Aviation Industry Days

U.S. Army Aviation Center of Excellence
Fort Novosel, AL

August 07, 2024

MG Clair Gill
USAACE Commanding General

Army Aviation Overview

7 August 2024

The overall classification of this briefing is Unclassified

What We Do

Increase Lethality & Survivability of Combined Arms Team

Why We Do It

"A Sacred Trust …"

Army Aviation Priorities

Generate Aviation Warfighters

Develop Technical & Tactical Competence

LSCO-focused

Sustainment

Build Ready Units

Tough, Realistic Training

Leaders of Character

Maintain Readiness

Fight Dispersed and Win

Continuously Transform

Who will fight…

How we fight…

What we fight with…

Strengthen the Profession

No Compromise on Standards

Rigor/Discipline

Recruit/Retain

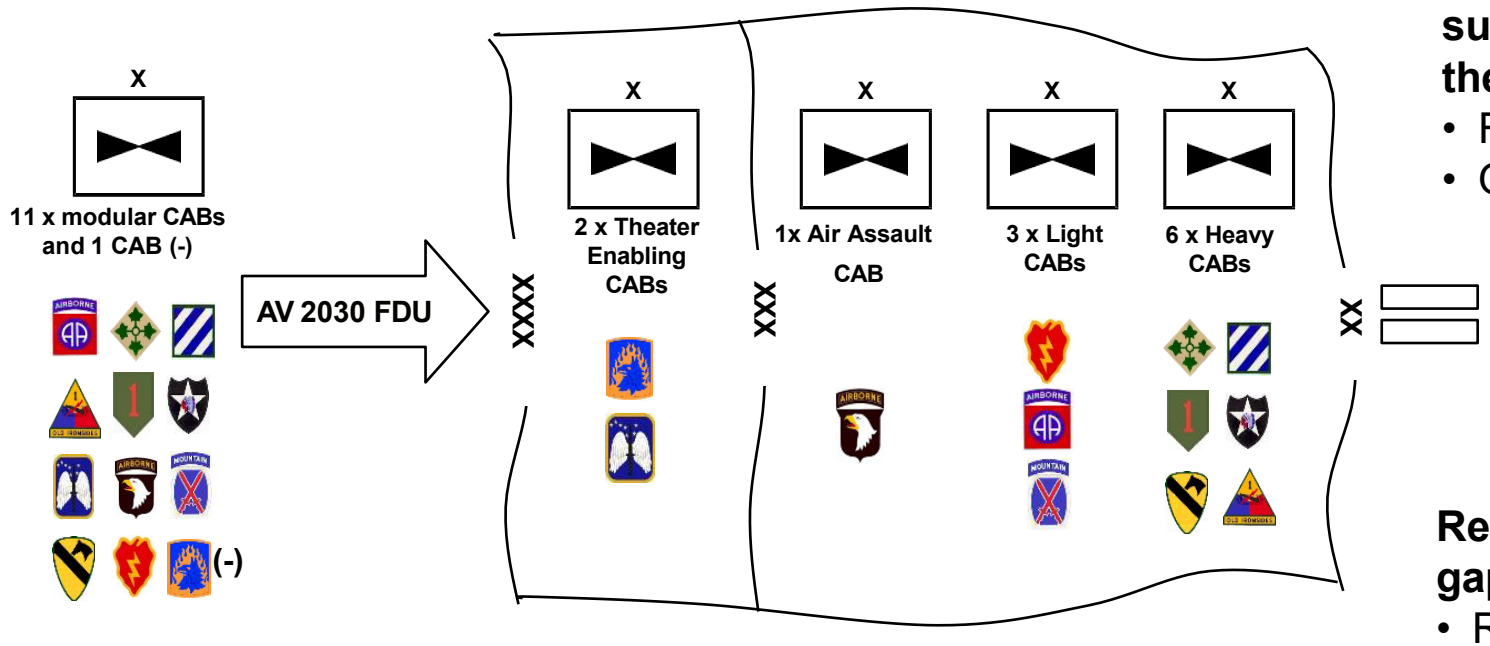
Aviation Warfighter Culture

Uphold the Sacred Trust

Aviation 2030 Force Design Update (FDU) Restructure

No-Growth Aviation Transition to Army 2030

Approved restructure addresses known gaps, supports Army 2030 division units of action, and directly aligns with 2022 National Defense Strategy



Current Structure

Army 2030 Structure: 12x CABs

Strategic readiness: 12 purpose-structured CABs support division units of action and set priority theaters

- Fully resources 12th CAB, assigned to USAREUR-AF
- Optimizes existing assets to provide:
  - 2x Theater CABs for USAREUR-AF and USARPAC
  - 1x Air Assault CAB for JFE Division
  - 3x Light CABs for JFE/Light Divisions
  - 6x Heavy CABs for Armored Divisions

Reorganization of existing assets addresses LSCO gaps:

- Resources two additional AH-64 battalions
- Resources BCT Air Assault capability
- Allocates additional lift capacity to Light Divisions by reassigning underutilized assets from Armored Divisions

Army Aviation Today …

- The Aviation Force: Experience vs Talent
- Transforming USAACE Professional Military Education (PME) and Training
  - Aviation Warrant Officer PME
    - Warrant Officer Intermediate Courses (WOIC)
    - Warrant Officer Advanced Courses (AWOAC)
    - Warrant Officer Senior Course (AWOSC) and Follow-on Courses
  - Warrant Officer Master Course
- Aviation Tactics Instructor Course (ATIC)
  - Course Objectives
  - Single-Ship vs Multi-Ship Training
- Future Aviation Tactical Ecosystem (FATE)
- Unmanned Aircraft Systems (UAS)

Army Aviation Increases Lethality & Survivability of Combined Arms Team

Aviation Enterprise Synergy

Aviation Enterprise
DoD, Congress, Industry, Media

Conclusion

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U.S. ARMY

Office of the Assistant Secretary of the Army

Acquisition, Logistics and Technology

ASA(ALT) Update

Major General Robert L. Barrie, Jr.
Deputy for Acquisition and Systems Management

7 August 2024

U.S. ARMY

ASA ALT Mission/Priorities...

... a Clear Path Forward

MISSION

Continuously modernize the Army, as part of the Joint Force, through rapid and timely delivery of Soldier capabilities that deter adversaries and win our nation's wars.

PRIORITIES

- Focus on Program Execution and Performance
- Improve Policies and Practices Regarding Software Acquisition
- Heighten Security in Acquisition – Cyber and Supply Chain
- Integrate Realistic Operational Testing into Army Programs
- Ensure that Modernization Efforts are Coordinated with Congress

Delivering the Army of 2030 and Beyond

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Acquisition at Speed …

… and Production at Scale

Acquisition at Speed

34

Middle Tier of Acquisition (MTAs)
24 MTA Rapid Prototyping
10 MTA Rapid Fielding

The Rapid Acquisition Authority
- **C-UAS - Coyote**
- **Electronic Advanced Ground Launcher Systems**

19

Software Pathways (SWPs) and Growing
SWP Planning Phase
- **Scalable Control Interface**
- **XM30 SWP**
- **Robotic Combat Vehicle**

SWP Execution Phase
- **Army Integrated Air and Missile Defense**
- **Joint Common Access Platform**

Production at Scale

- *Sustainment*
- *Advanced Manufacturing/ Automation*
- *MOSA*
- *Contracting*
- *Data*
- *Allies & Partners*
- *Policy*
- *Intellectual Property Cell of Experts*
- *Systems Engineering*

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Digital Transformation …

… a Digitally-Enabled, Data-Driven Army

- Implementing and scaling **Modern Software Practices**
- Evolving open architecture towards a Modular Open Systems Approach (**MOSA**)
- Implementing **Data Mesh** underpinning a Unified Data Reference Architecture (UDRA)
- Scaling and maturing **Artificial Intelligence** / Machine Learning
- Enhancing survivability and resilience in contested **cyberspace** and electromagnetic spectrum
- Developing a **Digital Engineering** Strategy
- Empowering an Army community of Soldiers, civilians, and contractors with the training needed to support the Digital Transformation initiatives






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Delivering Capability...

... with Early Soldier Feedback

MDTF

HIMARS

CATV

EBS-C

Integrated Tactical Network

IPPS-A

Mid-Range Capabilities

AMPV

S-MET

Coyote c-UAS

PrSM

M10 Booker

SGT STOUT

Switchblade 600

Future Tactical Unmanned Aircraft System

Next Generation Squad Weapon

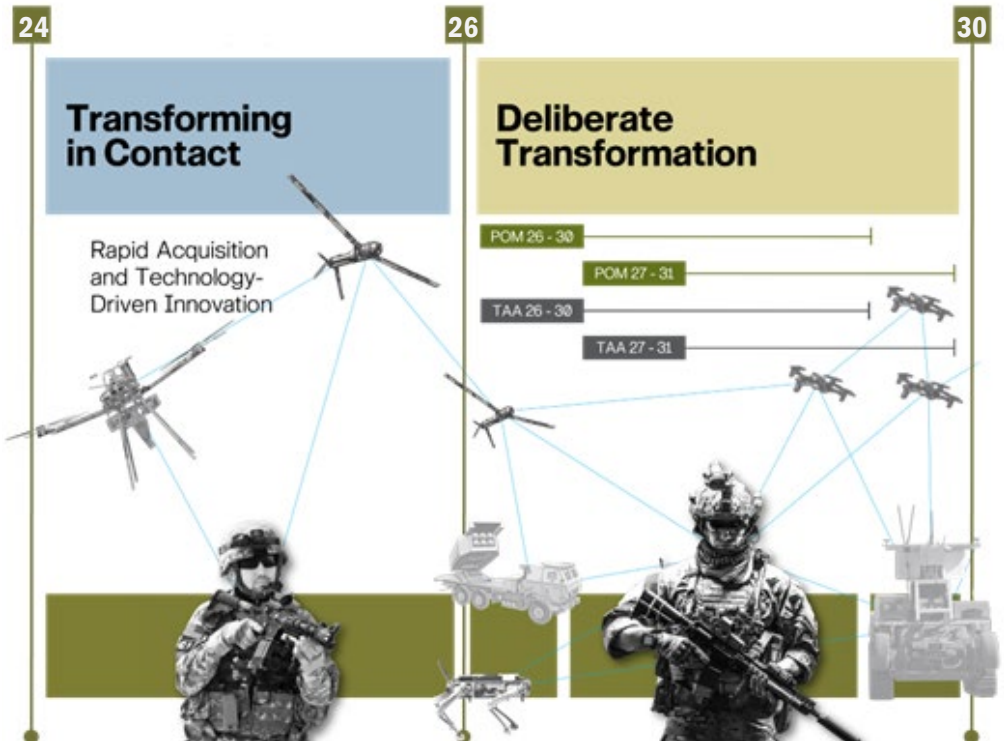
Lower Tier Air & Missile Defense Sensor - Prototypes

Infantry Squad Vehicle

DE M-SHORAD

UNO

U.S. ARMY Continuous Transformation...



DIRECTED REQUIREMENTS FOR
- Loiter Munitions
- Company-Level UAS
- Mobile Long-Range Missile
- Short-Range Rocket System
- Counter Small-UAS

- Follow through on SigMod
- DOTMLPF-P Integration
- Contested Logistics
- Tactical Fires
- Watercraft

Transform in Contact 1.0

- Resourced within FY24 Budget constraints
- Focused on IBCTs (2/101, 2/25, and 3/10)
- Prototype Organizational changes
  - 2/101 Mobile Brigade Combat Team
  - 2/25 and 3/10 Light Brigade Combat Team
- Focused resources to achieve density in systems:
  - **S-MET**: 12x per BCT
  - **ISVs**: 201x per MBCT | 96x per LBCT
  - **SRR**: 51x per MBCT | 126x per LBCT
  - **STEED**: 33x per BCT
  - **ITN/C2 Fix**: 2/101 C2 Fix | 2/25 ITN | 3/10 partial ITN
  - **LUS/LASSO**: 5x per MBCT | 4x per LBCT

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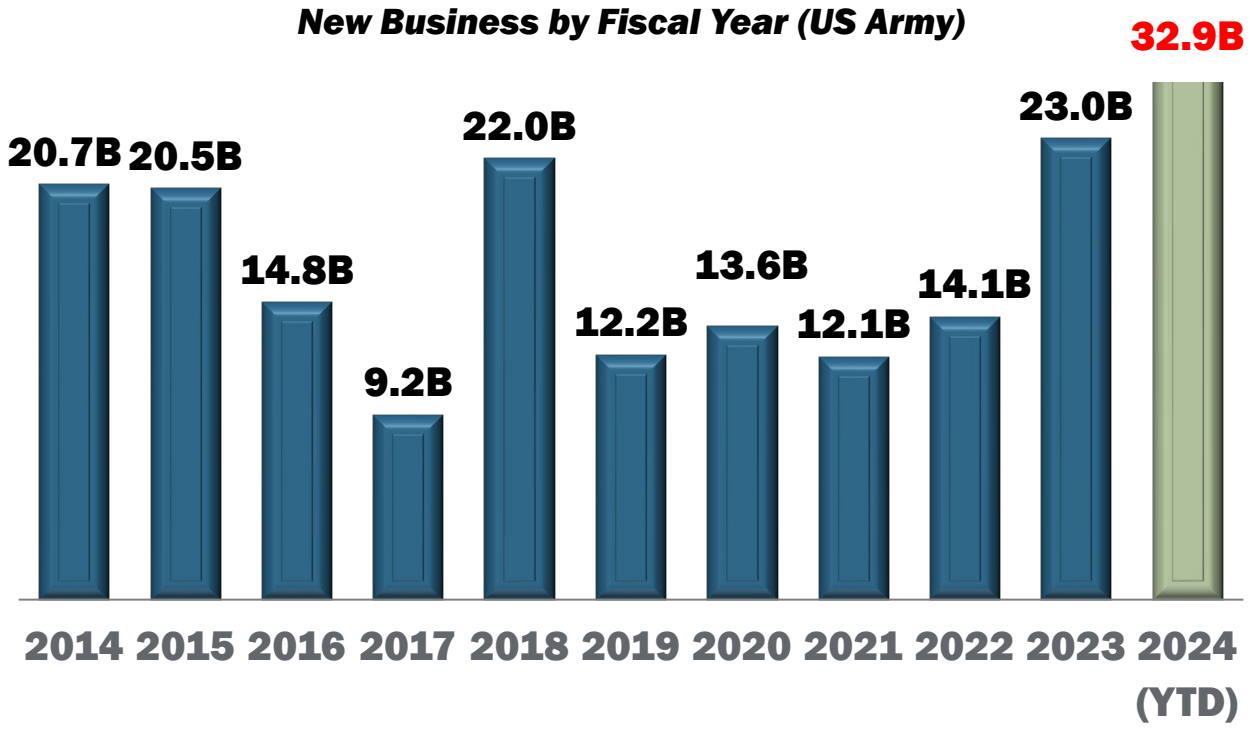
New International Business …

… Foreign Military Sales Since FY24

<u>Record breaking sales</u>: US Army has executed ~$32.9B of 'new business' since the start of FY24



1. Year to Date: value for 2024 is as of 9 JUL 2024

THIS WE'LL DEFEND

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ARMY FUTURES COMMAND

MG Michael McCurry
Chief of Staff (Incoming)

FUTURE OF WARFARE

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IMPLICATIONS AND OBSERVATIONS

WHAT WILL NOT CHANGE

- Warfare remains a human endeavor
- Land is decisive
- No one can guarantee a short war, or that it will not escalate
- Close combat decides battles
- We abide by the law of armed conflict

WILL CHANGE

- Fight under constant observation and in constant contact
- Defense is getting stronger and offense more costly
- Commanders will use maneuver to enable fires
- Urban combat is unavoidable
- Synchronizing warfighting functions to integrating systems

TECHNOLOGY WILL PUNISH THE UNSKILLED

FIVE CHALLENGES

U.S. ARMY

1

Employ a formation-based approach to lethality and survivability

2

Increase the lethality and survivability of our light formations

3

Decrease the weight and sustainment tails of our heavy formations

4

Integrate humans and machines

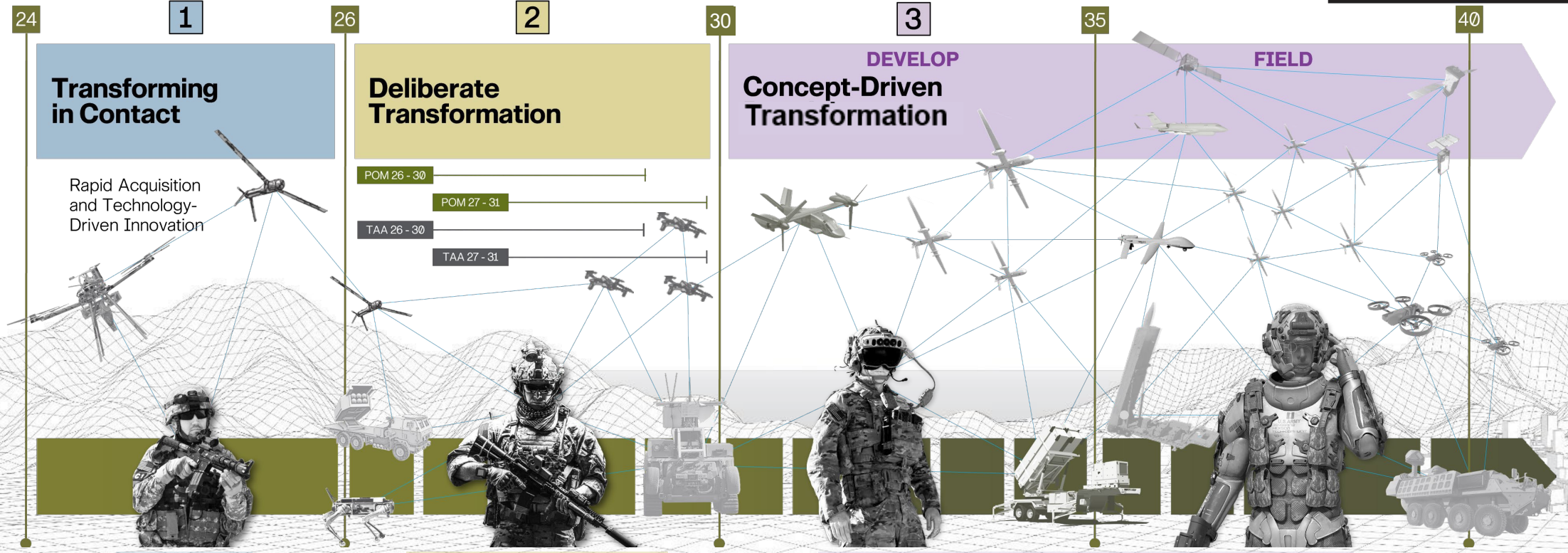
5

Field a data-centric C2 system for decision dominance

CONTINUOUS TRANSFORMATION

Concept-Required Capabilities

Army Warfighting Concept 2030 - 2040



NETWORK FIX → NETWORK PIVOT (C2 NEXT) → C2 WARFIGHTING SYSTEM FOR ALGORITHMIC WARFARE

HMI PROTOTYPES → HMI PROCUREMENT → HMI AT SCALE

DIRECTED REQUIREMENTS FOR
- Loiter Munitions
- Company-Level UAS
- Mobile Long-Range Missile
- Short-Range Rocket System
- Counter Small-UAS

- Follow through on SigMod
- DOTMLPF-P Integration
- Contested Logistics
- Tactical Fires
- Watercraft

- Preserve People and Maneuver Warfare
- Adaptability
- Endurance (Tactical, Operational, Strategic)
- Close Combat Dominance (Soldier/Squad/IFV/Tank)
- Integration of Offensive and Defensive Fires

FVL CFT Transformation

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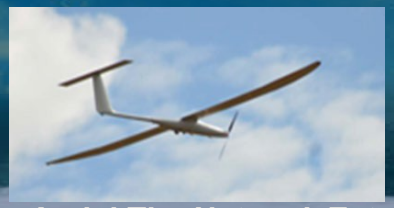
FLRAA: Bell V-280 Valor

Launched Effects



Aerial Tier Network Extension

- Speed, Range & Endurance at Range
- Global Reach
- Dominating within the Air Ground Littoral
- Threat & Tech Innovation Informed Capabilities
- Increased Lethality & Survivability
- Nested across Service & Joint Modernization Programs
- Operating from sanctuary to deliver effects farther
- Contested Logistics
- Network Extension & Reliability
- Integrated Situational Awareness
- Semi-autonomous, Ground & Air Launched Effects
- Modular Open Systems Approach- ability to upgrade at speed

PERSISTENT EXPERIMENTATION

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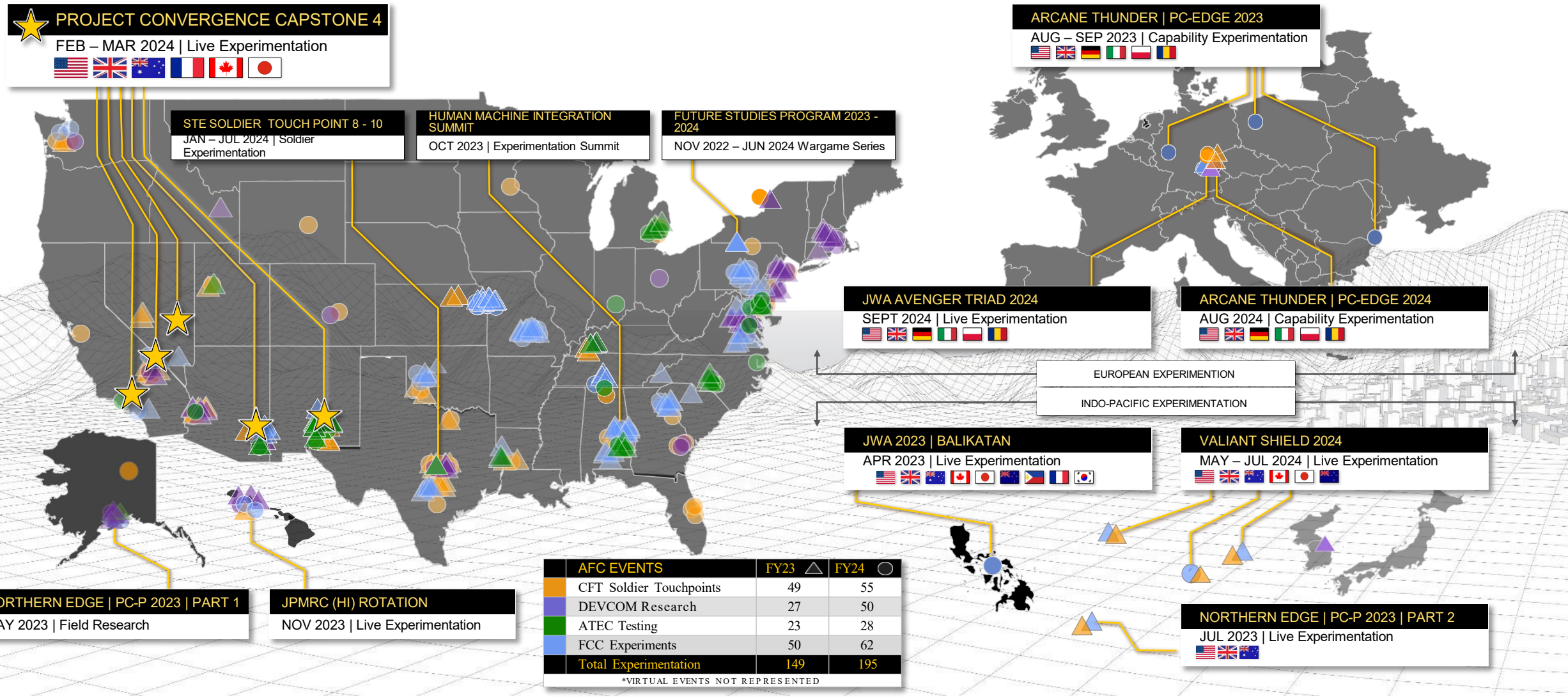

AFC EVENTS	FY23 △	FY24 ○
CFT Soldier Touchpoints	49	55
DEVCOM Research	27	50
ATEC Testing	23	28
FCC Experiments	50	62
Total Experimentation	149	195

*VIRTUAL EVENTS NOT REPRESENTED

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Victory Starts Here!

Our Army Profession

LTG DAVID J. FRANCIS

07 AUG 2024

Why We Must Transform

Changing Operational Environment

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Threats to Allies & Partners

Acute & Persistent Threats

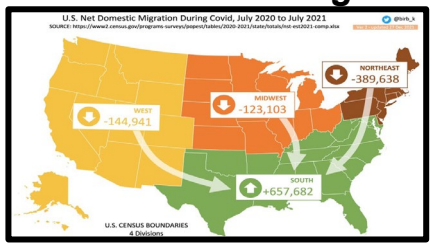
Threats to the Homeland

Rising Peer Threat

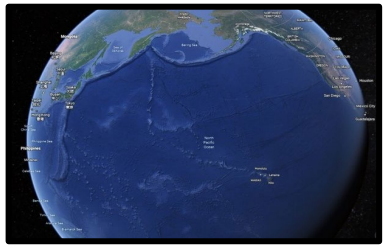
Shift to Large Scale Combat Operations (LSCO)

Developing Domains

Domestic Change



Challenging Priority Theater



We must transform iteratively and continuously to maintain overmatch as we deliver the Army of 2030; becoming leaner, more mobile, and more lethal.

TRADOC in Continuous Transformation

U.S. ARMY

Transform the Institutional Force

Adaptive
Systems that Solve Army Problems

Responsive
Programs that Drive Change

Efficient
Use of Army Resources

TRADOC builds and maintains Adaptive, Responsive, and Efficient systems to drive change while continuing to build the foundation of our profession and execute our core mission.

Maintain the Army's Foundation

Train
The Most Lethal Soldiers

Develop
The Most Professional Leaders

Victory Starts Here!

U.S. Army Aviation Center of Excellence
Fort Novosel, AL

August 07, 2024

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PROGRAM EXECUTIVE OFFICE AVIATION

PEO Aviation Update

U.S. Army Aviation Industry Days
Fort Novosel, AL

7 August 2024

Brigadier General David Phillips
Program Executive Officer - Aviation

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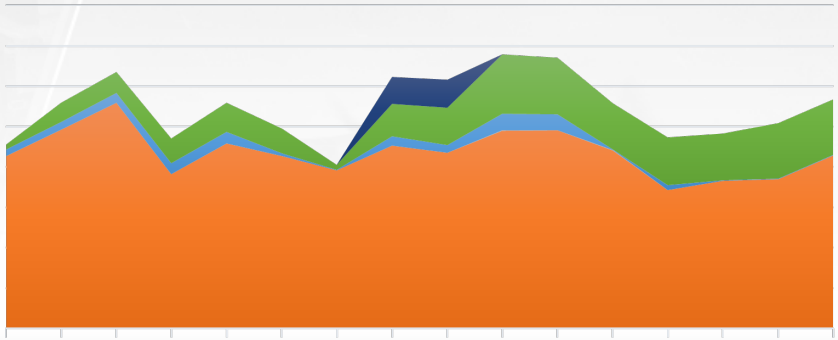
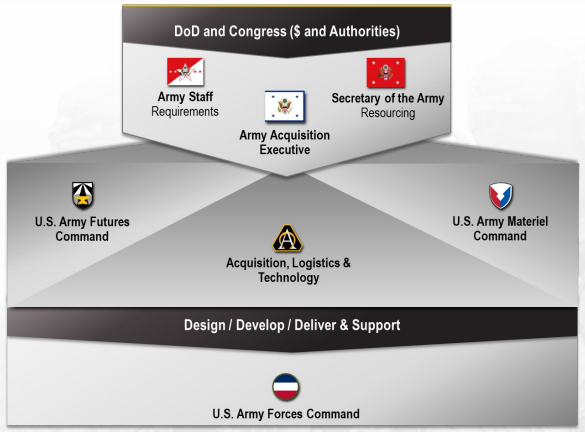
Understanding the Environment

Army Aviation Investment Rebalance



Resource Constraints

Team-Work



Doing Things Differently

Today's Strategic Environment

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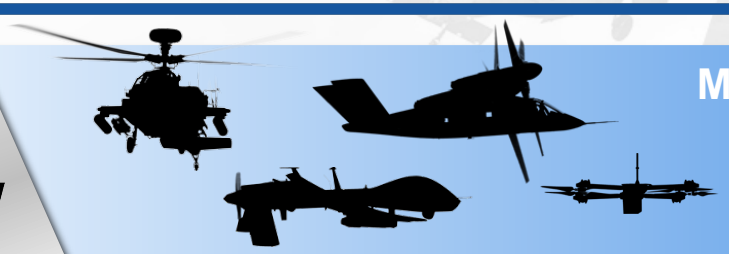
Aligned & Future Focused with Army Objectives



Modernize, Equip, & Sustain the Army of 2030 to Successfully Conduct MDO as Part of an Integrated Joint Force

Cultivate More Equipped, Capable, & Interoperable Allies & Partners

Foster a Diverse & Professional Workforce That Enables an Agile & Innovative Acquisition Enterprise

U.S. ARMY
2030

"The world and warfare are changing rapidly. We will stay ahead of our adversaries through continuous transformation iteratively adapting and evolving how we fight, how we organize, how we train, and how we equip."

-GEN Randy A. George 41st CSA

Secretary of the Army's Six Operational Imperatives

- ✓See & sense farther & more persistently
- ✓Deliver more combat power more effectively than ever before
- ✓Win the fires fight by delivering precise, longer-range fires
- ✓Protect our forces from air, missile, & drone attacks
- ✓Rapidly & reliably communicate & share data
- ✓Sustain the fight across long distances & contested environment

A Team of Teams Dedicated to the Continuous Transformation of Army Aviation

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Program Executive Office Aviation – Team of Teams


COL Daniel Thetford
AH

Mr. James Bamburg
(Acting)
AMSA


Ms. Regina Bublitz
ATE


COL Jennie Conlon
CARGO


COL Joe Minor
FW


Mr. Michael Horrocks
FARA


COL Jeff Poquette
FLRAA


COL Danielle Medaglia
UAS


COL Ryan Nesrsta
UH


Mr. Ray Nabors
Director
Human Capital Management


Ms. Liz Stolz
Director
Security


Mr. Joe Clegg
Director
Operations, Plans & Strategy


Mr. Tim Sweeney
APEO
Logistics & Sustainment


Mr. Scott Handlon
APEO
Acquisition & Systems Management


John Holdcraft
CIO
Office of the Chief Information Officer


Ms. Connie Goodwin
APEO
Plans, Programs, Resources & Procurement

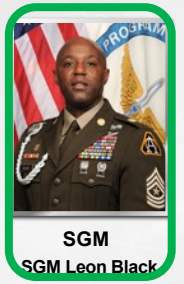

Mr. John Van Houten
APEO
Engineering & Architecture


Mr. Kris Davis
APEO
International


Mr. Lars Ericsson
Chief Scientist
Office of Chief Scientist


PEO
BG David Phillips


DPEO
Mr. Rodney Davis


SGM
SGM Leon Black


CCWO
CW5 Jaime Craig


CoS
Mr. Forrest Collier

As the Army's Program Executive Office for Aviation, We are Responsible for Modernizing the Aviation Fleet to Maintain the Army's Asymmetric Advantage Over Peer Adversaries in Large Scale Combat Operations

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Continuous Modernization - Transform in Contact

User Engagements, Demonstrations, & Experimentation

- Feedback from Soldiers, and Commanders *continuous and often*
- Project Convergence (PC)
- Experimental Demonstration Gateway Event (EDGE)
- Position, Navigation & Timing Assessment Experiment (PNTAX)
- Network Modernization Experiment (NetModX)

Bringing together Operational Units, S&T, ATEC, Capability & Materiel Developers, Academia, and Industry, early in the process to ensure realistic, affordable, & obtainable requirements *before bending metal and coding software.*

Iterative Development Through Modeling, Prototyping, Experimentation & Demonstration

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MOSA Transformation Background

Aligning People, Tools, & Processes for Successful Execution

Current State

Industry

FACE Future Airborne Capability Environment

ACVIP

DEVCOM

MBSE

OpenVPX

SOSA

HOST

CABAIL

The ACE Collaboration Challenge

Academia

OEM

System Integrator

Mission App & System Developer

ACE

AvMC

PEO AVN

Missiles & Space

Soldier

Science & Technology

ACWG/ICWG

IME

MSAD

VICTORY

Industry MOSA Investments

MOSA Transformation
established in 2018

Creating Standardization, Increasing Communications, Applying Lessons Learned, Eliminating Stovepipes

FY21 NDAA MOSA ICRD

All Elements of Life Cycle

1. Governance & Policy
2. Architecture & Standards
3. Software Development
4. Collaborative Digital Environment
5. MOSA Conformance Center
6. Qualification & Materiel Release
7. Affordability & Savings
8. Contracting Efficiencies
9. Strategic Communications

'Ready to Catch' Modernization Efforts

Future State

Integrated, Aligned, Synchronized

"As threats and technology evolve, some things remain constant. However, technology will punish unskilled units and commanders."
-General James Rainey, Commanding General, Army Future Command

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Commercial Open Systems Evolution

	Sony Trinitron - 2001	Panasonic Viera - 2013	Samsung - 2020
Performance	4:3, 480p, RCA	16:9, 1080p, 3D, HDMI, WiFi	4KUHD (3840x2160), HDR, Smart TV
Size	32” (35.4” x 27.4” x 22.6” = 21,921 in^3)	55” (50.6" x 30.0" x 2.0“ = 3,036 in^3)	65” (57.4" x 33" x 2.3“ = 4,356 in^3)
Weight	~ 165 lbs	~ 83 lbs	~ 55 lbs
Cost *(2021 Constant Dollars)*	~ $1494	~ $1133	~$706

Increased Capability, Open Standards, Larger Displays, Lower Weight & Cost

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Open Systems - Challenges & Opportunities

Requirements with Incremental Solutions & Adaptive Acquisition Strategies

- JCIDS "Increment" Definition
  - Technology development of the second increment begins while the first increment is in EMD
  - Increment timing depends on program particulars – reviews, tests, analyses, and milestones
- Continuous market research for emerging / existing technologies at the subsystem / component level

Areas of Interest for Future Investment = Must be MOSA-Aligned

- ASE
- DVE
- Navigation
- Applications
- Communications
- Training
- Launched Effects (LE)

Intellectual Property/ Data Rights

- Extensive technical data and intellectual property analyses have helped determine what technical data rights are required to support the sustainment of each hardware and software system.
- New approaches focused on balancing the "Crown Jewels" to sustain our weapon systems in the field, in garrison, and in the depots.

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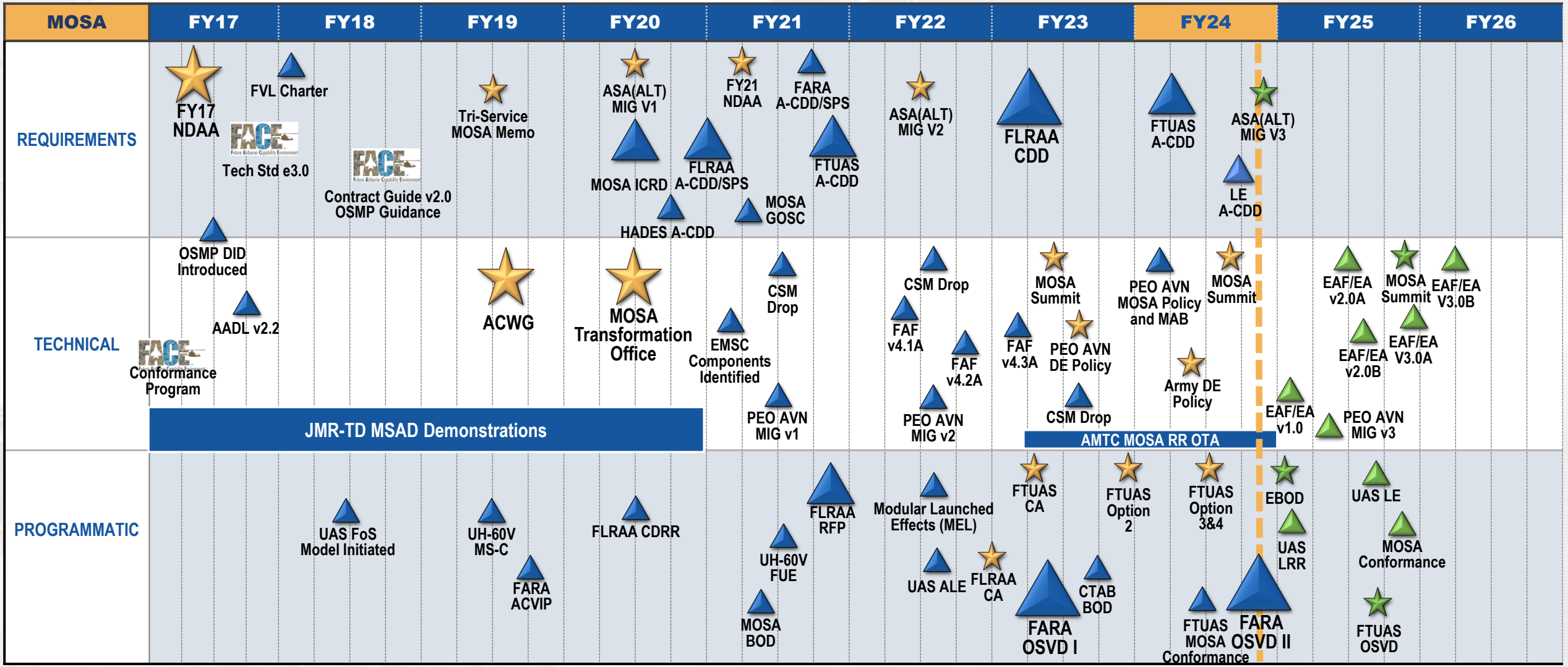
PEO Aviation MOSA Timeline 2017 - 2026



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MOSA Demonstrations


Modular Effects Launcher (MEL)

- **Modular Effects Launcher (MEL) Hang Test**
  - First MOSA designed launcher
  - Configured with HellFire, JAGM, 2.75in rockets, LE-SR, LE-LR, SPIKE
  - Potential application on ground vehicles


Griffon Valiant

- **FARA Open System Verification Demonstration II (OSVD)**
  - Government led complex integration demonstration
  - Third-party integrator changed the FARA CP mission system
  - MOSA compliant verification ahead of EMD phase


Textron Aerosonde

- **FTUAS MOSA Conformance Verification**
  - Third-party mission computer replace vendor provided processor
  - Mix of third-party and vendor software integrated into prototypes
  - Independent assessor to determine MOSA conformance verification

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Future MOSA Opportunities

PM AMSA

- Identification of Friend/Foe - New solution to provide capability in platforms with Digital Backbone while still providing capability to enduring fleet.
- Degraded Visual Environment (DVE) - Component Specification Model (CSM) for future DVE systems that can rapidly adopt new sensors.
- Aviation Mission Common Environment (AMCE) - Planned RFIs and potential trade studies 4QFY24 to assess Industry products (software and hardware) against the latest CSM.
- Communications / Data Links / Controls (CDC) – Component Spec Model for modular communications and data links that support a C5ISR/EW Modular Open Suite of Standards (CMOSS) architecture.

PM Apache

- Apache's OFP v6.5 implementing OSI standards. OFP v6.5 will provide the flexibility to integrate future mission equipment packages in FY26.

PM Utility

- Executing a phased approach that leverages the lessons and successes from the UH-60V program to develop, qualify, and field a MOSA-conformant H-60M mission systems avionics architecture to address current avionics obsolescence.

PM Cargo

- Fielding of Common Avionics Architecture System (CAAS) 10 by FY27 will open opportunities for 3rd party applications developed to the ARINC 661 standard and a FACE-Conformant OS in the new Processing Switching Module.

PM UAS

- Multiple iterative opportunities over the next year for sUAS (SRR, MRR, LRR, JTAARS), FTUAS, and Launched Effects (LE-SR,-MR,-LR).




U.S. ARMY

PEO Aviation

PEO Aviation
Meeting Request

http://www.army.mil/peoaviation

http://facebook.com/peoaviation

https://www.dvidshub.net/unit/PEO-A

https://www.linkedin.com/company/peo-aviation

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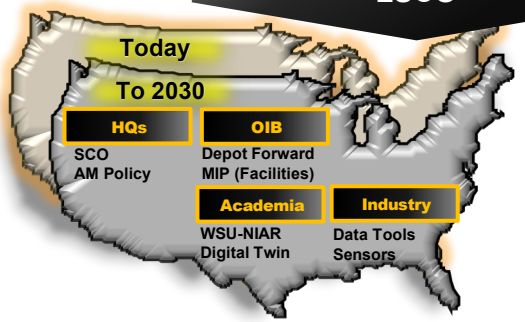
AMCOM Support to Army Aviation Sustainment Modernization

U.S. Army AMCOM
MG Lori Robinson
Commanding General

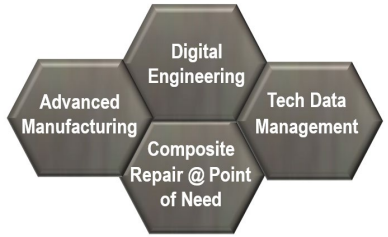
Army Aviation Sustainment Modernization - Army 2030

JSSA Investments ISO 2030

Multiple Investments ISO LSCO



Sustainment Modernization



- ✓ Sustainment at the Speed of Modernization
- ✓ Modernizing Capabilities to Enduring Platforms
- ✓ Harnessing Full Power of Academia + Industry
- ✓ Sustainment Modernization is Army Readiness

Modernization Investments ISO 2030

Digital Ecosystem

- ✓ CFT / PEO / AMCOM Partnering
- ✓ Build Data Architecture
- ✓ Drives all Future PL / Related Efforts
- ✓ Key to Advanced Manufacturing

Advanced Manufacturing

- ✓ Incentivize Industry – Speed, Quality
- ✓ Enable Small Scale Field Production
- ✓ Mitigate CL; Enable OIB Speed
- ✓ Critical for Surge Capabilities

OEM Partnering

- ✓ Harness Industry Data Tools / Knowledge
- ✓ GOV + Industry, not GOV vs. Industry
- ✓ Invest in Industry Tools, Where it Makes Sense
- ✓ Improved Demand Coordination ISO Readiness

Corrosion Prevention

- ✓ Key to Air / Ground Littoral Capabilities
- ✓ Partnered With Navy
- ✓ Requires OEM Innovation
- ✓ Sustain Equipment Forward

Air / Ground Littoral Readiness Today > 2030

PUSH

PRECISION SUSTAINMENT

- ✓ Tailorable, Deployable Forward Maintenance
- ✓ Enterprise Maintenance Insights to CDRs
- ✓ Tele-Maintenance (24hrs) – AVN & MSL
- ✓ LAR / OEM / Depot / LRC-A / Engineer Collective Expertise Across the Battlefield
- ✓ Authority to AM Print (Small-Scale)

PULL

DECISION DOMINANCE

- ✓ Sensor Data
- ✓ Supply Posture Data – for Enterprise Action
- ✓ OEM Data – Accessible to GOV
- ✓ Forward Maintenance Requirements – Real-Time
- ✓ Demand Reduction Enterprise Decisions

AMCOM FY24 Commercial Solutions Opening

Areas of Interest

✓ **AMCOM published CSO available on SAM.gov (Notice ID: W58RGZZ24P0001)**

- AMCOM seeking proposals against the following AOI(s):

SAM.gov

Submission Instructions

Areas of Interest

(1) **Agile / Flexible Facilities**
(2) **Manufacturing / Maintenance Digital Enterprise Technologies**
(3) **Advanced Manufacturing**
(4) **Model Based / Digital Twin**
(5) **Industrial and Maintenance Automation**
(6) **Advanced Analytics**
(7) **Technology, Tools, and Programs that Support Sustainment Workforce Development**
(8) **Workplace / Workforce Health and Safety**
(9) **Energy, Environmental & Utility Innovation**
(10) **Platform, Fleet, and Enterprise Decision-Making Tools**
(11) **Supply Chain Technology / Risk Management Capabilities**
(12) **Maintenance and Manufacturing Tools, Technology, and Capabilities**
(13) **Care of Supplies in Storage (COSIS) / Equipment ISO Readiness**
(14) **Operational Security Technologies**

***Vendors Must be OEMs / Equivalent**

Industry is Invited to Bring Innovative Products & Services to the Army

Aviation Industry Days

U.S. Army Aviation Center of Excellence
Fort Novosel, AL

August 07, 2024

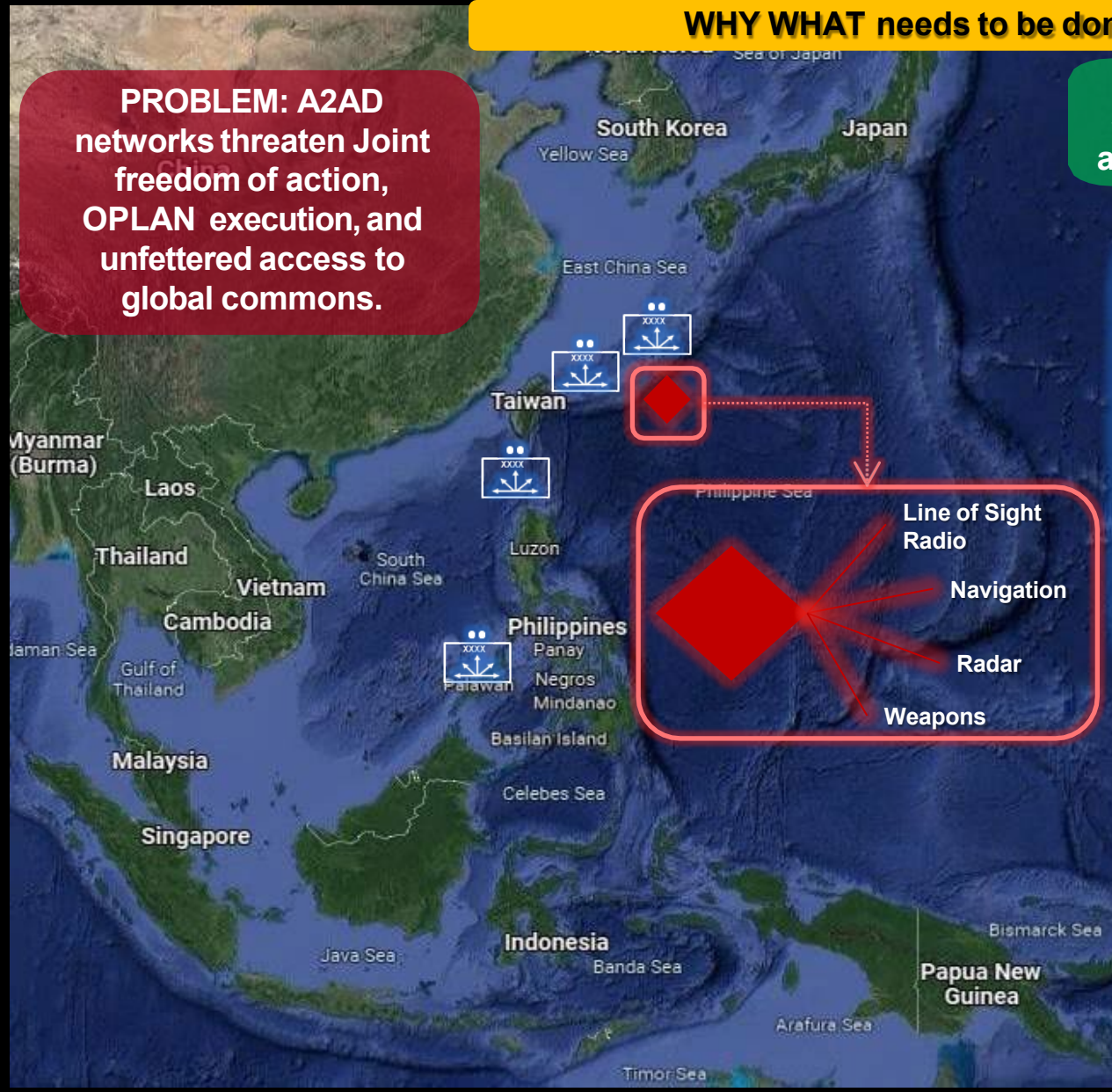
1st MULTI-DOMAIN TASK FORCE

This brief is UNCLASSIFIED

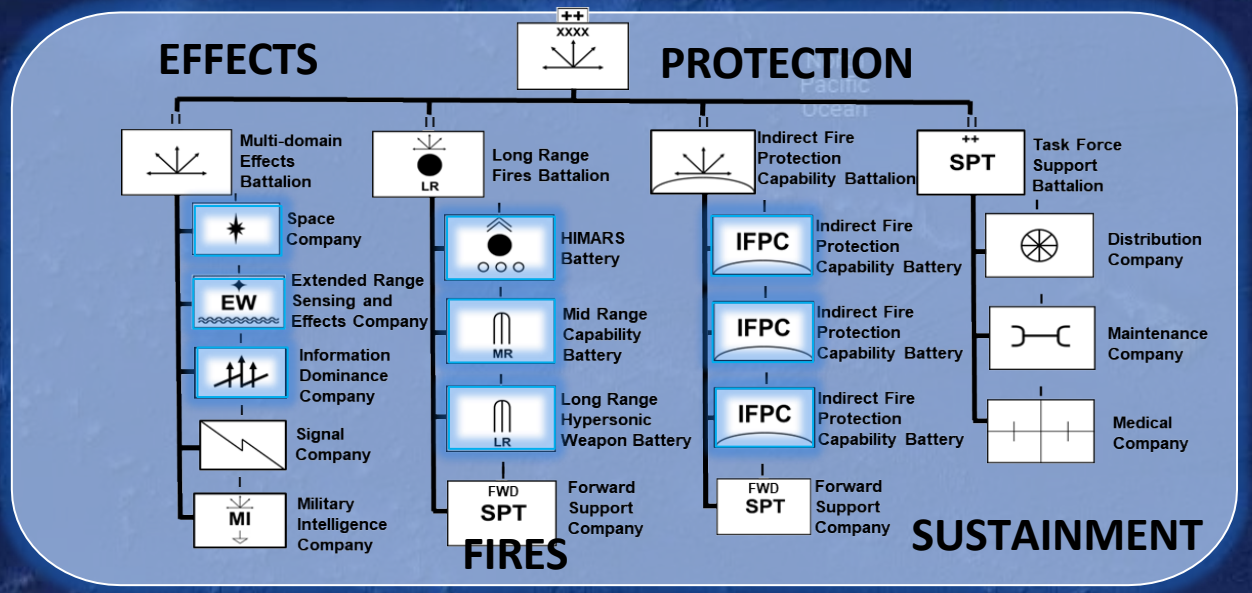
1MDTF Operational Concept

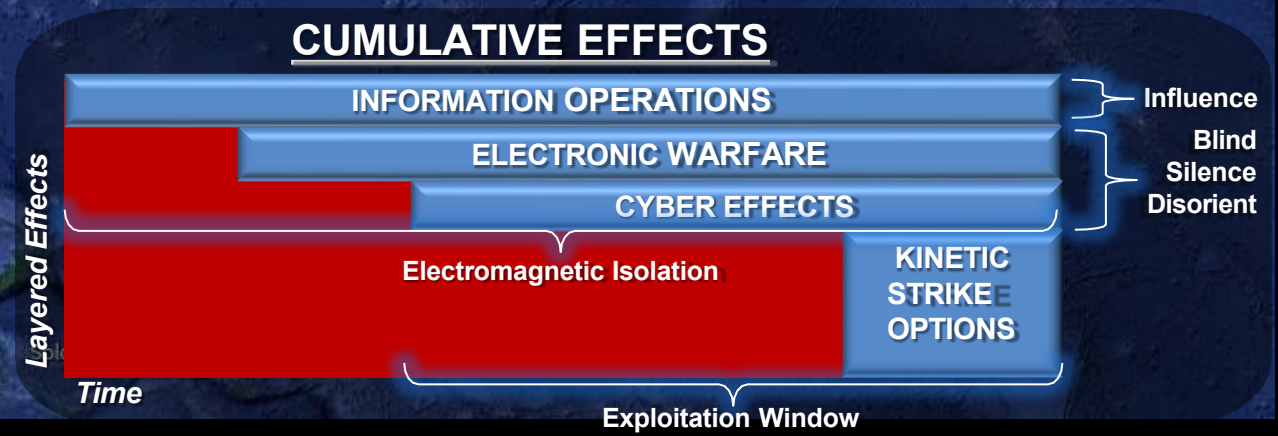
WHY WHAT needs to be done and WHO is needed to do it.

PROBLEM: A2AD networks threaten Joint freedom of action, OPLAN execution, and unfettered access to global commons.



MISSION:
Synchronizing LRPE and LRPF, MDTFs help neutralize adversary anti-access area denial (A2AD) capabilities to enable Joint freedom of action.





KEY OBSERVATIONS

* MDTFs provide unique capabilities to the Joint Force.

* AVN Opportunities at the Operational level: Deep sensing; HALE platforms (payload focus); logistics; Joint readiness & partner interoperability

* Exercises and experiments can not be binary, they must be complementary.

* Multi-domain operations require interoperability with the Joint Force and Regional Partners.

* Landpower is critical to establishing interior lines and advancing integrated deterrence

WIN FIRST!

U.S. Army Aviation Center of Excellence
Fort Novosel, AL

August 07, 2024

U.S. ARMY

Aviation Industry Days Expo

BG Matt Braman G-3/5/7 DAMO-AV
06-08 August 2024

DAMO-AV

Mission Statement

Enable a ready joint and expeditionary Army Aviation force by developing and overseeing integrated Army Aviation policies, priorities, requirements and plans for Headquarters Department of the Army in support of the total Army force. Serve as the principal Army staff advisor for Army Aviation efforts.

Responsibilities and Functions

HQDA Staff Directorate for Army Aviation in support of field commanders across all COMPOs, the Secretary of the Army, Joint Staff, Secretary of Defense, and Congress

- Lead integrator of the Aviation Enterprise for HQDA Staff and Army Senior Leadership
- Establish aviation policy, plans, and priorities based on Army Component Command requirements
- Inform and synchronize Army Aviation modernization efforts to improve current and future capabilities

Goals

- Future Vertical Lift: DAMO-AV's #1 enduring effort is to ensure the Aviation Force fields transformation technologies in order to fight and win in LSCO
- Force Structure: enhance the aviation force through fleet optimization efforts and force design
- Foreign Military Sales: support our Allies and partners' acquisition of US aircraft and training to build a combat-ready combined force
- Flying Hour Program: provide oversight of the Army's FHP to increase proficiency and safety of the force while promoting fiscal accountability

DAMO-AV is Dedicated to Readying Army Aviation to WIN in LSCO!

Stronger Together

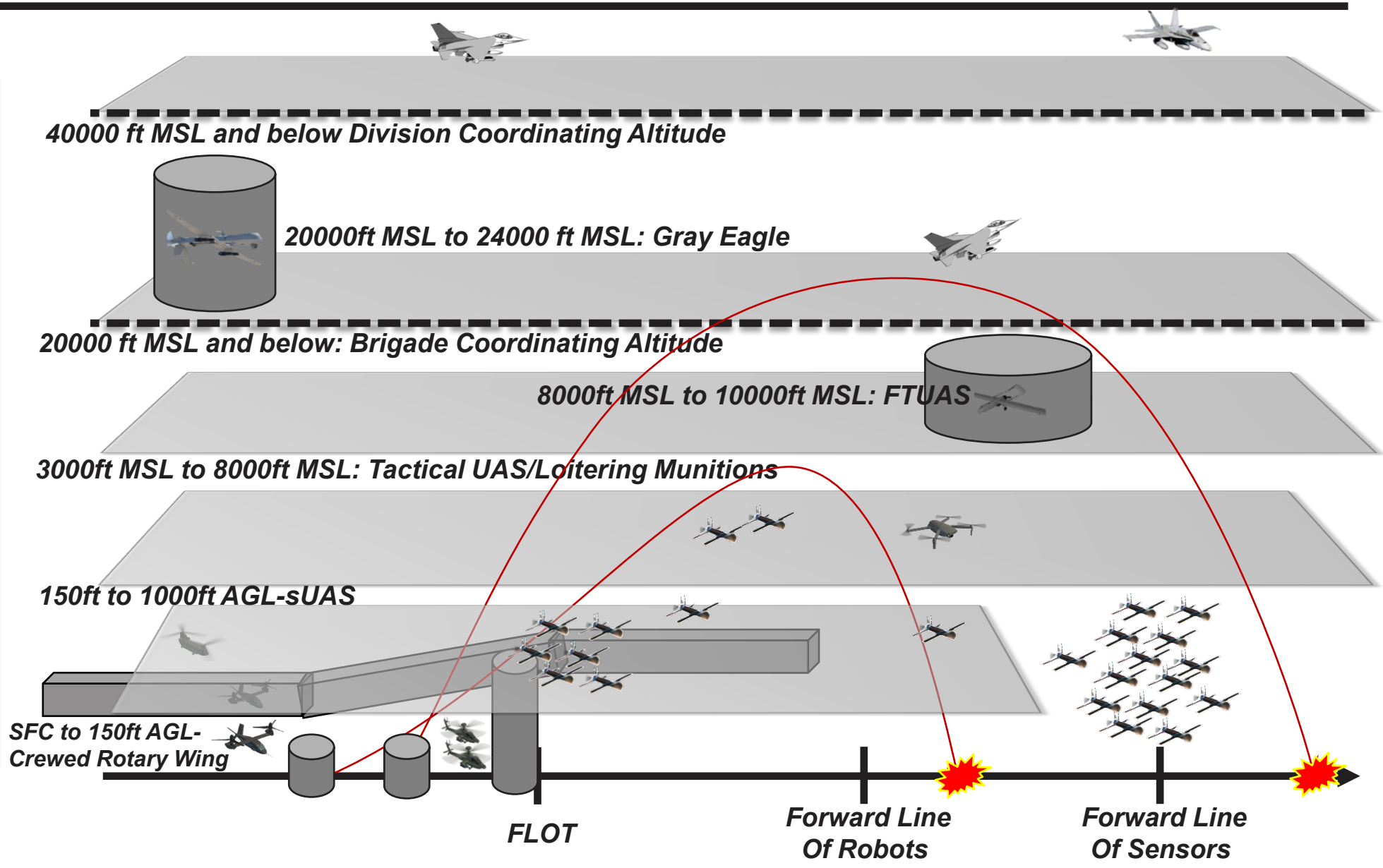
U.S. Foreign Military Sales supports integrated deterrence by enabling increased interoperability

Economies of scale: International investment enables cost savings across program lifecycle and insulates against future budget risk

Adopting U.S. Army configurations enables accelerated fielding

Airspace Deconfliction

- Depicts “a way” to execute Airspace deconfliction
- Lateral, vertical, and time separation
- Procedural control augmented by IMPACT and ASTARTE
- Attritable UAS / LE operate within SDZ’s beyond the FLOT
- Future UAS equipped with autonomous see and avoid technology
- Airspace management evolves from deconfliction to integration with AI



U.S. Army Aviation Center of Excellence
Fort Novosel, AL

August 07, 2024

ARMY FUTURES COMMAND

Future Vertical Lift Update

Future Vertical Lift Cross-Functional Team
COL Jason Cook
07 August 2024

ARMY FUTURES COMMAND

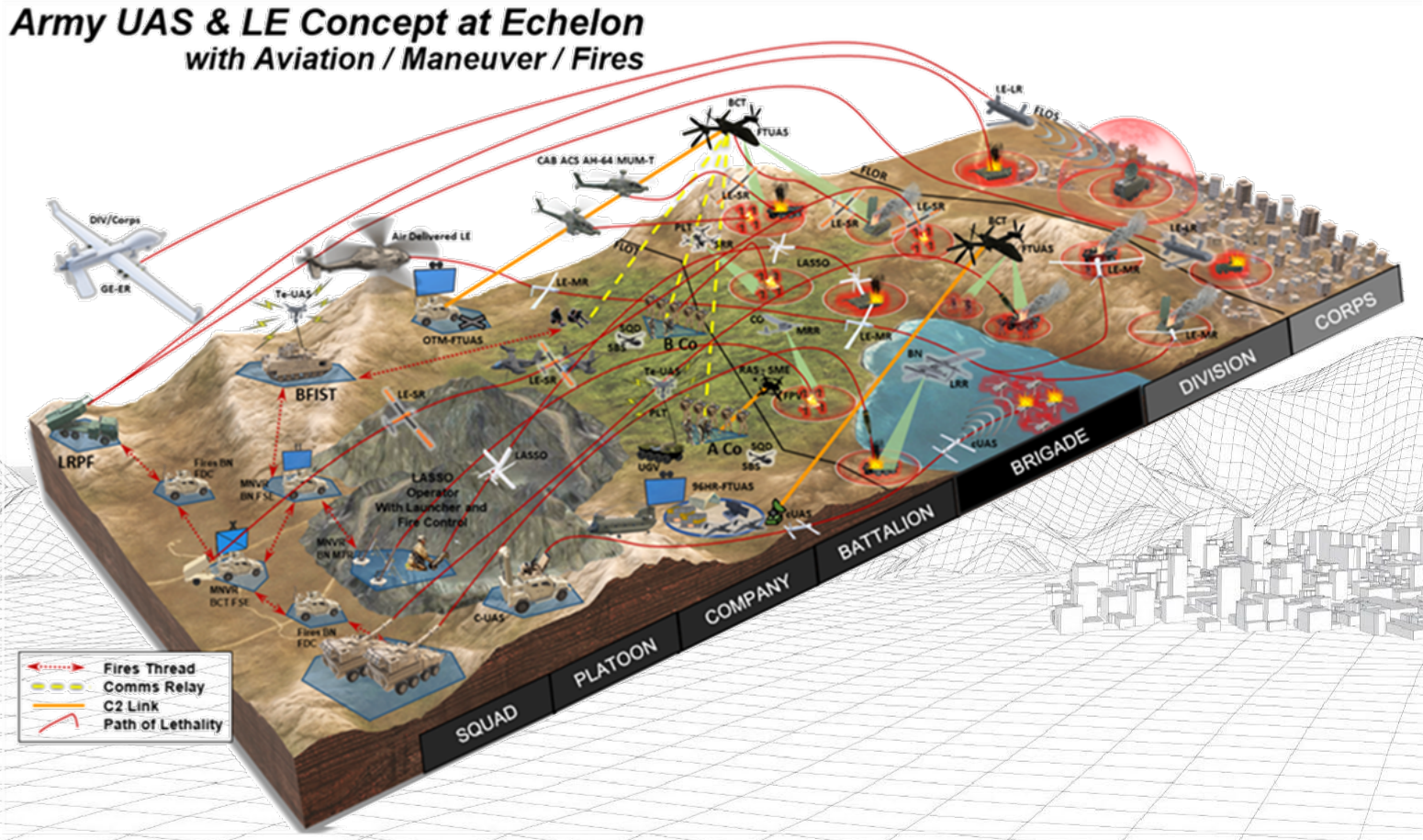
FVL Continuous Transformation

Transform In Contact

- Focused on near-term solutions to evolving threats.
- Enables Army units to rapidly test organizational changes while integrating emerging technology.

FUAS Requirements in Contact

- FUAS requirements remain flexible, adaptable.
- Continual assessment of strategic environment & state of technology.
- Harvest S&T, industry innovation, and experimentation lessons learned to provide capability to warfighter now.
- “Buy, give, inform” model requirement strategy, with organizations such as ATEC providing data collection.



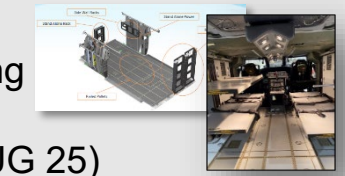
ARMY FUTURES COMMAND

Future Vertical Lift Effort Update

Future Long Range Assault Aircraft (FLRAA)

- JRCOM Signed 29 FEB 24. CDD CGRB Approved 12 JUN 24.
- FLRAA Milestone B Approved 02 Aug 24.
- Focus shift to Version II CDD – Update FY25 (Pilotage, Optionally Crewed, Advanced Avionics)

FLRAA MEDEVAC



- FLRAA CDD Annex B (Update FY25). Multi-Modal Vehicle Interface (MMVI) & Patient Handling
- 4 x Scheduled MOS 68WF2 Patient Handling System Tech Data Collection Events
  Ft. Liberty NC (OCT 24), Ft. Riley, KS (MAR 25), Ft. Cavazos, TX (JUN 25), Ft. Drum, NY (AUG 25)

Launched Effects

- A-CDD Update Approved 28 JUN 24 → AROCM Staffing / Appendix D (Armor Lethal)
- Next A-CDD Informed by Waveform Test→EDGE24 →PCC5 (Network, Autonomy/ Behaviors)

Future Tactical Unmanned Aircraft System

- A-CDD Update Approved 17 MAY 24
- Cold Weather Annex Development

Aerial Tier Network Extension

- ATNE support to 2/101 BCT JRTC 24-10
- Directed Requirement & Annex G to the ITN MOD A-CDD in Staffing

Modular Open System Approach

- Scalable Control Interface User Agreement for Software Acquisition Pathway
- Modular Effects Launcher Transition from FARA to Enduring Fleet

Near Term Activities

➢ **Exercises**
- Warfighter 24-08 FLRAA Included

➢ **EDGE 24**
- Final Planning Conference
- Execution 09-26 SEP 24

➢ **PCC5**
- LE Integration Ground/Air
- Airspace Mgmt, C-UAS
- FTUAS, ATNE, MEL

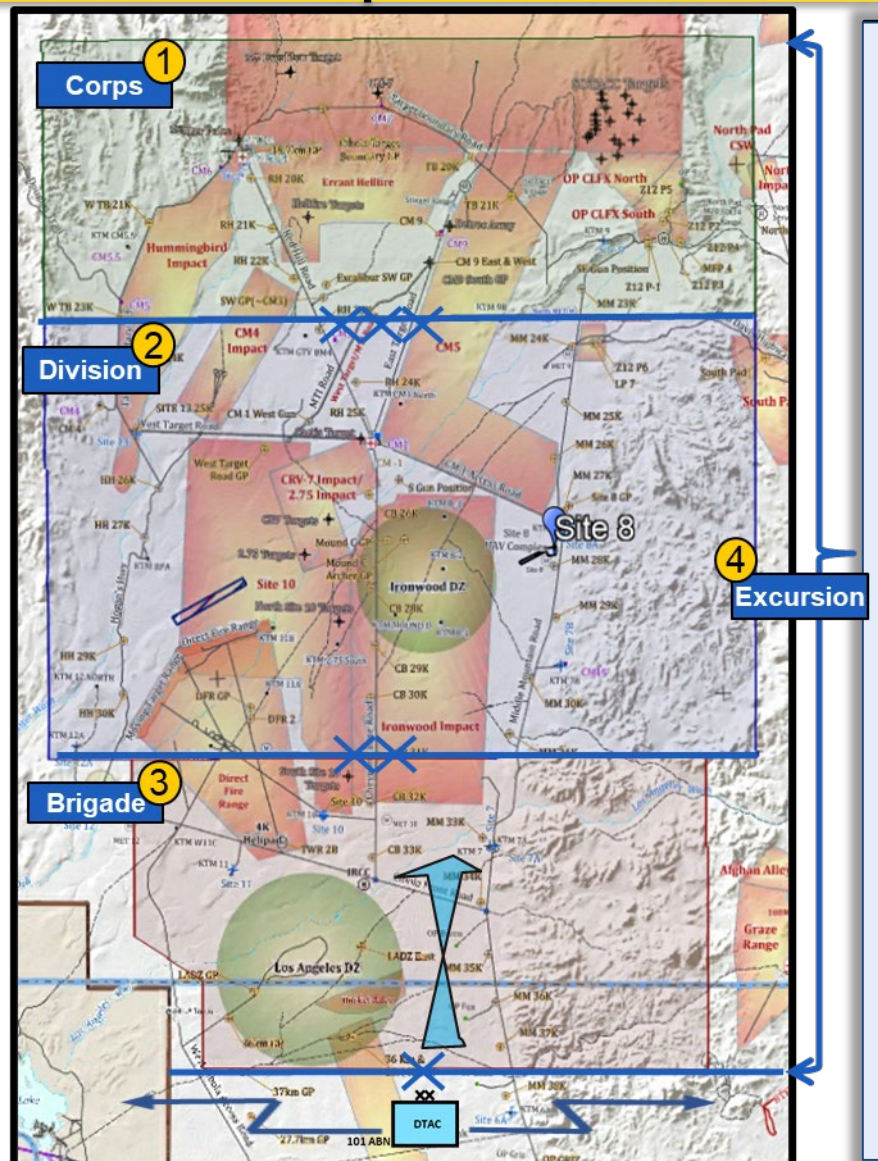
➢ **Studies**

MIT Lincoln Labs:
- LE Payloads & Behaviors
- ECD OCT 24

Ernst & Young:
- Full autonomy for zone recon in 2030/2040
- ECD OCT 24

SERCO:
- FLRAA Digital Engineering Pathfinder Study.
- AVN Enterprise Integration.
- ECD JAN 25

FVL CFT conducts EDGE at Yuma Proving Grounds 9-25 September 2024 focused on Optimization of Launched Effects Autonomous Collaborative Behaviors



Concept:

101 ABN(-) will facilitate STX lanes ICW Industry based on doctrinal near peer threat templates by echelon (Brigade to Corps), demonstrating the state of launched effects behaviors.

Corps — Lane 1 Detect and penetrate IADS inside Corps deep area with a zone reconnaissance against enemy A2AD systems (from air and ground).

DIV — Lane 2 Detect and provide lethal effects inside DIV deep area to allow expanded maneuver, which includes AASLT, out of contact attack, and BCT movement to contact (from air, ground, and vehicle).

BDE — Lane 3 Detect and provide lethal effects inside BDE maneuver area to allow BDE operations – screen or movement to contact (from air, ground, and vehicle).

Excursion — Lane 4 Expanding the launched effects ecosystem with long range communications (ATNE) and data fusion enabling mission command.

End state:

5 Industry Partners, 5 Government Technologies, 7 Government partners working in conjunction with FVL CFT operating over 28 LE surrogates, 7 ground technologies, 3 other aerial platforms, and 1 robot to further the development of LE behaviors.

What We Want to Learn:

- **LE must conduct Autonomous Collaborative Behaviors in groups to accomplish the mission.**
- **As LE conduct missions, groups of LE must communicate with each other to accomplish the mission.**
- **LE must be able to operate in denied environments.**

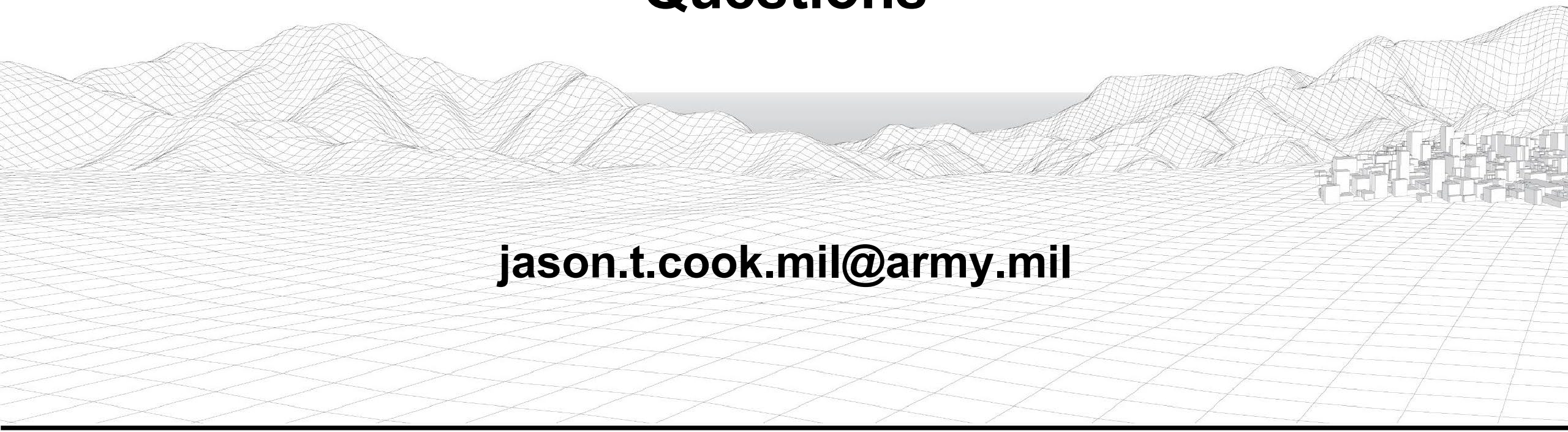
Industry & Government Tech Demonstrators

RTX (Collins & Raytheon)
Northrop Grumman
Elbit
Lockheed Martin
ISR Task Force.
USMC

Other Government Partners

- M-COE
- SL-CFT
- AV CDID
- ATEC
- DEVCOM HQ
- YPG / YTC
- C5ISR
- ARL

Questions



jason.t.cook.mil@army.mil

Aviation Industry Days

U.S. Army Aviation Center of Excellence
Fort Novosel, AL

August 07, 2024

U.S. ARMY COMBAT CAPABILITIES DEVELOPMENT COMMAND AVIATION & MISSILE CENTER

Aviation Technology Overview Brief, Technology Development Directorate

MS. CHRISTI DOLBEER, DIRECTOR

18 MAR 2024

PR2024065

APPROVED FOR PUBLIC RELEASE

WHERE WE FIT IN

OUR LEADERSHIP TEAM

Director
Dr. James Kirsch
(SES)

Chief of Staff
Mr. Steve Fisher

MILDEP
COL Shannon Thompson

Systems Readiness Directorate
Mr. Keith Darrow
(SES)

Software, Simulation, Systems Engineering and Integration Directorate
Dr. Stephanie Reitmeier
(SES)

Technology Development Directorate
Ms. Christi Dolbeer
(SES)

Scientific & Technical Positions (STs)

Radio Frequency Sensors
Dr. Brian Smith

Protective Technologies
Dr. Donna Joyce

Airvehicle Aerodynamics & Preliminary Design
Dr. Mahendra Bhagwat

Rotorcraft Flight Dynamics and Control
Dr. Jeffery Lusardi

BY THE NUMBERS

DEVCOM AVIATION & MISSILE CENTER

11,839 FY23 Strength

3,173 Civilian

18 Military

8,648 Contractor

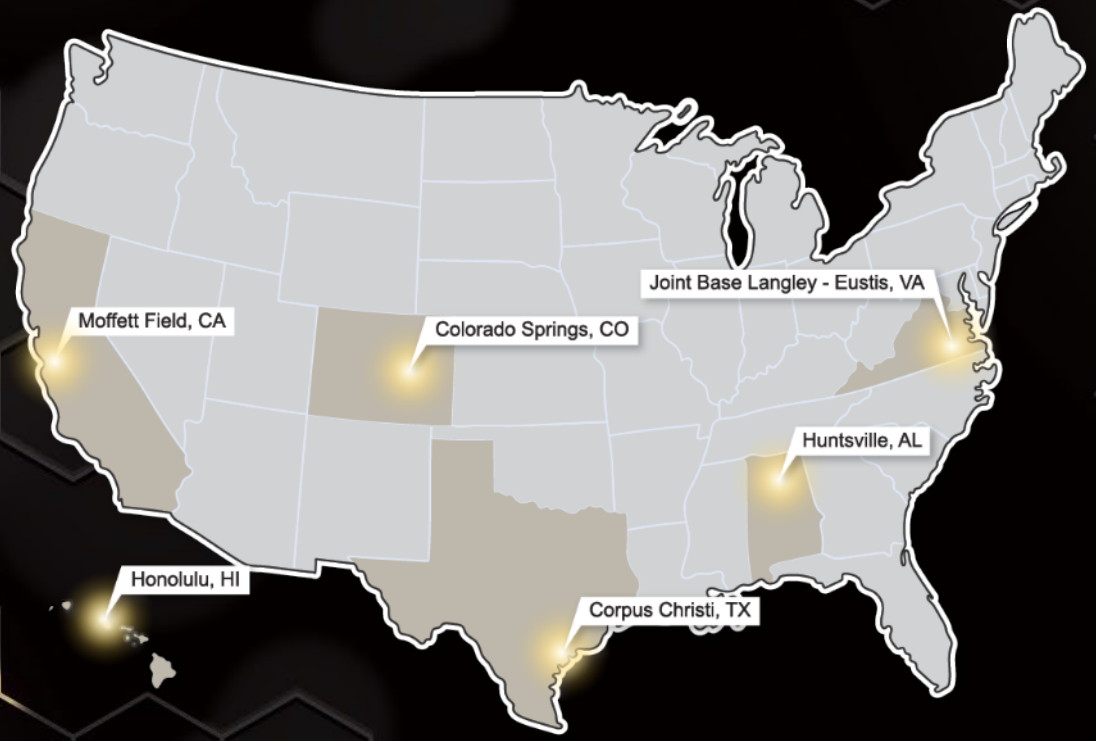
FY23 Funding
$5.4B

5% Aviation S&T

7% Missile S&T

62% Army

26% Other



CORE COMPETENCIES

SCIENCE AND TECHNOLOGY:

- Aviation Platforms & Air Mobility
- Aviation Autonomy, Teaming, Avionics & Survivability
- Missile Seekers, Guidance, Navigation & Control
- Missile Materials & Structures
- Missile Propulsion, Warhead Integration & Fuzing
- Air Defense Radar & Fire Control

LIFE CYCLE ENGINEERING:

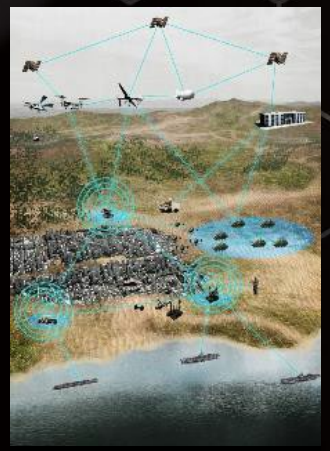
- Airworthiness
- Product Performance
- Modeling and Simulation
- Multidiscipline Acquisition and Project Engineering
- Prototype Design and Development
- Software Engineering
- Systems Engineering, Integration, and Interoperability
- Weapons Assurance

S&T PRIORITIES ALIGNED WITH THE ARMY MODERNIZATION STRATEGY

LONG RANGE PRECISION FIRES

NEXT GENERATION COMBAT VEHICLE

FUTURE VERTICAL LIFT



ARMY NETWORK

AIR & MISSILE DEFENSE

SOLDIER LETHALITY

SUPPORTING ARMY AND JOINT READINESS NOW AND IN THE FUTURE MDO ENVIRONMENT

RESEARCH IN SUPPORT OF FUTURE FORCE

Driving the discoveries and innovations which will be critical to realizing new capabilities for the Army of 2030 and beyond.

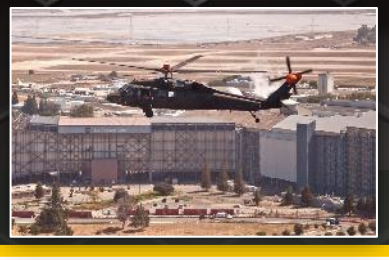
ANALYSIS

Conducting objective experimentation and systems analysis to support the equipping and sustaining of our Warfighters.

ENGINEERING

Providing life cycle engineering expertise to support fleet development and readiness across warfighting battlefield operating systems.

TECHNOLOGY DEVELOPMENT DIRECTORATE (TDD): MISSION & VISION



MISSION

Discover, develop, and demonstrate aviation and missile modernization technologies and provide life cycle engineering to improve readiness

What We Do

- Provide research, development, and technology demonstrations at the platform, weapon system, and component level
- Provide engineering and scientific subject matter expertise in all aspects of aircraft and weapon system design, development, improvement, and integration
- Fabricate and test prototypes for technology demonstrations and operational experimentation
- Support readiness/sustainment efforts (AMCOM Stockpile Reliability Program, Demilitarization, Corrosion Prevention and Control)

What We Manage

- Army Aviation and Missile Science & Technology Portfolio and Labs
- Reimbursable Support across DoD
- International Cooperative Development Efforts in Aviation & Missile Technology

WORKFORCE:

- Government: **562**
  - AL – Redstone Arsenal
  - VA - Eustis/Langley
  - CA - Ames/Moffett Field
  - Paris, France
- Contractor: **611**

GOV EDUCATION:

- Master's Degrees: **193**
- Doctorate Degrees: **71**

FACILITIES: 217
(993,252 ft^2)

Core Competencies

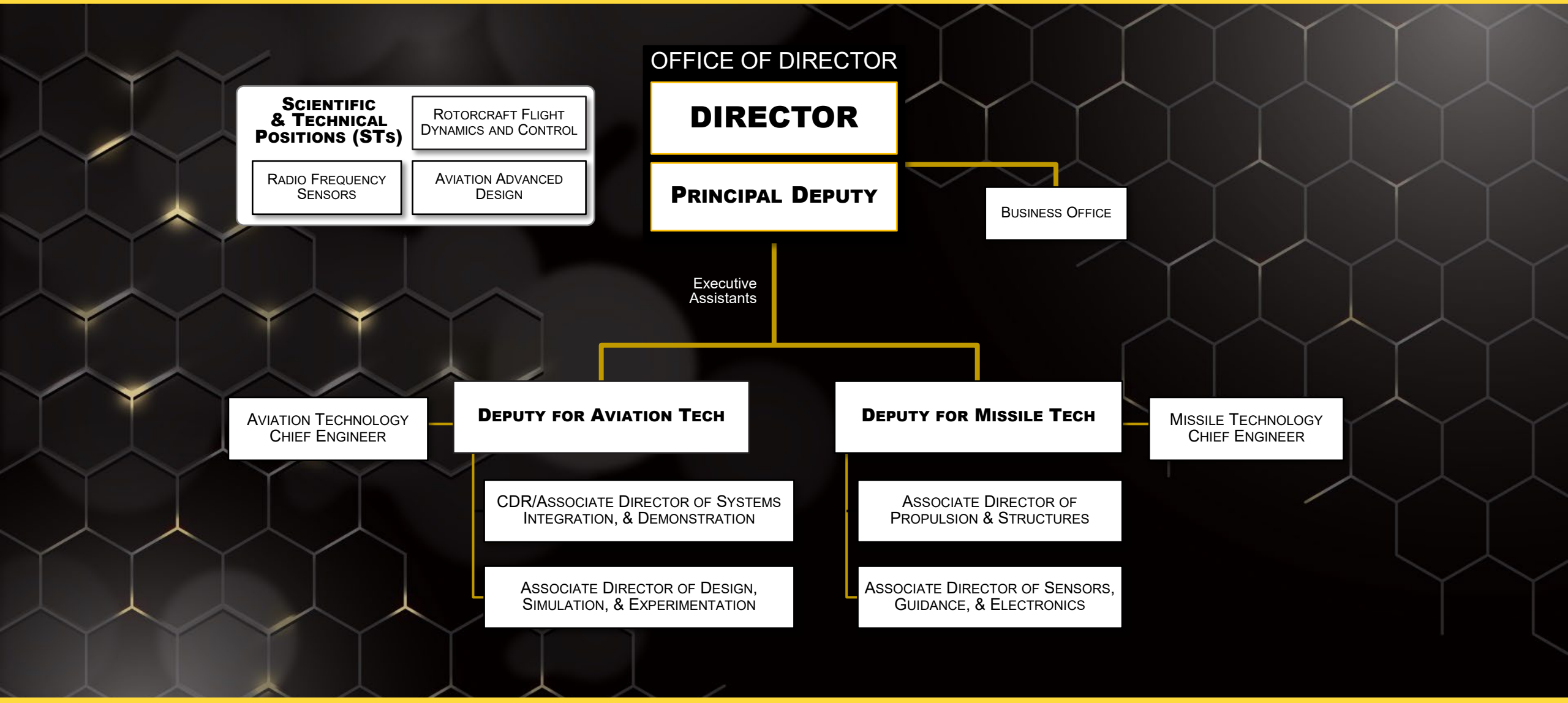
- Aviation Platform and Air Mobility
- Aviation Autonomy, Teaming, Avionics, and Survivability
- Missile Seeker, Guidance, Navigation, and Control
- Air Defense Sensor and Fire Control
- Missile Materials and Structures
- Missile Propulsion, Warheads, Integration, and Fuzing

All technical areas encompass systems engineering & design, analysis, HWIL/SIL, M&S, prototyping, laboratory testing, field testing, experimentation, and system integration

VISION

Provide world-class expertise to modernize aviation and missile capabilities

AVMC TECHNOLOGY DEVELOPMENT DIRECTORATE



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FACILITIES SUPPORTING AVIATION S&T

DEVCOM AVIATION & MISSILE CENTER

RESEARCH, DEVELOPMENT, ENGINEERING, AND SCIENTIFIC FACILITIES


National Full-Scale Aerodynamics Complex (NFAC)

DESIGN, SIMULATION & EXPERIMENTATION
NASA AMES – MOFFETT FIELD, CA

SYSTEMS INTEGRATION & DEMONSTRATION
JOINT-BASE LANGLEY-EUSTIS, VA

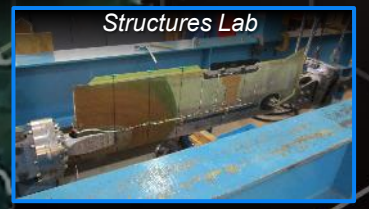
JOINT RESEARCH PROGRAM OFFICE
NASA LANGLEY, HAMPTON, VA

DEVCOM AvMC HQ
REDSTONE ARSENAL, AL
S&T MANAGEMENT & STAFF


Flight Test Facility


Rotorcraft In-Flight Lab


14-x22- Foot Subsonic Tunnel


Structures Lab


7- x 10- ft Wind Tunnel


Vertical Motion Simulator (VMS)


Mobile Acoustic Facility

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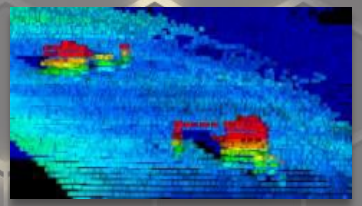
AVIATION S&T DIVISIONS

Mission Systems Division

Avionics & Networks

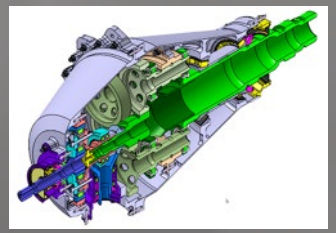


Survivability

Intelligent Teaming

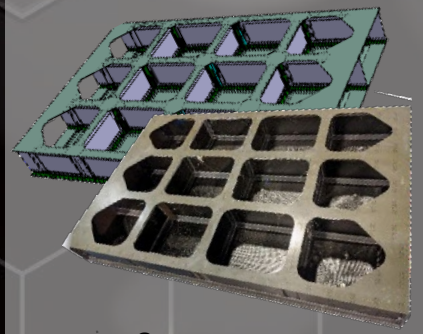
Human Systems Interface

Platforms Division



Drives

Engines



Structures

Aeroflightdynamics Division

Rotors

Experimental Aeromechanics

Computational Aeromechanics

Vehicle Management and Controls

Design & Test Division

Rotorcraft In-Flight Lab (RIFL)

Concept Design and Assessment

Wind Tunnel

S&T STRATEGY

BREAK THE ENEMY'S BUBBLE | **PROTECT OUR FORCE** | **ON THE MOVE**

ELIMINATE A2/AD AT ALL ECHELONS | **REACH, RANGE, AND SPEED** | **AGILE MANEUVER TO CONTACT**

AVMC AVIATION S&T

DELIVERING THE ARMY OF 2030

- Air Assault / Aerial Reconnaissance
- Launched Effects
- Advanced Rotor and Hub Technologies
- Open Systems Informed Digital Backbone
- Autonomous Flight in Degraded Environments

DESIGNING THE ARMY OF 2040

- Development of an Integrated Suite of Rotorcraft Aeromechanic Design and Assessment Models & Tools
- Advanced Autonomous Behaviors and Collaborative Teaming
- Increased Lethality and Aircraft Survivability in Contested and Degraded Environments
- Rapid/Agile Mission Systems Insertion
- Advanced Structures and Conventional/Hybrid Propulsion Capabilities
- Emerging Crewed / Uncrewed VTOL Configurations

APPROVED FOR PUBLIC RELEASE

U.S. Army Aviation Center of Excellence
Fort Novosel, AL

August 07, 2024

U.S. ARMY

PROGRAM EXECUTIVE OFFICE AVIATION

Apache Overview

COL Daniel Thetford & COL Ashley Lee

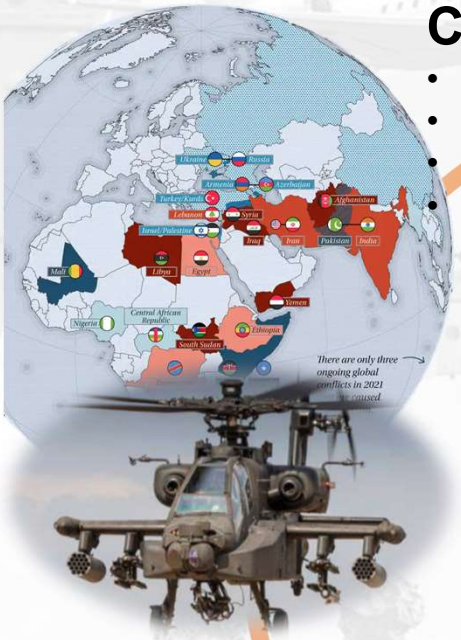
Attack Project Manager / Army Capability Manager Recon/Attack

08 August 2024

DISTRIBUTION STATEMENT A: Approved for Public Release. Distribution Is Unlimited.

ARMY AVIATION
DECISIVE IN LAND WARFARE

Requirements to Full Rate Production and Beyond



Capability Gap
- DOTMLPF-P
- Global Conflict
- OPLANS
- Warfighter (JUONS/ONS)

Requirements Documents
- Capability Development
- Capability Performance

Or Urgent Fielding to support ONS
- Urgent Material Release (G8 approves)

ACM-UAS
Launched Effects

ACM-LIFT
Improved Turbine Engine Program

AE-RDD
- Communications
- Aircraft Survivability Equipment
- Aircraft Ground Support Equipment

Industry
- Limited Rate Production
- Full Rate Production

Operational Evaluation Report

Acquisition Program Baseline

ARMY AVIATION
DECISIVE IN LAND WARFARE

ACM R/A Portfolio

L5 Comm & Nav System Trainer

L6 Airframe Engine Drive Sys Trainer

L7 Multiplex Avionics Visions Weapons Electrical Systems

Digital Captive Boresight Harmonization Kit

L8 Flight Control Park Task Trainer

Longbow Crew Trainer

TRAIN

MUMT

Link 16

EAGLE-M

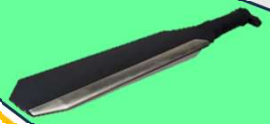
ARC-201D

ARC-231

BFT-1 (AH-64D)

APX-123 Transponder

AGNR



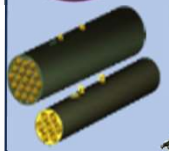
ITRB

BFT-2v3

APNT

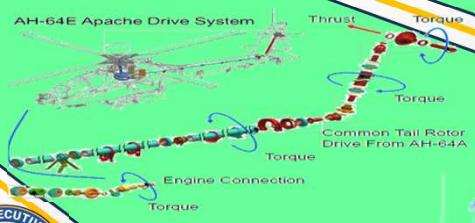
COMMUNICATE

M299 Launcher



M260/M261 Launcher

Single Launcher System



Improved Tail Rotor Drive Shaft

APKWS

LRPM &SPIKE NLOS

HYDRA II

M230

HELLFIRE

JAGM

M789

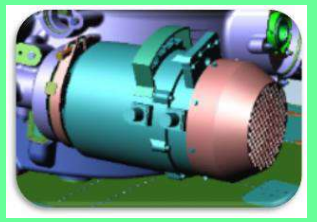
XM1211 PROX

GEN II Turret

Bi-Ocular HMD

SHOOT

ITEP

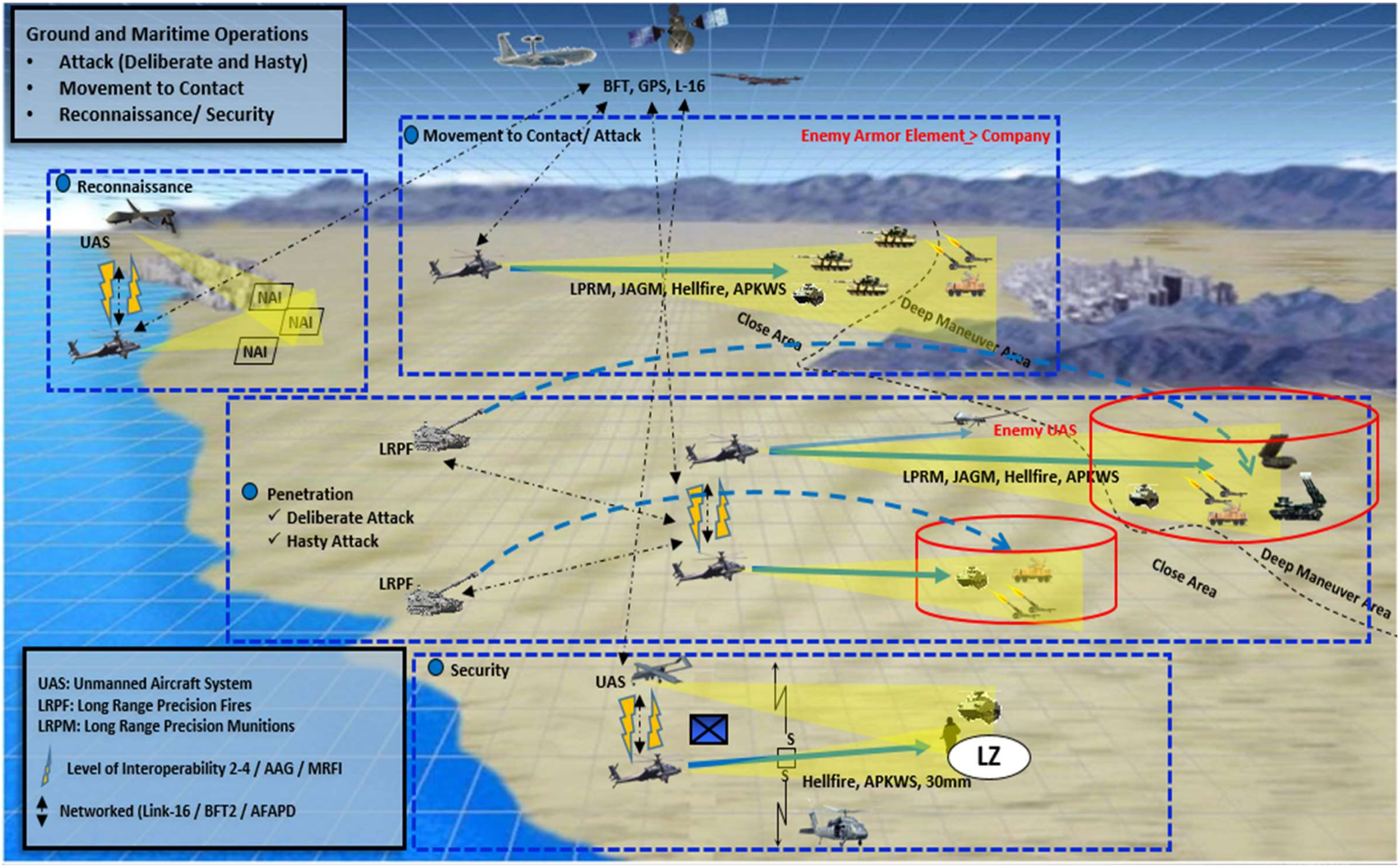


Generator (-7, -15, Oil Cooled)

MOVE

AH-64E LSCO

Current - 2040



Maintaining Shared Understanding and Trust with Commanders and Soldiers on the Ground

Consolidated 1-N FY24

AVN CDID Capability Gaps (dated 1 March 23)

#1 Recon, Security, Range, and Endurance
#2 Tactical transport and resupply ground force
#3 Readiness during Expeditionary High OPTEMPO
#4 Lethality Option, SEAD/ DEAD: E-WEZ, APS
#5 Protect Aircrews: Advance Threat & C-Air
#6 Operate in highly congested complex airspace
#7 SEAD/ DEAD
#8 Safe Operations in DVE and Urban Terrain
#9 Counter Recon against Aerial Threats
#10 Aircraft network setup and initialization

FY24 UFRs/ Critical Needs

1. **Improved Tail Rotor Blade & ITRDS:** Development, Qualification, and Fielding [Safety/Move]
2. **Generator Readiness:** (-7, -15, Oil Cooled) [Safety/Move]
3. **LCT:** Training/ Mission Equipment Concurrency and System Obsolescence [Train]
4. Bi-Ocular Color HMD: Hardware Development [See]
5. C-UAS: Capability Detect & Defeat (EW/EA, 30mm Proximity Fuze) [Strike]
6. M230E1: AWS Accuracy, Repeatability [Strike]
7. SPIKE CLS: [Directed Requirement] [Strike]
8. Advanced Mission Equipment: (~v6) for v6.5 QTY/ BOIP Increase (1. G3RFI, 2. RCEF 3. Coyote Modem & UR-X, 4. MDSA & G2T, 5. TACAN) [See/Move]
9. Communication System Capability: [Extend]
10. Launched Effect & Future UAS Interoperability & Deconfliction [See/Strike/Extend]

Modernization Priorities

Near Term (1-5 Years)

- Bi-Ocular Color HMD*
- Counter-UAS
- Communication Modernization*
- Advanced Sensor Processing*
- Next Generation Launcher

Mid Term (5-10 Years)

- **ITRB & ITRDS**
- **Generator Improvements/Redesign**
- Sensor Modernization (Targeting)
- Simulation and Training Concurrency
- GENIII RFI
- JAGM-MR

Far Term (10-15 Years)

- ITE Integration
- Drive Train Improvements
- AESA Radar
- Sensor Modernization (Pilotage)
- Common configuration through v6.5

v6.5 Common Configuration critical for LSCO Dominance

2040 Modernization

Lethality **- Increase lethal, non-lethal effects with precision and area target capabilities. Modular munitions with multiple stowed kills, selectable warhead types/effects.**

1. ***Air to Ground Munitions (extended range, increase accuracy, with robust warhead/ fuze capability)***
2. "Next-Gen" Launcher System
3. Lethality Common Operating Picture (JADC2)
4. Long Range Precision Munitions Interoperability
5. ALE (Air Launched Effects) Interoperability
6. Directed Energy

Reach **- Execute mission from relative sanctuary, Detect Identify Locate Report (DILR) last 1/3 threat WEZ, Degraded Visual Mission Execution (DVME)**

1. ***Generator Improvements***
2. ***Improved Turbine Engine T901***
3. ***Tail Rotor & Tail Rotor Drive Train (ITRB, ITRDS)***
4. **Bi-Ocular Color Helmet Display**
5. Fused Pilotage and Targeting (Sights & Sensors)
6. "Next Gen" Beyond Line-Of-Sight Comms (Mobile User Objective Systems, Blue Force Tracker 3)

Protection/ Survivability **- Ability to detect, defeat, target (Threat to Self) and populate Common Operating Picture (Threat to Team)**

1. ***Generation 3 Radio Frequency Interferometer (G3RFI) w/ increased Basis of Issue (BOI) - All***
2. Advanced Aircraft Survivability Equipment (Common Infrared Countermeasures, Improved Threat Detection System)
3. Assured Precision Navigation and Timing (APNT – EAGLE-M & MAGNA-F via v6.5)
4. Electronic Warfare Capabilities (Multi-Spectral Detection and Targeting; integral to c-UAS capability)

Sustainment/ Safety **- Increase maintenance free operating periods**

1. ***Open Systems Architecture***
2. GEN2 Turret
3. Conditions Based Maintenance
4. Improved Transmission / Nose Gear Box
5. System Level Embedded Diagnostics (SLED)

Prep

Near Term
FY 24 – 29

- Version 6.5 Software
- ***GEN3 RFI*** & MDSA BOIP
- ***Generator Improvement***
- Increased Sensor Processing Power
- ***Bi-Ocular Color Helmet Display***
- ***Open Systems Architecture***
- MAGNA Antenna, EAGLE M

Mid Term
FY29 – 35

- ***Improved Turbine Engine***
- ***Tail Rotor Blade & Drive System***
- "Next Gen" Launcher System
- Condition Based Maintenance Improvement
- Sensor Fusion
- Advanced Munitions
- Launched Effects Integration

Dominate

Far Term
FY 30 – 40+

- **Modernized Pilotage (Staring)**
- **Modernized Targeting (16km)**
- Modernized AESA RADAR
- Electronic Warfare Capabilities
- JADC2 Interoperability
- Next Generation ASE
- Transmission / Nose Gearbox
- Directed Energy

Large Scale Combat Operations

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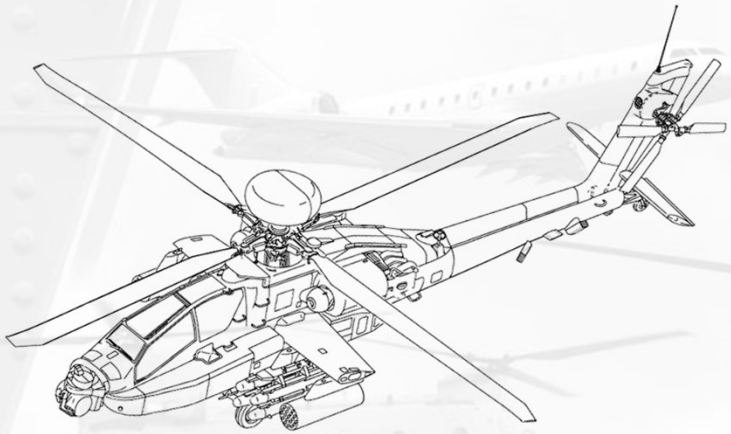
AH-64 Capabilities Progression



MDO Capability in Development

AH-64D

- Digital Cockpit
- Fire Control Radar (FCR)
- Radar Frequency Interferometer (RFI)
- Radar Guided Missiles
- Modernized Infra-Red Sensors
- Integrated Aircraft Survivability Equipment (ASE)
- Manned/Unmanned Teaming (MUMT)

AH-64E Version 1 / Version 2.2

AH-64D PLUS:

Aircraft Performance
- New Airframe
- Full 701D Engine Power
- Improved Drive System
- Composite Main Rotor Blades

Lethality
- Radar Electronics Unit (REU)
- Integrated Laser Pointer

Navigation
- IFR Certified
- Standby Flight Display

Communications
- Dual ARC-231 w/Emer backup

Aircraft Architecture
- Mission Processor

AH-64E Version 4

AH-64E v1 PLUS:

Aircraft Performance
- RCEFS

Situational Awareness
- Link-16 baseline
- Blue Force Tracker Block II (BFT-2)
- Air-to-Air-to-Ground (AAG) Video
- System Level Embedded Diagnostics (SLED)
- Smart Tool for Apache Maintenance Picture (STAMP)

Navigation
- Enroute RNP / RNAV / VNAV

Aircraft Architecture
- Cyber Security Improvements

AH-64E Version 4.5+

AH-64E v4 PLUS:

Aircraft Architecture
- Multi-core Mission Processor (MMP)

AH-64E Version 6

AH-64E v4.5 PLUS:

Aircraft Performance
- Engine First Limit Indicator

Lethality
- FCR Extended Range
- FCR Maritime & UAS Targeting
- JAGM
- MRFI Maritime Detection
- MRFI Ranging / Geo-location
- Modernized Day Sensor Assembly (MDSA) Extended Range
- MDSA HD Color Video (IFF)
- MUMT Extended Range (MUMT-X), C/L/Ku/S bands

Situational Awareness
- Expanded Link-16
- Expanded STAMP / SLED
- Data Correlation
- Cognitive Decision Aiding System (CDAS)

Navigation
- Full RNP / RNAV / VNAV
- ADS-B (out)
- TACAN

Communications
- ARC-231 Maritime Frequencies

Aircraft Architecture
- ARINC 653 RTOS

AH-64E Version 6.5

Aircraft Performance
- Legacy Sensors Backward Compatibility
- FOTE 2 “Fixes”
- Hydraulic Pressure Monitoring

Lethality
- IDM 01 Interoperability Update
- CIRCM PVI Integration
- JAGM Improvements
- Removes Cluster Munitions (FMS)
- 30MM AWS Improvements
- Rocket Improvements
- MUMT-X Workload Reduction
- MRFI: Pilot Reporting/Blanking
- FCR: Priority Scheme / JMAC Classification

Situational Awareness
- TAWS
- SLED over non-BFT
- Synthetic Vision
- DVE Cueing Symbology
- CDAS Improvements

Navigation
- EAGLE EGI / MAGNA
- TACAN

Communications
- Crypto-Mod for ARC-231A
- Coyote PVI

Aircraft Architecture
- Open Systems Interface (MOSA)
- Encrypted Data at Rest
- G2T Software Hooks
- Common Configuration

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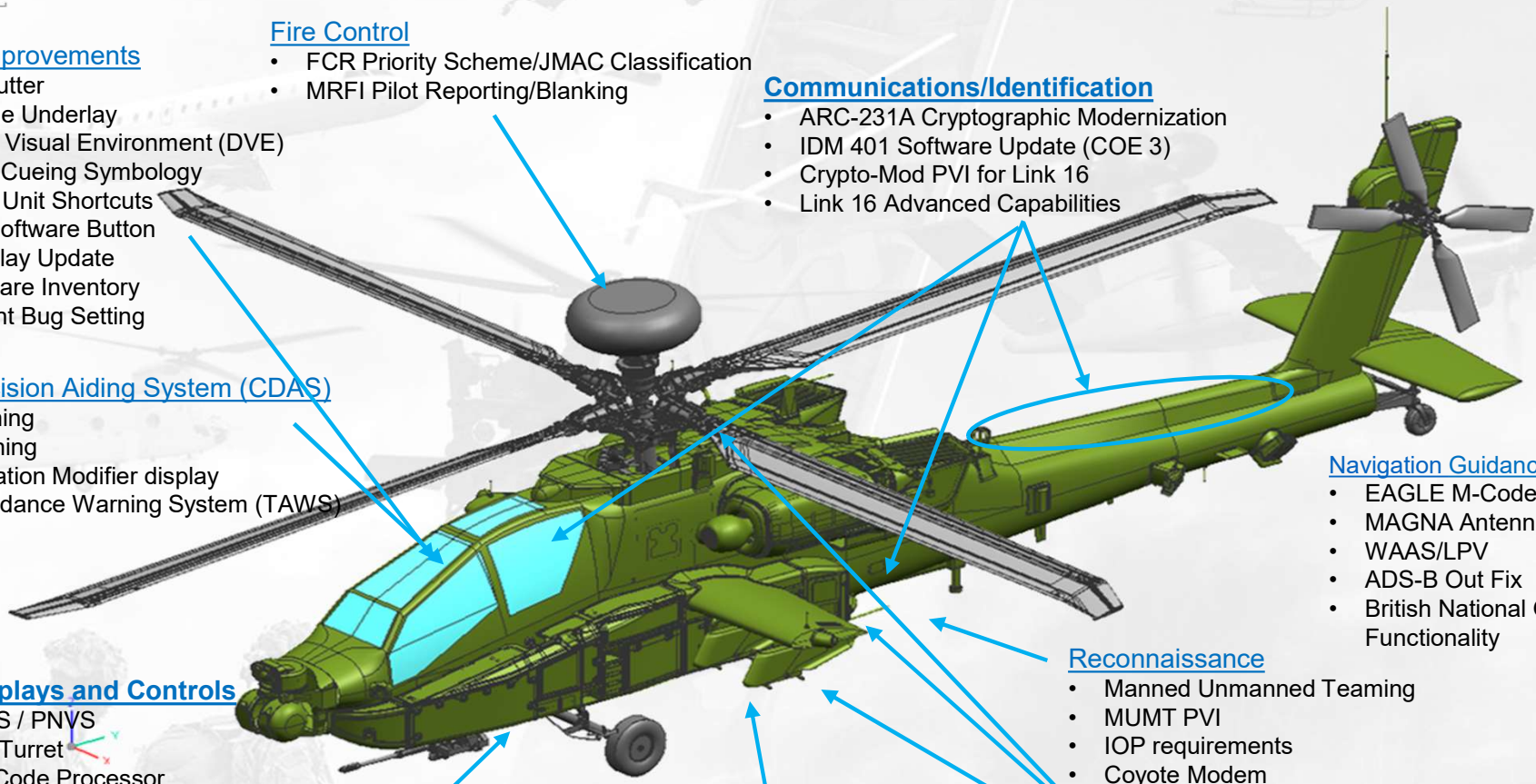
AH-64E Version 6.5 Capabilities

SA – PVI Improvements
- TSD Declutter
- Flight Page Underlay
- Degraded Visual Environment (DVE)
- Brownout Cueing Symbology
- Keyboard Unit Shortcuts
- FMC All Software Button
- HDU Display Update
- Chaff & Flare Inventory
- Low-Height Bug Setting

Fire Control
- FCR Priority Scheme/JMAC Classification
- MRFI Pilot Reporting/Blanking

Communications/Identification
- ARC-231A Cryptographic Modernization
- IDM 401 Software Update (COE 3)
- Crypto-Mod PVI for Link 16
- Link 16 Advanced Capabilities

Cognitive Decision Aiding System (CDAS)
- Route Planning
- Attack Planning
- Data Correlation Modifier display
- Terrain Avoidance Warning System (TAWS)



Navigation Guidance
- EAGLE M-Code
- MAGNA Antenna
- WAAS/LPV
- ADS-B Out Fix
- British National Grid Functionality

Reconnaissance
- Manned Unmanned Teaming
- MUMT PVI
- IOP requirements
- Coyote Modem

Data Displays and Controls
- MTADS / PNVS
- Gen 2 Turret
- Flight Code Processor
- Laser Designator
- Camouflage And Manmade Object Sensing (CAMOS) filter

Survivability
- CIRCM Integration

Software Upgrade
- Encrypted Data at Rest (DAR)
- Rad Alt Audio Warning
- Open Systems Interface (OSI)
- Legacy Sensor Suite Compatibility
- Hydraulic Pressure Monitoring
- SLED over non-BFT

Armament/Weapons Delivery
- Air to Ground Missile
- Hellfire R-Model Missile
- Joint Air-to-Ground Missile (JAGM) Improvements
- JAGM Export Features
- Remove Cluster Munitions Firing Mode
- Rocket Improvements

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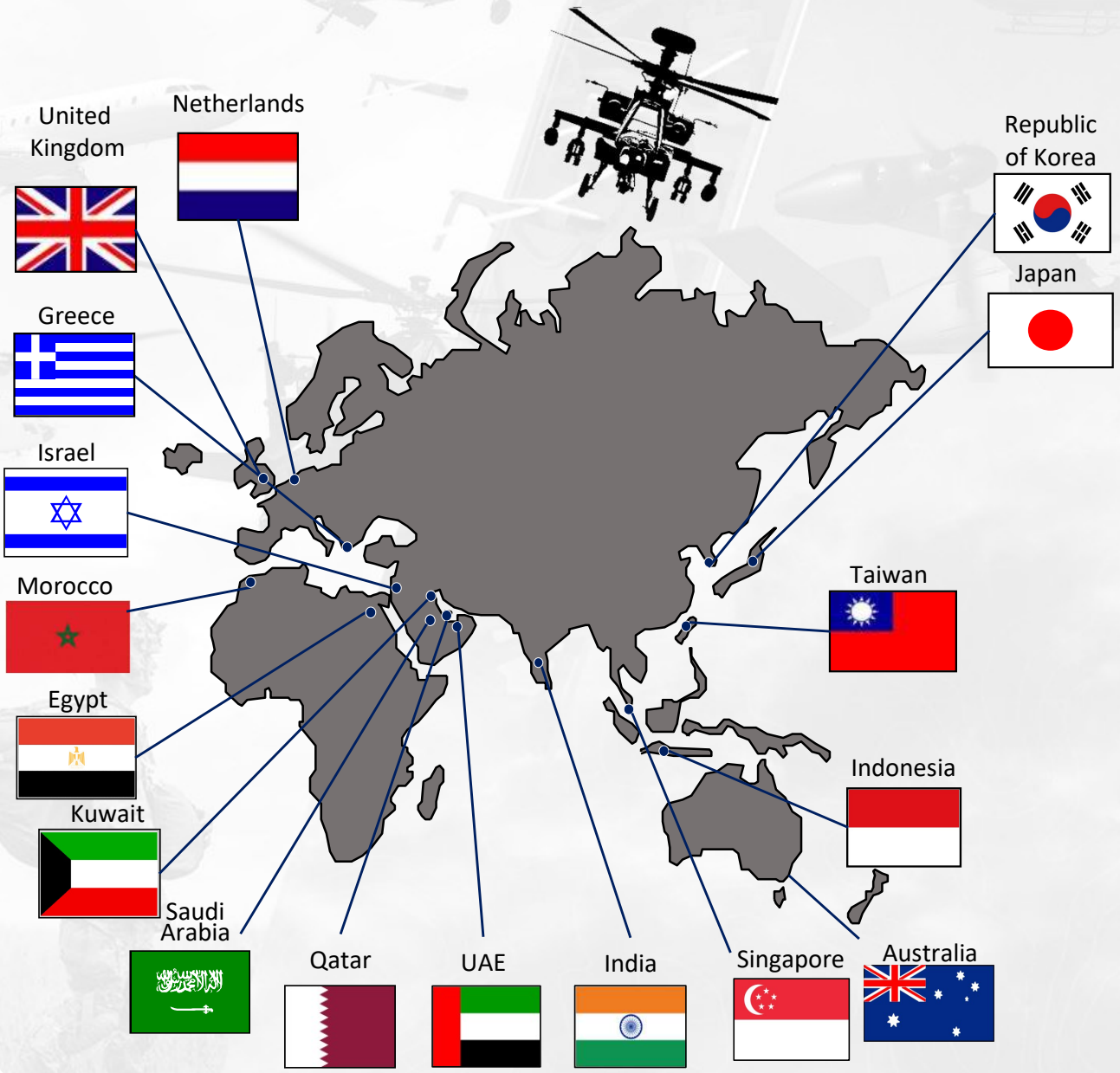
International Apache Fleet



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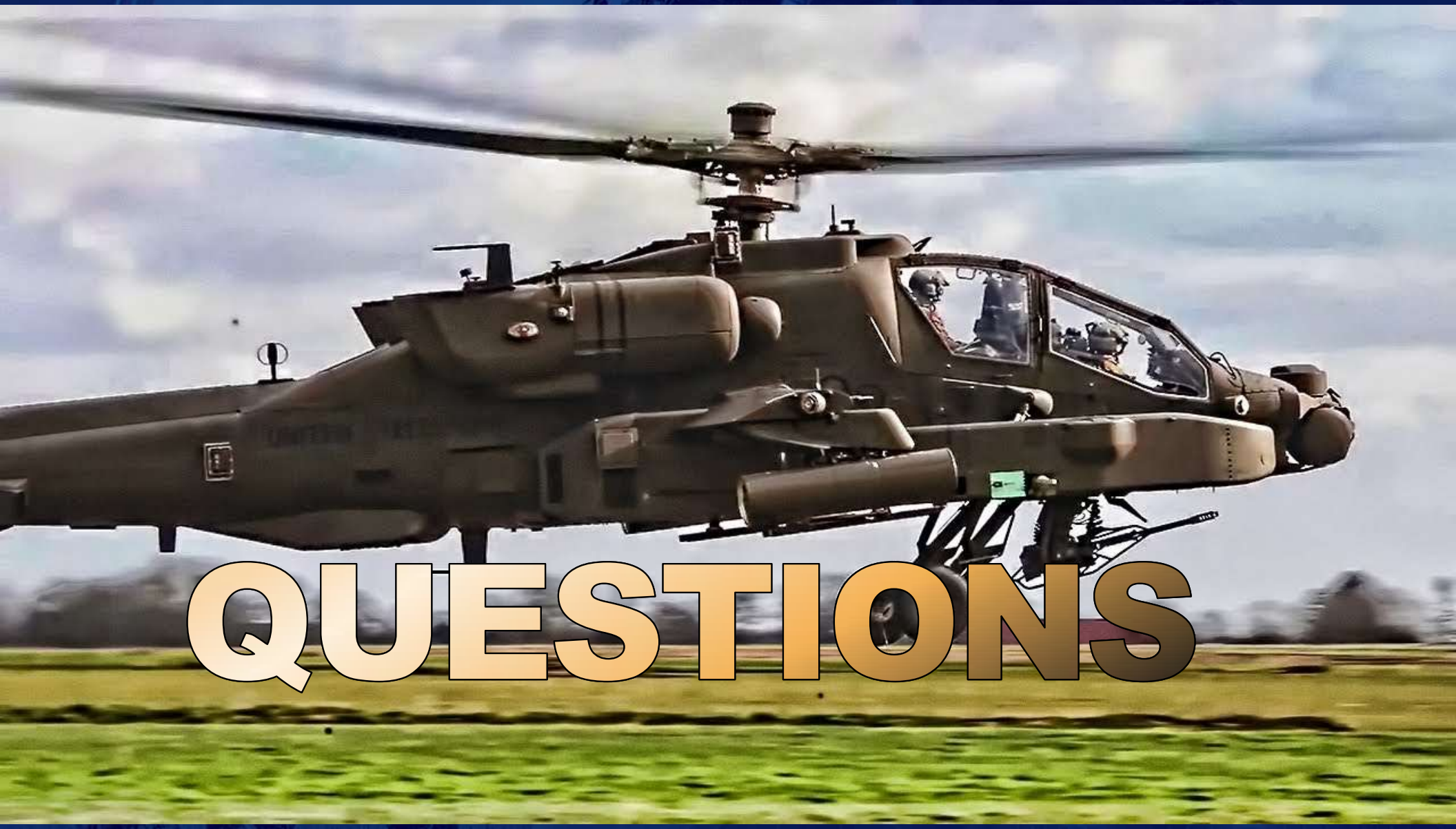
PROGRAM EXECUTIVE OFFICE AVIATION



QUESTIONS

Industry Day Lethality Update

Purpose: Provide information to our industry partners regarding the existing munitions portfolio, prioritized modernization requirements, and the "way-ahead"

Mr. Craig Riedell
Program Manager

COL Ashley Lee
Director

Lethality Strategy focuses on the following attributes:

- ***Reach***: Increased effective range to enable engagements beyond enemy weapons engagement zones (E-WEZ).
- ***Lethality***: Increased lethal and non-lethal effects with precision and area target capabilities.
- ***Survivability***: Aircrew survivability is achieved by employing survivable munitions with the ability to counter threat systems designed to engage the munitions after launch by utilizing trajectory shaping, low observability characteristics, masking, etc., and crew utilization of enhanced Tactics, Techniques, and Procedures (TTP).
- While these are the primary focus, in conjunction with our Program Managers, solutions must be achievable and affordable.

Current

Hydra Rockets

Hydra Family of Rockets provides lethal and non-lethal effects
- Lethal - High explosive, Flechette, MPSM
- Non-Lethal - Smoke screening, marking, illumination

M230E 30mm

M789 & XM1211 Prox

Apache Cannon – Self Protection
- M789 HEDP armor piercing
- XM1225 Prox fuzing C-UAS & Troops in the open expected to field in FY25/26

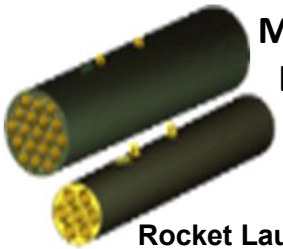
APKWS

APKWS – Precision Rocket
- M151 HE Warhead
- Accuracy similar to HELLFIRE

HELLFIRE

HELLFIRE – Anti-Armor, Buildings, Bunkers, Maritime
- AGM-114L Longbow – Radar Guidance
- AGM-114R Romeo – SAL Guidance, Selectable Fuzing

JAGM – Multi-purpose, Armor, Buildings, Bunkers, Maritime, CUAV
- Combines Radar & SAL guidance
- Selectable Fuzing
- Improved Countermeasure Capability
- JAGM-MR – Future increase in range (16km) & tri-mode seeker for terminal guidance; pending Capability Production Document threshold update



M260/M261 Launchers

Rocket Launchers
- M260 – 7 shot
- M261 – 19 shot

M299 Launcher

Missile Launcher
- Carries and Launches HELLFIRE & JAGM
- Digital 2-way communications

SPIKE NLOS

- SPIKE MK-5 is the *Interim* Long Range Precision Missile, limited fielding per Directed Fielding begins this month

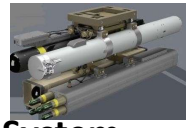
Future

Hydra II

Hydra II
- Precision Guided
- Minimally Guided (IMU) - lower cost
- Increased range and lethality
- Lethal and Non-Lethal Capabilities
  - HEAT/APAM
  - HoB/Prox for CUAS & Troops in the Open
- Currently developing Requirements Document

Long Range Precision Missile

Long Range Precision Missile (LRPM)
- Direct Strike capability
- Target Set – Radars, C2 Nodes, Rocket Artillery
- Future program – Draft Requirement Document developed, awaiting staffing



Single Launcher System

Single Launcher System
- Carries/launches multiple munitions (HF/JAGM, Hydra/APKWS, LE, LRPM)
- Requirements In-development

30mm

- Continue development and field the 30mm Proximity/Airburst with enhanced lethality & counter-UAS capability.

Missiles

- **HELLFIRE** – Longbow HELLFIRE capability w/Stockpile Reliability Program was extended to 2029, not feasible beyond 2029. Limited to 8km.
- **JAGM** – Is *the* anti-armor missile to replacing Hellfire for Apache and ensure lethality on the MDO/LSCO battlefield through weather and obscurants out to 16km (JAGM MR).
  - Continue to invest in improvements to increase range and lethality while maintaining the same high probability of kill.
- **Long Range Precision Missile (LRPM)** – Field SPIKE NLOS **Interim**-LRPM. Continue to invest in a replacement LRPM (direct strike) for Apache.

Rockets

- **HYDRA** – Extend current stockpiles with a reduction in M274 training quantities during FS Gunnery.
  - **HYDRA II** – developing requirements for an autonomous or semi-autonomous rocket in the same or similar form factor with increase range and accuracy, leverage Air Force efforts for HEAT/APAM/HoB capabilities
  - Requirements document is in development.
- **APKWS** – Incorporate into annual gunnery qualification to avoid sustainment costs / mitigate obsolescence (batteries) and take advantage of system improvements (Single Variant Block Upgrade = trajectory / range) to reach Total Munition Requirement (TMR).

Launchers

- **Single Launcher System** (SLS) – Ability to fire all existing and future munitions from a single launcher system for enduring Army Aviation attack platforms; leverage MEL electronics and R&D. Currently reviewing multiple options.

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PROGRAM EXECUTIVE OFFICE AVIATION

PM Aviation Mission Systems and Architecture (AMSA)

AMSA Update

AMSA AVIATION MISSION SYSTEMS AND ARCHITECTURE — ENABLING ARMY AVIATION

Mr. James Bamburg
Project Manager

22 July 2024 v1.

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PM AMSA

MISSION:
Design, Develop, and Deliver Advanced Aviation Technologies that Provide Soldiers an Overmatching Operational Advantage

VISION:
Enable the Aviation Enterprise to Win Today and Tomorrow in a Unified Networked Operational Environment

Mr. James Bamburg
Project Manager

Mr. Jeff McCoy
Deputy Project Manager

MSG Eddy Rivera-Nunez
Senior Enlisted Advisor

PRIMARY STAFF

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Division Chief

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Division Chief

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Division Chief

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Team Lead

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Futures Cell
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Director

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Mr. Jeffery Coffman
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Aerial Communications & Mission Command Product Office

LTC Mark Peterman
Product Manager
Mr. James Kelton
Deputy Product Manager

Assured Airspace Access Systems Product Office

LTC Paul A. Flanigen
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Mr. Brad Douglass
Deputy Product Manager

Aviation Ground Support Equipment Product Office

Mr. Samuel Lamb
Product Lead
Mr. George Anderson
Deputy Product Lead

New Leadership Personnel

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PM AMSA Capabilities In Support of LSCO

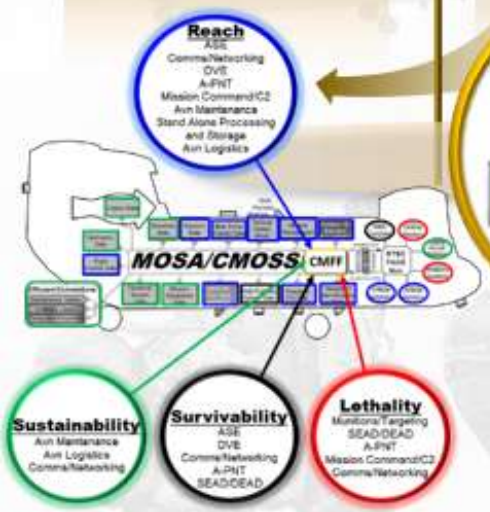
PM AMSA Near / Mid Term Capabilities Support Large Scale Combat Operations (LSCO), Modernizes Legacy Fleet and Establishes Initial MOSA Architecture

HOW
- Increased Operational Capability
- *Rapid* Integration and Fusion of Technology/ Capability

WHY
- Future Operational Environment
- Threat Adaptability

WHAT
- Aligned with *PEO Aviation MOSA Transformation*
- Facilitates MSN CMD COE Convergence
- Enables Sensor Fusion
- Delivers Capability in Bi-Annual Capability Sets – *Outpace Threat*
- Integration of Future Capability: *ASE, DVE, IVAS*

SO WHAT
Operational Benefits
- Reduce SWaP-C
- Commonality Across Platforms
- Shared HW & SW Components
- Minimize Integration Cost & Schedule
- Rapid Insertion of New Technology
- Enhanced AGO
- Enable MDO



Supports:
- Army in MDO & JADC2
- Common Operating Env (COE)
- Aviation Concept
- AGO Communications Concept

AMCS MOSA architecture sets foundation for future modularity of mission computing and communications capabilities

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AMSA Modernization Priorities

Align Resources to Design, Develop, and Deliver Common Enabling Capabilities To the Enduring and Future Fleets In Direct Support of Three Cross Functional Teams and Partner Nations

2024	2025	2026	2027	2028	2029

DVE & MOSA

Degraded Visual Environment (DVE) DR1

Degraded Visual Environment (DVE) DR2

Aviation Mission Common Server (AMCS)

Degraded Visual Environment (DVE) A-CDD

CMFF: AMCE MSN Processing

Network & Mission Command (COE Convergence)

IMPACT CS23 (CD2/3)

AGNR Integration

IMPACT CS25 (CD 4/5)

Blue Force Tracking Avn 3 (BFT-3)

Modernized Tactical Communications

Multi-Mode Aviation Radio System (AN/ARC-231A) (MARS)

AGNR Integration

CMFF: AMCE RF Comms

Navigation & Surveillance

Common Transponders (CXP) APX-118/123/123A

MAGNA

EAGLE-M

Enhanced Common Transponder

Alternate PNT

Aviation Common Ground Support Equipment & FBATC

Auxiliary Ground Power Unit 1.1 (AGPU) 1.1

Interim Voice Switch Replacement (IVSR)

Digital Airport Surveillance Radar (DASR)

Future AGPU & AGSE ISO FLRAA

Army Airfield Automation System (AAAS)

Instrument Landing System (ILS) w/ DME

DoD Advanced Automation System (DAAS)

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Aviation Radio Capability Roadmap

CURRENT



ARC-201D

ARC 201 Radio 1
- SINCGARS

ARC 201 Radio 2
- SINCGARS

RT-1808

ARC 231 (1)
- UHF
- VHF
- Havequick
- DAMA/IW (SATCOM)

ARC 231 (2)
- UHF
- VHF
- Havequick
- SINCGARS

KOR 24A

KOR 24A
LINK 16

ARC-220

ARC 220 + KY 100
High Frequency

AGNR

AMCS LRU 1

RT 1808

RT 1987

ARC 231A
- UHF
- VHF
- SINCGARS
- DAMA/IW SATCOM
- SATURN V4 NATO

SATURN

(V4 NATO → V4 US)

LINK 16

(AH-64E, GRAY EAGLE, FLRAA)

HIGH FREQUENCY

(CH-47, UH-60A/L, FVL)

ARC 220 + KY 100M
High Frequency

FUTURE

AGNR

AGNR (1)
- UHF
- VHF
- TSM
- SINCGARS
- MUOS

AGNR (2)
- UHF
- VHF
- TSM
- SINCGARS
- MUOS

ARC-231

ARC 231 (1)
- UHF
- VHF
- Havequick
- DAMA/IW (SATCOM)

RT-1808
RT-1987

ARC 231 (A)
- UHF
- VHF
- DAMA/IW SATCOM
- SATURN V4 US

RT-1808
RT-1987

KOR 24B

KOR 24B
LINK 16

HF

ARC 220M
High Frequency

OR

PRC 160
High Frequency

(New Requirement)

(Not Currently Common Programs Managed by PM AMSA)

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Recent Successes

- Aviation Ground Power Unit 1.1 (AGPU 1.1) Production Contract Awarded (JUL 23)
  - AGSE received first LRIP system on 28 MAR 04
  - Full Rate Production Decision FY25

- Aviation Mission Common Server Critical Design Review (CDR) Exit complete and moving program into Test Readiness Review (TRR)
  - AMCS successfully exited CDR in JUN 24

- ARC-231A platform / system level qualifications nearing completion in support of fielding in FY24

- PCC4: AGNR, AMCS, and IMPACT demonstrated with extremely positive user feedback
  - AGNR Demo Rack ISO TSM (Voice & DATA) on UH-60M; First utilization of TSM Voice through ICS
  - IMPACT utilized ISO Airspace Synch Mtg & to build Unit Airspace Plan
  - Mission planning data created on IMPACT, written from a tablet to a DTD, flown on a UH-60M
  - AGNR TSM radios were used to pass IMPACT dynamic mission updates from the BN TOC to tablets on the aircraft while in-flight

- 101st CAB Long Range Air Assault & JRTC Communications Demo

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Emerging Items of Interest

- Aviation Mission Computing Environment (AMCE) Request for Information
  - Hardware & Software Adjunct and Mission Systems Processing requirements

- Degraded Visual Environment Request For Information

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Closing Comments and Questions

PEO Aviation Meeting Request

http://www.army.mil/peoaviation

http://facebook.com/peoaviation

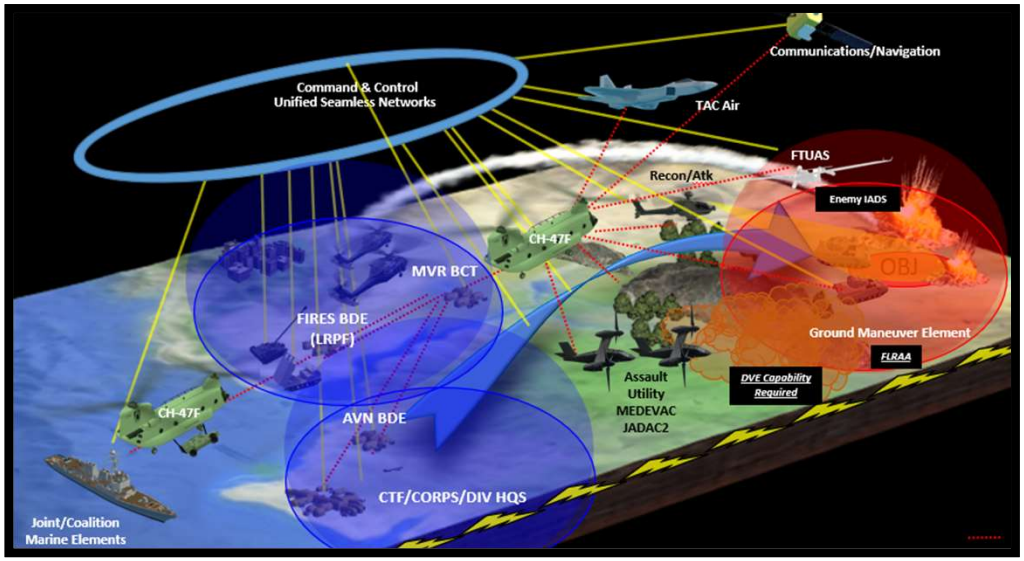
https://www.dvidshub.net/unit/PEO-A

https://www.linkedin.com/company/peo-aviation

ACM-Lift Capability Gaps
Industry Days 2024

Aviation Capability Gaps

Operate in Highly Contested Congested and Complex Airspace



Operations in Degraded Visual Environment

Aviation Capability Gaps

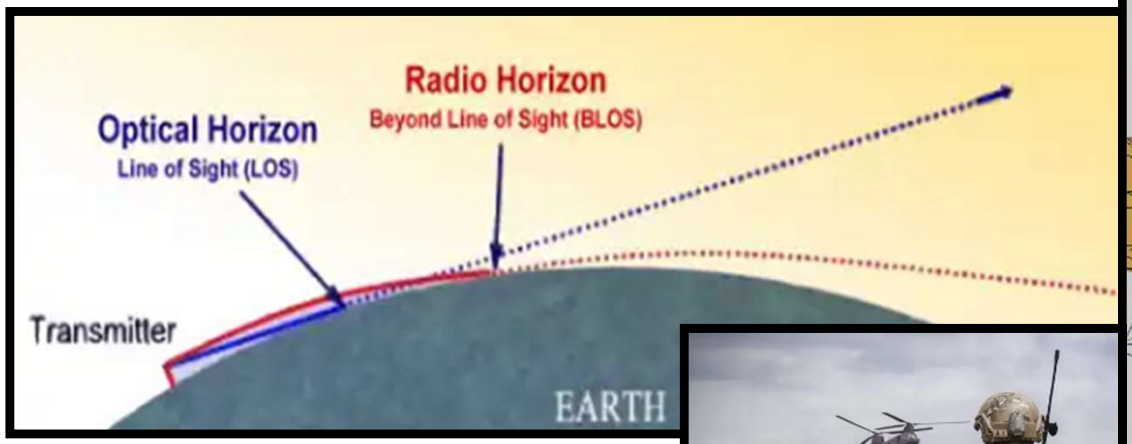
Air Assault of Ground Forces

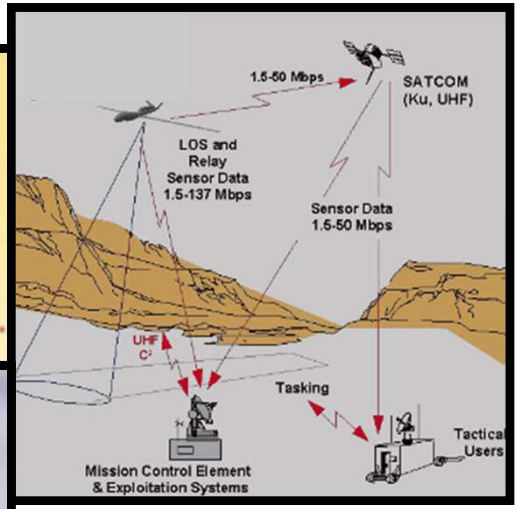
Air Movement and Resupply of Ground Forces

Aviation Capability Gaps

Protect Aerial Systems and Aircrews from Threat Weapon Systems

Aviation Communications and Data Management





Questions?

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PROGRAM EXECUTIVE OFFICE AVIATION

CHINOOK CARGO HELICOPTERS

Army Aviation Industry Days Exposition

JENNIE E. CONLON
COL, AV
Project Manager, Cargo Helicopters

6-8 August 2024

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PM CARGO Helicopters

Program Update

- Final 5 CH-47F aircraft in production
- CH-47F Block II EMD activities complete; MS C FY25
- Congressional CH-47F Block II aircraft procurement 2020-2024
- First production representative CH-47F Block II accepted by USG
- Global demand for CH-47F Block II is increasing

Sustainment of Enduring Fleet

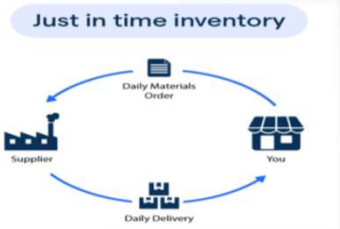
- Historically, aircraft sustainment relied heavily on production
- Fielded CH-47F require OCSM or overhaul to extend the life of a 20+ year old aircraft
- Modernization updates through obsolescence

CH-47F Legacy Radios
ARC-186 ARC-164

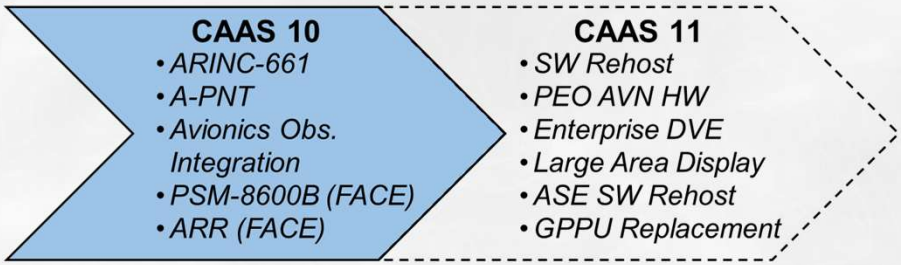
Product Improvement Program (PIP)
ARC-231A

Supply Chain Concerns

- Supply Chain
  - Second source opportunities
  - Increasing raw material costs and lead time for parts drive cost and schedule unpredictability
- Proactive obsolescence management to reduce risk



MOSA & Future Capability



- Use of MBSE processes and tools to integrate cross-platform capabilities
- CAAS architectural alignment with UH-60M, CH-47F, MH-47G

Quality and Affordability are key U.S. Army metrics that OEM and sub-tier suppliers must prioritize

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Closing Comments & Questions

PEO Aviation
Meeting Request

http://www.army.mil/peoaviation

http://facebook.com/peoaviation

https://www.dvidshub.net/unit/PEO-A

https://www.linkedin.com/company/peo-aviation

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PROGRAM EXECUTIVE OFFICE AVIATION

UH-60 ★ UH-72 UTILITY HELICOPTERS

Black Hawk Modernization

Fort Novosel
Army Aviation Industry Days

COL Ryan Nesrsta
Project Manager
Utility Helicopters Project Office

07 August 2024

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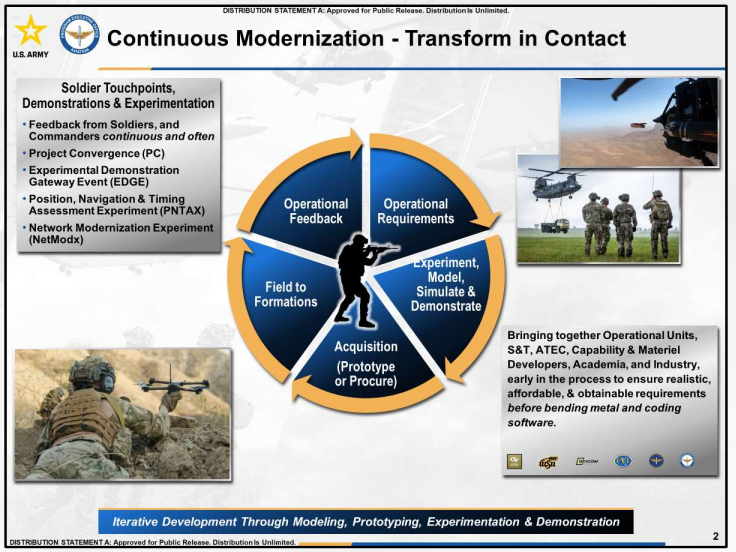
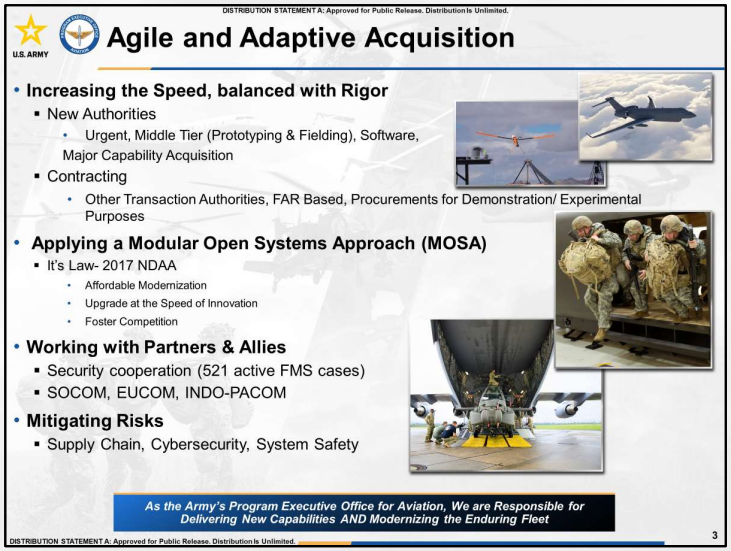
Black Hawk Focus Areas – Continuous Modernization

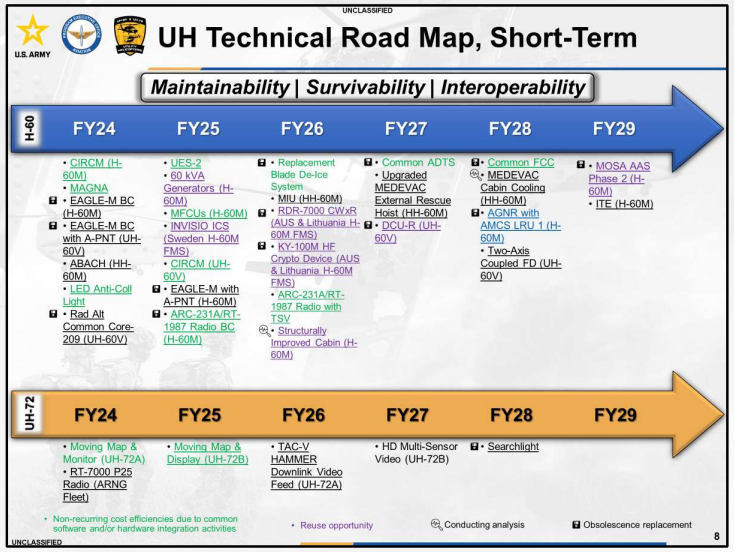
- Primary / Secondary Structural Upgrades and Digital Backbone
- MOSA Avionics Architecture Solution (AAS)
- Defense Advanced Research Projects Agency's (DARPA) Aircrew Labor In-Cockpit Automation System (ALIAS) and UHPO Technology Transition Agreement (TTA)

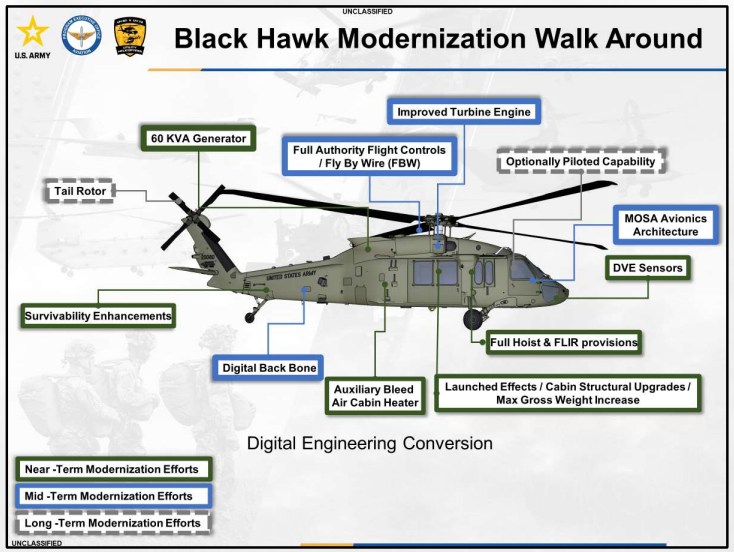




Black Hawk Focus Areas

- Primary and Secondary Structural Upgrades and Digital Backbone
  - Design and qualify the necessary primary and secondary structural enhancements
  - Permits integration of medium and large Launched Effects (LE)s for external deployment wing / cabin mounted configuration
  - Executing integration of digital backbone with nodal access points for rapid integration of future capabilities



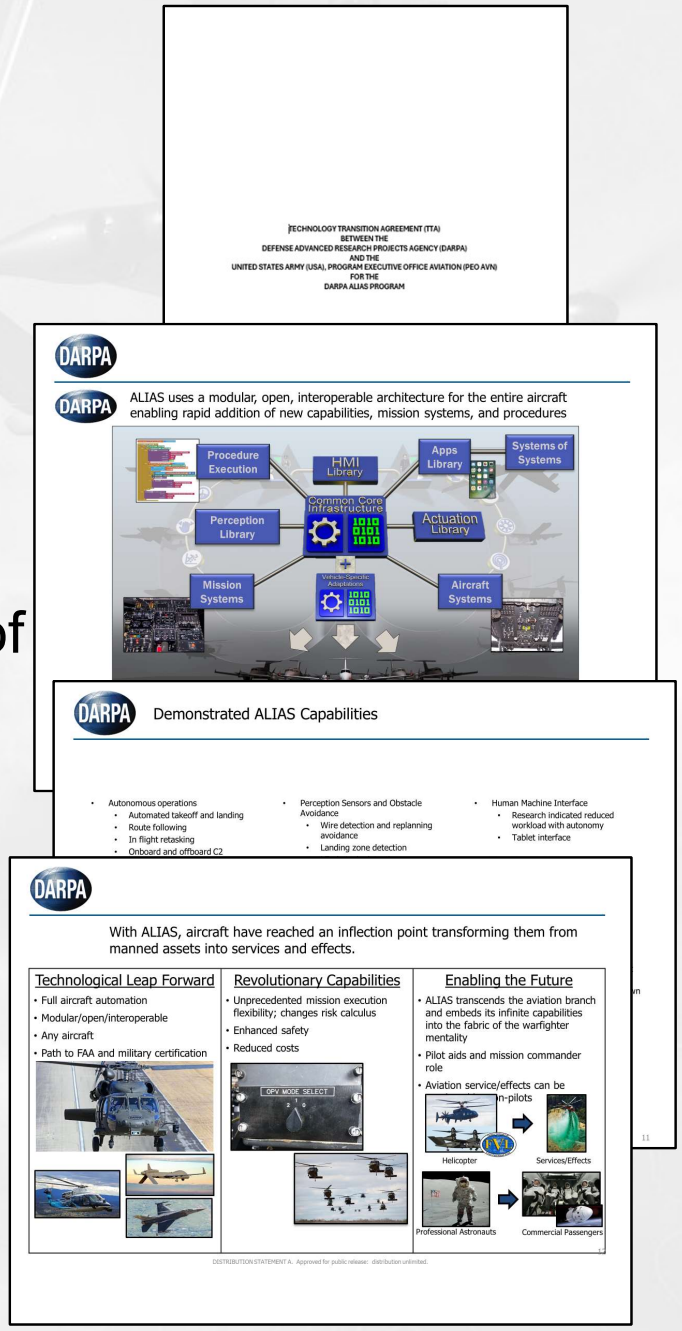


Black Hawk Focus Areas

- MOSA Avionics Architecture Solution (AAS)
  - Current 60M architecture is proprietary – significant cost and time to complete upgrades
  - UHPO, TAPO, and Cargo collaborating to upgrade avionics architecture and implement MOSA priorities and mitigate obsolescence
  - The MOSA AAS effort will be executed in three phases:
    - Phase 1 – digital engineering outputs – key enablers for portability and reuse components across other platforms
    - Phase 2 – addresses obsolescence and establishes avionics infrastructure: facilitates rapid insertion of new capabilities
    - Phase 3 – interoperable avionics and mission system capable of maneuvering in Large Scale Combat Operations and rapidly integrate new technologies to support Army 2040

Black Hawk Focus Areas

- Defense Advanced Research Projects Agency's (DARPA) Aircrew Labor In-Cockpit Automation System (ALIAS) and UHPO Technology Transition Agreement (TTA)
  - TTA in collaboration with U.S. Army Combat Capability Development Command (CCDC) to support continuous modernization of Army Aviation – increased survivability and lethality of future fleets
  - ALIAS – platform agnostic; demonstrated effectiveness in various experimentation exercises (Project Convergence and EDGE)
  - ALIAS technology, with other ongoing mission adaptive autonomy efforts conducted by CCDC and DoD, will inform requirements for an optionally piloted capability for FLRAA



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PEO Aviation

http://www.army.mil/peoaviation

http://facebook.com/peoaviation

https://www.dvidshub.net/unit/PEO-A

https://www.linkedin.com/company/peo-aviation

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PROGRAM EXECUTIVE OFFICE AVIATION

LONG RANGE ASSAULT AIRCRAFT

FVL

Future Long Range Assault Aircraft (FLRAA)

Program Update for AVN Industry Days

COL Jeffrey Poquette
Project Manager
PM FLRAA

6-8 August 2024

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FLRAA Project Office Organization

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Secretary of the Army

GEN Randy George
Chief of Staff of the Army

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Aviation

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Project Manager

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Product Support Manager

Dan Gadomski
Business Chief

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Technical Chief

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Development and Production, Product Manager

LTC Zachary Keefer
Modernization, Product Lead

Mark Caskey
Program Planning & Control Division

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FLRAA Characteristics

- **Transforms Army Aviation** – Provides the Joint Force and Soldiers with transformational capabilities in **speed and reach**.
- **Twice as Far, Twice as Fast** – A next generation aircraft that **flies further and faster** than any other Army vertical lift aircraft.
- **Unrivaled Patient Evacuation Capability** – Nearly **doubles** the range of the Army's current "Golden Hour."
- **Upgradeable** – The Army's commitment to a Modular Open Systems Approach (MOSA) will provide commanders with **faster fielding** of innovative, threat-based capabilities with commonality across mission systems, and rapidly integrate future capabilities. This will enable partner Nation capability integration into the architecture.
- **Affordable** – Through competition, the Army acquired data deliverables and licensed rights necessary for **affordable acquisition and system sustainment** over the life cycle.
- **Sustainable** – Pairing an Intellectual Property (IP) and MOSA strategy - Enables **organic maintenance, increased part commonality, and guards against potential obsolescence.**

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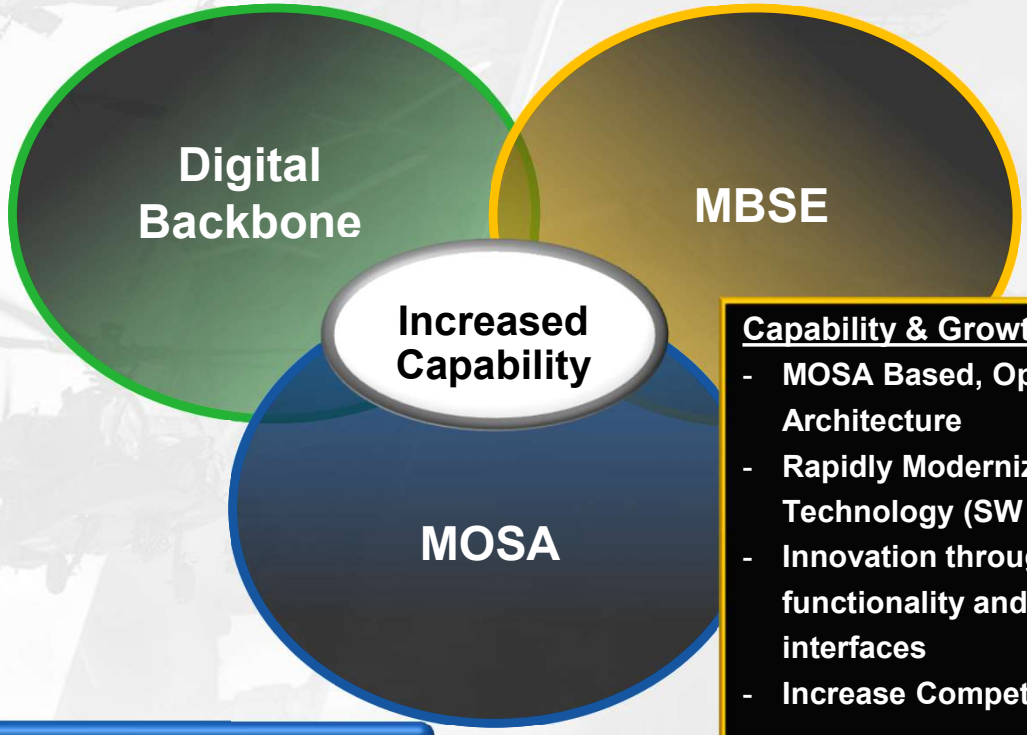
FLRAA Today

FLRAA enables multi-domain operations

- Flies 2x further and 2x faster than any other Army vertical lift aircraft
- Provides Air Assault, MEDEVAC, and Support to the maneuver force
- Able to operate in a contested and ever-changing environment.



Capability & Growth Potential

- MOSA Based, Open Architecture
- Rapidly Modernize & Refresh Technology (SW & HW)
- Innovation through modular functionality and defined interfaces
- Increase Competition

JMR Technology Demonstrations

AoA

ADM

CDD

MOSA Risk Reduction

Competitive Demonstration Risk Reduction

Design / Develop / Deliver INC 1

Modernization Concept

Design / Develop / Deliver INC 2

RFI | RFI #2 | RFP | CAs

INC 2 PDR | INC 2 CDR

Technology Maturation, Component Qualification, & SIL Integration | System Design & Aircraft Integration | Flight Test and Qualification | Increment 2 production line insertion

Engineering Services

INC 2

Increment 2 - *Spiral Technology Insertions & incremental upgrades; Alignment of enterprise modernization & MOSA objectives; Exportability for foreign partners*

• Advanced Mission Systems • Human / Machine Interaction • Launched Effects • Improved Survivability Improved Computing Environment & Card Based Solutions

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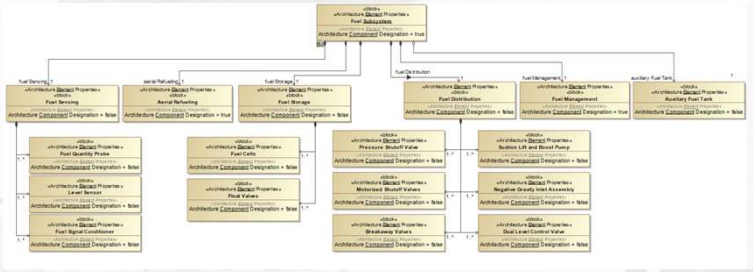
"Born Digital"

Model Based System Engineering

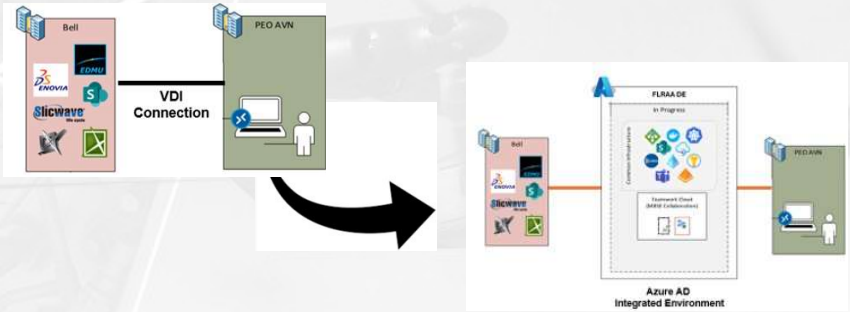
Using system modeling tools for system requirements and architectures



Forces rigor in system definition

Digital Environment

Virtual environment that enables right time access to data



Enables increased collaboration and reduces schedule inefficiencies

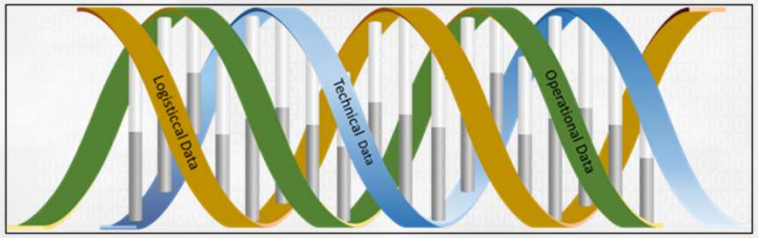
Digital Twin

Using system modeling tools for system requirements and architectures

Provides means for system analysis throughout the lifecycle without the need for a physical system

Digital Thread

Aggregated up to date data from different source systems with associated relationships (i.e. correlated design data)



and allows for change analysis given traceability

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Special User Evaluation

- Twelve (12) planned events during the system's design, development, and testing. Objectives set based off when user feedback can influence the design trade space.
- First Special User Evaluation completed in NOV 2023; planning the second for SEP 2024.
- User-centered design and human interface.
- Mix of air vehicle mock-ups, augmented reality simulations, systems integration laboratory rigs, and engineering simulations.
- Foundation to obtaining early, iterative, and substantiated user feedback.
- Steering committee contains various organizations across the enterprise; including, but not limited to, the PMO, CFT, AV CDID, RTC, and ATEC.

Soldiers entering the cabin mockup during Solder Engagement #1. An objective was to evaluate the step design for ingress & egress.

Soldier input is critical during the design, development, and testing processes.

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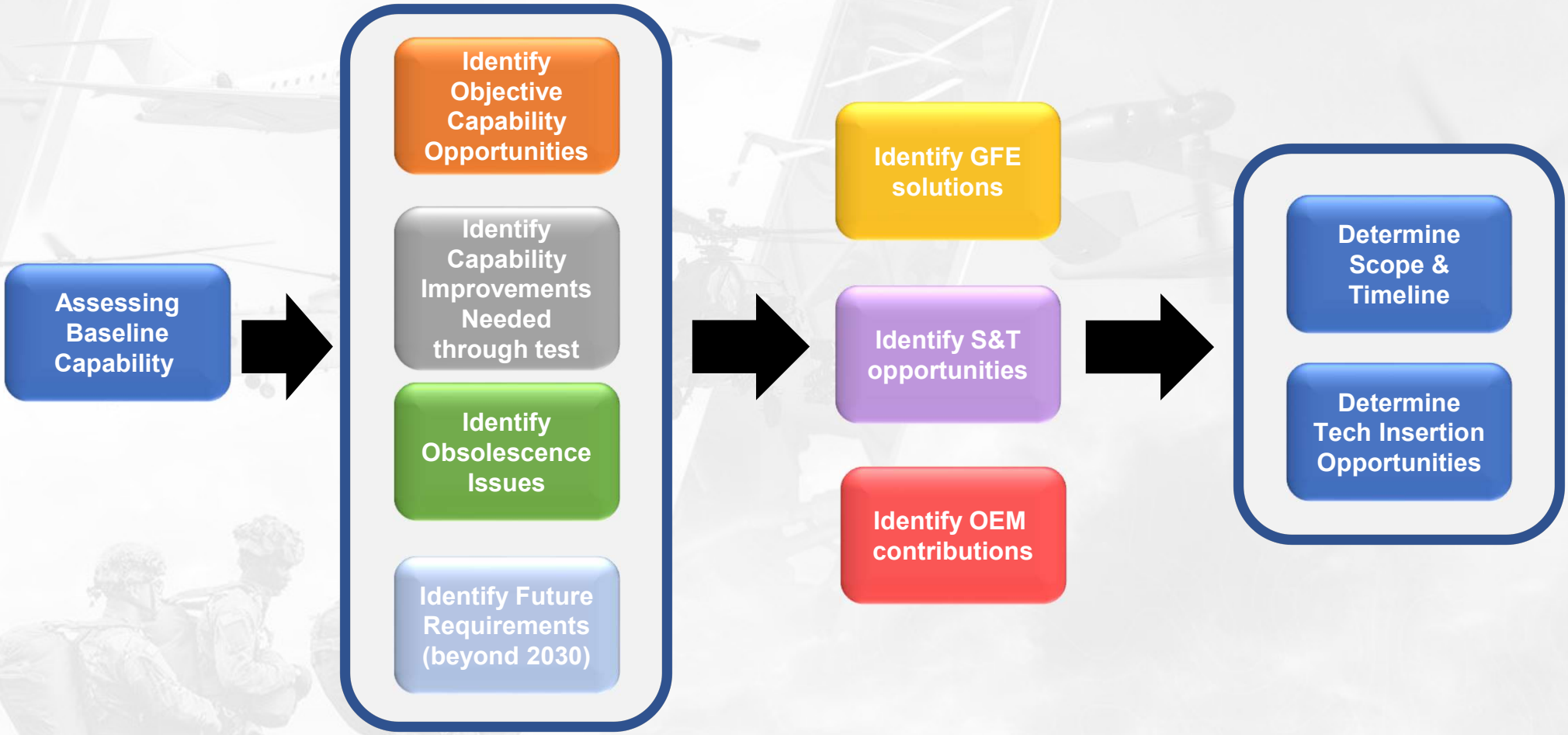
Modernization Strategy



Developing Modernization roadmap <u>now</u> to mitigate risk to the overall program; FLRAA Modernization Office provides technology insertion points

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Modernization Technology Domains

Identification:
- Civil and Military, to include ADS-B In/Out and M5L2-B (In/Out)

Communications:
- Line of Sight (LOS): VHF-AM/FM, SINCGARS, Havequick (I/II/Non-NATO), SATURN
- Beyond LOS: SATCOM (Single Channel), DAMA, IW, MUOS
- Advanced Teaming: BE-CDL (up to Ku band), future Modes 303 and 401

Sensors:
- Capable of providing:
  - Weather penetration in Degraded Visual Environment (dust/brownout, snow, etc.)
  - Terrain following / terrain avoidance through DVE conditions
  - Situational awareness
- Multipurpose sensors

Pilot Interfaces:
- Helmet mounted displays (binocular) compatible with HGU-56
- Design Assurance Level (DAL) A for pilotage

Mission Processing:
- Multi-core-based DO-297
- Sensor fusion, graphics processing, & networking that is hardware agnostic

Navigation:
- Civil & Military Navigation
- Capabilities to support GPS-denied environments

Operating Systems & Software Applications:
- ARINC 653
- FACE™ applications

Modernization technology solutions must:
- Support reduced size, weight, power, and cooling (SWaP-C)
- MOSA Objectives – allow for the insertion of new technologies with minimal modification of existing power, data, and software
- FVL Architecture Framework (FAF) – system specifications based on MOSA architecture strategy to build system architecture
- Digital / Model Based Systems Engineering – enables faster data creation & data review
- Intellectual property – creative strategies should positively impact lifecycle cost and readiness

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PROGRAM EXECUTIVE OFFICE AVIATION

LONG RANGE ASSAULT AIRCRAFT FVL

QUESTIONS

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PROGRAM EXECUTIVE OFFICE AVIATION

PM UAS Industry Day Brief

NEVER A FAIR FIGHT

UAS

UNCREWED AIRCRAFT SYSTEMS PROJECT OFFICE

8 August 2024

COL Danielle R. Medaglia
Project Manager
Uncrewed Aircraft Systems

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C2E

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Deputy Product Lead (A)
UVSS

Vacant
Deputy Product Lead
UVSS

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PM UAS Mission Statement

REVOLUTIONIZING *the Battlefield by Delivering Uncrewed Weapon Systems that Extend* ***Operational Reach***

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PM UAS Relationships and Approach

Integrated Capabilities

- Uncrewed Vehicle Control Software Backbone (SCI and RAC2)
- Payloads and Air Vehicles; Shared Interfaces
- UAS Family of Systems MOSA Architecture

Established Relationships

- Aviation CDID
- Maneuver CDID
- Fires CDID
- Sustainment CDID
- Intelligence CDID
- Cyber CDID
- PEOs IEW&S, M&S, C3T
- Marine Corps
- S&T: GVSC, TDD-A, C5ISR, SCO
- SIMO & TAPO
- INSCOM
- Navy
- ISR TF

PM UAS product
Non-PM UAS product

Shared Interfaces and Dependencies
Revolutionize *the Battlefield*

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Breadth of the PM UAS Portfolio

Division/Corps Assets

Provides dedicated Strategic Reconnaissance, Surveillance, and Target Acquisition (RSTA) supporting the ISR process. Full Motion Video (FMV), Signals Intelligence (SIGINT), Synthetic Aperture Radar, Ground Moving Target Indicator Radar (SAR/GMTI), comms, and weapons.

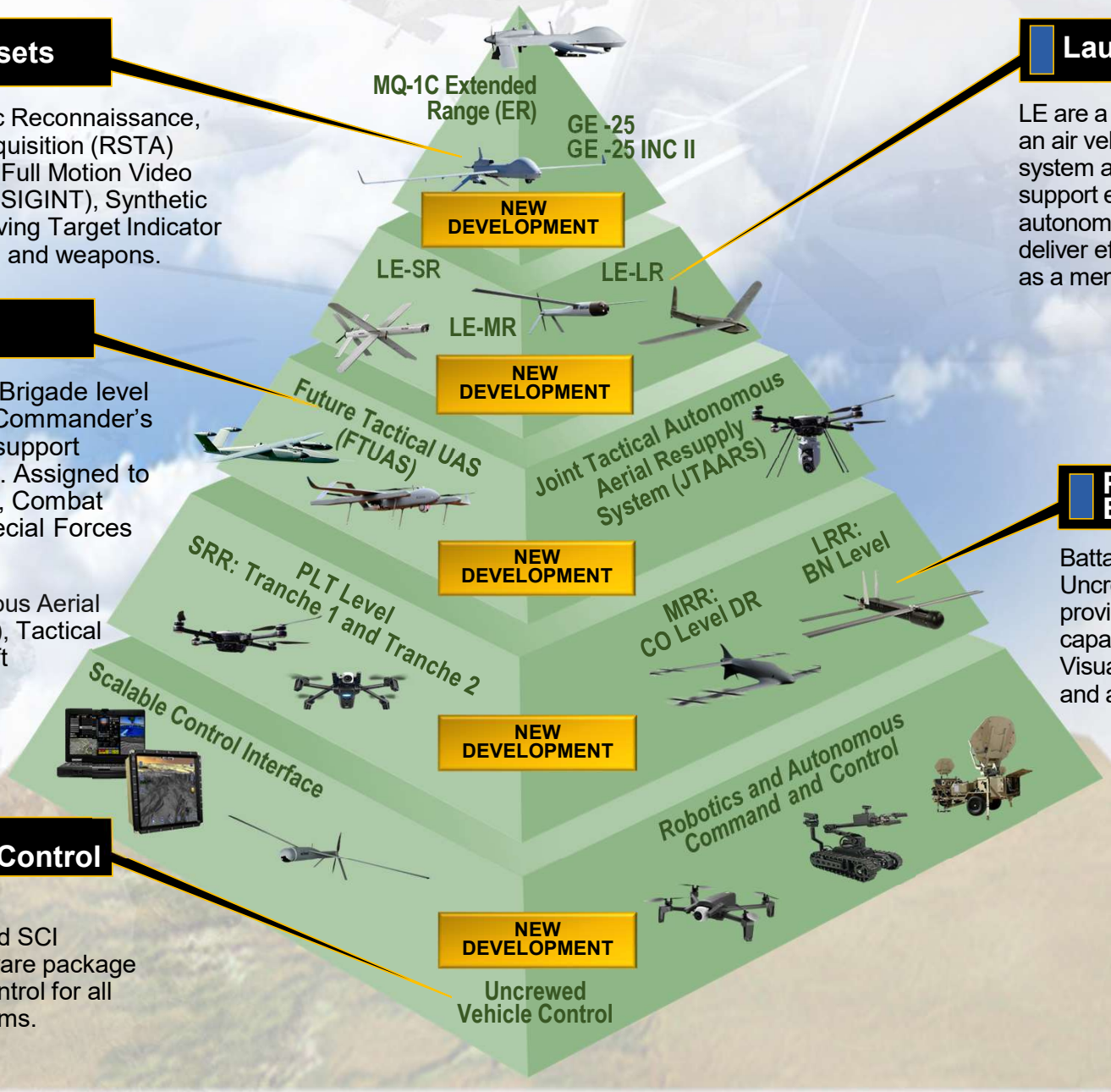
CAB/BCT Assets

Provides organic RSTA at Brigade level and below supporting the Commander's COP. Mission Configured support including FMV and comms. Assigned to the Brigade Combat Team, Combat Aviation Brigades, and Special Forces Group/Ranger Regiment.

The Joint Tactical Autonomous Aerial Resupply System (JTAARS), Tactical Resupply Unmanned Aircraft System autonomous aerial cargo delivery system.

Uncrewed Vehicle Control

Aligns development efforts and capabilities of RAC2 and SCI programs into a single software package to provide command and control for all ground and air robotic systems.



Launched Effects (LE)

LE are a family of systems consisting of an air vehicle, effector payload, mission system applications, and associated support equipment designed to autonomously or semi-autonomously deliver effects as a single LE vehicle or as a member of a team.

Platoon/Company/ Battalion Assets

Battalion and Below Small Uncrewed Aircraft Systems provide the organizations capabilities to perform Beyond Visual Line of Sight, RSTA, and a variety of capabilities.

Uncrewed Aircraft Systems

Questions