



Signal GO / SES Summit
23 March 2012

Deployed Mission Command

The Army's Objective Endstate



Mission Command Capabilities

- C2 On-the-Move
- Display & share relevant tactical info
- JIIM interoperability
- Standard & shareable geospatial foundation
- Enable Multi-form Collaboration
- Create, communicate & rehearse orders
- Execute running estimates
- Training Support

Enabling Network Capabilities

- Robust Network Transport
- Execute Tactical Network Operations

WIN-T is a high-speed and high-capacity backbone communications network which provides command centers and staff elements with the capabilities to link to adjacent, subordinate, sustaining base, joint, allied, and coalition forces.

JBC-P – is the successor to FBCB2 that provides upgraded Situational Awareness, C2, and applications like TIGR

JTRS WNW – Wideband Networking Waveform supports larger bandwidth, voice and data bridging above and below battalion.

JTRS SRW – Soldier Radio Waveform, smaller bandwidth Hand-held and man-pack for voice and data at company and below.

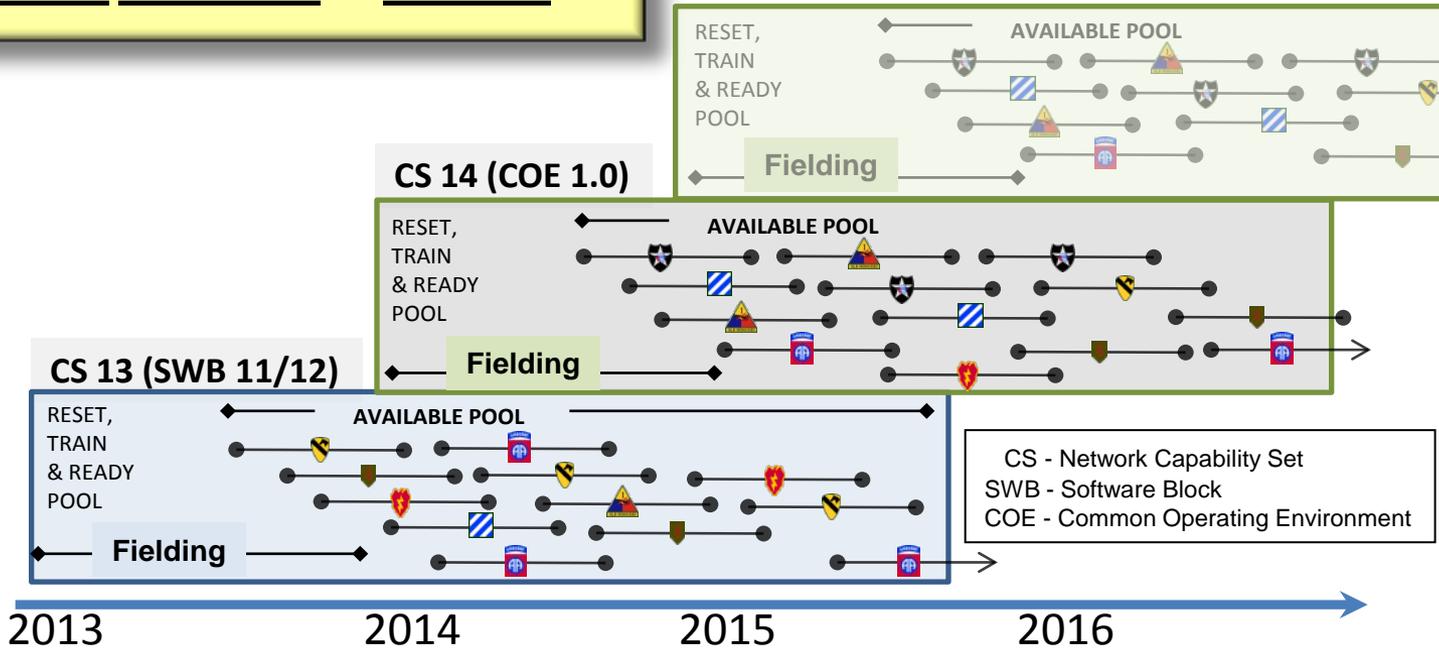
JTRS RR – Rifleman Radio is a single channel hand-held radio using SRW to provide voice and data to soldiers.

Modernizing the Network through Capability Sets

Building CS 14 from the Baseline:

- Increasing BCTs receiving CS from 8 to 10
- First Fielding to HBCT/SBCT
- Non-Developmental Item (NDI) Mid-Tier radio
- Ops/Intel Convergence (Transport/Application)
- COE Implementation
- Industry Participation Continues to Increase

FY13 Identified	Formation	FY14 Identified	Formation
1		1	
2		2	
3		3	
4		4	
5		5	
6		6	IBCT
7		7	
8	IBCT	8	SBCT
9		9	
		10	HBCT
		11	



Our Most Important Task Aligning the Network Against ARFORGEN

The Network Evaluation Construct

What Fort Bliss Brings to the Game

Brigade Modernization Command (BMC)

- Network Evaluation and Testing in a Fully Loaded Operational Network Environment with Operational Forces
- Disciplined Entry Point for New and Emerging Technologies
- Standard, Repeatable Evaluation Process Across the entire DOTML-PF
- Informs Decision Making, Architecture, Doctrine, Policies, etc...

THEATER



“Making the BMC the centerpiece of integrated Network training, testing, and DOTMLPF evaluation”

INDUSTRY



2/1 AD
Brigade
Mission Command

DoD



ARMY BATTLE LABS



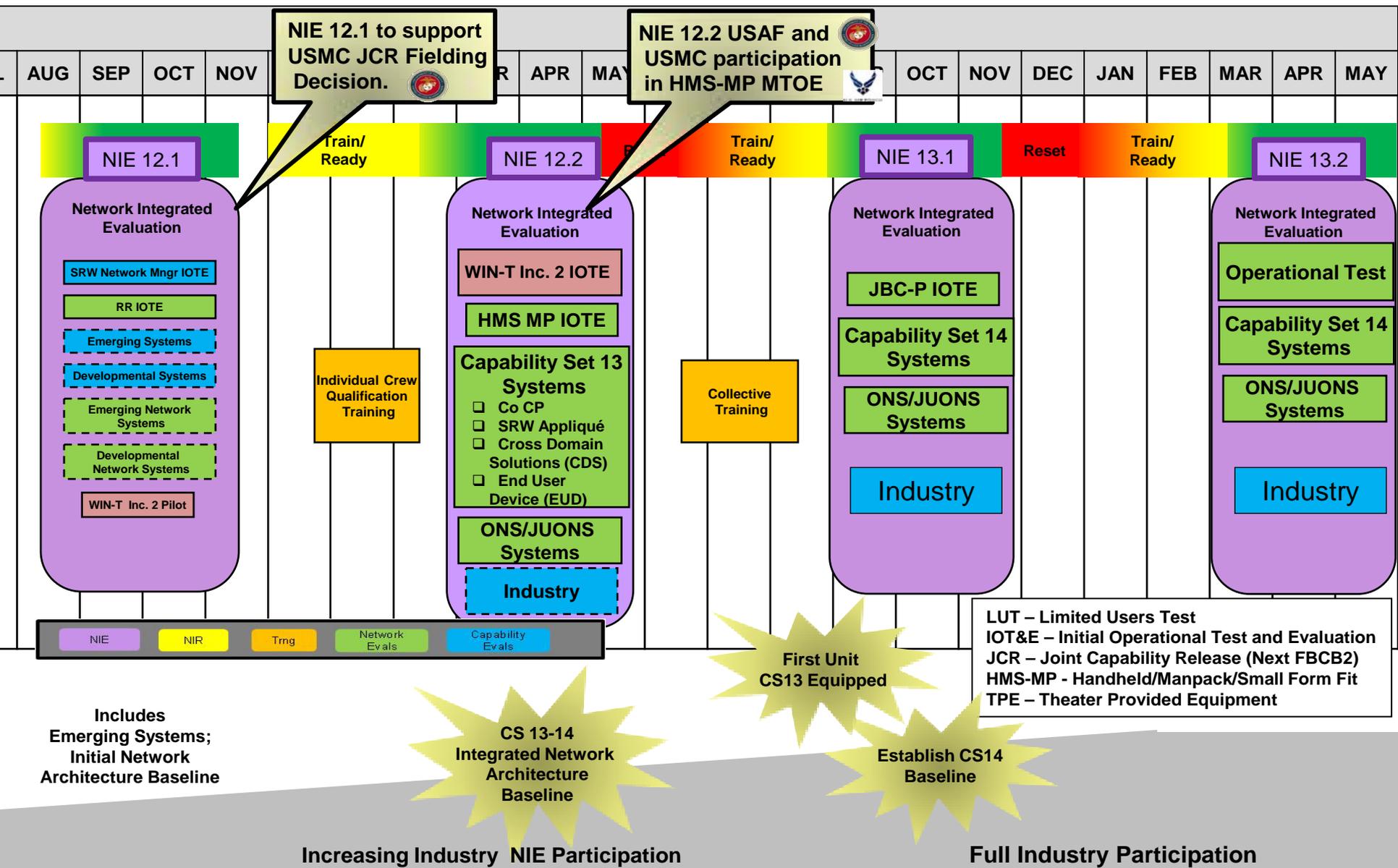
Taking the integration burden off of the operating force and putting it back on the generating force

Strategic Impacts of NIE

- Provides DoD a proven approach to change Acquisition, Testing and Programming for IT Capabilities
- Pushing Army efforts to provide better warfighter capability faster and cheaper
- Leverages Industry innovation and RDT&E funding



Implementing Capability Set Management Network Maturation Over Time



Agile Process Overview

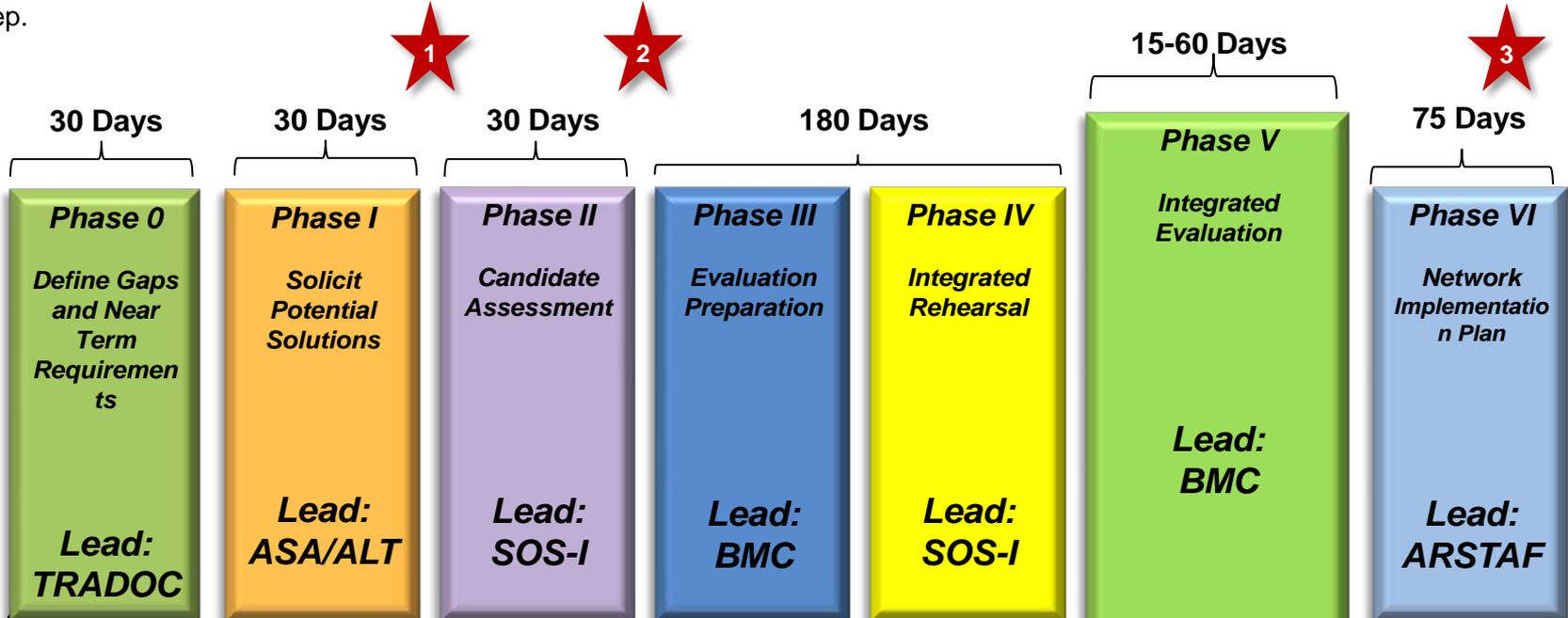
Executing NIE 12.2

Decision Point 1 determines Potential Solutions based on five assessment criteria. Industry is contacted on next step.

Decision Point 2 Recommended Approved Selection List of who will participate at NIE. Industry contacted.

Decision Point 3 Approved HQDA Position on Solution Way Forward and Procurement. Industry contacted after this decision.

NIE 12.2



- Army identifies and defines gaps and needs based on multiple data sources

- Army released an NIE Sources Sought and Tech Call Memos.

- Potential Candidates go through Lab Testing to assess capability and performance expectations.
- Funding applied at this Phase

- Selected Candidates are assigned a sponsor who guides them through the prep and rehearsal for the NIE event approximately 180 days.

- Selected Candidates participate in NIE.
- Industry is contacted within 15-30 days in conjunction with final NIE report.

- Army analyzes Final NIE Report
- Recommends where solutions could fit in Formations/ Echelons
- How capability will be used
- Determine procurement and fielding way forward.

- DP 1 - Viable Candidate List
- DP 2 - Candidates Selected for Evaluation
- DP 3 - Baseline Insertion

NIE Significant Outcomes

Savings more than pay for NIEs

AMERICA'S ARMY:
THE STRENGTH OF THE NATION™



RESULTS
ATTENTION OF

DEPARTMENT OF THE ARMY
BRIGADE MODERNIZATION COMMAND
BLDG 5800 CARTER STREET
FORT BLISS, TEXA S 79916-3802

ATFC-I

27 July 2011

MEMORANDUM THRU Director, Army Capabilities Integration Center, U.S. Army Training and Doctrine Command, 33 Ingalls Road, Bldg 133, Fort Monroe, VA 23651

FOR Commanding General, U.S. Army Training and Doctrine Command, 102 McNair Drive, Fort Monroe, Virginia 23651-1047

SUBJECT: Executive Summary (EXSUM) of the Brigade Modernization Command (BMC) Fiscal Year (FY) 11 Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel, and Facilities (DOTMLPF) Review

f. AN-PRC 117G. Field this system as an interim network solution (part of capability packages to ARFORGEN deployers) and consider it as a candidate bridging solution for Capability Set 13 in the event that a WNW-capable radio is not available. Soldiers found the AN-PRC-117G more useful and reliable than existing radio systems, supporting both fixed and OTM operations. It provided greater range for data and voice, outstanding voice clarity, and sufficient data transfer rate. It demonstrated high reliability and was easy to operate. Recommended improvements to the 117G include allowing its data display to interface with existing vehicular displays, support data compression, the ability to be mounted in an M2/M3 crew compartment, and improved system cooling. NIE 11.2 observations are subjective; recommend instrumenting the 117G during NIE 12.1 to formally capture performance data.

gg. JTRS Ground Mobile Radio (GMR). Stop GMR development and do not field as a material solution; however, keep the GMR in 2/1 AD in order to develop the WNW/SRW objective network until a replacement radio is available. The WNW demonstrated an acceptable level of speed and file transfer capability to warrant near-term fielding. The size, weight, and power requirements combined with significant heat output, complexity, and mechanical unreliability of the GMR preclude it from being a valid material solution. If GMR experiences a malfunction or power loss, a complete system shut down and restart was required. The GMR is neither simple nor easy to operate. The Portable Control Display Device (PCDD) was not intuitive for the soldiers to use; it required three different menus to substantiate any waveform. The JWNM is not an effective SA tool because it has no real time connectivity status display.

hh. Nett Warrior Surrogate (NWS). Stop development and do not field. Current applications do not provide a benefit to the user commensurate with the system limitations and burdens. The NWS capabilities compare poorly with other solution options available to the Army in the short and mid-term. The size, weight, and power demands cause it to have little to no overall operational benefit. Its ability to display maps/imagery, GCMS, and PLI should be weighed against its cost and the cost/availability of more capable, open-architecture systems that are able to accept and run multiple applications across multiple waveforms. We must adjust the operational requirements and rationale documentation for this capability.

KEITH C. WALKER
MG, US Army
Commanding

**Providing More
Capability Sooner
~ 8 BCTs for FY13**

- EIBCT Termination /Capability Set Implementation **\$4.0B**
- Ground Mobile Radio (GMR) Re-Structure **\$609M**
 - ❑ NIE 11.2 identified GMR Size Weight and Power (SWaP), complexity and mechanical reliability issues
 - ❑ Developed Directed Requirements for FY14
 - ❑ OSD endorsed NDI approach (MNVR Radios)
- Nett Warrior Re-Structure **\$822M**
 - ❑ NIE 11.2 identified limited operational benefit with solution
 - ❑ Requirements adjusted through a CSB -65% reduction in cost
 - ❑ New solution developed and evaluated in NIE 12.1 - 70% weight savings on Soldier
 - ❑ Fix took 6 Months, providing more capability, to more formations, sooner at less cost
- Mounted Soldier System (MSS) Terminated **\$445M**

TOTAL Savings ~ \$6 Billion

TRADOC Gaps List

- A robust network Provides fused information, and responsive access to the tactical edge
- Execute Mission Command and Control on-the-move (MCOTM)
- Share and display relevant multi-source data
- Digitally integrate Unified Action Partners
- Tailor network resources LOS and BLOS to match Commanders' priorities
- Conduct Cyber Electromagnetic Activities
- Network related Capability Gaps, which do not require the network for task performance, but are enabled by the network

Testing Priorities /Focus Areas

- CS13 Integrated Network Baseline
- MCOTM/Soldier Connectivity
- C2/ISR Integration
- Signal FAA Employment Concept
- Connecting Dismounts to the Network

HQDA Objectives

- Validate CS13/SWB11-12 Architecture; establish the CS13 Integrated Network Baseline
- Finalize CS13 MCOTM/Soldier Connectivity (NW) configurations
- Establish an ISR baseline; integrate C2/ISR functions at Battalion and below
- Deploy/Evaluate all Warfighting Functions (ISR, Med, Log)
- Finalize CS13 Signal FAA & Company CP configuration
- Assess/Evaluate network vulnerabilities
- Accomplish required evaluations in support of POR milestones and funding decisions

12.2 Improvements

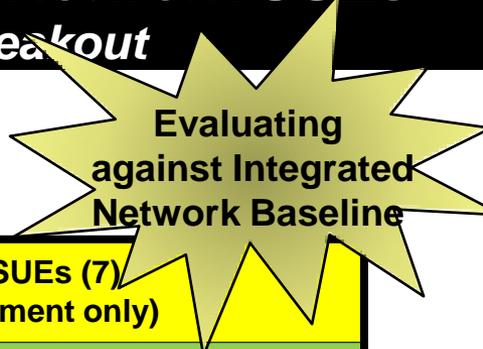
- ❑ **Validate CS13**
- ❑ **Classified Exercise**
- ❑ **HICON is 101 ABN (AA) DIV**
- ❑ **Objective Network (WIN-T Inc 2 undergoing IOTE)**
 - ❑ Brigade, Bn, and Co CPs required to jump
- ❑ **Dynamic, controlled free-play exercise**
 - ❑ Hybrid Threat => 1AD providing (+) 1 x Bn for OPFOR and Environment
 - ❑ Uncooperative, unpredictable environment
- ❑ **Fully nested TRIAD B2C2WG – consolidation will enable**
- ❑ **6 months between NIEs**
- ❑ **TRADOC-enabled MTTs / Support**
 - ❑ MCCOE => Mission Command with focus at Co CP and applied, tactical MDMP = use of Mission Training Complex
 - ❑ JTCOIC / TBOC=> Integrated understanding of COIST operations with Battle-rostered CPs
 - ❑ TRISA => Development of Threat Scenario



Centralized planning, De-centralized execution, Collaborative control

NIE 12.2 Recommended Network SUEs

(Phase I and II) Breakout



Networked SUEs (17)	
Aerial Tier	
Dynamic Aviation Update	Mode 5 IFF
Soldier Connectivity	
ITT Soldier Radio Rifleman	
NETOPs	
Warfighter Initialization Tool	CISCO Identity Service Engine
Lockheed Martin C2 Web Fusion	Tactical Key Loader
RASKL	
MC & ISR	
Fires PF/PSS SOF	P-OIC
JBC-P Vehicle	Ringtail Common Tactical Vision
Multichannel Radio	
BAE GMR Low Swap	Northrop Grumman SDMD
Other	
Govt TCN-Lite	TEMPUS PRO
Electronic Casualty Report	

Infrastructure SUEs (7) (technical assessment only)	
Cross Domain Solution	
Advatech Pacific TACDS	Northrop Grumman AMT
Tactical Routers	
DRS TS Tactical Router (DDU)	Agile Comm
GDC4S V2 5900 Tactical Router	DTECH Tactical Router
Klas Telecom ESRDock	



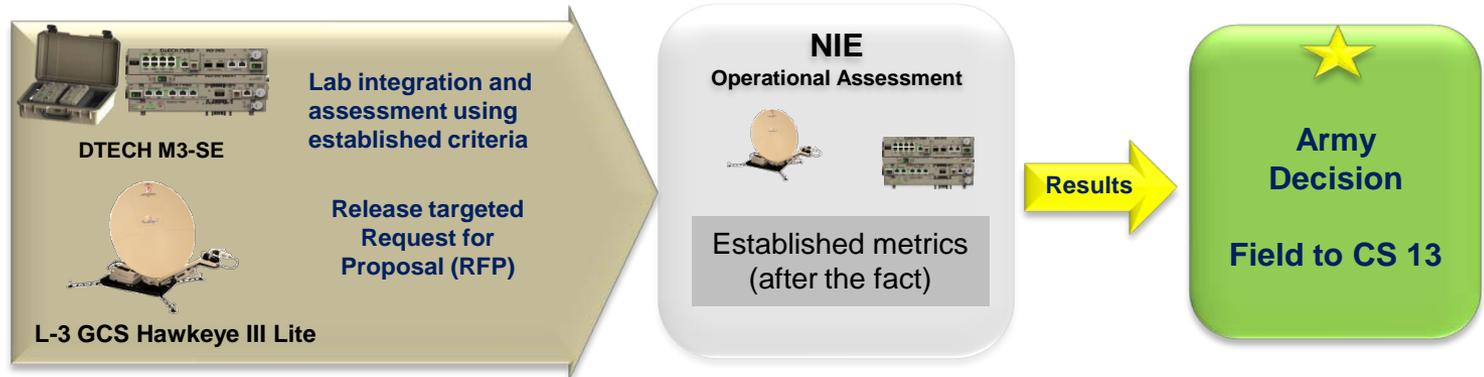
Networked SUEs Supported by 86th (8)	
Company CP	
DTECH CoCP	DRS TS MCCPS
GDC4S CoCP	L3GCS Hawkeye
TCS SNAP Impact Baseband	Klas Telecom ESRDock KP4700
TCS Snap Lite	Rockwell CoCP

NIE Delivering Capabilities Modifying Our Approach With Industry

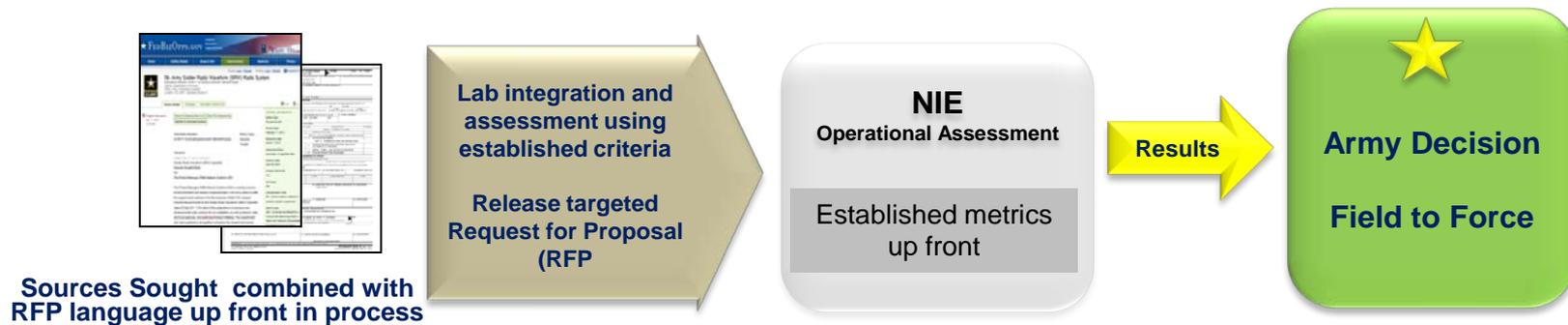
NIE 12.1 Soldier Radio Waveform



NIE 12.2 Company Command Post



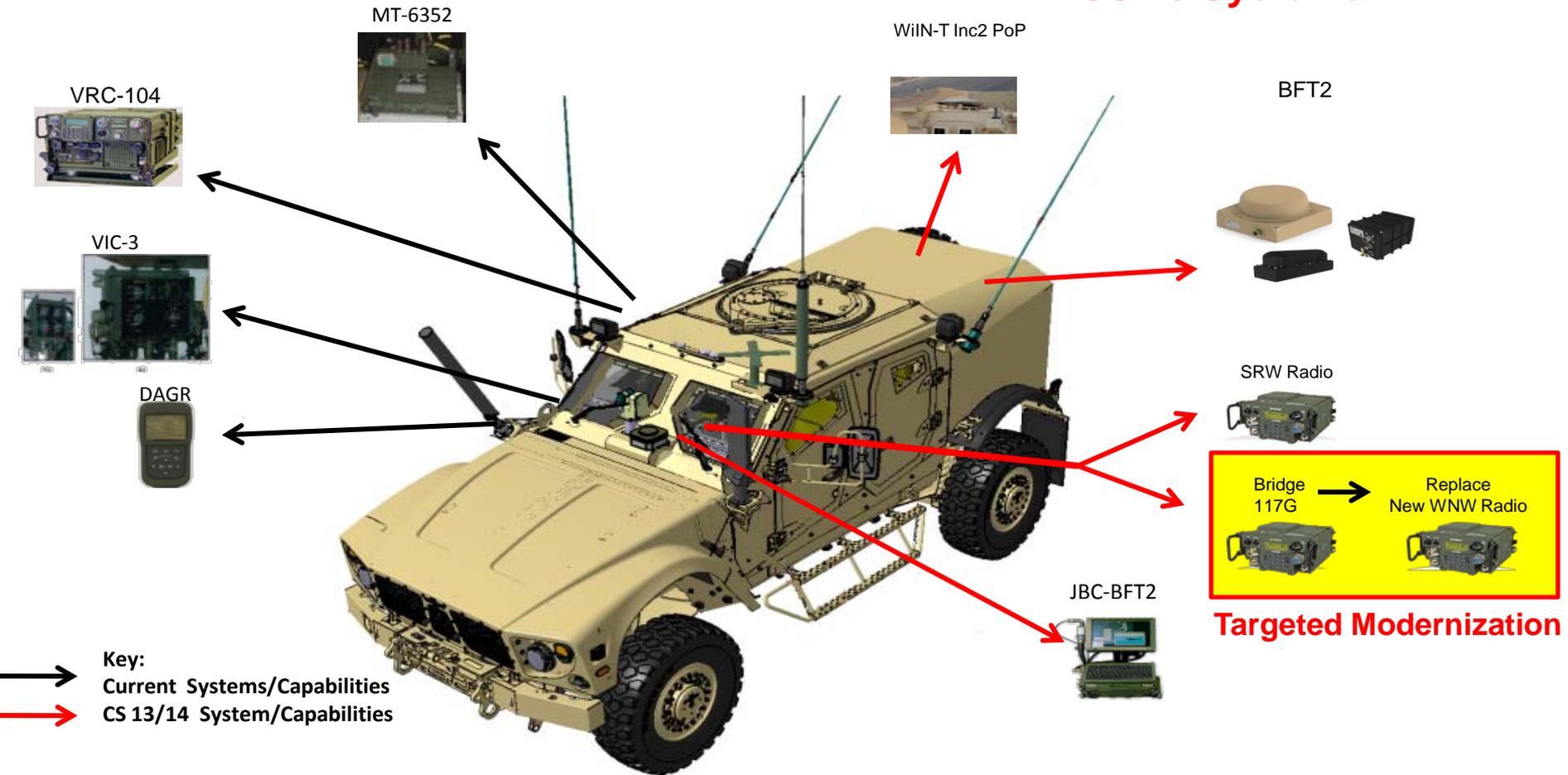
FY 13 And Beyond



Leveraging The Integrated Network Baseline Driving Integration Costs Down

Existing Systems

NEW CS 13 Systems



New Modernization Approach:
 Individual System / Components Targeted for Modernization
 - VS -
 Complete Replacement / Re-Integration by Platform

- Capability Set 13
- WIN-T Inc 2SNE (C2OTM)
- JBC-P/BFT2
- AN/PRC-117G (In Liew, GMR, Bridge Only)
- JTRS HMS
- AN/VRC 104(V)1



Directed Requirement for SINCGARS Soldier Radio Waveform (SRW) Appliqué

DEPARTMENT OF THE ARMY
 OFFICE OF THE DEPUTY CHIEF OF STAFF, G-5/7
 400 ARMY BENTLEY
 WASHINGTON, D.C. 20310-0201

DAMO-CIC

MEMORANDUM FOR ASSISTANT SECRETARY OF THE ARMY (ACQUISITION, LOGISTICS, AND TECHNOLOGY)

SUBJECT: Directed Requirement for SINCGARS Soldier Radio Waveform (SRW) Appliqué

1. References.

a. Memorandum, DAMO-LB, 16 January 2010, subject: Approval of Capability Set (CS) 11/12 Infantry Brigade Combat Team (IBCT) with Spin-Outs.

b. Decision Paper, ARIC (Capabilities Development & Assessments Directorate), 31 August 2009, subject: Brigade Combat Team (BCT) Modernization Capability Set

2. The Army has identified a requirement to design and field an affordable, data capability that can be employed with existing legacy radios or cheaper, newer technologies. It will include the Soldier at the tactical edge, close operational gaps, and rapidly capitalize on innovative technological advances by industry and others, while striving for maximum efficiencies in sustainment, logistics and lifecycle costs.

3. The DCS G-3/5/7 validates and establishes a directed requirement (DR) for a SINCGARS SRW Appliqué capability. Initially, this requirement is not to exceed 5,000 systems (300 systems for 15 BCTs plus spares for FYs 12-14). Request the Army Acquisition Executive (AAE) assign this DR to the appropriate Program Manager (PM) for immediate execution. This memorandum does not constitute authorization for non-competitive acquisition or sole source contracting. If either or both situations present themselves as viable alternatives, the appropriate regulatory guidance will be followed to apply that strategy.

4. The SRW appliqué shall re-use the SINCGARS base investment, adding the Soldier Radio Waveform (SRW) to the existing SINCGARS equipped platforms for the intended purpose of both networking among themselves and providing interoperability with JTRS SRW equipped products. Additional requirements are specified in the enclosure to this document. The delivered product is required to support Capability Sets beginning in FY-12 and approximately 300 appliques will be fielded to each brigade set for modernization activities. Specific delivery requirements will be provided to the ASA(ALT) Program Management Office when designated. Based on procurement options available, request ASA ALT identify the second and third order effects to the JTRS Acquisition Program if the SRW Appliqué option were executed.

- Design and field an affordable data capability that can be employed with existing legacy radios or cheaper, newer technologies
- It will include the Soldier at the tactical edge, close operational gaps, and rapidly capitalize on innovative technological advances by industry
- The SRW appliqué requirement is not to exceed 5,000 systems (300 systems for 15 BCTs plus spares for FYs 12-14)
- The delivered product is required to support Capability Sets beginning in FY-12



Harris Side Falcon



ITT Sidehat

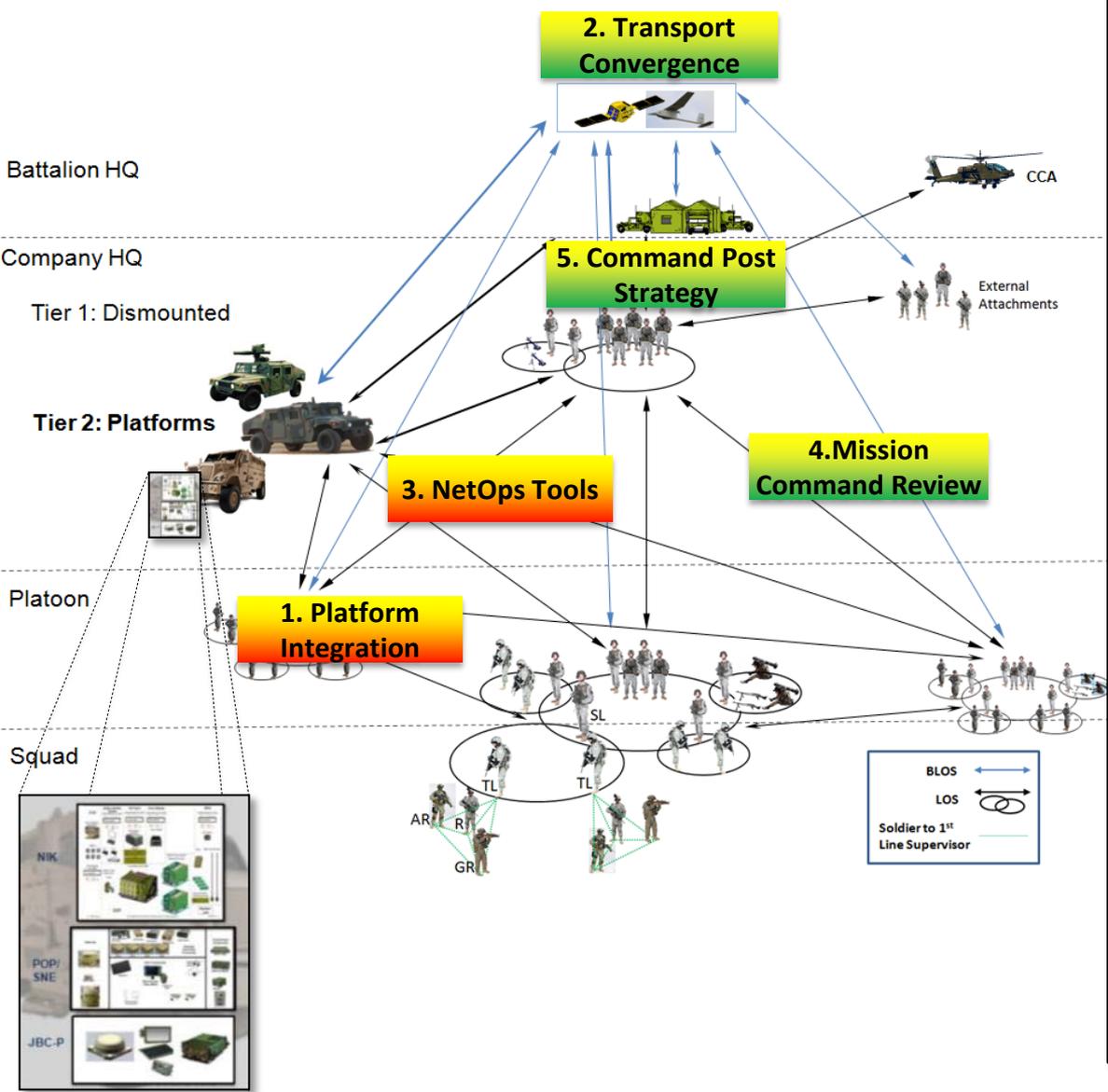


Sidewinder



Harris 117G

Other Challenges Remain



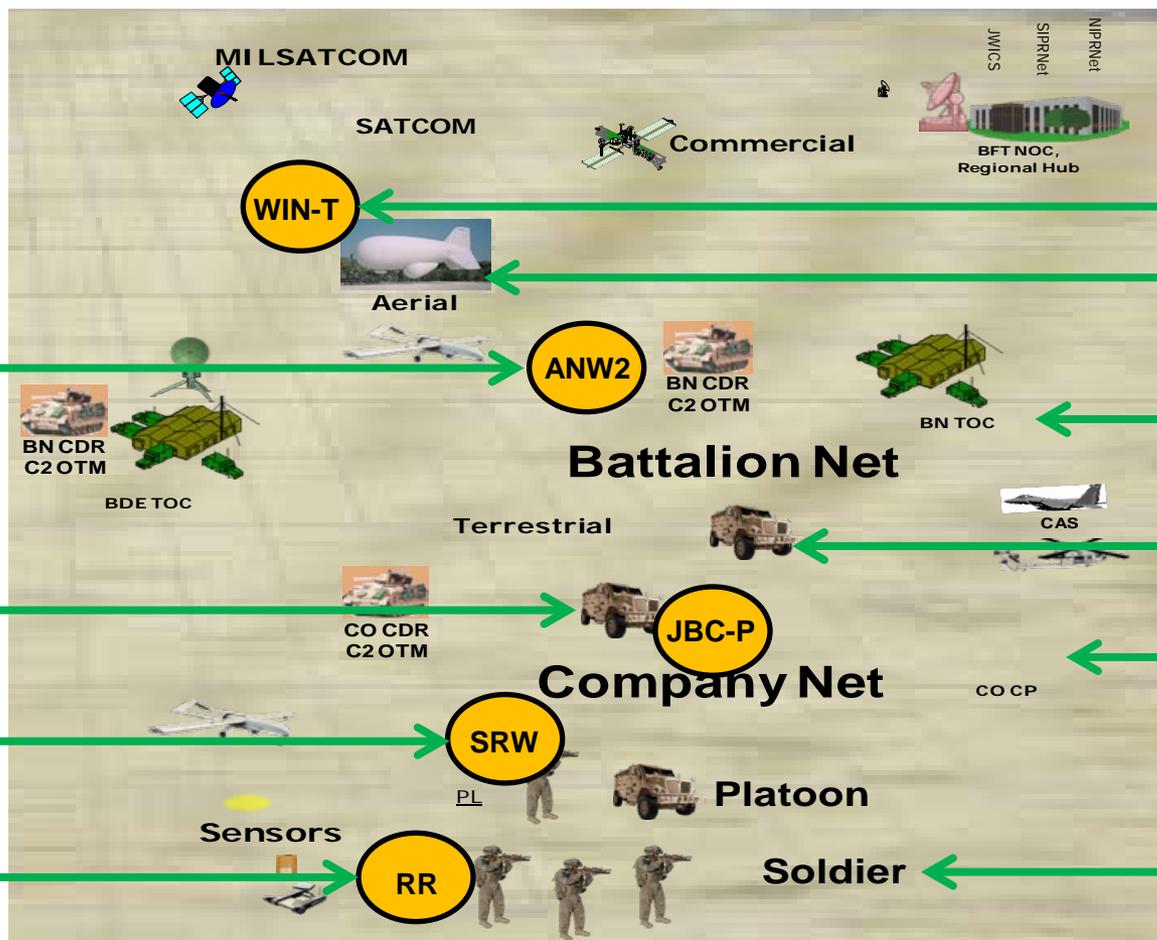
- 1** **Platform Integration:** Network capabilities must be integrated into vehicle platforms. Army Network Strategy and Army Tactical Vehicle Strategy Engineering Change Proposals (ECP) are not synchronized. Platforms have SWaP-C limitations.
- 2** **Transport Convergence:** Multiple stovepipe functional networks extending to the tactical edge produce inefficient network utilization and an inability for the commander to maximize the operational utility of the network(s).
- 3** **Network Operations Tools:** The BCT lacks the ability to plan, operate, and defend a responsive network with end-to-end transparency due to a non-integrated approach to network operations.
- 4** **Mission Command Application Review:** Redundancy in functional capabilities and infrastructures, perpetuate multiple stovepipe systems that unnecessarily complicate tasks for the commander and staff.
- 5** **Command Post Strategy:** Command posts lack standardization, insufficient on-the-move capability, and the ability to efficiently and effectively operate from a fixed, mobile, or dismounted environment.

Back Up Slides

Operational View NIE 12.1 Recommendations

✓ NIE 12.1
Field

Capability Set 13



✓ NIE 12.2 or 13.1
Evaluate/Field

Capability Set 13+

- WINT-T Inc 2 (IOT&E)
GNOMAD
- Shadow SRW Aerial
Harris Aerial Tier Radio
HARC-GMR
- JTRS Network Manager
(BDE-Co)
SRW Network Manager
(BN- CO)
- Harris 152A SRW Radio
- Co CMD Post
- Nett Warrior/JBC-P
MFLT - Translator

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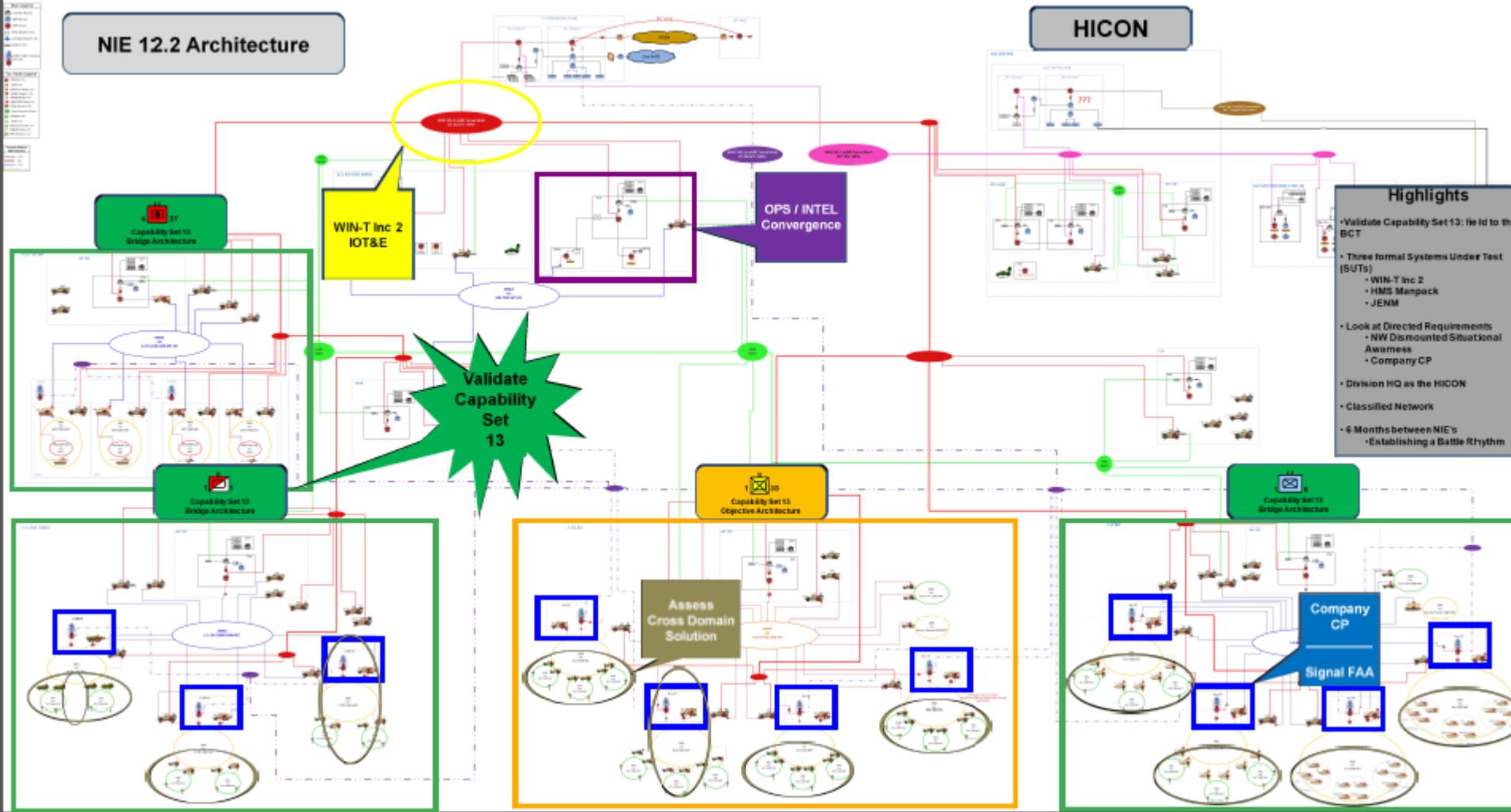
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✓ **JTRS SRW** – Soldier Radio Waveform, smaller bandwidth Hand-held and man-pack for voice and data at company and below.

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NIE 12.2 Network Map v0.1 (06DEC11)



- Highlights**
- Validate Capability Set 13: tie id to the BCT
 - Three formal Systems Under Test (SUTs)
 - WIN-T Inc 2
 - HMS Manpack
 - JENN
 - Look at Directed Requirements
 - NW Dismounted Situational Awareness
 - Company CP
 - Division HQ as the HICON
 - Classified Network
 - 6 Months between NIE's
 - Establishing a Battle Rhythm