Delivering the network to the edge

By Claire Schwerin

Today, the Army is giving dismounted troops the networked tools to exchange information and affect the battle in real time. It is recognition of the intelligence-gathering tenet that at the tactical edge, every Soldier is a sensor.

Tactical handheld devices resembling commercial smartphones and running various mission "apps" will be fielded to team leaders and above allowing them to communicate seamlessly within their units and with higher headquarters. These devices will connect to the Army's larger tactical communications network through the Joint Tactical Radio System Rifleman Radio, an advanced two-pound radio that can transmit voice and data such as text messages, GPS locations and photos.

"It gives my commander a full picture of what's going on as far as situational awareness," said 2LT Adam P. Martin, a platoon leader with the 2nd Brigade, 1st Armored Division. "He can see where guys are on the ground. If we see something – a vehicle, a person or an IED [improvised explosive device] – we can send pictures straight to them so they can see what we're looking at. It gives a better picture for [higher echelons], and if they know something [we don't], they can pass it down to us and we can react quicker."

Through the combination of new technology, such as the Nett Warrior handhelds, and upgrades to existing systems like Force XXI Battle Command Brigade and Below/Blue Force Tracking, Army leaders aim to empower lower echelons with more information and connectivity than ever before. Dismounted Soldiers will execute missions with greater situational awareness and agility, adapting their plans based on real-time information communicated throughout their brigade combat team.

PFC Philip Kerr said, during one scenario at the Network Integration Evaluation 12.1, the Nett Warrior made it possible to telegraph throughout a platoon which buildings had been cleared. To show which areas had been cleared and where they believed the enemy was hiding, a "chem light" application was used to place on screen icons, which were then simultaneously broadcast throughout the squads involved in the operation..

"If there's ever a situation where you're really not sure what's going on, you can just

A Soldier from the 2nd Brigade, 1st Armored Division demonstrates a Nett Warrior device during the Network Integration Evaluation 12.1 in November 2011.

pull this out and see; OK, this building's been cleared. That area should be good. Here's where all the guys are at right now, and there's the bad guy," Kerr said.

Using the software for Joint Battle Command-Platform, the successor to the widely fielded FBCB2, the Nett Warrior displays the precise locations of dismounted Soldiers to their teammates on the ground and in vehicles, aircraft and command posts, helping prevent fratricide. The vehicle-based version of JBC-P will be involved for the first time at NIE 12.2, where the Army researchers will collect Soldier feedback on JBC-P's totally redesigned user interface, faster situational awareness updates and availability of Tactical Ground Reporting data.

The "bridge" system from the current FBCB2 to JBC-P, known as the Joint Capabilities Release, was used at the first two NIEs. Operators from the 2/1 AD praised the speed and accuracy of JCR updates of position location information, which are exponentially faster than the original FBCB2 due to the increased bandwidth delivered by the BFT-2 satellite transceiver used with JCR and JBC-P. Soldiers also took advantage of the new "chat" feature to send instant-messages in real time, creating multiple chat rooms to coordinate quickly and accurately across multiple units.

"It's super easy to use – that's the best part," said SSG Cody Moose. "Before every mission, either me or the platoon sergeant will start a chat room. We'll start it up. Everybody accepts it before we leave – kind of like you do your radio checks. 'Everybody make sure you're on the chat room.' And then we use it for everything."

The ability to transmit blue force tracking information, photos and a host of other data across more echelons in real time will allow the principle that "every Soldier is a sensor" to reach its full potential, said MAJ Stephen Dail, 2/1 AD S6. He described a situation in which a Soldier with only a voice radio would encounter something or someone suspicious and use a camera to take a photograph.

"Right now, the way we fight, he'd have to take that back up to his company level, plug it into a computer, maybe even take it to the battalion level, (then) have somebody analyze it. Wait until it comes back down. That can be a very long process," MAJ Dail said. "With the enablement of [handheld devices and software-defined radios], he can take that image on the handheld. He uses that radio and pushes it right up to the squad-level vehicle. It immediately publishes across the JCR/BFT, so we can see here at the brigade where that Soldier is on the battlefield right now and what that image is that he's seeing. This may allow us to provide more information on the image that he has, and push that right back down to him so that information can be used immediately."

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