



Army Futures Command

Command Brief

Creating a New Culture of Innovation

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The World has Changed...

- The period of U.S. military dominance that followed the end of the Cold War is fading. So, too, are the circumstances that mitigated the risk of inter-state war.
 - Challenges to rules-based international order
 - Shifting balances of economic power
- Meanwhile, the **character of war is changing**. Our Army may be challenged by a convergence of factors, including technology advances that change how we fight:
 - Low-cost sensors
 - Precision-strike technology
 - Robotics
 - Biology
 - Artificial intelligence
 - Autonomy
 - Directed energy
 - Quantum computing and information

"We know there's a multitude of emerging technologies that are going to have, whether we like it or not, impact on the conduct of military operation. It is this command . . . that is going to determine victory or defeat." -Chief of Staff of the Army GEN Mark A. Milley



The Problem Statement

The operational problems

- **Failure to anticipate threats.** Over the past 20 years, potential peer-state adversaries have invested heavily to modernize their forces to overmatch us.
- **Eroded overmatch.** Over the same period the Army has been losing its overmatch. The current Army modernization enterprise moves too slowly to maintain or regain overmatch.

The institutional problems

- **Lack of a coherent vision of the future.** Various components of the modernization enterprise are developing capabilities against different, and frequently contrasting views of the future, across different time horizons.
- **No one is driving the Army toward the future.** Army resources, from funding to senior leader energy and focus, are captured by near-term demands.
- **Industrial-age processes.** Dysfunctional and outdated processes in capability development & research, development, and testing.
- **Lack of unity of command.** No single person below the SECARMY/CSA level can say “yes” while too many can say “no.”
- **Slow delivery.** Average development time between MDD and IOC spans 17 years and the average time required to fully field a capability to every unit is 25 years.

“Success no longer goes to the country that develops a new fighting technology first, but rather to the one that better integrates it and adapts its way of fighting . . .”

-The National Defense Strategy (2018)



What is the Army Futures Command?

Secretary of the Army Esper established the Army Futures Command (AFC) in General Orders 2018-18, signed 4 June 2018. In that order, Secretary Esper charges the new command with leading the Army's future force modernization enterprise (FFME).

Key functions include:

- Early and iterative assessment and integration of the future operational environment, emerging threats, and the “art of the possible” from new science and tech advances
- A highly unified and integrated approach to developing and delivering concepts, requirements, and future force designs
- Posturing the Army for the future by
 - Setting strategic direction
 - Integrating the FFME
 - Aligning resources to priorities
 - Maintaining accountability for modernization solutions

“The Army Futures Command will deliver reliable and decisive capability to the hands of Soldiers faster.”

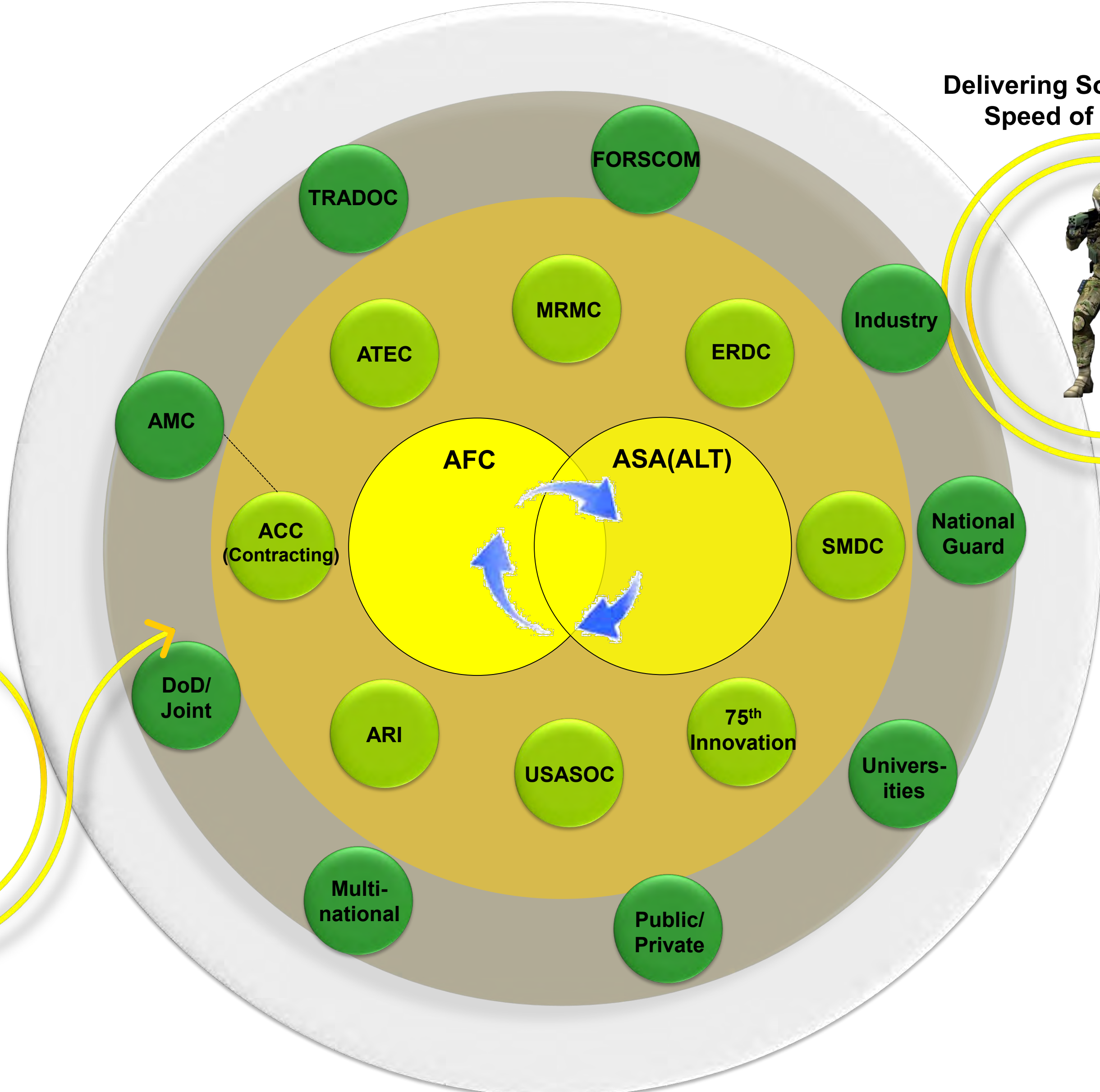
-LTG Jim Richardson, Deputy CG, AFC



Unified Enterprise Approach to Army Modernization

National Defense Strategy, Army Strategy, and Congressional input inform the Army Modernization Strategy

Army Modernization Strategy drives the FFME



Delivering Solutions at the Speed of Relevance





Army Futures Command: An Integrated and Iterative Framework for Discovery, Invention, and Innovation

Need: Create a culture that unifies talent, capabilities, and infrastructure across the FFME to strategically & effectively develop and deliver future force

Iteration of Materiel & Non-materiel Elements:
Early, data-driven modeling, experimentation, science & technology demonstrations, testing, and analysis reduces risk by developing operationally valid, defensible requirements.

Concept

- Identify Need
- Analysis
- Modeling
- Minimum Viable Products
- Experimentation
- Testing
- Validation
- Tactics, Techniques, & Procedures

DOTMLPF-P

Integrated materiel & non-materiel elements

Acquisition

Desired Warfighting Effects

Materiel

Requirements

AFC Promotes Iterative and Integrated Teaming Across FFME



CFTs: Teaming for Impact

- **AFC** is based on the principles of being **strategic, effective, innovative, agile, unified, and faster**.
- **CFTs** demonstrate transformational **AFC principles in action** and can enable the culture shift to unity of effort across the FFME.
- **CFTs** are empowered & **integrated teams** of Requirements, Acquisition, Science and Technology, Test and Evaluation, Resourcing, Contracting, Costing, and Acquisition Logisticians expertise.
- **CFTs** also demonstrate **integration of the FFME**, including U.S. Army Forces Command, other Army Service Component Commands, and leveraging of industry and academia.



Next Generation Combat Vehicle (NGCV) CFT - Soldiers and science and technology experts team on Robotic Combat Vehicles (RCV) experimentation.

CFTs successfully demonstrating the benefits of empowered military and civilian teaming on Army Modernization priorities



A Vision to Build the Future. Together.

On a future battlefield...

...a young company commander looks back to 2018 and thanks the Army's Leadership for having the courage to reorganize the Army and stand up Army Futures Command because she/he was just part of the last battle of a short, sharp, successful joint campaign against a near-peer nation state.

And the thing that young company commander is most thankful for is that he/she had the tools necessary to dominate in the unforgiving crucible of ground combat and bring every last Soldier home to the families that trust us with the lives of their sons and daughters.





Army Futures Command

BACKUP



Development of the Abrams, Bradley, and Apache started in the 1960s



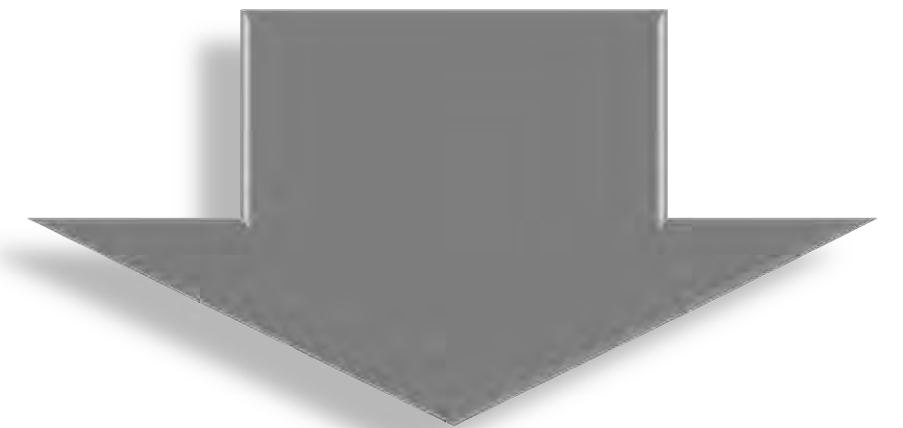
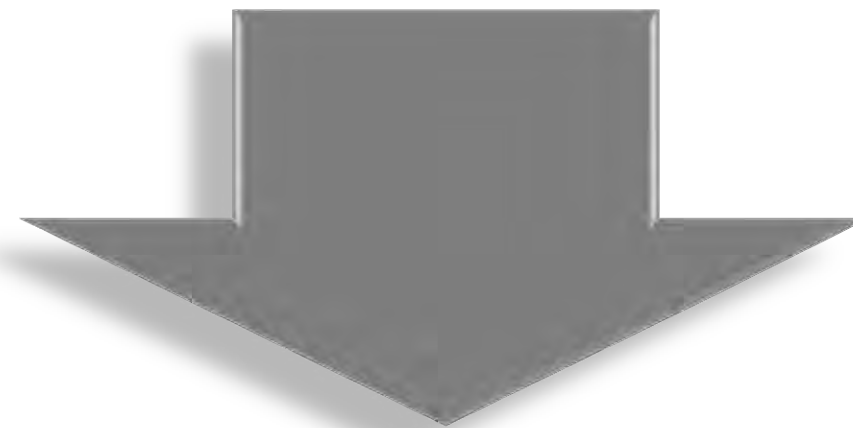
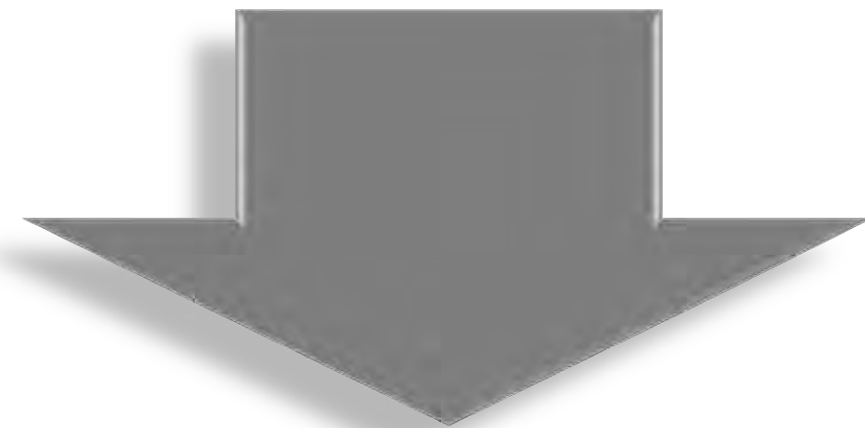
MBT-70 program



XM-701 (MICV-65 program)



AH-56 Cheyenne program



M1 Abrams



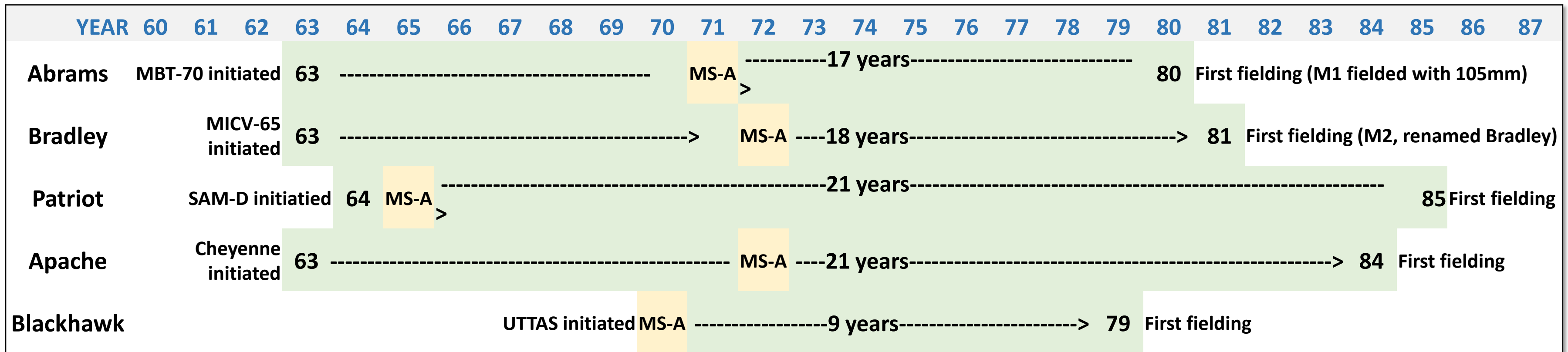
M2 Bradley



AH-64 Apache



Most Army “Big 5” programs took 17-21 years to develop and field



Program initiation, Milestone A (MS-A) equivalent, and first fielding for each “Big 5” program

- Development of the Abrams, Bradley, Patriot, and Apache began in the 1960s
 - The Main Battle Tank (MBT) 70 program led to the Abrams
 - The Mechanized Infantry Combat Vehicle (MICV) 65 program led to the Bradley
 - The Surface-to-Air Missile, Development (SAM-D) program led to the Patriot
 - The Cheyenne program led to the Apache
- The Blackhawk was an outlier, but it also represented the least-significant departure from the system it replaced (UH-1 Iroquois, or “Huey” helicopter)



Mission and Principles

Mission statement

**Army Futures Command
Mission: Army Futures
Command leads a
continuous transformation
of Army modernization in
order to provide future
warfighters with the
concepts, capabilities and
organizational structures
they need to dominate a
future battlefield**

Strategic

We must create and deliver focused, prioritized concepts, organizational designs and capabilities to achieve Defense Planning Guidance objectives and meet Army Senior Leader guidance to address mid and long-term challenges.

Effective

We must deliver what warfighters need, when they need it, in a timely and affordable manner.

Innovative

We must create and cultivate a culture that front-loads smart risks through iteration and prototyping.

Agile

We must be willing to fail early and responsibly and learn from our failures and successes. We must be creative and not become victim to a “that is not how we do it here” mentality.

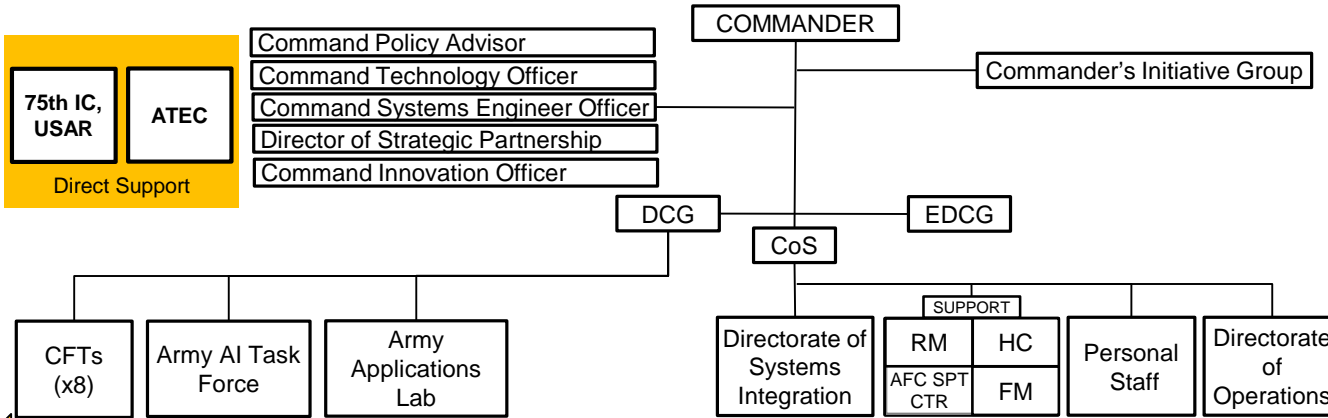
Unified

We must become “one team” with a laser focus on creating speed through shared goals and understanding, disciplined initiative, enabled decision making at the lowest possible level, and delivering valued outcomes for the Army.



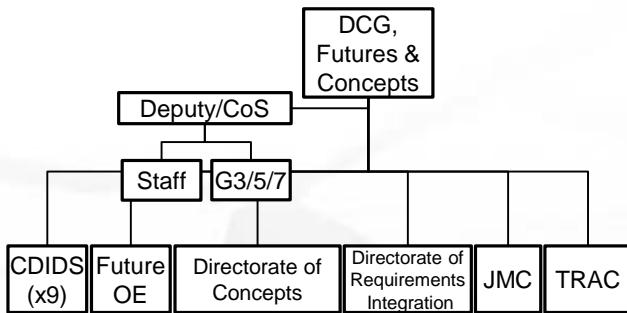
Army Futures Command Task Organization

Mission: Effective immediately, AFC leads a continuous transformation of Army modernization in order to provide future warfighters with the concepts, capabilities, and organizational structures they need to dominate a future battlefield.

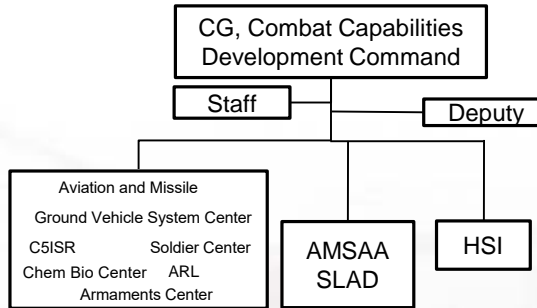


Establishing and maintaining unity of effort, purpose & prioritization across the Future Force Modernization Enterprise

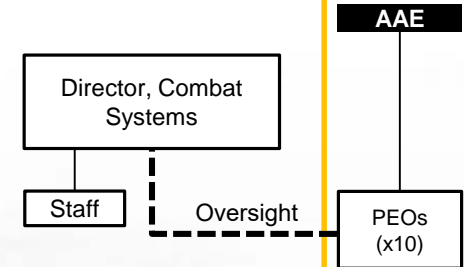
FUTURES AND CONCEPTS



COMBAT CAPABILITIES DEVELOPMENT



COMBAT SYSTEMS



- Develop understanding of the FOE and threat
- Develop concepts and requirements through iterative experimentation and prototyping

- Mature technology
- Allocate resources



Army Futures Command End State

The Army Futures Command develops and ensures delivery of . . .

- better warfighting solutions,
- faster
- with greater return on investment . . .

Strategic impact: the Army's force modernization enterprise is a source of enduring competitive advantage that U.S. adversaries cannot replicate.



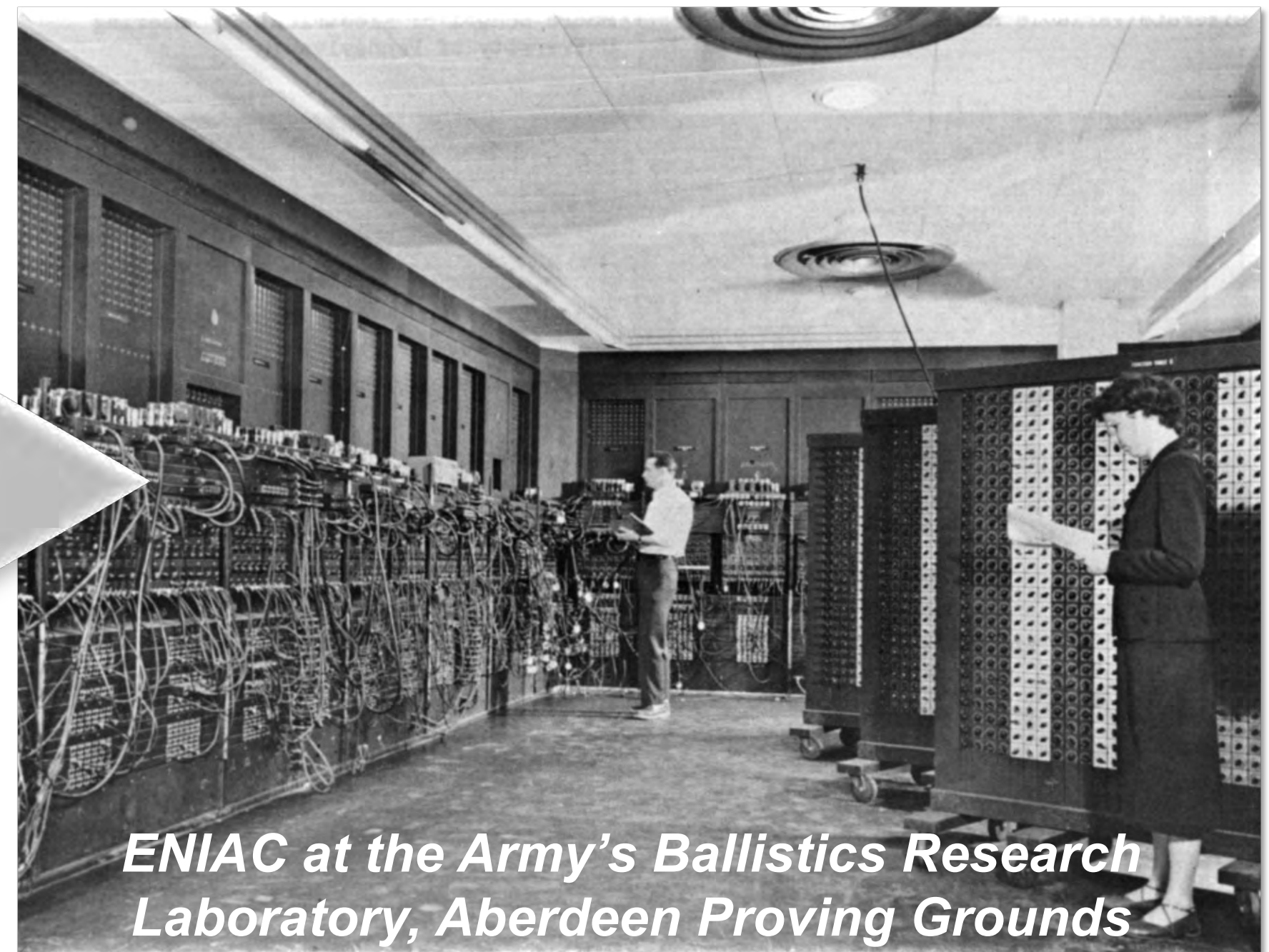
AFC: Drawing on a Legacy of Army Culture & Collaboration

- The Army has always been an **early adopter** of new concepts, technologies, and approaches.
- The Army is the **model for teaming** to accomplish difficult missions on the battlefield.
- The Army has a **legacy of** teaming and **collaboration** with universities and industry to find and develop the best talent and capabilities.



Historic Example

- The U.S. Army and the University of Pennsylvania collaborated to deploy ENIAC, one of the world's earliest electronic large-scale computers.
- It was originally designed to calculate artillery firing tables for the U.S. Army's Ballistic Research Laboratory at Aberdeen Proving Grounds.
- Its first program was a study of the feasibility of the thermonuclear weapon.



ENIAC at the Army's Ballistics Research Laboratory, Aberdeen Proving Grounds

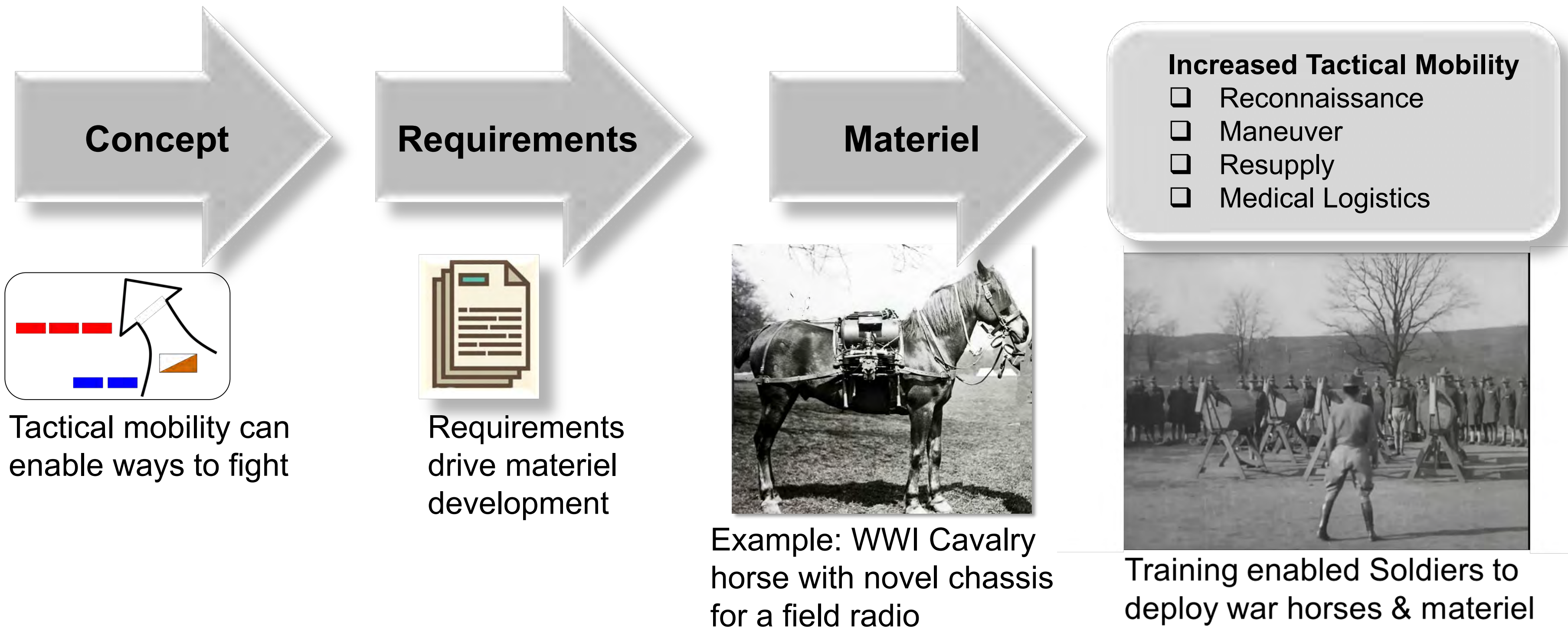


Historic Example of Requirement Development

WWI War Horses as Enablers for Tactical Mobility

WWI Army Need: Greater tactical mobility for Soldiers and their materiel

Linear progression from concept to requirements and materiel



WWI war horses “carried men to battle and wounded men to safety”



Army Futures Command: A Unified Approach to Concepts, Materiel, and Requirements Development

- Develop Valid Requirements Better & Faster
- Move beyond the “Industrial Age” model to be *ahead* of S&T advances
- Embrace “minimum viable products (MVPs)” to iterate, learn, and accelerate delivery of high-impact results
- Enable data-driven decision making through a disciplined approach to collecting, sharing, and analyzing data

FROM:

Concept

Materiel

Requirements

linear, rigid

TO:

Concept

Requirements

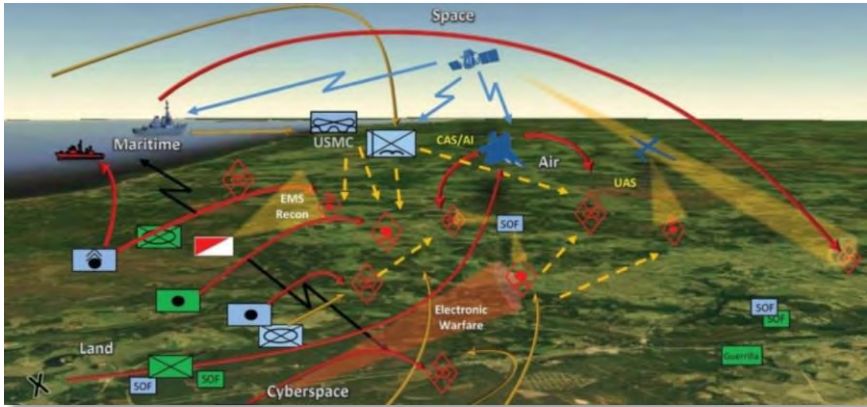
Materiel

iterative, agile



Contemporary Example: Developing Requirements for Manned/Unmanned Teaming

Need: Greater tactical mobility for warfighters and their materiel



Concept

Synchronization of Materiel & Non-materiel Elements: Both warfighter and robots will need to “learn” new and effective tactics, techniques, and procedures



Requirements

Materiel

DOTMLPF-P

Integrated materiel & non-materiel elements

Acquisition

Increased Tactical Mobility

- Reconnaissance
- Maneuver
- Resupply
- Medical Logistics

Materiel: Science & Technology to Produce and Assess Minimum Viable Products Fast



GHOSTROBOTICS

Manned/Unmanned Teaming has transformative tactical mobility potential

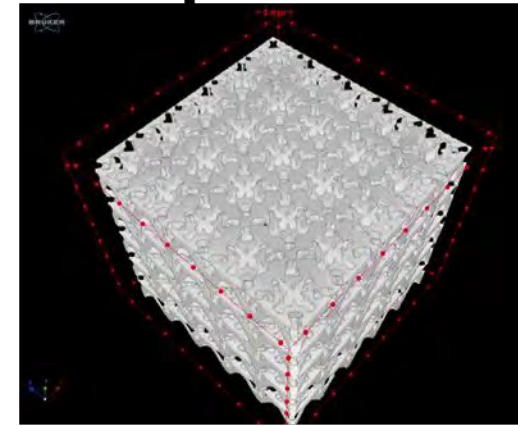


A Culture of Teaming to Develop & Deliver the Best Solutions

Minimum Viable Products & Prototypes



Characterization & Inspection



**Decisive Army Capability
Delivered at the Right Time**

Synthesis & Processing

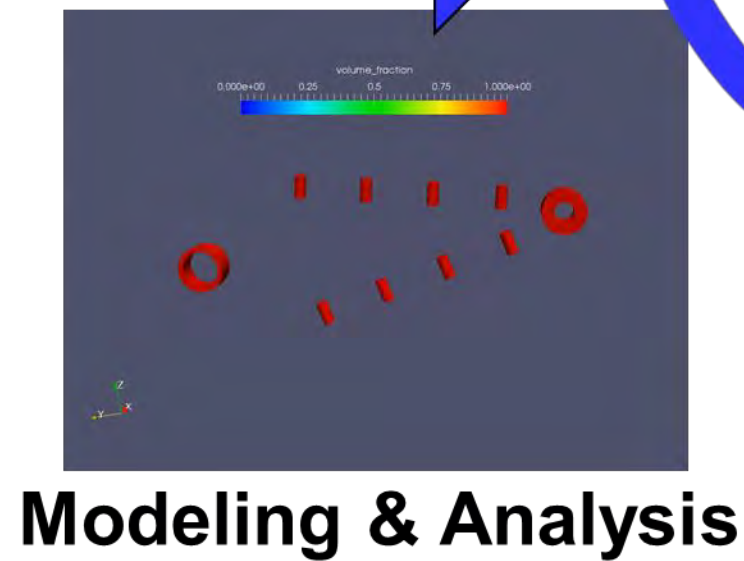


**New Threats and
Opportunities**

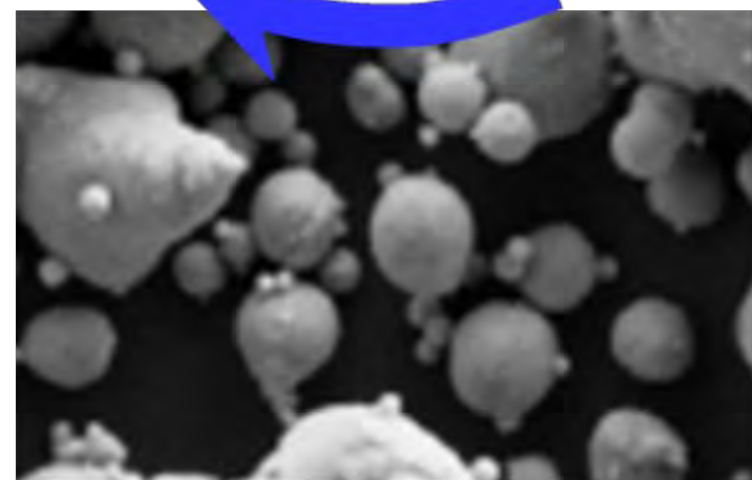
**An Iterative Process
that Develops &
Validates
Requirements and
Rapidly Matures
Science & Technology**

**Enabling Technology for
Future Army Systems**

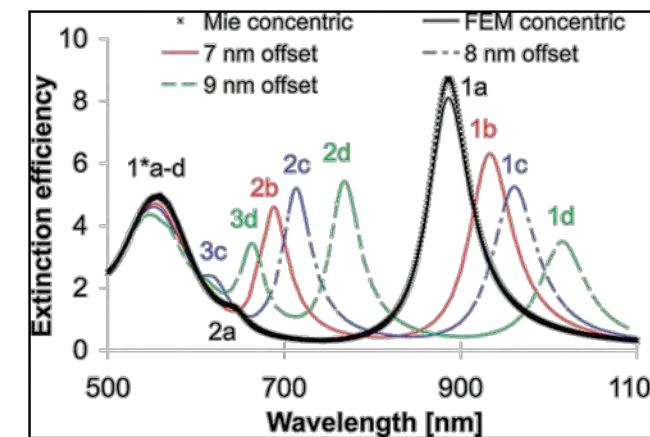
**Concepts
Capabilities
Organizational
structures**



Modeling & Analysis



Foundational Science, Insights, and Discoveries



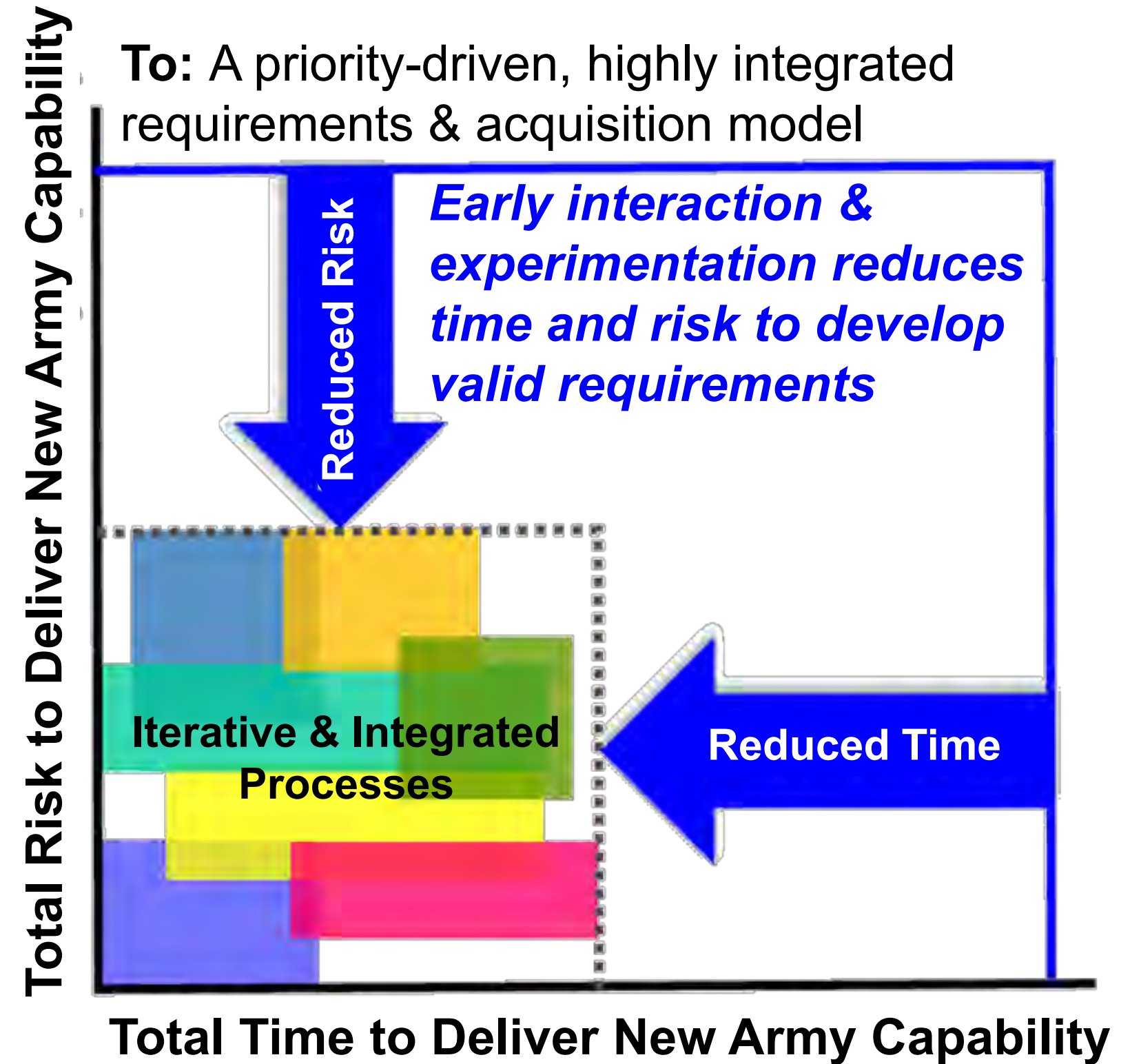
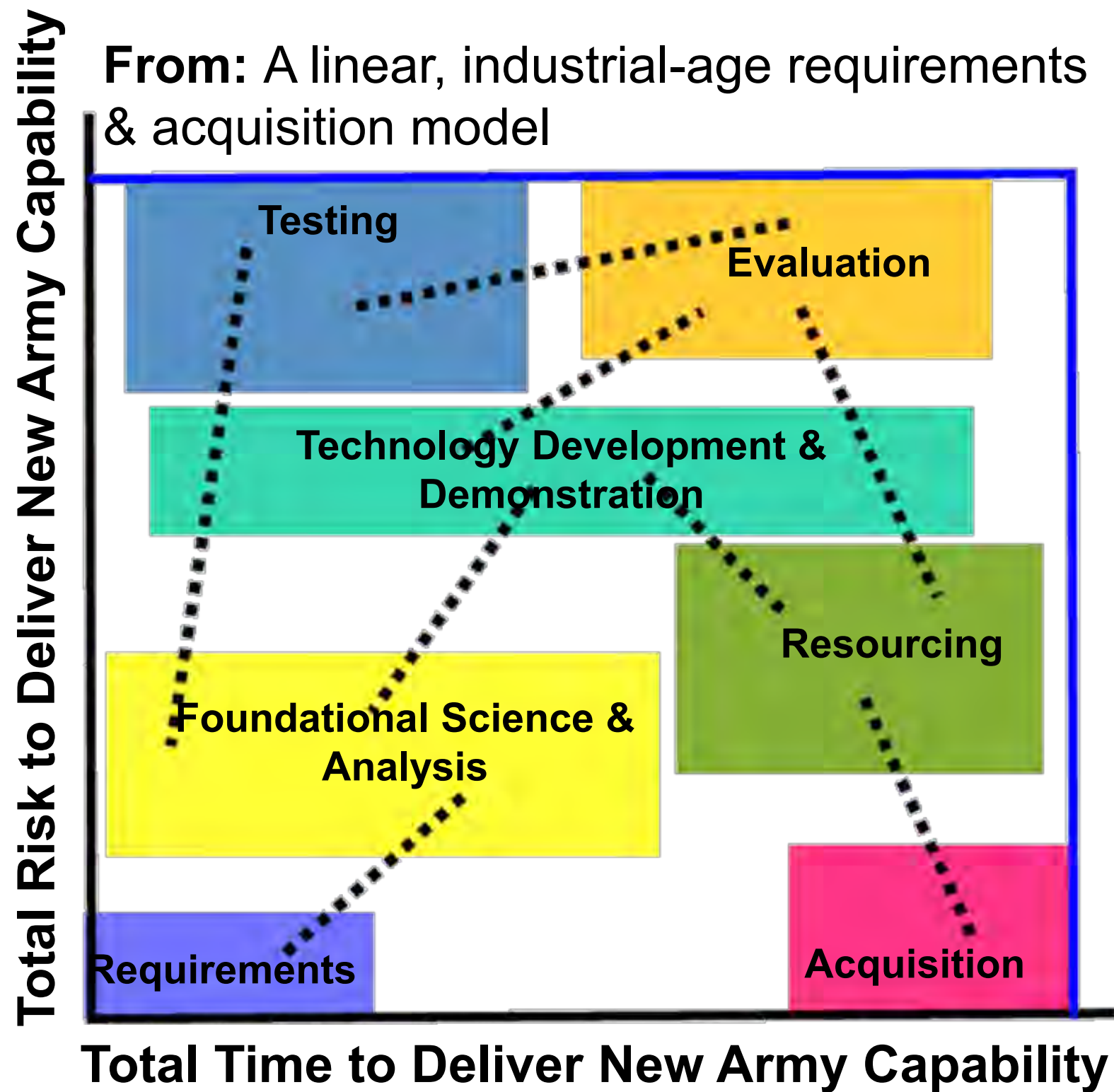
Experimentation, Testing, and Characterization

**Harnessing New Discoveries, Technologies, and
Talent from Universities, Industry, and Public-Private Partnerships**



CFTs: Early Demonstrators of AFC's New Principles & Culture

- Cross-Functional Teams (CFTs) provide examples of **diverse** Army and private sector **talent & capabilities** strategically focused on Army Modernization Priorities
- CFTs promote AFC's **culture shift** to an integrated & iterative exchange of ideas, innovation, and experimentation to reduce the time and risk to deliver validated requirements & solutions



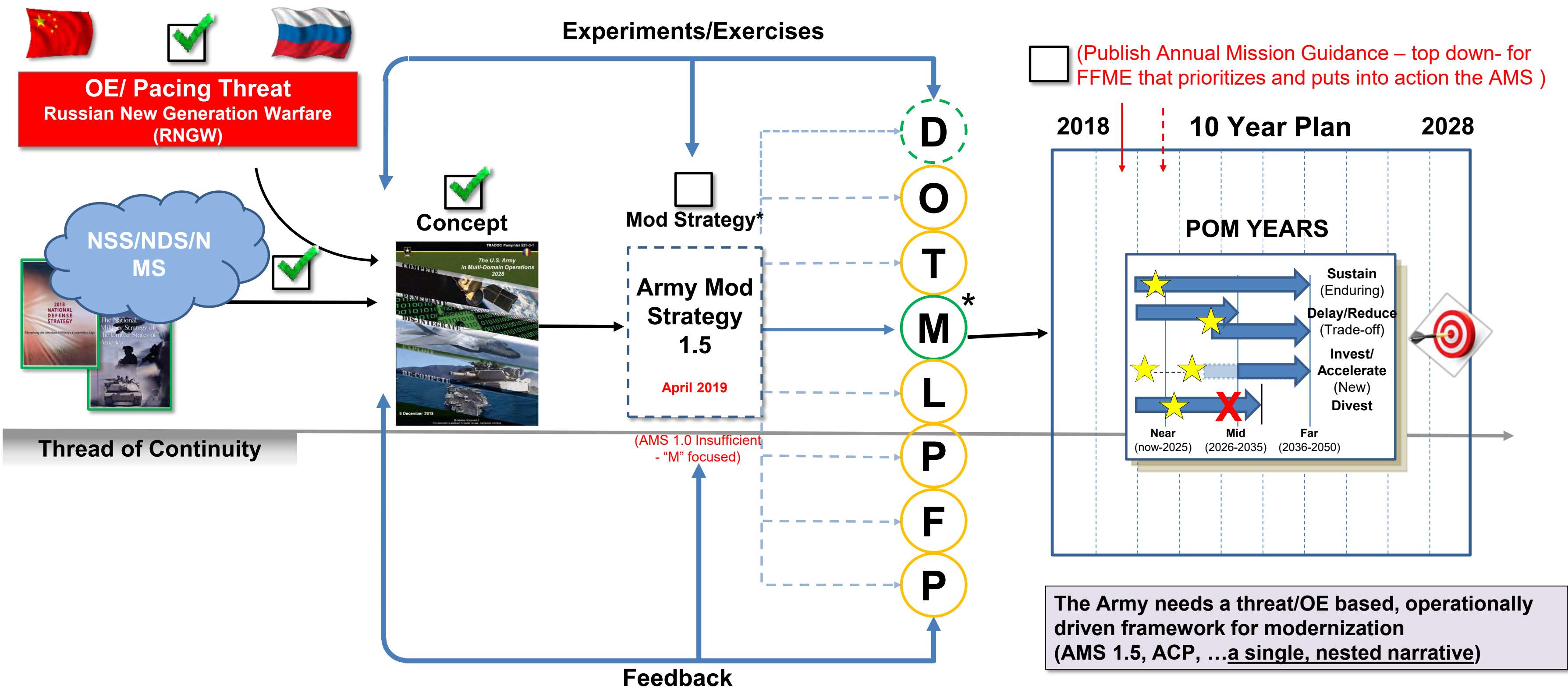
Impact: CFTs demonstrate AFC's **Unity of Effort** to Develop & Deliver the Right Solutions at the Right Time





The U.S. Army Modernization Framework

“The Army of 2028 will be ready to deploy, fight and win decisively against any adversary, anytime and anywhere, in a joint, combined, multi-domain, high-intensity conflict, while simultaneously deterring others and maintaining its ability to conduct irregular warfare”
 - SEC Mark Esper, GEN Mark Milley



*Note: AMS 1.5 must address a comprehensive DOTMLPF-P modernization plan; the current AMS is “M” focused while CAC has sought to maintain doctrinal change commensurate with capability.

Ideally, the AMS becomes an Army guidance document driving the entire enterprise across the ACOMs...potentially serving as the modernization chapter to the ACP (LOE #2 of the Army Strategy)