# *MCoE and M-CDID*

# Industry Day


***The U.S. Army Concept for BCT Cross-Domain Maneuver***

**5 April 2023**

# *Agenda*

- Operational Environment
- BCT Concept Overview
- BCT Concept Implications
- Experimentation Insights
- Sustainment Implications
- Space Implications
- Materiel Development Priorities

# *How the Pacing Threats Will Fight*

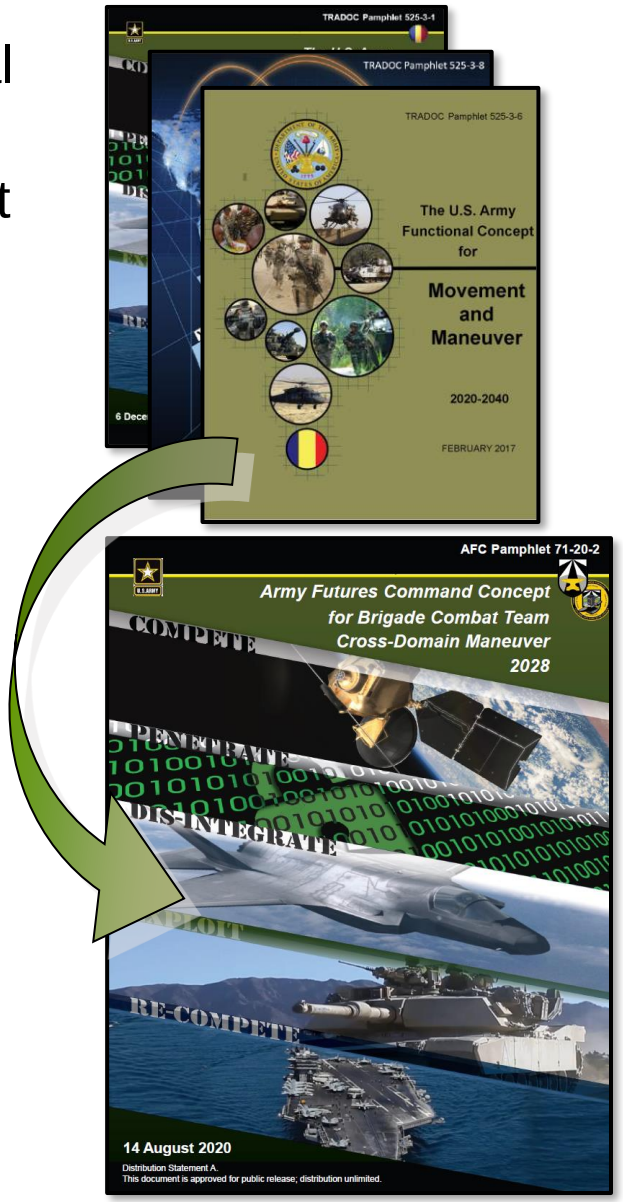
- Employ air-defense systems in depth – hold BCT and DIV ATK AVN, CAS, and UAS at risk
- Employ multifunctional UAVs - armed drones, loitering munitions, and ISR
- Employ layered EW to degrade and disrupt C2 and delay OPTEMPO – win the information fight
- Fight an unbalanced BCT – isolate BCTs and BNs, fight on their own terms
- Technology-enabled reconnaissance – interconnected ground and air sensors to feed standoff engagements

# *How the Pacing Threats Will Fight*

- Fight with multiple and simultaneous forms of contact – seize the initiative and create multiple dilemmas
- Employ layered EW to enable targeting – characterize signatures and accelerate kill chains
- Employ mobile and extended range ATGMs – dive munitions, salvo engagements
- Employ deception and obscuration – way of war – high priority

# BCT Cross-Domain Maneuver Concept Key Ideas

- Describes Cross-Domain Maneuver as the tactical application of MDO.
- Describes necessary changes for BCTs to support MDO
- Serves as the basis for O&O development and BCT modernization.
- Sufficiently broad to permit room for changes as concepts mature.
- Recognizes the role of the Corps and Division to enable BCT Cross-Domain Maneuver.
- Required Capabilities (Appendix B) benchmarked for:
  - Large-Scale Combat Operations
  - Near-Peer Threats
- Breakthrough technological innovations and scientific discoveries linked to BCT Required Capabilities (Appendix C).



# Concepts and S&T Linkages

## Key Required Capabilities

- Conduct Cross-Domain Maneuver
- Execute Command and Control
- Integrate Cross-Domain R&S Operations
- Operate Semi-Independently
- Integrate Enabling Support from Corps and Divisions

Concepts Shaping Science

Science Shaping Concepts

## Future Capabilities

- Mobility and Sustaining
- Robotics and Autonomous Systems
- Deception and Obscuration
- Lethality and Survivability
- AI and Machine Learning


## S&T Objectives

- Inform Concepts Community about scientific discoveries to ground concepts in scientific based, art of the possible.

- Inform scientists about concepts to shape on-going initiatives and inspire research efforts.

# CDD Experimentation Insights

## Execute Command and Control

All Domain Real-time Common Operating Picture is necessary for situational awareness and understanding, timely intelligence processing, exploitation, and dissemination for rapid decision-making and synchronization of effects. Compatibility with Joint and FVEY partner systems will be required.

Command Post and support area physical and electromagnetic footprint must be minimized, distributed, and highly mobile for survivability. Electronic obscuration/obfuscation and deception technology/techniques essential.

## Integrate Cross-Domain Reconnaissance and Security Operations

Unmanned Aerial Systems (UAS) and Counter Unmanned Aerial Systems (CUAS) are essential to intelligence, surveillance, reconnaissance, and target acquisition activities especially as battlespace distances expand and cross multiple domains. Systems should be capable of sensing, identifying, spoofing, and striking.

Air and ground electronic warfare (EW) systems (Support, Attack, and Protection) are necessary to cover expanding distances in distributed operations. Systems like the Terrestrial Layer System enhances or supplements traditional reconnaissance and security with signals identification, classification and direction finding.

# CDD Experimentation Insights

## Operate Semi-independently

Towed artillery and ground-mounted mortar systems are a liability. Every platform must be capable of rapid emplacement, displacement, and self-movement. Ubiquitous sensors increase likelihood of discovery and targeting from multiple domains. The ability to mask signatures and move quickly are essential for survivability.

Wet gap crossing. Bridging assets can be targeted prior to and during employment. Even limited amphibious capability creates freedom of action and creates multiple dilemmas for the enemy.

## Integrate enabling support from Corps and Divisions

Significant collaboration must occur between G2, G3, Space Operations, Special Technical Operations (STO), EW, Information Operations (IO), Civil Affairs (CA), Aviation, and Fires for efficient employment of space-based all-weather sensing capabilities.

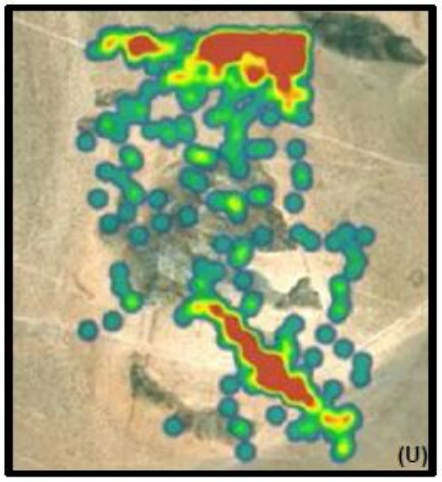
An Integrated Tasking Order, similar to an Air Tasking Order (ATO) will likely be required for planning, resourcing, and deconflicting air and ground EW assets. Competing requests from multiple echelons combined with longer planning times for space-based EW capabilities require a collaborative approach similar to the current ATO process.

# *Sustainment Implications*

- Predictive Analytics and Diagnostics
  - Inbuilt Ability to Predict Demand
  - Self-Monitoring for Preventative Maintenance
- Reduced Footprint
  - Combat-Configured Platforms
  - Autonomous Resupply
- Complex Maintenance Demands
- Energy Density
  - Storage Capacity
  - Electrification

# *Space Implications*

- Denied, Degraded, Disrupted Space Operational Environment (D3SOE)
- Redundancy and Resiliency
  - Position, Navigation, Timing (PNT)
  - Communications
- Emissions Control




Signal footprint of BN sized element

# *Material Development Priorities*

- Artificial Intelligence/ Machine Learning (AI/ML)
- Vehicle Protection Suites (VPS) (CRAM, CsUAS, IED)
- Collective Protection – combat configured
- Networking sensors, lethal and non-lethal systems
- No dumb bullets – fire control for all lethal systems
- BCT organic long-range fires
- Signature reduction in multiple spectrums
- Advanced autonomous robotic systems
- Prolonged endurance