

Army applies NIE lessons to integrating network equipment

U.S. Army

WARREN, Mich. (Dec. 20, 2012) -- The Army is applying integration lessons learned from completed Network Integration Evaluations as it continues production of networked vehicles to support fielding efforts to 10th Mountain Division (LI).

To date, the Army has conducted four Network Integration Evaluations, or NIEs, which have not only allowed for Soldier-driven evaluations and assessments of network technologies, but also aided the Army in development of tactics, techniques and procedures for tactical network capability.

Of equal importance, the NIE process informed the acquisition, logistics and production communities on how to better integrate network capability onto Army vehicle platforms, officials said. They said these lessons learned, paired with user feedback on how the integration work met operational needs, have directly influenced fabrication methods as the Army fields these network capabilities.

Supporting the vehicle integration effort at the NIEs was the engineering team at the Space and Naval Warfare, or SPAWAR, Systems Center Atlantic, known as SSC Atlantic, in Charleston, S.C. The team combined their prior experience and expertise with mine-resistant, ambush-protected vehicle, or MRAP, integration with NIE lessons learned to integrate network systems such as Warfighter Information Network-Tactical, or WIN-T Increment 2, tactical radios and routers on more than 150 MRAP vehicles.

Bringing with them years of vehicle integration experience, the SPAWAR team has designed, prototyped, installed and tested more than 27,000 MRAPs with multiple variants across different platforms and for all services.

"We took our engineering processes that we've refined over the last five to six years here in Charleston over the course of MRAP and other tactical vehicle programs and took those to Fort Bliss to support the NIE process," said Christopher Bryant, Capability Set 13, or CS 13, Tactical Vehicle Integration Lead, SSC Atlantic. "The SPAWAR team came in at the end of NIE 12.1 to support just the exercise phase. For NIE 12.2 and 13.1, we were there from start to finish working the planning, design and integration efforts prior to the NIE events, as well as offered technical field support to the Brigade during the actual exercise."

As part of the NIE 12.2 effort, Program Manager (PM) WIN-T solicited SPAWAR to assist with the redesign and integration of 50 WIN-T vehicles equipped with tactical network components on the M-ATV platform which conducted the program's Initial Operational Test & Evaluation, or IOT&E during NIE 12.2. It was during that time that the SPAWAR team gained critical knowledge of the system's design and how

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each of the WIN-T components interfaced with each other, which was crucial as WIN-T is a main component of CS 13.

Understanding and having supported the WIN-T vehicles in NIE 12.2 and 13.1 provided a level of experience that helped the Army's PM MRAP and SPAWAR ramp up the integration for CS 13 at a smarter pace. NIE experiences also provided key insight into how to best integrate other data radios onto the vehicles and anticipate integration challenges of radios that will be later added.

The Army and SPAWAR are actively applying key lessons learned through the NIE process to enhance the ongoing capability set integration work at Charleston. During the NIE, after more than six weeks of systems being used in the field, Soldiers quickly provided both positive and negative feedback on the system capabilities, as well as how they are integrated into the vehicles. That feedback was critical to aid in the redesign of mounting brackets and cable routers to keep elbows from being hit, cables from being stepped on, certain features were made easier to reach prior to moving into full production with the specific systems that were incorporated under the capability set.

"To me, this is a clear-cut example of making [Information Technology] count for the warfighter and the nation," said Bryant. "And, that is the real value of NIE. It allowed us to see how a Soldier would or could use a system, but also find where any interoperability issues may exist between multiple systems; this allows everyone to immediately resolve potential problems that would never be known prior to fielding unless you put them into the NIE environment to operate together on the same network and within the same battle space."

Currently, SPAWAR is in the process of completing the integration of 144 vehicles equipped with CS 13 and will continue to build the remaining 144 vehicles. Additionally, they are working the design and development of an integration kit that will go on MRAP-Lite vehicles. These vehicles are not equipped with WIN-T but do have a high-band network radio component and pieces of what's on the heavy platforms. The kits will then be shipped and integrated overseas.

"We incorporated NIE lessons that allowed us to streamline engineering, prototyping and production build designs near simultaneously," said Paul Wilson, director of Synchronized Fielding for the effort. "A more traditional approach doesn't follow this sort of process but the total Army team effort between research and development centers, production facilities and program managers allowed us to meet new equipment training and fielding schedules with multiple vehicle deliveries to 10th Mountain."

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