

**AFRSO**

# **Air Force Life Cycle Management Center**

## ***Life Cycle Industry Days***

Mr. Allen McCormick, AFRSO Chief Strategic Communications

3-5 August 2021

# OVERVIEW

- **RSO Mandate**
- **Mission and Objective**
- **Organization Construct**
- **Strategy**
- **Innovation Pipeline**
- **Technology Focus Areas**
- **A Look Ahead**
- **Summary**

***“The objective of the RSO will be to develop, test, and deploy new technologies for implementation across the sustainment enterprise to improve readiness and reduce sustainment costs.”***

***-SECAF Wilson-  
RSO Establishment Memo  
23 July 2018***

***“The AFRSO validated the need and value of a Department of the Air Force organization focused on rapidly delivering new and emerging technologies to the sustainment enterprise. Based upon the merits of the organization, I direct SAF/AQ and AFMC to retain the AFRSO as a permanent organization.”***

***-SECAF Barrett-  
RSO Permanence Memo  
16 Oct 2020***



# MISSION

Transform the operations and sustainment enterprise vital to the world's most advanced Air Force

# OBJECTIVE

Increase mission readiness by identifying, applying and scaling technology essential to the operation and sustainment of the United States Air Force



**RSO  
BOARD OF  
DIRECTORS**



**Ms. Darlene  
Costello**  
SAF/AQ



**GEN. ARNOLD W.  
BUNCH JR.**  
AFMC/CC



**LT GEN WARREN D.  
BERRY**  
AF/A4



**LT GEN DONALD E.  
KIRKLAND**  
AFSC/CC



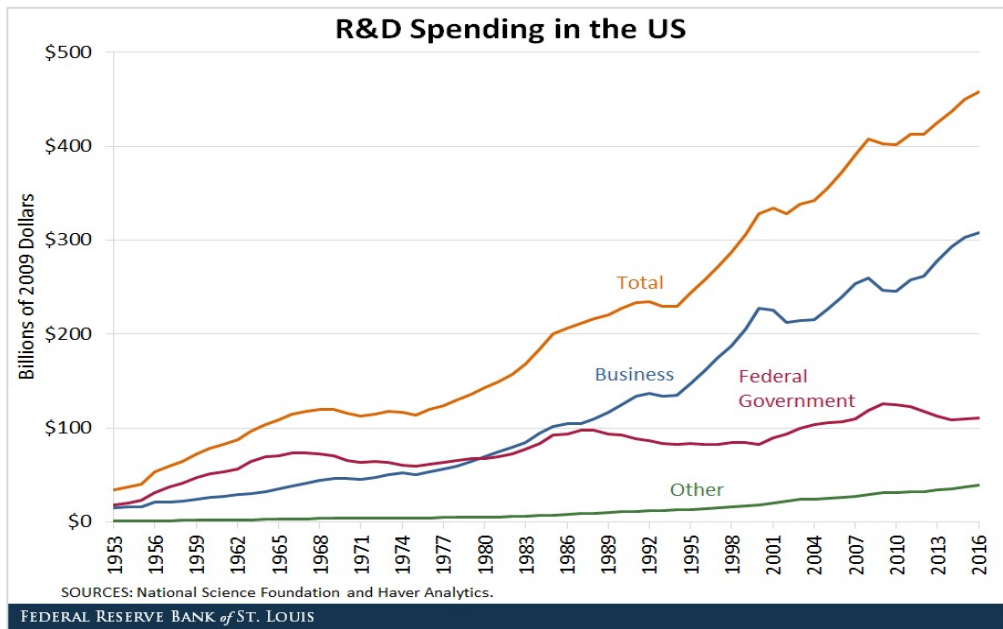
**LT GEN SHAUN Q.  
MORRIS**  
AFLCMC/CC

# STRATEGY

# DoD and Air Force R&D Spending

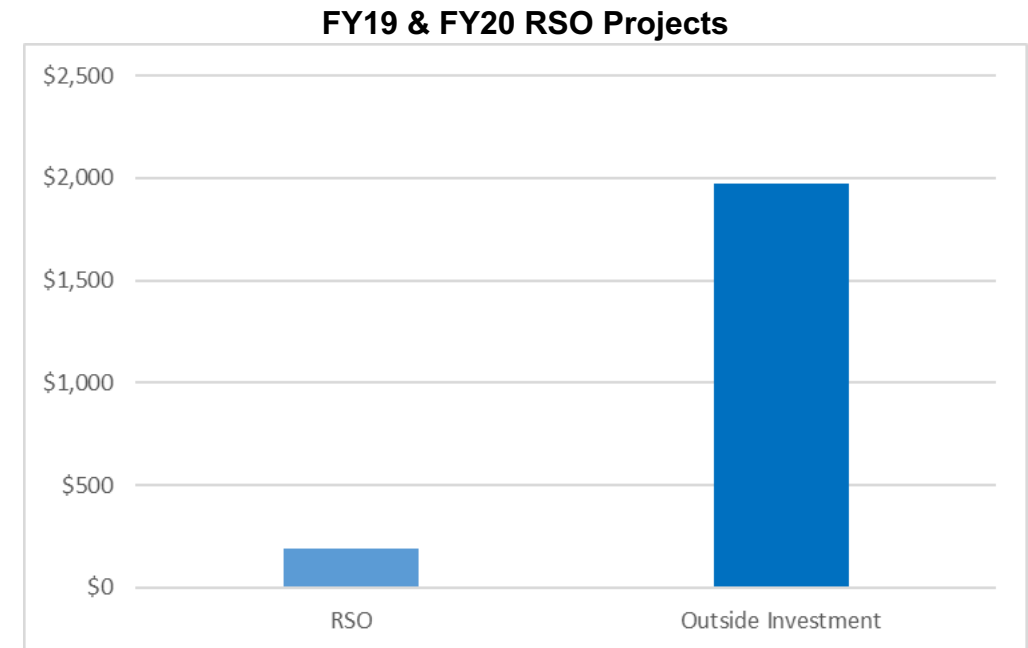
## Investment is both Commercial and Global

- DoD and Air Force technologies increasingly rely on global innovation that is dual-use for commercial and military purposes
- The military depends on access to the global commercial sector
- Great power competition around preserving US access while denying or limiting adversary access



US commercial investment in R&D is outpacing the Federal Government

<https://www.stlouisfed.org/on-the-economy/2018/may/rd-business-spending-up-government-spending-flat>



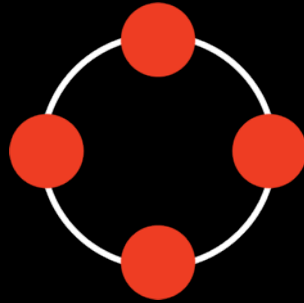
RSO leveraging ~15x \*outside investment!

\*Outside investment: venture capital or prior investments (non-RSO)



## IDENTIFY

Identify, assess and develop mature, new and emerging technologies from across the public and private sectors.



## APPLY

Prototype, validate and verify the utility of a solution in an Air Force environment.

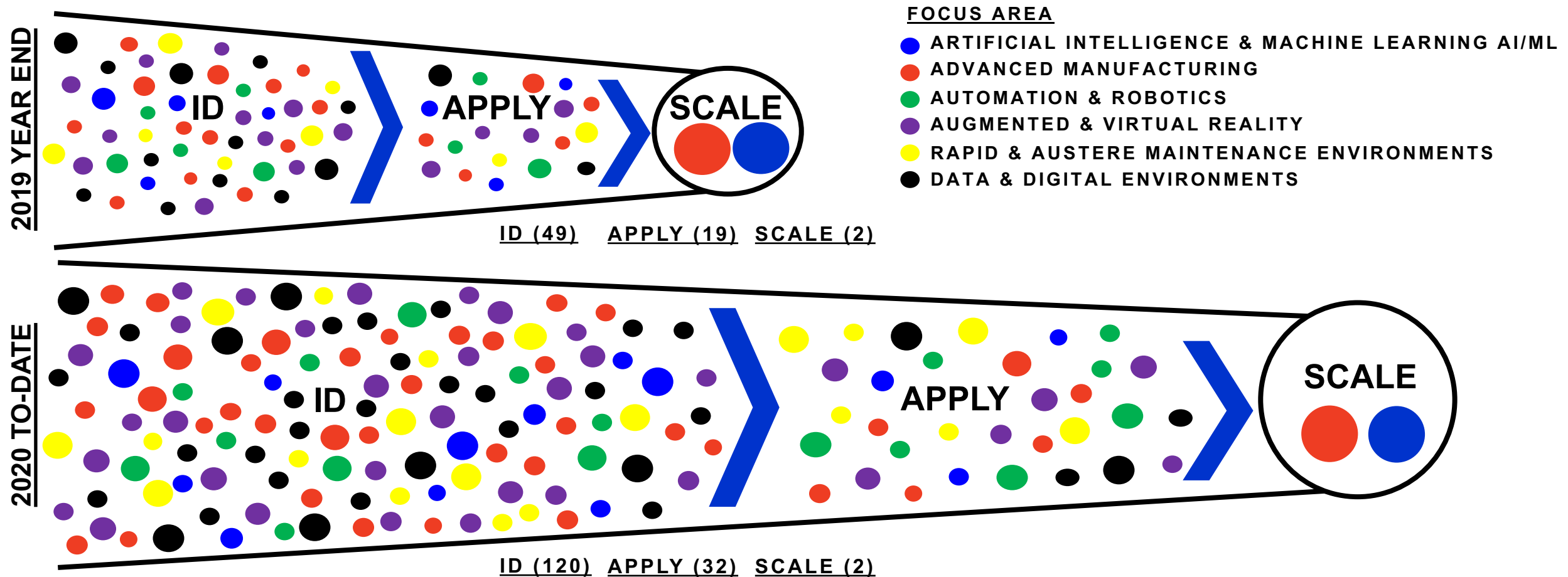


## SCALE

Deploy technology or processes across the Air Force enterprise that successfully demonstrate the ability to decrease cost and/or increase readiness.


# RSO Portfolio

## Innovation Pipeline Growth



# TECHNOLOGY FOCUS AREAS





# ARTIFICIAL INTELLIGENCE & MACHINE LEARNING

**Our most prominent use of AI is in our Condition Based Maintenance Plus (CBM+) program.**

**CBM+ provides predictive health indicators for each aircraft**

**CBM+ is a proven methodology that is now active in the Air Force**

**CBM+ improves overall reliability**



# ADVANCED MANUFACTURING

**Advanced Manufacturing as a U.S. Air Force ready solution**

**Working to identify, develop, transition, and scale advanced manufacturing technology for the advancement of the sustainment enterprise**

**Leveraging mature, new, and emerging AM technology to reduce O&S costs and improve readiness**



# AUTOMATION & ROBOTICS

**Applying automation and robotics to eliminate repetitive, manpower-intensive, or hazardous maintenance tasks**

**Focusing on COTS solutions to deliver capability and grow expertise based on customer pull**

**Identifying leading industry partners to provide cutting edge sustainment services driven by organic capability gaps**

# DATA & DIGITAL ENVIRONMENTS

**Standardizing maintenance and sustainment data collection to streamline distribution of the data across the U.S. Air Force**

**Collecting the data, identifying what's useful, turning it into a functional format that can be used by machine learning and then leveraging it to inform smart and proactive decisions**






# **AUGMENTED & VIRTUAL REALITY**

**Unifying geographically-dispersed expertise to accelerate training and proficiency levels of the U.S. Air Force sustainment workforce**

**Identifying industry leading AR/VR prototypes and preparing them for scaling to improve flight line operations and maintenance training**



A U.S. Air Force technician, identified by the name 'TORRES' on his uniform, is shown working on a large, dark, curved aircraft component. He is wearing a camouflage uniform, a helmet, and sunglasses. The background is a blurred green, suggesting an outdoor setting. The image is part of a presentation slide.

# **RAPID & AUSTERE MAINTENANCE ENVIRONMENTS**

**Providing Airmen with effective tools, leveraging modern, cross-cutting technologies to reduce the U.S. Air Force's logistical footprint and enhance mission capability**

**Validating the suitability and effectiveness to determine the proper size, power, and energy requirements for austere locations**



# A Look Ahead



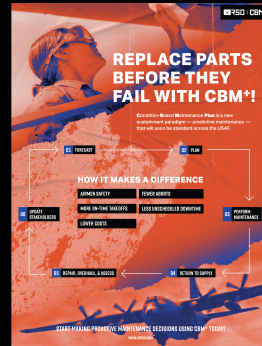
**In July 2020, RSO issued a Commercial Solutions Opening (CSO) solicitation which will remain open for two years.**

**The CSO allows RSO to leverage the latest technology advances working with companies who can deliver innovative sustainment and operational advances that truly make a difference to Air Force end users.**

**This competitive solicitation seeks innovative technologies from traditional aerospace and defense companies, non-traditional contractors, large and small businesses as well as academia, which can result in the award of commercial contracts or Other Transaction Agreements.**

# Participate & Engage with the RSO

CONDITION  
BASED  
MAINTENANCE **CBM+**



 **AGORA**









**SUMMIT** **RSO**





**LIGHTHOUSE** **RSO**



# FY22 and Beyond

| Focus Area  | Description   |
|---|---|
|  AGORA             | Next Generation Metal Printing  |
|  AGORA             | Hydraulic System Spares & Associated Components                         |
|  AGORA             | Cold Spray; Directed Energy Deposition (DED)                            |
|  AGORA             | Printing Passageway & Thin Walls Process for F357                       |
|  AGORA             | Printing Strength & Geometry Process for Stainless Steel                |
|  AGORA             | Nickel Alloy's (NA-718) Print Capability                                |
|  AGORA             | AGORA Systems Integrator  |
|  CBM <sup>+</sup> | Maintenance data analytics using government furnished software platform |

# FY22 and Beyond

| Focus Area  | Description   |
|---|---|
|  | <p>Focused on technology solutions vectored to the RSO Lighthouse at Nellis AFB:</p> <ul style="list-style-type: none"><li>• Flightline Asset Situational Awareness</li><li>• Flightline Connectivity for Data Transfer</li><li>• Maintainer Physical Assistance Devices</li><li>• Supply Warehouse Efficiency Enhancements</li><li>• Automated Ground Vehicles</li></ul> |
|  | <p>Focused on onboarding successful prototypes. Focus areas include Data &amp; Digital Environments, Augmented/Virtual Reality, Rapid &amp; Austere Environments, Automation &amp; Robotics, AI &amp; Machine Learning, and Advanced Manufacturing.</p>   |
| AR/VR   | AR/VR content creation, interface devices, and ruggedized hardware.   |
| Automation & Robotics   | Collaborative robotics and applications where a collaborative robot could exist to aid human activities such as maintenance, assembly, and fulfillment.   |

# SUMMARY



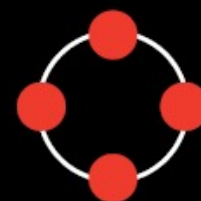
# RAPID SUSTAINMENT OFFICE

# RSO

2020 WRAP-UP



IDENTIFY



APPLY



SCALE

WORKING WITH

# 600+

## USERS



ACROSS ALL MAJCOMS

# 35

APPLY PROJECTS

# 200%

Year-Over-Year Growth

FOCUS AREAS

Artificial Intelligence & Machine Learning  
Advanced Manufacturing  
Automation & Robotics  
Data & Digital Environments  
Augmented & Virtual Reality  
Rapid & Austere Environments

# TECHNOLOGY APPLIED TO OVER 1,530 TAILS



# EXECUTING IN 50 STATES

# SCALE PROGRAMS



Advanced Manufacturing  
Condition Based Maintenance Plus

# 39%

of our small business  
partners are new to  
working with the  
Department of Defense

# 15X

multiplier of  
outside  
investment

# AMO

**12k** views on one presentation

**4284** registrations

**92%** event satisfaction rating

**22M** social media impressions



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# *Connect With Us*

## **Email:**

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## **Website:**

[www.afrso.com](http://www.afrso.com)

## **Social Media:**

LinkedIn: @AFRSO

Facebook: @airforcerso

Twitter: @airforcerso

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