Lessons-Learned About Command Posts

Iron Brigade's Combat-Team Pursuit of Mobile Command-Post Capabilities

by COL Charles Lombardo and MAJ Ken Selby

Command posts (CPs), no matter the formation which sets them up, are a concern for today's battlefield. As GEN Mark Milley, Army Chief of Staff, said at the Association for the United States Army luncheon Oct. 4, 2016, "Our brigade [CPs] must be able to jump within two to three minutes or they will be destroyed."

Since 2nd Brigade Combat Team (BCT), 1st Armored Division, spent the past six years serving as the Army Experimental Task Force (AETF) for the Brigade Modernization Command (BMC) and the Army Capabilities and Integration Center, we have some lessons-learned to share with the force. The Army established 2/1 Armor under BMC to evaluate the network and other Army modernization technologies and to develop tactics, techniques and procedures (TTPs) for their employment.[1]

This article's purpose is to describe the Iron Brigade's final assessment during Army Warfighting Assessment (AWA) 17.1 in October 2016 and to offer potential TTPs to improve expeditionary and uninterrupted mission command (MC), leveraging the Warfighter Information Network-Tactical (WIN-T) Increment 2 network and mobile CP solutions.[2]

Gaps

While 1st Armored Division and 2nd BCT have made great strides in developing expertise for integrating the WIN-T Increment 2 network, the brigade has not been able to make the required progress in developing the entire MC system,[3] particularly the CP's materiel aspects, and in refining the doctrine that tactical echelons use to simultaneously command-and-control combined-arms maneuver and wide-area security in decisive action (DA). The fact that the Standardized Integrated Command Post System (SICPS) is in sustainment phase has further exacerbated the materiel gap in capitalizing on the gains of uninterrupted MC.

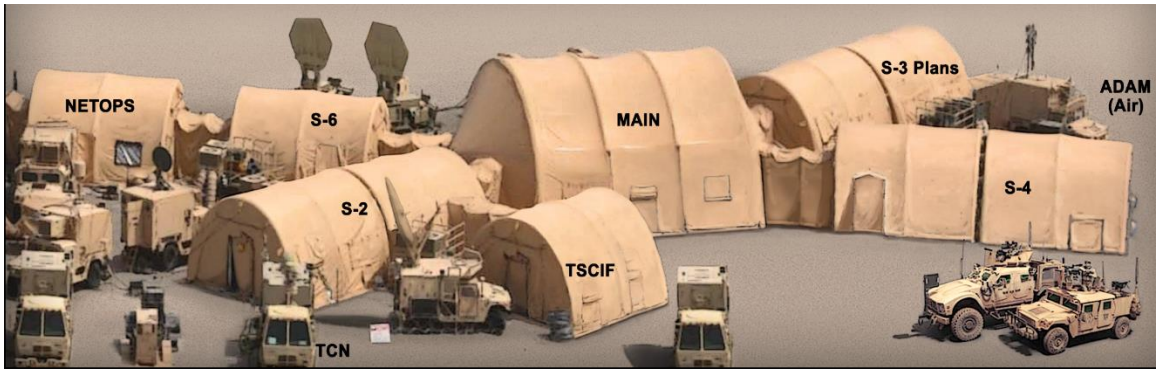

Figure 1. 2/1 Armor's main CP in May 2016 during NIE 16.2. The unit's previous CP had a large footprint (11 tents and 2 battalion tactical-assembly areas; long setup/teardown times; and a significant logistical tail), nor was it survivable in a DATE environment.

In addition to addressing the aging and static tent-based CP solutions, the Army needs to relook the codification of doctrinal TTPs for brigade-and-below CP. Our current doctrine, Field Manual (FM) 3-96, ***Brigade Combat Team*** (October 2015), describes the six principles of MC and lays out MC tasks. The FM even provides duty descriptions for the staff officers. However, what the FM doesn't contain is the science aspects of command-and-control at BCT or battalion level. Current doctrine doesn't address the application of personnel and networks to the different echelons of CPs within the battalion or brigade.

The "old" way – something like the configuration in Figure 2, which is an illustration from FM 71-123, dated September 1992 – is still worthy of emulation. The graphic clearly identifies the personnel, network and multiple CP configurations from the initial SICPS methodology.

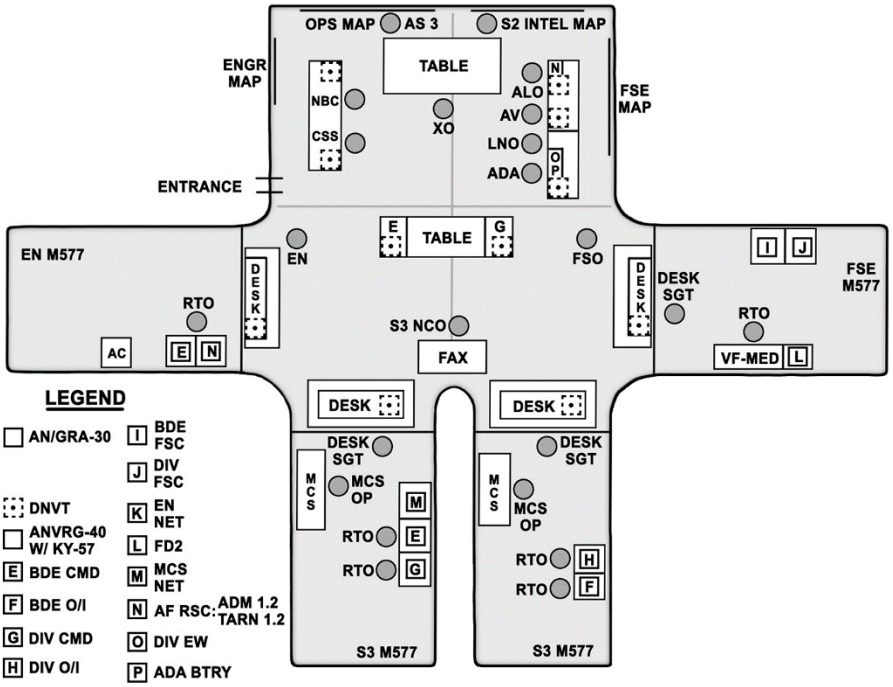

Figure 2. BCT main CP with established SICPS (T configuration). *(From FM 71-123, Figure 1-3)*

In addition to the doctrine and layout of CPs from a network and hardware perspective, our current doctrine lacks the how-tos of integrating personnel. In the DA environment – with the focus on continuous operations and removal of "suspension of battlefield effects" – the BCT must account for the integration of key personnel in their staff roles for CP analysis and functions as well as for the CP's security aspects. The BCT must integrate key staff personnel into dedicated security teams of the distributed CPs.

This shift to DA should jump-start a doctrine, organization, training, materiel, leadership and education, personnel and facilities review of personnel (nodes) networks, functions and security over time in an attempt to place the appropriate personnel by echelon in each CP.

A second gap in our MC systems is the CP materiel solution. The current CP structure is vulnerable to a variety of attacks and lacks mobility as well as survivability. Near-peer threats are able to detect and target MC nodes due to their large signature. As a result, the operational force seeks to standardize CPs that are austere, mobile, expeditionary and – from an electromagnetic (EM) aspect – able to match mobility and survivability with the subordinate maneuver forces they support.

Note that the physical and EM signature of large CPs present a significant opportunity for the opposing force to disrupt the BCT's initiative by employing effective combined-arms attacks that deplete BCT resources while hindering the BCT staff's ability to synchronize reconnaissance, fires and logistical support.

Acknowledging these unsettling realities, 2/1 Armor identified that its CP was vulnerable to precisely this type of coordinated attack in a decisive-action training environment (DATE) construct. The vulnerabilities:

- **It *looked* like a CP.** The brigade's CP consisted of 11 Airbeam tents centering off one large tent; three 40-foot wings housed the brigade warfighting functions (WfF) and command group.
- **It was *big*.** The CP's sheer size presented a clear confirmation to a reconnoitering enemy that the CP was either a brigade- or division-sized element.

- **It took too much time.** Setup and teardown times ranged between 10 to 20 hours, depending on Soldier training and experience level.
- **It consumed too much manpower and transportation resources.** The CP required extensive manpower and lift assets using many offloaded transit cases and up to 5,000 feet of CAT-5 cabling.
- **It ate too much power.** This large and overly cumbersome CP consumed large quantities of resources and power generation that required a significant logistical tail.

Fixes

With an upcoming National Training Center rotation, the brigade decided to immediately reduce our CP footprint during AWA 17.1. To combat the cumbersome and static CP structure, 2/1 Armor's vision was to capitalize on the WIN-T Increment 2 network by creating an uninterrupted-MC philosophy that enabled the BCT to exercise MC across multiple locations with built-in WfF and leader redundancies. This CP would be capable of fusing intelligence and enabling subordinate units to simultaneously prosecute the hybrid enemy in the DATE. Achieving this distributed MC TTP gives the commander "reach."[4]

- **Look.** Leveraging upgraded vehicle capabilities developed during six years as the AETF under the network-integration evaluations (NIE), 2/1 Armor replaced the Airbeam tents with four M1087 expansible vans, two M1079 vans and two Light Medium Tactical Vehicle-linked Sesolinc containers. Facilitated by BMC, the brigade upgraded one M1087 that housed 10 workstations with Secure Internet Protocol Router (SIPR)/Non-secure Internet Protocol Router (NIPR)/Coalition enclaves, two built-in projectors, five mounted whiteboards, light-emitting diode (LED) lighting and an improved environmental-control-unit (ECU) system. The 2/1 Armor also used two upgraded M1079 vans converted into CP platforms (CPP) that eliminated the four-humvee SICPS-solution CPPs.

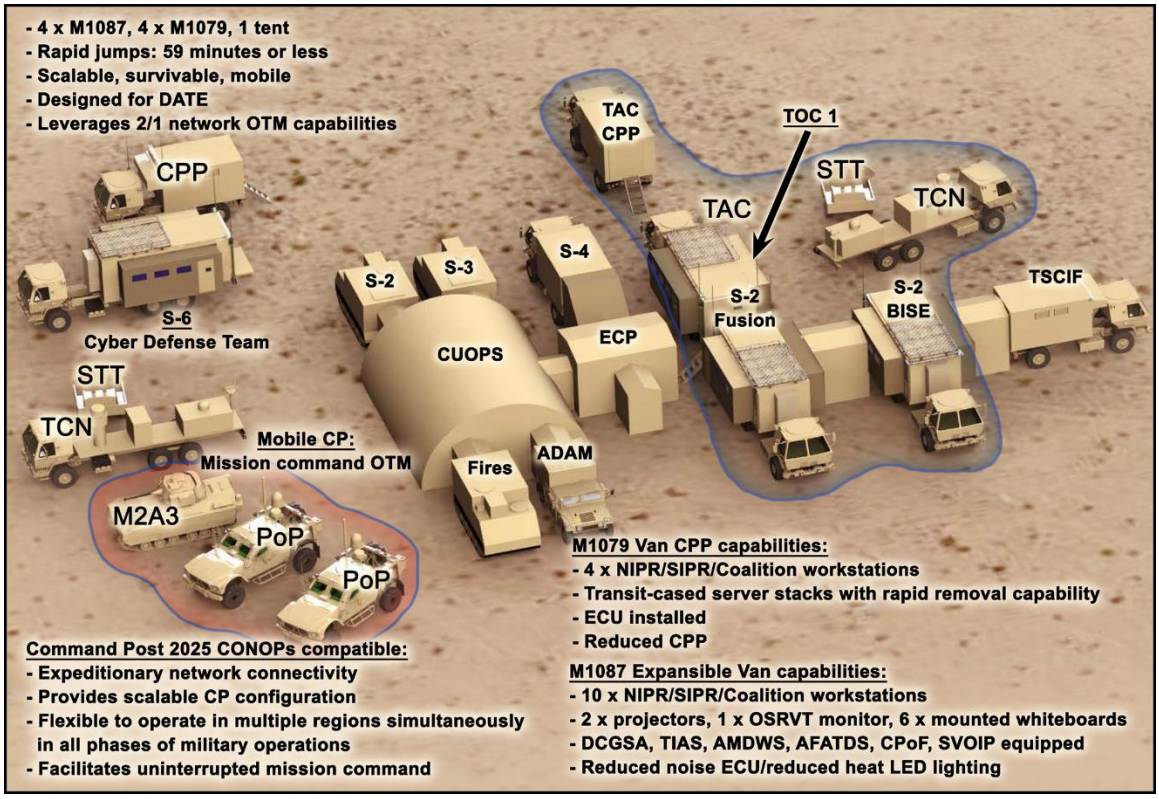

Figure 3. 2/1 Armor mobile CP endstate during AWA 17.1.

- **Size.** By employing three more M1087s and two more M1079s, the brigade reduced its footprint from 17 to one 20-foot-by-32-foot tent with accompanying vehicles. This vehicle-based CP housed the S-2, S-3, S-4 and S-6 sections as well as a Temporary Sensitive Compartmented Information Facility (T-SCIF) and mobile brigade intelligence-support element (BISE). From this design, the brigade leveraged its WIN-T Increment 2 on-the-move (OTM) capability employing two points of presence (PoP) as an enroute CP.
- **Time.** Incorporating this mobile CP concept, the brigade developed an early-entry CP as well. After multiple CP jumps during AWA 17.1, 2/1 Armor decreased BCT jump times from 18 hours to under two hours near the exercise's end. Also of note, the CPP trucks are invaluable should a vehicle breakdown occur, as the server stacks are easily removable while housed in transit cases. The opposite is true with the Army SICPS solution, as hard-mounted server-stack removal requires hours of tedious work while the network remains cold.
- **Manpower and transportation.** To lessen electromagnetic-field (EMF) emissions while further reducing the CP's footprint, 2/1 Armor developed a tactical-operations center (TOC) 1/TOC 2 concept that distributed the infrastructure geographically while still being interconnected using MC systems. TOC 1 is analogous to a BCT tactical-actions center (TAC) but robust in capability. Using vehicles to plug in and out of different TOC configurations, 2/1 Armor created scalability that provided redundancy and depth in MC and gave the commander options to choose the capabilities he wanted at each CP, depending on the mission set. The 2/1 Armor increased survivability as well by distributing the footprint using hardened vehicles and lowering the EMF signature in any one location. This CP design complicated the enemy's reconnaissance efforts since the MC nodes broadcast battalion-size elements.

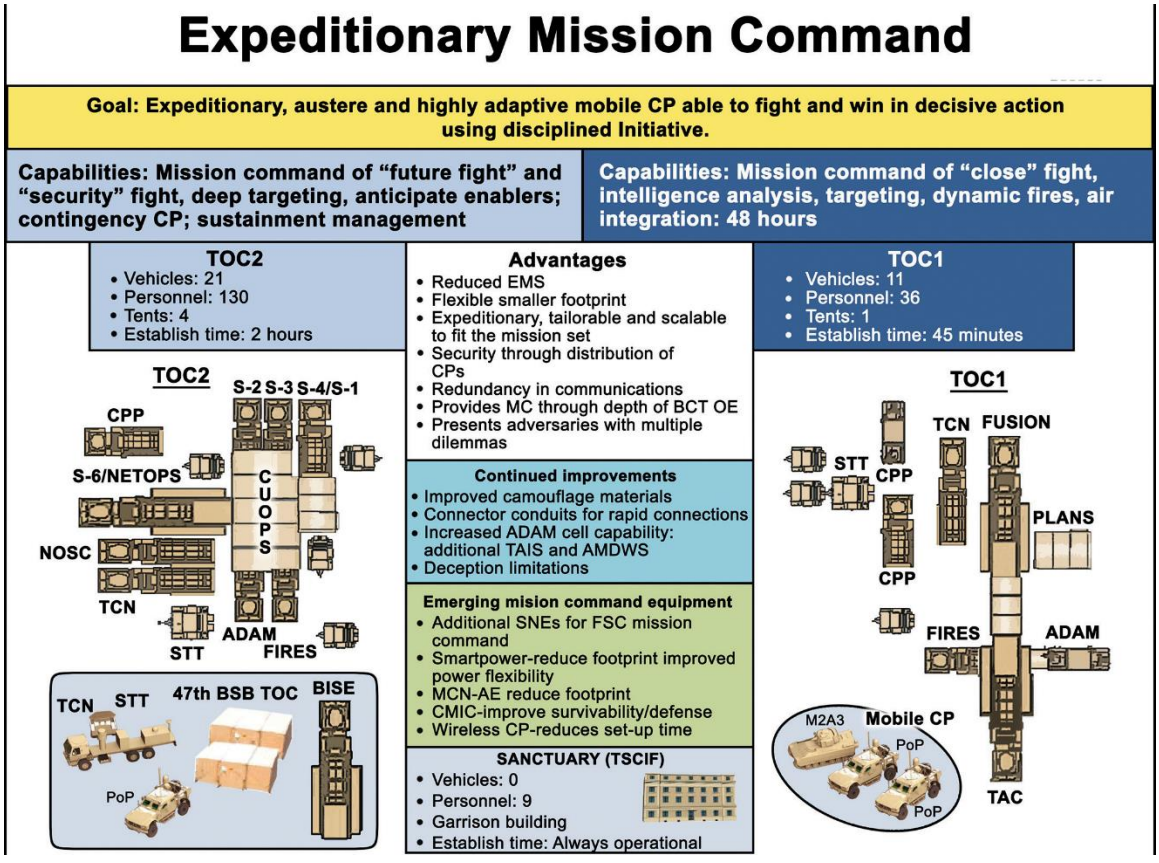

Figure 4. 2/1 Armor employs distributed MC capability while reducing EMF in any one location.

Reducing the footprint forced the brigade staff to eliminate redundant command, control, communications, computers, intelligence, surveillance and reconnaissance systems plus computer-screen

clutter. Shrinking seat capacity also placed more personnel on security, facilitating insurgent ground-attack deterrence. The brigade also eliminated many sleep tents while dispersing the engineer and fires battalions into noncontiguous tactical-assembly areas (TAAs), further distributing the brigade's MC nodes. The brigade also eliminated boot tents connecting the vehicles to the tents to further reduce setup times.

Using a fold-out awning attached to the vehicle platform is an alternative boot option the United Kingdom's army uses and can be set up in less than two minutes.

The Iron Brigade used a variety of platforms: M1087 and M1079 vehicle upgrades were conducted by a contracted design and engineering company or by unit personnel using military work orders. The ECU upgrade was the most critical, however. The standard M1087 ECU is too loud and hinders verbal communication, forcing the staff to either turn it off during meetings – producing an uncomfortably hot environment – or shouting with the ECU kept on.

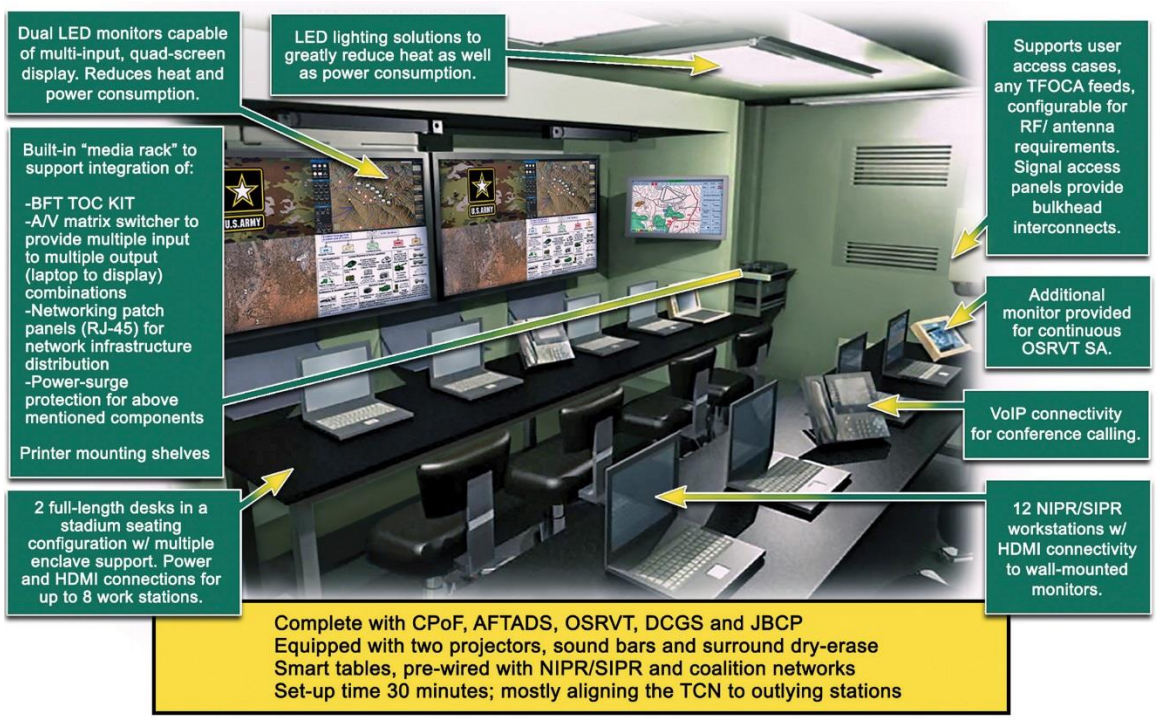

Figure 5. Modernized M1087 Expando van as a combat information center (CIC) variant. Thirty minutes forward-operations establish time.

Also, the BCT used a container-based-system CP node for our CPP and for the build of the alternate CP. These recent restorations have led to a Defense Logistics Agency Class IX parts-kit solution that can be procured or modernized in the Army system using Global Combat Support System (GCSS)-Army.

- **Power.** Further CP footprint reduction measures and time-saving include intelligent power generation/distribution, transport convergence via Modular Communications Node-Advanced Equipment (MCN-AE) and wireless CP capability. Increasing power-generation efficiencies while reducing generator clutter further reduces the CP footprint and gives time back to noncommissioned officers and mechanics. The 2/1 Armor used the Advanced Medium Mobile Power Source microgrid during NIEs 16.1 and 16.2 and decreased the CP generator count from 14 to four 60-kilowatt generators running in parallel using intelligent power distribution. The entire power-generation package fits on one C-17 pallet. Also, the MCN-AE performed well during NIE 16.2 and replaced the bulky Trojan system's two humvees and trailers with two Pelican cases. This system linked into the WIN-T Increment 2's tactical-component network (TCN) for network access while showing no visible degradation in bandwidth capacity. These

complementary CP systems provide more footprint reduction options to BCTs working to shrink their CPs.

The vehicle-based configuration is a logical and cost-effective solution to produce a scalable, survivable and expeditionary BCT CP designed to fight and win in a DA environment. This CP configuration does not require an Army acquisitions-system development and fielding cycle, as the materiel solution already exists in our inventory.

Multi-domain battle poses a significant problem to large stationary TOCs, indicating that the current Army SICPS BCT CP solution requires changes to MC node design and configuration. Countering this requires CP mobility, scalability and survivability that is achievable with the proposed CP design described in this article. BCTs should not wait years for a future Army-approved BCT CP solution and subsequent fielding with a "fight tonight" readiness goal. We recommend consideration to implement this actionable CP concept for all BCTs as an interim solution while the Army develops a long-term solution commensurate with Command Post 2025 concept-of-operations (CONOPS) principles.

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Notes

[1] https://www.army.mil/article/51926/brigade-modernization-command/.
[2] See Army News Service, https://www.army.mil/article/177286/awa_171_increasing_the_pace_of_battle_in_a_coalition_environment, for more information.
[3] Army Doctrinal Reference Publication 6.0, ***Mission Command***, defines *mission command system* as the arrangement of personnel, networks, information systems, processes, procedures, facility and equipment that supports the philosophy of mission command as well as the mission-command warfighting function.
[4] This interpretation of *reach* is defined as collaboration, shared situational understanding and effective relationships with key actors. From ***Mission Command Network Vision and Network***, Mission Command Center of Excellence, Fort Leavenworth, KS.

Acronym Quick-Scan

ABCT – armored brigade combat team
ADAM – air-defense airspace management
AETF – Army Experimental Task Force
AFATDS – Advanced Field Artillery Tactical Data System
AMDWS – Air and Missile Defense Workstation **or** Army Missile Defense Warning System
A/V – audiovisual
AWA – Army Warfighting Assessment
BCT – brigade combat team
BFT – Blue Force Tracker

BISE – brigade intelligence-support element
BMC – Brigade Modernization Command
CIC – combat information center
CONOPS – concept of operations
CP – command post
CPoF – Command Post of the Future
CPP – command-post platform
CUOPS – current operations
DA – decisive action
DATE – decisive-action training environment
DCGS-A – Distributed Common Ground System-Army
ECP – entry control point
ECU – environmental-control unit
EM – electromagnetic
EMF – electromagnetic field
EMS – electromagnetic signature
FM – field manual
FSC – forward-support company
HDMI – high-definition multimedia interface
JBCP – Joint Battle Command Platform
JMC – Joint Modernization Command
LED – light-emitting diode
MC – mission command
MCN-AE – Modular Communications Node-Advanced Equipment
NetOps – network operations
NIE – network integration evaluation
NIPR – Non-secure Internet Protocol Router
NOSC – Network Operations and Security Center
OE – operational environment
OSRVT – One-System Remote Video Terminal
OSRVT-SA – One-System Remote Video Terminal situational awareness
OTM – on-the-move
PoP – point of presence
RF – radio frequency
SAMS – School of Advanced Military Studies
SICPS – Standardized Integrated Command Post System
SIPR – Secure Internet Protocol Router
SME – subject-matter expert
STT – small tactical terminal
SVOIP – Secure Voice over Internet Protocol
TAA – tactical-assembly area
TAC – tactical-actions center
TCN – tactical-component network
TFOCA – tactical fire-operations cable assembly
TOC – tactical operations center
T-SCIF – Temporary Sensitive Compartmented Information Facility
TTP – tactics, techniques and procedures
WfF – warfighting function
WIN-T – Warfighter Information Network-Tactical