CTMA CONNECTOR

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Novel ML Models Fuel New Predictive Asset Readiness Solution

P7

IN THIS ISSUE

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CTMA Connector

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UPCOMING EVENTS

June 17, 2025
Livestream: Finalist Presentations for CTMA Technology Competition
1-3:30 p.m. EDT

June 26, 2025
CTMA Webinar: Rapid Contracting to Accelerate Readiness
1-2 p.m. EDT

July 8-10, 2025
NCMS Sustainment Accelerator: COMFRC
Lexington Park, MD

July 22-24, 2025
NCMS Sustainment Accelerator: Eastern North Carolina Tech Bridge
New Bern, NC

August 5-7, 2025
2025 Global Expeditionary Logistics Symposium (GELS)
Newport News, VA

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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.

A Farewell To Steve McKee

The CTMA Program staff—on behalf of the entire NCMS organization—would like to warmly thank Steve McKee, Director of Enterprise Maintenance Technologies, Office of the Deputy Assistant Secretary of Defense for Materiel Readiness (ODASD-MR) for his support and expertise. For the past four years, he has served as the CTMA Program Officer, providing exemplary leadership for the CTMA Program. We wish him the very best in his next chapter.

Steve has been a strong advocate for leveraging CTMA projects to achieve ODASD-MR maintenance and sustainment goals. The CTMA community continues to praise Steve's leadership, including the Joint Technology Exchange Group (JTEG) Principals, who work together to improve coordination in the introduction of new or improved technology, new processes, or new equipment into DOD maintenance activities.

JTEG Principal Bill Baker, Depot Maintenance Division, US Marine Corps Albany Maintenance Center, said, "Steve has a natural ability to motivate people, keep them moving forward, and align them to accomplish a common goal. When he moved to OSD, his leadership abilities and critical thinking skills intensified. He always put in a lot of time before each meeting, and this helped us quickly make decisions and move things forward. He always had new ideas to make things better in the DOD, and he was never satisfied with just talking about new ideas—he demanded implementation and results. He always had a smile, energy, and enthusiasm that is infectious, and this pushed us all to do things better."

One of Steve's ideas was the Rapid Sustainment Improvement Program (RSIP), which identifies and fields solutions to solve common sustainment problems across the DOD.

"While RSIP was a group effort, Steve's leadership and critical thinking skills were instrumental to the program," said Baker. "Along with RSIP, the CTMA Program has significantly improved under his leadership."

Throughout his career, Steve has focused on transitioning technologies into the DOD. At the DOD Maintenance Symposium, he organized a presentation titled "Transitioning Solutions into Sustainment – How to Bridge the Valley of Death." As Baker recalled, "It was the most dynamic, fun, and informative session of the week. He had enthusiastic panel members, rock music, and more."

JTEG Principal Donna Stacy, Principal Systems Engineer, Air Force Materiel Command/A4/10, Wright-Patterson AFB, remarked on Steve's exceptional leadership and collaboration skills.

"Steve possesses a unique gift for recognizing the potential in every individual," she said. "His unwavering compassion for both people and the work itself has been fundamental to his success. Working alongside him has been a privilege, and I've learned so much from his expertise. He consistently provides invaluable mentoring and motivation, fostering a positive and productive environment. His absence will be particularly noticeable in our cross-service collaborative efforts, where his talent for uniting people toward a common goal has been invaluable. We wish him all the best in his well-deserved retirement."

JTEG Principal Dan Stanley, NAVSEA 05T NESAR/Cold Spray Program Manager, remarked on Steve's commitment to forging partnerships and solving challenges.

"Steve has always been a great person for me to bounce ideas off of and gain perspective navigating the waters as a program manager verus a mere mechanical engineer," he said. "In the world of innovation, success is not only

weighed by the ability to solve existing gaps but who you are willing to partner with on those efforts. Steve has a natural ability to attract the 'coalition of the willing' to solve hard problems, and his presence will be deeply missed."

JTEG Principal Eric Kirchner, Technical and Quality Assurance Analyst, DLA HQ J344, said, "Steve is the epitome of the term 'seek self-improvement.' His genuine work ethic and actions are contagious and inspire others to work a little harder, not to get bogged down in the minutia, and keep trudging forward toward mission accomplishment. Coupled with Steve's professionalism, he has the unique skill set that can bring together a group of folks from across DOD, industry, and academia, and by the end of the first conversation, the team will want to participate in the task at hand."

Steve played a key role in establishing innovative programs to accelerate advanced manufacturing. As David Anderson, Director of Operations, Marine Depot Maintenance Command, recalled, "I was introduced to Steve during my time in Japan supporting USFJ in standing up new innovation programs. He quickly became my innovation battle buddy, and I leveraged his expertise and the CTMA Program to drive some successful projects across the finish line in a highly complex, forward deployed environment. In my current role at MDMC it has been an absolute pleasure now working with him on the Advanced Manufacturing Competitive Advantage Pathfinder (AdvM CAP) initiative. Steve is a visionary and incredible leader who loves people and his country. I am honored to call him my friend!"

The NCMS community also reflected on Steve's important contributions to the CTMA Program, noting in particular how his technical expertise and collaboration skills have been essential to the program's growth.

Frank Schuster, Vice President, Program Operations and Execution, NCMS, said, "It has been a pleasure to work with Steve on the CTMA Program for the past four years. His insight into how novel technologies can be applied to solve real maintenance and sustainment issues will have a lasting impact for our warfighters. Steve's hard work and technical knowledge of industry capabilities, coupled with his experience and dedication to public service, created an environment for exceptional opportunity and growth of the CTMA Program. He also possesses an innate capacity for team building, and for applying focus where and when it is needed, at the right place, and at the right time. He will be missed by our entire industry and government collaborative team, and will be an asset wherever he ends up in the next chapter of his career."

Other NCMS staff members emphasized how Steve's passion for warfighter readiness and continuous improvement advanced the CTMA Program.

"From the moment I met Steve, it was clear that he has such a passion for helping the American warfighter," said Michelle Revels, Deputy, Maintenance and Sustainment Program, NCMS. "This passion has led to many great improvements through his vision and tireless efforts to promote and expand maintenance and sustainment technologies. His unrelenting pursuit of excellence and determination to continuously improve has certainly made myself and our program stronger and his absence will be felt. As one of the hardest working people I know, Steve has exemplified what it means to be a leader, and I feel fortunate that I had the opportunity to work alongside him to help push the CTMA Program to new heights. He is truly an asset to any program he works on, and I wish him all the best in his next endeavors."

Josh Chapman, Deputy, Maintenance and Sustainment Program, NCMS, said, "It has been a privilege to work alongside Steve in his role as Program Manager through the DOD and NCMS/CTMA. His strategic vision and leadership have been instrumental in advancing critical initiatives that directly supported mission readiness and technological innovation. He consistently demonstrated commitment to excellence, navigating complex challenges with professionalism and resulting in a driven mindset. His ability to foster collaboration across diverse teams strengthened partnerships, accelerating progress across the DOD."

Prior to his work with the CTMA Program, Steve served for 18 years working with Navy sustainment organizations and 13 years in uniform as an Army engineer. In 2020, he received the Office of the Secretary of Defense Award for Excellence, having been instrumental in standing up the Joint Robotics Organization for Building Organic Technologies (JROBOT).

"Steve's tenacity and unwavering dedication to everything he does set the framework for the JROBOT community," said Daniel Miller, Project Manager, NCMS. "Steve carried the torch as co-chair for many years, fostering a synergy amongst its members who come from all corners of the robotics and automation in sustainment enterprise. His ability to captivate any audience is magical. He was the glue that held us all together and his absence will be felt for some time. We wish him the best in his future endeavors." ■

Advanced Modular Automation Supports Readiness at RIA-JMTC

Members of the Rock Island Arsenal-Joint Manufacturing and Technology Center (RIA-JMTC) Safety Team observe the use of a large crane in the historic factory. (RIA-JMTC photo by Kendall Swank.)

In 2024, the US Army completed the first year of a 15-year Modernization Implementation Plan for the Organic Industrial Base (OIB), a network of government-owned facilities including arsenals, depots, and ammunition plants that sustain the US military by manufacturing, resetting, and maintaining equipment. A recent CTMA project has supported these efforts by advancing the OIB's capacity to produce parts needed to meet operational demand. The project, a collaboration between Rock Island Arsenal Joint Manufacturing and Technology Center (RIA-MTC) and industry partner Fives Liné Machining Systems, Inc., successfully assembled an advanced modular automation manufacturing line that produces more reliable and less expensive mechanical components for military vehicles.

This state-of-the-art capability, installed at RIA-JMTC, which will be demonstrated later this year, will transform raw aluminum billets into finished, treated, and painted vehicle parts. The manufacturing line handles large aluminum billets weighing up to 5,015 pounds.

"The team produced a complete cell that can accommodate the full processing of aluminum slabs," said Carl Duchesne, Project Management Office Director, Fives Liné Machines, Inc. "The project had three phases. In the first phase, the team installed one robotic asset and one machining asset, along with the integration of conveyors and a shuttle system to move the parts around."

The manufacturing line contains two zones. The first zone—raw material preparation and rough machining—is equipped with an automatic band saw and a robotic machining cell for roughing. The second zone—finishing and post machining treatment and painting—consists of a CNC machining cell for finishing, a chromatic treatment bath, and a paint booth. The other major component of the line is a transport system comprising overhead cranes, a parts transfer shuttle capable of navigating the line, and parts tilting stations.

Machining operations are physically separated into roughing and finishing cells, with a distinctive layout that places the machined part in a vertical position in the middle of the cell and between the two machining centers, each of which works simultaneously on opposite sides of the part. This layout was designed to optimize machining times and ensure a competitive workflow. Roughing is performed with an exclusive solution of machining robots developed by Fives Liné Machines, while finishing is performed by 5-axis CNC Horizontal Milling Machines (HMM), belonging to the industry partner's standard machine range.

In the second phase, the team added two more assets to increase productivity: one (dual) machining asset cell and one (dual) robotic cell asset. The third phase established a solution to manage the debris (chips) produced during cutting operations and upgraded the electrical capacity of the site to meet the demands of the production line.

This final line is equipped with two robotic rough machining cells (2 robots per cell), two finishing cells (2 High Precision Machines per cell), two shuttles, and multiple stock stations to support and improve production rates. The project team also created a training plan and documentation for operators and maintenance personnel.

"The biggest success of this project will be the production of a custom-built solution for RIA-JMTC," said Duchesne. "The collaboration has been very good. Working together, we raised the bar to create a complex solution to support the installation's readiness."

The advanced modular automation manufacturing line created and demonstrated in this project will enable RIA-JMTC to produce a wide range of precision-machined, reliable parts. The use of automation reduces manpower requirements, enhances safety, and ensures the production of consistent parts, further enhancing product quality. The manufacturing line—designed to be easy and cost-effective to install, operate, and maintain—could be modified and installed at other arsenals, depots, and shipyards, giving those locations the ability to quickly reconfigure existing manufacturing facilities with a proven, adaptive solution. Beyond the DOD, the processes and assets employed in this initiative could be adapted for a wide range of industries seeking to upgrade facilities with an advanced modular automation manufacturing line that builds more reliable and less costly mechanical components. ■

JTEG Consultant Ray Langlais Retires

NCMS and the CTMA Program thank Ray Langlais for his valued contributions to our maintenance and sustainment community. After 15 years as a consultant at LMI supporting the Office of the Secretary of Defense for Materiel Readiness (ODASD-MR), preceded by 25 years serving the US Army as a logistician, Ray will be retiring from the workforce. Most of Ray's work as an experienced senior consultant for ODASD-MR supported the Enterprise Maintenance Technology (EMT) mission and provided expertise in technology demonstrations and integration, operations management, organizational leadership, policy issuance and management, and command & control. Ray also contributed to advancing knowledge on additive manufacturing (AM) and was instrumental in helping to organize, facilitate, and execute the annual AM Workshop.

In his position, Ray supported the CTMA Program, worked closely with innovators across the military services to keep the Joint Technology Exchange Group (JTEG) collaborating, and was central to the Maintenance Innovation Challenge (MIC) as well as the surrounding activities and initiatives.

"For 12 of my 16 years at ODASD-MR, Ray was literally my right hand," said Greg Kilchenstein, Chief Technologist, NCMS, and former Director of Enterprise Maintenance Technologies in the ODASD-MR. "Nothing we engaged in or accomplished in forwarding the EMT mission was done without Ray's substantial contribution and dedication. I can't thank Ray enough for his years of service to OSD, the warfighter, and the maintenance and sustainment community."

Ray's work on the Maintenance Innovation Challenge was emphasized by NCMS Executive Vice President, Sustainment, Business Development, and CTMA Program, Debbie Lilu. "I really enjoyed working with Ray over the years. He was instrumental in executing the Maintenance Innovation Challenge and ensuring it went off without a hitch at the DOD Maintenance Symposium. He was a pleasure to be around, and I will miss his him and his guidance to ensure the maintenance and sustainment community was poised to succeed with their mission."

In addition to his work on the Maintenance Innovation Challenge, Ray supported other important initiatives.

"I partnered with Ray throughout my ten years at NCMS," said Doug Brown, MIS Specialist, NCMS. "The activities we've worked on include the Maintenance Innovation Challenge (MIC), the JTEG monthly Technology Forums, and the CTMA Technology Competition. Ray is the glue that holds everything together. He works in the background to keep everything running, without seeking any recognition. He is one of the easiest people to talk to. He always has an anecdote, and whenever I see him in person, it is like we are long-lost friends. Ray is prepared, amenable, and easy to get along with in a day-to-day work relationship. I wish him well in his well-deserved retirement. He will absolutely be missed." ■

Novel ML Models Fuel New Predictive Asset Readiness Solution

Two soldiers with the 1st Battalion, 7th Field Artillery Regiment, 2nd Armored Brigade Combat Team conduct preventative maintenance on a M109A6 Paladin self-propelled Howitzer while on a training mission in Grafenwoehr, Germany. (US Army photo by Staff Sgt. Sharon Matthias.)

The need to predict asset failures before they occur is a critical challenge currently faced by the DOD as well as many industrial, transportation, and asset-intensive organizations. To solve this problem, a current CTMA project is creating a Predictive Asset Readiness solution that will provide continuously updated data analytics and predictions of an asset's future condition.

The project brings together the US Army Materiel Command (AMC) with two industry partners: DPRA and r4 Technologies, combining DPRA's subject matter experts and experience conducting DOD projects with r4's expertise in applying the lessons learned from Priceline.com, the travel services website.

"Twelve years ago, r4 was created by the founders of Priceline to recreate that ability to generate granular and precise demand signals to help companies get incremental profit out of product inventories and other enterprise resources," said David Bradley, EVP of Solutions at r4. "In this project, we're focused on helping to advance the DOD's ability to understand demand signals for maintenance activities and supplies, with greater precision at the point of need, for resource and mission planning, optimizing maintenance sequences, and optimizing supplies of critical parts and consumables. The solution we're delivering will provide a more granular and accurate demand signal that can be applied to dozens of use cases to enable predictive and precision logistics."

The project team worked in collaboration with the NCMS Digital Enterprise team to define and deliver a Predictive Asset Readiness solution using the r4 AI software platform.

"This work is being done in the context of an armored brigade combat team preparing for deployment to the

National Training Center at Fort Irwin," said Bradley. "The Predictive Asset Readiness solution will help service members maintain readiness as they go through exercises and return to the home base, so those brigades are ready and mission capable for whatever deployment comes next."

To build the Predictive Asset Readiness solution, the team began by reviewing authoritative data sources—including asset master data, daily status history, and maintenance history—for four weapon systems: the M1A2 Abrams Main Battle Tank, the M2/M3 Bradley Fighting Vehicle, the M109 Paladin Self-propelled Howitzer, and the M88 Recovery Vehicle.

"We've got data for all four of those vehicles," said Don Ralston, Project Manager, DPRA. "The main two we're concentrating on initially are the M1A2 and the Bradley fighting vehicle because we have the most data on those assets. We're prototyping three machine learning predictive models based on those vehicles."

Currently, the team has delivered the first two models using recurrent neural networks (RNN), which are trained on time series data to create machine learning (ML) models that retain information about previous inputs and model temporal dependencies and patterns over time. The first model, Asset Status Prediction, forecasts whether an asset is mission capable or non-mission capable. The second model, Non-Mission Capable (NMC) Duration Prediction, considers assets that have become non-mission capable, predicting the time duration before they will become mission capable again.

The third model—NMC Duration Driving Factors—currently in progress, will provide additional information by bringing together several data sources.

"The third model will look at the specific features of each asset to identify factors that explain variability in time to return to mission capability," said Bradley. "It will pull together data about assets such as who operates them, where they have been used, and who is responsible for maintaining them. The drivers of readiness become demand signals that give planners and maintainers information about what they can do differently to reduce the time to return to capability when an asset is in maintenance, such as changing the sequence of maintenance activities or changing the levels of inventory for parts and supplies."

A major success of this project has been the creation and use of synthetic data, which maintains the

A cannon crew member with the 4th Battalion, 27th Field Artillery Regiment, 2nd Brigade, 1st Armored Division performs preventive maintenance on an M109A6 Paladin during training at Fort Bliss, Texas. (US Army photo by Spc. Adam Garlington.)

properties of the original data, is not traceable to the original data points, can be generated in huge volumes, and can be used in non-DOD environments.

"What we've been able to demonstrate in this project is the ability to work in a secure DOD environment to understand and analyze data so that we can go to a commercial environment and create synthetic data for the purposes of training the model," said Bradley. "One of the things I think they're very interested in at AMC is the ability to create synthetic data to validate predictive software models on the commercial side. The use of synthetic data enables 80 percent of the work to be done before it's deployed in a government environment. The team's generation of synthetic data for the purpose of model training is a great formula going forward to better leverage the resources, speed, and capabilities of commercial industry to benefit the DOD."

When all three models are completed, trained, and validated, they will be ready for deployment in a government cloud environment.

"Our team is focusing on the configuration, training, and validation of the software models so that the solution can be put into software containers and dropped into a government cloud environment," said Bradley. "We will deploy software containers with the set of pre-validated models, so they can be validated with government data in a secure environment."

While the project is still in its early stages, the predictive capabilities of the models tested so far have achieved a high level of accuracy. The three models produced for the Predictive Asset Readiness solution show great promise to support not only the AMC but also the DOD enterprise wide.

"One of the most important features of this solution is its ability to produce a set of predictions of the future status of a single asset, then to aggregate that up to a brigade, and ultimately to a division level," said Bradley. "For example, this solution will be able to predict how many Abrams tanks are going to be mission capable three days from now or 23 days from now. It's important for mission planning personnel to know which resources are going to be available as they plan current or future operations under different time horizons and with different constraints."

Overall, the team commented on the successful collaboration between AMC, industry, and NCMS.

"This is a short, ten-month project, and we're meeting all the milestones," said Ralston. "That's only because of the cooperation between all the partners, especially AMC, which is very expeditious. When we ask for something, they get it to us immediately."

Bradley agreed: "AMC has been outstanding on this project. The personnel have been extremely responsive and provided us with the critical data we've needed. It's been a great success story working with AMC."

An armament repairer stationed at Pabrade Training Area, Lithuania, inspects the tracked vehicle barrel of a M109A7 Paladin. (US Army photo by 113th Mobile Public Affairs.)

The industry partners also emphasized the benefits of working with NCMS. "By providing clarity and helping to fine-tune the concept paper and statement of work, NCMS helped to stand up this project very quickly," said Bradley. "We were able to hit the ground running. This is a terrific success story and a model for how a commercial organization, working with DOD, can get a fast start on a project."

The team is looking forward to the next steps of the project.

"We're very focused on the next milestones and having the opportunity to engage with other folks within AMC," said Bradley. "We're looking forward to taking this from concept to an impactful pilot implementation where people can see how AI/ML capabilities like this can improve actual readiness levels." ■

NCMS Announces 2025 CTMA Technology Competition Finalists

NCMS is pleased to announce the finalists of the 2025 CTMA Technology Competition, which supports the National Defense Strategy by shining a spotlight on transformative maintenance and sustainment capabilities. This competition provides an opportunity for academic, industry, and government teams to showcase innovative ways of making maintenance and sustainment operations more agile, effective, efficient, and affordable. As a new addition to the competition this year, NCMS has teamed up with Fleet Readiness Center Southeast (FRC-SE) to seek capabilities in five focus areas: aircraft data integration, laser cutting on aluminum, robotics and automation, surface preparation and corrosion control, and expeditionary repair of aircraft structural components.

Technicians test out the Grey Gecko Real-Time Inspection Tool (GRIT) 125v2.5, a handheld, battery-powered system that uses spread-spectrum infrared technology. (Photo courtesy of Grey Gecko.)

The top three finalists, selected by DOD maintenance leaders from a highly competitive field of entries, are presented here in alphabetical order by capability name:

- **GRIT Solution for Deployed Aircraft Inspection & Repair by Grey Gecko, LLC** (Competition Category: Expeditionary Repair of Aircraft Structural Components)

- **NDT Tracker for Mobile C-Scan Generation by Cybernet Systems Corporation** (Competition Category: Expeditionary Repair of Aircraft Structural Components)

- **Palladyne™ IQ by Palladyne** (Competition Category: Robotics and Automation)

The **Grey Gecko Real-Time Inspection Tool (GRIT)** 125v2.5 is a lightweight, battery-powered non-destructive testing (NDT) system for expeditionary inspection and repair. Using patented spread-spectrum infrared technology, GRIT penetrates coatings over 20 mils thick to detect corrosion, cracks, and deformities—including battle damage and bird strikes—on aluminum, steel, titanium, and composites. It provides real-time, high-resolution imaging without coating removal or complex setup, integrates into existing workflows, and requires just one hour of training. GRIT's scalable, cost-effective design enables fast detection and repair in the field.

At the US Coast Guard Aviation Logistics Center (ALC), GRIT reduced HC-144 wing joint inspection time by 80 percent (30 to 6 hours), saving $240,000 and 120 labor hours across five 2024 depot cycles while eliminating toxic exposure. On the C-27J, it identified spar cap cracks missed by legacy methods, avoiding $1.2M in repair costs per incident. GRIT is being adapted for USAF C-130s and evaluated on F-35 and H-60 platforms with Lockheed Martin, targeting corrosion and damage on wing skins, fuselage joints, and rotor assemblies. In austere environments, GRIT reduces downtime by 25 percent and labor by over 50 percent, extending benefits across DOD fleets.

The second finalist—**NDT Tracker for Mobile C-Scan Generation**, by **Cybernet Systems Corporation** in collaboration with the US Air Force—enables expeditionary repair of aircraft structural components. The NDT Tracker is a mobile, camera-based tool that reduces UT grid inspection labor from two inspectors to one, cutting labor in half. The Tracker eliminates hand-drawn grids and manual recording, using patent-pending AutoClick Combo-Filtering to auto-select accurate thickness readings, reducing average inspection time from 20 to 2 seconds per cell—a 10x efficiency gain. Color-mapped C-Scan reports over inspection area imagery eliminate re-inspections due to miscommunication. The shortened inspection phase accelerates turnaround time and boosts maintenance throughput. The Tracker now operates from 0.5-5ft range with a 4ft x 4ft inspection area extendable via leapfrogging.

The Tracker is in active use at Tinker AFB, Robins AFB, and by commercial MROs like Delta TechOps, ST Engineering, and Aeroman. Aircraft manufacturers (Boeing, Airbus, and Gulfstream) are pursuing adoption. The Tracker won the

2024 SAE/A4A International Innovation Award and the 2024 ASNT Cool New Ideas Award by popular vote. This revolutionary tool transforms UT gridding for the Air Force and is poised to impact NDT inspections across the DOD.

The third finalist is **Palladyne™ IQ** by **Palladyne**, a closed-loop autonomy software that uses AI and ML technologies to provide human-like reasoning capabilities for industrial robots and collaborative robots (cobots), increasing flexibility and dynamism in assigned tasks without relying on cloud connectivity. Palladyne™ IQ helps make robots smarter and better equipped to handle jobs that have historically been too complex to automate. Palladyne™ IQ is designed to enable low-/no-code training for robotic systems: robust training and ML happen on the edge, which supports faster deployment without costly programming resources needed by traditional automated systems. Its edge computing capabilities facilitate autonomous decision-making without needing a connection to the cloud, making Palladyne™ IQ ideal for deployed and remote operations where network access may be limited. Palladyne™ IQ has been awarded a multi-year contract with the Warner Robins Air Logistics Complex, which showcase the product's usefulness in augmenting industrial robots for aircraft sustainment. Palladyne™ IQ is being integrated into multiple remediation activities such as robotic media blasting and sanding, proving its real-world viability. These demonstrations represent milestones on Palladyne™ IQ's path to full operational deployment, ultimately resulting in a high-impact, scalable solution for diverse military sustainment efforts.

The three finalists will present their solutions in person at NCMS Headquarters in Ann Arbor, MI on June 17, at 1-3:30 pm EDT. The winner will receive a $100,000 in-kind contribution from NCMS.

A free livestream webinar will provide access to view the finalists' presentations. To register for the event and learn more about the 2025 CTMA Technology Competition, please visit: https://ncms.org/ctma-technology-competition/. ■

As you meet with your maintenance and sustainment contacts in industry and government, you should know that this time of year offers added opportunities to set up new technology initiatives, because "sweep up" has arrived—where those who still have funding in their budgets seek ways to obligate those funds prior to the end of FY25 or lose them.

The Commercial Technologies for Maintenance Activities (CTMA) Program can help guide your discussions. The CTMA cooperative agreement is an easy-to-use contract vehicle that is 100 percent focused on improving maintenance and sustainment operations across the DOD to optimize warfighter readiness. NCMS has a long track record of successfully administering CTMA to complete over 900 projects focused on leveraging commercial technologies to advance military capabilities.

But don't delay: The window to obligate expiring funding through the CTMA's cooperative agreement will be closing soon. Funding MIPRs and paperwork for future projects must be received in-house at NCMS no later than Friday, August 15, to leverage this contract vehicle for FY25 funds.

Don't let this deadline affect your critical projects. For more information about CTMA, please visit: https://ncms.org/ctma-home/. ■

DragoonITCN

Since 1992, DragoonITCN, based in Dayton, Ohio, has been at the forefront of avionics and weapon systems testing, specializing in MIL STD 1553 bus interfaces. The company's flagship product is common support equipment that combines several functions into a rugged, portable tester: CORVUS.

DragoonITCN's CORVUS combines an advanced 1553 real-time bus monitor with a Vector Network Analyzer (VNA) for cable impedance fault detection with a wire mapping capability for cable pin to pin continuity. CORVUS provides a distributed capability to test the 1553 stubs and couplers on an inactive bus. A mimic 1553 signal is transmitted from the stub and received at test ports along the network, making fault detections due to polarity, insertion, and opens/shorts. An optional Wi-Fi capability is included in the CORVUS kit, removable for site security concerns. CORVUS is also able to monitor activity on an active 1553 bus using the receive modules whereby signal attenuation and general bus health can be quickly assessed. Finally, the intermittent fault issue is addressed by stepping up the clock frequency on the mimic 1553 with the bus inactive. This effectively stresses the bus to show indications of potential intermittent issues.

DragoonITCN is developing a commercial variant of CORVUS that applies the bus monitor technology to ARINC 429 along with the VNA and wire mapping. Additionally, DragoonITCN is engaged with multiple companies in support of making the resulting test data ingestible to the databases associated with CBM+ and cyber resiliency programs.

DragoonITCN also produces the Countermeasures Sequential Timing Amplitude Tester (C-STAT), a fielded CMDS tester designed for intermittent level ALE-47 maintenance used in combat shield and Air Force Special Operations Command (AFSOC) platforms. The C-STAT is a widely used tester at Air Force, Air National Guard, and AFSOC installations.

For more information about DragoonITCN, please visit https://www.dragoonitcn.com.

Infernoware

Infernoware LLC, based in Ann Arbor, MI, manufactures specialized industrial coatings. The company's innovative solutions enhance the thermal efficiency, durability, and aesthetics of various systems and components. Infernoware's commitment to technical excellence has positioned it as a trusted name in the industrial coatings market. The company has three main products: Infernoware Dissipate, Infernoware Reflect, and Infernoware Shield.

Infernoware Dissipate is a high-performance coating designed to absorb and dissipate heat from substrate materials. This advanced coating significantly improves thermal efficiency and lowers the operating temperatures of radiators, heat exchangers, firearm barrels, suppressors, and other systems. Dissipate is essential for applications requiring enhanced heat management for optimal performance.

Infernoware Reflect is a cutting-edge thermal barrier coating that improves the radiant heat reflection properties of heat shields by 40 percent. This coating is ideal for systems exposed to high temperatures and radiant heat, providing superior protection and efficiency. Reflect coating improves heat shield performance in sensitive applications, such as electronics and sensors adjacent to heat-generating systems.

Infernoware Shield is a robust abrasion and scratch-resistant decorative coating available in over 50 colors, including military specification colors. This versatile coating not only enhances the appearance of components but also provides exceptional durability and resistance to wear and tear. The Shield coating is perfect for applications where aesthetic appeal and long-lasting protection are crucial.

All Infernoware products are simple to apply and cure. They are single-part (no mixing of catalysts), air-cure (no ovens), and are applied using standard air compressor spray equipment. There are solvent-based and low VOC (volatile organic compounds) versions of each formulation to suit any situation.

For more information about Infernoware, visit www.infernoware.net. ■