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About NCMS

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

About CTMA

The CTMA Program offers a unique contracting vehicle for industry, academia, and the DOD sustainment community to work collaboratively. Through these efforts they promote the demonstration, evaluation, and validation of new and innovative technologies that enhance warfighter readiness at optimal value and lowest risk. This non-FAR based contracting vehicle is the only DOD-wide program focused solely on maintenance and sustainment.

UPCOMING EVENTS

May 9-11, 2023

[NCMS Technology Showcase: Norfolk Naval Shipyard 2023](#)

May 16-18, 2023

[Carrier Team One Innovation Expo 2023](#)

June 6-8, 2023

[CTMA Partners Meeting & NCMS Technology Showcase](#)
New Orleans, LA

June 20-21, 2023

[Cold Spray Action Team \(CSAT\) 2023](#)
Worcester, MA

June 22, 2023

[Large Scale Additive Action Team \(LSAAT\) 2023](#)
Worcester, MA

Due to ongoing travel uncertainties, some NCMS events might get rescheduled. Please check the NCMS events page linked below for the latest updates. Don't hesitate to email eventsupport@ncms.org with any questions.

View all upcoming events at: www.ncms.org/events



Soldiers consolidate documents for an inspection by the Network Audit Field Compliance Division of the Defense Finance and Accounting Service. (US Army photo by 1st Lt. Todd A. Kuzma.)

Audit Readiness Tool Enhances Software with Embedded AI

As the tax filing deadline approaches, audits are the last thing many people want to discuss. Yet audits—in the broadest sense, not just tax-related—are beneficial for all organizations seeking to improve operations and achieve strategic objectives.

A current CTMA project, Enhanced Audit Software Readiness Tool, brings together industry partner Ricardo Defense with the US Army Tank-Automotive & Armaments Command (TACOM). The team is using the Army's Audit Readiness Tool (ART) as a surrogate to evaluate a repeatable and tailorable process audit readiness tool. The overall goal is to develop an enhanced software tool that will significantly increase readiness functions while reducing manpower and organizational maintenance/sustainment support costs. Such a tool can be utilized across commercial entities, the Army, and multiple DOD organizations to develop an

effective method for tracking and following up on audit findings and agreed-upon actions by management.

While the format of internal and external audit reports varies by entity, all organizations need an approach that effectively communicates key issues and resolves those issues. Audits help an organization accomplish its objectives by bringing a systematic, disciplined approach to evaluate and improve the effectiveness of risk management, control, and governance processes.

This project is establishing a framework for initiating and executing an internal audit, processing and responding to internal audit findings, and preparing for and executing an external audit. The framework includes a scalable set of checklists, process flows, and templates that can be tailored to the size, scope, and complexity of the audit in question.

“This project focused on standardizing business processes that have a financial impact, providing accessibility of process documentation to the TACOM/Security Assistance Management Directorate (SAMD), and improving Department of Defense (DOD) readiness,” said Ahan Hunter, a Program Analyst for SAMD who contributed audit support for the project.

The team evaluated organizational internal business processes and controls to identify system deficiencies and provide solutions. In particular, the project centered on updating the General Fund Enterprise Business System (GFEBS), the Army’s cloud-based financial, asset, and accounting management system.

“We had many different working groups and IPT sessions,” said Hunter. “We identified a lot of risk mitigation. For example, one of the sub-processes we developed ensures that purchasers can’t be approvers because then that creates improprieties within the system. We created a workflow in which a person cannot approve their own inputs; they have to get a different approver.”

The team updated the GFEBS software by implementing internal organizational controls to prevent errors and comply with applicable laws and Army regulations. The use of embedded Artificial Intelligence (AI) will help with risk mitigation by combing through a huge volume of financial data to identify anomalies and flag them for scrutiny by a human auditor.

Additionally, the team created a dashboard pathway for senior management that enables continuous monitoring of data, providing real-time total financial and asset visibility. This dashboard will help leadership assess internal controls, promote best practices, ensure regulatory compliance, reduce costs, and lower the need for external auditing. It also identifies operational inefficiencies and time waste in the different IT systems, enabling leadership to address cross-functional issues. With trusted and reliable audit tools, management will be able to evaluate “what is,” paving the way for “what if” scenarios that can help to streamline business and

maintenance operations, leading to substantially greater efficiencies and effectiveness.

“We also created a SharePoint repository for new personnel who join the team,” said Hunter. “With this repository, nobody will have to start over from scratch.”

The team is currently producing a report on best practices and standard operating procedures that can be used, in both public and private sectors, to integrate audit processes and software. This report will be especially useful for large, expanding, multi-faceted organizations with a global reach.

This project provides powerful tools to access more comprehensive financial information, which can be used to advance overall organizational efficiency and strategic program effectiveness in both public and private-sector organizations. With this upgraded financial intelligence, leadership will have the flexibility to adapt as business requirements change, which will facilitate more effective funding allocation.

Furthermore, the project’s dashboard pathway can help leadership gain visibility on all aspects of their organization, which would also be beneficial for many commercial operations. It could provide quick access to better data—such as accounting transactions for financial reporting—which could assist with rapid decision-making.

Overall, the improved financial information that could be delivered can facilitate compliance, business system upgrades, fraud reduction, and better organizational planning, which would lead to increased customer, employee, and corporate confidence.

“This project is ultimately about supporting a culture of audit success,” said Hunter.■

“One of the sub-processes we developed ensures that purchasers can’t be approvers because then that creates improprieties within the system. We created a workflow in which a person cannot approve their own inputs; they have to get a different approver.”

- Ahan Hunter, TACOM/SAMD



Demonstration of Gecko Robotics's TOKA wall-climbing ROV on the USS Howard while docked at the US Naval Ship Repair Facility and Japan Regional Maintenance Center in Yokosuka, Japan. (Photo courtesy of Japan Regional Maintenance Center Public Affairs Office.)

ROV Brings New Success to Naval Asset Inspections

For maintainers working to sustain large assets, such as Naval ships, it's no longer necessary to perform the laborious, time-consuming work of manual structural assessments, using a hand-held probe, while elevated thirty feet in the air.

A CTMA collaboration recently achieved exceptional success by using a remotely operated vehicle (ROV) equipped with ultrasonic testing (UT) capabilities to inspect Naval assets. The initiative, a collaboration between the Office of the Secretary of Defense (OSD) and Gecko Robotics, found that this technology can significantly reduce lead time, man-hours, safety risk, and unscheduled maintenance while improving data quality for maintenance operations.

The team worked in Yokosuka, Japan, at the US Naval Ship Repair Facility and Japan Regional Maintenance

Center (SRF-JRMC), using Gecko Robotics's TOKA wall-climbing ROV to perform visual and UT inspections on two assets: the Dry Dock #4 caisson (the large gate at the harbor end of the dry dock), and the USS Howard, which is part of the Navy's Seventh Fleet mission.

"Our robotic system is capable of extracting a level of data that is cost-prohibitive or impossible from a manual perspective," said Will Elliott, Head of Government Sales at Gecko Robotics. "We then utilize that data through a suite of applications. We drive the key maintenance decisions to ensure that assets are operational, in a cost-effective manner."

The TOKA wall-climbing ROV provides the capability to identify material discontinuities caused by damage mechanisms such as wall-thinning, coating loss, corrosion, pitting, and weld cracking. The ROV's

onboard camera eliminates the need to perform a visual inspection prior to conducting a UT inspection. Further, using the ROV provides multiple improvements over current methods, including faster speed, increased comprehensiveness, and vastly more informative data.

“The level of data that we extract is hundreds of thousands of times greater than the level of data extracted using manual methods,” said Elliott. “Getting that level of fidelity allows you to get a very good baseline understanding of the asset condition to help make better decisions and more targeted repairs.”

For the Dry Dock #4 caisson, the existing non-destructive testing (NDT) inspection of the caisson uses an 8-foot grid pattern across the surface of one side of the caisson and provides less than 100 data points. In contrast, the ROV inspected a majority of the caisson’s B-side, providing over 4.2 million data points. The additional coverage provided by the ROV identified thinning and pitting within the caisson structure not previously identified using existing methods. Using the ROV resulted in a lead time reduction of 77 hours as well as a 213-man-hour reduction.

Employing the ROV for inspections of the USS Howard—specifically the port side of the hull and the outboard side of the starboard rudder—led to even more significant improvements, with a lead time reduction of 288 hours and an 875-man-hour reduction. Before the ROV, the inspection process produced 6,000 data points. The ROV provided significantly more coverage by collecting over 3.3 million data points for the hull and over 463,000 data points for the outboard side of the starboard rudder. This additional coverage identified areas of concern on the rudder for further investigation.

In addition to increased comprehensiveness and speed, Gecko Robotics’ software solution for data management—the Gecko Portal, a cloud-based platform—provided rapid insight for condition-based maintenance. The Gecko Portal produced high-density maps for visual representation of, and interaction with, inspection data using thickness filters and time-based differencing.

“This level of data enables us to produce predictive models using AI and ML to look at trends, degradation, and plan for damage repair before it even happens,” said Elliott. “The data helps to look at assets with a condition-based maintenance mindset, so you can allocate resources in an optimal manner based on where they’re most needed.”

Along with providing better data, this project increased worker safety, as the ROV operation could be conducted at ground level in the dry dock. This eliminated the need for NDT inspectors and recorders to utilize a manlift for fall protection. Using the ROV also reduced environmental impact because the ROV is capable of performing UT inspections through coatings, eliminating the need for coating removal and restoration as well as the associated lead abatement controls.

The technology demonstrated in this project can benefit multiple commercial industries needing to inspect large assets. In particular, energy producers such as oil and gas companies would be able to inspect energy-producing assets without interrupting operations.

“It’s really expensive to be reactive and fix depreciating assets after they fail. If that happens regularly, it’s going to increase the price of power,” said Elliott. “By utilizing our technology and the data we use in

our in our software, you can not only ensure that these assets are producing power, but also keep the price down to a reasonable level.”

While the project focused on two Naval assets, it’s clear that it would have broad application to assets across the entire DOD.

“We want to see if we’re able to scale our solution through all the regional maintenance centers,” said Elliott. He noted that further improvements to speed could be made through the use of multiple ROVs operating in parallel. Such dramatic time-saving benefits would have an enormous impact on materiel readiness.■

“The level of data that we extract is hundreds of thousands of times greater than the level of data extracted using manual methods. Getting that level of fidelity allows you to get a very good baseline understanding of the asset condition.”

– Will Elliott, Gecko Robotics



The COVID-19 “Weather Report”

Advanced Sensing and Blockchain Technologies Optimize Supply Chain Readiness

As the COVID-19 pandemic disrupted supply chains in vital industries, the CTMA Program designed an initiative to prevent problems with the production and distribution of critical supplies in the event of future pandemics, natural disasters, cyberattacks, and emergencies such as chemical, biological, radiological, nuclear, and high-yield explosives (CBRNE) situations.

The collaboration—Advanced Sensing and Blockchain Technologies to Optimize Supply Chain Readiness—brings together two industry partners, Presage Technologies and SIMBA Chain, along with the Assistant Secretary of Defense for Acquisition Enablers (AE) and the Deputy Assistant Secretary of Defense for Materiel Readiness.

Since the initiative’s launch in September 2021, the team has been using the COVID-19 pandemic as a case study. They have performed two mutually reinforcing lines of work to demonstrate how the latest advances in data science can generate vital information. First, the team is improving the collection of population health signal data by documenting changes in the health, mobility, and economic activity of given regions that impact suppliers. This effort leverages advanced sensing and aggregating technologies, along with artificial intelligence and machine learning (AI/ML) algorithms to help analysts predict future disruptions in the supply chain. Second, the team is integrating this population health signal data into

commercial blockchain technologies. As a result, they can help to automate supply and demand logistics decisions, enabling just-in-time inventory management of critical products and equipment.

“Any public health information system that records COVID cases takes about five days for the process to even reach the system, but this technology provides the information immediately,” said Ian Taylor, CTO and co-founder of SIMBA Chain, which developed the project’s blockchain tools.

“We think of this technology like a weather service,” said Mark Oliver, President and CEO of Presage Technologies, which builds software-based medical devices. “We were calling it ‘health weather’ for a while.”

To provide the “health weather,” Presage Technologies’ team of biomedical and software engineers use remote photoplethysmography (rPPG), a camera-based, unobtrusive technology that allows continuous monitoring of changes in vital signs to help diagnose and treat diseases earlier. This technology can be used to gather anonymous vital sign metrics—pulse rate, heart rate variability, breathing rate frequency and volume, and blood oxygen saturation—from cell phone cameras.

“Imagine pulse oximeters or respiratory frequency monitors. We can do all of that now with just the camera on a phone,” said Oliver. “We’re achieving clinical-grade accuracy and we produce vital signs metrics from videos in a privacy-oriented way. We aggregate videos into huge, square-mile blocks so that no one can ever point the health data back to any individual.”

By collecting data exclusively from open and social media sources, the team solved a significant problem in assessing global health risks: gathering and modeling population-level biometric data in a manner that does not rely on host nations' capability or willingness to share information, all while maintaining robust individual privacy protections.

"We don't want to turn this into a Big Brother tool that says whether someone has COVID-19 and possibly make them take a temperature test or kick them out a venue," said Dan Janes, Government Engineering Lead at Simba Chain. "We really wanted to approach it from a public health perspective by focusing on the aggregated data for a particular location."

The team applied algorithms that provide epidemiological projections of infection rates in a specific area. By using a deep learning model, the team forecast the actual COVID-19 infections per 100,000 people, using Germany as a case study. The collaborators checked their model against the actual infections per 100,000 people in Germany, which is reported every seven days. The results were stellar: 80% accuracy with a very low error rate, without requiring any on-the-ground information.

The project uses a commercial off-the-shelf application programming interface (API), a mechanism that enables two software components to communicate with each other. For example, the weather bureau's software system contains daily weather data. Weather apps on cell phones communicate with this system via APIs, then display that data on the apps.

"Every day on the API we make available the 'COVID weather,' or the number of infections per 100,000 for the whole country," explained Oliver. "Any entity that we give access to our data can ping our API. Then, they can pull that data into the blockchain. From there, they have the demand-sensing piece. Now they can look at inventory and make sure, say, in the case of the flu, there is enough Tamiflu on hand."

This data facilitated the project team's second task: using blockchain to automate the ordering and distribution of PPE and other health protection logistic items to areas in need of them. Blockchain is a digital, decentralized, and publicly accessible database that records transactions (blocks), across many computers, that are linked using cryptography. Each transaction contains a cryptographic hash of the previous block, a timestamp, and transaction data. As a result, data cannot be altered retroactively.

While blockchain is widely known for its role in cryptocurrencies, it is being used in multiple industries and is especially useful in supply chain management because

it provides immediate, transparent access to information stored on an immutable ledger that can be accessed only by permissioned network members.

How does this technology work? First, SIMBA Chain pulls data from Presage's API once a day. Next, the data is fed into the SIMBA Extract, Transform, Load (ETL) Pipeline—a process that packages the data and pushes it to SIMBA's Blocks platform. Then, Blocks sends the data to a SIMBA-created smart contract, which notifies the end-user of any alarming COVID-19 predictions that pass thresholds set by the end-user.

"The way blockchain works is that a transaction comes through a smart contract, which is a piece of code, that you can add logic to, and that results in something being recorded on the blockchain, which is not changeable," said Taylor. "The data coming in and decisions being made on that data are being made available to the supply chain in a way that is completely transparent, trustworthy, and un-hackable."

Blockchain facilitates automated inventory management because it can be connected directly to an ERP system to automate the ordering of needed supplies.

"If the COVID-19 rates are ramping up quite a lot, the system might order masks and other supplies, then have them shipped to that geographical region automatically to preempt the situation that's about to occur," said Taylor. This will ensure that PPE, medical supplies, and other vital goods are available where they are most needed.

While this project produced a deep learning model to forecast COVID-19 infections, the model can be used to forecast any infectious disease. For the DOD, this population health signal data will help leadership make judgments about population and community health risks to inform force-health protection decisions worldwide. This data will also help to better inform procurement and supply chain decisions so that correct parts, medical supplies, PPE, and other items are available to protect our armed forces.

Additionally, this technology could help government leaders make informed decisions to ensure that hospitals and other critical infrastructure remains operational; to sustain the unimpeded flow of food, water, medical supplies; and to safeguard basic quality of life products and services.

Moving forward, the team plans to enhance the technology to support more locations, create data visualization, provide stronger supply chain integration, and build a user interface (UI) to help end-users interact with the system. ■



A maintenance crew prepares to test the wiring on a V-22 Osprey. (Photo courtesy of Eclipse International.)

Celebrating the CTMA Program's Longest-Running Technology: The Automated Wire Test Set (AWTS)

The Department of Defense (DOD) has thousands of aircraft consisting of a dozen unique aviation platforms with extremely complex electronics. Maintaining these electronics is a constant challenge. The issue of intermittent faults in electronic devices—which the DOD defines as a “momentary discontinuity, a malfunction of a device or system that occurs at regular intervals”—will always exist, and currently costs the DOD \$3 billion annually.

Intermittent faults are exceptionally difficult to locate, due to the many thousands of circuit paths in modern electronics. For example, the F/A-18 aircraft contains over 27 miles of wiring and 17,000 connecting points. Traditional maintenance techniques to identify and isolate the root cause of each intermittent fault are both time- and cost-intensive because, when maintainers suspect that the interconnect wiring of a damaged system is the issue, they often check for faults, wire by wire. During this process, non-faulty components and avionics assemblies are removed, incurring preventable costs. Investigating intermittent faults used to result in a no-fault-found (NFF) outcome, due to conventional test methods' inability to detect them.

Fortunately, a state-of-the-art technology has been developed and has been gaining prominence within the DOD to perform electrical diagnostics efficiently and effectively. Eclipse International's Automated Wire Test Set (AWTS) enables maintenance professionals to conduct electrical and electronic system diagnostics in a fraction of the time it takes technicians to perform tests with manual equipment. Eclipse introduced the AWTS to the DOD through the Commercial Technologies for Maintenance Activities (CTMA) Program with an enhanced wiring integrity project for the Navy in November 2002. Over twenty years later, the AWTS is the longest running technology utilized in the CTMA Program, providing continually evolving solutions for wiring issues in both the DOD and the commercial sector.

“Prior to using AWTS in a preventative maintenance role, technicians performed visual inspections of aircraft wiring to check for obvious defects, but there was no electrical testing involved. With AWTS, there is both a physical inspection and an electrical test,” said David Droke, an aviation electronics engineering technician with the V-22 Fleet Support Team at the Fleet Readiness Center East's detachment on board

Marine Corps Air Station in New River, North Carolina.

The AWTS is a small, portable system that provides electrical test capability. Designed to meet requirements set by a joint DOD acquisition for deployable common test equipment for the Air Force, Navy, Army and Marine Corps, AWTS gives maintainers at home and deployed the same capability previously available only in factories and depots. Each AWTS set is designed to operate in harsh O-level environmental conditions yet is scalable to support Intermediate- and Depot-level locations. Operating software that controls the AWTS is identical across all configurations, enabling consistent training for all platforms and maintenance levels.

Because the AWTS's capabilities can be adapted to any system that uses wires for connectivity, regardless of the system's complexity, the AWTS can be used to test any item in the DOD inventory. Through the CTMA Program, the AWTS is primarily being used on aircraft platforms such as the F/A-18, V-22, H-6, H-47, H-60, C-130, C-5, and F-16. The technology is also being used as a quality control check for newly manufactured rotary wing aircraft before delivery to the DOD, further reducing costs to both the OEM and DOD. Additionally, it is being used to test ships and ground vehicles.

"As soon as AWTS was delivered in 2010 we immediately began using it for I-level testing on the V-22 platform to help the technicians with a faster test," said Droke. "We've used AWTS in a limited capacity at an I-level for about ten years, and for a scheduled maintenance requirement at the O-level for two years. The main benefit from a preventative maintenance perspective is the electrical wire inspection. AWTS enables maintainers to target problematic areas during scheduled maintenance to prevent them from developing into a system or wiring failure between scheduled maintenance intervals."

AWTS is capable of testing multiple circuits at a time, with the least amount of weapon system disassembly, significantly reducing maintenance times. By lowering the number of disconnection points for checkout and troubleshooting, AWTS reduces risk of damage to onboard computers and avionics. A key benefit includes

reductions in the amount of support equipment needed, and the overall time and cost of maintenance. AWTS provides rapid identification and condition of a fault intuitively to maintainers.

"Broken wires are easy to find. Technicians can easily find them with a multimeter," said Droke. "However, other issues defined as degraded wires are harder to find. These include chafed wire insulation, broken wire strands, and contacts that are contaminated, corroded, or under-crimped. AWTS helps identify those issues."

“AWTS enables maintainers to target problematic areas during scheduled maintenance to prevent them from developing into a system or wiring failure between scheduled maintenance intervals.”

-David Droke, FRC-East

Within the DOD, the AWTS has been quickly finding electrical problems, reducing no-fault-found (NFF) rates and test times, resulting in efficient and thorough diagnosis of electrical problems. Serving as an integral part of the condition-based maintenance plus (CBM+) environment, the AWTS can also predict when wiring may need to be changed to prevent potential failures and unscheduled maintenance activities.

In short, the AWTS has been helping to shift the DOD maintenance paradigm from reactive to proactive. Aircraft scheduled for deployment are now prepared

by inspecting systems prior to departure. This has resulted in more reliable mission-ready aircraft with less unscheduled maintenance in the field.

Droke highlighted one added benefit of AWTS. "In order to run the system, the aircraft connectors have to be clean, with no oil, dirt, water, or grease, before they can test it," he said. "Needing to clean the connectors is driving maintainers to do something that is preventative in nature because cleanliness is key for rotorcraft that operate in harsh environments. Because maintainers perform inspections and thorough cleanings, the wiring system is in better condition, which helps to prevent failures."

The AWTS technology has also moved into the commercial sector, supporting fleets of aircraft from passenger planes to shipping industries. Its applications will likely continue to expand.

"The result of using AWTS on aircraft is a healthier wiring system and a reduction in NFF," said Droke. ■



Attendees at the 2022 CTMA Partners Meeting in Virginia Beach, VA, meet with exhibitors and watch technology demonstrations during the Technology Showcase. (Photo by NCMS Staff.)

Upcoming Events You Won't Want to Miss

NCMS Technology Showcase—Norfolk Naval Shipyard

We're honored to partner with the **Norfolk Naval Shipyard (NNSY)** in **Portsmouth, VA** on a two-day **Technology Showcase** that will be held **May 9-11, 2023**. For industry and academic partners, participating in this Technology Showcase will provide an unparalleled opportunity to spotlight new innovations. NNSY is actively seeking innovative technologies to demonstrate at the shipyard. This Technology Showcase generates interest for the NNSY leadership, engineering, and production management teams because NCMS's cooperative agreement creates a framework where the command and private industry partners can collaborate to develop customized solutions that meet the shipyard's specific needs. Moreover, this showcase is unique because it will take place during a change in command. The deadline for exhibitor registration is **April 10, 2023**.

For more information: <https://www.ncms.org/events/ncms-technology-showcase-norfolk-naval-shipyard/>.

Carrier Team One Innovation Expo and Technology Exchange and Adoption Event

NCMS is pleased to partner with the Carrier Team One

(CT1) Annual Community Event on an **Innovation Expo** to be held **May 16-18, 2023**, in **Norfolk, VA**. The one-day Innovation Expo will be held May 16, followed by a Technology Exchange and Adoption event May 17-18. CT1's mission is to improve the performance and availability of Navy aircraft carriers, accomplished through process improvement as well as leveraging digital capabilities and technology. The registration deadline is **May 1, 2023**.

For complete information and registration, please see: <https://www.ncms.org/events/carrier-team-one-annual-community-innovation-expo/>.

2023 CTMA Partners Meeting and NCMS Technology Showcase

We're thrilled to announce that registration is now open for the **2023 CTMA Partners Meeting!** Join us **June 6-8** at the **Royal Sonesta Hotel** in **New Orleans**. This year's event is especially exciting because both the NCMS Technology Showcase and the CTMA Technology Competition will take place, increasing opportunities for partners to display next-generation technology solutions to reach a broad cross-section of decision makers throughout the DOD. As the *only* forum exclusively



Tim Eden, left, of Penn State University Applied Research Lab, and Craig Diffie, right, of Everactive, Inc., display the certificates presented to them at the 2022 CTMA Partners Meeting for their awards won during the 2021 CTMA Technology Competition. (Photo by NCMS Staff.)

“Being able to get a list of the various presenters and DOD attendees in advance of the Partners Meeting helped us to do well-planned and well-focused networking. The networking was outstanding, and we appreciated the panel discussions and presentations.”

-Kevin Connell, Engineering USA

devoted to improving DOD maintenance and sustainment practices, processes, and technologies, the Partners Meeting provides exceptional networking.

For those interested in showcasing their organizations' capabilities, tabletop display space can be purchased as part of a registration ticket. Reserving a table will give you an opportunity to reach a broad cross-section of decision makers throughout the DOD, increasing your industry exposure. There is also an opportunity to promote your company and presence at the event by becoming a sponsor. Space is limited, so reserve your space quickly. **Registration ends on Thursday, May 25, 2023.**

To learn more and register, please visit: <https://www.ncms.org/ctma-partners-meeting/>.

2023 CTMA Technology Competition

NCMS and the CTMA Program seek to support the National Defense Strategy by shining a spotlight on transformative maintenance and sustainment capabilities. The CTMA Technology Competition provides an opportunity for both commercial and government sources to showcase innovative ways of making maintenance and sustainment operations more agile, effective, efficient, and affordable. The

review and selection process for the six finalists, and the awards themselves, will be overseen by top DOD maintenance leaders, providing great exposure to all.

Submissions are encouraged by the government, academia, and industry. The submission period is now open and will close on **Friday, April 14**. Six finalists will be selected to give presentations to the judges at the Partners Meeting June 6-8 in New Orleans. At that time, two winners will be named:

- An **Overall Award winner**, to be selected by the judges
- A **People's Choice Award winner**, to be selected by the audience attending the finalists' presentations

NCMS will make available \$100,000 in project support funding. The Overall Award winner and the People's Choice Award winner will each be awarded \$50,000 in CTMA project support funding. This funding will go toward a selected DOD demonstration activity, to the extent permitted under the existing CTMA cooperative agreement.

For more information and to enter, visit: <https://www.ncms.org/ctma-competition/>. ■

NCMS Assists the DOD with Identifying Rapid Sustainment Improvement Partners

When the Department of Defense (DOD) quickly needs a novel technology to help protect the country, NCMS stands ready to answer the call through the Sources Sought Program.

This program helps the DOD fulfill urgent, critical needs for technology innovations. The process begins when NCMS experts, working directly with the DOD customer, develop a high-level description of the specific need with required criteria included. Next, NCMS notifies its network about the opportunity. The NCMS network is valuable to the DOD because it is comprised of trusted, proven companies that provide extremely specific and often hard-to-find technologies. NCMS manages the submission process, compiles qualified submissions, and delivers them to the DOD. Finally, the DOD selects desired partners and notifies NCMS of next steps.

NCMS supports the DOD in finding the right provider, with the right innovation, at the right cost.

“Sources Sought was effective in allowing us to quickly push out an urgent military requirement to the larger commercial/industrial base beyond common major defense companies to mitigate a major programmatic delay,” said Lt. Col. Joseph Lay, Materiel Leader, B-1 Systems Engineering Branch, Tinker AFB. “We plan to make Sources Sought another tool in our tool belt to help discover new vendors who can fill various part requirements going forward.”

Recently, NCMS assisted the DOD by issuing a Sources Sought to identify academic and industry partners with capabilities, technologies, and expertise in three rapid sustainment improvement processes: Condition-Based Maintenance Plus (CBM+), digital tracking of maintenance, and remote inspections. These solutions are intended for sea, air, land, and space platforms across all of the DOD.

For more information about Sources Sought, please visit: <https://www.ncms.org/ctma/ctma-opportunities/>.

If you have any questions about Sources Sought, or if you would like more information, please contact: opportunities@ncms.org. ■

MEMBER SPOTLIGHT



Meet BlastOne International

BlastOne International is a leading global supplier of surface preparation products and technologies, including blasting and painting equipment, facilities, and abrasives. With 50 years of experience in the corrosion control industry, they help make abrasive blasting and industrial painting faster, safer, and cleaner. BlastOne works with heavy industries, facilities, and contractors to deliver long-term coating integrity, and has collaborated with the Navy and Army. Their focus is on high-quality surface preparation to prevent 90% of industrial coating failures.



Maintainer with a BlastOne SnakeBite XQ Blast Nozzle. (Photo courtesy of BlastOne.)

The SnakeBite nozzle, a new product, reduces blasting noise by 75% and reduces blaster fatigue by 45%. BlastOne provides clients with a dedicated account manager and access to a global team of experts to stay current with the latest technologies and industry insights. The company has consulted on over 10,000 project sites.

To learn more about BlastOne, visit their website, at <https://www.blastone.com>.

Want to see who else has recently become a member of NCMS? Visit the “Member Spotlight” section of the [NCMS News](#) page on the NCMS website. ■