



RAPID SUSTAINMENT OFFICE

Quarterly Report
April - June 2022



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VISION

**MODERNIZE THE MAINTENANCE OPERATIONS
AND SUSTAINMENT ENTERPRISE VITAL TO THE
WORLD'S MOST ADVANCED AIR FORCE**

OBJECTIVE

**INCREASE MISSION READINESS BY
IDENTIFYING, APPLYING, AND SCALING
TECHNOLOGY AND INNOVATIVE SOLUTIONS TO
ADVANCE AND MODERNIZE SUSTAINMENT
OPERATIONS OF THE UNITED STATES AIR FORCE**

RSO TECHNOLOGY FOCUS AREAS



ARTIFICIAL INTELLIGENCE & MACHINE LEARNING

We apply machine learning and Artificial Intelligence (AI) to optimize fleet maintenance, increase aircraft availability, and minimize aircraft downtime.

Our most prominent use of AI is our Condition Based Maintenance Plus (CBM+) program. Employing AI has enabled us to improve maintenance data quality and evaluate large sets of aircraft sensor data and maintenance history to predict component failures. These applications enable our CBM+ program to save thousands of maintenance hours every year.



ADVANCED MANUFACTURING

The Department of the Air Force Advanced Manufacturing Program Office (AMPO) scales organic capability and serves as the Air Force's focal point for the application of AM in matters related to acquisition and sustainment.

The AMPO executes four major functions:

- Technology Assessment
- Airworthiness Certification Support
- Product Support Management
- Deployment Across the Enterprise

Vision

Empowering Supply Chain Management and scaling AM across the Department of the Air Force to ensure continuous Warfighter advantage and readiness anytime, anywhere in the world



AUTOMATION & ROBOTICS

We apply automation and robotics to eliminate maintenance tasks that are repetitive, labor-intensive, or hazardous, making it possible to accomplish these tasks safely and efficiently with a high degree of accuracy.



DATA & DIGITAL ENVIRONMENTS

We standardize maintenance and sustainment data collection to serve as a connector of data sources across the Air Force. Our process is to collect the data, identify what's useful, turn it into a functional format, and then leverage it to inform smart and proactive decisions.



AUGMENTED & VIRTUAL REALITY

Augmented and Virtual Reality (AR/VR) technology creates an immersive environment for Airmen to train and execute more efficiently and effectively. The immersive access to digital resources allows the Air Force to predict, analyze, and solve problems faster, leading to a decrease in sustainment costs and increase in Airmen readiness. The AR/VR Product Team aims to continuously collaborate with users, characterize problems, and design and scale turn-key technological solutions that benefit the entire sustainment enterprise.

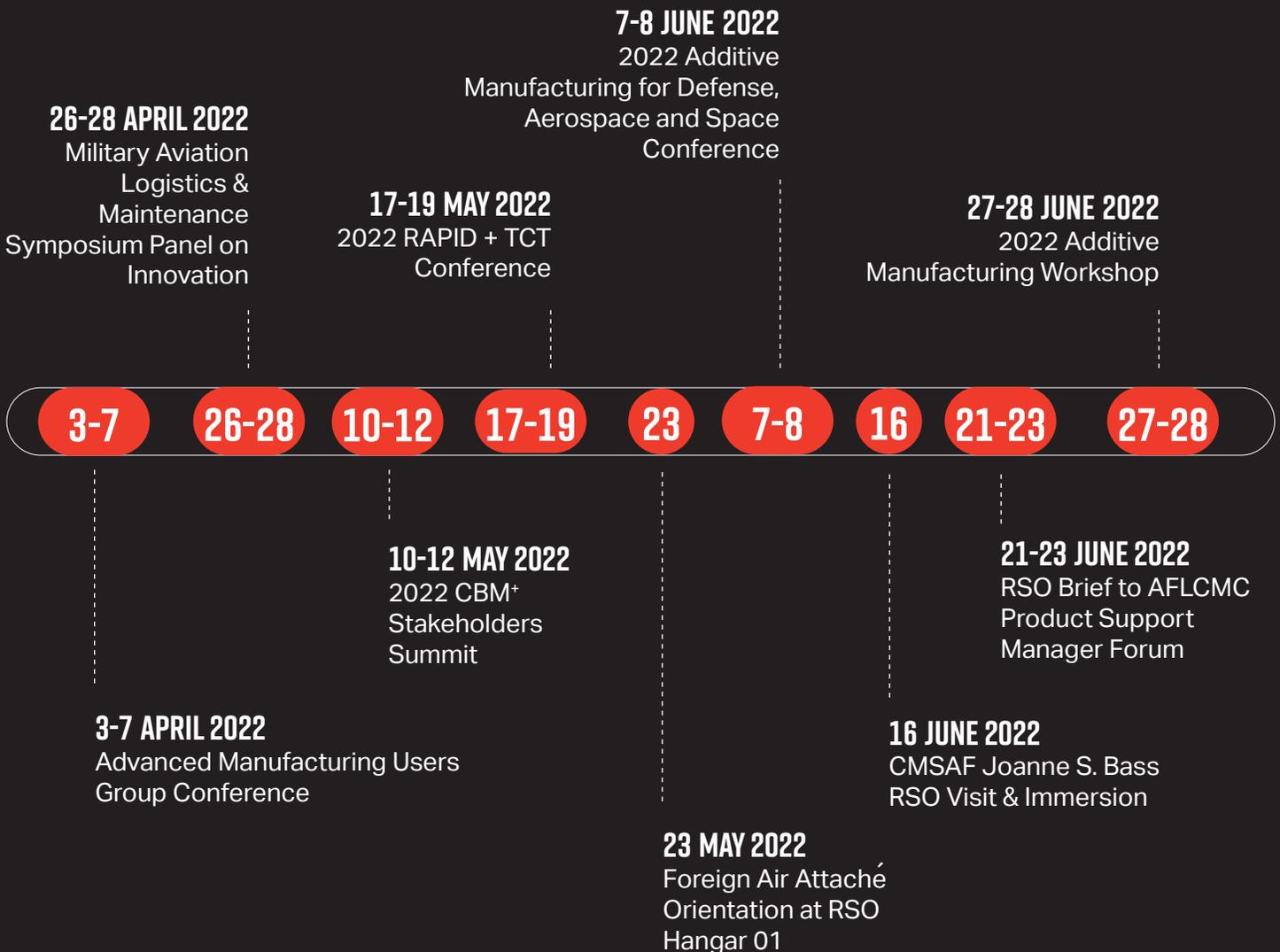


RAPID & AUSTERE MAINTENANCE ENVIRONMENTS

We provide Airmen with effective tools, leveraging modern, cross-cutting technologies to reduce the Air Force's logistical footprint and enhance mission capability. We are working toward becoming the Air Force's leading office for rapidly implementing emerging and solution-oriented technologies in austere environments.



KEY ENGAGEMENTS





RSO SPOTLIGHT

CBM+ STAKEHOLDERS SUMMIT

The RSO CBM+ Program Office hosted the 2022 CBM+ Stakeholders Summit at Nellis AFB NV, 10-12 May 2022. This event provided a forum for over 240 stakeholders from across the Department of Defense to collaborate on tackling the challenge of transforming the maintenance construct of the Air Force and shifting toward conducting maintenance based on evidence of need, fueled by the Air Force’s Artificial Intelligence and Machine Learning (AI/ML) tool, Predictive Analytics and Decision Assistant (PANDA).

This year’s Stakeholders Summit focused on three main areas: Acquisition, Supply Chain, and Maintenance Operations. The event also provided attendees with opportunities for more targeted discussions by hosting multiple breakout sessions, which included a dialogue around CBM+ for next generation platforms and a demonstration of an organic sensor-capturing device, the Vampire Box, in development by the Air Force Research Laboratory.



Each year the Air Force moves closer to scaling CBM+ across the entire Enterprise, and the CBM+ footprint grows.



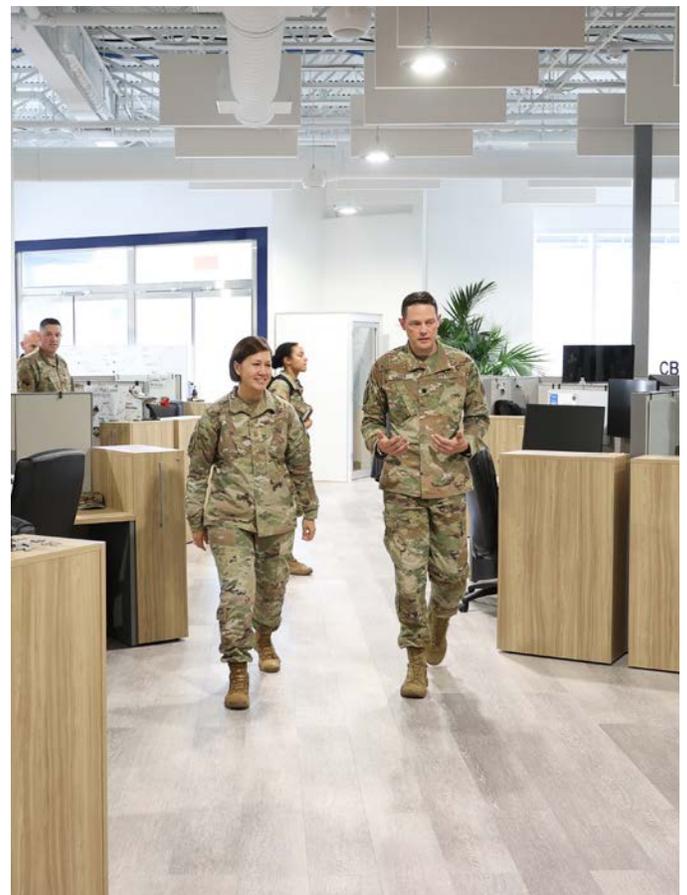
“The 2022 CBM+ Stakeholders Summit was a huge success,” says Chris Damani, CBM+ Program Office Chief. “These collaborative events are critical to ensure the unification of the enterprise as we collectively tackle the challenges of CBM+ implementation across the Air Force and maximize the positive impact to fleet readiness.”

We would like to thank everyone who attended this year’s event and for supporting the awareness and expansion of CBM+. The CBM+ Team is already looking forward to the CBM+ Stakeholders Summit in 2023.



RSO WELCOMES CMSAF TO HANGAR 01

We were honored to welcome Chief Master Sergeant of the Air Force Joanne S. Bass to RSO HQ 16 June 2022, providing her with a tour of our facility and an immersion into some of our APPLY and SCALE sustainment technologies, including Product Management's Aircraft Infrastructure Readiness System (AIRS) and Lighthouse Integration Technology Engine (LITE), Advanced Manufacturing (3-D aircraft part printing and Cold Spray), and Predictive Analytics and Decision Assistant (PANDA).





BY THE NUMBERS



AM

Total parts delivered

4,548

Individual AM part numbers flying

171

Individual AM part numbers delivered

449

Total AM parts flying

307

Completed Technical Data Packages

310

RSO



CBM+

Aircraft platforms fielded

16

C-5, KC-135, C-130, C-17, B-1, B-2, B-52, AC/MC-130, F-15, RC-135, HH-60, F-16, A-10, EC/HC-130, CV-22, U-2

Aircraft actively monitored across the USAF

3,102

eRCM removals since implementation (April 2019)

1174

Sensor Based Algorithm maintenance alerts issued resulting in **270** scheduled maintenance actions completed since implementation (October 2018)

435

Active users registered in PANDA

485

Aircraft platforms transitioned to the Predictive Analytics and Decision Assistant (PANDA)

15

B-1, F-15, B-2, B-52, KC-135, C-5, C-130, AC/MC-130, EC/HC-130, F-16, C-17, A-10, RC-135, HH-60, CV-22

DELIVERING CAPABILITIES



The RSO Product Management Team successfully delivered multiple weapon systems to CONUS and OCONUS users this quarter. The RSO and vendor teams delivered Solar Powered Integrated Structure (SPIS) systems to four units in both CONUS and OCONUS locations, as well as one Hands-Off Expeditionary Tent (HEXT) unit. This hardware was immediately employed in numerous exercises and operations, including Polar Force 22-4, Mobile Badger, Patriot Exercise, and humanitarian relief missions. This was in conjunction with the maturation of many other projects in the RSO technology development pipeline for future delivery to end users.

HIGHLIGHTS FROM 3 COMPANIES SUPPORTING OUR PATHWAYS TO SCALE



Pvilion's Solar Powered Integrated Structure (SPIS) is a state-of-the-art structure utilizing cutting-edge technology to provide rapidly deployable structures and needed power capabilities in rapid and austere environments. The company's Hands-Off Expeditionary Tent (HEXT) is a 20x20 foot structure that can be automatically erected in less than two minutes with the push of a button.



Southie Autonomy is a non-traditional defense contractor focused on making robots easy – like interacting with another person. Using its software platform, ANYONE can changeover a robot arm to do a new task within minutes. No coding or programming is required. Through its partnership with the RSO, Southie Autonomy is bringing its robotics capability to the USAF maintainer to make kitting faster and more efficient.



The RSO is partnering with Aging Aircraft Solutions to improve maintenance through development of the MxGo application. MxGo utilizes natural language processing AI technology to automate the maintenance data entry process for weapon system maintainers. This results in maintainers spending less time on administrative tasks and more time maintaining aircraft. It also creates more accurate and complete maintenance data records to aid better data-driven decisions by operational commanders and the lifecycle sustainment enterprise.

PARTNERSHIPS





CUSTOMERS



RSO

VISIT OUR WEBSITE

To contact the RSO, please email: AFLCMC.RSO.workflow@us.af.mil



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