. As one of America's leading strategic assets in the Asia-Pacific Theatre, PHNSY & IMF is a designated Regional Maintenance Center and provides a capable, ready, and "Fit to Fight" fleet. PHNSY & IMF's capabilities enable the US Navy to secure sea lanes of communication and commerce, effectively projecting power across the expansive Pacific and Indian oceans. In the twenty-first century, the Asia-Pacific region is central to global economic development and geopolitical stability.

The shipyard was officially established on the Hawaiian Island of Oahu by the US Navy on May 13, 1908, as a mid-Pacific coaling and repair station. Since then, the shipyard has proven to be vital for the defense of the United States and its interests.

The men and women of PHNSY & IMF strengthened our nation during a historic attack, providing pivotal support and a hard-fought victory in World War II, earning the motto "We Keep Them Fit to Fight!" PHNSY & IMF also supported the fleet in the Korea conflict, the Vietnam War, the Cold War, the Gulf War, in combat operations in support of ground Forces in Iraq and Afghanistan, and in a myriad of international affairs today.

PHNSY & IMF has continuously improved from its modest beginnings into a world-class Navy complex. The dedicated professionals who repair, maintain, and modernize the US Pacific Fleet contribute to the economic and social well-being of the State of Hawaii. PHNSY & IMF endeavors for the "No Ka `O'i" (The Best) Shipyard to be recognized as the superior maintenance provider in the Pacific.

CTMA Technology Focus Areas

Additive & Advanced Manufacturing

Just as technology is rapidly changing the fundamental nature of manufacturing worldwide, corresponding changes are being brought to bear throughout the life cycle of manufactured assets. Whether on the upstream, with digital model-based engineering design foundations, or on the downstream, with automation, robotics and artificial intelligence used in modern manufacturing processes, the tools and infrastructure continue to evolve. Advanced manufacturing is transforming the way products are brought to market and sustained. Likewise, additive manufacturing is changing the very nature of what can be manufactured and how the manufacturing process is executed.

Business IT and Analytics

Sustainment leaders and maintenance managers make a multitude of decisions every day, such as which component should be inducted to maximize production at the lowest cost. Other decisions center on which tools to invest in and processes to improve to maximize the effectiveness of maintenance and sustainment operations. With the advent of new IT capabilities, disparate data types can be absorbed and integrated to present information more effectively, providing decision-makers with greater insight. The Internet of Things (IoT), machine learning, natural language processing, artificial intelligence, and ever-expanding internet bandwidth and speed are radically changing the very nature of when and how maintenance is executed.

CBM+/Predictive Maintenance

Across the DOD, maintenance has largely been conducted with time-honored approaches: unscheduled maintenance is prevalent, and when a system breaks, maintainers react by troubleshooting and correcting the problem. This legacy maintenance strategy is the leading driver of weapon system non-availability and exorbitant sustainment

cost. However, with rapid advances in sensing technologies as well as artificial intelligence and data science, predictive maintenance is now within reach. The DOD recently completely revamped condition-based maintenance-plus (CBM+) policy to accelerate the adoption, integration and use of these transformative capabilities and shift from largely reactive maintenance to proactive and predictive maintenance.

Coatings and Corrosion Prevention

Recently, the DOD issued a report to Congress citing corrosion as a leading weapon system readiness driver, costing the department and the taxpayers in excess of \$20B annually. The DOD has as a result established the Corrosion Prevention and Control team, and each military service has appointed a corrosion executive in their expanded efforts to combat corrosion and its effects on readiness and cost. These authoritative bodies seek to fundamentally change the way the DOD has battled corrosion by developing and implementing a multi-faceted solution set, which includes novel primers and coatings, cold-sprayed protective layers, improved substrate material formulae, advanced washes and application methods, innovative non-destructive inspection tools, artificial intelligence-based algorithms, CBM+ focused sensors, and robotic solutions to name a few.

Energy, Environmental, and Health & Safety

In order for the DOD organic industrial base as well as field-level sustainment activities to remain ready, relevant and resilient, close attention must be paid to worker safety and health, environmental concerns and hazardous waste, and energy availability and its efficient use. Maintainer health and safety are at the heart of every process and procedure across the DOD's vast sustainment enterprise; but advances in PPE technology, automation, eco-friendly chemicals,

CTMA Technology Focus Areas

and process monitoring are rapidly changing the way industry and the DOD are taking care of their people. At the same time, greater efforts are aimed at improving process efficiencies and output, while reducing waste streams.

Enhanced Inspection

Prior to every military operation, weapon systems and equipment must be thoroughly inspected to ensure safe and reliable performance as well as mission completion. Additionally, every maintenance action is predicated on an in-depth and sometimes complex inspection of material condition. The sheer volume of inspection taking place across the DOD on a daily basis is mind-boggling. As most inspection is performed manually by experienced maintainers with “calibrated eyeballs,” a great opportunity exists to completely re-think how the DOD can enhance its inspection capabilities. Non-destructive inspection and testing (NDI/NDT) will continue to advance as new sensor technology matures, new imaging technologies are employed, AI-based interpretive algorithms are developed and validated, electronic diagnostics progress, built-in-testing expands, and the use of automation is integrated into maintenance.

Facilities and Industrial Process Modernization

The National Defense Strategy calls for improving the readiness posture of the DOD’s weapon systems through innovative and sustainable methods. The recently issued OSD Sustainment Strategy aligns with these goals and calls for modernizing and innovating the organic industrial base (OIB) in order to remain relevant, competitive and cost-effective. The 19 major maintenance depots and arsenals constitute the DOD’s OIB, many of which have not had a major update since World War II. Through novel approaches that enable the modeling and simulation of process operations, many facilities are now working to optimize MRO processes and are investing in tools and technologies that maximize production at the best overall cost.

Reliability Improvement (Hardware)

In the maintenance realm, less is more—the less a system requires maintenance, the more it is ready for its intended purpose. Unexpected material failure of weapon systems and components initiates a labor-intensive and often expensive chain of events necessary to return the equipment to ready status. The DOD refers to this as the “sustainment kill chain,” which begins with system failure or fault indication, requires experienced inspection-test-troubleshooting, initiates supply ordering and fulfillment, necessitates trained maintenance action and quality assurance, and ends with system-level check and test in hopes of achieving first-time repair yield. With the rapid growth of advanced manufacturing capabilities and digital engineering, designing for ultra-high reliability is now within our reach. Artificial intelligence and machine learning coupled with advanced modeling and simulation capabilities enables astounding increases in the reliability of components and systems.

Workforce Development and Visualization

The DOD’s maintainers are the single greatest asset the sustainment community possesses, and the readiness of America’s fighting forces is directly dependent on the competency of those individuals. Traditionally, maintainers are trained in a classroom environment, with paper-based training materials. Similarly, many of the maintenance manuals and guides needed to sustain the readiness of military equipment are paper-based as well. But today’s generation of maintainers are attuned to multimedia learning, with content presented on their phones, tablets, laptop computers, 3D goggles and gaming consoles. These electronic media coupled with enhancements via artificial intelligence, machine learning, augmented reality and virtual reality technologies open up an entirely new way to train the workforce and guide maintainers through the most complex maintenance tasks with greater precision and repeatability than ever before achievable.

Exhibitor Directory for NCMS Technology Showcase at Pearl Harbor Naval Shipyard & IMF

ADVANCED/ADDITIVE MANUFACTURING

ASTRO America

Defense Supply Chain Development



The Applied Science & Technology Research Organization (ASTRO) of America is a nonprofit focused on advancing the public good through manufacturing technology and policy.

Our Think Tank provides non-partisan and independent policy analysis for government and industry leaders across the US. This work ranges from designing for DARPA a capstone blueprint for a Hypersonic Production Accelerator Facility to advising the Government of Guam on establishing an advanced manufacturing sector to meet DOD and civilian MRO needs.


Additionally, our Research Institute undertakes government-sponsored research on manufacturing materials and processes—ranging from helping the Army to develop the world’s largest metal 3D printer, based at Rock Island Arsenal to leading

the world’s largest engine manufacturers in establishing a common approach to additive manufacturing qualification.

ASTRO America leads AM FORWARD, the nation’s foremost supplier development effort for additive manufacturing. Launched in 2022 by the President of the United States and chief executives of ASTRO, Boeing, GE, Honeywell, Lockheed, Northrop, RTX, and Siemens Energy, this public-private partnership helps companies to expand their small suppliers’ adoption of additive manufacturing.

Contact

Jason Gorey
202-642-1181
jason@astroa.org
astroa.org

<p>Problem</p> <p>Additive technology can solve problems posed by the limitations of conventional production methods, too. Announced in 2020, the Jointless Hull Project aims to do just that. Analysts estimate that, since the Vietnam War, approximately 73 percent of vehicle losses resulted from underbody blasts. In fact, they were the leading cause of death for U.S. troops deployed in Iraq and Afghanistan.</p>	<p>Benefits</p> <p>This will improve ground vehicle resilience and reduce the damage caused by these attacks — ultimately increasing survivability.</p>
<p>Technology Solution</p> <p>Because manufacturers produce vehicle hulls by welding together multiple parts, vehicle underbodies have joints — and these weak points make them vulnerable to roadside bombs. The Jointless Hull Project uses additive technology to print single, seamless combat hulls, eliminating weaknesses in vehicle bodies.</p>	

ADVANCED/ADDITIVE MANUFACTURING

DMG MORI Federal Services, Inc.**DMG MORI Advanced Manufacturing and Additive Manufacturing Solutions****DMG MORI**
FEDERAL SERVICES

The DMG MORI Group is a leading innovator in the machine tool industry with an expansive portfolio of manufacturing equipment. We are focused on customer support, quality, service, and advanced technology. Our product line includes 5-axis milling machines, 4- and 5-axis horizontal machining centers, additive machines, hybrid machines, vertical machining centers, CNC turning machines, CNC boring mills, and a variety of palletized systems and grinding machines. With over 12,000 team members world-wide, our group companies specialize in providing unmatched applications support, service and training to large OEMs, tier-one contractors, and the US government itself. DMG MORI Federal Services (DMFS) works exclusively with US federal and state

government agencies to support government initiatives while focusing on federal acquisition regulations and cybersecurity compliance. DMFS is also (ITAR) Registered, (CMMC) 2.0 complaint ready, and (NIST) compliant. We currently have active projects with the Army, Navy, Air Force, Department of Energy, and NASA.

Contact

Kevin Pasiola
224-451-5137
kpasiola@dmgmori-fs.com
us.dmgmori.com

Problem

- How to reduce machining time.
- How to reduce scrapped parts.
- How to increase accuracy of machined parts.
- How to reduce the number of machines needed.
- How to reduce the number of complex and expensive fixtures needed to machine components.
- How to reduce lead time to repair critical components.
- How to train machine operators.

Benefits

- Reduces scrap parts.
- Reduces the number of machines needed to complete a part or a repair, resulting in a smaller footprint.
- Reduce cycle/production time.
- Reduction of repair time.
- Higher quality and increased precision.
- Less tooling and fixtures required.
 - Less machine operators needed.
 - Reduced energy consumption and CO2.
 - Increased profits.

Technology Solution

- Additive manufacturing enables the creation of parts and products with complex features previously not possible.
- Use of both additive and subtractive technologies in one machine (DMG MORI Hybrid DED Machines) combine operations and reduces the need for complex fixtures.
- 5-Axis milling and turning in same machine reduces the number of machines, fixtures, set ups, scrapped parts, leading to reduced time needed to make the part complete.
- DMG MORI Academy offers expert training in operation and repair of our machine tools.



ADVANCED/ADDITIVE MANUFACTURING

GoEngineer

3D Printing/Additive Manufacturing



Collaboration and partnership with our customers is at the center of everything we do. With more than 35 years experience and tens of thousands of customers in high tech, medical, machine design, energy, and other industries, GoEngineer provides best-in-class design solutions, carefully selected that are easy to use, manage, and integrate with other platforms.

Contact

Dina Love
480-254-7332
dlove@goengineer.com
www.goengineer.com

<p>Problem</p> <p>GoEngineer has been a trusted partner for 35+ years providing training resources and support platforms for the continued success of our customers.</p>	<p>Benefits</p> <p>GoEngineer delivers software, technology and expertise that enable companies to unlock design innovation and deliver better products faster. With more than 35 years’ experience and tens of thousands of customers in high tech, medical, machine design, dental, energy and other industries, GoEngineer provides best-in-class design solutions from SOLIDWORKS CAD, Stratasys 3D printing, Creaform & Artec 3D scanning, CAMWorks, PLM, and more.</p>
<p>Technology Solution</p> <p>GoEngineer’s extensive technical knowledge can assist with your additive manufacturing needs. Our Award winning team is ready to help. Reach out and see why GoEngineer is the #1 reseller of SOLIDWORKS and Stratasys systems in the world!</p>	A collection of industrial equipment including a large Stratasys 3D printer, a Creaform 3D scanner, and other manufacturing machinery.

ADVANCED/ADDITIVE MANUFACTURING

Siemens Government Technologies Ship Availability Overhaul Digital Model



Digitalization for Defense. Government agencies are at the forefront of two historic trends: unprecedented innovation and increased complexity. To take advantage of these trends and improve threat preparedness, federal leaders are embracing the digital enterprise. Siemens Government Technologies delivers the power of the Digital Twin and Digital Thread, two innovations at the core of Industry 4.0 that connect the real and virtual worlds to optimize operations, predict outcomes more accurately, and reduce maintenance costs.

Contact

Rob Tye
703-789-5409
robert.tye@siemensgovt.com
www.siemensgovt.com

Problem

Naval Shipyards were last significantly updated in WWII. A Shipyard GAO report of September 2017 stated that planned maintenance periods complete updates on schedule only 47% of the time for aircraft carriers and 24% of the time for submarines. From 2000-2016, maintenance overruns resulted in 1300 lost operational days for aircraft carriers and 2,500 lost operational days of submarines. Modernization of the physical plant to take advantage of new work processes has associated risk of major financial investment.

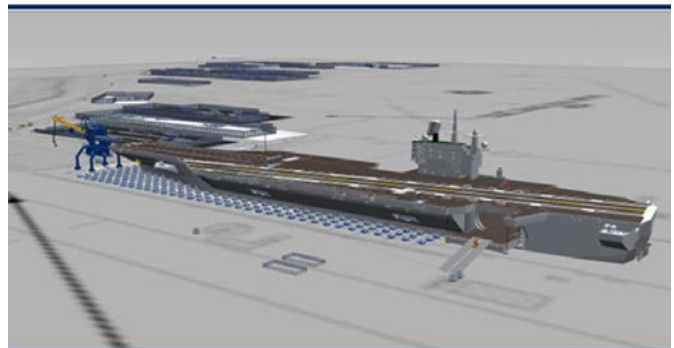
Benefits

- Improve back shop repair process performance.
- Maximize allocation of resources.
- Allow for supported decisions on layout alternatives to reach defined objectives within cost constraints.
- Target faster ROI from project investments in facilities, tooling and new technologies.
- Establish a NAVSEA enterprise simulation management tool.
- Establish priority on readiness.

Technology Solution

This effort focuses on processes within the shipyard's back shop facilities to optimize workflow, equipment, and worker resources at the detailed process level. Performance improvements will then be mapped to the shipyard forecasting models to assess potential impacts:

- A stochastic equipment level model incorporating all infrastructure and industrial assets required to support fabrication and repair processes and other productive work, and equipment maintenance performed in these facilities.
- A stochastic forecasting model incorporating outputs of equipment models to predict future Naval shipyard availability durations.



ADVANCED/ADDITIVE MANUFACTURING

T-C Company/Esco Tool

Round Machining



Esco Tool Company was founded in 1954 and developed the first portable beveling machines for tube and pipe fabrication. After early success on the Trident Nuclear Submarine project, this equipment rapidly became the most popular way to bevel high pressure tube and pipe on-site. Esco Tool MILLHOG® End Prep Tools are built tough and precision machined in the USA from the finest materials. Boiler tube membrane removal and beveling can be completed in one pass for accurate fit-ups, which helps ensure high-quality welds.

Customer feedback has led us to develop our own line of Cohog® clamshell split frames that hold true to our reputation of providing high-quality manufacturing and reliable products. The Cohog allows users to simultaneously part and bevel heavy-walled pipe, with a more simplified setup process than competitive split frames. Machined

out of aircraft-grade hard anodized 7075 aluminum and heat treated 4140 steel, we continue to provide a top-quality product.

ESCO Tool now has a line of over 23 field-proven products that are used all over the world in power generation plants, pulp and paper plants, refineries, fabrication facilities, public work systems, and other metalworking industries.

Contact

Paul Arnesen
208-871-5445
paul@t-ccompany.com
www.escotool.com

<p>Problem</p> <p>Butt welding tubes and pipes without a precision end-prep may result in inferior weld quality. The result of a bad weld in a pressurized system can include pinholes and catastrophic failure. Welds that fail to pass quality control procedures may result in re-work for higher labor and material costs. Damage on raised face flanges can require the flange to be cut out, re-welded and inspected.</p>	<p>Benefits</p> <p>Spark free, precision, power-source-free machining.</p>
<p>Technology Solution</p> <p>With Esco Tool MILLHOG End Prep Tools, your choice of blade gives you precise weld prep and flange face.</p>	

BUSINESS IT AND ANALYTICS

IBM Consulting

IBM Digital Transformation



Achieving full mission readiness is becoming increasingly complex and requires dynamic defense technology solutions. Securing and protecting people, the nation, and information is impacted by a multitude of challenges including COVID-19. New threats and domains for warfare continually emerge, including cyber and space along with disruptive technologies, like AI and quantum. Dealing with these threats necessitates using data as a critical enabler for information driven operations.

As defense departments navigate increasingly sophisticated threat landscapes, they are eyeing a shift to a DevSecOps mindset to ensure they can securely innovate. At a recent round table, produced by Government Executive Media Group and hosted by IBM and Red Hat®, experts across the DOD provided their insights on the critical role that DevSecOps plays to support the mission. These insights are captured in the Top Takeaways: 4 Ways

the Defense Department Can Leverage DevSecOps and a report from the IBM Center for the Business of Government on Achieving Mission Outcomes through DevSecOps.

IBM can help you transition to an advanced hybrid cloud-based environment built on technology that is designed for your mission, including AI, SAP S/4HANA and “cloud to the edge” innovation. Through the IBM cloud management capabilities, you can securely access data anywhere within this new environment, regardless of cloud provider—or even if the information resides on in-house systems.

Contact

Brian FitzPatrick

619-213-7263

Brian.Sean.FitzPatrick@ibm.com

IBM.com

Problem

To maintain business resiliency, operations-intensive industries need to begin responding to operational performance and health issues across siloed organizations:

- Difficulty empowering employees to make the best decisions efficiently and effectively.
- Succumbing to the time, error, expense, and risk inherent in manually rolling out many devices, assets, and processes.
- Need to prevent costly recalls, an excess of scrap metal, down time on the shop floor and lengthy root cause analysis.
- Need to mitigate and manage cyber risks and concerns about the security and vulnerability of devices and sensors.

Benefits

Enjoy unprecedented, secure access to complex data to radically reinvent and simplify your processes.

- Reimagined Processes – Up to 40% reduction in process steps, up to 90% reduction in human touch points with higher automation.
- Operational Cost Savings – Extract more value out of your existing investments in operational performance improvement while saving 65% operational cost.
- Reduced Risk – Increase safety by minimizing human involvement in dangerous or remote environments. Avoid costly compliance and regulation violations.

Technology Solution

Exploit the power of data and digital technologies to revolutionize operations:

- IBM Smart Edge for Welding (SE4W) aggregates different AI-based quality inspection offerings including parametric, acoustic and visual insights into a unique solution that is capable of solving some of the most challenging pain points in any welding application.
- IBM Digital Twin delivers the ability to visually model, simulate, test, and optimize assets, operations, and processes.
- IBM Robotics customized payloads for the Boston Dynamics Spot robot to collect more data than was possible before by bringing the sensors to the assets.



BUSINESS IT AND ANALYTICS

Main Sail

Industry 4.0 and ERP Integration



Main Sail is a nontraditional, Veteran-owned small business focused on maintenance and logistics optimization (MLO) for the federal government. We combine emerging technologies with process excellence to improve effectiveness and readiness for federal agencies with maintenance and logistics missions. Main Sail’s 22 years of experience in both MLO and ERP with emerging technologies and process excellence enable us to deliver customized solutions that effectively address our clients’ unique needs and challenges. Our solution suite includes digital twins, enterprise resource planning (ERP), manufacturing execution systems (MES), product lifecycle management (PLM) as well as integration and automation tools such as low-code platforms, robotics process automation (RPA), and data visualization tools. Our solutions partners

provide a variety of best-of-breed solutions giving us the tools to implement optimized integration for our clients.

Contact

Shane Kelso
717-645-0280
shane.kelso@mainsailgroup.com
www.mainsailgroup.com

<p>Problem</p> <ul style="list-style-type: none">• Aging infrastructure and equipment require modernization.• New Industry 4.0 tools lack efficient integration with legacy systems.• Modern tools require modern software to optimize operations.• Connected equipment often operates in a silo, separate from enterprise data.• Best-of-Breed products often specialize in specific issues with lack of integration.	<p>Benefits</p> <ul style="list-style-type: none">• Improved throughput of manufacturing, maintenance, and repair cycles using industry 4.0 technologies.• Improved supply chain management, like lead times and demand forecasting, with integration of shop data with customer and vendor transactional data.• Reduced data integration time with ERP and legacy solutions.• Real-time feedback of digital twin data using stochastic simulations.• Gain holistic view of the data chain connecting the shops with rest of the business.
<p>Technology Solution</p> <ul style="list-style-type: none">• Our federal implementation experience drives tailored solutions using COTS solutions to fit client needs.• Industry 4.0 technologies, such as sensors and connected equipment can be modeled using digital twins to optimize layouts and throughputs.• Low-code platforms can connect Industry 4.0 software with existing ERPs to integrate the shop floor outputs with enterprise logistic data.• Data visualization tools take data from disparate systems and display key metrics to users with unique layouts for their business cases.	<p>Maintenance, Repair, and Operations</p> <p>The diagram illustrates the integration of Maintenance, Repair, and Operations (MRO) with Logistics. At the top, under the heading "Maintenance, Repair, and Operations", four boxes represent "Production equipment", "Tools and consumables", "Infrastructure", and "Material handling". Below these, a central box labeled "Supply Chain Management" is connected to four boxes at the bottom under the heading "Logistics": "Customer Demand", "Inventory Management", "Transportation", and "Warehousing".</p>

BUSINESS IT AND ANALYTICS

Moviynt**Mobilium Edge and Insights - Mobile Solution and Analytics for Supply Chain Execution and Logistics**

Moviynt accelerates business transformation giving front-line staff tools that connect to SAP or other ERP systems without getting in the way of the work—easy to learn, easy to use, and fast. Our solution, Mobilium™, securely runs on a wide range of industrial mobility devices running Android, iOS, or Windows, including handheld or wearable. Staff can work online, intermittently online, or fully offline—critical when Wi-Fi is unavailable.

Using our native client, our customers' teams get all device benefits: Bluetooth printing, image capture, signature on glass, and more. Mobilium™ is SAP-certified and seamlessly deploys to cloud or on-premise SAP or other ERP systems with no middleware and no new servers.

Our robust solution studio allows deployment teams to rapidly configure any workflow, quickly integrate that workflow to SAP or other ERP systems, and get it in the hands of customers' staff.

Warehouse management, quality inspection, work order management, pick by vision/voice, and hands-free workflows are available and fully integrated to SAP or other ERP systems.

Contact

Robby Moss
301-448-6173
rmoss@moviynt.com
www.moviynt.com

Problem

- High turnover makes it expensive to train staff on complex solutions.
- Warehouses have notoriously poor Wi-Fi signals and signal interrupts require tasks to be restarted.
- When ERP platforms cannot be reached, all work stops.
- No real-time warehouse or shop floor monitoring for operations.

Benefits

- Mobilium supports full offline modes, so staff remain productive if Wi-Fi is down, unavailable, or if the back-end system—such as the ERP or system of record—is offline.
- Mobilium software is easy to use, easy to learn, and accelerates tasks—staff readily adopt our solutions. We have seen training timelines for our customers' front-line staff reduced from days to hours.
- Moviynt projects are up and running in a matter of weeks.
- Moviynt's solution, Mobilium, is SAP certified, and requires no middleware.

Technology Solution

- Mobilium ensures business continuity by running 100% offline.
- Easy to use apps mean staff like their new tools.
- Our software helps make staff faster and more accurate when completing tasks.
- Mobilium Insights provides managers a powerful landing page that monitors staff workflows across all plants in real-time.
- Supervisors easily review task exceptions; e.g., short picks, workflow steps skipped, and posting errors. Resolutions to errors (e.g., re-processing vs. deleting SAP errors) are also monitored and updated in real-time.



COATINGS AND CORROSION PREVENTION

Adapt Laser
Laser Ablation Systems



While we serve a myriad of industries, we do the bulk of our work providing defense and military solutions. With our extensive experience in this field, we fully understand the sensitivity of defense projects as well as the common challenges faced by military bases when providing proper maintenance for equipment and vehicles. At Adapt Laser, we are able to provide the laser cleaning units to allow our soldiers, airmen, marines, and sailors to maintain and operate ground equipment, electronics, armored vehicles, aircraft, ships and other items safely, effectively and into the future.

Contact

Ty Babb
859-979-0070
ty@adapt-laser.com
www.adapt-laser.com

<p>Problem</p> <p>Traditional methods of surface preparation and coating removal use abrasives and media that harm the environment, pose a health & safety risk to the operator and surrounding workers, and can cause irreversible damage to the substrate.</p>	<p>Benefits</p> <ul style="list-style-type: none">• Fast and efficient• Creates no waste and requires no secondary cleanup• Can be handheld or integrated into an automated process• Only PPE required are laser safety glasses• Doesn't damage the substrate• Easy to train new operators to use
<p>Technology Solution</p> <p>Laser ablation uses thousands of pulses of light per second to selectively remove coatings without damaging the substrate. With handheld and automated options available the lasers range in power from 100W all the way up to 1,600W to fit application needs. A fume extraction system captures contaminants at the source and requires no secondary cleanup.</p>	A close-up photograph showing a laser beam being used to remove a coating from a metal surface. A bright yellow laser safety warning triangle is visible on the left side of the frame.



COATINGS AND CORROSION PREVENTION

BlastOne International**PEATS - Driving Productivity Through Innovation**

Originally established nearly 50 years ago to provide technical consulting, BlastOne has grown to become a single source supplier of blasting equipment, abrasives and know-how to customers all over the world. BlastOne operates internationally from several offices across Australia, New Zealand, North America and Europe. We stand behind our brand claim of superior performance. It's something we define as 'Performance3'—the result of combining superior know-how with superior abrasives and superior equipment. In short, it delivers greater cost-efficiencies for our customers.

Contact

Chloe Meisner

614-695-5794

chloe.meisner@blastone.com

blastone.com

Problem

Industrial sandblasting is notoriously fatiguing and creates noise pollution ranging between 113dB-120dB. OSHA requires employers to implement protective hearing equipment when noise exposure reaches 85 decibels averaged over 8 working hours. However, as many blasting job sites are in public areas or work alongside other construction trades, standard blasting volumes are detrimental to anyone near the job site not wearing hearing protection.

SnakeBite's proprietary technology significantly reduces both blaster fatigue as well as overall noise pollution.

Benefits

- SnakeBite Nozzles' quieter operations protect the hearing of operators and surrounding trades.
- The diminished back-thrust reduces blaster fatigue and mitigates falling dangers involved when blasting on platforms or scaffolding.
- Due to its reduced back-thrust, the SnakeBite #10 (5/8") nozzle now offers blasters the following benefits:
 - 25-35% avg increase in blast pattern width per sweep.
 - 54% increase in blasting speed over the most common #8 high-production nozzle

Technology Solution

BlastOne has developed the world's quietest blast nozzle: the SnakeBite.

The SnakeBite's newly designed internal geometry reduces noise up to 75% (16-19dB) compared with standard blast nozzles.

The re-engineered nozzle also results in a 45% average reduction in back-thrust; increasing productivity by decreasing operator fatigue and turnover.



COATINGS AND CORROSION PREVENTION

Elinor Coatings, LLC

High Performance Chromate-Free Metal-Rich Primer for Aluminum



Elinor provides accelerated custom development of chromate-free anti-corrosion and specialty coatings and metal protection systems for the US Department of Defense. We pioneer metal-rich solutions for aluminum, magnesium and titanium and the latest universal primers to protect against galvanic corrosion where steel and lightweight substrates meet. We address the toughest corrosion issues and provide longer-lasting readiness for vehicles, communication systems, superstructures, weapon systems and general deployment with agile surface solutions in convenient packaging designed for safer, cleaner, hassle-free application on land and at sea in all types of climates.

Contact

Dante Battocchi
701-499-3632
dante@elinorcoatings.com
www.elinorcoatings.com

<p>Problem</p> <p>Aluminum corrodes and degrades when exposed to salt water and UV light, but the properties of aluminum alloys make adhesion and long-term protection difficult to achieve without using toxic chromates that are extremely harmful to health and environment. Non-chromate alternatives have had difficulties simultaneously achieving high performance and health safety. Ability to conduct maintenance and repairs to aluminum in harsh conditions such as heat, humidity, or cold can hamper operations or readiness on weapon systems or infrastructure.</p>	<p>Benefits</p> <p>Health and environmental concerns are eliminated, less product is wasted, and ease of application means performance is increased. Less maintenance and less lifetime cost lead to increased asset readiness.</p>
<p>Technology Solution</p> <p>By using lightweight non-toxic metal pigment in an epoxy-modified polyamide in novel and easy to use packaging that eliminates mixing, waste and hassle, the active corrosion-inhibiting traits of a metal-rich system match the effectiveness of chromate in a coating system that is recyclable and safe for marine and human life. By maximizing the application window from 50°-95°F with fast dry-to-touch and unlimited topcoat window, even if there's no time to topcoat, this primer has you covered in the harshest ocean environment.</p>	

COATINGS AND CORROSION PREVENTION

G.C. Laser Systems Inc.**Laser Cleaning and Surface Prep**

G.C. Laser Systems Inc. is an American laser cleaning system manufacturer and a CWOSB with headquarters in Illinois. Our unique and globally patented laser cleaning technology is proudly designed and made in the USA. This proprietary technology was initially developed to clean cultural heritage buildings and artifacts with unmatched precision, and has evolved into many heavy duty industrial and DOD applications. From making our own scan heads and optics to fabricating our systems with durable stainless steel and powder coated aluminum to endure humid and corrosive environments, we specialize in delivering off-the-shelf and custom bespoke laser ablation tools that can work during all four seasons worldwide.

On the industrial side our technology is used for rust removal, paint removal, chloride removal, surface prep, hydrocarbon removal, radiation decontamination, lead abatement, and various other industrial applications that demand precision and efficiency. Branches of the DOD such as the US Army, the US Coast Guard, and the US Air Force use our laser equipment to maintain and service valuable assets.

Contact

Bartek Dajnowski
844-532-1064
bartek@gclasers.com
www.gclasers.com

Problem

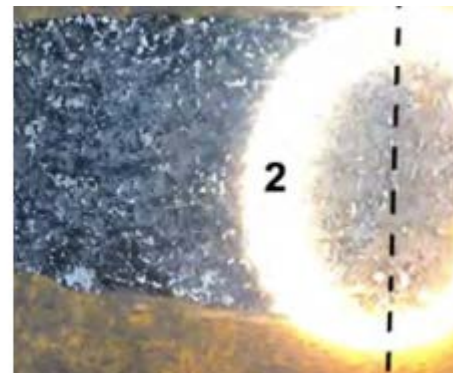
Removing corrosion and coatings from a variety of surfaces can be challenging and the process of abrasive corrosion removal can wear down the thickness of the assets being cleaned, reducing its useful service life, as well as pose environmental concerns with traditional blasting media and chemical stripping containment. Traditional cleaning techniques rely on consumables and have a lot of clean up and disposal costs.

Benefits

- Environmentally friendly speed laser cleaning effectively removes corrosion and coatings from surfaces without causing any loss of thickness or damage to the substrate.
- Laser cleaning does not have any consumables and vaporized materials are easily captured with fume extractors.
- Our durable portable laser systems are plug and play and easy to use.

Technology Solution

G.C. Laser Systems offers environmentally friendly and logistically easy-to-deploy portable laser systems for removing rust, paint, coatings, and contamination from surfaces.



COATINGS AND CORROSION PREVENTION

Laser Photonics

DefenseTech Handheld Laser Cleaning System



Laser Photonics is a leader in high-tech laser systems for laser cleaning, laser marking, laser cutting, laser engraving, and 3D printing applications. NASDAQ: LASE

Contact

Rohan Narain
407-804-1000
rnarain@laserphotonics.com
www.laserphotonics.com

<p>Problem</p> <p>Corrosion damages billions of dollars of military assets every year. Traditional cleaning methods expose personnel to hazardous chemicals, pollutants, and involve costly consumables that are facing increased regulations from OSHA, EPA and other regulatory agencies.</p>	<p>Benefits</p> <ul style="list-style-type: none">• Laser cleaning can replace abrasive blasting in virtually every industry and every application where blast cleaning is utilized.• No dangerous chemicals.• No hazardous fumes.• No complex cleaning procedures.
<p>Technology Solution</p> <p>Laser surface treatment can be used to remove corrosion from metal surfaces on missiles and other equipment without damaging the underlying material.</p> <p>DefenseTech Handheld Laser Cleaning System is a non-contact, environmentally friendly process that removes surface coatings from metals, concrete and delicate substrates such as composites—with minimal impact on the base material.</p>	Two images of the DefenseTech Handheld Laser Cleaning System. The left image shows a unit with a black and grey camouflage pattern and the text 'DEFENSE TECH' and 'MISSION READY SOLUTIONS'. The right image shows a similar unit with a more industrial, metallic look and a control panel on top.

CBM+/PREDICTIVE MAINTENANCE

Edlore**Edlore/Asset Explorer™ - AI-Driven Maintenance Technology Software Platform**

Edlore is a pioneer in AI/ML and 3D technological solutions, reshaping industry standards with its interactive manuals and wearable device integrations. Our patented AI-driven platform transforms complex technical orders into digestible, contextually relevant insights, streamlining operations. With state-of-the-art mobile and wearable technology, professionals achieve access to crucial data, ensuring efficiency and precision. Our platform also encompasses a robust work order management system, enhanced by asset tracking and multimedia attachments, facilitating seamless operations and maintenance processes. At Edlore, we blend innovation and practicality, consistently delivering excellence in an ever-evolving technological landscape.

Contact

Javid Vahid
949-690-2245
javid@edlore.com
www.edlore.com

Problem

Despite the rapid advancement in industrial and technical operations, complex equipment service and maintainers often grapple with cumbersome manuals, scattered asset data, and lack of real-time expert assistance. This disjointed information flow increases operational downtime and raises the margin for error. Edlore addresses this pressing challenge by seamlessly integrating AI-driven insights, 3D interactive manuals, and hands-free wearable technology, ensuring precise, efficient, and on-demand data accessibility for professionals in the field.

Benefits

Empowering maintainers with immediate access to AI-enhanced, 3D interactive guidance, reduces operational errors and downtime. By unifying knowledge, expertise, and real-time tracking within a mobile and wearable interface, we ensure every task is executed with precision, speed, and confidence. The benefits of using Edlore are:

- More efficient on-board service and repair.
- Access to device parts metadata and ability to possibly print the component on board.
- Ability to gather field data from service and repair.
- Mobile and hands-free operation.

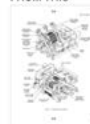
Technology Solution

Edlore introduces a unified technology suite designed for the modern maintainer. Leveraging AI's power, we've transformed dense manuals into interactive, 3D-guided insights that intuitively provide the right information at the right time. Our platform, optimized for desktop, mobile and wearable devices, ensures hands-free, on-the-go access to these insights, minimizing downtime. Furthermore, with our real-time Remote Expert Video Chat, professionals are never alone in the field, always having a lifeline to expert assistance. Paired with a comprehensive work order management system and dynamic asset tracking, Edlore's solution streamlines operations, ensuring that data accessibility is efficient, precise, and always at one's fingertips.



Unlock the Future of Maintenance Excellence
Convert tech manuals to interactive 3D

FROM THIS



TO THIS



TO THESE

- Simple User Experience
- Technical Documentation Repository
- Massive library of 3D parts
- AI driven Procedures / 3D animations
- Remote Expert Video Chat
- Preventative and Predictive Maintenance
- Procedural videos and pictures upload
- Asset tracking / Repair History



ENERGY, ENVIRONMENTAL, HEALTH, AND SAFETY

American Ceramic Technology, Inc.

Non-Hazardous Radiation Shielding



American Ceramic Technology, Inc. is the ISO 9001:2015 manufacturer of Silflex® Shielding, the award winning nonhazardous, non-lead radiation shielding. In 2005, Silflex® tungsten shielding was developed and certified by Entergy and ANO in 2007 for use in the nuclear industry. We have expanded into the medical, military, NDT, mining and oil & gas industries. Manufacturing is located in California and South Carolina. We have many radiation shielding materials and product options designed with a flexible silicone base. We design custom solutions to help customers achieve their ALARA goals. Silflex® shielding is designed for maximum radiation dose reduction during operation and installation to protect personnel and equipment. American Ceramic Technology’s innovative technology allows nuclear

power plants, laboratories and naval reactors to provide a safer, cleaner and more efficient work environment.

Contact

Richard Culbertson
619-992-3104
cubculbertson@cs.com
www.silflexshielding.com

<p>Problem</p> <p>ANO Nuclear Plant was looking for a new and innovative radiation shielding.</p> <ul style="list-style-type: none">• Needed to be just as effective as lead shielding.• Needed a quicker application than lead shielding.• Need to be a safer environment for workers to install shielding.	<p>Benefits</p> <ul style="list-style-type: none">• Saved ANO Nuclear of \$319,000 in total saving for one project.• Tungsten weighs 25%-50% less than lead and twice as effective.• Less toxicity hazard and mixed waste processing costs.• Tungsten is more effective than lead at reducing gamma rays.• Workers avoid exposure to lead shielding when wearing the vest by 39% using tungsten vests.• The total exposure avoided was 642 person-mRem.
<p>Technology Solution</p> <p>The project consisted of two parts. First part was shielding the source. Installation of tungsten shielding blankets with embedded magnetics that form fit with ease. They were 25%-50% lighter than lead, which was easier to install and also twice as effective than the previously used lead shielding. Second part was shielding the person. “If you can’t shield the source, shield the person.” ANO founded the fabricated tungsten vest to eliminate concerns that are associated with lead shielding exposure to humans and the environment.</p>	The image contains two photographs. On the left is a black, sleeveless tungsten vest with a black belt and a small yellow logo on the lower left. On the right is a large blue tungsten shielding blanket with a yellow and black striped border, hanging from a metal frame in an industrial setting.

ENERGY, ENVIRONMENTAL, HEALTH, AND SAFETY

Aptima, Inc.**Confined Spaces Monitoring System**

Aptima, Inc. is a small business engineering firm, headquartered in Woburn, Massachusetts, specializing in innovative R&D for various DOD organizations with a focus on end-user applications to augment human performance. Aptima's expertise is in creating effective end-user solutions through the integration of wearable sensors, secure communications, and intuitive user interface design. Aptima's work aims to seamlessly blend new technologies with end-users' natural behaviors and environments, leading to improvements in job performance and decision-making capabilities.

Among Aptima's leading advancements within the DOD are its health/safety monitoring and atmospheric detection systems, which have a broad spectrum of applications from personal health management to industrial workforce

safety monitoring. Aptima's experienced team of scientists and engineers continuously pushes the envelope of human-centric technology, striving to translate theoretical concepts into practical solutions that address the real-world challenges faced by individuals and communities. Aptima prioritizes positive and active collaborative relationships with its project stakeholders, fostering partnerships that propel the collective pursuit of technological excellence and meaningful impact.

Contact

Kevin T Durkee

937-490-8010

kdurkee@aptima.com

www.aptima.com/

Problem

Gas-free engineering and confined spaces safety management is very challenging. Existing policies reflecting OSHA regulations necessitate frequent gas-free verifications and a near 1:1 safety attendant to worker ratio in confined spaces, leading to high manpower costs and operational inefficiencies. Despite significant personnel deployment, manual procedures don't fully assure safety, and compliance documentation adds to the task burden, revealing a need for improved safety monitoring practices within DOD maintenance environments.

Benefits

CSMS bolsters depot efficiency by minimizing costs and manpower for confined space monitoring, aiding in accelerating production schedules and mitigating weapon system availability delays. The benefits are threefold: (1) Enhanced Safety: faster, automated problem detection; (2) Improved Organizational Efficiency: significant reduction in labor hours for monitoring confined spaces; (3) Augmented Compliance: better adherence to OSHA regulations via digital and semi-automated logging of confined space entries, making CSMS a scalable, data-secure solution for various DOD applications.

Technology Solution

CSMS shifts confined space monitoring practices from manual to sensor-based procedures, enabling remote safety attendants to continuously monitor personnel. CSMS provides attendants with enhanced situational awareness, allowing a single individual to safely monitor multiple workers and promptly alert emergency personnel when needed. Through human-worn sensors, CSMS continuously monitors workers' physiological status and atmospheric conditions, offering automated alerts for concerning events, thereby improving safety, compliance, and operational efficiency in DOD maintenance environments.



ENERGY, ENVIRONMENTAL, HEALTH, AND SAFETY

Greasweep

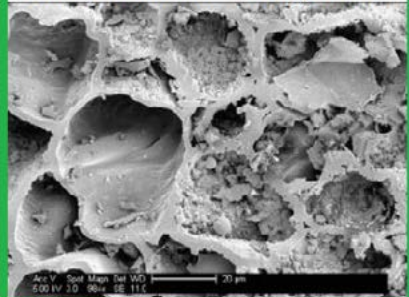
Greasweep Super Absorbent “Fail Safe”



Greasweep LLC, provides to industry what is considered to be the most advanced, all-purpose liquid absorbent in the world. Greasweep absorbs all liquids separately or simultaneously. This tool absorbs all liquids on contact and encapsulates after absorbing liquids. The liquids become a Greasweep container. Works great for absorbing burning fuels, making fires easy to extinguish.

Contact

Floyd Martin
360-710-9181
floyd@greasweep.com
www.greasweep.com

<p>Problem</p> <p>Transporting nuclear waste and other highly hazardous material from military installations on our highways is necessary. Many attempts to add a second layer of protection in case of an accident have failed, such as surrounding the container holding the hazardous waste with a clay absorbent “kitty litter” product. The enormous weight of the clay absorbent product is too heavy for some roads etc. Another product used was spray foam, which glued the container holding hazardous waste to the outer container, creating more of a hazard by removing foam from container.</p>	<p>Benefits</p> <p>If there is a breach in the container holding liquid hazardous waste, Greasweep will absorb instantly and encapsulate creating a secondary fail-safe outer no-leak container.</p>
<p>Technology Solution</p> <p>Greasweep Encapsulating Absorbing Containers, which are custom made, fully house containers holding liquid hazardous waste.</p>	<p>100% Plant Ash Microscopic View</p>  <p>100% Green / Greasweep Advantages</p>

ENERGY, ENVIRONMENTAL, HEALTH, AND SAFETY

Phoenix Group

PHOENIXGROUP

One-Piece Chemical, Biological and Radiological Protective Suit

Phoenix Group of Virginia. (Phoenix Group) provides expert services and quality products to the U.S. Government, NATO, International marketplace and commercial industry. Our personnel have successfully supported contracts with the departments of Defense, Homeland Security, and Transportation, the NSA, and defense-related contracts with NATO, both as a prime and sub-contractor.

Contact

Stephen Clock

757-615-2367

sjclock@phoenix-group.com

www.phoenix-group.com

<p>Problem</p> <p>Current chemical, biological and radiological (CBR)/ hazardous material suit (hazmat suits) are not form fitting and do not provide the tactical end user with a comfortable suit to engage in tactical situations. Tactical CBR/hazmat suits are a two-piece system and do not offer a one-piece quick-front-entry zip-up application and do not offer the same level of protection as other CBR/hazmat suits. The two-piece suits also do not meet NFPA certifications.</p>	<p>Benefits</p> <ul style="list-style-type: none"> • Shelf-life of 10 years. • Laundered up to 10x. • One-piece design. • NFPA-certified (currently undergoing NFPA 1992 certification). • Awaiting award of an AFWERX STTR Phase 1.
<p>Technology Solution</p> <p>Phoenix Group of Virginia personnel have designed and developed Innovative NFPA-certified suits since 2008. The STS suit would be distinguishable from similar suits due to the carbon technology and extended shelf-life (10 years and laundered up to 10x). The STS suit will be lighter than the competition utilizing our exclusive woven fabric technology and outer fabric material. The form-fitting design will be ideal for tactical teams.</p>	

ENERGY, ENVIRONMENTAL, HEALTH, AND SAFETY

TDA Research

TDA Cooling Shirt




TDA Research, Inc. was founded in 1987 and is located in Wheat Ridge and Golden, CO. TDA’s staff of 110+ develops catalysts and sorbents, personal protective equipment, and advanced materials and components. Our development work is primarily supported by government R&D contracts. With a research staff larger than some fortune 500 R&D departments, we have a highly capable team to perform rigorous scientific research. Our organization is designed to efficiently operate in compliance with government contract requirements. Our scientifically diverse technical staff (about one-third with PhDs) creates advanced materials, chemical processes and aerospace and military hardware to solve our customer’s challenges. TDA Research, Inc. has a proven record of commercializing our R&D projects.

We have licensed large industrial processes and manufactured tens of tons of sorbents, catalysts, and advanced chemicals, with multi-million dollars in sales. We manufacture specialty chemicals and build flight-qualified hardware for NASA and the DOD. Our team’s unique skill set and extensive experience allow us to move a project forward from idea to commercial product seamlessly.

Contact

Girish Srinivas, PhD, MBA
303-748-7153
gsrinivas@tda.com
tda.com

<p>Problem</p> <ul style="list-style-type: none">• Shipyard welders and other workers often work in very hot environments and wear heavy personal protective equipment (PPE).• The combination of a hot environment and heavy PPE can lead to heat-related illness (such as heat exhaustion or heat stroke).• This forces shipyard welders and other workers to take frequent breaks to maintain safety, reducing productivity and increasing costs.	<p>Benefits</p> <ul style="list-style-type: none">• TDA’s cooling shirt has been shown to reduce core body temperature by >2°F (a huge amount) in a 90-minute test on a sweating manikin in an environmental chamber at NIOSH.• TDA’s cooling shirt is light weight, durable, self-regulating, and doesn’t restrict mobility.• It’s powered by a small battery that lasts 2 hours and can easily be hot swapped.
<p>Technology Solution</p> <ul style="list-style-type: none">• TDA’s cooling shirt employs patent protected (US 9,635,889) technology to significantly increase the sweat evaporation efficiency.• Sweat evaporation is more efficient per pound at cooling than phase change materials (including ice).• The only consumable is a small battery that lasts >2 hours and can quickly be swapped for a fully charged one to provide constant cooling over longer shifts.• The shirt is lightweight, comfortable, durable, machine washable, and causes no reduction in wearer mobility.	

ENHANCED INSPECTION

Creaform, a Division of Ametek
3D Scanning Technologies

Creaform develops and manufactures portable 3D measurement technologies for applications such as 3D scanning, reverse engineering, quality control, and product development.

Contact

Mike Walsh
415-298-2432
mike.walsh@ametech.com
www.creaform3d.com/en

Problem

Creaform's products and services are intended for industries such as the automotive, aerospace, consumer products, heavy industries, health care, manufacturing, oil & gas, power generation and research & education.

Benefits

Provides an exponential decrease in overall time for reverse engineering / CAD modeling, first article inspection, wear and tear analysis/damage monitoring, and adds traceability and repeatability with a trusted ISO 17025 rating for NDT, QC, and aerospace inspections.

Technology Solution

The company offers innovative solutions such as 3D scanning, reverse engineering, quality control, non-destructive testing, product development and simulation.



ENHANCED INSPECTION

FARO

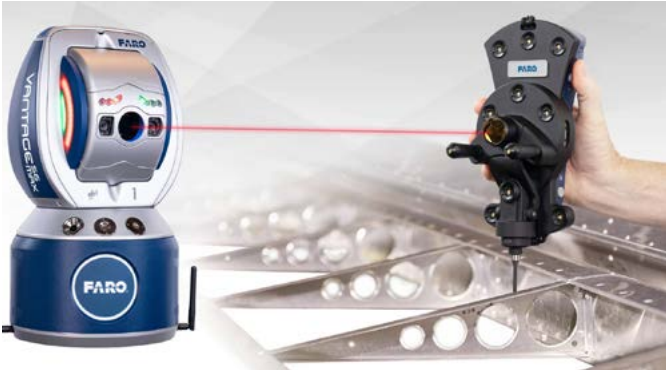
3D Metrology for Quality Assurance/Inspection and Reverse Engineering



FARO is the leading global source for 3D measurement, imaging, and realization technology. For 40 years, FARO has provided industry-leading technology solutions that enable customers to quickly and easily measure their world, and then use that data to make smarter decisions faster. FARO continues to be a pioneer in bridging the digital and physical worlds through data-driven reliable accuracy, precision and immediacy. FARO’s global headquarters is located in Lake Mary, Florida. The company also has a technology center and manufacturing facility located in Exton, Pennsylvania, containing research and development, manufacturing and service operations.

Contact

Ivan Barrow
360-920-1745
ivan.barrow@faro.com
www.faro.com

<p>Problem</p> <ul style="list-style-type: none">• In order to stay competitive, you need to meet increasingly strict quality standards — and do this as cost-effectively as possible. You can’t invest in a quality control or inspection solution only to find out that it doesn’t perform as you expected, or that it requires significant changes to your team’s workflow, skills or software.• Traditional bridge-style CMMs and other stationary measurement methods do not alone provide the mobility and versatility required by today’s manufacturing standards.	<p>Benefits</p> <ul style="list-style-type: none">• Quick and simple inspection process.• Easy to use software with no programming required.• Fully portable and wireless, allowing use in the field.• Can bring the device to your parts.• Allows detailed measurements of complex geometry across a very large envelope (up to 80 meters).• Easy to apply coordinate system means little to no prep time per part.• Ready to use right out of the box.• No manual data entry is needed – measurements are automatically stored in the software.
<p>Technology Solution</p> <ul style="list-style-type: none">• Sometimes a part or tool is so large or complex, you can’t use stationary CMMs or Arm systems. FARO® VantageS6 Max and VantageE6 Max Laser Trackers enable you to build and inspect products by measuring quickly, simply and precisely with exceptional portability. The Vantage Max Laser Trackers offer comprehensive, large-volume 3D measurement up to 80 meters, significantly streamlining your processes and reducing inspection cycle times.• Vantage Max can incorporate our highly accurate 6 degrees of freedom (6DoF) measurement capabilities via the optional 6Probe, which enables precise measurement of hidden areas and small features.	

ENHANCED INSPECTION

Gamma Reality Inc.**3D Radiation Mapping, Data Fusion, and Visualization:
LAMP System**

Gamma Reality Inc. (GRI) provides real-time, mobile, 3D radiation mapping capabilities deployable in handheld mode, on unmanned robotic platforms (UAV/UGV) and on vehicles, to enable safer, more efficient, and dynamic radiation detection missions. Our core capabilities include multi-sensor data fusion and data analysis, 3D radiation mapping with situational awareness sensors, and integration of multi-sensor 3D radiation mapping systems with robotic platforms. GRI provides gamma-ray imaging and dual neutron and gamma-ray mapping capabilities based on user need for applications including nuclear security, emergency response, safeguards, defense, decontamination, and more. The GRI team has over a decade of experience developing

and integrating hardware and software for multi-sensor systems as well as designing and building custom radiation mapping systems.

Contact

Erika Suzuki

510-542-9025

esuzuki@gammareality.com

www.gammareality.com

Problem

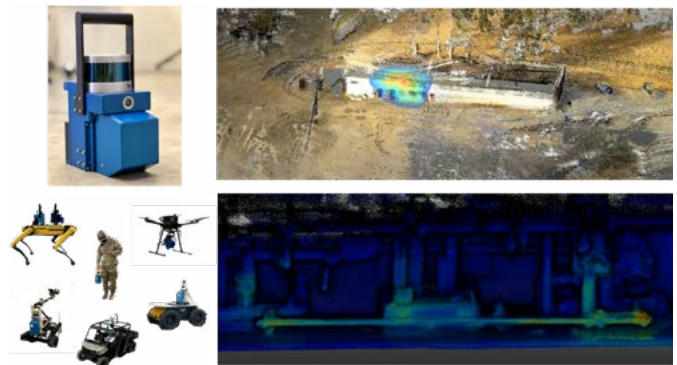
Conducting radiological surveys of complex indoor and outdoor areas is a time-consuming, error-prone process that currently requires a technician to manually collect and analyze multiple pieces of information, including location, dose rate, and isotope ID, and attributes of the environment (e.g., equipment in the area or size of the room). This data collection process can also expose the technician to radioactive dose and may also be inaccurate or incomplete.

Benefits

GRI's real-time, remotely deployable 3D radiation mapping and visualization technologies provide faster, safer, and more intuitive ways to detect, assess, identify, map, and visualize radiological and nuclear threats and hazards. The LAMP system is user friendly and requires minimal training, and remotely deploying it on robotic platforms enables the user to avoid unnecessary dose or exposure to other hazards. The intuitive 3D maps also make it easier to communicate the location of hazards to anyone, including nontechnical stakeholders.

Technology Solution

GRI's 3D radiation mapping technologies, such as the LAMP system, provide real-time 3D radiation maps that automatically correlate location and radiation data to provide accurate maps of hotspots, contamination, and source term. LAMP automatically fuses data from the radiation detector, LiDAR mapping sensor, and visual camera and shows the resulting 3D radiation map and radiation data in an intuitive user interface. LAMP can be deployed in handheld mode or on manned or unmanned ground and aerial vehicles.



ENHANCED INSPECTION

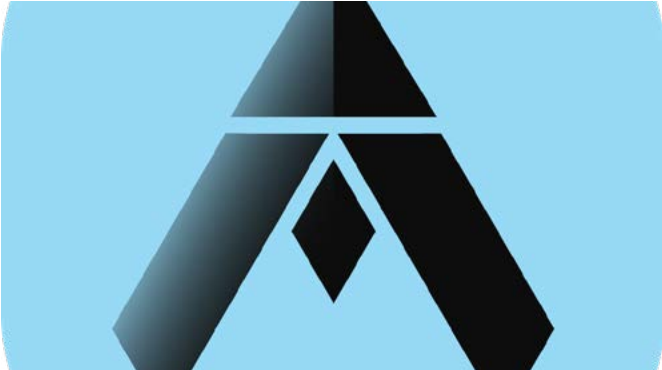
Hexagon Manufacturing Intelligence
Metrology Software – Spatial Analyzer & Inspire



Hexagon Manufacturing Intelligence is the largest software developer in the metrology industry and offers a wide range of in-house developed, individually customizable software packages that deliver intelligent and effective data acquisition, analysis, and evaluation as well as powerful data management and reporting tools.

Contact

Cody Anderson
253-349-1644
colton.anderson@hexagon.com
hexagon.com/company/divisions/
manufacturing-intelligence

<p>Problem</p> <p>Spatial Analyzer fills the need for software to input data from portable metrology tools used for large-scale applications. End-users require an instrument-independent, traceable 3D graphical software platform that makes it easy to integrate data from multiple instruments and perform complex tasks simply, ultimately improving productivity.</p>	<p>Benefits</p> <ul style="list-style-type: none">• Spatial Analyzer interfaces with all Hexagon Metrology portable instruments like Laser Trackers, Laser Stations, Theodolites and its accessories. A clear history of all data from start to finish is logged, providing 100% traceability.• It aligns instruments to known coordinate systems using a variety of techniques.• Unique relationship fitting enables simultaneous feature-based fitting to organic surfaces in addition to traditional iterative fitting.• Digital assembly options enable users to see how parts will virtually fit in final assembly.
<p>Technology Solution</p> <p>Spatial Analyzer provides full support for multiple portable metrology instruments. Powerful, versatile, and user-friendly, it can simultaneously communicate with virtually any number and type of portable metrology instruments. This includes laser trackers, arms, laser radars, scanners, projectors, theodolites, total stations, and photogrammetric devices—all featuring a common interface for each instrument class.</p>	

ENHANCED INSPECTION

Hexagon Manufacturing Intelligence Laser Tracker



Hexagon Manufacturing Intelligence is the largest software developer in the metrology industry and offers a wide range of in-house developed, individually-customizable software packages that deliver intelligent and effective data acquisition, analysis, and evaluation as well as powerful data management and reporting tools.

Hexagon's Manufacturing Intelligence division helps customers put data to work to improve productivity and efficiency while embedding quality throughout the product life cycle.


Contact

Justin Lopez

248-533-4739

justin.lopez@hexagon.com

hexagon.com/company/divisions/manufacturing-intelligence

Problem	Benefits
When needing to measure parts with high accuracy and increased portability, look no further than a Hexagon Leica Laser Tracker.	Lightweight, accurate, portable, able to be completely wireless, reliable, and much more.
Technology Solution	
A Hexagon Leica Laser Tracker will measure parts within 15-micron accuracy and has the ability to operate completely wirelessly and offers ultimate portability.	

ENHANCED INSPECTION

Hexagon Manufacturing Intelligence

Hexagon – Portable Scanning, Probing, NDT/NDI, and much more



Hexagon Manufacturing Intelligence is the largest software developer in the metrology industry and offers a wide range of in-house developed, individually-customizable software packages that deliver intelligent and effective data acquisition, analysis, and evaluation as well as powerful data management and reporting tools.

Contact

Scott Zanio
949-421-7297
scott.zanio@hexagon.com
www.hexagon.com

<p>Problem</p> <p>Need to keep the ships in the water? Hexagon has the answer with hardware and software.</p>	<p>Benefits</p> <p>High accuracy measurements, with continual support.</p>
<p>Technology Solution</p> <ul style="list-style-type: none">• Laser scanning, hard probing, GD&T, and reporting solutions.	The Hexagon logo, featuring a stylized blue and green geometric shape with the word "HEXAGON" in black text.

ENHANCED INSPECTION

InfoTech NorthStar, LLC

SIMCase and SIMSuite



InfoTech NorthStar, LLC (ITNS) provides professional, technical and engineering support services in several related fields for all phases and types of project, task, and service-based work. When we started ITNS, we saw a need in the government sector to offer these types of wide-ranging services. ITNS is based in Richland, Washington, and supports the community by hiring many of our employees locally. ITNS is a small, disadvantaged, woman-owned business that while local first, is expanding its reach throughout the entire government sector with its task- and professional, technical and engineering-support-service-focused offerings. ITNS, LLC was formed and registered in Washington State in October of 2021 as a consortium of local, experienced government contractors with over 50

years of combined experience at government sites around the country. ITNS, LLC is registered with the Washington Secretary of State, Corporation Commissioner and maintains licensed professional engineers (P.E.) and other credentialed personnel in many fields on its team.

Contact

Nolan Wright

509-531-8890

nolan.wright@infotechnorthstar.com

www.infotechnorthstar.com

Problem

The current semi-automated methods of efficiently and thoroughly testing and reporting results for large and/or complex real-world control systems (PLC/HMI/DCS) are time-consuming and laborious processes. Even if partially automated with some level of field I/O simulation, the process is frustrating, especially if you ever need to repeat tests, potentially over the course of several code updates, and multiple phases of testing.

Benefits

- SIMCase™ provides a black-box, hardware-based testing method that is truly independent of the system I/O.
- Eliminates manual lifting/landing of I/O leads to generate test signals.
- Agnostic to and supports all hardware brands.
- Allows for wide range of processing large numbers of simultaneous I/O for advanced logic, interlock, user interface, and performance testing.
- Supports all project phases including development, acceptance (FAT), construction (CAT), operational (OAT), and for long term maintenance and upgrade testing.

Technology Solution

Introducing SIMCase™ to fully test your process control system I/O, be it on the bench, at the factory, or in the field. Your development and test team can now perform expansive automated tests, retests and reports on your control system interfaces, logic, interlocks, alarms and HMI user interface.

- SIMCase™ cables connect in a mirrored fashion to the inputs/outputs of the control system. Special cases of signal conditioning are handled with “breakout boards.”
- SIMCase™ works in conjunction with SIMSuite to make a complete testing solution.



ENHANCED INSPECTION

Keyence

VHX-7000N Digital Microscope/VR-6000 Optical Profilometer



As a leading supplier of sensors, measuring systems, laser markers, microscopes, and machine vision systems worldwide, KEYENCE is at the forefront of factory automation. We strive to develop innovative and reliable products to meet the needs of our customers in every manufacturing industry.

In addition to our world-class products, KEYENCE offers a full range of services to further assist our customers. Our technically trained direct sales force is able to solve tough applications and answer technical questions about our products. We also provide fast shipping so customers can improve their processes as quickly as possible.

KEYENCE is dedicated to adding value to our

customers by combining superior technology with unparalleled support.

Contact

Zach McKee
424-266-6210
Zach.Mckee@keyence.com
www.keyence.com

<p>Problem</p> <p>VHX-7000N Digital Microscope</p> <ul style="list-style-type: none">• The VHX is designed to overcome limitations of traditional optical microscopes and combines capabilities from a stereoscope, compound/metallurgical microscope, measuring microscope, and an SEM. <p>VR-6000 Optical Profilometer</p> <ul style="list-style-type: none">• Many metrology tools on the market are hard to use and hard to learn. The VR allows for a novice user to complete the most complex of measurements within minutes.• The VR can replace the use of a CMM, 3D scanner, contact surface roughness profiler, OMM, and more.	<p>Benefits</p> <p>VHX-7000N Digital Microscope</p> <ul style="list-style-type: none">• Ease of use requires little training.• The many capabilities of this tool allows us to replace multiple different microscopes. <p>VR-6000 Optical Profilometer</p> <ul style="list-style-type: none">• Immediate data and high accuracy allows the user to make educated and NIST-traceable decisions.• Ease of use requires little training.• Wide range of tool set allows the VR to substitute a task that could normally require 3-5 metrology tools.
<p>Technology Solution</p> <p>VHX-7000N Digital Microscope</p> <ul style="list-style-type: none">• The VHX has simple software allowing non-microscope users to get high resolution images with ease. With a 27-inch 4K resolution display, easily communicate between a group of people and build reports. <p>VR-6000 Optical Profilometer</p> <ul style="list-style-type: none">• The VR allows users with no metrology background to complete challenging measurements, while giving experts a wide range of capability. This tool works on almost any material and has extreme accuracy to allow for the widest range of samples to be tested on one tool.	

ENHANCED INSPECTION

Skydio

Autonomous Drones



We are the leading US drone manufacturer and world leader in autonomous flight. We leverage breakthrough AI to create the world’s most intelligent flying machines for use by consumer, enterprise, and government customers.

Founded in 2014, our team is made up of leading experts in AI, robotics, cameras, and electric vehicles from top companies, research labs, and universities from around the world.

We take our responsibility as America’s leading drone manufacturer seriously. We design, assemble, and support our products in the US. We develop our software in-house and source our processors from US companies. That enables us to provide a high level of supply chain security

and serve as a trusted partner to government customers.

The result is a homegrown aircraft that reflects the best of American innovation, trustworthiness, and craftsmanship.

Contact

Jake Johnson

757-773-3382

jake.johnson@skydio.com

www.skydio.com

<p>Problem</p> <p>Navy assets at sea need dynamic visualization and inspection methods to “see” themselves and the world surrounding them. For example, ships need to “see” above and below the water line, and inside and outside of the hull. Lengthy scanning and/or synthesis of scan data is unacceptable. The Navy needs individuals, working both onsite and remotely, to provide battle damage assessment (BDA) in locations above/below the vessels’ waterline as well as within their interior.</p>	<p>Benefits</p> <p>What sets Skydio Drones apart is the fact that they not only reduce the lengthy scanning and synthesis of scan data but also increase the accuracy of the inspection, helping to mitigate potential risks.</p> <p>This combination of autonomy and digital twin technology streamlines the inspection process, which is otherwise a time-consuming and costly task, thereby improving operational efficiency. Skydio Drones allow for more frequent and precise checks and overall better management of the Navy’s fleet.</p>
<p>Technology Solution</p> <p>The cutting-edge Skydio Drones utilize advanced autonomous capabilities and 3D scanning technology. This technology is designed to operate independently, reducing the need for human intervention and significantly decreasing the time required.</p> <p>Incorporating AI, machine learning, and computer vision, Skydio Drones are equipped to navigate complex environments and all areas of a vessel. These drones are capable of capturing highly accurate, high-resolution images and data of the vessel, both externally and internally. By using 3D scanning technology, these drones are capable of capturing highly accurate, high-resolution images and data, providing a real-time digital representation or “digital twin” of the asset.</p>	A white Skydio drone with four arms and propellers, viewed from a top-down perspective.

ENHANCED INSPECTION

Synergy360


Rapid Onsite Mobile Scanning and 360 Video Capture for Inspection and Asset Management



SiteScout360, a flagship service offered by Synergy360, has been at the forefront of scanning and modeling US Navy waterfront infrastructure and maintenance areas for over a decade. Our methodology is underpinned by cutting-edge technology and a wealth of experience, ensuring that we deliver results with unprecedented speed and pinpoint accuracy. Unlike traditional tripod-based scanning methods, SiteScout360 leverages the power of the fastest and most accurate on-site scanners, complemented by immersive 360-degree video capture. The result is a comprehensive site collection that is completed in a fraction of the time.

Contact

Mike Russalesi
443-983-6469
mike@synergy360.co
www.synergy360.co

<p>Problem</p> <p>In fleet concentration centers and shipyards, the US Navy faces a formidable challenge: a lack of comprehensive knowledge about its waterfront assets. This deficiency hinders maintenance and vital modernization planning. The current state leaves the Navy uninformed, resulting in inefficiencies, higher maintenance costs, and readiness issues. Without accurate asset insights, the Navy’s capacity for ensuring safety and readiness is compromised.</p>	<p>Benefits</p> <p>SiteScout360 offers the US Navy numerous benefits:</p> <ul style="list-style-type: none">• Enhanced efficiency• Precision and accuracy• Streamlined maintenance• Improved asset management• Safety• Cost savings• Readiness and modernization• Comprehensive data
<p>Technology Solution</p> <p>SiteScout360’s advanced infrastructure data collection service revolutionizes waterfront asset assessment and management. Our arsenal includes mobile LiDAR scanners, autonomous-capable models, 360-degree cameras, and precisely located sensors. What sets us apart is our rigorous testing in Navy waterfronts.</p>	



RELIABILITY IMPROVEMENT (HARDWARE)

Astronics Test Systems

PinPoint Alpha - Circuit Card Diagnostic System

Astronics Test Systems ensures optimal performance of mission critical electronic systems with innovative test solutions. With over 60 years of test and measurement expertise, we provide COTS and custom solutions that enable operational readiness, organic maintenance capabilities, and confidence in every mission.

Our innovative test solutions address your most challenging test and maintenance needs, mitigating obsolescence, extending the life of your legacy equipment, embracing modern technology, and ensuring operational readiness. Leverage our deep expertise as our team works directly with yours to deliver a solution to fit your exact needs.

With solutions for all levels of maintenance, our specialties include automated test equipment, radio test solutions (field portable and bench/depot), instrumentation, circuit card diagnostic systems, consolidated test equipment, test program sets (TPSs)/ application program sets (APS), and customized solutions.

Contact

Elizabeth Cortes

949-350-3164

elizabeth.cortes@astronics.com

www.astronictestsystems.com

Problem

- Obsolete fault-finding systems (no capability to upgrade or scale the system)
- Multiple pieces of equipment required to identify faults.
- Diagnostic equipment incapable of finding faults and/or offering various test methods.
- Complicated or difficult-to-navigate software.
- Inaccurate fault detection/isolation.
- Lengthy diagnostic/repair time, leading to reduced availability of useful circuit boards.

Benefits

- Extends life of your inventory.
- Protects investment in the system with upgradeable/modular architecture.
- Minimizes reliance on OEM support.
- Provides support capability for legacy and modern electronic systems.
- Offers cost effective approach to troubleshooting circuit card failures.
- Creates technical data for legacy equipment.
- Offers clear, accurate results ensure full coverage test down to the component level.

Technology Solution

The PinPoint Alpha extends the life of your equipment and protects your investment with accurate, rapid fault detection and multiple, comprehensive test methods. With capability for technology expansion, the system can be upgraded to accommodate future needs. Featuring user-friendly software, there is very little learning curve or technical knowledge necessary to operate the system. The PinPoint Alpha provides rapid fault detection, allowing you to get inventory back into service faster and keep them there.



RELIABILITY IMPROVEMENT (HARDWARE)

Atlas Copco

Ergonomic Power Tools



The industrial technique business area provides industrial power tools and systems, industrial assembly solutions, quality assurance products, software and service through a global network. Principal product development and manufacturing units are located in Sweden, Germany, United States, United Kingdom, France, Japan, and Hungary. Atlas Copco industrial tools are used in a number of applications, such as assembly, drilling and material removal. The equipment supplied includes assembly tools for a wide torque range using electric, hydraulic and pneumatic tools, fixture and hand drills, percussive tools, grinders, hoists, trolleys, and accessories.

Contact

Joe Rarick
346-267-6612
Joe.rarick@atlascopco.com
www.atlascopco.com

<p>Problem</p> <p>When safety is compromised and accidents or injuries become inevitable, productivity and quality suffer. Issues arising from poor ergonomics are costly, and not only because of the rehabilitation process, but also the cost of lost productivity and quality after an accident can be much greater than the cost of rehabilitation.</p> <p>The impact of low-quality tools also includes:</p> <ul style="list-style-type: none">• Productivity issues• Quality/re-work costs• Reliability concerns• High cycle times	<p>Benefits</p> <p>Increase uptime with Atlas Copco pneumatic grinders that are ergonomically designed to be powerful yet comfortable and safe for operators. By offering an impressive power-to-weight ratio, our grinders deliver increased productivity with significantly less strain on operators over time. Implementing ergonomics into our tools means taking things into account such as sound and noise levels, vibration levels, power-to-weight ratio, etc. in order to ensure your operators' health and well-being. <i>This allows operators to get more work done, safely, in less time.</i></p>
<p>Technology Solution</p> <p>Features include:</p> <ul style="list-style-type: none">• Speed governor for maintaining higher speeds under load• Scatter dampening spindle for less vibration• High power-to-weight ratio and ergonomic handles• The LSF39 Die Grinder has a built-in silencer• Integrated auto balancers in the LSV39, LSV48, GTG25 & GTG40 to reduce vibration by 50%• Durability due to sealed angle head, lubrication free motors, and quality manufacturing• Good ergonomics = Improved productivity, quality, and decreased costs.	



RELIABILITY IMPROVEMENT (HARDWARE)

DIT-MCO International

Wiring Harness Test Solutions

For cable testing, harness testing and other automated product testing, customers rely on DIT-MCO wiring analyzers. DIT-MCO is your complete solution provider for electrical testing of cables, harnesses, wired boxes, panel assemblies and more. From simple cables to complex assemblies requiring EE & LM, DIT-MCO has the solution. We also provide custom adaptation and test programming, giving you a complete turnkey solution.

Contact

Marshall Pelot
816-210-2487
mpelot@ditmco.com
www.ditmco.com

Problem

Electrical wiring harnesses are inherently complex and labor intensive to build. Errors in the process occur everywhere from the first wire run to the last pin placed. With more than 80% of harness building done manually, eye strain, labor fatigue and simple human errors can lead to mistakes in the finished harness.

Benefits

- First ended pinning drastically reduces cross wiring errors
- Increased throughput
- Saves time and money
- Reduces labor fatigue and eye strain
- Provides portable testers to troubleshoot/repair wiring errors
- Final test solutions to guarantee 100% correct cables and harnesses

Technology Solution

DIT-MCO's technology helps eliminate wiring errors. From the first connector being pinned, to the final point being tested, DIT-MCO offers products that provide solutions. PinMate, a guided wire insertion tool, helps operators insert wires correctly, ensuring less errors at final test. DIT-MCO's analyzers aid in fault detection and troubleshooting of cables and wiring harness. This ensures mistake free harnesses, which is critical in the aerospace and defense world.



DIT-MCO Products - Wiring Harness Test Solutions



RELIABILITY IMPROVEMENT (HARDWARE)
EFCO USA, Inc.
3D Digital Twins



Established in 1978, EFCO has been a world-leading manufacturer of portable and stationary valve repair and testing equipment. Wherever fittings, valves, and pumps are used, EFCO equipment is also needed to maintain, repair, and test sealing surfaces, shut-off bodies, and housings. We are a family-run business with the philosophy of making our customers our partners – working together to create machining and testing solutions. Customer experience from the extensive use of our machines continuously contributes to our product development.


EFCO equipment is used worldwide, certified to DIN EN ISO 9001, and is characterized by our quality, durability, easy handling, and superior results. Our product range for in-shop and in-field service includes portable and stationary grinding and lapping equipment, flange facers, portable

lathes, test benches, and workshops for valves, flanges, and pipelines. Our technically advanced tool line gives anyone repairing or maintaining valves the edge to improve valve maintenance rapidly and efficiently, resulting in cost-effective work with machines that last.

The EFCO USA Headquarters is located in Charlotte, NC and services shipbuilding & repair, oil & gas, petrochemical, energy, shipyards, valve service and manufacturing, and other industries in all of North and South America.

Contact

Whitney Simmons
704-492-4214
whitney@efcousa.com
www.efcousa.com

<p>Problem</p> <ul style="list-style-type: none">• Time and budget-consuming manual processes.• Inconsistent results.• Complicated, limited, or dangerous processes.• Tool and testing reliability issues.	<p>Benefits</p> <ul style="list-style-type: none">• Easy to use, durable, and efficient.• Versatile, easily customizable, and expandable.• Use systems more effectively.• Consistent results.• Keep downtimes to a minimum.• Increase the quality and productivity of maintenance.• Use human resources more responsibly.
<p>Technology Solution</p> <ul style="list-style-type: none">• Stationary and portable equipment for valve repair and testing.• Valve grinding and lapping equipment for gate, globe, control, safety, and ball valves.• ID- and OD-mounted flange facers, with CNC options.• Portable lathes with manual, automatic, and CNC options.• Test benches for control and safety valves—body, seat leakage, and set pressure.	

RELIABILITY IMPROVEMENT (HARDWARE)

Maglogix**Switchable Permanent Magnets**

Maglogix has patented the world's most powerful switchable permanent magnet technology. Our small business builds a wide variety of products that change the way welding, fabrication, fit-up and shipbuilding are done.

Contact

Ted Brooks

303-885-6400

tbrooks@maglogix.com

www.maglogix.com

Problem

- Tack welds waste time and materials
- Slow, difficult process aligning and leveling plate
- Existing magnets are too heavy and will not work on most steel (too thin)
- Existing magnets cannot be welded close to and will interfere with electronics
- Magnetic drill presses are too heavy and unsafe
- Parts removal and steel handling cause employee injuries

Benefits

- Lightest and smallest magnets available
- Most effective on steel down to 1/8" by up to 10X
- Safe to handle, operate and store
- Can be welded very close to w/o affecting the weld
- No EMI past about 1"
- Lightest and safest MagDrills
- Wide range of hand lifting and parts handling tools

Technology Solution

- First multi-pole technology switchable permanent magnet
- Rapid deployment for all aspects of fabrication
- Can be used for tethering tools to eliminate drop / falls
- Almost no handle kickback for constant use with no RSI's or employee injuries
- Easily attached to or integrated for unlimited custom solutions
- Hardened steel base with tin coating for long life and less corrosion
- Able to read the actual holding force for unprecedented safety



RELIABILITY IMPROVEMENT (HARDWARE)
Parhelion, Inc. (dba Stripelight)
Stripelight FRT Intrinsic Laser-LED Flashlight



Parhelion, Inc. is a research and development company manufacturing its own laser module with necessary FDA compliances for its laser technologies. Parhelion (dba Stripelight) has developed a unique and patented blue laser flashlight application for first responders, firefighters, and shipboard personnel. This technology will help the US Navy with shipboard damage control, firefighting, and other operational capabilities. Additionally, other government entities such as the DOE (i.e., nuclear power plants) can benefit from Parhelion’s laser light technology. See www.stripelight.com for more information on this unique capability.

Contact

Jean-Pierre Bolat (CDR, USN (Ret.)
203-747-5697
jp@parhelion.com
www.stripelight.com

<p>Problem</p> <ul style="list-style-type: none">• Smoke-filled locations cause blinding fog light using standard flashlight.• Single white beam flashlight provides little for navigation, situation awareness and difficult to inspect crowded areas.• No solution to view smoke flow and/or trace source.• No solution for a non-white light on ship deck for view or situation awareness.• Cumbersome protective clothing difficult to use with buttons on equipment.• No long storage battery solution for flashlight.	<p>Benefits</p> <ul style="list-style-type: none">• Provide additional functionality for situational awareness and hints to navigation in unlit areas.• Blue light eliminates need for eyes to acclimate darkness and address shipboard requirements.• Coordination of multiple firefighters in single quick scan.• 15 hours operation blue light, 3.5 hours white light on single charge.• Long term battery storage up to a year+.• Wireless charging avoids effects of accumulated dirt or while moving.• Improved ergonomic for cumbersome protective clothing.
<p>Technology Solution</p> <p>The FRT flashlight provides two light sources: (1) An LED optimally designed for firefighters with a high-performance custom optic for smoke cutting and temperature to read smoke color for insight into the progression of fire, and (2) A unique patented blue laser technology blue horizontal laser ‘stripe’ to for improved situational awareness, smoke flow detection, and navigation. The laser provides view airflow, smoke layer thickness, assistance in reading fire progression, and quick scan capability for room dimensions and other firefighters.</p>	A photograph showing two firefighters in full protective gear. One firefighter is holding a flashlight that emits a bright blue laser stripe across a dark, smoke-filled environment, illuminating the scene.

WORKFORCE DEVELOPMENT/VISUALIZATION

ARSOME Technology

AR/VR/XR



Every workforce training program requires innovation. Our AR/VR technology and vocational expertise are second to none, but it's our custom development, integration of artificial intelligence and commitment to exceeding client expectations that set us apart. It's why the most innovative organizations on the planet rely on our AR/VR training programs to reduce cost, improve workplace safety and accuracy, and prepare personnel for the real thing.

Contact

David Oyanadel
860-304-7660
oyanadel@arsome.com
www.arsome.com

Problem

Our military units may face multifaceted training, maintenance, & repair challenges depending on geography, equipment complexity, austere environments, and access to in-theatre maintenance contractors, requiring the DOD to keep up with technological advances to maintain superiority on the battlefield. Various technologies have offered piecemeal solutions, resulting in increased system complexity, cost, & multiple systems to support.

Benefits

AR-based holographic capabilities allow maintainer(s) to overlay step-by-step maintenance & repair operations with field-deployed equipment. 3D field of view can be shared with off-site SMEs for real-time support.

Logistics & Supply Chain Management: Optimize logistics & supply chain operations, including AR-based inventory management systems, navigation tools, and digital content. Handheld scanners can take a 3D image of parts to share with depots & shipyards to reduce the time of fabrication, thus reducing operational downtime.

Technology Solution

Augmented & Virtual reality End-to-End Repair, Training, & Maintenance (AVEERT-M) is an ARSOME software solution that combines several subsystems to support training, maintenance, and repair solutions that integrate pre-operations equipment maintenance training, holographic augmentation for step-by-step repair or maintenance directions, with live SME support, and ability to perform handheld scans of unique parts for fabrication by depot level maintenance facilities, shipyards, and/or CNC milling.



WORKFORCE DEVELOPMENT/VISUALIZATION


Boston Engineering
BEEP and Family of Sustainment Assisting Robotics



Boston Engineering is a leader in sustainable digital transformations, implementing innovative technologies, and developing road maps to solve tomorrow’s business challenges. Leveraging the latest in emerging technologies, such as sustainment robotics (SR), augmented reality (AR), virtual reality (VR), Internet of Things (IoT), and more, Boston Engineering helps you bring innovation to bear on your mission. Whether leading ideation, developing proofs of concept, building consensus, providing training, or handling post implementation support, simply imagine the possibilities and Boston Engineering will expand your capabilities to innovate.

Contact

Mark Smithers
508-259-8686
msmithers@boston-engineering.com
www.boston-engineering.com

<p>Problem</p> <ul style="list-style-type: none">• The need to erect support structures, like scaffolding, necessary to get workers to desired locations requires added time to maintenance schedules already under pressure.• Rapid deployment of maintenance and sustainment capabilities, such as inspection or cleaning systems, or remote SME oversight, is needed to increase efficiency and allow flexibility in the skill levels.• Capabilities are needed that reduce requirements for workers wearing safety gear or working in unsafe locations.• Multiple design solutions for largely similar tasks lead to increases in overall training time and required spare parts stocking.	<p>Benefits</p> <ul style="list-style-type: none">• Quick system setup. Allows rapid work initiation and eliminates the need to erect scaffolding.• A modular TRL 7 design provides easier modifications to special configurations and new sensing and work attachments.• Ruggedized system worthy of operating in DOD operational environments, such as shipyards and depots.• Scalable platform provides versions sized for specific applications, e.g., smaller for aircraft, larger for ships.• Open architecture enables capability advancement by multiple people/organizations in industry, academia and DOD R&D centers.
<p>Technology Solution</p> <ul style="list-style-type: none">• The need to erect support structures, like scaffolding, necessary to get workers to desired locations requires added time to maintenance schedules already under pressure.• Rapid deployment of maintenance and sustainment capabilities, such as inspection or cleaning systems, or remote SME oversight, is needed to increase efficiency and allow flexibility in required skill levels.• Capabilities are needed that reduce requirements for workers wearing safety gear or working in unsafe locations.• Multiple design solutions for largely similar tasks lead to increases in overall training time and required spare parts stocking.	

Notes

[illegible]

