



# AFWERX Challenge

Jason Chen

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# Overview

*Accelerating ideas to demonstrated and deployed solutions to DAF problems*

- Overview
- Challenge Process
- Past
- Planned
- Getting Involved

AFWERX

CHALLENGE



# What is AFWERX Challenge?

- AFWERX Challenge is an expanded market research program that matches solutions to DAF prioritized problems
- Solutions come from individuals, startups, small businesses, large enterprises, academia, and research labs
- Utilizes design thinking workshops, crowdsourced ideas, collaborative events and showcases, flexible contracting pathways



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# Challenge Process

- > ~6 months from Challenge launch to beginning of contract negotiation
- > Interested DAF parties contact a member of the Challenge team to initiate a conversation about sponsorship

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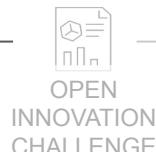


# Discovery

~ Weeks 1-4

1. Conduct introductory discussions with the Sponsor Team
2. Perform background research
3. Facilitate a Scoping Workshop to define key elements for the Challenge Definition Workshop:

- Purpose
- Principles
- Product
- Process
- Preparation
- Place
- Participants



# Challenge Definition

~ Weeks 5-11

4. Conduct outreach over 4-6 weeks to solicit participation by SMEs from industry, academia and government in the CDW
5. Design and facilitate a two-day, face-to-face, collaborative workshop to define the challenge, including:
  - a. Opportunity/Problem Definition
  - b. Solution Component Identification
  - c. Open Innovation Challenge Specifics

# Open Innovation Challenge

~ Weeks 12-20

6. Design and launch a Crowdsourcing Campaign using design elements from the CDW
7. Conduct advertising and marketing across multiple channels to attract top private sector and academia submitters
8. Evaluate and select submissions to advance to Showcase Event
9. Communicate to selected solution providers

# Demo & Showcase

~ Weeks 21-25

10. Conduct individual pitch meetings to enable deeper demonstration of potential solutions to military customers.
11. Plan and facilitate a 1-2 day Showcase Event, open to the public, to bring together selected solution providers and potential military customers to discover, discuss and iterate thinking regarding potential uses of their solutions



DISCOVERY



CHALLENGE  
DEFINITION



OPEN  
INNOVATION  
CHALLENGE



DEMONSTRATION/  
SHOWCASE





CONTRACT


AFWERX

# Contract

- Commercial Solutions Opening (CSO) solicitation vehicle
- All teams invited to Showcase Event are eligible for a contract award
- The CSO can be used by anyone in the DoD to bring innovative and commercial solutions to Air Force end-users and acquisition professionals.

 **SPIRAL 1:** Solutions to DAF problems are crowd sourced from innovators identified through global market research and targeted outreach

 **SPIRAL 2:** High impact solutions advance to a pitch day and showcase to connect with potential military customers

 **SPIRAL 3:** Solutions may be awarded contracts for development, demonstration, or delivery, based on favorable review of a commercial solutions proposal

**CSO CONTRACT + FUNDING**  
**WARFIGHTING CAPABILITY**

  
DISCOVERY

  
CHALLENGE  
DEFINITION

  
OPEN  
INNOVATION  
CHALLENGE

  
DEMONSTRATION/  
SHOWCASE

  
CONTRACT

# Past

**BASE OF THE FUTURE**  
XAFWERXFUSION

- SITE PERIMETER AND SECURITY CHALLENGE
- MULTI-DOMAIN OPERATIONS CHALLENGE
- MICROELECTRONICS SUPPLY CHAIN PROVENANCE CHALLENGE
- USAF FUTURE OF WARGAMING CHALLENGE
- USAF NEW WIRELESS SYSTEM OPEN CHALLENGE
- STEEL-UNIT CONCRETE ASSESSED BY NON-DESTRUCTIVE SCAN CHALLENGE
- ADVANCED MICROELECTRONICS DESIGN AND PROTOTYPE CHALLENGE
- AIR FORCE RECRUITING, REIMAGINED CHALLENGE
- MIXED REALITY PLATFORM CHALLENGE
- REVOLUTIONIZING PILOT TRAINING OPEN CHALLENGE
- SPACECRAFT ENGAGEMENT SIMULATION EXPERIMENT CHALLENGE
- ENABLING TECHNOLOGIES FOR REVERSE ENGINEERING AND ADDITIVE / AGILE MANUFACTURING CHALLENGE
- REVOLUTIONIZING USAF FIGHTING OPERATIONS CHALLENGE
- GLOBAL SPACE TRANSPORT AND DELIVERY CHALLENGE
- SPACE ASSET RESILIENCE CHALLENGE
- EMPOWERING AIRMAN AND FAMILY WELLBEING CHALLENGE
- REIMAGINING ENERGY FOR THE DOD
- HIGH-SPEED VERTICAL TAKE-OFF AND LANDING CONCEPT CHALLENGE
- AIRFIELD MAINTENANCE AND REPAIR CHALLENGE
- INTEGRATED RESPIRATOR INFORMATION SYSTEM CHALLENGE
- ACCELERATING PILOTS TO COMBAT-READY AVIATORS CHALLENGE
- LEVERAGING OPERATIONAL TECHNOLOGY CHALLENGE
- NEW WARRIORING AND OPERATIONAL EQUIPMENT NOT DEPENDENT ON FOSSIL FUELS CHALLENGE
- DATA AVAILABILITY FOR IMPROVED PLANNING AND DECISION-MAKING CHALLENGE
- ENERGY CULTURE, POLICY, AND EDUCATION CHALLENGE
- ADVANCED TRAINING CONCEPTS CHALLENGE
- FLIGHTLINE SECURITY CHALLENGE
- SKY HIGH RESILIENCE CHALLENGE
- #INNOVATE2PROTECT
- CULTURE OF INNOVATION TECHNOLOGY CHALLENGE
- ENERGY TRANSMISSION AND DISTRIBUTION CHALLENGE
- FIXED AND MOBILE ENERGY GENERATION CHALLENGE
- FIXED AND MOBILE ENERGY STORAGE CHALLENGE
- INSTALLATION RESILIENCE CHALLENGE
- BASE SECURITY AND DEFENSE CHALLENGE
- EMERGENCY AND RESPONSE CHALLENGE
- MIXED REALITY AIR REFUELING TRAINING CHALLENGE

Overview

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CHALLENGE







# AFWERX CHALLENGE - WHAT WE HAVE ACCOMPLISHED FY18 -FY23

**COLLABORATION**

**49** CHALLENGES

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

**ADVANCEMENT**

**\$75** MILLION AWARDED

for prototyping and marketing research

**31** showcases

with

**21,286+** members

**46** workshops

with

**3,600+** attendees

**12**

weeks average from submission to prototyping contract

**Follow-on Contracts**

**122**

**7,600+**

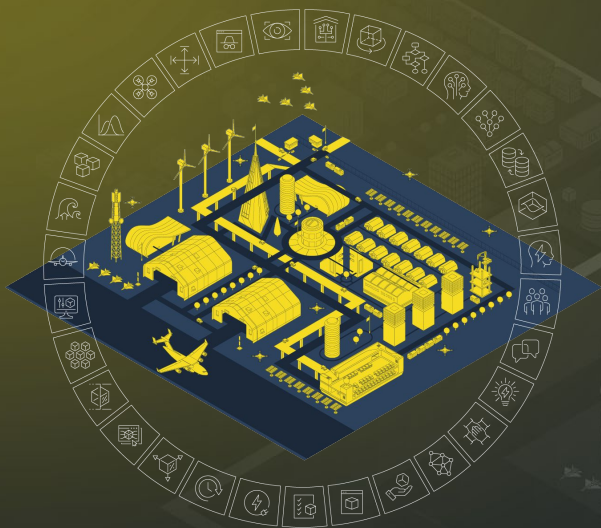
solutions submitted

**70%**

of submissions are from companies who have never worked with the government before

**“** I am amazed at how quickly we were able to achieve a government contract to work with the Air Force. The AFWERX Vegas team have been relentless in supporting our company with additional opportunities to connect with both industry customers and internal government customers.

**MICHAEL ROZIN**  
Rozin Security



# BASE OF THE FUTURE CHALLENGE

**1,600+ SOLUTIONS,  
\$15M Awarded**

The Base of the Future initiative was comprised of six challenges:

- Leveraging technology for **operational effectiveness**
- Increasing **installation resiliency** by creating stronger infrastructure and the ability to bounce back quickly
- Improving **base security and defense** while increasing efficiency and effectiveness;
- Improving the **wellbeing of Airmen and their families**
- Creating a **culture of innovation** to allow the free sharing of ideas on base and increasing the speed of technology adoption
- **Reverse engineering** legacy parts with the latest **additive and agile manufacturing** technologies

More than 1,600 solutions were submitted across these six challenges. Following evaluation, 374 teams were selected for showcase and 92 were advanced as finalists..

# BASE OF THE FUTURE



[afwerxchallenge.com](https://afwerxchallenge.com)



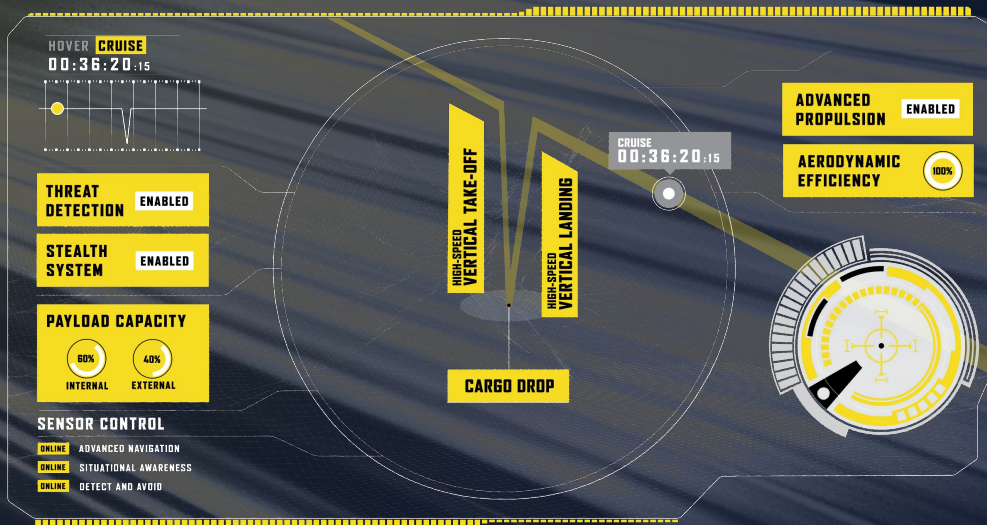
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CHALLENGE



# HIGH-SPEED VERTICAL TAKE-OFF AND LANDING CONCEPT CHALLENGE

## 200+ SOLUTIONS, T1 ON CONTRACT

This challenge was aimed at advancing solutions to help the U.S. Air Force and U.S. Special Operations Command achieve optimal agility in contested, resource-constrained, and runway-independent settings. The challenge yielded over 200 solutions from industry, academia and government innovators. The most promising solutions were showcased at the Showcase Event, where subject matter experts selected T1 to move forward toward market research contracts.



afwerxchallenge.com



# Planned

- ACE Common Support Equipment
- Power Generation for UAVs
- Expedient Basing
- Tactically Responsive Space
- Aerial Refueling
- Enterprise Test Vehicle
- Super Goggles

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# Current Challenge Topics

- **ACE Common Support Equipment**



- Sponsored by AFRL/RS (TCO)
- Highly mobile, multi-capable, resilient, and sustainable suite of common aviation support equipment for the flightline in support of Agile Combat Employment (ACE)

- **Affordable Power Generation for UAVs:**



- Sponsored by AFRL/RQ
- New methods for electrical power generation systems targeting Class V UAVs while maintaining/improving a healthy supplier base

- **Expedient Basing (5 topics):**



- Sponsored by AFCEC, PACAF, USAFE
- Deployed solutions for water, power, facilities, housing, food, runways to quickly create power projection

# Current Challenge Topics Continued

- **Tactically Responsive Space**



- Sponsored by SpaceWERX, Space Systems Command
- Rapid establishment of technologies in orbit, rapid reconstitution of disabled assets, rapid deployment of new constellations, and obscuring launch activities from adversaries
- Launched as Direct-to-Phase-2 SBIR topic

- **Aerial Refueling**



- Sponsored by AFRL/RS (TCO)
- Modernize air-to-air fuel transfer systems for small and agile tactical tankers to optimize missions in contested airspace, provide flexibility for a broader range of aircraft, and reduce manufacturing costs

# Current Challenge Topics Continued

- **Digital Spaceport of the Future**



- Sponsored by SpaceWERX, Space Systems Command
- Generate cutting-edge ideas and state-of-the-art capabilities that will advance USSF'S digital transformation, hardware modernization, and operational enhancement of current and future spaceports.
- SBIR topic planned to launch in January; currently will not be going through the CSO path

- **Alternative/Augmented PNT**



- Sponsored by SpaceWERX, Space Systems Command
- Explore the “art of the possible” for alternative technologies and techniques to enhance, complement, and augment current PNT capabilities to increase resilience for USSF, DoD, US Civil/Interagency, and US Allied users worldwide. Our Vision: Reliable PNT from any source, anywhere, all the time.
- SBIR topic planned to launch in January; currently will not be going through the CSO path

# Current Challenge Topics Continued

- **Enterprise Test Vehicle**



- Sponsored by AFLCMC/EB (Armament Directorate)
- Government design sprint plus Challenge for design of modular, open architecture test vehicle, serving as baseline for future low-cost cruise missiles

- **Super Goggles**



- Multi-MAJCOM topic, led by ACC
- Advanced AR/VR goggles for pilot training



# Integration, Support, Alignment

- **Integration with AFWERX**
  - CSO is a path for med/large company funding
  - Connect to SBIR specific topic: timeline, evaluations
  - Connect to Spark campaigns
- **Support to DAF**
  - Strategic partnering with USAF, USSF, AFRL
  - Minimum 1 MAJCOM Innovation group topic per year
- **Alignment**
  - Align most or all Challenge topics to OIs
  - Align to Air Force Futures where possible

# Getting Involved

- Benefits of a Challenge
- How to Participate

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# Benefits for Challenge Submitters

- **Simple submission**
  - Streamlined, 7 question web form plus up to 5 page attachment
  - Spiral structure where level of effort increases only after idea moves forward
  - Concise Challenge Statement
- **Collaboration**
  - Submitted ideas are viewable by others on crowd-sourced platform
    - IP-sensitive information can be submitted through private attachment
  - Collider events: webinars, workshops, showcase
- **Military understanding**
  - Chance to interface with government and military through workshops, webinars
  - Challenge statements are approachable with limited military expertise
  - Stay in-the-know about the AFWERX ecosystem

# How to Participate

- Challenge Definition Workshops
  - Create an account on AFWERXChallenge.com
  - Keep an eye out on AFWERX Social Media
- Evaluate submissions
  - View open Challenges on AFWERXChallenge.com
  - View submitted solutions
  - Attend webinars
  - Submit your idea!

**Solution Submission Phase**  
24 Oct 2023 until 15 Dec 2023

[Submit Solution](#)



The United States Air Force (USAF) seeks in-flight, platform agnostic fuel transfer hardware technology that can provide fuel to both receptacle and probe equipped receivers. The USAF is interested in any and all capabilities that can achieve the desired outcome of enabling Department of Defense (DoD) and joint coalition aircraft the ability to transfer fuel from legacy and future aircraft to legacy and future tactical aircraft. Initial scoping for design considerations should focus on a preliminary use for the F-15.

## CHALLENGE TIMELINE

SEP 20-21 2023	OCT 24 2023	DEC 15 2023	JAN 2024	FEB/MAR 2024
Challenge Definition Workshop	opens	closes	Evaluations & Down-Selection	Oral Demonstrations & Showcase

*Please note: If you experience an issue submitting your solution when copying and pasting text from a rich-text word editor like Microsoft Word into the submission form please do the following. Copy and paste all of your text into a format free text tool like Text Edit, Notepad, etc. Make sure all formatting is turned off by making your text plain text. Then copy and paste into the submission form.*



# AFWERX CHALLENGE

## **AN INNOVATION ECOSYSTEM TO SOLVE DEPARTMENT OF THE AIR FORCE PROBLEMS**

As the Department of the Air Force's innovation arm, AFWERX is the right place to go for solutions to complex problems. **AFWERX Challenge** is our proven open crowdsourcing program that casts a wide net for industry and academic innovators to apply their latest technologies and solutions to government problems and accelerate the path from idea to deployed solution.