Mission Command Network Modernization

AFCEA
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## CSA’s Principles, Characteristics and Requirements

<table>
<thead>
<tr>
<th>Principles (Why)</th>
<th>Warfighting Requirements</th>
<th>Characteristics of the Network</th>
<th>Technical Network Requirements</th>
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</thead>
<tbody>
<tr>
<td>Mission: The Army must fight and win wars against adversaries…</td>
<td>❑ Able to fight, shoot, move, communicate, protect, and sustain</td>
<td>❑ Simple and Intuitive, single mission command suite (Single COP), installed, operated and maintained by Soldiers</td>
<td>❑ Must be capable of adequate secure communications, provides <em>voice, data, video</em> in all environments</td>
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<tr>
<td>1st Principles: The Army network must enable:</td>
<td>❑ Reliably communicate anywhere, anytime, in all domains, in all environments, against any foe</td>
<td>❑ Available, Reliable and Resilient with the ability to operate in all operational environments against any enemy</td>
<td>❑ Capable of providing situational awareness down to Platoon level</td>
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<tr>
<td>1. Conduct of War: Execution of expeditionary, world-wide, Unified Land Operations (ULO) to shape, prevent, and win as a part of Unified Action in all domains and all environments (Note 1/2/3/4)</td>
<td></td>
<td>❑ Expeditionary and Mobile, voice, data, and video on the move</td>
<td>❑ Device works anywhere in the world; installed, operated and maintained by Soldiers</td>
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<td>2. Preparation for War: Execution of Title 10 responsibilities to man, train, and equip the force, and to build and sustain readiness.</td>
<td></td>
<td>❑ Standards-based, protected, and dynamic network that is upgradeable over time</td>
<td>❑ <em>Standardized</em>: Runs on a COE, common graphics, applications, and integrated data</td>
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<tr>
<td>Note 1: Unified Actions Partners – Consisting of Joint, Interagency, Intergovernmental, and Multi-National (JILM) partners</td>
<td></td>
<td>❑ Enables the Warfighter to Observe, orient, decide, and act faster than the enemy in the conduct of ULO (Note 4)</td>
<td>❑ Ensures <em>continuous</em> Joint interoperability enabling agile and adaptable operational flexibility</td>
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<td>Note 2: Domains – Land, maritime, air, space, cyber</td>
<td></td>
<td>❑ Enables use of the network as a weapon system</td>
<td>❑ <em>i.e.</em>, Enables Rapid Task Organization and employment of joint capabilities</td>
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<td>Note 3: Environments – Permissive, non-permissive, contested, denied</td>
<td></td>
<td>❑ Enables leaders to lead and fight their formations from anywhere they choose</td>
<td>❑ <em>Mitigates</em> electronic signature</td>
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<td>Note 4: ULO – Simultaneous offense, defense, and stability or defense support of civil authorities tasks to seize, retain, and exploit the initiative and consolidate gains to prevent conflict, shape the operational environment and win our nations wars as part of unified action</td>
<td></td>
<td></td>
<td>❑ <em>Accessible</em> to allies and coalition partners</td>
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AMERICA'S ARMY
THE STRENGTH OF THE NATION

Modernization Path

Current State

Future State

Network Modernization Plan

Four Lines of Effort:
• Unified Network
• Common Operating Environment
• Interoperability
• Command Post

Supporting Efforts
• Institutional Reform
• Policies and Governance
• Research and Development
• Science and Technology

• Seamless end-to-end connection and pace plan
• Self-generating, self-healing, multilayered integrated network
• Unified Transport Layer → End User Device
• Unified Mission Command Suite
• Simple and Intuitive
• Available, Reliable and Resilient
• Expeditionary and Mobile
• Standards-based, protected, upgradeable
• OODA Faster than the enemy
• Network is a weapon system

Doesn’t enable mission command
Lacks end-to-end interoperability
Complex and Fragile
EMS Vulnerable
Multiple identities
Crypto mod challenges
Software baselines = interoperability challenges
What is the Army’s Network Modernization Strategy?

**Vision:** An integrated/unified, end-to-end, warfighting network that is flat, fast, mobile and protected which enables leaders to lead and fight their formations from anywhere they choose.

**Ends:** A cascading set of successive future states achieved through four lines of effort:

- Unified Network - Supporting all theater of operations
- Common Operating Environment – Unified suite of mission command applications
- Interoperability – Among all Army elements, Joint and Coalition partners
- Command Posts – Deployable, mobile and survivable

**Ways:** Implement the pillars of “halt”, “fix” and “pivot” across the four lines of effort. Objectives established over time allowing the Army to develop and apply the means to achieve successive future states.

**Means:** Reinvest the funding from the programs halted in FY18 to fix our fight tonight capability (improve readiness) and then shift to focused investments in RDT&E and proven industry, Joint and SOF solutions to pivot to the next generation network.
New Path Forward

1. **Halt** programs that cannot be sufficiently remedied

2. **Fix** programs required to “fight tonight”
   - Command posts → Improve survivability and mobility
   - Transport → Integrate the upper and lower tactical internet into a unified transport layer; increase survivability to Electronic Warfare/Cyber threats
   - Mission Command Application Suite → Common Operating Environment
   - Interoperability → Joint and Coalition gateways and Tactical Data Links

3. **Pivot** to a new adapt and buy approach
   - Design “future state” network to address shortfalls, counter the threat, and keep pace with technology
   - Through experimentation and demonstration, adapt and buy current available Joint/SOF and industry solutions where possible
   - Develop future solutions through RDT&E and S&T; develop new Programs of Record only to meet a unique warfighter requirements

Requires significant change in current acquisition approach; unity of command, effective governance, an integrated body of requirements, and standards based architecture
### Implementation Plan Framework

**Three Phases: to 2020, to 2025, to 2026+**

### 3 – 5 Year Sprints Between Future States

<table>
<thead>
<tr>
<th>Lines of Effort (LOEs)</th>
<th>Near Term Objectives 2017-2020</th>
<th>Mid Term Objectives 2021-2025</th>
<th>Far Term 2026 +</th>
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</table>
| **LOE 1: Unified Network**
  - Converged Mission Command Network
  - Network Augmentation / Extension
  - Synthetic Training Environment | o Network Baseline & Modernization
o Integrated Computing Infrastructure
o Converged Network
o Formation & Platform Integration
o Integrated DODIN OPS & Cyber Security
o Integrated Services (Enterprise & Tactical)
o Protected, Resilient, Survivable Network
o Establish IOC of Synthetic Training Environment | o IOC of Integrated Tactical Network
o IOC of Cloud Services
o Formation & Platform Integration
o Operationalize Cybersecurity
o Achieve Worldwide Spectrum Supportability
o FOC of STE
o Achieve Network Survivability | |
| **LOE 2: Common Operating Environment** | o Deliver and Staff COE Requirements
o IOC of COE
o Deliver STE to MPE
o Deliver COE to STE
o Implement COE Cross-Cutting Capability
o Formation & Platform Integration | o FOC of COE
o Assimilate all Legacy Programs of Record
o IOC of Single Identity and Access Management
o FOC of FIE
o IOC of Unified Network Operations | |
| **LOE 3: Interoperability** | o Joint Interoperability
o Establish Coalition-accessible Network
o Formation & Platform Integration | o FOC of MPE
o Joint and Coalition Policy Review and Mod
o IOC of UAP Secure Voice Interop Solutions
o FOC of COE on MPE Solutions | |
| **LOE 4: Command Posts** | o Implement Command Post Directed Requirement
o Integrated Mission Command
o Establish Integrated CP Design
o Formation & Platform Integration | o IOC of CP12 CP Infrastructure
o IOC of Joint and Multi-Natl MC Nodes
o IOC of Decision Aids
o Formation and Platform Integration | |

**SE: Institutional Reform**

**SE: Policies / Governance**

**SE: Research and Development**

**SE: Science and Technology**

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*A cascading set of successive future states achieved through four lines of effort*