

CTMA MAGAZINE

ISSUE NINE

TRANSFORMING THE DOD MAINTENANCE PARADIGM

ADDITIVE MANUFACTURING •
Laser Coating Removal • JOINT
INTERMITTENT TESTING
• Item Unique Identification •
CONDITION-BASED
MAINTENANCE + •
Expeditionary Fluid Analysis
Capability



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SUPPLY CHAIN LOGISTICS: Key to Readiness

To remain viable and competitive in the marketplace today, manufacturers must find ways to keep up with high demand while maintaining quality and ensuring safety for both workers and consumers. But as we hear in the news on a regular basis, recalls are often necessary when these goals are not met. The Takata Airbag Recall (2013) is a perfect example of how quality and safety could not keep up with high demand. The now-defunct auto supplier installed tens of millions of defective inflators in airbags that were distributed across 19 of the world's automakers and in millions of cars in the U.S. In the years since this safety recall was first issued, there have been numerous fatalities and injuries due to these faulty parts. This resulted in recalling more than 42 million cars and, at the time, was the largest automotive recall in U.S. history. To this day, automakers are contacting affected customers.

If auto suppliers like Takata had been given access to an IT system designed for standardization, cataloging, and identifying the right parts and amounts for distribution, the nation's biggest and longest safety recall might have never happened. Since the Takata recall, businesses across the country continue to struggle with IT upgrades needed to keep pace with ever-changing advances in technology. They also require an enterprise management solution that will continue to support daily business processes while offering an advantage over foreign competitors.

Keeping up with production demands is essential for suppliers, manufacturers, and sustainers, and fulfilling customer expectations is the first rule of business today. However, additional challenges are presented when more than one manufacturer draws from the same supplier, and there is a requirement to track and manage products

as they are delivered to customers. The failure to predict and mitigate these shortfalls and replacement items produces a substantial negative impact on the availability and safety of merchandise sold to the general public.

In the Takata example, could the consumer injury, death, and financial impact across the automotive industry have been avoided? If a process, system, and technology solution had been in place that offered better asset visibility, item cataloging and tracking of faulty parts before they were distributed, the answer is definitely yes.

The DOD faces similar challenges. Both U.S. Air Force and U.S. Navy launched efforts to help its logisticians align high demand, or mission readiness, with quality and safety. Currently, DOD logisticians struggle to keep their logistics enterprise operational using antiquated legacy systems and data that are stove-piped and afford

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very little, if any, interoperability. This results in increased weapon system downtime, increased costs, and excessive expenditure of resources to provide the workarounds required to maintain operational readiness in defense of our nation.

Sustainment costs associated with legacy systems increase year after year and sustainable modernization opportunities are severely limited. Lengthy implementation timelines cause projects and sometimes entire programs to lag, and a lack of auditing compliance by some legacy systems results in an inability to support a viable logistics modernization strategy across the Logistics Information Technology (LogIT) portfolio.

Over the course of two, multi-phased CTMA initiatives (one Air Force and one Navy), One Network Enterprises (ONE) demonstrated and validated how appropriate technologies can serve as a viable prototype for tracking multiple classes of supply within the DOD supply chain. At the enterprise level, it enabled a production-ready software solution hosted in DOD approved, cloud-based environments leveraging a subscription platform model that can benefit commercial industry and DOD Services simultaneously. At the operational level, this effort delivered a lifecycle logistics capability, utilizing an agile approach that kept pace with warfighter requirements. Tactically, it provided a transformational product suite capable of executing in both connected and disconnected environments. The initiatives underscore DOD

efforts to reduce its LogIT portfolio through implementation of common data platforms and standardized data sets, coupled with a substantial reduction in the number of point-to-point interfaces while implementing modernized platforms that could subsume legacy solutions in a cost-positive manner.

Efforts also demonstrated that these technologies could be beneficial to other DOD organizations and commercial manufacturers who are also facing similar LogIT challenges. The ONE solution focuses on how “never legacy” software capabilities can be used to create, receive, validate, record, maintain, and distribute catalog management data, item identification data, supply management data, and other information essential to DOD logistics support. It also proved this technology is capable of improved planning, procurement, physical, and financial accountability that meets stringent DOD requirements and stays current with those mandates. Through the multi-party aspect of the solution, multiple Services and their suppliers and trading partners can be connected into one extended enterprise, delivering an integrated execution and planning capability on a single platform. This tactic allows enhanced capabilities such as global demand/supply match, federated Master Data Management, real-time digital twins, and prescriptive analytics that transcend

today’s analytic and predictive approaches.

Through these initiatives, ONE demonstrated and deployed solutions with both enterprise and field level capability and showed that the technology is viable in both connected and disconnected environments. The robust, common data platform proved to be an innovative and practical alternative to the inflexible, outdated legacy systems that are costly and difficult to maintain.

To date, these efforts have led to technology adoption (through follow-on contracts) with the Air Force, Navy, and Marines with other Service branches expressing interest. The technology can bridge the cross-functional, cross-Service supply chain data gaps within the DOD.

Adoption of these capabilities has led to significant mission improvement including a full replacement of an over 30-year-old legacy system, enhancing capabilities, delivering full Financial Improvement and Audit Readiness (FIAR) guidance and disconnected operations while managing a \$15 billion plus inventory of sophisticated munitions across 220 global locations. The solution provides a modernized platform that will bring together eight additional legacy systems running on the Secure Internet Protocol Router/Non-Secure Internet Protocol Router (SIPR/NIPR). ●

THE AMOUNT OF RE-WORK NEEDED TO REDUCE FOULING BY GOING BACK AND RE-CLEANING HAS BEEN REDUCED FROM A BEST CASE 10 PERCENT RE-CLEANS TO A CURRENT WORST CASE 0.25 PERCENT RE-CLEANS.

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- PSNS & IMF also engineered improved safety processes to help reduce the chance of a near-miss situation becoming an injury

The savings in man-hours and overall time dedicated to heat exchanger cleaning have been so significant, the process is now being used at other locations as well.

“So far PSNS & IMF has taken delivery of a set of the equipment that is being moved from location to location to support West Coast work in Bremerton and San Diego, as well as Japan,” Gonzales said. “Norfolk Naval Shipyard is starting the process to obtain the same equipment with some upgrades that we’ve identified for them. Japan will also be obtaining a set of this equipment to keep on-site.”

The heat exchanger cleaning and inspection improvement process is one very successful example of the potential throughout PSNS

& IMF, but probably not the last successful innovation to originate here.

“We are working to expand efforts and take on more and more of these projects as a shipyard,” said Ryan Marson, a Cell Manager with Code 10001. “We see the potential of great gains going forward, not only here at PSNS & IMF, but for the entire NAVSEA enterprise.”

Because Naval vessels of several classes use heat exchangers, the team expects this technological solution could be adapted for use on a variety of ships.

“I will be thrilled when this is deployed to every class of

ship where it gives us an advantage in the safety, duration, and cost of cleaning heat exchanger tubes,” said Gonzales. ©

The appearance of U.S. Department of Defense (DOD) visual information does not imply or constitute DOD endorsement.

The graphic features a dark blue background with a stylized white ship silhouette on the left. At the top, a maroon banner contains the 'one' logo (a white square with 'one' in maroon) and the text 'One Network Enterprises™'. Below the banner, the text 'Secure solutions that never go legacy' is displayed in white. Underneath, a paragraph reads: 'One Network powers some of the most complex and critical supply chains in defense.' A QR code is positioned below the text. At the bottom, the website 'www.onenetwork.com' is listed in white.

one One Network Enterprises™

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