Warfighter Information Network-Tactical

Commander's Handbook

TCNO
Tactical Cyber and Network Operations

Increment 1
Networking At-The-Halt

Increment 2
Networking On-The-Move

ONE NETWORK

Version 2.0

WIN-T is the Army's secure communications network modernization priority. Voice and data communications and battlefield applications rely on WIN-T for anytime, anywhere availability.

The WIN-T network is the first of its kind, giving soldiers voice and data service on the move, providing unique situational awareness and communications from anywhere on the battlefield. WIN-T gives soldiers the ability to pass information seamlessly back and forth-from the company commander back up to division and higher echelons-enabled in part by the system's unique satellite communications on-the-move capability.

WIN-T Inc 2 equipped Stryker vehicle

Warfighter Information Network-Tactical

INCREMENT 1
(Formerly JNN)

(Networking At-the-Halt)

Increment 1 Overview

With the restructure of the Warfighter Information Network-Tactical (WIN-T) program in June, 2007, both the Joint Network Node Network (JNN-N) and WIN-T programs were combined under Project Manager, WIN-T. JNN is now generically referred to as WIN-T Increment 1 (Inc 1).

WIN-T Inc 1 is defined as providing "networking at-the-halt" and is further divided into two sub increments defined as WIN-T Inc 1a, "extended networking at-the-halt", and WIN-T Inc 1b, "enhanced networking at-the-halt."

Increment 1a

WIN-T Inc 1a upgrades the former JNN capability to incorporate major baseband networking components consistent with Lot 10 and satellite components to access the Ka-band defense Wideband Global SATCOM (WGS), reducing the reliance solely on commercial Ku-band satellite.

Increment 1b

Increment 1b introduces the Network-Centric Waveform (NCW) modem, which utilizes a dynamic waveform that optimizes bandwidth and satellite utilization, increasing information throughput. It also introduces a security architecture, referred to as the colorless core, that meets Department of Defense (DoD) Information Network (DoDIN) Information Assurance (IA) security compliance requirements.

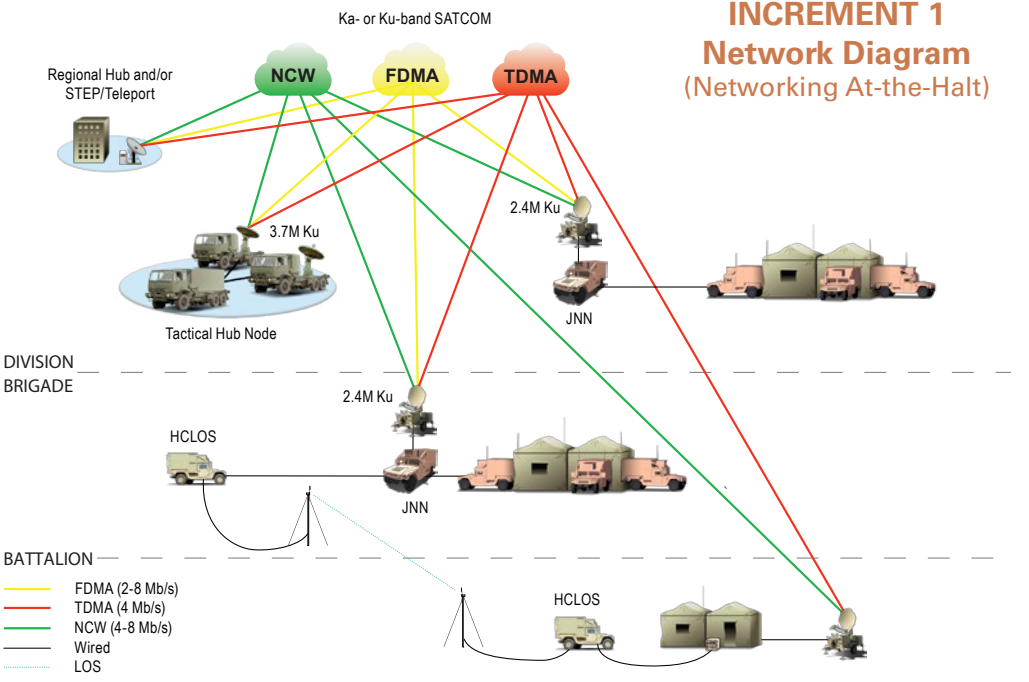
Ongoing System Update Initiatives

Lot 10 End of Life - The Lot 10 End of Life (EOL) activity identified a hardware update applicable to the lot 10-14 systems. The update introduced Virtualization to the shelters, NetOps and BnCP systems. The lot 10-14 systems that have been updated per this activity have the following nomenclature updates. (Note that all systems that have undergone the Lot 10 EOL update have also been updated for Colorless and NCW.)

Configuration Item	Pre-EOL Nomenclature	Post-EOL Nomenclature
JNN	AN/TTC-59B(V)3	AN/TTC-59C(V)5
		AN/TTC-59C (V)6
SSS	AN/TTC-56B(V)3	AN/TTC-56C(V)4
THN	AN/TTC-61B(V)2	AN/TTC-61C(V)3
BnCP	AN/TTC-64B(V)3	AN/TTC-64C(V)3
Division Main (DMAIN) G6/NetOps Cell	OL-761A(V)1/T	OL-761B(V)1/T
ESB Headquarters Company (HHC)	OL-761A(V)2/T	OL-761B(V)2/T
Brigade Combat Team (BCT) Command Post (CP) 1 S6/ NetOps	OL-761A(V)3/T	OL-761B(V)3/T
Division Tactical Communications (TAC) 1 G6/NetOps	OL-761A(V)4/T	OL-761B(V)4/T
Brigade Combat Team (BCT) Command Post (CP) 2 S6/ NetOps	OL-761A(V)5/T	OL-761B(V)5/T
ESB Signal Company	OL-761A(V)6/T	OL-761B(V)6/T
Autonomous Operations and Interoperability IA Server Suite	OL-761A(V)7/T	OL-761B(V)7/T
Battalion (BN) Command Post Node (BnCP)	OL-761A(V)8/T	OL-761B(V)8/T

NetOps Convergence / Directed Change - Under the Heading of NetOps Convergence and a directed change, the systems prior to lot 10 are undergoing an End of Life update and processing update to preposition for and be supportive of a common or converged NetOps Solution.

INCREMENT 1
Network Diagram
(Networking At-the-Halt)



TACHUB *A(V)2, B(V)2, C(V)2, A(V)3, B(V)3, C(V)3* Tactical Hub Node (AN/TCC-61)

AN/TSC-187 x2

AN/TTC-61 x1

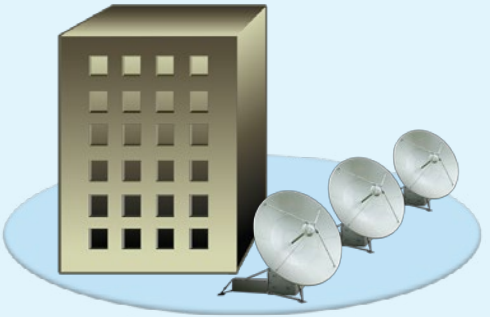
Note: AN/TSC-187s (depicted) are used with Lots 10-14. For systems prior to Lot 10, AN/TCS-169C are used. Several B(V)2 systems have been updated with an Inc 2 kit. The Kit adds Inc 2 compatible: Performance Enhancement Proxy (PEP), Quality of Service Edge Device (QED) and Inc 2 NMS

The Tactical Hub node is the central element of the Inc 1 network that links deployed JNN systems and BnCPs via satellite connectivity while providing communication interfaces to other fixed and deployed networks. All Spiral 1-9 nodes were upgraded to Lot 10 baseline functionality. Note: Spiral/Lot 1-9 (Inc 1A) Tac Hub baseband systems are mounted in S-280 shelters. Lot 10-14 (Inc 1) Tac Hub systems are mounted in LMS Shelters.

Capabilities:

- Serves as a DISN Point of Presence, interface to STEP/Teleport, access to DSN, SIPR, NIPR, JWICS, CENTRIXS
- Interfaces to HCLOS, TROPO, SMART-T, TSC-85/93 and commercial SATCOM
- Provides positive control over the TDMA/DAMA satellite network with the Master Reference Terminal
- Interface for local data and voice subscribers
- Secure VoIP, Data and VTC
- UNCLAS/CLAS VoIP, UNCLAS/CLAS VTC, and UNCLAS Private Branch Exchange/POTS
- Enclave Boundary Protection (Perimeter SIPR/NIPR Router/Tier2 SIPR/NIPR)
- SATCOM Capability - TDMA, FDMA, NCW
- C-17 Transportable

Regional Hub Node (AN/FSC-133)



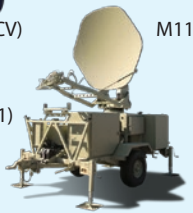
To provide tactical users with secure, reliable connectivity worldwide, the Army has positioned RHNs in five separate strategic regions: Continental United States (CONUS) East and CONUS West, Central Command, European Command and Pacific Command.

RHN supports 3 JNN DIV size enclaves, plus up to 4 (RHN 1, 2) or 12 (RHN 3-5) autonomous BDEs. For autonomous users, Regional Hub Node serves as the primary hub node.

Capabilities:

- Provide primary hub node and network connectivity for tactical users
- Ku or Ka capable TDMA/FDMA SATCOM (3 x 3.9m Antenna) with NCW being added
- Co-located with, and permanently connected to an Army Tier 1 network, and is fully capable of extending, DSN, CENTRIX, JWICS, SIPR, NIPR, Secure (Secret) VoIP, Data and VTC
- SI Services (VoIP, Data, Private Branch Exchange/POTS)
- Enclave Boundary Protection (Tier1/Tier2 SIPR/NIPR)
- Approximately 360 Mb/s

M1113 (ECV) M1102 (HMT)



STT V(1)

M1097 10 kW Generator

Notes:Generators provided by PM based on availability. M1097 Unit provided.

**Note: Spiral 1-9 nodes that have been upgraded to Lot 10 baselinefunctionality are also known as "Inc 1A"*

The JNN, in all its variant forms, services users at Echelons above Corps, Corps, Division and Brigade levels. The A(V)3 represents all Spiral 1-9 nodes that have been upgraded to Lot 10 baseline functionality.* The B(V)3 represents an A(V)3 that has been upgraded for colorless. The JNN consists of the following

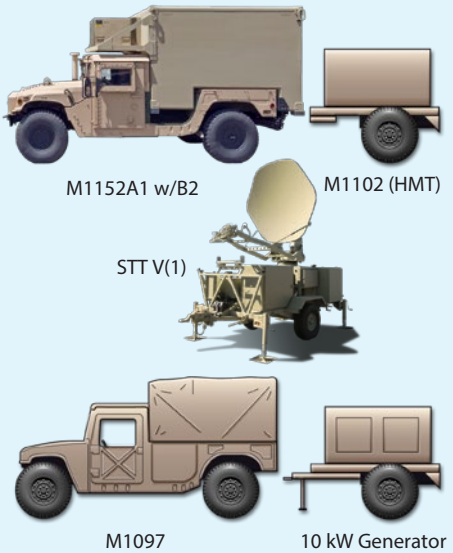
Baseband Component:

- JNN Shelter with:
  - SIPR/NIPR Data/Voice Access transit cases and UPS Cases
  - NIPR/SIPR Router transit cases
  - Battlefield Video Teleconference equipment
  - Battle View Image Transmission System (BITS) transit cases
- (4) User access cases with (2) UPS cases for user access in the TOC

Capabilities:

- Provides an interface to STEP/Teleport, access to DSN, SIPR, NIPR, JWICS, CENTRIX, CX-I (with additional transit cases)
- Interfaces to Legacy (MSE) LOS Shelters, HCLOS, TROPO, SMART-T, TSC-85/93 and commercial SATCOM
- Secure VoIP, Data and VTC
- UNCLAS VoIP, Data, VTC and Private Branch Exchange/POTS
- Secure VoIP, Data and VTC
- UNCLAS/CLAS VoIP, UNCLAS/CLAS VTC, and UNCLAS Private Branch Exchange/POTS
- Enclave Boundary Protection (Tier1/Tier2 SIPR/NIPR)
- C-130 transportable

JNN A(V)5, B(V)5, C(V)5, A(V)6, B(V)6, C(V)6 Joint Network Node Variants (AN/TTC-59)



Notes: Generators provided by PM based on availability. M1097 Unit provided.

The Lot 10 JNN introduces variants of the JNN based on a modular design. The modular concept uses common and standard SIPR, NIPR, STEP, and Transmission modules:

- SIPR & NIPR modules provide the IP capability to provide converged voice, video and data services
- STEP module provides the capability to connect to and interoperate with STEP or Teleport
- Transmission module provides the requisite crypto and modems to interface with line of sight, satellite and cable transmission items

JNN (V)6 is the baseline module all JNN variants. It consists of a SIPR, a NIPR and a transmission module. The JNN(V)5 is the functional equivalent of an A(V)3 or B(V)3.

JNN (V)5 is a (V)6 with the addition of STEP gateway module. It consists of SIPR, NIPR, STEP gateway and transmission modules. The "B" version of the JNN adds a colorless module/colorless network capability.

Note: The "C" version reflects an updated hardware baseline. (Colorless capability included)

Satellite Transportable Terminal JNN (AN/TSC-167) & (AN/TSC-185)

AN/TSC-185
(V)1, A(V)1, B(V)1

AN/TSC-167
F(V)1, G(V)1, H(V)1

Note: For systems prior to Lot 10, AN/TSC-167 are used

Capabilities:

- Ku or Ka configured SATCOM
- FDMA
- TDMA
- NCW
- Tactical Fiber Optic Cable Assembly (TFOCA)-II Interface
- C-130 transportable
- Helicopter sling load capable

Satellite Transportable Terminal BnCPN (AN/TSC-167) & (AN/TSC-185)

AN/TSC-185
(V)2, A(V)2, B(V)2

AN/TSC-167
F(V)2, G(V)2,H(V)2

Note: For systems prior to Lot 10, AN/TSC-167 are used

Capabilities:

- Ku or Ka configured SATCOM
- TDMA
- NCW
- Tactical Fiber Optic Cable Assembly (TFOCA)-II Interface
- C-130 transportable
- Helicopter sling load capable

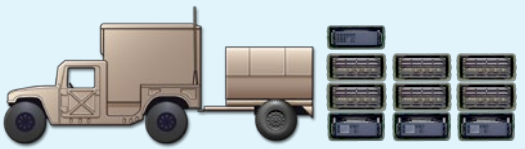
BnCPN *(V)2, (V)3, A(V)3, B(V)3, C(V)3* Battalion Command Post Node (AN/TCC-64)

Capabilities:

- ATH TDMA/NCW (NCW) if equipped with Colorless AN-TTC-64A(V)3 version
- ATH interface to Current Force, DSN, SIPR and NIPR
- Secure (Secret) VoIP, Data and VTC
- Sensitive Information (VoIP, Data, VTC)
- Enclave Boundary Protection
- C-130 transportable

Note: M1097 and Generator Unit provided and Spiral 1 to 9 cases upgraded to this configuration as part of Inc1a upgrade. The Call Manager laptops are not required in the lot 10 EOL or NetOps convergence updated systems

Note: For systems prior to Lot 10, AN/TSC-167 are used



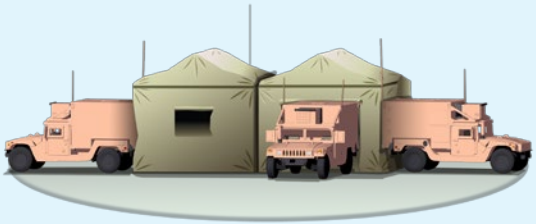
(V)3: S8-9 M1113 ECV
(V)4: L10 M1152A1 w/B2

The SSS functions as the primary communications node for the Expeditionary Signal Battalion (ESB) Network, being able to support a Joint Force Land Component Commander and Staff (JFLCC), a Joint Task Force Headquarters (JTF HQ), ASCC/Army Operational Command Post (OCP), Army-level major subordinate command (MSC) headquarters, functional brigades and their subordinate battalions, Army-level digital liaison teams, ad-hoc command posts, forward operating bases (FOB) and base/CP clusters, other United States (US) armed services and DoD agencies, other governmental and non-governmental organizations.

The A(V)3 represents all Spiral 1-9 nodes that have been upgraded to Lot 10 baseline functionality. The A(V)4 represents lot 10 and later nodes. The B(V)3 and B(V)4 represents A(V)3 and A(V)4 systems (respectively) that have been upgraded with Colorless Capabilities. The C(V)4 is the equivalent of a B(V)4 that has upgraded hardware per the Lot 10 EOL activity.

Capabilities:

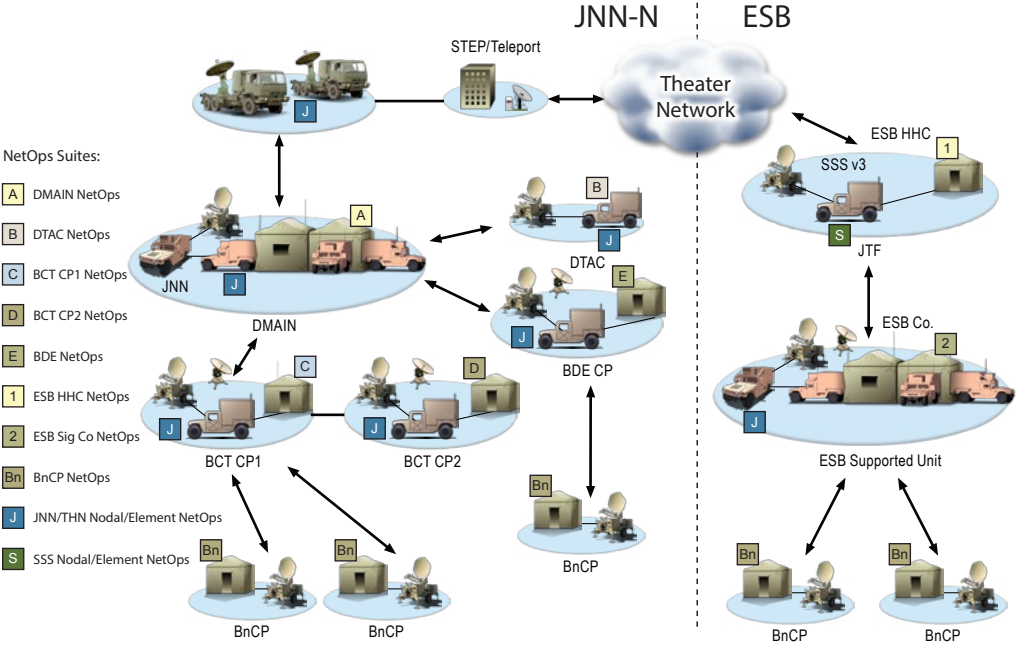
- Ku or Ka FDMA and TDMA SATCOM ATH (Note, unlike the JNN, the SSS does not have dedicated STT)
- Interface to LOS, SMART-T / Phoenix / TSC-85/93s, CENTRIXS, CWAN, and Joint Services
- Interface to Commercial Office
- Support for 2-Wire Analog STEs
- Sensitive Information and Secret LAN and CWAN extension (for user LAN VoIP, video, or data devices)
- User Services (DNS, DHCP, Voice)
- C-130 transportable



BCT & Div Capabilities (OL-761(V)1-3/T

- Network-Wide Planning
- INetwork-Wide Fault and Performance Monitoring
- WAN Management
- ILAN Management
- Trouble Ticketing Access
- Information Assurance
- Device Management
- Information Assurance Security Incident Management
- NetFlow Traffic Analysis
- VoIP Call Detail Record Monitoring & Reporting
- INE Management

NetOps Overview Increment 1



NetOps Suite Composition

Increment 1 & 1B (Colorless)

Label	NetOps Functional Location	Echelon	WAN Mgr Server	Netflow Collector	WAN Mgr Laptop	LAN Mgr Laptop	Node Mgr Laptop	Element Mgr Laptop	Element Mgr Server	Net MRI	Desktop CM Laptop	Help Desk Laptop	Planner Laptop	NM Client Laptop	IA SIM	IA Device Mgr Server	IA Client Laptop	INE Mgr V1 & INE
		Domain																
A	Division Main (DMAIN) G6/NetOps Cell	Division	2	2	1					2	2	2	1	2	2	2	2	2
1	ESB Headquarter Company (HHC)	ESB	2	2	1					2	2	2	1	2	2	2	2	2
	Corps HQ	Corps	2	2	1					2	2	2	1	2	2	2	2	2
B	Divison Tactical CP (DTAC) 1 G6/NetOps	Division			3													
C	BCT/SBCT Command Post CP1 S6/NetOps	BCT/SBCT			3						2	2	1				2	
D	BCT CP 2 S6/NetOps	BCT				3												
2	ESB Signal Company	ESB			3								1					
E	Brigade (BDE) S6/NetOps	Brigade			3													
J	Tactical Hub Node (THN)	Divsion					3	3										
J	Joint Network Node (JNN) Nodal Mgt	All JNN Locations					3	3										
S	Single Shelter Switch (SSN) Nodal Mgt	All SSS Locations					3	3	1									
Bn	Battalion Command Post Node (BnCPN) Nodal Mgt	All BnCPN Locations				3												
	Autonomus Ops. & Interoperability IA Server Suite	Pooled at ESB													2	2		2
	NM Server Suite	As Required	2	2						2								

S|PR/N|PR Coalition Wide Area Network Secret

NetOps Suite Composition

Lot 10 EOL (Omega 14 & Alpha/Omega 15) & 1B (Colorless)

Label	NetOps Functional Location	Domain / Echelon	Virtual Server Stack	WAN Manager	Netflow Collector	LAN Manager	Nodal Manager	Element Manager	ACAS Security Center	Nessus Scan Tool	NMS Planner	McAfee ESM (IA SIM)	IA Device Mgr Server	IA Client	INE Mgr V1	Domain Controller	vCenter	Remote Desktop Server	SharePoint Server	General Purpose Mgr	General Purpose Client
A	Division Main (DMAIN) G6/NetOps Cell	Division	2	1							1										
1	ESB Headquarter Company (HHC)	ESB	2	1							1										
	Corps HQ	Corps	2	1							1										
B	Division Tactical CP (DTAC) 1 G6/NetOps	Division		3																	
C	BCT/SBCT Command Post CP1 S6/NetOps	BCT/SBCT	2	1							1										
D	BCT CP 2 S6/NetOps	BCT				3															
2	ESB Signal Company	ESB		1							1										
E	Brigade (BDE) S6/NetOps	Brigade		1																	
J	Tactical Hub Node (THN)	Divsion					3	3													
J	Joint Network Node (JNN) Nodal Mgt	All JNN Locations					3	3													
S	Single Shelter Switch (SSN) Nodal Mgt	All SSS Locations					3	3													
Bn	Battalion Commmand Post Node (BnCPN) Nodal Mgt	All BnCPN Locations				3															
	Autonomus Ops. & Interoperability IA Server Suite	Pooled at ESB	1																		
	Virtual Server Stack (per enclave, N/S)	As Required		1					1	1		1	1	1	1	2	1	1	1	2	4

S|PR/N|PR Secret

A

Capabilities:

- Planning and Engineering (P&E)

1

- WAN & LAN Management: Division-wide network fault, performance & configuration management
- Protocol/User Traffic Analysis (using NetFlow and GetFlow)
- VoIP Call Detail Record (CDR) Monitoring & Reporting
- Desktop/Server IAVA Compliance
- Access to SharePoint Help Desk
- IA Management: Severable IA Suite provides operational flexibility 1 only provided as needed to subordinate units

Components (per security enclave--NIPR & SIPR):

- Virtual Server Stack
- Raid OTC (NetAPP)
- Server OTC (Brocade Eswitch r420 Server)
- 1400W UPS
- 6 Laptops for operations
- Nodal Management Laptops (Element Manager, Node Manager, LAN Manager)
- NMS Planner Laptop (SIPR only)

Components (Colorless)

- WAN Manager Laptop

NetOps WAN Management

C
E
2
B
D

Capabilities:

- P&E: Planning and Engineering C & 2 only
- WAN Manager: Brigade-wide network fault, performance and configuration management
- Desktop/Server IAVA Compliance
- Access to SharePoint Help Desk
- IA Management: IA Suite for autonomous operations-received as needed from higher headquarters

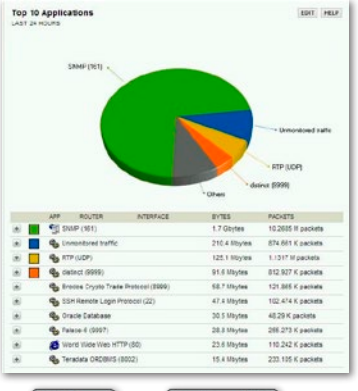
Components (per security enclave--NIPR & SIPR):

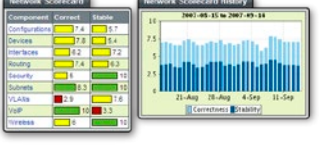
- Virtual Server Stack
- Raid OTC (NetApp)
- Server OTC (Brocade Eswitch / 2x Dell r420 Server)
- 1400W UPS
- 6 Laptops for operations

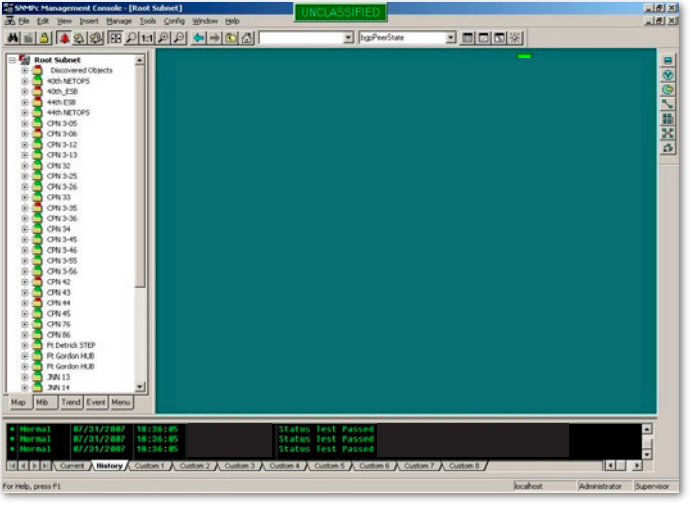
Components (Colorless)

- Wan Manager Laptop

NetOps WAN Management







LAN/Node Management

Bn

Capabilities:

- SNMPc and SolarWinds used to initially configure BnCP node equipment and for nodal and LAN management of BnCP TOC
- Ability to forward summary SNMPc data to upper echelon WAN Manager platforms
- Authentication, Authorization and Accounting Services may be configured on LAN Manager
- Access to SharePoint Help Desk

Componets:

- LAN Management Laptop (per security enclave--NIPR & SIPR)

J

S

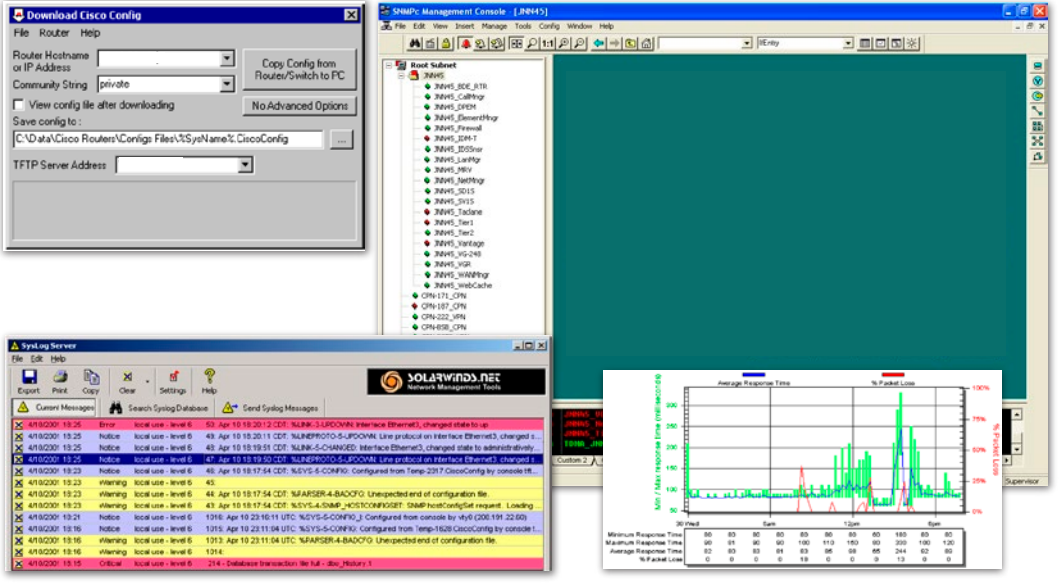
Capabilities:

- Nodal and element management of JNN network components
- SNMPc and SolarWinds
- Authentication, Authorization and Accounting Services configured on Element Manager

Components:

- 6 laptops per JNN, SSS and THN (per security enclave--NIPR/SIPR/Colorless)
  - 3 shelter mounted element manager laptops
  - 3 transit case node manager laptops

LAN/Node Management



Capabilities:

- IA Server Suite provides operational flexibility, IA Device manager manages FW/IPS configurations, security incident manager provides event correlation and trend detection
  – CSM: Cisco Security Device Manager
  – IA SIM: Provides Security Management & Event Correlation

Components:

Additional IA suites pooled at ESB

- Pushed down to support autonomous BCT

Notes:

Notes:

Warfighter Information Network-Tactical

INCREMENT 2

(Networking On-The-Move)

Increment 2 Overview

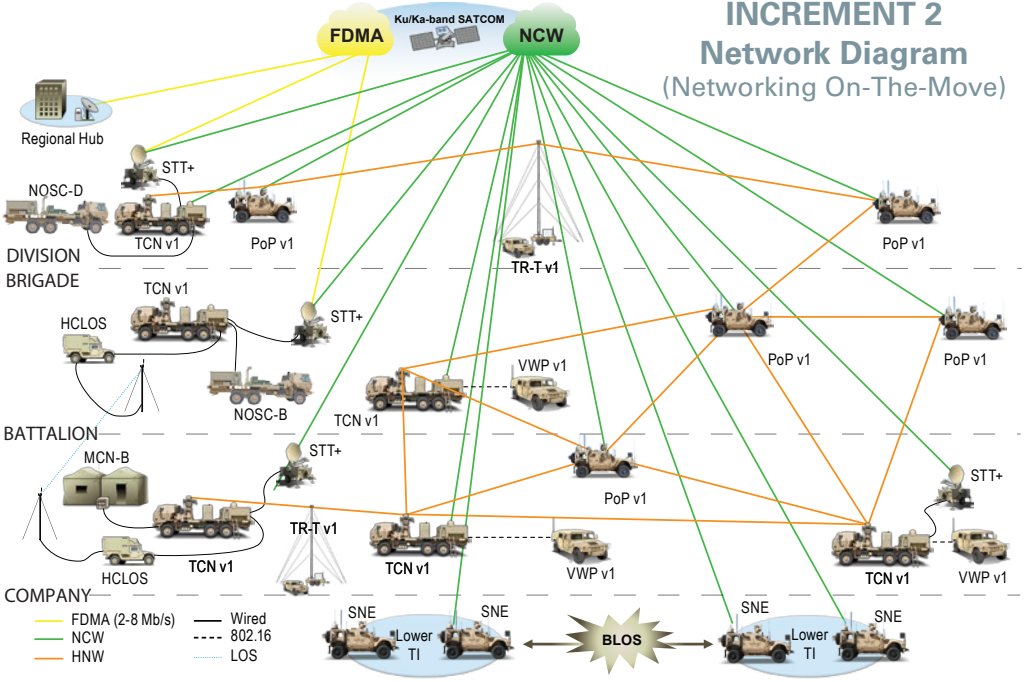
Warfighter Information Network (WIN-T) Increment 2 (Inc 2) provides the Army with On-The-Move (OTM) networking capability. The WIN-T Increment 2 network retains capabilities delivered by WIN-T Increment 1 and by leveraging proven government and commercial technologies, adds greater network throughput and automated Network Management to optimize planning (to include spectrum use), initialization, monitoring and troubleshooting. WIN-T Increment 2 employs Satellite Communications (SATCOM) OTM to extend the network in maneuver Brigade Combat Teams (BCTs) to Company-level through FY2018. Using equipment mounted on combat platforms, WIN-T Increment 2 delivers a mobile capability that reduces reliance on fixed infrastructure and allows key leaders to move on the battlefield while retaining situational awareness and mission command capabilities. Using the Highband Networking Radio, with the Highband Networking Waveform and high performance antennas.

WIN-T Increment 2 Line-of-Sight network offers an adaptive 30 Megabit per second (Mbps) aggregate throughput to key leaders in their Command Post or in their vehicle. The WIN-T Increment 2 network is self-forming, which means that it automatically creates transmission paths based on terrain and environmental conditions; and self-healing, meaning that the paths will automatically re-route traffic to complete network transactions and calls even if one or more nodes break down or loses connectivity. This offers greater network reliability and better end-to-end connectivity than traditional point-to-point networks. WIN-T Increment 2 introduces the network management capability needed to keep the mobile and dispersed forces networked together through automated planning, initialization, monitoring, and troubleshooting. Finally, WIN-T adopts "Colorless Core" technology that encrypts both classified and unclassified user information in the network and minimizes the number of users on the "core" of the network.

The Colorless Core allows commanders to utilize the tactical network without fear of the enemy intercepting information. Colorless Core is a technical insertion in the WIN-T Increment 1b network which enables information sharing between Increment 1b and Increment 2.

PdM Tactical Cyber and Network Operations (TCNO) developed NetOps and NetCentric Waveform (NCW) updates will be inserted into WIN-T Increment 2 equipped units.

INCREMENT 2
Network Diagram
(Networking On-The-Move)



WIN-T Inc 2 Primary Configuration Items

Tactical Communications Node (TCN v1) – Provides mobile communications and networking capabilities servicing division, brigade and maneuver battalion command post operations with high capacity secure IP voice, video and data services. With an on-the-move capability, the TCN v1 allows the commander to stay connected to the network wherever he is on the battlefield. The TCN v1 also hosts the battle command server stack with critical situational awareness applications.

Satellite Transportable Trailer + (STT+) – Towed satellite terminal supporting commercial and military satellite communications, leveraging both the FDMA & NCW waveforms. The STT+ provides higher bandwidth for the TTCN v1 when supporting the command post in an at-the-halt (ATH) configuration.

Network Operations & Security Center (NOSC) – Provides full suite of network operations (NetOps) applications and information assurance (IA) protection for the network. The NOSC delivers powerful network planning, monitoring and management tools that allow the commander to understand the health and reach of his network in making informed battlefield decisions.

WIN-T Inc 2 Primary Configuration Items *Cont.*

Point of Presence (PoP v1) – Provides a mobile connection to the WIN-T network using both Highband Networking Waveform (HNW) LOS and Net Centric Waveform (NCW) satellite communications, offering VoIP and number of mission command applications that provide commanders with situational awareness and instant, direct communications all the way up the chain of command.

Soldier Network Extension (SNE) – Connects dismounted and down-range soldiers to the WIN-T network through their legacy combat net radios while also providing commanders in or near the vehicle access to the wide area network. Extends the network to the forward-most position of the unit, providing real-time situational data to company commanders over large distances.

Vehicle Wireless Package (VWP) – Using a local access waveform (LAW) the VWP extends the SIPR network from the TCN v1 while on-the-move for critical real-time tasks such as fire support operations. Delivers a short-range wireless 'hot spot' on VWP-installed vehicles.

User Access

AN/MSC-82
AN/MSC-82A

Capabilities:

- OTM/ATH High-capacity G-to-G HNW, Ka or Ku Band SATCOM NCW, SWLAN (S or SI), LAW
- GIG IA Compliant (Colorless Core)
- ATH Interface to CENTRIX Joint/Current Force SATCOM/HCLOS v1/v3
- Node Management (CO, S, SI); LAN Management (S, SI); Key Management Client
- Supports SI and S LAN extension (for user VoIP, video, or data)
- Wireless user access (SWLAN)
- IP Gateway for Analog phones (AN/MSC-82 only)
- Enclave Boundary Protection
- QoS with Congestion Control
- HAIPEs (S and SI) provide user data COMSEC
- NSA accepted TRANSEC

Capabilities:

- Ka or Ku FDMA and NCW SATCOM
- Node Management (Co)
- NSA accepted TRANSEC

AN/MRC-150

Provides high throughput via HNW and NCW while also providing healing capabilities for fragmented dismounted terrestrial nets while also providing reachback to higher echelons.

Capabilities:

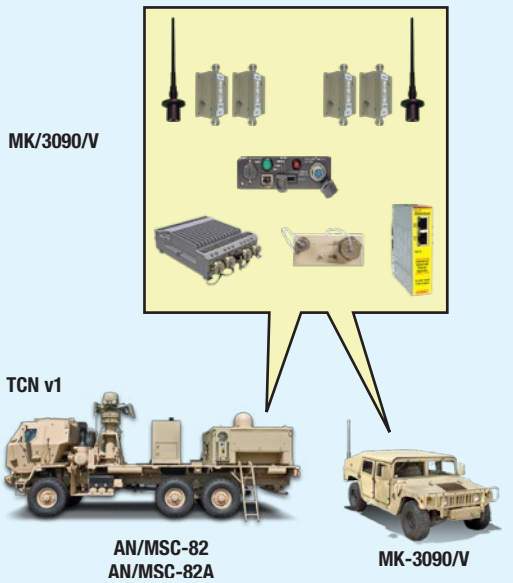
- Mission Command
  - Host Mission Command Applications (TIGR & CPOF)
  - VNC Capability to FBCB2/JCR/JBC-P
- OTM/ATH High-Capacity C Band G-to-G HNW
- Ka/Ku-Band SATCOM NCW
- Local Node Management (CO and S or SI)
- Extends lower TI data subnets (e.g., SINCGARS)
- NSA Approved TRANSCEC
- QoS with Congestion Control (S or SI)
- VoIP Soft Phone with local Call Control
- DNS/DHCP services (S or SI)

AN/MRC-149

Provides healing for fragmented dismounted terrestrial nets and simultaneously supports reachback to higher echelons down to Company level.

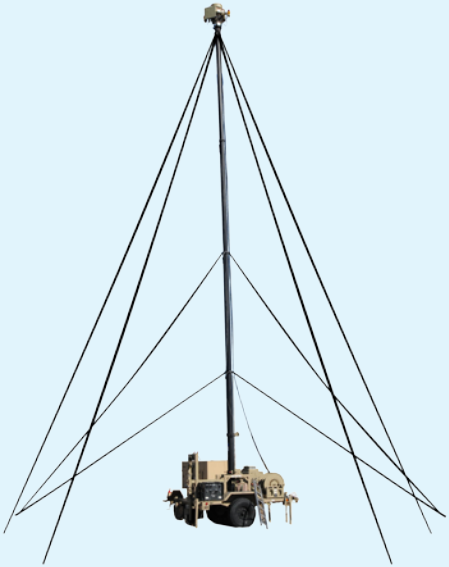
Capabilities:

- Mission Command
  - Host Mission Command Applications (TIGR)
  - VNC Capability to FBCB2/JCR/JBC-P
- Local Node Management (CO and S or SI)
- Extends lower TI data subnets (e.g. SINCGARS)
- Bridge to Combat Net Radio net
- NSA Approved TRANSEC
- QoS with Congestion Control (S or SI)
- VoIP Soft Phone with local Call Control
- DNS/DHCP services (S or SI)



Capabilities:

- OTM/ATH Connectivity for Select Command Vehicles
- Connectivity to TCN v1
- Point to Multi-Point network topology
- User interfaces (VoIP or Data) (AN/MSC-82 18 ports / AN/MSC-82A 3 ports)
- HAIPEs (S or SI) provide user data COMSEC
- NSA accepted TRANSEC
- Supports wireless extension of (S or SI)
- Provide local WiFi Hotspot



Capabilities:

- ATH High-capacity G-to-G HNW
- Interfaces to Legacy (MSE) LOS Shelters, HCLOS, TROPO, SMART-T, TSC-85/93 and commercial SATCOM
- Provides maximum G-to-G range via improved LOS (30 meter mast)
- Node Management (colorless)
- Wired connection to TCN v1

OB-123/T
OB-123 A/T

Capabilities:

- Supports 48 ports for user access (VoIP or Data)
- Supports 24 ports for 2-Wire Analog STEs (OB-123/T only)
- Wired connection to TCN v1
- One set extends the SIPR network and the other set extends the NIPR network

Capabilities:

- SIP Enabled devices
- Supports standard CODECs (G.711, G.729a, G.729d, and MELP)

Voice Services:

- Number portability/affiliation
- Secure/non-secure voice conferencing (preset and progressive)
- Call Forwarding
- Direct Access Service
- Line Hunt Groups
- Redial
- Call Transfer
- Call Waiting
- Caller ID
- Speed Dial
- Multi-Level Precedence and Preemption
- Call Hold (to initiate or accept at least one non-secure call)

NOSC-B/D V1, V2 Network Operations and Security Center-Brigade/Division

User Access

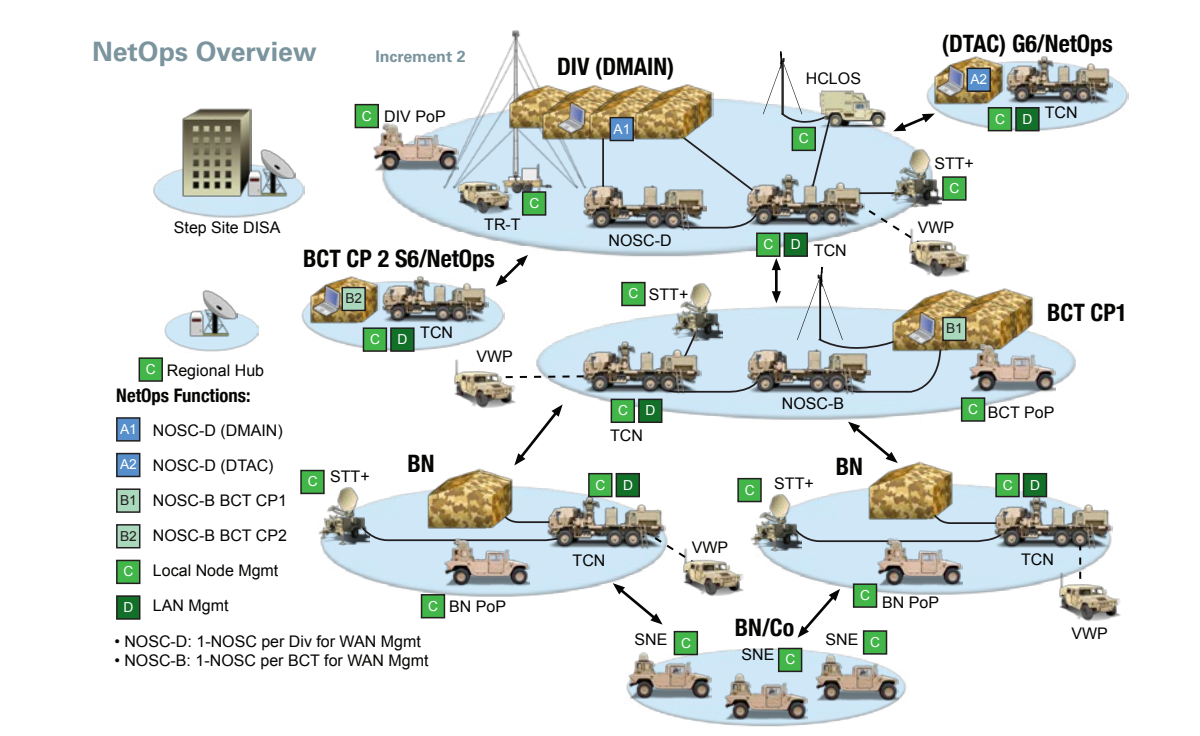
AN/TSC-188(V)1

Capabilities:

- Full Brigade and Division level Planning and Network Management
- Topology Generator and Network Capacity and Analysis
- Coverage Planning for wireless LANs, LAW, HNW, NCW, SINCGARS and HCLOS radios in support of TCN, JNN, 802.11 and Generic Emitter
- Information Assurance monitoring and administration
- Spectrum Planning for all known emitters and Management of Network emitters
- Support for PKI
- Key Management
- TOC and limited TAC support
- NetOps unification framework
- Initial unified NetOps solution

NetOps Overview

Increment 2



NetOps Suite Composition Increment 2

Label	NetOps Functional Location	Echelon	Node Mgr Server	Node Mgr Server	Node Mgmt Laptop	WIN-T NMS(ENG)Laptop	WIN-T NMS Server (OEM)	WAN Mgr Laptop	WAN Mgr Server	NM Client Laptop	Desktop CM Laptop	Help Desk Laptop	Virtural Machine (VM) Mgr Laptop	IA Device Mgr Client Laptop	INE Mgr Laptop	Security Incident Mgr	IA Device Mgr Server	Network & Security Mgr	Hostbased Security Mgr	Key Mgmt Server	Key Mgmt Client Laptop	Spectrum Mgr Laptop	Service Center Mgr Server	Database Server	Active Directory & DNS/DHCP Server	Netflow Collector	Net MRI
		Domain																									
C	SNE Nodal Mgmt	BN/Co	2																								
C	PoP Nodal Mgmt	BN/BCT/DIV	2																								
C D	STT+ Nodal Mgmt	BN/BCT/DIV	1																								
C	TCN Nodal/LAN Mgmt	BN/BCT/DIV	2	1	3																						
C	TR-T Nodal Mgmt	BCT/DIV	1		1																						
B1	NOSC-B BCT CP1 S6/NetOps	BCT				3	3	3			2	2	3	3	2	3	3	1	3	1	1	1	3	3	3		
B2	NOSC-B BCT CP2 S6/NetOps	BCT						2																			
A1	NOSC-D (DMAIN) G6/NetOps Cell	Division				4*	3	1	2	2	2	2	3	3	2	3	3	1	3	1	1	1	3	3	3	2	2
A2	NOSC-D (DTAC) G6/NetOps Cell	Divsion						2																			

**One Engineering (ENG) Laptop goes to the C4 Future Ops Cell*

SIPR NIPR Colorless

C

D

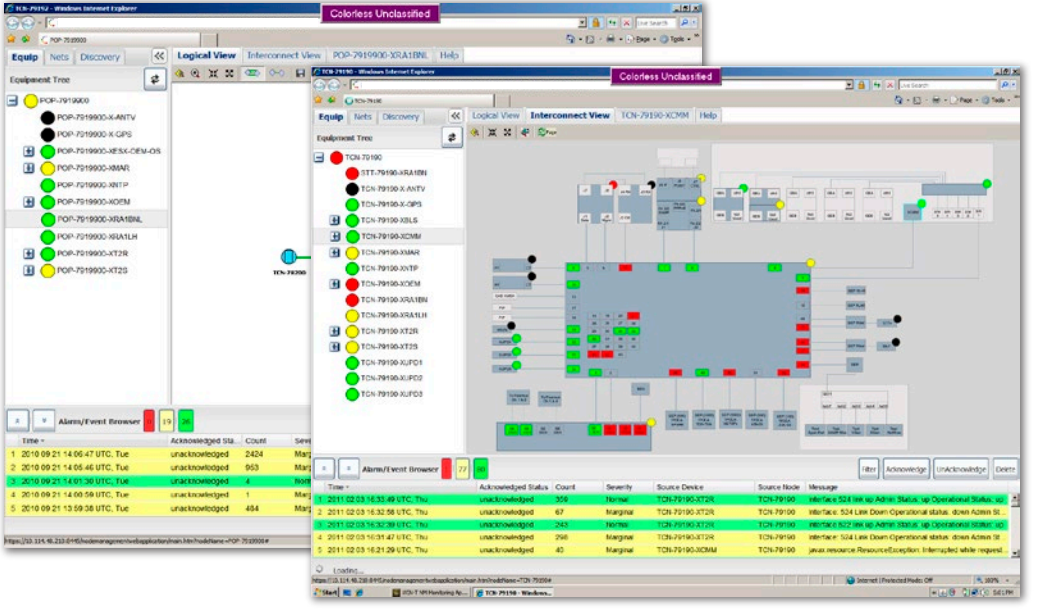
Capabilities:

- Nodal and LAN Management
- Nodal Management provides a web-based GUI that allows users to manage their Node. The software used configures the node to get it on the network. Once on the network the software is used to quickly view status of the communications system and network connectivity "at a glance".
- LAN Management provides the capability to discover computers and equipment on the TOC networks. Once discovered, the status of the devices are available via the web and can be remotely accessed.
- If problems occur in the Node or the LAN, the software provides insight into the source of the problem and tools to provide further additional insight and fault isolation.
- Node status and control available via web session
- Comms status display in cab for OTM operations
- One Hop Out 1/2/3 views
- Shelter Interconnect views
- LAN discovery
- Performance and Configuration monitoring
- Policy Management
- Status monitoring of MPM-1000, HNR, Routers, Switches, QOS, TCP Proxy, NTP, Call Manager, Vertex antenna, SNE Antenna, DHCP, Software Services, Processors/Operating Systems, INE, UPS, DDT VIS services, and CNR Gateway
- Automated Configuration of the MPM-1000, HNR, RTR, Switches, NM,OE,QED, and SATCOM Antennas
- Support for Primary and Alternate Radio Nets

Software Components:

- WIN-T NMS Node Management
- SNMPc
- Solarwinds
- Operating Environment Suite
- DMD-PS

Node Manager Server and Laptop



A1 B1

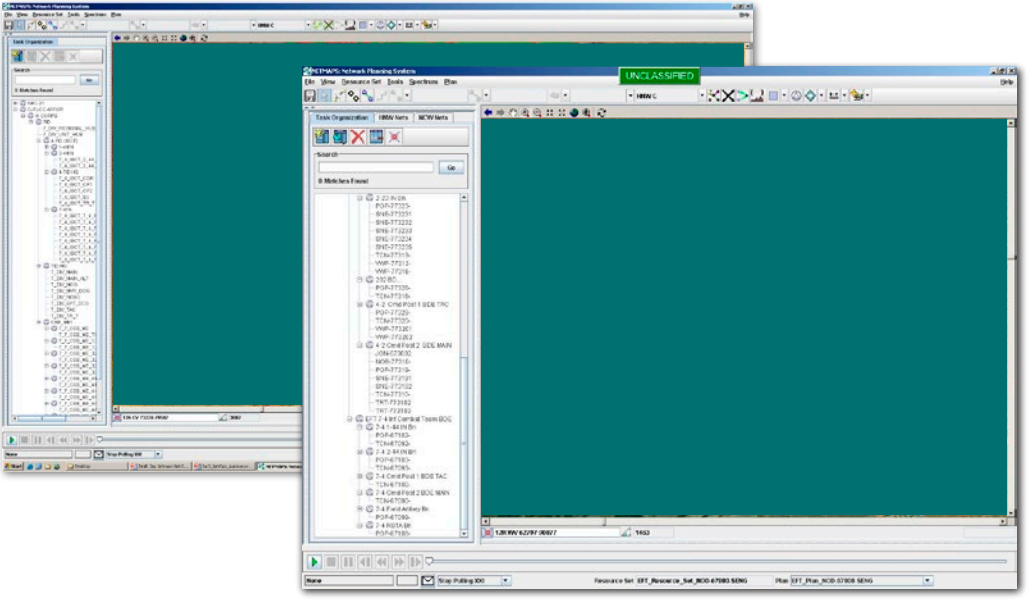
Capabilities:

- Movement planning for mobile nodes
- Automated link planning for TDMA, HCLOS links
- HNW G to G, NCW Ku and Ka Net planning, frequency deconfliction and assignment
- FDMA SATCOM planning
- QoS Planning
- LAW planning and configuration
- IP/Router Management
- IA planning
- HNR relay assistance tool Relay placement tool
- Planning Import of Monitoring Snapshots
- Planned Spectrum COP
- User defined nodes and emitters
- Import and process background emitters
- Import and processing of JRFLs
- JSIR Interference Report
- Multi-beam SATCOM Planning
- Deconfliction with background signal environment
- Auto generation of SFAF
- Auto SAR creation
- Plan viewable via web session
- Logical views in planning
- Battle Command interface
- Policy management & monitoring
- Selective generation of Configs and Cutsheets

Software:

- WAN Planning
- NASA World Wind Geographic Mapping tool
- Battle Field Spectrum Management
- Spectrum Management Tool
- TIREM
- Oracle
- Operating Environment Suite

WIN-T NMS (ENG) Laptop WAN Planning



A1

B1

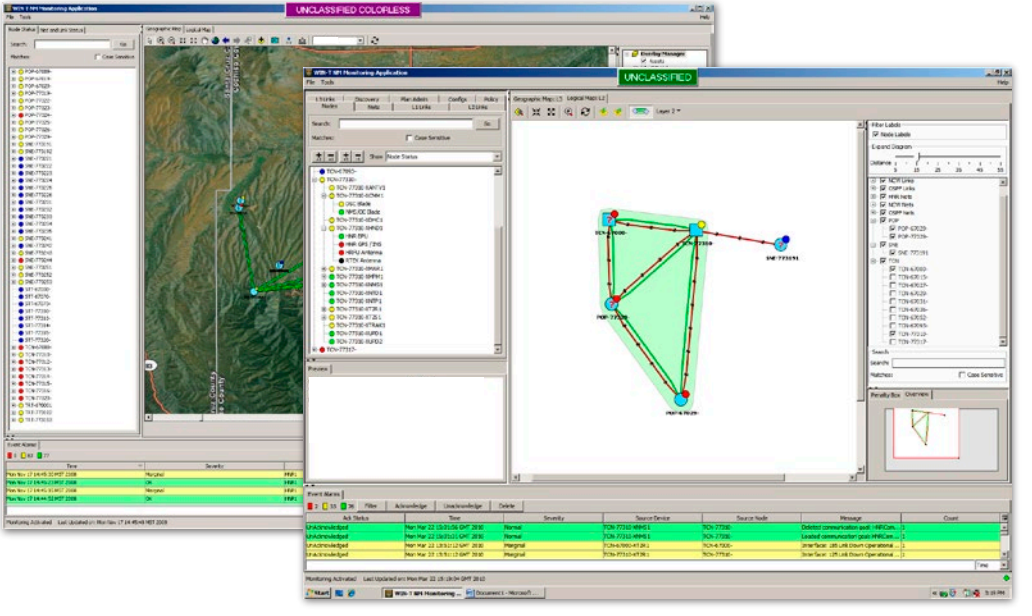
Capabilities:

- WAN/LAN Monitoring in all enclaves
- Planning and monitoring Integration
- Status of the following devices are visible at the NOSC: MPM-1000, HNR, Routers, Switches, QOS, TCP Proxy, NTP, Call Manager, Vertex antenna, SNE Antenna, DHCP, Software Services, Processors/ Operating Systems, INE, UPS, SINCGARS, EPLRS, DDT VIS services,and CNR Gateway
- Multiple monitoring views
  - Map based
  - UTO
  - Logical
  - Web-based Map view
  - Layer 1/2/3
- Performance, and Configuration Management
- Record and playback of monitoring data
- Monitored Spectrum COP
- Policy monitoring
- Status reporting to satellite control facility
- Battle Command interface
- Distribute configurations

Software:

- WAN Monitoring
- NASA World Wind Geographic Mapping tool
- Oracle
- Operating Environment Suite

WIN-T NMS (ENG) Laptop and Server WAN Monitoring



A1
B1

Builds upon Inc 1 COTS Capabilities:

- Layer 3 WAN & LAN COTS Management (SNMPc & SolarWinds): Network-wide network fault, performance & configuration management
- Protocol/User Bandwidth Utilization (NetFlow and J-Flow) A1 only
- VoIP Call Detail Record (CDR) Management (VoIP and Network Quality Manager (VNQM) A1 only
- Desktop/Server IAVA Compliance
- Access to SharePoint Help Desk
- IA Device Management
- IA Security Incident Management
- INE Management

Components:

- WAN Management Server and Client Laptop A1
- WAN Management Laptops B1 A2 B2
- VoIP and Network Quality Manager (VNQM) & NetFlow Collector A1
- Desktop Configuration Management Laptops
- Help Desk Laptops
- IA Device Manager Server and Client Laptops
- IA Security Incident Manager Server
- INE Management Laptops (GEM-X)

A1 B1 **Additional Inc 2-Specific COTS Capabilities:**

- Virtual Machine (VM) Management
- Active Directory Management
- Host Based Security Management
- Colorless IA Device Management

Components:

- Virtual Machine (VM) Manager: Manages the Virtual Machines in the NOSC
- AD Service Center Manager: Active Directory and Microsoft Server Management
- Host Based Security System (HBSS) Manager (and client software)
- Network and Security Manager (IA CL): Manages the CL IA devices

Key Management Server and Client Laptop

A1

B1

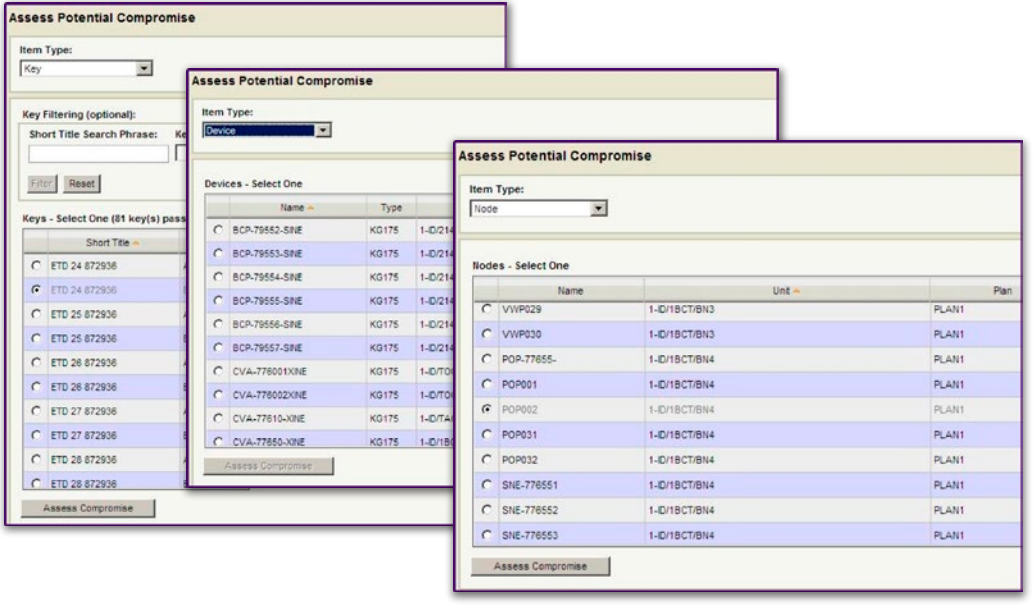
Capabilities:

- Create and manage units, organization structure, node/platform inventory, equipment
- Create and manage cryptonets, assign short titles to networks, affiliate networks with organizations
- Accept input from other systems including wrapped keymat, UTO, ACES data
- Track status of all black keymat introduced, NW/unit assignments, and TrKEK wrappers
- Facilitate ordering of needed key material and key material wrapping
- Create and manage Local Elements, including affiliating users, organizations, SKL inventory and TrKEK mapping
- Over the network key distribution
- Keymat and mission data delivery/distribution
- Assess compromise of a specific node, device, SKL, TrKEK, or short title
- Real-time COMSEC readiness status assessment
- Delivers key material and mission data to an SKL via DMD-PS and serial cable, optionally via a thumb drive

Software:

- KMS
- Operating Environment Suite
- ACES
- DMD-PS

Key Management Server and Client Laptop



A1

B1

Capabilities:

- Provides the capability manage spectrum, plan SINCGARS , and generate Signal Operating Instructions.

Software

- Spectrum XXI
- ACES
- DMD-PS
- Operating Environment Suite

Notes:

Notes:

Notes:

Warfighter Information Network-Tactical

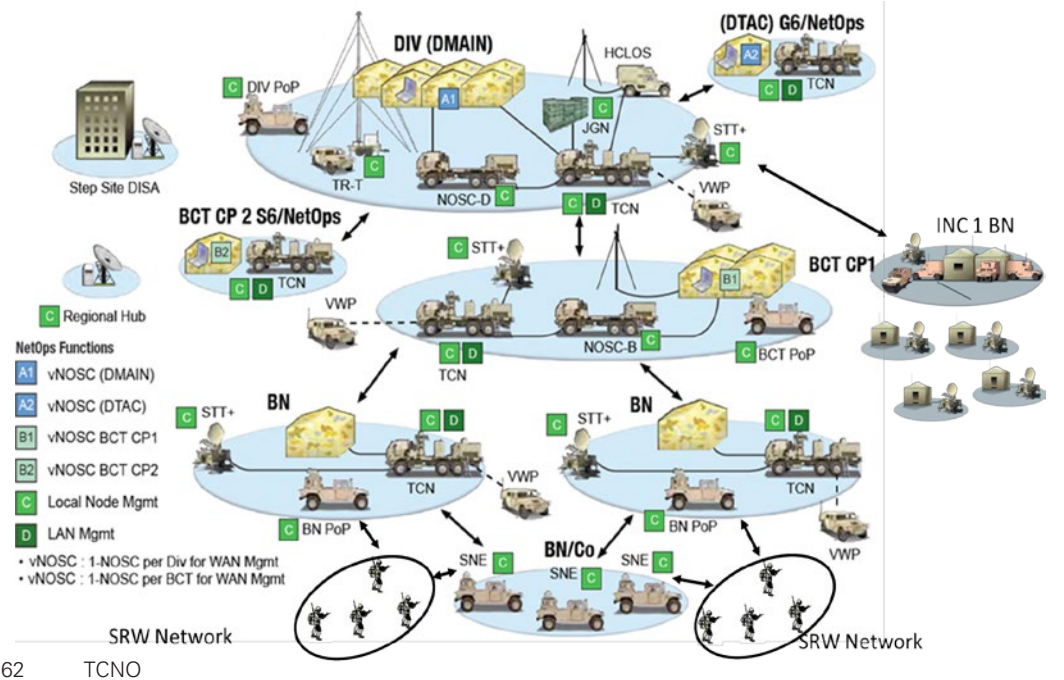
TACTICAL CYBER AND NETWORK OPERATIONS

(TCNO)

PdM Tactical Cyber and Network Operations (TCNO) develops the Network Operations (NetOps) software 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 NetOps software will also provide Information Assurance and Network Centric Enterprise Services. This allows for seamless integration of the 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 developed NetOps software enhancements will be provided as a technical insertion to WIN-T Inc 1 and WIN-T Inc 2 for fielding and support.

TCNO develops the enhanced Net Centric Waveform (NCW) version 10.x for increased throughput capability for beyond the line of sight satellite communication and the Highband Networking Waveform (HNW) version 3.0 for line of sight communications. Both NCW and HNW provide improved network capacity and robustness. The waveform improvements will be available for use in WIN-T and other Army and Department of Defense programs.


DIV (DMAIN)
HCLOS
(DTAC) G6/NetOps
C DIV PoP
A1
A2
C D TCN
JGN
STT+
TR-T
NOSC-D
VWP
Step Site DISA
BCT CP 2 S6/NetOps
B2
INC 1 BN
BCT CP1
B1
NOSC-B
BCT PoP
C Regional Hub
NetOps Functions
A1 vNOSC (DMAIN)
A2 vNOSC (DTAC)
B1 vNOSC BCT CP1
B2 vNOSC BCT CP2
C Local Node Mgmt
D LAN Mgmt
• vNOSC : 1-NOSC per Div for WAN Mgmt
• vNOSC : 1-NOSC per BCT for WAN Mgmt
BN
BN PoP
BN/Co
SNE
SRW Network
SRW Network

Label	NetOps Functional Location	Echelon	Node Mgr Server	Node Mgr Server	Node Mgr ServerNode	Node Mgmt Laptop	NOSC Client Laptop	WIN-T NMS Server (OEM)	Spectrum Mgr Laptop	Key Mgmt Client Laptop	Key Mgmt Server	JENM Server	Help Desk Corrective Action Server	Virtural Machine (VM) Mgr Laptop	Security incident Mgr	Hostbased security Mgr	Service Center Mgr Server	Active Directory & DNS/ DHCP Server
		Domain																
C	SNE Nodal Mgmt	BN/Co	2															
C	PoP v1 Nodal Mgmt	BN/BCT/DIV	2															
C	STT+ Nodal Mgmt	BN/BCT/DIV	1															
C D	TCN v1 Nodal/LAN Mgmt	BN/BCT/DIV	2	1	3													
C	TR-T v1 Nodal Mgmt	BCT/DIV	1		1													
B1	NOSC BCT CP1 S6/NetOps	BCT					8	3	1	1	1	1	1	3	3	3	3	3
B2	NOSC BCT CP2 S6/NetOps	BCT					2											
A1	NOSC (DMAIN) G6/NetOps Cell	Division					10	3	1	1	1	1	1	3	3	3	3	3
A2	NOSC (DTAC) G6/NetOps Cell	Divsion					2											
E	Corps/Army G6	Army					17	3	1	1	1	1	1	3	3	3	3	3

SIPR NIPR Colorless Top Secret

C
D

Capabilities:

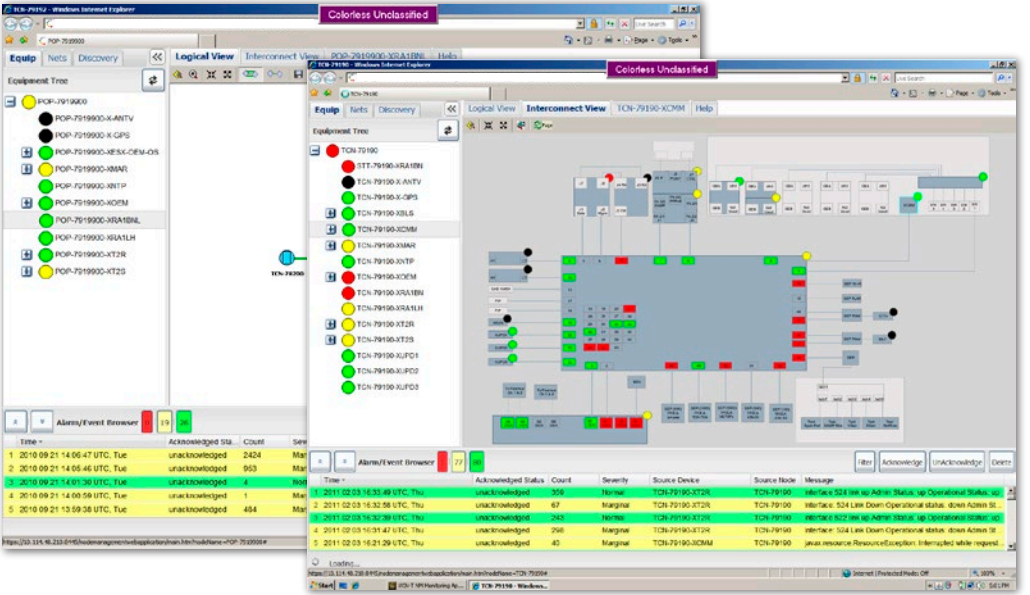
- Nodal and LAN Management
- Nodal Management provides a web-based GUI that allows users to manage their Node. The software used configures the node to get it on the network. Once on the network the software is used to quickly view status of the communications system and network connectivity "at a glance".
- LAN Management provides the capability to discover computers and equipment on the TOC networks. Once discovered, the status of the devices are available via the web and can be remotely accessed.
- If problems occur in the Node or the LAN, the software provides insight into the source of the problem and tools to provide further additional insight and fault isolation.

Capabilities added in TCNO :

- Summarized On-The-Move Display
- Policy Management (QoS)
- Syslog Support
- Status monitoring of PRC-155 Manpack Radio, LinkWay S2 Modem, Radyne, DMD-2050E Modem, HCLOS/GRC-245C and CDS
- Management of Stacked Modems
- Management and monitoring of NCW LDPC mode
- PRC-155 and SRW, management, configuration and monitoring
- Multicast Monitoring
- Auto-discover of FDMA and Cable links
- Role based views
- Antenna Direction Display
- Router Multicast events

Software:

- WIN-T NMS Node Management
- Operating Environment Suite
- DMD-PS


Colorless Unclassified
Equip
Nets
Discovery
Equipment Tree
Logical View
Interconnect View
POP-7919000-XRA1BNL
Help
POP-7919000
POP-7919000-X-ANTV
POP-7919000-X-GPS
POP-7919000-XBLS
POP-7919000-XCMM
POP-7919000-XMAR
POP-7919000-XNTP
POP-7919000-XOEM
POP-7919000-XRA1BN
POP-7919000-XRA1LH
POP-7919000-XT2R
POP-7919000-XT2S
Alarm/Event Browser
Time
Acknowledged Sta...
Count
1 2010 09 21 14:06:47 UTC, Tue unacknowledged 2424
2 2010 09 21 14:06:46 UTC, Tue unacknowledged 953
3 2010 09 21 14:01:30 UTC, Tue unacknowledged 4
4 2010 09 21 14:00:59 UTC, Tue unacknowledged 1
5 2010 09 21 13:59:38 UTC, Tue unacknowledged 484
TCN-79190
Colorless Unclassified
Equip
Nets
Discovery
Equipment Tree
Logical View
Interconnect View
TCN-79190-XCMM
Help
TCN-79190
STT-79190-XRA1BN
TCN-79190-X-ANTV
TCN-79190-X-GPS
TCN-79190-XBLS
TCN-79190-XCMM
TCN-79190-XMAR
TCN-79190-XNTP
TCN-79190-XOEM
TCN-79190-XRA1BN
TCN-79190-XRA1LH
TCN-79190-XT2R
TCN-79190-XT2S
TCN-79190-XUFD1
TCN-79190-XUFD2
TCN-79190-XUFD3
Alarm/Event Browser
Filter
Acknowledge
UnAcknowledge
Delete
Time
Acknowledged Status
Count
Severity
Source Device
Source Node
Message
1 2011 02 03 16:33:49 UTC, Thu unacknowledged 509 Normal TCN-79190-XT2R TCN-79190 interface 524 link up Admin Status: up Operational Status: up
2 2011 02 03 16:32:58 UTC, Thu unacknowledged 67 Marginal TCN-79190-XT2R TCN-79190 interface 524 Link Down Operational status: down Admin St...
3 2011 02 03 16:32:39 UTC, Thu unacknowledged 243 Normal TCN-79190-XT2R TCN-79190 interface 522 link up Admin status: up Operational Status: up
4 2011 02 03 16:31:47 UTC, Thu unacknowledged 298 Marginal TCN-79190-XT2R TCN-79190 interface 524 Link Down Operational status: down Admin St...
5 2011 02 03 16:21:29 UTC, Thu unacknowledged 40 Marginal TCN-79190-XCMM TCN-79190 javax.resource.ResourceException: Interrupted while request...
Loading...
TCN-79190 - Windows...

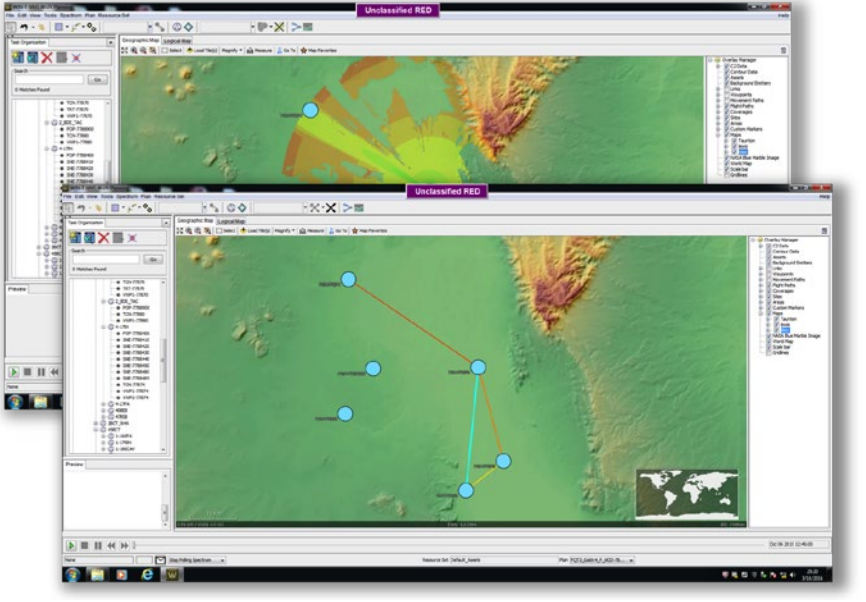
A1
B1
E

Capabilities added in TCNO:

- NCW Ku and Ka Net planning: Support Multiple Bandwidth Segments for NCW Nets; Automated / Manual Gain State Planning; Support Multiple Waveform Carriers on single antenna dish; Support Multiple Beams ; Support N number of terminal locations; Support stacked modem configuration
- Support NCW LDPC mode
- SRW Planning
- Spectrum Coverage Analysis Enhancements
- Spectrum Environmental Enhancement
- Policy management & monitoring for QoS
- Selective generation of Configs and Cutsheets
- Distribute configurations
- Incremental additional NetOps unification
- IA Planning with global changes
- Voice service planning and configuration generation
- Improved HNR relay placement
- Planning interoperability with one year of Inc 2 PDSS images

Software:

- WAN Planning
- NASA World Wind geographic mapping tool
- Battle Field Spectrum Management
- Spectrum Management Tool
- TIREM
- Oracle
- Operating Environment Suite


Unclassified RED
Unclassified RED

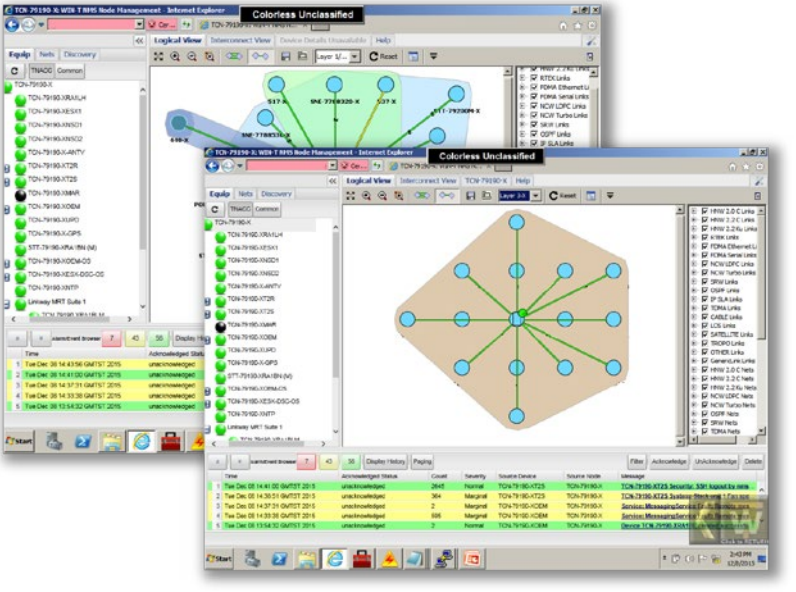
A1
B1
E

Capabilities added in TCNO:

- WAN Monitoring in all Enclaves
- Combined multi-security domain view over CDS
- Status of the following devices are visible at the NOSC: PRC-155 Manpack Radio, Linkway S2 and FDMA Modem
- WAN Mgt Integration into Inc 1
- Configuration and Performance monitoring
- Policy monitoring of QoS
- Ping from WAN Monitoring
- External Network Monitoring
- Alarms indications enhancement
- Monitoring display of planned links
- Monitoring of LDPC and Turbo mode NCW links and nets
- Monitoring of PRC-155 and SRW waveform
- Improved scalability and simplification of visualizations associated with viewing all levels of the network
- Display of common name identifiers

Software:

- WAN Monitoring
- NASA World Wind geographic mapping tool
- Oracle
- Operating Environment Suite


Colorless Unclassified
Colorless Unclassified

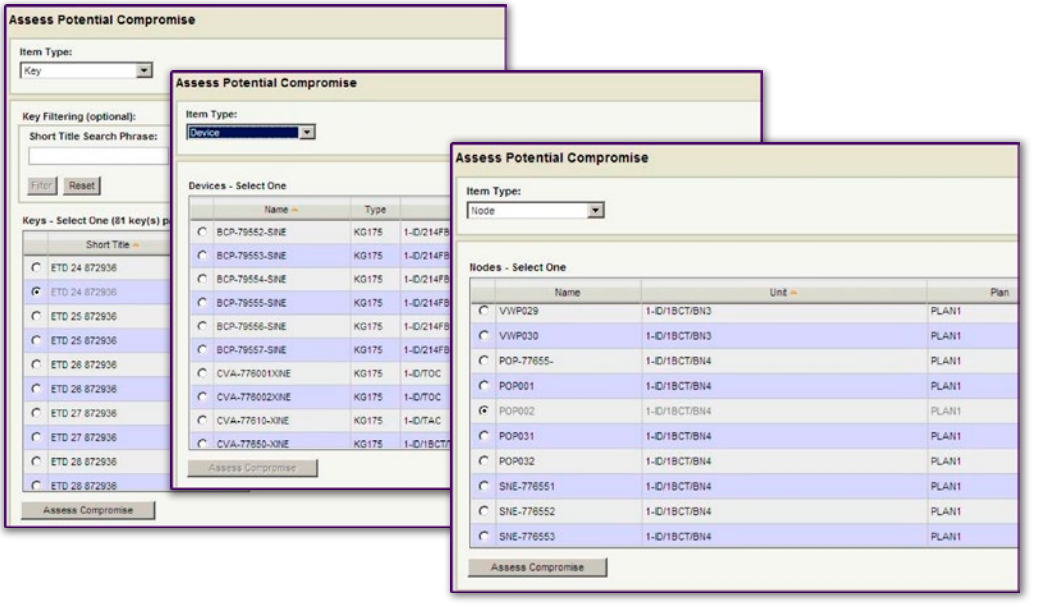
A1
B1
E

Capabilities added in TCNO:

- Create and manage units, organization structure, node/platform inventory, equipment
- Create and manage cryptonets, assign short titles to networks, affiliate networks with organizations
- Accept input from other systems including wrapped keymat, UTO, ACES data
- Track status of all black keymat introduced, NW/unit assignments, and TrKEK wrappers
- Facilitate ordering of needed key material and key material wrapping
- Create and manage Local Elements, including affiliating users, organizations, SKL inventory and TrKEK mapping
- Over the network key distribution
- Keymat and mission data delivery/distribution
- Assess compromise of a specific node, device, SKL, TrKEK, or short title
- Real-time COMSEC readiness status assessment
- Delivers key material and mission data to an SKL via DMD-PS and serial cable, optionally via a thumb drive

Software:

- TKMS
- Operating Environment Suite
- ACES
- DMD-PS


Assess Potential Compromise
Item Type:
Key
Key Filtering (optional):
Short Title Search Phrase:
Filter
Reset
Keys - Select One (81 key(s) p
Short Title
ETD 24 872936
ETD 24 872936
ETD 25 872936
ETD 25 872936
ETD 26 872936
ETD 26 872936
ETD 27 872936
ETD 27 872936
ETD 28 872936
ETD 28 872936
Assess Compromise
Assess Potential Compromise
Item Type:
Device
Devices - Select One
Name
Type
BCP-79552-SINE
KG175
BCP-79553-SINE
KG175
BCP-79554-SINE
KG175
BCP-79555-SINE
KG175
BCP-79556-SINE
KG175
BCP-79557-SINE
KG175
CVA-776001XINE
KG175
CVA-776002XINE
KG175
CVA-77610-XINE
KG175
CVA-77650-XINE
KG175
Assess Compromise
Assess Potential Compromise
Item Type:
Node
Nodes - Select One
Name
Unit
Plan
VWP029
1-ID/1BCT/BN3
PLAN1
VWP030
1-ID/1BCT/BN3
PLAN1
POP-77655-
1-ID/1BCT/BN4
PLAN1
POP001
1-ID/1BCT/BN4
PLAN1
POP002
1-ID/1BCT/BN4
PLAN1
POP031
1-ID/1BCT/BN4
PLAN1
POP032
1-ID/1BCT/BN4
PLAN1
SNE-776551
1-ID/1BCT/BN4
PLAN1
SNE-776552
1-ID/1BCT/BN4
PLAN1
SNE-776553
1-ID/1BCT/BN4
PLAN1
Assess Compromise

A1

B1

Builds upon Inc 2 COTS Capabilities:

- Desktop/Server IAVA Compliance
- Access to SharePoint Help Desk
- IA Device Management
- IA Security Incident Management
- INE Management
- SNMPc Setup Wizard - aids NOSC operator in identifying multicast groups and allows bulk change of network icon ID's from IP address to Army recognizable names

Components:

- Desktop Configuration Management Laptops
- Help Desk Laptops
- IA Device Manager Server and Client Laptops
- IA Security Incident Manager Server

A1 **Additional TCNO-Specific COTS Capabilities:**

B1
- Virtual Machine (VM) Management
- Active Directory Management
- Host Based Security Management
- Colorless IA Device Management
- VoIP and Network Quality Manager (VNQM)

Components:
- Virtual Machine (VM) Manager: Manages the Virtual Machines in the NOSC
- AD Service Center Manager: Active Directory and Microsoft Server Management
- Host Based Security System (HBSS) Manager (and client software)
- Network and Security Manager (IA CL): Manages the CL IA devices

Spectrum Manager Laptop

A1

B1

E

Capabilities:

- Provides the capability manage spectrum, plan SINCGARS , and generate Signal Operating Instructions.
- JSDR interface-authorative source of spectrum data
- Spectrum XXI online capability

Software:

- Spectrum XXI
- ACES
- DMD-PS
- Operating Environment Suite

A1

B1

E

Capabilities:

- Interface to CPOF
  - provides summarized and actionable network status information to CPOF
- White Board
  - provides electronic equivalent to summary board in NOSC
- CBM+ Enhancements
  - Uptime and OTM time for CIs
  - Basic usage date for select devices
- WIN-T Integration Framework (WIF)
  - Framework for developers to interface applications to WIN-T

Capabilities:

- Provides up to 16.384 kbps data rate
- Improved Order Wire Burst Management
- Expedited Signaling Protocol (reduces voice call setup time)
- Increased throughput for stacked modem configurations
- Improved BER/OER performance
- Variable box size coding – more efficient packing of data and additional coding gain
- Backwards compatible with NCW 8.x

Capabilities:

- Removal of DMVP tunnels
- HAIPE improvements providing lower TI Red-side mobility
- Improved Multicast registration and solicitation features
- Generic Discovery Server – improves HAIPE route discovery

QED improvements:

- Per flow pre-emption
- Pre-emption tone for voice calls

Capabilities:

- Tactical Non-Person Entity (NPE) Public Key Infrastructure
- Removes the need for passwords
- Increased deployment automation
- More efficient revocation checking
- Ground work for supporting tactical and non-tactical PKE subscribers in the future

Notes:

Notes:

Acronyms

ATH	At-the-Halt
BCT	Brigade Combat Team
BDE	Brigade
BLOS	Beyond Line-Of-Sight
BnCPN	Battalion Command Post Node
CENTRIXS	Combined Enterprise Regional Information Exchange System
CNR	Combat Net Radio
COMSEC	Communications Security
CP	Command Post
CWAN	Consolidated Wide Area Network
DAMA	Demand Assigned Multiple Access
DHCP	Dynamic Host Configuration Protocol
DISN	Defense Information System Network
DIV	Division
DMAIN	Division Main
DMD-PS	Data Management Device-Power Station
DNS	Domain Name Service
DoD	Department of Defense
DSN	Defense Secure Network
DTAC	Division Tactical
EFT	Engineering Feasibility Test
EOL	End Of Life
ESB	Expeditionary Signal Battalion
FDMA	Frequency Division Multiple Access
GDMS	General Dynamics Mission Systems
GIG	Global Information Grid
HAIPE	High Assurance Internet Protocol Encryptor
HCLOS	High-Capacity Line-of-Sight

Acronyms

HHC	Headquarters Company
HNR	Highband Networking Radio
HNW	Highband Networking Waveform
IA	Information Assurance
JENM	Joint Tactical Radio System (JTRS) Enterprise Network Manager
J-Flow	Juniper Flow
JNN-N	Joint Network Node-Network
JNN (V)	Joint Network Node Variants
JTF	Joint Task Force
JRFL	Joint Restricted Frequency List
JSIR	Joint Spectrum Interference Resolution
JWICS	Joint Worldwide Intelligence Communications System
LAN	Local Area Network
LAW	Local Area Wireless
LOS	Line of Sight
LMS	Lightweight Multipurpose Shelter
MCN	Modular Communications Node
MELP	Mixed Excitation Linear Predictive
MSE	Mobile Subscriber Equipment
NCW	Network Centric Waveform
NetOps	Network Operations
NIPR	Non-Secure Internet Protocol Router
NSA	National Security Agency
OTM	On-The-Move
PCD	Personal Communication Device
PKI	Public Key Infrastructure
POTS	Plain Old Telephone Service

Acronyms

QoS	Quality of Service
RHN	Regional Hub Node
S	Secret
SATCOM	Satellite Communications
SBCT	Stryker Brigade Combat Team
SI	Sensitive Information
SINCGARS	Single Channel Ground and Airborne Radio System
SIP	Session Initiation Protocol
SIPR	Secure Internet Protocol Router
SMART-T	Secure Mobile Anti-Jam Reliable Tactical Terminal
SNE	Soldier Network Extension
SSS	Single Shelter Switch
STEP	Strategic Tactical Entry Point
STEs	Secure Terminal Equipment
STT	Satellite Transportable Terminal
TACHUB	Tactical Hub Node
TCNO	Tactical Cyber and Network Operations
TDMA	Time Division Multiple Access
THN	Tactical Hub Node
TOC	Tactical Operation Center
TRANSEC	Transmission Security
TRI-TAC	Tri-Service Tactical Terminal
TROPO	Tropospheric Scatter Radio
TS	Top Secret
UPS	Uninterruptible Power Supply
VoIP	Voice Over Internet Protocol
VTC	Video Teleconference
WAN	Wide Area Network
WGS	Wideband Global SATCOM

GENERAL DYNAMICS
Mission Systems

GDMS July 2016