AFLCMC... Providing the Warfighter's Edge



## Air Force Acquisition Update 2022

### **U.S. AIR FORCE**

Cleared for Public Release AFLCMC-2022-0312

### Department of the Air Force

Innovate, Accelerate, Thrive - The Air Force at 75

### Agile Combat Support



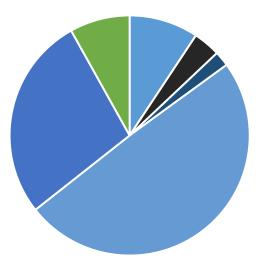
Ms. Lea Kirkwood, SES PEO, Agile Combat Support lea.kirkwood.1@us.af.mil



### **Agile Combat Support Directorate**



### 247 programs



- 23 Acquisition Master List
- 9 Developmental (non-ACAT)
- 5 Middle Tier Acquisition
- 122 Sustainment
- 68 Foreign Military Sales
- 20 Support



### **Provides:**

- Auto Test Systems Human Systems
- AFMETCAL

Electronic Warfare & Avionics

Simulators

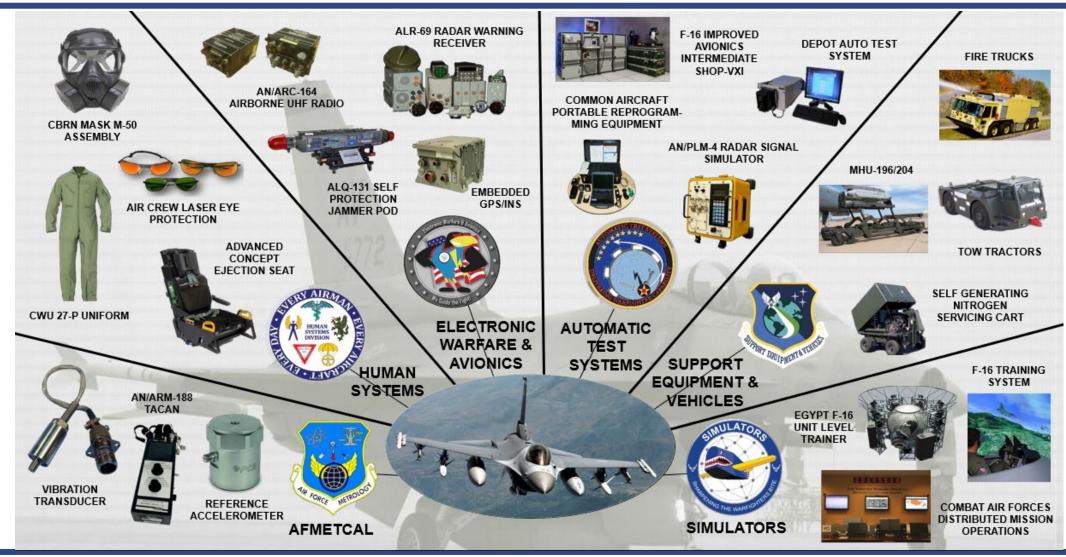
Support Equipment & Vehicles





### **ACS Impact**







### **Operational Imperative 7**



#### **READINESS TO DEPLOY AND FIGHT**



#### SITUATION

The Department relies upon a wide range of supporting information systems and facilities, in the continental U.S. and overseas, to mobilize, deploy and support our forces in a major conflict. All of these dependencies can be targeted by a wide variety of threats, including cyber and kinetic threats.



#### CHALLENGE

The Department of the Air Force must analyze the entire mobilization and support chain to ensure the entire system is hardened against the threats we would expect an enemy to present, so we can meet our commitments to combatant commanders.



#### **APPROACH**

Deploying Airmen, Guardians, and the systems they employ takes a herculean effort. This imperative will identify priority gaps and vulnerabilities in the Department's ability to transition to and support current and projected operational plans in a contested environment.

#### **OPERATIONAL IMPERATIVE 7**





### **Operational Test & Training Infrastructure**



The Air Force requires a robust synthetic test and training capability, which enables realistic and high-fidelity test and training in a seamless and connected virtual environment. This capability must cross multiple generations of aircraft and associated training systems.

- Due to range constraints, threat replication and surveillance issues, advanced training must migrate to the synthetic environment to meet requirements
- OTTI Synthetic Test and Training Capability
  - Joint Simulation Environment
  - Simulator Concurrency and Distributed Training
  - Common Simulator Architecture
  - Policy

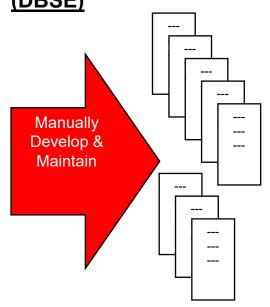


### **Digital Transformation**

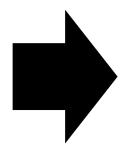




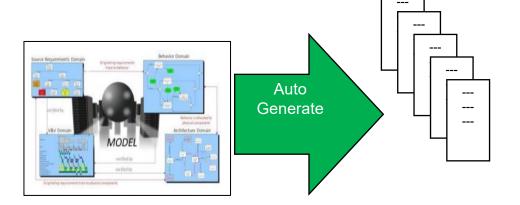




Digital Engineering Transformation



### Model Based Systems Engineering (MBSE)





### **Digital Transformation Activities**



- 145 programs in ACS have digital initiatives underway
- 6 Major Pilot Pathfinder Programs ID'ed and roadmapped across our six divisions, including
  - Position Navigation Timing
  - Automatic Test
  - Training Systems
  - Ejection Seats
  - Munition Loaders
  - RF Microwave Calibration
- Robust 3D scan/print capabilities
- Artificial Intelligence

#### **Simulators Division**

- Simulator Common Architecture Requirements and Standards (SCARS)
- Lightweight Sims Ecosytem
- Remote Sim Instructor
- Simulators Logistics Product
   Support
- B-52 Training System



### Summary



- ACS is everywhere! Products and systems we manage are engrained in the Airman culture
  - Accelerate Change or Lose!
- Readiness underpins all the Operational Imperatives

 Moving to a Digital Enterprise is essential to stay relevant



### **Agile Combat Support**





**Every Airman... Every Mission... Every Day!** 



# Simulators Division (AFLCMC/WNS) Update

29 November 2021

Col Matt "T2" Ryan Senior Materiel Leader Simulator Division

Cleared for Public Release AFLCMC-2021-0286



### **Recent Successes**



#### AFLCMC... Providing the Warfighter's Edge



**Game-Changing** Training Technology

**10 SBIR Contracts** Concluded















E-4B - CymSTAR



C-130J MATS Reconfigurable Device - Lockheed Martin





Man in the Loop Delivery

**8,400 Training Events 26,635 Training Hours 1,800 Aircrews Trained 19,500 Personnel Trained** 





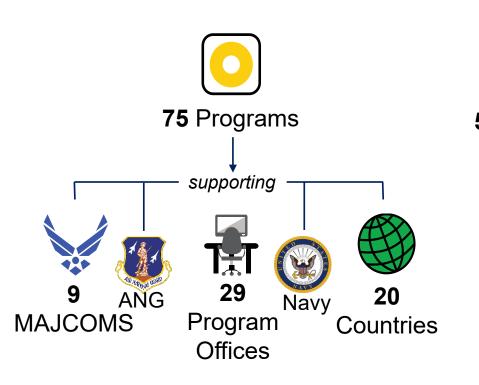


**Simulators Innovation Lab** 



### **Simulators Snapshot**













Funding Documents





















### What Is Our Destination?



- AF OTI 2035 Flight Plan, circa 2017, provided framework and strategic lines of effort "to achieve and sustain full spectrum readiness"
- Simulators Division guiding efforts
  - Implementing Simulator Common Architecture Requirements and Standards (SCARS)
  - Supporting development and implementation of a common synthetic environment (Joint Simulation Environment)
  - Increasing the capability and interoperability of distributed training networks
  - Improving live training via injection of synthetic entities
  - Ensuring sufficient concurrency, fidelity, connectivity, and recapitalization of training systems



### **SCARS** Full Potential





- Cyber-Secure Hybrid Cloud based Infrastructure Providing Centralized Operations & Services including baseline SCARS Library
- ✓ Local/Remote Cyber Security
- ✓ Local/Remote Sustainment
- ✓ Local/Remote Baseline Management
- ✓ MBSE Supported Design
- Multi Security Domain Support

- ✓ SCARS Digital Engineering Environment (DEE) with DevSecOps & MBSE Capability to TSSCs as an OPE
- ✓ Training System Reference Architecture
- ✓ App Development & Onboarding
- Expand SCARS library with approved open source Apps and common simulator Apps for reuse by multiple Platforms/Simulators

- Cyber-Secure Hybrid Cloud based Simulator with High Availability and Performance
- ✓ MOSA Compliant
- DEE Supported Simulator Common Architecture
- Continuous Development, Integration & ATO
- Populated with Common Synthetic Environment Services & Apps
- Minimum Platform Specific Hardware & Software



### **SCARS Status and Way Ahead**



- 18 SCARS partners on contract supporting standards development
- 8 On-Premise Equipment (OPE) systems fielded
- Achieved IOC w/approved design and first scan
- SCARS Increment 1 and Increment 2 Standards complete
- Geospatial Data Repository awarded in FY22, developing central repository of authoritative data for all USAF Ops Training
- Migrating sim applications to virtual machines and containers
   Defining government reference architecture for common types of
   training systems to support Increment 3 Standards
- Collaborating w/AFRL to assess real time simulator performance for new architectures – which apps work best in VMWare and containers



### Joint Simulation Environment (JSE)



- What is Joint Simulation Environment (JSE):
  - Operationally realistic, Digital Test and Training Range (DTTR) that provides environment for secure, relevant, and effective DT/OT/HEAT3 and experimentation for high-end fight of current and next gen weapon systems
- Gaps filled by a common DTTR:
  - Overcomes open-air range limitations for test and training
  - Provides high fidelity, integrated, operationally and tactically relevant test and training environment
  - Multiplies the value of digital trinity across lifecycle: concept experimentation, system development/test, employment training

### CONCEPTUAL JSE VISION



#### **SUPER SITE**

- Highest fidelity platform representation with Man In The Loop (MITL)
- Highest fidelity electromagnetic and infrared spectrum battlespace
- · Highest fidelity threat representation with MITL
- Highest fidelity representation of future domain simulation
- Support DT
- Supports OT / mission level assessments
- Supports high end, operationally representative training against densest threat population
- Supports tactics development



#### MISSION TRAINING CENTER

- Fidelity/density of blue, red, and environment dialed back a notch, but informed by "super site" fidelity and learning
- Smaller footprint, less hardware, and less MITL representation
- Prepares for joint/integrated training at "super sites"
- Reinforces learning achieved at "super sites" to maintain proficiency
- Represents opportunity for lower fidelity, "connected" / distributed training



#### **DEPLOYABLE CAPABILITY**

- Training solution scaled to laptop-sized
- Lower fidelity/density, all entities "constructive" except own ship
- Constructive behaviors informed by "super site" fidelity and learning
- Reinforces learning at other levels to maintain proficiency while deployed



### **Critical Enablers**



- Continued maturation of Government Simulation Interface
- Direct future platform SPOs to provide JSE-compliant OFPs
  - JSE vision/strategy to be developed, prioritizing DAF system implementation
- Pursue Multi-Level Security enabled JSE -> VTTC & OTTI Reqts
- Obtain Collaborative SW Development & Business Network
  - Connects 412th, PAX, XA, VTTC, others
  - Common DevOps tools and processes
  - Common MBSE model

- GSI is the gateway to JSE; government owned standard for model development
- GSI is how you will plug into the Global Reference Interface Domain (GRID)
- Other platforms/programs can get involved/work with JSE by building their products to this spec, or by building an adaptor for it
- Simulation Common Architecture Requirements and Standards (SCARS)
  Inc IV



### **Data Products**



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- Multi-Level Security (MLS)
  - Need in data stream MLS/ way to tag data in motion
  - Need MLS for brief/de-brief

•

- Learning Management Tool
  - Need data collection standards
    - Use collected data for inputs to Learning Management System (LMS)
    - Metadata standard
  - LMS
    - Artificial Intelligence/Machine Learning with collected data as inputs
    - Output From Al/ML to drive proficiency of aircrew



### **JSE Program Management Concept**



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#### AF SPO for JSE (AFLCMC/WNS) will:

- Manage development, integration and sustainment of new entities in a box (IABs) for AF
- Manage development, integration and sustainment of compute infrastructure at AF test and training sites
- Manage suppliers (organic and industry) for AF contributions to the JSE environment and core services
- Manage the procurement, integration and sustainment of Human-Machine Interface (HMI) h/w (e.g., cockpits, domes, XR devices, etc.) at AF sites and for AF platforms connecting to Navy JSE operating sites
- Manage JIAB product line in coord with Navy for AF requirements

#### JSE NAWCAD will:

- Continue as the lead system integrator for JSE baseline releases
- Manage development, integration and sustainment for Navy contributions to the JSE environment and core services
- Manage development, integration and sustainment of new entities IABs for Navy
- Navy will manage the procurement, integration and sustainment of HMI h/w for Navy platforms



### **JSE Future Steps**



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#### FY23-FY27

- Finish F-35 IOT&E at NAS Pax
- Stand up JSE SPO in WNS
- Finish construction of JSE Edwards (DT) and JSE Nellis (OT)
- Start test operations at Edwards/Nellis (F-22 pathfinder)
- Complete phase 1 fielding of JSE at the VTTC
- Begin delivery of phase 2 platform incorporation into JSE VTTC
- Continuous development/modernization of environment and threats



### **JSE** and You



- Future products and devices must have commonality to connect to JSE
- JSE services require continuous development to keep pace with threats and technology
- Hi-fidelity (OFP-based) models of platforms and sensors required to fully leverage physics-based environment



### **Simulators Division Leadership**



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DIVISION CHIEF SENIOR MATERIEL **LEADER** Col Charles 'Matt' Rvan



**DEPUTY DIVISION** CHIEF Penny Mason



CHIEF OF CONTRACTING (PK) Christine Diehl







CHIEF OF ENGINEERING (EN) Kelly Navarra

DEPUTY Jeff Pfledderer



CHIEF OF FINANCE (FM) Kristen O'Sullivan

DEPUTY Bruce Comer





AIR COMBAT **Branch Chief** Stefan Craw

#### DEPUTY

Michael Hayes

EN - Susan Schemmel / Craig Siefert / Barry Green FM - Natalie Pickett LG - Chris Covert PK - Abby Hoefler

#### AWACS/Attack

Maj Anthony Maxie

Bombers/F-15 Maj David Meyn



#### AIR MOBILITY **Branch Chief** Greg McCan

#### DEPUTY

Rex Easley

EN - Barry Green / Gernai Bledsoe FM - Beth Truesdale LG - Joe Gerling PK - Richard Fries

#### Airlift

Holly Hogsett

#### Tankers

Rex Easley (Acting)



#### SPECIAL OPS & AETC **Branch Chief** Lt Col Abigail Ono

#### DEPUTY

Lt Col Blake Bradford

EN - Brian Woehrman / Greg Enochian FM - Josh Elliott LG - Tonita Davis PK - Shane Hemmerich

#### Special OPS

Lt Col Blake Bradford

#### Air Education Vacant

Innovation Cell Margaret Merkle



#### OPERATIONAL TRAINING INFRASTRUCTURE **Branch Chief**

Lt Col Drew Frazier

EN - Tom Casey/ Mike Baker FM - Steve Hevl LG - Christal Green PK - Shane Hemmerich

#### **Distributed Training Systems**

Lt Col Bert Uhler

#### Common Architecture & Standards

Scott Poznanski

Cybersecurity Gary Coe



CHIEF OF

LOGISTICS (LG)

Richard Swain

DEPUTY

Joe Gerlina

#### OPERATIONAL TRAINING ENVIRONMENT **Branch Chief** Lt Col Drew Frazier (Acting)

DEPUTY

#### Johnny Clark FN - Vacant

FM - Vacant

LG - Vacant PK - Vacant

#### Joint Simulation Environment Johnny Clark



#### **FMS Branch Chief** Doug Rogers

EN - Terri McBeth FM - Eric Ellsworth

LG - Michael Baldwin PK - Karen Palomaki

#### Fighter Programs Tanya Hopson

Airlift / Tanker Programs Vacant

#### **New Business**

Jesse Dewberry



#### **ANALYSIS &** INTEGRATION **Branch Chief** Scott Cumminas

EN - Jeff Pfledderer FM - Vacant LG - Vacant

PK - Karen Palomaki T&E - Oliver Cook

#### Program Control Nathan Stevens

Division Action Group Kara Truelove



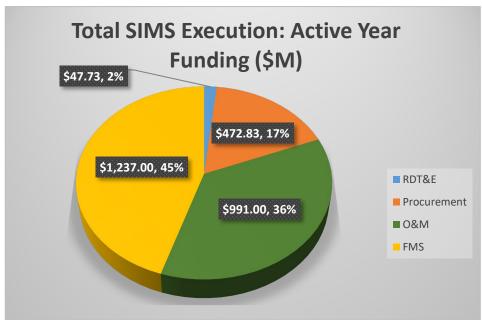
### **WNS Funding Profile**



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- WNS Active Year Funding
  - FMS and O&M are the largest portion of budget
- Air Force is prioritizing sustainment of those weapon systems which strengthen the fight, in accordance with the NDS
  - Must be innovative with our sustainment of Sims
  - Look to requirements with greater ROI

Active USAF & FMS TOA: \$2.75B





### **WNS MAJCOM Funding & FYDP**

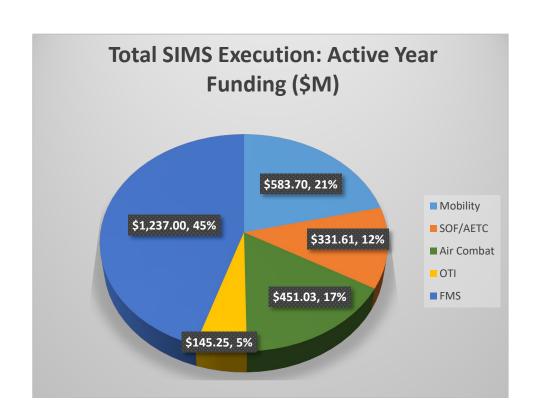


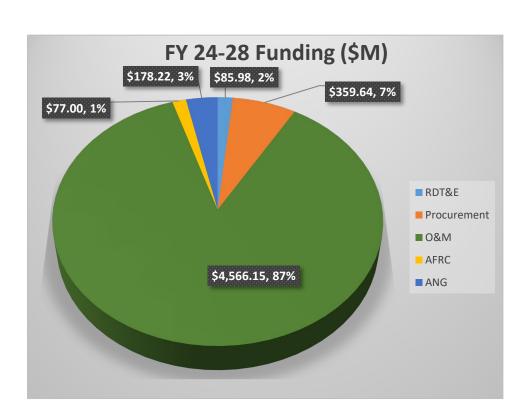
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Active Year USAF (FY20 – FY22): \$1.51B

+ FMS Active Cases +\$1.24B

Active USAF & FMS TOA: \$ 2.75B



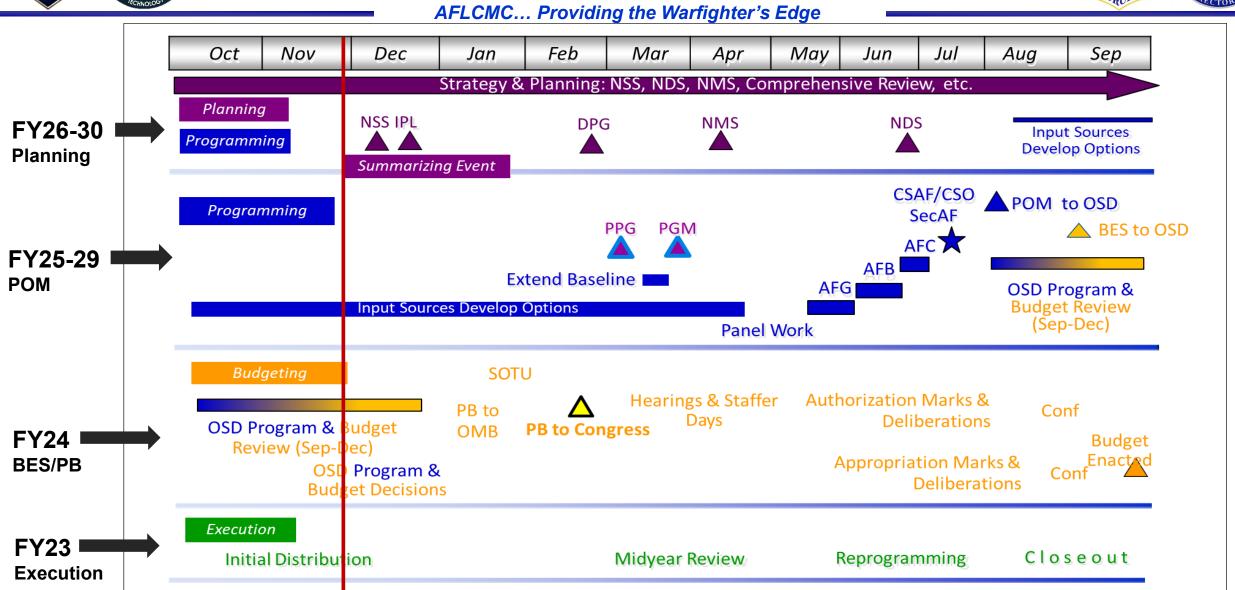


**USAF FYDP (FY24 – FY28): \$5.267B** 



### **FY23 PPBES Calendar**







### **Engineering Priorities**



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Support AF efforts in development of common standards/interfaces (Help us Help You)

- Simulator Architecture Requirements and Standards (SCARS) working towards defining architecture standards for training systems.
- Expect to see standard architecture and industry standards requirements in future RFPs.
- Government Purpose Rights (GPR) and government-owned interfaces are key to achieving JSE desired commonality and interoperability.
- A government-defined interface (GSI) is in development, and we plan to add it to the architecture standard.

#### **Get serious about Digital Engineering and MBSE!**

- Looking at ways to tightly couple platform and training system models and provide updates simultaneously.
- Future RFPs will seek delivery of high-level functional models.
- Shifting to use models in all contracting actions from RFP to CDRLs
- We are using CAMEO products (v22).



### **Accelerating Lightweight Sims**



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- Legacy Sims are experiencing obsolescence, concurrency, and affordability issues
- AFGSC Future Training Concept envisions a Family of Systems for their platforms
- AFLCMC/WNS currently executing several efforts to meet AFGSC goals & requirements
  - Focus is OFP-based, non-proprietary technology to enable proficiency-based training
    - Increased Commonality
    - Reconfigurable hardware
    - PKI enabled devices
    - Efficient & Sustainable (\$)
    - Networked across platforms
  - B-1 Reconfigurable Cockpit Procedures Trainer (R-CPT)
    - 2020 Pitch Day SBIR contract served as basis for contract to modify existing CPTs
    - Successfully demonstrated virtualization of aircraft OFPs and integration with COTS hardware
  - B-52 Mission Employment Trainer (MET)
    - Phase III SBIR leveraging technology demonstrated in B-1 SBIR, initial risk reduction phase on contract
  - B-2 VR Maintenance Training System (MTS)
    - Supplemental immersive training tool aimed at achieving higher training proficiency and transfer of skills compared to traditional instructional methods



**B-1 RCPTs** 



### **SOF & AETC Initiatives**



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#### Remote Simulator Instructor

- Completed demonstration of prototype capability
- 19 AF conducting Operational Assessment
- Awaiting final requirements
- Defense Innovation Unit Collaboration
  - Partnership between rapid acquisition and SPO
  - Bridge projects into programs of record under PEO
- Innovation Cell
  - Continuing support of SBIR efforts
  - Working towards connecting innovation to needs across MAJCOMs
- Kirtland Davis-Monthan Andrews Moody (KDAM)
  - Better aligning requirements under focused contracts



### **WNS Near-Term Acquisitions**



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2022

2023

2024

- T-1A GBTS
- T-38 GBTS
- Altitude Chambers
- MAF DMO

- (KDAM) RATS CLS/TSSC
- KDAM ATARS C&I
- TSA IV

- C-17 TS
- B-52 CLS/TSSC
- AWACS DRAGON FCTS
- AWACS FCT
- CAF DMO/DMON 3.0

KEY Undecided

Apr 24 – B-52 Legacy – Oct 24

Nov 23 AWACS DRAGON – May 24

Mar 23 - C-17 TS- Apr 24

Roughly 25% of WNS USAF portfolio is sole source; 75% is competitive or undecided pending market research



### **Future WNS Acquisitions**



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	25	
U	25	

### 2026

### 2027

### 2028

- C-5 ATS
- C-130J MATS Production
- F-15 TDAS
- AFSOC ACTS
- ANG OTS
- T-6 GBTS

- B-1
- B-2
- C-5 MATS
- C-130H ATS
- C-130J MATS TSSC
- F-15 MTC
- KC-46 ATS
- KC-46 MTS
- Spatial D
- E-4B

- A-10 TS
- F-16 STP
- KC-10?
- KC-135

- E-4B
- Alt Chambers
- MAF DMO?
- T-1A GBTS
- RATS CLS/TSSC
- KDAM ATARS C&I
- F-16 STP



### **C-17 TS**



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### **Program Requirements**

The C-17TS Sustainment contract will provide aircrew instruction (ATS only), courseware, ATS & MTS CLS, concurrency and obsolescence modifications, and training flights to produce certified aircrew members. CLS on ATSs also will include supporting the simulators in a networked DMO environment. This contract will also include ATS instruction of C-17 foreign partners on USAF devices. This task order may include the same services for Foreign Military Sales (FMS) case countries. Cybersecurity Risk Management Framework (RMF) requirements will apply.





### **AWACS DRAGON FCTS**



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### **Program Requirements**

The Airborne Warning and Control System (AWACS) Diminishing manufacturing sources Replacement of Avionics for Global Operations and Navigation (DRAGON) Flight Crew Training System (FCTS) contract will provide CLS and TSSC support to three sims at Tinker AFB, OK. CLS and TSSC support consist of ensuring the training system is operational/available at 98%, maintaining multi-airfield VDB, configuration/data management, potential concurrency and obsolescence modifications, possibly establishing connection to the DMON, and may include drawdown or retirement; DMON and drawdown requirements still tbd.



-Pending ASP-Competitive Fair Opportunity Selection using TSA IV

#### PERIOD OF PERFORMANCE

1 year base 5x 1-year options End date: July 2030

#### MILESTONES

Draft FOPR

FOPR

Award

Sep 23

Nov 23

May 24

#### POINT OF CONTACT

Organization: AFLCMC/WNS

Program Manager: Capt William Sousa

Email: william.sousa@spaceforce.mil

#### **FUNDING**

\$ TBD
Firm Fixed Price w/ Cost Reimbursable

### CURRENT CONTRACT/ORIGINAL DEVELOPER/OEM (IF RECOMPETE)

CAE



# B-52 Legacy Training Systems Sustainment CLS/TSSC AFLEMC... Providing the Warfighter's Edge



### **Program Requirements**

The Awardee will be tasked with providing CLS and TSSC sustainment services to the legacy B-52 Weapon System Trainer (WST). There will be no upgrades or updates made to the WSTs. The Awardee will also not be required to keep any developmental trainer in a ready state. Additionally, there will not be a requirement to support Distributed Mission Operations (DMO) related environments.





### **Key Take-Aways**



- We value your partnership and appreciate your feedback as we work through execution challenges
- JSE is an Air Force priority program for a test and training environment
- Strategic goal to ensure SCARS is used to properly develop and implement JSE
- WNS has the expertise to develop and sustain the training environment of the future; however, we need to rebalance our portfolio to better support 21<sup>st</sup> Century Force training needs
- Near term focus: successfully execute SCARS and keep training systems relevant and ready in a challenging fiscal environment



### **Key Take-Aways**



- Budget increases are not keeping up with inflation
- Calendar years 2024-2026 will be Source Selection heavy
- Innovation Activities: User/Warfighter to incorporate new technologies into training programs
- Shrinking budgets = cannot fund everything
- SCARS can make training more affordable with common services/apps, and common h/w baseline
- Opportunity for light-weight sims to make training more affordable (family of targeted sims, JSE sites, LVC, etc.)
- Need to balance training device concurrency funding w/ other needs









### **QUESTION AND ANSWER**









### **Simulators Program Execution**



**Analysis &** 

Integration

**Program Control** 

Strategic Planning/Roadmaps

TSA IDIQ Contracts

Enterprise Scheduling

Analysis & Metrics

WN SIO Liaison

PMRT Admin

**CPAR Focal Point** 

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#### Air Combat (ML)

#### Bombers / AWACS

B-1 Training Systems B-2 Training Systems B-52 Training Systems E-3 DRAGON E-3 FCT/MTS E-3 MTC

#### Fighters / Attack

A-10 ATS F-15 EX F-15 TDAS F-15C/EMTC F-16 STP T2 T4

#### Air Mobility (ML)

#### **Airlift**

C-5 Training Systems C-17 Training Systems C-130 ATS/MTS C-130J MATS C-130 ANG RWST HC/MC-130J

#### **Tankers**

KC-10 Training Systems KC-46A ATS KC-46A MTS KC-135 Training Systems KC-135 BOSS (ANG)

#### SOF/AETC (ML)

#### SOF/UAV

**AFSOCACTS** JTC TRS KDAM ATARS C&I RATS CLS/TSSC

#### **AETC**

A&OP Training Systems Spatial D T-1A GBTS T-6 GBTS T25 SECT T-38CATS **URT GBTS** VTRAT

#### OTI (ML)

#### **Distributed Training Systems**

CAF DMO MAF DMO ANG OTS LVC XCITE/NGTS

#### **Standards**

Cybersecurity

#### OTE (ML)

#### **JSE**

VTTC VBE MITL

#### **Fighter Programs**

FMS (ML)

F-15 Japan F-16 Jordan F-15 Qatar F-16 Morocco F-15 RSAF F-16 Pakistan F-16 BSB F-16 Romania F-16 Egypt F-16V Taiwan F-16 EPAF F-16 Thailand F-16V Greece F-16 Iraq

Airlift / Tanker

**Programs** 

C-17 Australia C-130J New

C-130 Egypt KC-46 Japan

**FMS New Business** 

C-17 NATO

C-130 India

Zealand

Administrative Support Quality Assurance Self Inspection / MICT Supplies / GPC Travel / DTS Knowledge Mamt Timekeeping / ATAAPS Awards & Decorations SIMS University

#### Division Action Group

A&AS Management