

New approach will deliver integrated

By Claire Schwerin

The Army's next major network field exercise will take place in May and June, with a goal of finalizing its first integrated "capability set" of network equipment that will be fielded to Army brigade combat teams starting in Fiscal Year 2013.

Capability Set 13 is composed of vehicles, network components and associated equipment and software that, for the first time, will deliver an integrated voice and data capability throughout the brigade combat team formation down to the tactical edge. This robust tactical communications network will empower dismounted Soldiers, speed commanders' decision-making and support mission command on-the-move.

The connectivity, architecture and components of Capability Set 13 will be validated during the Network Integration Evaluation 12.2, the third in a series of semi-annual field exercises designed to quickly integrate and mature the Army's tactical communications network. The events are held in the challenging terrain of White Sands Missile Range, N.M., and Fort Bliss, Texas, and involve 3,800 Soldiers of the 2nd Brigade, 1st Armored Division executing realistic operational scenarios. The brigade evaluates dozens of technologies from government and industry to determine whether they perform as needed, conform to the network architecture and are interoperable with existing systems.

The NIEs are led by a Triad consisting of the Brigade Modernization Command, Army Test and Evaluation Command and System of Systems Integration Directorate under ASA(ALT). The Triad assesses capabilities and determines their implications across doctrine,



A 2nd Brigade, 1st Armored Division Soldier demonstrates Warfighter Information Network-Tactical Increment 2 and mission command on the move applications during the Network Integration Evaluation 12.1. WIN-T 2 is a major upgrade to the tactical network backbone that will extend satellite communications to the company level allowing Soldiers to communicate seamlessly through voice, data, images and video even in complex terrain that can break line-of-sight radio connections. Hosted on a single computing system, the initial set of Mission Command on the move applications will provide mobile company Soldiers with the real-time information that typically would only be available inside a Tactical Operations Center.

organization, training, materiel, leadership, personnel and facilities.

By placing technology in Soldiers' hands "early and often," the NIEs have already driven decisions to send certain systems to the field, revamp others to better meet Soldier needs and terminate several programs that lacked merit. The NIE process has also aligned several key Army programs of record to form an Integrated Network Baseline, including Warfighter Information Network-Tactical, the Joint Capabilities Release for Force XXI Battle Command Brigade and Below, Joint Tactical Radio System Handheld, Manpack, Small Form Fit, and the JTRS Soldier Radio Waveform and Wideband Net-

working Waveform.

Integrating the satellite terminals, radios, waveforms, mission command software and other systems that make up the network in laboratories at Aberdeen Proving Ground, Md., and in the field at White Sands also reduces the burden on Soldiers downrange, said COL (P) Dan Hughes, director of the Army's System of Systems Integration Directorate.

"We're not doing what we used to call 'drive-by fieldings.' We are not taking something to the field anymore unless it comes through here," COL Hughes said. "We run it through the lab. We test it out here. We put it in Soldiers' hands. We get an evaluation and

tactical communications network

we move on from there. What we're trying to get to is a baseline architecture that we can put everywhere in the Army."

The NIE approach represents a fundamental change in the way Army procurement specialists develop, evaluate, test and deliver networked capability to operating forces. Until now, Army leaders have developed, funded and fielded network technologies on individual program schedules.

Going forward, Army leaders will shift from traditional acquisition strategies by utilizing the Agile Process, which rapidly incorporates technological advances from industry and continuously delivers the latest critical capabilities to Soldiers in line with the Army Force Generation cycle.

The new construct also includes Capability Set Management, an adaptive process that synchronizes network development and fielding with the Program Objective Memorandum cycle, thereby ensuring that the right amount of funding is in place at the right time for all components of the capability set.

Synchronized fielding of capability sets every two years will assure the right amount and type of gear are purchased for the brigades that need it first, then incrementally modernize it -- instead of spending resources on technology that may be out of date by the time it is needed.

"Fielding the same radio year after year would be like putting the original iPhone in the force five years from now," COL Hughes said. "Instead [we are] buying the latest technology and putting it out there. The more we can use and leverage commercial technology the better off we're going to be."

However, the aim of the NIEs goes beyond just "buying widgets," said COL (P) John Morrison,

director of the Army G-3/5/7 LandWarNet-Battle Command Directorate. Army leaders are considering a systems' technical merit and the impacts on doctrine, training, requirements, force structure and other key areas.

"This is a completely different way of doing business," COL Morrison said. "When we hand the capability over to a brigade that's in the ARFORGEN process, we also give them the TTPs [tactics, techniques and procedures] that go along with it."

Aside from forcing positive changes to the Army's business practices, the NIEs have yielded numerous integration "firsts" and innovative risk reduction prior to formal operational tests. The Army has effectively reduced risk for the NIE 12.2 Initial Operational Test and Evaluation for WIN-T Increment 2 and the JTRS HMS systems by integrating them into the NIE architecture and obtaining initial Soldier feedback prior to their formal tests.

Capability observations during NIE 12.1 revealed that the use of a networked aerial tier with line of sight systems vastly improved mission command on-the-move and simplified connectivity to remote company outposts by removing the need for vulnerable ground retransmission locations. Dismounted position location information was integrated into the common operating picture and mission command capabilities were extended to the tactical edge. Army planners brought together dozens of different network management tools that are currently fielded, and made progress toward integrating and streamlining NETOPS capabilities into common standards.

Additionally, Nett Warrior handheld devices down to the fire team leader level and above have demonstrated tremendous poten-

tial for dismounted operations, especially for transmitting position location information and SPOT reports. Through the NIE process, Army leaders have aligned various efforts aimed at harnessing smartphone technology for tactical use, resulting in a single handheld solution that will be fielded in the Army in Fiscal Year 2013 and continuously upgraded with new "apps."

Extending the network to the lowest echelons will facilitate decisive action at the company level, said CPT Luis Albino, commander of C Troop within 1st Squadron, 1st Cavalry Regiment in 2/1 AD. A dismounted Soldier who spots an objective can immediately relay information through voice, text and photos, significantly improving the company commander's situational awareness, CPT Albino said.

"I'm far from the scout that is actually seeing the objective, but if I can see what he's seeing, I can quickly make a decision. And my [higher chain] will be able to get that same picture," CPT Albino said. "I'm not wasting time waiting for somebody outside my chain to give me a 'Hey, this is what he's looking at.' - I can now make a decision because I can know exactly what he's looking at."

NIE 12.2 will operate in a classified environment with secure data connections and will connect evaluation units to a higher-division headquarters, being represented by the 101st Airborne Division operating out of Fort Campbell, Ky. 2/1 AD operations at White Sands will require the brigade, battalion and company command posts to "jump" or move in uncooperative and unpredictable environments, and quickly establish network connectivity. A

(Continued on page 38)

(Continued from page 37)

battalion-sized opposition force will be employed in dynamic scenarios with hybrid threats, including conventional forces, insurgents and members of the local population.

“What you’re going to find in 12.2 is we’re going to be more fluid,” with operations covering at least two-thirds of the 12,000 square kilometers of White Sands, said BG Randal Dragon, commanding general of the Brigade Modernization Command. “You’re going to see an increase in capability in the NIE.”

The dominant event of NIE 12.2 is the IOT&E for WIN-T Increment 2, a major upgrade to the tactical communications backbone that will extend satellite communications to the company level and enable

The Brigade Modernization Command conducts physical integration and evaluations of the network, capability packages and other adaptive and core capabilities in order to provide doctrine, organization, training, materiel, leadership and education, personnel and facilities recommendations to the Army.

mission command on-the-move.

“Increment 2 is the baseline. It’s the foundation for the Army’s tactical network of the future, which provides a fully mobile network that we’ve never had before,” said COL Ed Swanson, WIN-T project manager. “The IOT&E is critical because we have to show Increment 2 is operationally effective, suitable and survivable to support a full rate production decision to field Increment 2 to the entire Army.”

NIE 12.2 will finalize Capability Set 13 and the Integrated Network Baseline, the foundation upon which Army leaders will set future requirements and evaluate emerging technology. NIE 13.1, scheduled for the fall of 2012, will be the final exercise prior to the synchronized fielding of Capability Set 13. While Army leaders plan to provide up to eight brigade combat teams with the full suite of networked systems, every unit in ARFORGEN will receive “minimum essential” network capabilities including a modernized tactical operations center and a basic mission command on-the-move capability, COL Morrison said.

“We’re buying what we need, for those operational formations that need it, when they need it,” he said. “This really is about buying less, more often and modernizing that Integrated Network Baseline over time.”

Claire Schwerin is a staff writer for Symbolic Systems, Inc. supporting the U.S. Army Program Executive Office Command, Control and Communications-Tactical (PEO C3T) and the Assistant Secretary of the Army for Acquisition, Logistics and Technology (ASA(ALT)) System of Systems Integration Directorate. She is a former Statehouse reporter for The Star-Ledger, New Jersey’s largest newspaper. She has covered the Army’s first two Network Integration Evaluations and several related Network Modernization events.

ACRONYM QuickScan

2/1 AD -- 2nd Brigade, 1st Armored Division

ARFORGEN -- Army Force Generation

ASA(ALT) -- Assistant Secretary of the Army for Acquisition, Logistics, and Technology

DOTMLPF -- Doctrine, Organization, Training, Materiel, Leadership, Personnel and

Facilities

FBCB2 -- Force XXI Battle Command Brigade and Below

HMS -- Handheld, Manpack, Small

IOT&E -- Initial Operational Test and Evaluation

JCR -- Joint Capabilities Release

JTRS -- Joint Tactical Radio

System

NETOPS -- Network Operations

NIE -- Network Integration Evaluation

SPOT -- Synchronized Pre-deployment and Operational Tracker

WIN-T -- Warfighter Information Network-Tactical

Phases of the Agile Process



Phase 0—Define Near Term Requirements

A TRADOC-led effort to identify capability gaps and opportunities for evaluation in the NIE. Those gaps are validated and prioritized by HQDA G3/5/7 based on operational need and the Army Network Strategy.

Phase I—Solicit Potential Solutions

Led by ASA (ALT), this phase initiates a solicitation to both Industry and the Government materiel community for potential solutions. For consideration in Phase I, systems must support a capability gap or opportunity established in Phase 0 and provide supporting information to ASA (ALT) concerning its technical maturity, concept of operations, ability and cost to integrate with the network and ability to provide the required quantity of systems and support for the NIE. Formal Program of Record systems requiring formal tests go through the Test Schedule and Schedule and Review Committee (TSARC) process and are incorporated into the most relevant NIE.

Phase II—Conduct Candidate Assessments

Led by ASA (ALT), this phase determines the viability of candidates for participation in the Network Integration Evaluation. Participation in Phase II requires a favorable assessment in Phase I and respective decision point (DP1) for inclusion on the initial list of viable candidates. At this phase, systems undergo a more thorough review in a laboratory environment to confirm technical maturity evaluated and the system level of integration; and a network architecture analysis to determine whether or not the candidate is a viable addition to the NIE architecture. Based upon these results and HQDA Objectives and Priorities for the relevant NIE, Decision Point two (DP2) selects the candidates to participate in the NIE.

Phase III—Evaluation Preparation

This phase, led by the Brigade Modernization Command (BMC) and ASA(ALT), focuses on preparing for the Network Integration Rehearsal (NIR) and NIE. Some specified criteria for this phase includes that systems have an assigned PM and Combat Developer, funding, draft requirements, initial test plans, initial safety assessments, training plan, a technology maturity and readiness level assessment, a draft evaluation concept, as well as an IA and spectrum assessment. Final outcome is a defined unit architecture, systems delivered and integrated, Soldiers trained, and systems instrumented prepared for Phase IV. **Candidates are required to provide onsite support during this phase of the Agile Process.**

Phase IV—Network Integration Rehearsal (NIR)

Led by ASA (ALT) and supported by ATEC and BMC, the NIR is a risk-reduction event in preparation for the NIE. The primary activity in this phase is the overall integration of systems, not only physically within unit platforms but also within the network and the NIE vehicle integration fleet. This phase is complete after the successful execution of the LOADEX, Pilot Test, and COMMEEX. **Candidates are required to provide onsite support during this phase of the Agile Process.**

Phase V—Network Integration Evaluation (NIE)

Led by BMC, with ATEC holding primary responsibility for Type I systems (formal program of record testing), the NIE evaluates candidate systems in an operational environment. The NIE seeks Soldier recommendations on system/concept continuation and DOTMLPF changes required to integrate systems/concepts into units and operations. The NIE completes identified PoR testing during the first portion of the NIE and it ends with a two-week integration assessment event and a DOTMLPF review providing system recommendations. **Candidates are required to provide onsite support during this phase of the Agile Process.**

Phase VI—Develop a Network Implementation Plan

Phase VI is led by the HQDA ARSTAF. ASA(ALT), TRADOC, ARSTAF collectively provide a recommendation to procure and integrate NIE demonstrated capabilities based on system maturity, current architecture and integrated network baseline, valid requirements, and available resourcing. In this phase, the HQDA ARSTAF makes integrated capabilities fielding recommendations and/or DOTMLPF change recommendations to continue to develop capabilities based on TRADOC's NIE findings for each candidate.