PORTFOLIO

PEO C3T

PROGRAM EXECUTIVE OFFICE COMMAND CONTROL COMMUNICATIONS-TACTICAL

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ACRONYMS

PEO C3T

Headquartered at Aberdeen Proving Ground, Md., the Army's PEO C3T develops, acquires, fields and supports the Army's tactical network, a critical priority that brings information dominance to current and future Soldiers. The mobile tactical network delivered by PEO C3T provides secure and reliable communications that allow commanders and Soldiers to stay connected and informed at all times, even in the most austere and hostile environments.

The reach of government and contractors of PEO C3T throughout the United States.

PEO C3T

PROGRAM EXECUTIVE OFFICE COMMAND CONTROL COMMUNICATIONS-TACTICAL

CONGRESSIONAL LOCATIONS

Credit: Jett Loe, Las Cruces Sun-News

Our goal is to deliver a pervasive, integrated network that provides Soldiers the information they need from garrison to the foxhole, while simplifying the tactical network so it is easier to use, train, maintain and sustain. A simplified network will also continue to drive cost savings by combining hardware and other infrastructure, reducing software development efforts and decreasing the field support required to train Soldiers, troubleshoot systems and sustain equipment.

PEO C3T's first priority remains supporting deployed forces. We have seen the power of the network in the field, where Soldiers have relied on advanced communications technologies to stay connected, exchange voice, data and video, and execute their advice-and-assist missions in vast, challenging terrain. Our equipment and personnel support overseas operations, including Operation United Assistance, Operation Resolute Support, Operation Inherent Resolve, Operation Atlantic Resolve and Pacific operations. For example, the Army network supported improved coordination across a coalition of organizations responding to the Ebola outbreak in West Africa as part of Operation United Assistance. Here, they shared critical information such as the locations and status of treatment units, training updates for health workers and progress that's been made to contain the disease.

PEO C3T technologies allow Soldiers in tactical vehicles to plan and execute their missions while on the move across the battlefield, tracking friendly and enemy force locations on a digital map. Capabilities fielded by PEO C3T allow Soldiers to digitally call for fires, accurately engage their targets, send text messages reporting enemy locations or request medical help, and track unit readiness and equipment availability

Through the integrated Capability Set Fielding and Unit Set Fielding processes, PEO C3T continues to deliver thousands of tactical network and communication upgrades to active component and National Guard units. Capability sets, currently fielding to Army-prioritized infantry and Stryker brigade combat teams, extend mobile network connectivity from the brigade command post all the way down to the dismounted Soldier.

Now, we are preparing for the future by executing mission command modernization to build a seamless information sharing environment across the tactical battlefield, supporting Force 2025 and Beyond operational priorities for versatility, mobility and interoperability with joint and coalition partners.

The dedicated PEO C3T staff supports more than 22 key acquisition programs and efforts with expertise in the areas of computer science, program management, engineering, information technology, security, logistics, contracting, procurement, accounting and budgeting. At any given moment you can find us at the Soldier's side, whether in combat training centers or remote locations, within the continental United States or around the world.

JTNC

To ensure interoperable, secure, and affordable waveform and wireless communications by recommending standards, conducting compliance and certification assessments in accordance with DoD policies, and maintaining a DoD Waveform Information Repository (IR).

CONGRESSIONAL LOCATIONS

KEY CONTRACTORS

- G2 Software Systems
- Booz Allen Hamilton

JOINT TACTICAL NETWORKING CENTER (JTNC)

DESCRIPTION

JTNC supports the DoD's goal of ensuring interoperable, secure, and affordable waveforms and wireless communications products (WCPs) by recommending standards, conducting compliance and certification assessments, and maintaining the DoD Waveform IR. JTNC concurrently supports the Under Secretary of Defense for Acquisition, Technology, and Logistics (USD [AT&L]), DoD Chief Information Officer (DoD CIO), and Service initiatives by providing technical expertise to facilitate standardization of key waveform interfaces. The intent is to minimize duplication of waveform developments, increase wireless communications software reuse, promote effective information sharing, and integrate command and control (C2) capabilities.

CAPABILITIES

The Joint Tactical Networking Center provides coordinated wireless communications expert technical support to USD(AT&L) and DoD CIO-related policy initiatives and governance processes aimed at ensuring interoperable, secure, and affordable waveform and wireless communications.

To achieve its vision and execute its mission, the JTNC is organized into three functional entities: DoD Waveform Information Repository, Standards, and DoD Waveform Compliance and Certification Assessments. At the heart of the JTNC are the enduring, core functions as defined in the JTNC Charter:

DoD Waveform Standards and Software Communications Architecture (SCA)

- Provides a validated open architecture framework that separates waveform/network manager from the radio set
- Permits common waveforms and network managers to be deployed across multiple radio sets and vendors

DoD Waveform IR Management & Configuration Control

- Provides a cyber-hardened, DoD-wide waveform library and controlled access for waveforms and associated network managers, operating environment software, models, architectural standards and Application Program Interfaces (APIs)
- Protects and distributes artifacts based on legal agreements between government and software developers

Technical assessments of DoD Waveform IR products

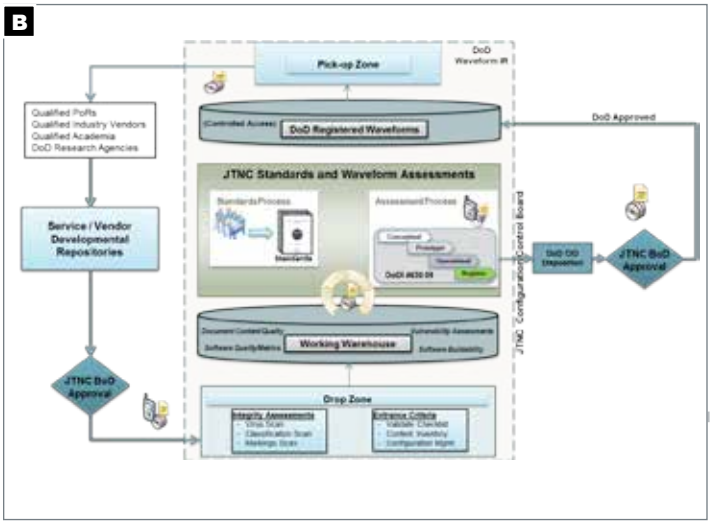
- Compliance: preliminary characterizations regarding meeting government standards for interoperability and security
- Assessments: facilitate preparation for participation in Service-level test events
- Certification: comprehensive characterization of Waveform IR products as to whether they meet DoD standards and policies for interoperable and secure joint tactical networking

Technical advisor to JTNC Board of Directors (BoD)

A | A soldier communicating via an industry developed, JTNC Compliant, software defined radio.

B | The JTNC End to End Process provides an enterprise view of how JTNC performs the task of assessing a waveform in a DoD CIO Stage Review.

B



* Tri-Service Funded Organization: The Army Acquisition Executive is the Lead Acquisition Executive for the Joint Tactical Networking Center and has delegated executive oversight to PEO C3T.

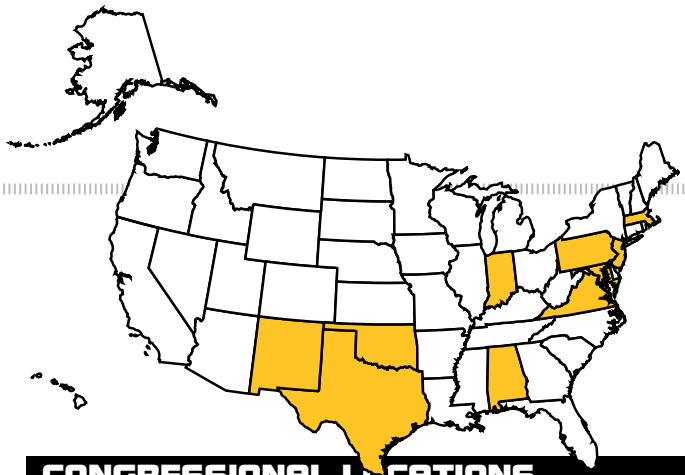
ACQ PHASE*

1. Technology Development
2. Engineering & Manufacturing Development
3. Production & Deployment
4. Operations & Support

1	2	3	4

FSC2

Fire Support Command and Control (FSC2) empowers commanders to plan and execute the delivery of lethal and non-lethal fires by providing capabilities to visualize fires, situational awareness and increase collaboration among fires staff.



CONGRESSIONAL LOCATIONS

KEY CONTRACTORS

- General Dynamics
- Raytheon
- CACI
- CSRA
- Engility Corp
- Chenega Technology Services Corp.

DESCRIPTION

FSC2 provides the U.S. Army, joint and coalition commanders with the capability to plan, execute and deliver both lethal and non-lethal fires. Many FSC2 capabilities are transitioning to web-based apps that can be accessed via a secure internet as part of the Army's Command Post Computing Environment (CP CE). The CP CE is consolidating and simplifying the separate capabilities commanders use for missions related to all of the warfighting functions and will provide the commander with a consolidated readiness picture on a singular workstation, lessen the logistics trail for the Soldier, reduce the training burden and save taxpayer dollars.

CAPABILITIES

- Advanced Field Artillery Tactical Data System (AFATDS) provides fully automated support for planning, coordinating, controlling and executing fires and effects such as mortars, field artillery cannons, rockets and missiles, close air support, attack aviation and naval surface fire support systems.
- Joint Automated Deep Operations Coordination System (JADOCS) is a joint and coalition warfighting Windows-based software suite that provides integration and synergy between multiple joint and coalition forces for real-time targeting and fires coordination.
- Pocket-Sized Forward Entry Device (PFED) is used by forward observers and fire support teams to transmit and receive fire support messages over standard military line of sight, high frequency and satellite communications radios.
- Lightweight Forward Entry Device (LFED) hosts the Forward Observer System (FOS) software, which enables mounted forward observers and fire support officers to plan, control and execute fire support operations at maneuver platoon, company, and battalion and brigade levels.
- CENTAUR is the lightweight technical fire direction system that provides an automated cannon ballistic firing solution to the Fire Direction Centers (FDCs). Its primary function is a secondary technical calculation check for AFATDS or manual calculations.
- Gun Display Unit-Replacement (GDU-R) digitally receives firing commands from the FDC, which are then forwarded down to the crews of non-digitized howitzers.
- Profiler weather system improves artillery accuracy by providing Meteorological (MET) data, which is one of five requirements for accurate predicted fires. Profiler provides MET information to field artillery assets via the AFATDS. Weather information is received via the Weather Data download site or the Global Broadcast Satellite (GBS) and computations provide correction information along the projectile trajectory and within the target area.

A | **Soldier using AFATDS**
B | **Soldier using a PFED**
C | **Soldier using a LFED**

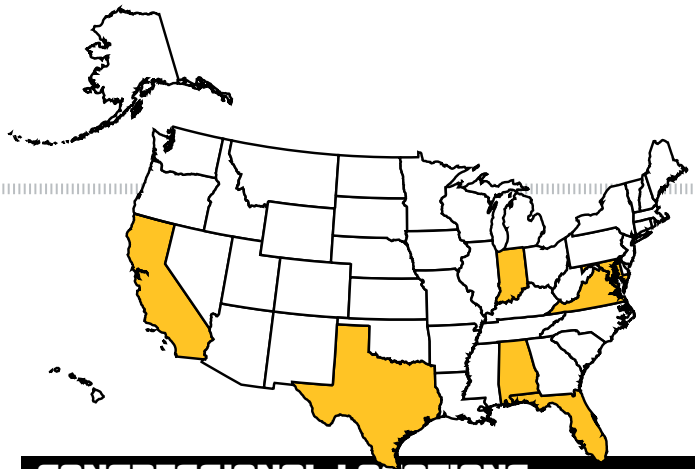
ACQ PHASE

1. Technology Development
2. Engineering & Manufacturing Development
3. Production & Deployment
4. Operations & Support

1 | 2 | 3 | 4

JBC-P

Joint Battle Command-Platform (JBC-P) is the Army's next generation friendly force tracking system, equipping Soldiers with a faster satellite network, secure data encryption and advanced logistics.



CONGRESSIONAL LOCATIONS

KEY CONTRACTORS

- CMDC
- CSRA
- DRS Technology
- ESP
- General Dynamics
- Northrup Grumman
- MITRE
- ViaSat

DESCRIPTION

JBC-P includes an intuitive interface with features like touch-to-zoom maps and drag-and-drop icons. JBC-P interoperates with the Nett Warrior handheld device, managed by PEO Soldier, delivering situational awareness capabilities to dismounted Soldiers. JBC-P incorporates the common hardware solution known as the Mounted Family of Computer Systems (MFoCS), standardized tactical computers that are scalable and tailorable to the mission and vehicle. Encompassing options from a detachable tablet to a fully loaded, vehicle-mounted workstation, MFoCS runs not only JBC-P but other software applications, reducing size, weight and power demands. JBC-P builds on the situational awareness capability known as Force XXI Battle Command Brigade and Below/ Blue Force Tracking, which is integrated on more than 120,000 platforms and is authorized and fielded to every Brigade Combat Team in the Army.

CAPABILITIES

- Enables Soldiers to receive orders, graphical overlays, and situational awareness of friendly, hostile, neutral, unknown and noncombatant entities
- Allows communications between Soldiers including Free Draw, Free Text, chat and combat messages
- Provides capability to pinpoint locations through sensor integration
- Offers improved user interface
- Generates Electronic Casualty Report
- Facilitates improved route planning
- Utilizes universal hardware through the MFoCS
- Integrates with Nett Warrior hand-held devices hybrid network

[redacted]

A | A Soldier uses JBC-P to send messages and increase situational awareness.

B | Full featured capabilities enable warfighter efficiency.

C | Soldiers will be able to operate the Army's primary situational awareness capability, JBC-P, as well as other command, control, communications, computers, intelligence, surveillance and reconnaissance applications.

B

C

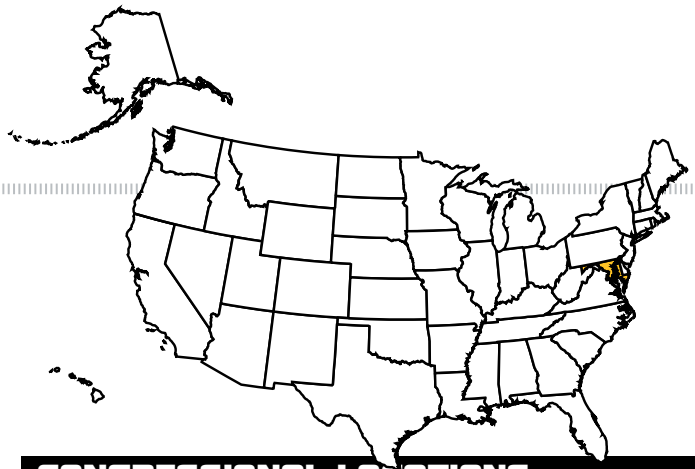
ACQ PHASE

1. Technology Development
2. Engineering & Manufacturing Development
3. Production & Deployment
4. Operations & Support

1 | 2 | 3 | 4

SMC

To conduct lifecycle management of cohesive infrastructure command and control hardware and software solutions integrated for enterprise through tactical levels in coordination with joint, inter-organizational, multinational and partner U.S. products.



- CSRA
- ESP

CONGRESSIONAL LOCATIONS **KEY CONTRACTORS**

DESCRIPTION

SMC provides interoperable hardware and software solutions to the Army, joint and coalition partner communities under the Army's Common Operating Environment (COE) effort. The COE is an approved set of computing technologies that will allow government and industry partners to develop secure and interoperable applications across several computing environments, including the Command Post Computing Environment (CP CE), thus drastically reducing the time it normally takes to field applications to Soldiers.

CAPABILITIES

- Global Command and Control System-Army (GCCS-A) is the Army's strategic and theater Command and Control (C2) system. It fulfills the need for critical automated command and control tools for Army combatant commanders to enhance the Soldier's capabilities throughout the spectrum of conflict during joint and combined operations.
- Multilateral Interoperability Programme (MIP) is an interface/gateway/common language definition that facilitates the automatic exchange/translation of the Common Operational Picture (COP) digital information between C2 systems of two or more nations.
- The Defense Readiness Reporting System – Army (DRRS-A) is a secure, centralized, web-enabled set of enterprise capabilities that report mission-critical unit readiness; manage unit mobilization, deployment, and employment execution; and maintain registration of units.
- Tactical Infrastructure Enterprise Services (TIES) and Coalition Warfare Program (CWP) capabilities help overcome interoperability challenges from different private cloud infrastructures and technologies to enhance joint system interoperability and improve joint operations. They also enhance the interoperability and information exchange of U.S. and coalition partners using National Information Exchange Model (NIEM), Identity and Access Management (IdAM) and security metadata tagging.

A | Soldier using GCCS-A

B | Polish army Capt. Lukasz Lacki, left, and U.S. Army Chief Warrant Officer 2nd Class Samuel Tillery help reconfigure the mission network system at U.S. Army Garrison Grafenwoehr (U.S. Air Force photo by Tech. Sgt. Kenya Shiloh/Released)

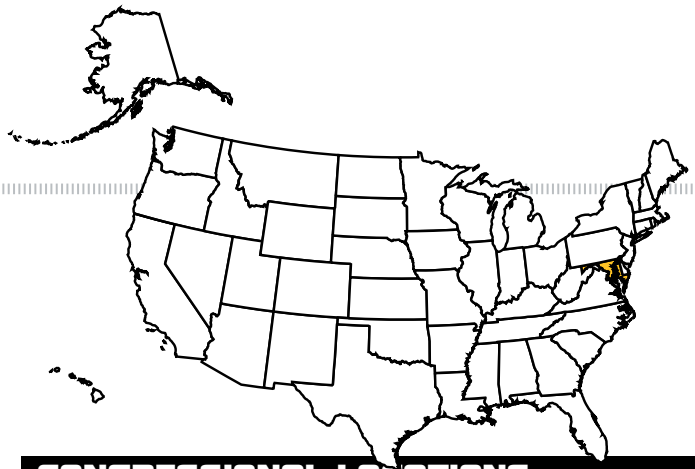
* Non-Program of Record

ACQ PHASE*

1. Technology Development
2. Engineering & Manufacturing Development
3. Production & Deployment
4. Operations & Support

TDM

To provide the Army a state-of-the-art, standardized and resourced set of capabilities for the collection and processing of digital media and visual information products within a tactical network operations environment.



- CSRA
- General Dynamics

CONGRESSIONAL LOCATIONS **KEY CONTRACTORS**

DESCRIPTION

In today's operating environment, public affairs teams are often dispatched with combat patrols and small units that deploy to remote locations not supported by current Army networks. Tactical Digital Media (TDM) packages allow these teams to gather, process and deliver audio files, digital imagery and visual media in austere environments. TDM operations rely on U.S., allied and coalition common tactical networks available at the supported unit. The TDM packages include cameras and video equipment, ruggedized laptops, night vision devices and audio capabilities. TDM aids globally deployed Combat Camera (COMCAM) teams, public affairs detachments and Military Information Support and Operation teams operating from Tactical Command Posts, Forward Operating Bases, combat outposts and forward deployed combat patrols. Commanders supported by TDM capabilities are provided timely imagery and multimedia information products that facilitate operational analysis, planning, training and documentation, as well as the digital media content essential to informing and influencing activities to support strategic engagement. TDM products are designed to communicate information, record historical events, support decision-making, and provide accurate information.

CAPABILITIES

- Tactical Media Acquisition Kit (TMAK) includes hybrid photo/video devices including high definition lens, providing the user with a broad range of versatility and adaptability in capturing photographs and video, as well as processing ability.
- Digital Video Acquisition Kit (DVAK) includes audio/visual products such as a hand-held camcorder to provide digital recording and peripherals to support versatility and adaptability in a tactical operational environment.
- Media Production Kit (MPK) is a semi-permanent media production station that enables the integration and processing of product-ready delivery of video, photographs and audio into various formats and files.
- Advanced Acquisition Kit (AAK) include components added to the TMAK as needed by COMCAM to provide flexibility and agility for Soldiers to accomplish their mission. This includes a remote control for time-lapse, wireless flash, wireless microphone, headphones and stabilizing systems.
- Night Vision Device (NVD) to enable images to be produced in a range of low-light levels in support of a full spectrum of military operations.

[redacted]

A | Tactical Digital Media provides Army public affairs teams the tools needed to produce digital imagery and visual media in austere environments.

B | Tactical Media Acquisition Kit (TMAK)

* Non-Program of Record

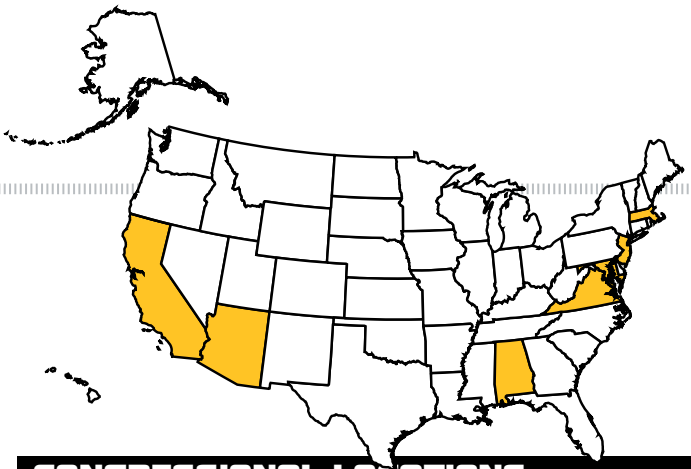
ACQ PHASE*

1. Technology Development
2. Engineering & Manufacturing Development
3. Production & Deployment
4. Operations & Support

1	2	3	4

TMC

Tactical Mission Command (TMC) develops, integrates, fields and supports the Army's core mission command collaborative environment and maneuver applications to enable operating force commanders to make timely and effective decisions. TMC will provide enduring capabilities in support of the Army's vision for a Command Post Computing Environment under the Common Operating Environment (COE).



CONGRESSIONAL LOCATIONS

KEY CONTRACTORS

- AASKI
- CACI
- ESP
- Future Skies
- General Dynamics
- ManTech
- SEC
- SED
- WSEC

DESCRIPTION

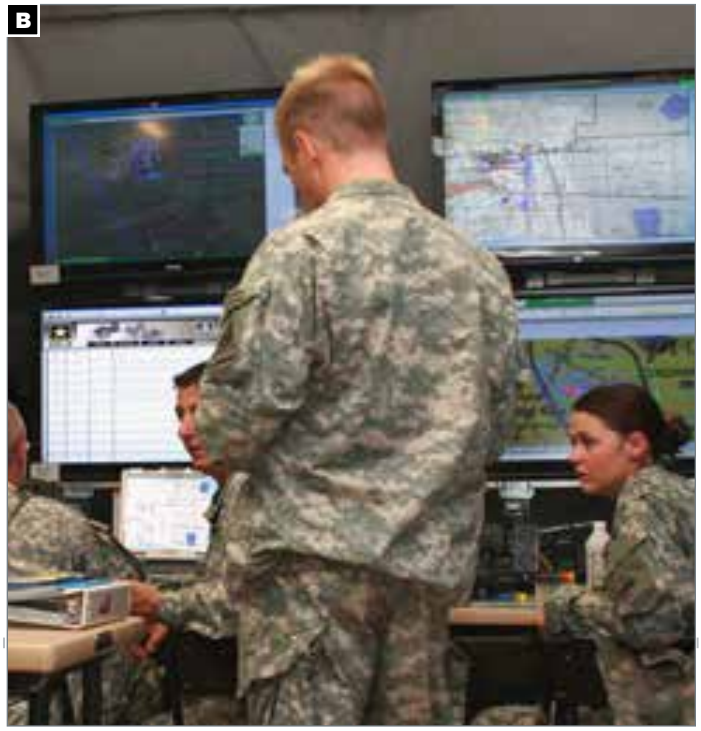
TMC is a suite of products and services that provide commanders and staffs executive decision making in a collaborative environment, planning tools, common operational picture management, information and knowledge management, and other maneuver functional tools. Many TMC capabilities are transitioning to web-based widgets that can be accessed via a secure internet as part of the Army's Command Post Computing Environment (CP CE). The CP CE is consolidating and simplifying the separate capabilities commanders use for missions related to all of the warfighting functions and will provide the commander with a consolidated readiness picture on a singular workstation, lessen the logistics trail for the Soldier, reduce the training burden and save taxpayer dollars.

CAPABILITIES

- Tactical Applications (TacApps) is the implementation of essential warfighting functions (e.g. maneuver, fires, engineering, logistics) onto a common map that incorporates a common look and feel to application based capabilities leveraging common services and infrastructure which are COE/CP CE compliant. TacApps provides real-time, rich collaboration across echelons that can run on a variety of end user devices.
- Command Web provides modular software widgets delivered over the web for improved supportability and ease of use in robust network environments.
- Tactical Server Infrastructure (TSI) replaces disparate server hardware by merging operational and intelligence functions onto one common set of servers. TSI enables more server capability than existing fielded solutions and delivers a consistent approach for installation and configuration, creating efficiencies in fielding, training and sustainment.
- WAVE is a commercial-off-the-shelf (COTS) Voice Over Internet Protocol (VOIP) capability that links two-way radios, smart phones, telephones and PCs together for seamless communications for both Command and Control (C2) and Combat Radio Networks (CNR), using the Warfighter Information Network-Tactical (WIN-T).
- Command Post of the Future (CPOF) is the commander's situational awareness and decision support tool for company and above. CPOF integrates data feeds from other Army, joint, and coalition systems into an operating picture that is tailorable by users to meet their particular needs.
- Battle Command Common Services (BCCS) is an architecture designed for scalability both from a hardware and baseline software architecture perspective, and can be adopted to support various tactical unit standard operating procedures, processes and integration needs.

[redacted]

A | Soldier using Command Post of the Future (CPOF)
B | TMC systems inside a Command Post

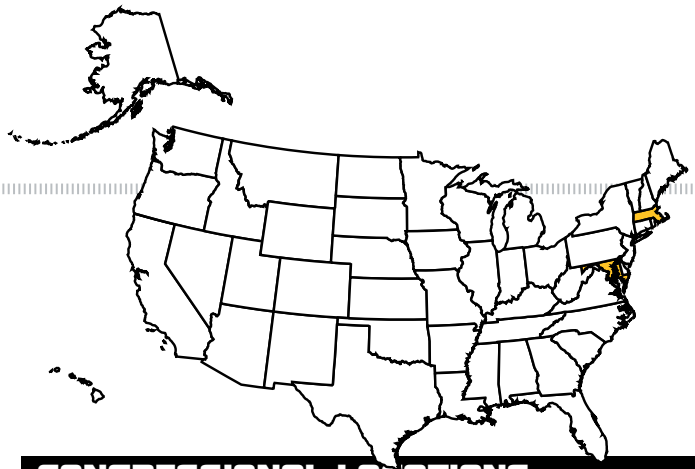


ACQ PHASE

1. Technology Development
2. Engineering & Manufacturing Development
3. Production & Deployment
4. Operations & Support

CHS

Common Hardware Systems acquires and sustains highly flexible, cost effective, common, and simplified non-developmental Army Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) solutions that improve interoperability and connectivity on the battlefield while garnering efficient competition to enable the latest commercial technology solutions to be integrated onto the Army's tactical network.



CONGRESSIONAL LOCATIONS

KEY CONTRACTORS

- General Dynamics

DESCRIPTION

The CHS program office enables the Army's Operating Force by providing a holistic approach to acquiring common hardware across the battle space, utilizing the most effective and efficient means to meet the unique fielding requirements of tactical program offices. CHS coordinates across tactical programs to provide consolidated procurement and sustainment of modified COTS IT and to ensure configuration and obsolescence management. CHS also partners with industry to examine new and emerging technologies that meet the operational need. The CHS-4 contract provides a procurement mechanism to meet Army and DoD programs requirements for commercial IT supplies and services.

CAPABILITIES

- Streamlined Rapid Acquisition Process: CHS provides a "one-stop shop" consolidated, rapid acquisition capability for all requirements including engineering support, hardware and sustainment services. CHS works with stakeholders to facilitate the rapid execution of technology insertions, delivery orders, and task orders.
- Configuration Management: The CHS-4 contract provides a mechanism to preserve hardware configurations, including designs for integrated solutions and kits. Programs can execute repeated procurements of a specific hardware configuration to ensure continued interoperability with networked systems as well as continued information assurance compliance.
- End of Life Management: CHS works with its prime vendor and with OEMs to manage technology obsolescence. CHS also communicates with programs to identify next generation replacement configurations to ensure requirements continue to be met.
- Emerging Technologies: CHS works with programs and with industry to coordinate new commercial information technologies onto the Army's tactical network. CHS hosts industry roadmaps and technology demonstrations to facilitate collaboration between OEMs and program offices.
- Better Buying Power: CHS works across programs and with stakeholders of the Common Operating Environment (COE) Computing Environments (CEs) to meet consolidated requirements for common hardware platforms. Programs benefit from quantity pricing discounts achieved through economies of scale and avoids costs through vendor price reductions. CHS provides an annual efficiencies report to supported organizations.
- Web-Based Customer Interface: Allows CHS customers to search the CHS item catalog, initiate hardware orders and generate reports

A | A Soldier uses a CHS rugged handheld device in the field

B | A unit executes its mission using CHS equipment in a Tactical Operations Center (TOC)

C | Soldiers configuring operational transit cases for use in a Command Post (CP)

* CHS is not a materiel developer, but coordinates with programs prior to entering Post Milestone-A activities in order to ensure effective and efficient lifecycle management of common hardware solutions.

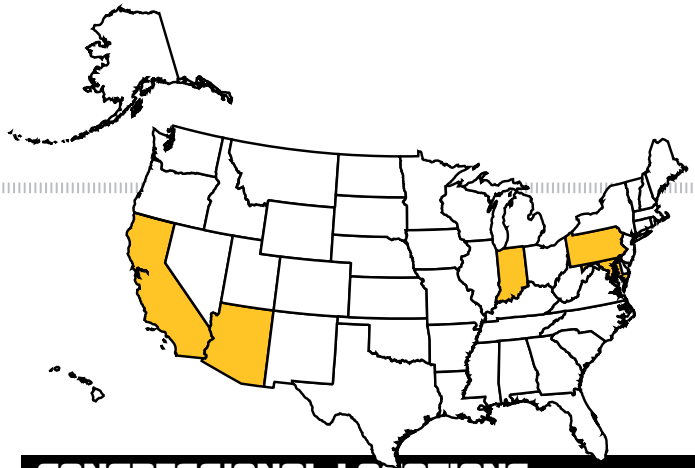
ACQ PHASE*

1. Technology Development
2. Engineering & Manufacturing Development
3. Production & Deployment
4. Operations & Support

1	2	3	4

CRYPTOGRAPHIC SYSTEMS

COMSEC Cryptographic Systems procures, tests and fields Communication Security (COMSEC) solutions to secure the Army's information infrastructure against all cyber threats; increase the Soldier's survivability and lethality on the battlefield; and enable mission command activities.



CONGRESSIONAL LOCATIONS

KEY CONTRACTORS

- L3
- General Dynamics
- VIA SAT
- Raytheon
- CACI

DESCRIPTION

The COMSEC Cryptographic Systems Program procures, tests and fields COMSEC solutions to secure the Army's Tactical and Enterpise Networks. New and emerging architectures, cease key dates and DoD/Army policy are driving the need to replace the current inventory of legacy stovepipe systems with technologically advanced (network centric/GIG compliant) modern devices that incorporate Chairman of the Joint Chiefs of Staff and Joint Requirements Oversight Council directed cryptographic standardization, advanced key management and network centric performance capabilities. This enables the Army to equip the force with critical crypto solutions and services during peacetime, wartime and contingency operations.

CAPABILITIES

- In-Line Network Encryptor Family - Encryption systems that provide secure data and voice communications over Internet Protocol (IP) networks.
- Link/Trunk Encryptor Family
  - Encryption systems that provide secure data and voice communication over point-to-point wideband data links.
- Secure Voice Family – Encryption systems that provide secure voice and limited data communication over unsecured IP and public switched telephone networks.
- In-Line Media Encryptors Family
- Encryption systems that provide secure data encryption capabilities for data at rest.
- Embedded Cryptographic Modernization Initiative – Retrofit of existing systems with embedded cryptographic capability to insure they will be able to accept and utilize modern keying material.
- Commercial Solutions for Classified – commercially available products that when used together in a layered fashion are approved by NSA for protecting classified information.

[redacted]

A | **Soldier using Cryptographic Systems**
B | **Examples of the INE Family of Cryptographic Systems**
C | **Examples of the ECC Family of Cryptographic Systems**
D | **Examples of the LEF Family of Cryptographic Systems**

B

C

D

* Non-Program of Record

ACQ PHASE*

1. Technology Development
2. Engineering & Manufacturing Development
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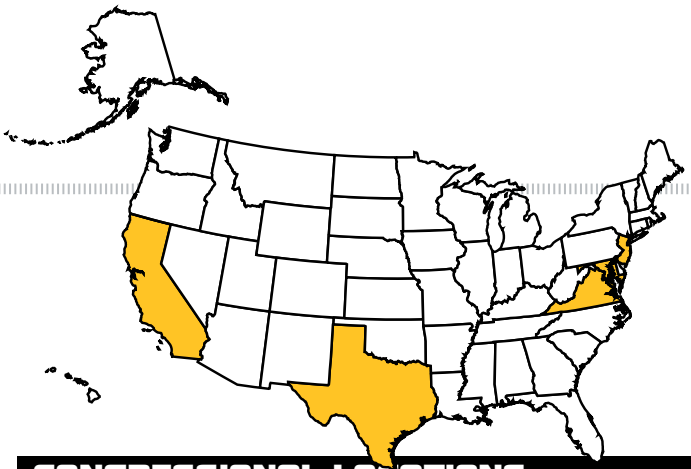
1	2	3	4

DATA PRODUCTS

Data Products are a collection of mission data required to initialize Army Battle Command Systems (ABCS) and other Army Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) systems.



CONGRESSIONAL LOCATIONS

KEY CONTRACTORS

- CACI
- General Dynamics

INITIALIZATION AND TACTICAL NETWORK ARCHITECTURES AND CONFIGURATIONS-CURRENT [TNACC]

DESCRIPTION

This data includes the information required to enable end-to-end network centric connectivity and interoperability across the Tactical Internet (TI) via the Warfighter Information Network – Tactical. They enable the Common Operating Picture (COP)/Situational Awareness (SA) and Variable Message Format (VMF) / United States Message Text Format (USMTF) Command and Control (C2) messages for ABCS, Joint Capabilities Release (JCR) /Joint Battle Command-Platform (JBC-P), Maneuver, Fires, Aviation, and selected Intelligence, Electronic Warfare & Sensors (IEW&S) and Enterprise Information Systems (EIS) products. Components of the Data Product are provided from two organizations within Program Management Office Network Enablers, Product Management Office Director Initialization and Product Director Tactical Network Architectures and Configurations Current. In accordance with Unit Set Fielding (USF) Conferences, Data Product schedules are developed to meet the USF requirements, such as Product Acceptance Test (PAT2), Validation Exercise, PM Fieldings and deployment events. The baseline Data Products will be developed according to Modification table of organization and equipment (MTOE), Network Basis of Issue (NBOI), Business Rules and ICD authorizations.

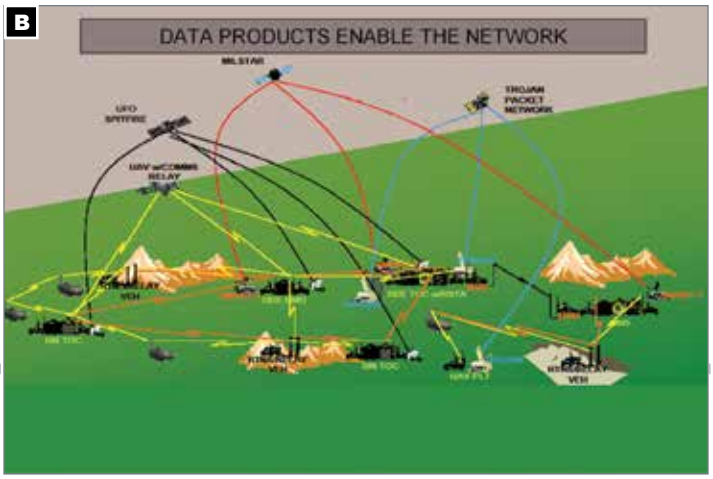
CAPABILITIES

- Initialization is responsible for creating initialization products that enable C2 and application messaging.
  - Software Blocking 2 (SWB2)
  - BFT Database(s) and Global
  - SWB 11-12 / Capability Set (CS) Baselines
  - adam.ldif
  - address book to support Air and Missile Defense Workstation (AMDWS)
  - Simulation To Mission Command Interoperability (SIMCI) Files
  - .pdf Lightweight Directory Interchange Format (LDIF) Versions
  - Unit Task Organization (UTO) Report and Warfighter Initialization Tool Files (WIT) Unit Reference File (URN) Files
  - Tactical Radio Report (TRR) for CS units
  - Initialization Tool Suite (ITS)
- TNACC is responsible for creating products that enable IP connectivity and end-to-end network communications.
  - IP Address Templates
  - Telephony Numbering Plans
  - Multicast Addressing / Autonomous System Numbering
  - Network Device Configurations
  - Interconnectivity Diagrams
  - Engineering Field Notices
  - Configuration Management/ SharePoint Portal

[redacted]

A | Data Products allow Soldiers to connect to vital mission data

B | Graphic Pictorial (TNACC)



* Non-Program of Record

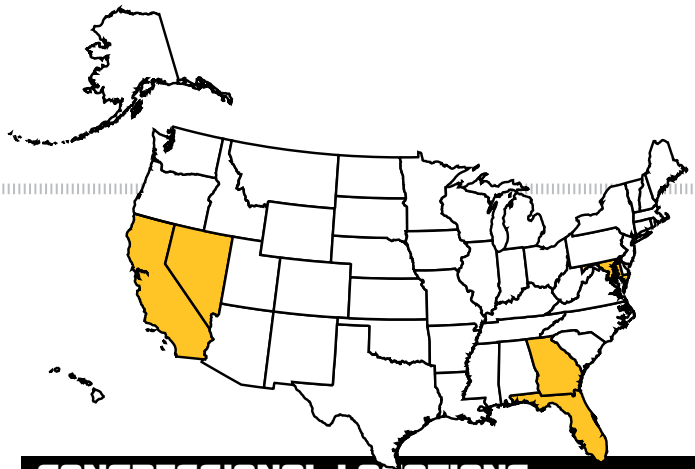
ACQ PHASE*

1. Technology Development
2. Engineering & Manufacturing Development
3. Production & Deployment
4. Operations & Support

1 | 2 | 3 | 4

KEY MANAGEMENT

Key Management automates the functions of Communications Security (COMSEC) key management, control, and distribution; Electronic Protection generation and distribution; Signal Operating Instruction (SOI) management and Spectrum Management. The Army Key Management Infrastructure (AKMI) provides planners and operators with the capability to deliver secure communications at both the theater/tactical and strategic/sustaining base levels.



CONGRESSIONAL LOCATIONS

KEY CONTRACTORS

- CACI
- Booz Allen Hamilton
- Sierra Nevada Corp

DESCRIPTION

Under the umbrella of the National Security Agency (NSA), Key Management Infrastructure (KMI), AKMI provides tactical units and sustaining bases with an organic key generation capability and an efficient, secure electronic key distribution means. AKMI consists of 3 subcomponents: Management Client (MGC), Automated Communications Engineering Software (ACES) and Simple Key Loader (SKL). AKMI provides a system for distribution of COMSEC, electronic protection and SOI information from the planning level to the point of use in support of current, interim and objective force at division and brigade levels.

It introduces capabilities and processes to transform operations from manual to secure automated distribution of keys and firmware directly to IA devices.

- Expanded operations to DoD unclassified network to reach broader DoD customer base.
- Expanded operations to NATO and coalition users to support combatant commanders' needs.
- Flexibility and agility to support dynamic communities of interest.

CAPABILITIES

- MGC: Automates COMSEC management/accounting; electronically generates/distributes keys; and reduces hardcopy files use.
- ACES/JACS: Provides Crypto network planning; generates SOI data/creates COMSEC key tags; supports emerging requirements.
- SKL: Loads keys into End Crypto Units (ECUs); small and ruggedized design allows easy key transfers; interface between LCMS/MGC (Key Generation), ACES and ECUs.

A | Soldiers programming a Simple Key Loader to allow their radios to communicate securely between vehicles
B | ACES is a piece of software that is also a system that can be employed and operated on a Workstation (Laptop)
C | Key Management Infrastructure (KMI) Components

B

C

ACQ PHASE

1. Technology Development
2. Engineering & Manufacturing Development
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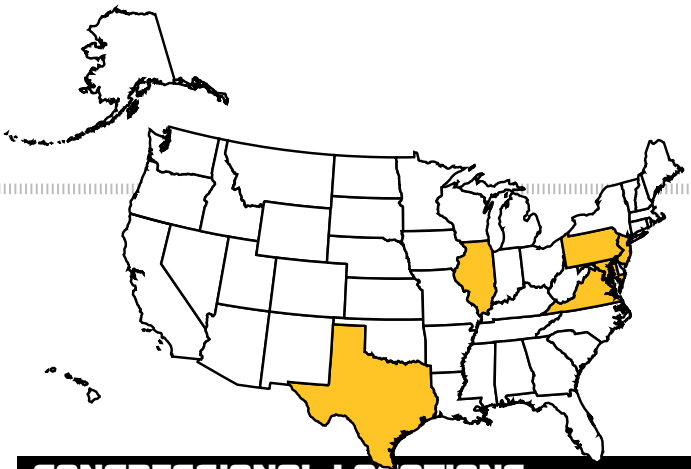
MILTECH SOLUTIONS

MilTech Solutions supports the Department of Defense's (DoD) initiatives with integrated, collaborative solutions to inspire actions across a synchronized workforce. MilTech Solutions develops, adapts and implements dynamic tools to optimize the human and technological potential of the DoD.



CONGRESSIONAL LOCATIONS

KEY CONTRACTORS

- DSA
- IDS
- ManTech
- PKMM

DESCRIPTION

Military Technical (MilTech) Solutions is a fully reimbursable Non-Program of Record that provides collaborative technology solutions that connect the DoD community and closes the gap between tactical and enterprise IT. MilTech uses a customer-funded "consortium" approach in order to efficiently support a subset of its customers. This model allows partnered organizations to pool resources and co-invest in technologies, reducing each member's individual costs while helping adopt IT and knowledge management solutions to address critical organizational challenges. MilTech capabilities include:

- milSuite: A collection of secure, online tools and applications that focus on improving collaboration and social networking behind the DoD firewall
- Knowledge Management Consortium: A collection of GOTS/COTS tools funded by an innovative cost-sharing model that allows partnered organizations to pool resources and co-invest in technologies, reducing each member's individual costs. Includes SharePoint Collaboration Services, Green Force Tracker Instant Messaging/Chat, and Manpower Information Retrieval and Reporting System (MIRARS) for managing personnel accountability in emergency situations.
- Single Interface to the Field (SIF) is a 24/7virtual portal that provides informational awareness to field support personnel using mission command systems.
  - Unified Trouble Ticketing System (UTTS) is an integration of SharePoint and Remedy that provides seamless online reporting that is accessed through an Army unit's SharePoint to create a single automated trouble ticket for critical reach-back support
- Business Intelligence and Decision Support: Dashboards with interactive drill downs, big data/data warehousing, and scorecards, as well as capabilities aimed at facilitating data-driven decision-making.
- Educate and Inform: 100, 200, 300-level and advanced curriculums for each of our capability offerings distributed via self-service learning solutions, face to face instruction, and secure communities of practice, as well as strategic communications campaigns focused on adoption of these capabilities.

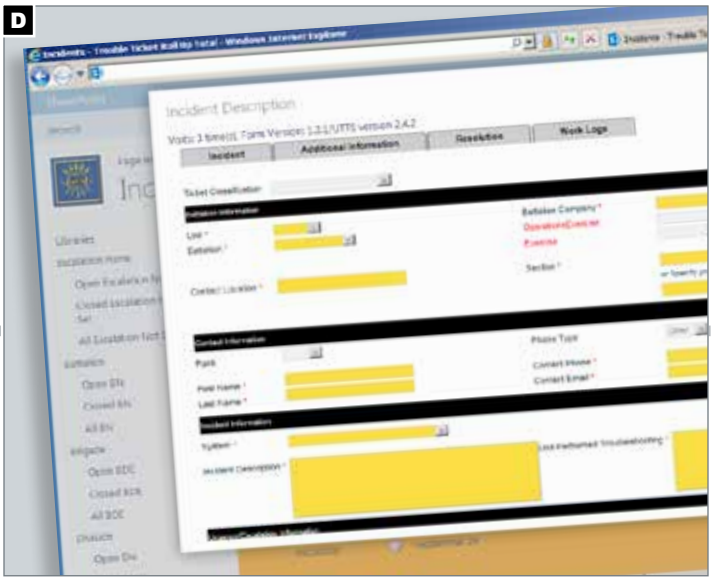
While MilTech primarily adapts COTS products to solve business challenges via a Software as a Service model, MilTech also offers custom development and configuration services, including website, portal, and knowledge management systems development.

A | milSuite has more than 650,000 registered users across DoD with 15,000 users onboarding monthly
B | 23,000 users on SharePoint 2013
C | 30,000 Green Force Tracker chat users
D | Unified Trouble Ticketing System linking tactical SharePoint users to Remedy IT Service Management

B

C

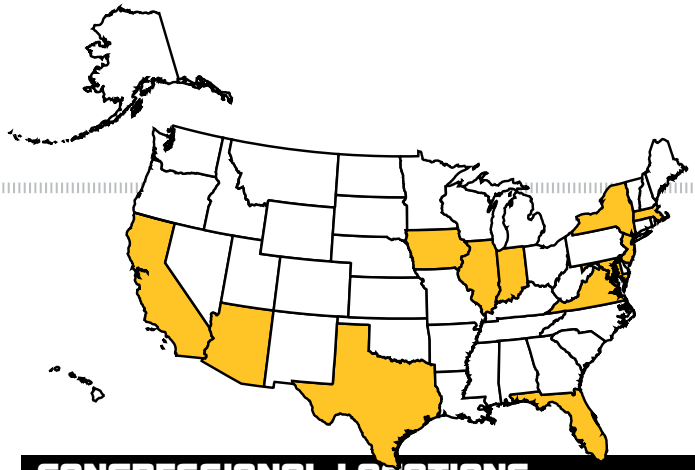
D



MILTECH SOLUTIONS IS A CUSTOMER-FUNDED ORGANIZATION

AMF

Airborne, Maritime & Fixed Station (AMF) will provide Army Aviation platforms the ability to link with and expand integrated tactical networks. AMF ensures Army Aviators' ability to communicate both horizontally and vertically via voice and data within all mission areas and in all combat operational environments.



CONGRESSIONAL LOCATIONS

KEY CONTRACTORS

- Booz Allen Hamilton
- CSC
- Mitre
- SRA

DESCRIPTION

The Airborne, Maritime & Fixed Station (AMF) radios are software programmable, multi-band, multi-mode, mobile ad hoc networking radios, providing simultaneous voice, data and video communications. The radios will support the Common Operating Picture (COP), Situational Awareness (SA) and interoperability of Mission Command (MC) systems throughout the battlefield. AMF must ensure the Soldier's ability to communicate both horizontally and vertically via voice and data within all mission areas. AMF radios will help close capability gaps by extending data networking to company and below echelons, enabling network services to the platform and connecting Army aviation platforms to Army ground and Joint air network domains. Per Milestone Decision Authority (MDA) direction, the redefined AMF Program will procure radios as Non-Developmental Items (NDI).

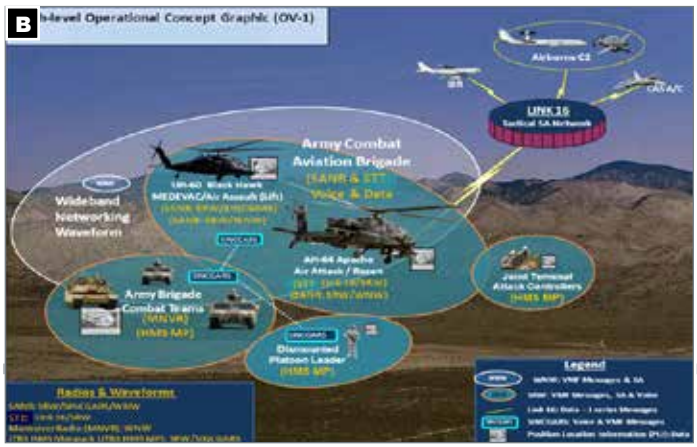
CAPABILITIES

- Meets Size, Weight and Power (SWaP) restrictions for Army rotary wing platforms.
- SANR (Small Airborne Networking Radio) will provide a multi-channel networking radio capable of using Soldier Radio Waveform (SRW) and Wideband Networking Waveform (WNW) in addition to legacy Single Channel Ground and Airborne Radio System (SINCGARS) capability to interoperate with ground forces, ensuring seamless connectivity for combat operations.
- SANR will provide support to all Army rotary wing platforms, as well as the Gray Eagle Unmanned Aircraft System (UAS).

[redacted]

A | AMF ensures air-to-ground and air-to-air interoperability for Army Aviation Platforms

B | AMF NDI Operational Concept



ACQ PHASE

1. Technology Development
2. Engineering & Manufacturing Development
3. Production & Deployment
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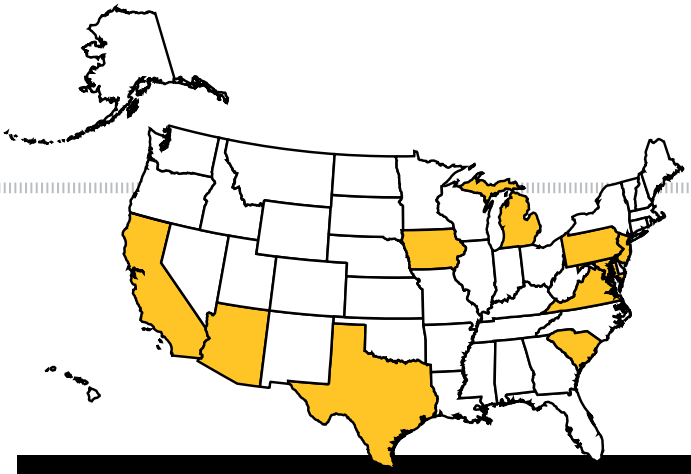
HMS

Handheld, Manpack and Small Form Fit (HMS) develops and produces affordable networking tactical radio systems that meet the requirements of the Army, Marine Corps, Navy, Air Force and Special Operations Command (SOCOM) and are interoperable with specified radios in the current forces.



- GDC4S
- Booz Allen Hamilton
- Harris Radio Corporation
- MITRE Corporation
- Thales Communications

DESCRIPTION

Handheld, Manpack and Small Form Fit (HMS) is a family of networking tactical radio systems that are interoperable with specified radios in the current forces. HMS provides Joint interoperable connectivity to the tactical edge/most disadvantaged Warfighter with an on-the-move, at-the-halt and stationary Line of Sight (LOS)/Beyond Line of Sight (BLOS) capability for both dismounted personnel and platforms. The radios are scalable and modular Software Communications Architecture (SCA) compliant, enable net-centric operations, operate multi-band and multi-mode and deliver reliable, secure tactical communications.

- AN/PRC-154 Rifleman Radio (RR) Sensitive But Unclassified (SBU) (1 Channel Type 2): SRW
- AN/PRC-154A RR Secret and Below (SAB) (1 Channel Type 1 Suite B): SRW
- Full Rate Production Radios (1 Channel Type 1 Suite B): SRW
  - RF-330E-TR (HARRIS)
  - AN/PRC-154A (THALES)
- AN/PRC-155 Manpack (MP) (SAB) (2 Channel Type 1): SRW, SINCGARS, UHF SATCOM, Mobile User Objective System (MUOS)
- Small Form Fit: SRW and various legacy WF mixes

CAPABILITIES

- Simultaneous voice, data and video communications.
- Increased throughput using networking waveforms.
- Interoperable with currently fielded radios operating with Single Channel Ground and Airborne (SINCGARS), Ultra High Frequency (UHF) Satellite Communications (SATCOM), as well as new radios using Soldier Radio Waveform (SRW) and MUOS.
- Routing and retransmission (Cross-banding)
- Multi-Channel operations
- Add screen for Rifleman Radio, reduced weight, additional waveforms (e.g., IW)

A | Soldier using Manpack Radio at NIE 16.1
B | AN/PRC-154 Rifleman Radio
C | AN/PRC-154A Rifleman Radio
D | AN/PRC-155 Manpack
E | Soldiers using Rifleman Radio with Nett Warrior

B

C

D

E

ACQ PHASE

1. Technology Development
2. Engineering & Manufacturing Development
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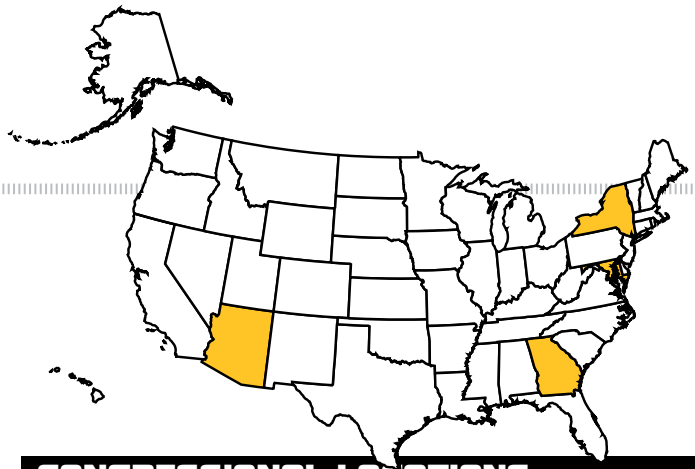
MNVR

Mid-tier Networking Vehicular Radios (MNVR) provides the terrestrial backbone for the Army's tactical network, enabling the extension of mission command through seamless integration of the upper and lower tiers. MNVR provides software-defined, two channel networking radios for a wide variety of Army tactical vehicles to meet the Army's requirement for the Mid-tier Wideband Networking capability.



CONGRESSIONAL LOCATIONS

KEY CONTRACTORS

- Booz Allen Hamilton
- Harris Radios Corporation
- Janus Research

DESCRIPTION

The MNVR system provides an extension of data services from the upper tactical network at brigade and battalion to the lower tactical network at company and platoon echelons. The advanced network waveforms provide rapid distribution of data and imagery with increased information assurance protection and automatic routing across complex terrain. The MNVR capability consists of modular radios capable of running software-defined waveforms, which operate as nodes in a network to ensure secure wireless communication and networking services for mobile and stationary forces. This supports Mission Command, sensor-to-shooter, sustainment and survivability applications through the full range of military operations on tactical platforms.

CAPABILITIES

- MNVR can operate new Internet Protocol (IP) based networking waveforms offering increased data throughput through self-forming, self-healing and managed communication networks.
- Dynamic, scalable, on-the-move (OTM) network architecture, connecting the Soldier to the mission command network; enhances capability to exchange voice and data simultaneously and faster than current systems.
- Advanced network waveforms provide rapid distribution of data and imagery with increased information assurance protection and automatic routing across complex terrain.

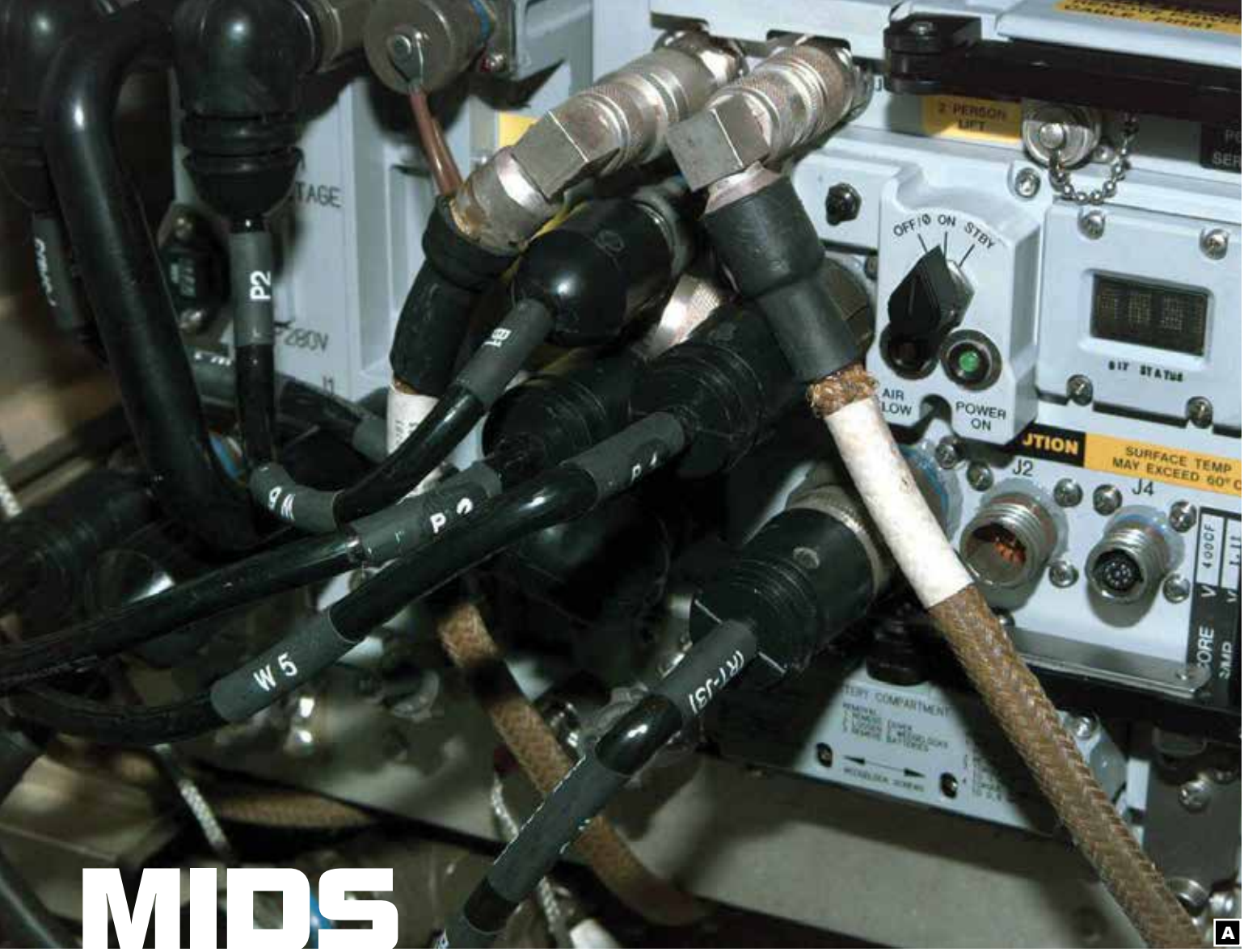
A | Solider using MNVR at NIE 16.1.
B | The Army has conducted a successful initial demonstration of its MNVR radio system at NIE 14.2.

* Pre MS C

ACQ PHASE*

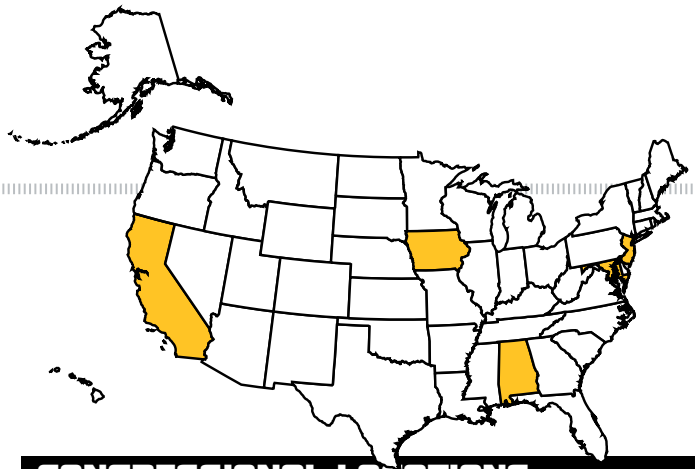
1. Technology Development
2. Engineering & Manufacturing Development
3. Production & Deployment
4. Operations & Support

1	2	3	4



MIDS

Multifunctional Information Distribution System Low Volume Terminal 2/11 (MIDS LVT 2/11) terminals provide tactical data link (Link 16) connectivity integrating communication, navigation and identification capabilities in support of airborne, land-based and maritime tactical operations. The United States Army MIDS system primarily supports air defense platforms such as the Patriot, Air Defense and Airspace Management (ADAM) Cell, Forward Area Air Defense Command and Control (FAAD C2), Terminal High Altitude Area Defense (THAAD) and Joint Tactical Ground Station (JTAGS).



CONGRESSIONAL LOCATIONS

KEY CONTRACTORS

- DLS LLC
- VIA SAT

DESCRIPTION

MIDS (Link-16) is the Department of Defense's primary tactical data link. It provides multiservice/NATO interoperability and situational awareness and supports air and missile defense engagement operations. The MIDS LVT 2/11 is composed of three Line Replaceable Units which are characterized by a unique power supply and blower system. The MIDS LVT 2/11 uses a 200-watt power amplifier enabling a range of up to 300 nautical miles.

CAPABILITIES

- Near Real Time Distribution of Air & Missile Tracks
- Nets Air Defense Control Centers
- Control Air/Missile Defense Operations
- More affordable Link-16 terminal vice JTIDS terminal
- Secure /Jam Resistant Communications
- High Data Throughput
- Time Division Multiple Access (TDMA)
- 300nm (Normal)/500 nm (Extended) Range

[redacted]

A | Close-up of a MIDS
B | MIDS-LVT(2/11)
C | An engineer installs the MIDS during a test

B

C

* Non-Program of Record

ACQ PHASE*

1. Technology Development
2. Engineering & Manufacturing Development
3. Production & Deployment
4. Operations & Support

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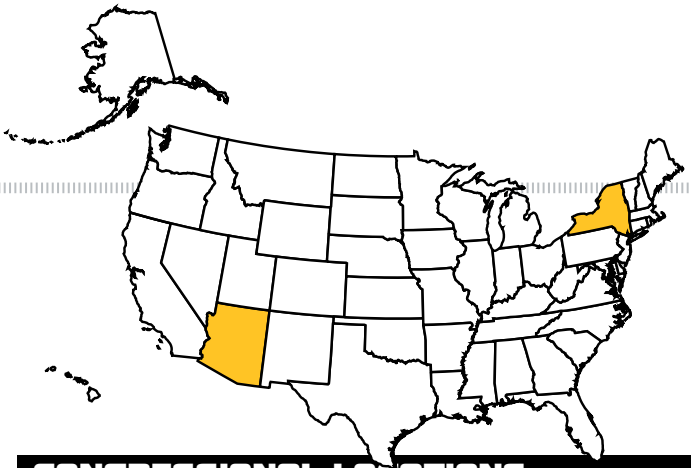
WAVEFORMS

Army portable and interoperable waveforms provide mobile ad hoc networking and network enterprise services to enhance tactical warfighting capabilities. Waveforms enable the Army's tactical data radios to transmit voice and data across the operational area.



CONGRESSIONAL LOCATIONS

KEY CONTRACTORS

- General Dynamics
- Harris Corporation

DESCRIPTION

Waveforms manages the Soldier Radio Waveform (SRW) and Wideband Networking Waveform (WNW). By drawing on available spectrum, waveforms provide secure wireless networking services for mobile and stationary forces to transmit information, including voice, data, images and video. The waveforms are Internet Protocol (IP) based, so they can interoperate with other IP based networks, which allows Soldiers to connect to other networks outside their range. Each waveform undergoes a rigorous process to become National Security Agency certified, which provides Soldiers with secure and encrypted information that cannot be broken by the enemy.

CAPABILITIES

Soldier Radio Waveform

- The SRW, which is used by individual Soldiers, small units and very small sensors enables communication without a "fixed" infrastructure such as a cell tower or satellite network.
- The SRW provides critical tactical edge connectivity through Combat Net Radio (CNR) Voice and Position Location Information, as well as mission command applications to dismounted units and disadvantaged users at the lower tier – battalion and below.
- By connecting via gateways to the mid-tier backbone (WNW), the SRW extends the range of communications.
- The SRW's CNR voice pre-emption feature allows commanders and other leaders with higher authority to actively pre-empt an active talker with lower authority on the same group call. This enables critical information to be conveyed more quickly.
- The SRW's duplicate node detection Identification (ID) warns users when a duplicate ID had been configured in the network, decreasing network planning-related issues.
- The SRW has been fielded to thousands of Handheld, Manpack and Small Form Fit Manpack and Rifleman Radios.

Wideband Network Waveform

- The WNW provides high bandwidth network connectivity and enterprise network services for aircraft and ground vehicles at the mid-tier – battalion and above.
- With its mobile ad-hoc networking capabilities, the WNW reroutes and re-transmits communications beyond-line-of-sight.
- The WNW is designed to work well in urban landscape such as Iraq or terrain-constrained environments like Afghanistan, since it can locate network nodes and determine the best path for transmitting information.
- Both the SRW and WNW provide a seamless network interface with existing DoD network infrastructures, such as the Army's tactical network backbone, WIN-T.

A | Soldiers at a recent Network Integration Evaluation (NIE) use a Manpack Radio to communicate during training missions.
B | A Soldier at a recent NIE uses a Rifleman Radio to execute a mission.

* Non-Program of Record

ACQ PHASE*

1. Technology Development
2. Engineering & Manufacturing Development
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ACUS MOD

Area Common User System Modernization (ACUS MOD) provides planned network upgrades through technology insertions into the current force to support the Army's current WIN-T Increment 1 force modernization efforts. It includes increased network services and management, information assurance, enhanced reach-back and increased transport speed and bandwidth required to support the Soldier's increasing need for high-speed data, voice, video and imagery through the recapitalization of current force systems.

CONGRESSIONAL LOCATIONS

KEY CONTRACTORS

- General Dynamics
- CACI
- Engineering Solutions & Products

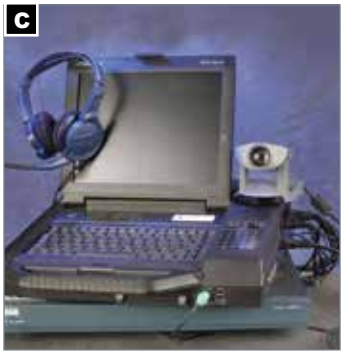
DESCRIPTION

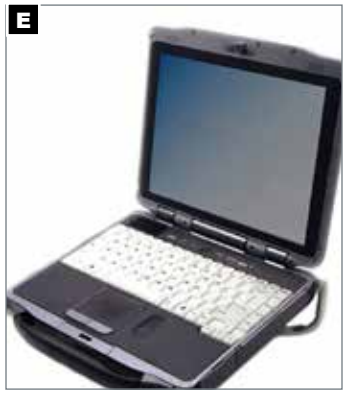
ACUS MOD provides Internet network management capabilities, as well as integrated voice, video and data services. It also provides for beyond-line-of-sight (BLOS) transmission capability. It provides increased situational awareness to unit commanders, improved throughput and joint and coalition interoperability at battalion and above. It also implements commercial-based technology insertions into the current force for smooth technology upgrades.

CAPABILITIES

- The Single Shelter Switch (SSS), designed for rapid deployment and small footprint, provides "first in" capability and is the building block for network expansion. The SSS provides communication officer (S6) functionality in a single vehicle shelter.
- The High Capacity Line Of Sight (HCLOS) radio, an integral part of WIN-T Increment 1, replaces the existing AN/GRC- 226 radios in the AN/TRC-190 LOS family. The HCLOS radio upgrade provides improved data rates required to transport the increased volume of data on the digital battlefield.
- Battlefield Video Teleconference (BVTC) provides the commander with access to accurate, timely situational information and is interoperable with the existing communication Local Area Network (LAN) infrastructure across a multi-platform backbone network. The BVTC will also assist the commander in coordinating and interacting with different echelons and adjacent units.
- The Tropospheric Scatter (TROPO) Radio, AN/TRC-170(V)3 provides BLOS communications, reduces SATCOM demands and offers an alternative long-haul communications method. It provides greater distance and bandwidth than the LOS terminals found in tactical theater signal battalions.
- Tactical Network Operations (NetOps) Management System (TNMS) is a scalable, modular NetOps capability that operates on multiple client or server platforms. The TNMS will facilitate decision-making necessary to quickly identify network problems, shift resources, change configurations and coordinate the management of the critical network infrastructure supporting mission command functions.

A | Soldier conducts a radio functions check on the AN/TRC-190 High Capacity Line of Sight (HCLOS) radio terminal during the unit's HCLOS training at Tower Barracks located in Grafenwoehr, Germany
B | Battlefield Video-Teleconferencing Center (BVTC)
C | Single Shelter Switch (SSS)
D | Tactical Network Operation Management System (TNMS)
E | The TROPO Radio, AN/TRC-170(V)3 provides BLOS communications, reduces SATCOM demands, and offers an alternative long haul communications method.





* Non-Program of Record

ACQ PHASE*

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2. Engineering & Manufacturing Development
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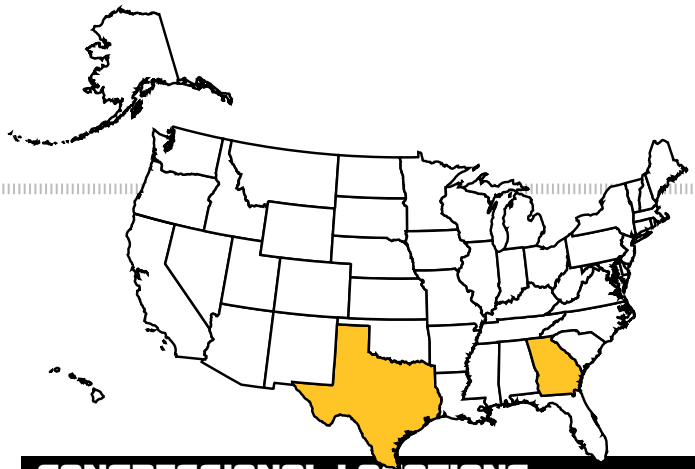
DKET

Deployable Ku band Earth Terminals (DKETs) are used at brigade and higher deployed headquarters elements to augment the tactical communications network infrastructure. Some of the DKETs take on dual roles as a hub providing inter- and intra- theater satellite links at brigade and higher and linking multiple regional command headquarters. The DKET reduces the traffic load on Regional Hub Nodes and provides hub services for disadvantaged forward operating bases.



CONGRESSIONAL LOCATIONS

KEY CONTRACTORS

- Datapath
- General Dynamics

DESCRIPTION

DKETs are satellite terminals designed for use at larger hub locations. They support commercial Ku-band frequencies, and have been certified for Ka and X band capability to take advantage of U.S. military satellites. They are highly transportable and self-contained, and can establish headquarters-level, network-hub connectivity anywhere a mission demands.

CAPABILITIES

- DKETs are currently deployed in three configurations: Light (3.7 – 3.9M), Mobile (4.5M) and Standard (4.6M – 7M). The lighter design has a tri-fold antenna and a smaller shelter to make redeployment and setup faster and easier.
- The robust DKET network makes for a seamless transition to backup equipment or terminals, eliminates long outages and minimizes impact to the Soldier.
- DKETs operate on Ku, Ka and X-band frequencies.
- Electronics are housed in separate shelters.

A | DKETs support commercial Ku-Band frequencies and their electronics are housed in separate shelters. They are highly transportable, self-contained and can establish headquarters-level, network-hub connectivity anywhere a mission demands.
B | A DKET is shown in March 2011 as part of Project Manager Warfighter Information Network-Tactical's Ka and X-band frequency certification effort that enables earth satellite terminals to utilize military satellites.

B

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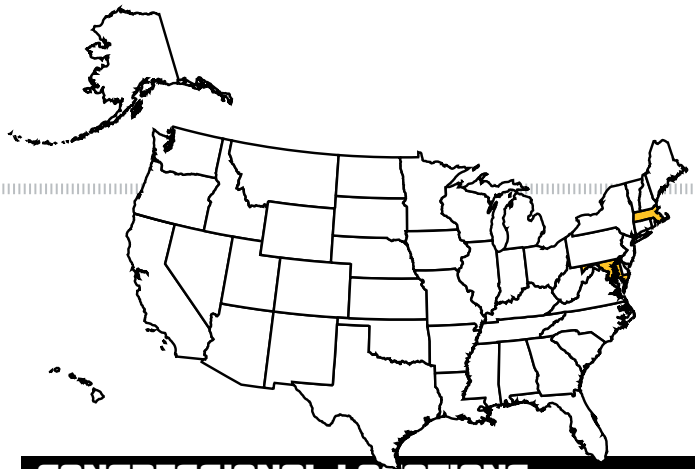
Photo by Army Alabama National Guard

DIRECT

The new Disaster Incident Response Emergency Communications Terminal (DIRECT), formerly called the Joint Incident Site Communication Capability (JISCC), provides interoperable communications support to National Guard response forces and local first responders in support of civil missions and domestic emergencies. It provides collaboration and communication services at incident sites that link local responders and emergency managers with state and federal authorities.



CONGRESSIONAL LOCATIONS

KEY CONTRACTORS

- Janus Research
- Engineering Solutions & Products

DESCRIPTION

Domestic emergencies happen quickly and often without warning. The DIRECT advanced communications system can rapidly deploy anywhere in the U.S. to enable vital interagency communications. It provides critical communications capabilities to numerous Nation Guard missions that include large-scale pre-planned events, responses to man-made and natural disasters and other civil support and humanitarian efforts. The system includes a modular communications system, support equipment and a team of trained DIRECT operators and maintainers that can provide global communications to help save human life and material property. DIRECT will provide commercial internet and phone accessibility, 4G/wireless and radio bridging and voice cross-banding, enabling first responders to seamlessly communicate with each other.

CAPABILITIES

- The Joint Network Node (JNN) is a transportable network node that provides high-speed wide area network capability for secure voice, video and data exchange.
- The Satellite Transportable Terminal (STT) is highly transportable and mobile satellite system that operates in conjunction with the JNN and is designed to establish secure voice, video and data communications virtually anytime and anywhere.
- A new WiFi and 4G LTE transmission infrastructure capability will support Soldier wireless and cellular handheld requirements from the command post to the edge of the tactical formation.
- The Commercial Coalition Equipment (CCE) provides tactical access to commercial internet and commercial telephone services to facilitate coalition and civil support. An integrated radio-bridging and voice cross-banding module allows interconnection between telephones, combat net radios, first responders' radios and voice applications supporting both civil and military operations. It enables seamless interoperability among disparate radio networks without supplying common radios to these users.
- The DIRECT package also includes a towed generator, towed equipment trailer with communications equipment, tent and support supplies.

[redacted]

A | People and their pets evacuated by high clearance Army truck in Boulder County.

B | A Joint Network Node (left) provides high-speed network capability as part of the DIRECT package.

C | The 4G LTE Cellular/Wireless transmission antenna

D | The DIRECT package also includes a Satellite Transportable Terminal (left), a towed-generator (right), towed equipment trailer with communications equipment, tent and support supplies.

E | Radio-bridging and voice cross-banding capability enables Soldiers to fuse radio and phone networks.

*Non-Program of Record

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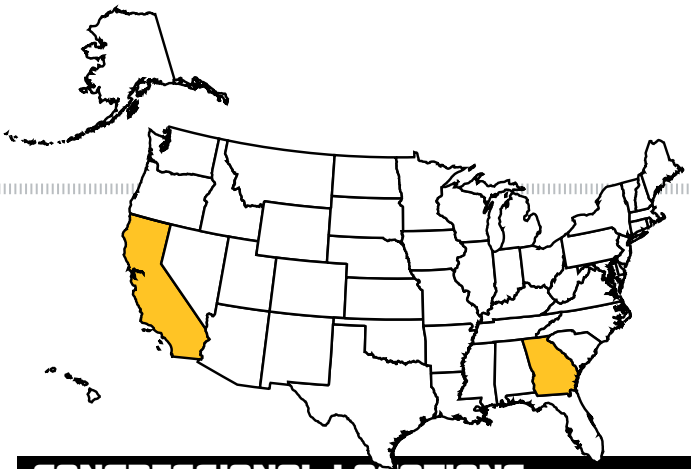
EMC2

Enroute Mission Command Capability (EMC2) enables Commanders of Global Response Force (GRF) units to plan missions in the air, while their Soldiers receive operational updates and watch full motion video of upcoming drop zones before their parachutes ever open. It arms Soldiers with real-time situational awareness so they can be more effective the moment boots hit the ground. The system's suite of network communications capabilities provide GRF Commanders with the same mission command and communications capabilities they would use in a command post on the ground, in essence turning the plane into a "flying command post."



CONGRESSIONAL LOCATIONS

KEY CONTRACTORS

- ViaSat
- Boeing

DESCRIPTION

The GRF must rapidly deploy anywhere in the world with little to no notice and they need as much situational awareness as possible. By leveraging technologies similar to those used by today's commercial airlines to provide inflight internet access, EMC2 enables the GRF of the XVIII Airborne Corps and 82nd Airborne Division to access the mission command capabilities, such as Command Post of the Future, and secure reliable voice, video and data communications provided by the Army's common tactical communications network, Warfighter Information Network-Tactical (WIN-T), all from a C17 aircraft. Because of the increased bandwidth the system provides, GRF commanders can now tap into mission command applications and utilize services such as Secure Voice Over Internet Protocol (SVOIP) phone calls, chat and email. Unmanned Aerial Vehicle (UAV) feeds can now be displayed throughout the aircraft on LED screens, which also have an integrated scrolling marquee and intercom system that provides status updates. The comprehensive real-time situational awareness and understanding provided by EMC2 can be critical to the effectiveness of the unit in the initial stages of early entry operations.

CAPABILITIES

- The Fixed Installed Satellite Antenna (FISA) provides reach-back capability through the use of commercial services, enabling access to the information provided by the WIN-T network. This satellite antenna also initially provides a fourfold increase in bandwidth, with additional increases coming in the follow-on capability, so that a new host of services can be employed on board, increasing capability for GRF units to plan and maintain critical situational awareness in the air.
- The key capability of EMC2 is not just in the antenna, but also in the incorporation of the roll-on Key Leader Enroute Node (KEN), and later the Dependent Airborne Node (DAN) and Command And Staff Palletized Airborne Node (CASPAN). These nodes provides airborne units with broadband reach-back data capability; SVoIP plane-to-plane and plane-to-ground communications between task force commanders and combatant commanders.
- With EMC2, UAV feeds can now be displayed on board the aircraft on LED screens, along with integrated marquees and an intercom system. This will enable commanders and their troops to see the target area, to gain an understanding of the battlefield prior to arriving, and to see enemy positions and dispositions in the target area.

A | Airborne Soldiers from the XVIII Airborne Corps and 82nd Airborne Division successfully utilized EMC2 during the Joint Forcible Entry (JFE) exercise at Fort Irwin, Calif.
B | EMC2 provides a workstation for Soldiers and Commanders to prepare for missions in flight. In the photo a Soldier prepares for an EMC2 demonstration at Pope Army Air Field, Fort Bragg, N.C.
C | EMC2 provides in-flight network communications and mission command to increse the situation awareness of the GRF.

*Non-Program of Record

ACQ PHASE*

1. Technology Development
2. Engineering & Manufacturing Development
3. Production & Deployment
4. Operations & Support

1 | 2 | 3 | 4

GBS

Global Broadcast Service (GBS) provides high-speed broadcast of large-volume information products such as video, maps and weather data to deployed Tactical Operations Centers and garrisoned forces worldwide. GBS provides critical situational awareness, decreases decision times and increases combat agility.

CONGRESSIONAL LOCATIONS

KEY CONTRACTORS

- General Dynamics
- Engineering Solutions & Products
- CSC
- Northrop Grumman
- VIA SAT

DESCRIPTION

GBS provides high-speed, one way flow of multimegabit video and data products including National Television Standards Committee video, large data files, map files and web products. GBS operates as a system of broadcast sites with multiple receive suite types.

CAPABILITIES

- Operates on the UHF Follow-On Ka band satellites and the Wideband Global SATCOM Satellite system, augmented as required by commercial Ku band satellites.
- Transportable Ground Receive Suites allow deployed forces to directly receive national level data and full motion video and distribute to tactical operations center local area network users.
- Theater Injection Point provides the Combatant Command/ Combined Joint Force Command an in-theater uplink capability that broadcasts live Unmanned Aerial Vehicle and other video feeds as well as data products generated in theater.
- Transitioning to joint internet protocol modem will provide transmission security capability.

A | Soldier on GBS
B | Transportable Ground Receive Suites (TGRS)
C | Soldier setting up a GBS

B

C

* Non-Program of Record

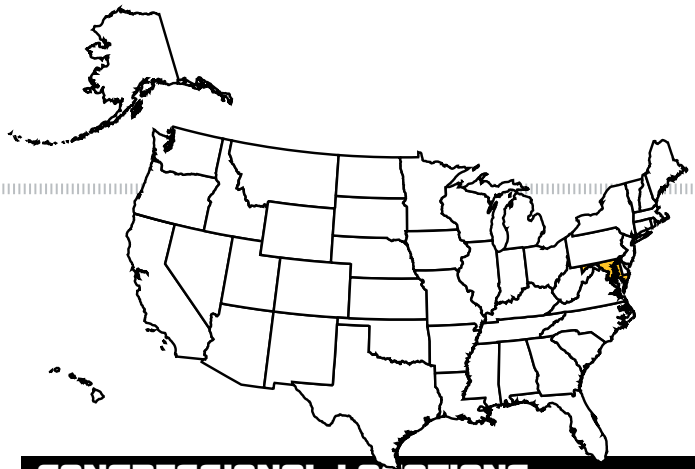
ACQ PHASE*

1. Technology Development
2. Engineering & Manufacturing Development
3. Production & Deployment
4. Operations & Support

1 | 2 | 3 | 4

GRRIP

Fitting into a single handheld transit case for rapid mobility, this satellite network communications kit known as the Global Rapid Response Information Package (GRRIP) provides secure, beyond-line-of-sight voice, video and data communications without the need for local network infrastructure so Soldiers can communicate anytime and anywhere on the planet. The system supports early entry and mature operational phases in austere environments.



CONGRESSIONAL LOCATIONS

KEY CONTRACTORS

- KLAS Telecom Services

DESCRIPTION

The GRRIP is small enough to fit in the overhead bin of a commercial airplane and sets up rapidly. The system provides access to Defense Information Systems Network (DISN) services, which enables early entry elements to transfer critical information (data/voice/video) to commanders. It provides classified and unclassified communications to forces operating in austere and demanding environments, such as embedded training teams and other small units that do not have access to the network equipment and infrastructure of established forward operating bases. This commercial-off-the-shelf terminal is designed for small teams entering locations where the infrastructure has been dismantled, destroyed or is non-existent. The GRRIP is also an excellent system for use by first responders.

CAPABILITIES

- Network communications from anywhere on the planet.
- Fits into a single handheld transit case for rapid mobility and force scalability.
- Continued communications and situational awareness from early entry to more mature operations at the tactical edge.
- Can be configured for use on Secure Internet Protocol Router Network (SIPR) Non-secure Internet Protocol Router (NIPR) or coalition networks.

[redacted]

A | GRRIP enables the Soldier or first responder to communicate anywhere in the world by using SIPR/NIPR or coalition voice and data capability without electricity or an existing infrastructure.

B | GRRIPs provide secure and non-secure communications to forces operating in austere and demanding environments such as embedded training teams and other small units that do not have access to the network equipment and infrastructure of established forward operating bases.

*Non-Program of Record

ACQ PHASE*

1. Technology Development
2. Engineering & Manufacturing Development
3. Production & Deployment
4. Operations & Support

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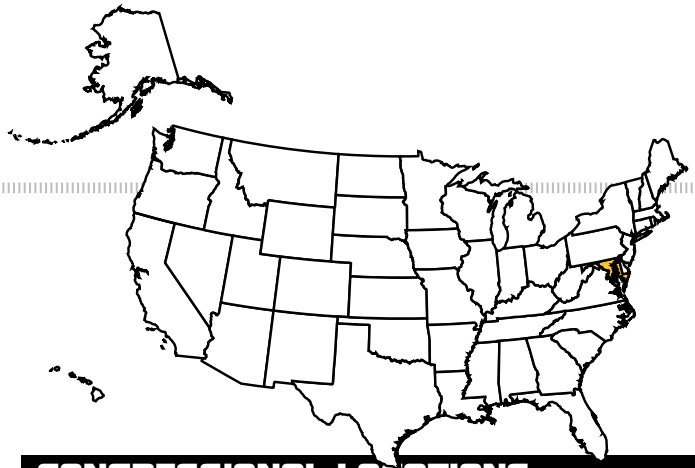
JENM

Product Manager Joint Enterprise Network Manager (JENM) develops, integrates and fields the network manager for mid and lower tier tactical networks aligned with the U.S. Army [via Integrated Tactical Networking Environment (ITNE)] and the Joint networking environment. JENM is the tactical edge network manager that integrates into the larger global vision of planning and managing all tactical networking waveforms and software defined radios.



CONGRESSIONAL LOCATIONS

KEY CONTRACTORS

- Northrup Grumman
- Harris

DESCRIPTION

JENM designs networks, loads, monitors, and manages software defined radios and ancillary devices across the ground, air, and maritime domains, a capability not available in legacy planning systems, and will integrate with other network managers.

CAPABILITIES

- JENM operates within the Integrated Tactical Networking Environment (ITNE) and handles the planning, configuration, monitoring, management, and analysis functions for all signal components and systems within the tactical radio.

A | Spc. Samantha Myers, Combat Network Radio (CNR) signal support systems specialist for the 2nd Brigade Combat Team, 1st Armored Division (2/1 AD), works with the JENM, a software application that manages lower tactical radio networks, during Network Integration Evaluations (NIEs) 16.1

B | Soldiers take part in a user jury for the Army's JENM, a software application that manages lower tactical radio networks, to provide feedback to support continual JENM enhancements.

C | Soldiers from the 2nd Brigade Combat Team, 82nd Airborne Division received JENM new equipment training with the Joint Tactical Network Toolkit in early September. In the first photo the Soldier in the front is working with his Rifleman Radio and the Simple Key Loader (right hand).

B

B

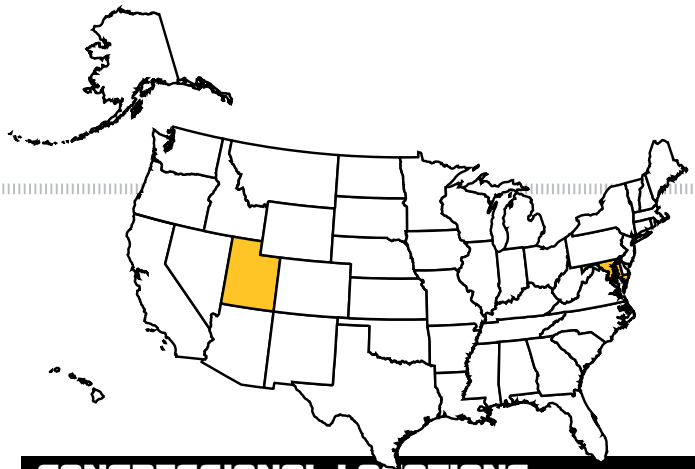
*Non-Program of Record

ACQ PHASE*

1. Technology Development
2. Engineering & Manufacturing Development
3. Production & Deployment
4. Operations & Support

PHOENIX

Phoenix/Super High Frequency (SHF) terminal provides Expeditionary Signal Battalions (ESBs) with high capacity, inter- and intra-theater range extension for networked mission command information to include logistical, operational, intelligence and administrative data.



CONGRESSIONAL LOCATIONS

KEY CONTRACTORS

- L3 Communications
- JANUS Research
- Booz Allen Hamilton

DESCRIPTION

Phoenix/SHF terminal is a transportable, quad-band, tactical satellite terminal that operates in the SHF band over military and commercial satellites. Phoenix/SHF terminal is mounted on an expanded capacity vehicle and provides ESBs assured access to satellite communications and operational flexibility in a tactical environment through a rapidly deployable capability operating over military X/Ka and commercial C/Ku satellite bands. It is designed to operate 24 hours per day, seven days per week and provides assured and reliable communications throughout the world.

CAPABILITIES

- Operates in military X and Ka band and commercial C and Ku bands.
- Qualified for the military environment: temperature, shock, vibration.
- High-capacity, inter- and intra-theater data range extension over commercial and military satellites.
- Can interface with other strategic networks via Standardized Tactical Entry Points or strategic assets.
- Transmits one FrequencyDivision Multiple Access (FDMA) link and receives up to four FDMA links simultaneously.
- Supports point to point, mesh and hug-spoke networks.

A | The Phoenix operates in a world-wide military tactical environment and provides baseband satellite communication signals

B | Pheonix at Network Integration Evaluation 14.1 at Fort Bliss, Texas in November 2013.

ACQ PHASE

1. Technology Development
2. Engineering & Manufacturing Development
3. Production & Deployment
4. Operations & Support

1 | 2 | 3 | 4

RHN

Regional Hub Nodes (RHNs) are transport nodes for the Warfighter Information Network-Tactical (WIN-T) network. Strategically located at five Department of Defense Standardized Tactical Entry Point (STEP) locations globally, they enable the Army's ability to deploy forces anywhere in the world in support of contingency operations, disaster relief, or National emergency response.

CONGRESSIONAL LOCATIONS

KEY CONTRACTORS

- GDC4 systems
- ITT

DESCRIPTION

The five RHNs are at the upper-most level of the WIN-T network architecture, and their innovative baseband and satellite communications capabilities enable regionalized reach-back to the Army's global network. Additionally, the Army recently installed a Commercial Internet and Phone (COM-IP) package to the RHNs to support contingency operations, disaster relief or National emergency response.

RHNs give the Soldier in the field immediate access to secure and non-secure internet and voice communications anywhere in the globe. To provide tactical users with secure, reliable connectivity worldwide, the Army has positioned RHNs in five separate strategic regions: Continental United States (CONUS) East and CONUS West, Central Command, European Command and Pacific Command.

CAPABILITIES

- Currently used by deployed Marine Corps and Army units.
- Uses both commercial and military satellite bands, and is "plug and play" to accept additional military transmissions systems.
- "Customizable:" containing spare racks to support unit equipment specific to their mission set.
- Contains full Network Operations capabilities for network monitoring, management and trends analysis, as well as information assurance tools.
- Commercial Internet and Phone (COM-IP) package supports contingency operations, disaster relief or National emergency response.

A | The extensive satellite communications capabilities of RHNs enable regionalized reach-back to the Army's global network.

B | RHN used for exercise with the 82nd Airborne Division, Fort Bragg.

C | A 58th Signal Battalion Soldier prepares to perform maintenance on the 9.2 Meter antenna located in Guam.

*Non-Program of Record

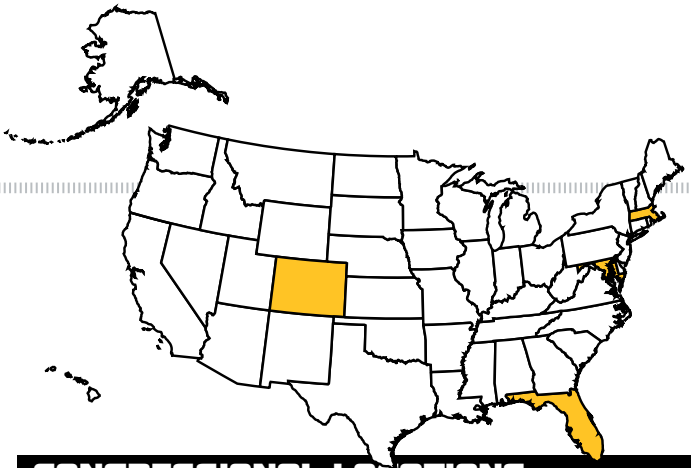
ACQ PHASE*

1. Technology Development
2. Engineering & Manufacturing Development
3. Production & Deployment
4. Operations & Support

1	2	3	4

SMART-T

Secure, Mobile, Anti-Jam, Reliable, Tactical - Terminal (SMART-T) makes it possible for units to extend the range of their network in such a manner that communications cannot be jammed, detected or intercepted; enabling Soldiers to reliably and securely send text, data, voice and video communications beyond their area of operations.



CONGRESSIONAL LOCATIONS

KEY CONTRACTORS

- Raytheon
- MIT Lincoln Lab.
- Booz Allen Hamilton

DESCRIPTION

SMART-T is the Army's protected satellite communications system that enables commanders at brigade and higher to operate in an Electronic Warfare (EW) threat environment that includes both RF signal interference (jamming), signal detection and geographic location threats. Additionally, the SMART-T can also survive the effects of a High-Altitude Electromagnetic Pulse (HEMP) produced by nuclear detonations and can operate and survive in a biological and chemical environment.

CAPABILITIES

- Interoperable with AEHF satellite constellation.
- Enhanced system interfaces
- Provides Low and Medium Data Rate (LDR/MDR) capability for voice and data transmission.
- Interoperable with Milstar, UHF Follow-On, EHF MIL-STD 1582D and MIL-STD 188-136 compatible payloads.
- Provides Anti-Jam and anti-scintillation (nuclear environment) communications.

[redacted]

A | Soldiers train on SMART-T at the SMART-T centralized training and fielding facility, in Largo, Fla.

B | Signal soldiers in Korea used secure, mobile, anti-jam, reliable, tactical terminal (SMART-T) equipment.

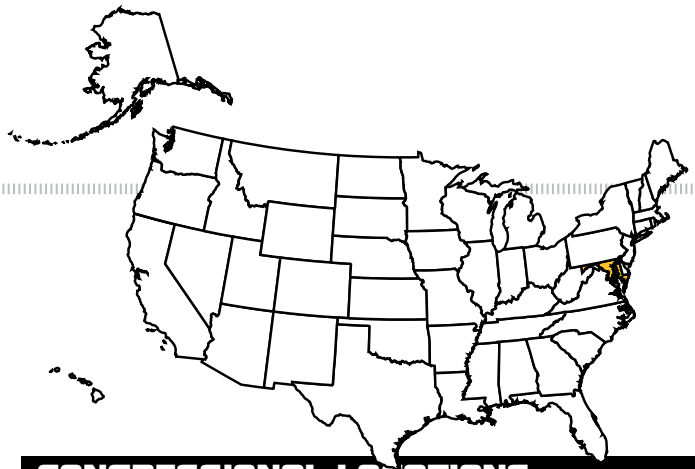
ACQ PHASE

1. Technology Development
2. Engineering & Manufacturing Development
3. Production & Deployment
4. Operations & Support

1 | 2 | 3 | 4

SIG MOD

The Signal Modernization (Sig Mod) program aims to increase the expeditionary nature of today's forces and the ability to deploy the right size units to the right place at the right time. Sig Mod will provide expanded network transport capacity to WIN-T Increment 1 and Increment 2 while reducing the tactical signal support footprint and strategic lift requirements for operational brigades, divisions, corps and expeditionary signal battalions (ESBs). It increases the agility, scalability and the expeditionary nature of units.



CONGRESSIONAL LOCATIONS

KEY CONTRACTORS

- Janus Research

DESCRIPTION

Sig Mod will transform and augment the Army's communication capabilities and extend the network to lower echelons via modular, scalable and interoperable nodes. Operational requirements have pushed the need for communication capabilities lower in Army formations. The new network enhancements will provide significant increases in throughput and situational awareness, further untether commanders from the command post and enable a more rapidly deployable force by reducing size, weight and power (SWaP). The Sig Mod program provides continued communications to the tactical edge.

CAPABILITIES

- Tri-band Line of Sight (TRILOS) is a new high bandwidth, WIN-T Increment 1 and Increment 2 interoperable network radio, which establishes a terrestrial link for a more robust network. It also reduces SWaP and significantly increases throughput.
- A transit-cased Troposcatter transmission (Tropo) system provides increased data throughput, reduced manning, and decreased SWaP. Tropo systems shoot microwaves that bounce off of the troposphere layer of the atmosphere instead of a satellite, allowing for secure, high-speed transfer of large volumes of data between sites and over terrestrial obstructions such as mountains. They also reduce the Army's reliance on expensive commercial and military satellites.
- A new Command Post Wi-Fi and 4G LTE Cellular transmission infrastructure capability will support Soldier wireless and cellular handheld requirements from Command Posts (CPs) to the edge of the tactical formation.
- The Commercial Coalition Equipment (CCE) can be rapidly reconfigured to provide tactical access for one of four different networks: the coalition network, Secure Internet Protocol Router (SIPR), Non-secure Internet Protocol Router (NIPR), or commercial internet and phone service.
- An integrated radio-bridging and voice cross-banding module allows interconnection between telephones, combat net radios, first responders radios and voice applications supporting both civil and military operations. It enables seamless interoperability among disparate radio networks without supplying common radios to these users.
- Enroute Mission Command Capability (EMC2) will provide military internet access and mission command capability for Soldiers while in flight on US Air Force C-17s to support joint Global Response Force (GRF) missions. EMC2 enables rapidly deployed GRF units to plan and maintain critical situational awareness in the air, keeping joint forces connected as they travel into developing situations.

A | Soldiers from the 86th Expeditionary Signal Battalion, B Company evaluated the new command post 4G LTE/Wi-Fi system.
B | The Tropo Lite, a transit case-based tropospheric scatter communications system, enables secure transfer of large volumes of data between sites and over terrestrial obstructions.
C | Soldiers get a first hand look at this new WIN-T Increment 1 line-of-sight radio that that reduces size, weight and power while significantly increasing throughput.

*Non-Program of Record

ACQ PHASE*

1. Technology Development
2. Engineering & Manufacturing Development
3. **Production & Deployment**
4. Operations & Support

1	2	3	4

SNAP

Secure Internet Protocol Router Network/Non-secure Internet Protocol Router (SIPR/NIPR) Access Point (SNAP) ground satellite terminals are fielded to augment current network capabilities to extend network access to company and team level. Project Manager Warfighter Information Network-Tactical (PM WIN-T) is bridging gaps in C4ISR created by rugged-expansive terrain and sparse infrastructure by deploying these transportable commercial-off-the-shelf Very Small Aperture Terminal (VSAT) satellite terminals, which can deploy more quickly than their larger traditional counterparts.

CONGRESSIONAL LOCATIONS

KEY CONTRACTORS

- Telecommunications Systems Inc

DESCRIPTION

SNAPs are designed to provide satellite communications to units at remote forward operating bases where use of terrestrial radios is challenging due to issues with terrain or distance. These SNAP terminals provide reliable satellite communication access and take advantage of commercial equipment to expedite the fielding process. They provide access to the tactical and strategic networks for mission command, calls for fire, Medevac and information exchange. SNAPs are a key communications component for units, providing secure beyond-line-of-sight communications at the company level and below.

CAPABILITIES

- Work in concert with WIN-T Increments 1 and 2.
- Transit case design enables easy transport in the back of High Mobility Multipurpose Wheeled Vehicles or helicopters.
- Modular design allows for varying dish and antenna sizes to appropriately satisfy mission requirements.
- Easy to move around the battlefield, providing an expeditionary element to the force.
- Certified Ka and X-band capability to take advantage of the Department of Defense's Wideband Global SATCOM satellites.

A | SNAPs enable units in austere environments to pull down SIPR/NIPR-centric services and communicate with higher headquarters
B | SNAPs are designed for use at the company echelon and small combat outposts.
C | Soldiers from the 307th ESB practice troubleshooting procedures during new equipment training for SNAP bridging terminals, at Helemano Military Reservation, Hawaii, in June 2015.

B

C

*Non-Program of Record

ACQ PHASE*

1. Technology Development
2. Engineering & Manufacturing Development
3. Production & Deployment
4. Operations & Support

1 | 2 | 3 | 4

T2C2

Transportable Tactical Command Communications (T2C2) is a new program of record that will provide robust voice and data communications in the early phases of joint operations and in later operational phases in austere environments. By taking advantage of military satellite capability, it greatly increases throughput over currently fielded capability. T2C2 will connect small company and team-sized units on the ground to the high capacity Warfighter Information Network-Tactical (WIN-T) network and extend that network to the tactical edge.

CONGRESSIONAL LOCATIONS

KEY CONTRACTORS

- Janus Research
- Telecom Systems

DESCRIPTION

T2C2 provides satellite capability to small detachments and teams operating in remote locations without network infrastructure, enabling them to securely relay classified and time sensitive information, increasing the situational awareness for the entire operation. The man-portable T2C2 Lite version can be rapidly set up and provides satellite capability to small detachments and teams operating in remote locations without network infrastructure. The heavy version of T2C2 provides a high bandwidth tactical network extension for small companies and small forward operating bases operating beyond-line-of-sight from their higher headquarters.

Many systems with capabilities similar to T2C2 have been fielded over the years to address operational needs, however T2C2 product selection is not expected until the second quarter fiscal year 2016.

Reset and upgraded Secure Internet Protocol Router Network/ Non-secure Internet Protocol Router (SIPR/NIPR) Access Points (SNAPs) and even smaller suitcase-sized Global Rapid Response Information Packages (GRRIPs), which reduce SWaP and increase bandwidth, are being used as bridging capability until the respective heavy and light versions of the T2C2 program are ready to begin fielding.

CAPABILITIES

- T2C2 Lite (V1) is intended to be man-portable (carried by one Soldier), sets up rapidly and can be on the air in less than ten minutes. V1 will support military Ka and X band and commercial Ku band capability for integration into the WIN-T tactical network.
- T2C2 Heavy (V2) will leverage capabilities based on the SIPR/ NIPR Access Point (SNAP) terminal solution and will support company sized elements and small forward operating bases. V2 will support military Ka and X bands and commercial Ku band for integration into the WIN-T tactical network.

A | T2C2 will provides soldiers operating in remote locations without network infrastructure
B | Soldiers with the 1st Armored Brigade Combat Team using a prototype of T2C2 during NIE 16.1, T2C2 design concept depiction for market research only.

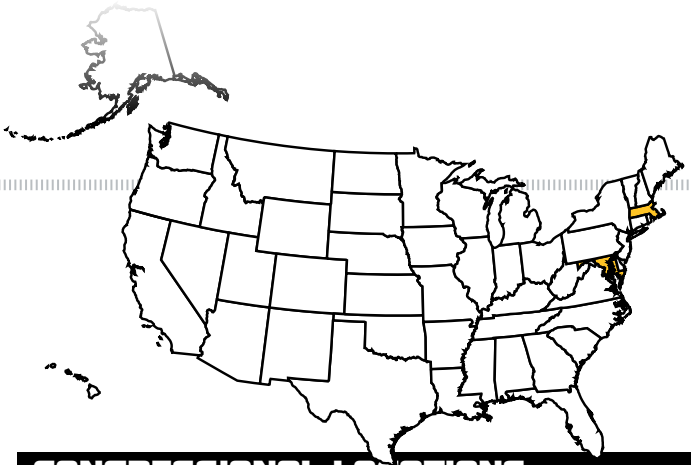
ACQ PHASE

1. Technology Development
2. Engineering & Manufacturing Development
3. Production & Deployment
4. Operations & Support

1 | 2 | 3 | 4

WIN-T INCREMENT 1

Warfighter Information Network-Tactical (WIN-T) is the Army's current and future tactical communications network backbone that provides seamless, assured communications for the Soldier along with advanced network management tools to support implementation of a commander's intent and priorities. WIN-T Increment 1 establishes a network backbone that provides the full range of data, voice and video communications to battalion and above echelons using satellite and line-of-sight communications nodes that set up at-the-quick-halt to successfully meet needed operational requirements.



CONGRESSIONAL LOCATIONS

KEY CONTRACTORS

- ESP
- General Dynamics
- JANUS Research

DESCRIPTION

The Army began fielding WIN-T Increment 1, formerly known as the "Joint Network Node Network," in 2004 and completed fielding in 2012 to all units dedicated to receive the capability. WIN-T Increment 1 is the Soldier's expeditionary Internet and provides a full range of at-the-halt data, voice and video communications, allowing Soldiers to simply pull over on the side of the road to communicate. WIN-T Increment 1 provides this networking capability to command posts and units at the battalion level and above.

The WIN-T Increment 1 End Of Life Technical Refresh (EOL Tech Refresh) effort currently underway is one of four upgrades being made to WIN-T Increment 1. This effort advances capability while reducing equipment by one third for increased unit agility. An on-going enhanced networking upgrade, the WIN-T Increment 1b upgrade, improves the efficiency, security and interoperability of the network. Other upgrades include the Network Operations (NetOps) Convergence Upgrade that simplifies and reduces the number of network management tools communications officers (S6s and G6s) use to manage the tactical communications network, and the High Capacity Line Of Sight (HCLOS) Radio Upgrade that provides more than a fourfold increase in throughput.

CAPABILITIES

- WIN-T Increment 1 has three types of transportable network nodes that provide high-speed wide area network capability for secure voice, video and data exchange. The Tactical Hub Node (THN) supports division headquarters; the Joint Network Node (JNN) supports brigade level headquarters; and the Battalion Command Post Node (BnCPN) supports battalion level headquarters. The fourth type of node, the Regional Hub Node, is a fixed installation equivalent to three THNs, and is used to support theater level operations.
- The Satellite Transportable Terminal is highly transportable and mobile satellite system, which operates in conjunction with the JNN and BnCPN and is designed to establish secure voice, video and data communications anytime, anywhere.

[redacted]

A | Soldiers work together to position their Satellite Transportable Terminal to ensure the strongest signal at Camp Buehring, Kuwait
B | Joint Network Node
C | Soldiers training at the WIN-T Increment 1 Colorless Core Upgrade, Regional Training Site 2 at Fort Drum, N.Y. in June 2013.

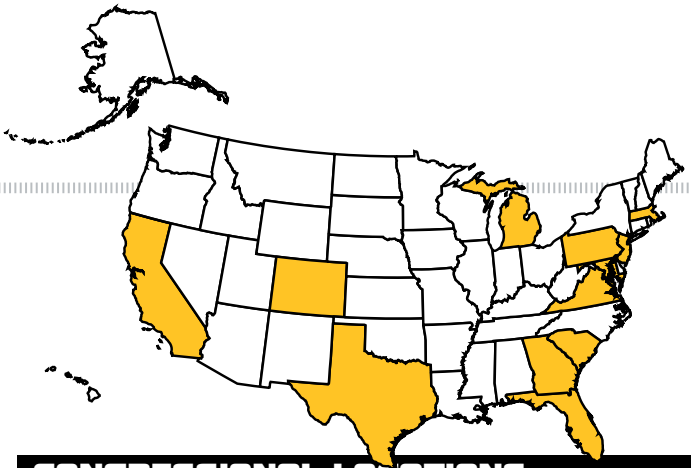
ACQ PHASE

1. Technology Development
2. Engineering & Manufacturing Development
3. Production & Deployment
4. Operations & Support

1 | 2 | 3 | 4

WIN-T INCREMENT 2

WIN-T Increment 2 provides an integrated tactical mobile network leveraging proven commercial and government technology. The system provides on-the-move network and a mobile infrastructure by employing military and commercial satellite connectivity and line-of-sight (terrestrial) radios and antennas to achieve end-to-end connectivity and dynamic networking operations. WIN-T Increment 2 extends the network backbone to company level for maneuver brigades for the first time.



CONGRESSIONAL LOCATIONS

KEY CONTRACTORS

- General Dynamics
- Lockheed Martin
- L3 Communications
- Harris Corp

DESCRIPTION

Combat vehicles integrated with WIN-T Increment 2 provide the on-the-move communications, mission command and situational awareness that commanders need to lead from anywhere on the battlefield. WIN-T Increment 2 enables deployed Soldiers down to the company level operating in remote and challenging terrain to maintain voice, video and data communications while on patrol, with connectivity rivaling that found in a stationary command post. With WIN-T Increment 2, Soldiers can utilize applications for maneuver, fires and intelligence from inside vehicles, enabling commanders to make decisions on-the-move rather than being tied down to a fixed command post, ensuring effective and unpredictable offensive and defensive operations. WIN-T Increment 2 began fielding in October 2012 and is fielded as the tactical network communications backbone of the Army's capability sets.

CAPABILITIES

- The Tactical Communications Node (TCN) provides the principal backbone element and supports command post operations for the WIN-T Increment 2 network. It provides communication and networking equipment and allows the Soldier to access the network at a variety of security levels. While at-the-halt, the TCN is equipped with a 10 meter, extendable mast to improve line-of-sight (LOS) connectivity and larger satellite assemblage for high throughput.
- PoP is installed on select platforms at division, brigade and battalion echelons, enabling mobile mission command by providing on-the-move network connectivity, both LOS and beyond-line-of-sight.
- The Soldier Network Extension (SNE) is installed on select vehicles provide on-the-move network communications to extend the network from the brigade down to the company level for the first time. Using its on-the-move satellite communication systems, the SNE can be used to heal and extend lower echelon tactical radio network for geographically separated elements blocked by terrain features.
- VWP is a communications package for non-WIN-T Command and Control (C2) vehicles. The VWP B-Kit provides remote connectivity to a TCN via a Local Access Waveform for C2 vehicles during at-the-halt and on-the-move operations. It is a small form factor Local Area Network extension of the TCN's satellite and terrestrial LOS network systems.
- NetOps and Security Center (NOSC) provides network management and enhanced tactical network planning, administration, monitoring and response capabilities.
- The Satellite Transportable Terminal Plus (STT+), a trailer-mounted ground satellite communications terminal with a generator, is used in conjunction with the TCN at the halt.

A | A WIN-T Increment 2 SNE was utilized during a developmental test in June 2014 at White Sands Missile Range, N.M.

B | A WIN-T Increment 2 PoP, which enables mobile mission command at the battalion level and above, heads out to the desert during a WIN-T Increment 2 developmental test.

C | The Developmental Test 2 provided the opportunity for technical verification of three WIN-T Increment 2 Stryker variants.

B

C

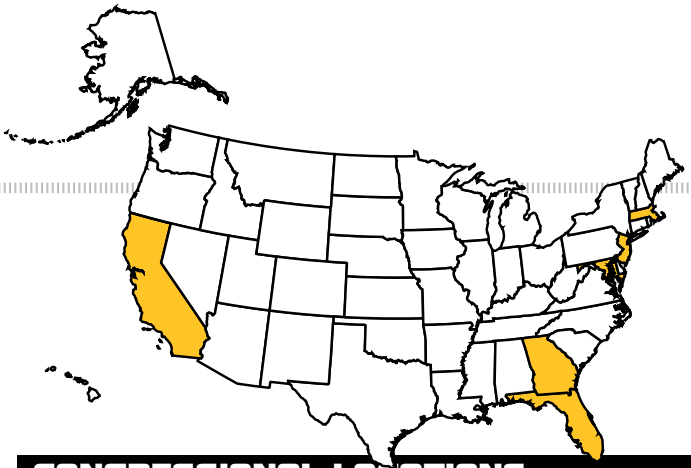
ACQ PHASE

1. Technology Development
2. Engineering & Manufacturing Development
3. Production & Deployment
4. Operations & Support

1 | 2 | 3 | 4

WIN-T INCREMENT 3

Warfighter Information Network-Tactical (WIN-T) Increment 3 develops the Network Operations (NetOps) software needed to meet the Army's Network Convergence goals. NetOps provides the monitoring, control and planning tools to ensure management of the voice, data and internet transport networks. The WIN-T Increment 3 program's NetOps efforts will simplify and reduce the number of network management tools communication officers (G6s and S6s) use to manage the tactical communications network. WIN-T Increment 3 leads the Army's Tactical NetOps convergence efforts.



CONGRESSIONAL LOCATIONS

KEY CONTRACTORS

- Harris Corp
- General Dynamics
- Lockheed Martin
- L3 Communications

DESCRIPTION

WIN-T Increment 3 provides the fully integrated Network Operations capability to allow seamless integration of tactical network planning, management, monitoring and defense for the Signal Staff. These NetOps improvements simplify the management of the network, and increase the automation of tools and reporting. The effort will also increase visibility across the network to make communications systems easier to install, operate, maintain and defend – key to supporting an agile future force. NetOps will be provided as a technical insertion to WIN-T Increments 1 and 2 for fielding and support.

WIN-T Increment 3 also provides waveform management and modernization with the new Highband Networking Waveform (HNW) version 3.0 for line-of-sight communications, and the Net Centric Waveform (NCW) version 10.x for increased throughput capability for beyond-line-of-sight satellite communications.

CAPABILITIES

- Providing enhanced NetOps software packages that support NetOps convergence activities across WIN-T and the Lower Tactical Internet to meet the Army's Convergence goals and Common Operating Environment (COE) interoperability.
- Advancements in monitoring, control and planning tools to ensure management of emerging voice, data and internet transport networks as well as improved Information Assurance and Network Centric Enterprise Services.
- Inherent software modernization through recurring technical refresh within the WIN-T family of programs.
- Improved beyond line-of-sight satellite communications via next generation Multi-Frequency Time Division Multiple Access (MF-TDMA) NCW supporting data rate increases for large terminals.
- Next generation line of sight Highband Networking Waveform version 3.0 available to other programs via the Joint Tactical Networking Information Repository.

[redacted]

A | The Condition Based Maintenance Plus (CBM+) interface to Command Post of the Future, known as the "CBM+ plug-in," was demonstrated during NIE 14.2. CBM+ is one of the NetOps solutions delivered by the WIN-T program.

B | Soldiers with 4th Brigade, 10th Mountain Division (4/10) at Fort Polk, La., receive training on Network Operations (NetOps) tools for tactical radios. As the Army restructures the WIN-T Increment 3 program to focus on NetOps, it will simplify and reduce the number of NetOps tools that G6s and S6s use to manage the tactical communications network.

ACQ PHASE

1. Technology Development
2. Engineering & Manufacturing Development
3. Production & Deployment
4. Operations & Support

1 | 2 | 3 | 4

ACRONYMS

A

Acquisition Decision Memorandum (ADM)
Advanced Acquisition Kit (AAK)
Advanced EHF (AEHF)
Advanced Field Artillery Tactical Data System (AFATDS)
Advanced Tactical Optimized Map (ATOM)
Airborne Maritime Fixed Station (AMF)
Area Common User System Modernization (ACUS MOD)
Air Defense and Airspace Management (ADAM)
Air Operation Centers (AOCs)
Application Program Interfaces (APIs)
Area of Operation Responsibility (AOR)
Areas, Structures, Capabilities, Organizations, People, and Events (ASCOPE)
Army Battle Command System (ABCS)
Army Force Generation (AFORGEN)
Army Key Management System (AKMS)
Automated Communications Engineering Software (ACES)

B

Battle Command Common Services (BCCS)
Battle Command Sustainment Support System (BCS3)
Battalion Command Post Node (BnCPN)
Battlefield Video Teleconference (BVTC)
Beyond Line Of Sight (BLOS)
Brigade Combat Team (BCT)
Battle Damage Assessment (BDA)
Beyond Line Of Sight (BLOS)
Blue Force Tracker (BFT)
Broadband Global Area Network (BGAN)

C

Capabilities Development Document (CDD)
Capability Production Document (CPD)
Capability Set (CS)
Chief Information Officer (CIO)
Combat Camera (COMCAM)
Combat Net Radio (CNR)
Command and Control (C2)
Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR)
Command Post Local Area Network (CP LAN)
Command Post Computing Environment (CP CE)
Command Post of the Future (CPOF)
Command Post Platforms (CPPs)
Commercial-Off-The-Shelf (COTS)
Commercial Internet and Phone (COM-IP)
Common Hardware Systems (CHS)
Common Operating Environment (COE)
Common Operating Picture (COP)
Communications Security (COMSEC)
Commercial Coalition Equipment (CCE)
Computing Environments (CEs)

D

Defense Readiness Reporting System-Army (DRRS-A)
Department of Defense (DoD)
Deployable Ku Band Earth Terminals (DKET)
Digital Video Acquisition Kit (DVAK)
Disaster Incident Response Emergency Communications Terminal (DIRECT)
Distributed Common Ground System - Army (DCGS-A)

E

Early Infantry Brigade Combat Team (E-IBCT)
Electronic Casualty Report(ECR)
Electronic Key Management System (EKMS)
Enroute Mission Command Capability (EMC2)
Expeditionary Signal Battalion (ESB)
Extremely High Frequency (EHF)

F

Fire Direction Center (FDC)
Fire Support Command and Control (FSC2)
First Unit Equipped (FUE)
Fiscal Year (FY)
Follow-on Operational Test & Evaluation (FOT&E)
Forward Entry Devices (FED)
Force XXI Battle Command Brigade and Below (FBCB2)
Forward Observer System (FOS)
FrequencyDivision Multiple Access (FDMA)

G

Global Broadcast Service (GBS)
Global Command and Control System - Army (GCCS-A)
Global Command and Control System – Joint (GCCS-J)
Global Information Grid (GIG)
Global Rapid Response Information Package (GRRIP)
Global Response Force (GRF)
Gun Display Unit - Replacement (GDU-R)

H

Hand Held (HH)
Handheld, Manpack, and Small Form Fit (HMS)
Harbormaster Command and Control Centers (HCCC)
High-Altitude Electromagnetic Pulse (HEMP)
Highband Networking Waveform (HNW)
High Capacity Line Of Sight (HCLOS)
High Frequency (HF)
High Mobility Multi-Purpose Wheeled Vehicle (HMMWV)

I

Independent Initial Operational Test & Evaluation (IOT&E)
Information Assurance (IA)
Information Repository (IR)
Initial Operational Capability (IOC)
Initialization Tool Suite (ITS)
Information Systems Security Program (ISSP)
Integrated Tactical Networking Environment (ITNE)

J

Joint Automated Deep Operations Coordination System (JADOCS)
Joint Battle Command-Platform (JBC-P)
Joint Capabilities Release (JCR)
Joint Convergence/Multilateral Interoperability Programme (MIP)
Joint Incident Site Communication Capability (JISCC)
Joint Network Node (JNN)
Joint Tactical Ground Station (JTAGS)
Joint Tactical Networking Center (JTNC)
JTRS Enterprise Network Manager (JENM)

K

Key Management Infrastructure (KMI)

L

Lightweight Forward Entry Device (LFED)
Line Of Sight (LOS)
Limited User's Test (LUT)
Local Area Networks (LANs)
Local COMSEC Management Software (LCMS)

Low Rate Initial Production (LRIP)
Low Volume Terminal 2 (LVT2)

M

Manpack (MP)
Manpower Information Retrieval and Reporting System (MIRARS)
Materiel Development Decision (MDD)
Mid-tier Networking Vehicular Radios (MNVR)
Media Production Kit (MPK)
Military Specification (MIL SPEC)
Mission Command (MC)
Mobile Ad Hoc Networking (MANET)
Mobile User Objective System (MUOS)
Mounted Computing Environment (MCE)
Mounted Family of Computer Systems (MFoCS)
Movement Tracking System (MTS)
Multi-Frequency Time Division Multiple Access (MF-TDMA)
Multifunction Information Distribution System (MIDS)
Multiservice Operational Test & Evaluation (MOT&E)

N

National Security Agency's (NSA)
Net Centric Waveform (NCW)
Network Operations (NetOps)
NetOps and Security Center (NOSC)
Night Vision Device (NVD)
North Atlantic Treaty Organization (NATO)
Non-Developmental Item (NDI)

O

On-The-Move (OTM)

P

Pocket-Sized Forward Entry Device (PFED)
Point of Presence (PoP)
Program Executive Office Command, Control and Communication-Tactical (PEO C3T)
Program Managment Office Network Enablers (PMO Net E)
Project Manager Mission Command (PM MC)
Project Manager Tactical Radios (PM TR)
Project Manager Warfighter Information Network-Tactical (PM WIN-T)
Program of Record (PoR)

R

Range of Military Operations (ROMO)
Regional Hub Nodes (RHN)
Rifleman Radio (RR)

S

Satellite Communications (SATCOM)
Satellite Transportable Terminal Plus (STT+)
SATCOM-On-The-Move (SOTM)
Secret and Below (SAB)
Secure Internet Protocol Router (SIPR)
Secure Internet Protocol Router Network (SIPRNET)
Secure, Mobile, Anti-Jam, Reliable, Tactical - Terminal (SMART-T)
Sensitive But Unclassified (SBU)
Signal Modernization (Sig Mod)
Signal Operating Instruction (SOI)
Single Channel Ground Airborne Radio System (SINCGARS)
Single Interface to the Field (SIF)
Simple Key Loader (SKL)
SIPR/NIPR Access Points (SNAP)
Situational Awareness (SA)
Small Airborne Networking Radio (SANR)
Software Communications Architecture (SCA)
Software Development Kit (SDK)
Soldier Network Extension (SNE)
Soldier Radio Waveform (SRW)
Size, Weight and Power (SWAP)
Special Operations Command (SOCOM)
Standardized Tactical Entry Points (STEP)
Strategic Mission Command (SMC)
Stryker Brigade Combat Team (SBCT)
Super High Frequency (SHF)
System Development and Demonstration (SDD)

T

Tactical Communication Nodes (TCNs)
Tactical Digital Media (TDM)
Tactical Ground Reporting (TIGR)
Tactical Hub Node (THN)
Tactical Internet (TI)
Tactical Media Acquisition Kit (TMAK)
Tactical Mission Command (TMC)
Tactical Network Architectures and Configurations Current (TNACC)
Tactical Network Operation Management System (TNMS)
Tactical Operation Center (TOC)
Tactical Radio Report (TRR)
Terminal High Altitude Area Defense (THAAD)
Time Division Multiple Access (TDMA)
Transportable Tactical Command Communications (T2C2)
Trailer Mounted Support System (TMSS)
Tri-band Line of Sight (TRILOS)
Transportable Ground Receive Suites (TGRS)
Troposcatter transmission (Tropo)

W

Wideband Global SATCOM (WGS)
Wideband Networking Waveform (WNW)
Wireless Communications Products (WCPs)
Warfighter Information Network-Tactical (WIN-T)

U

Ultra High Frequency (UHF)
Under Secretary of Defense for Acquisition, Technology, and Logistics (USD(AT &L))
Unified Trouble Ticketing System (UTTS)
Unit Set Fielding (USF)
United States Message Text Format (USMTF)
Unmanned Aircraft System (UAS)

V

Variable Message Format (VMF)
Vehicle Integration for C4ISR/EW Interoperability (VICTORY)
Very Small Aperture Terminal (VSAT)
Voice over Internet Protocol (VoIP)

FOR MORE INFORMATION

PUBLIC SITE: **HTTP://PEOC3T.ARMY.MIL**

FACEBOOK: **HTTP://WWW.FACEBOOK.COM/PEOC3T**

TWITTER: **HTTP://TWITTER.COM/PEOC3T**

PEO C3T

PROGRAM EXECUTIVE OFFICE COMMAND CONTROL COMMUNICATIONS-TACTICAL

U.S.ARMY

Approved for public release; distribution is unlimited. NOVEMBER 2015