

In a SNAP:

Bridging C4ISR Gaps with SATCOM Boost

The U.S. Army is employing COTS know-how to extend SATCOM speed and integrateable reach.

By Amy Walker, staff writer for Symbolic Systems, Inc. supporting Army PEO C3T

Project Manager Warfighter Information Network-Tactical (PM WIN-T) is bridging gaps in C4ISR created by rugged terrain and sparse infrastructure by deploying transportable Commercial off the Shelf (COTS) Very Small Aperture Terminal (VSAT) SIPR/NIPR Access Point (SNAP) satellite terminals that can deploy far quicker than their traditional counterparts.

“These terminals get network battle command to the tactical edge,” said Lt. Col. Gregory Coile, product manager, Satellite Communications (PM VSATCOM).

Certain locations in theater create unique satellite communication requirements which cause the need for the SNAP terminals to be fielded to augment current Program of Record (PoR) solutions. Secure Internet Protocol Router/Non-secure Internet Protocol Router (SIPR/NIPR) Access Point (SNAP) terminals are VSATs that take advantage of commercial equipment to expedite the fielding process. They provide access to the tactical and strategic networks for command and control, call for fire, Medevac and information exchange. SNAPs are a key communications component for units, providing secure beyond line of sight communications to battalions and below.

“One of the biggest gaps SNAPs fill is providing network capability down to the team, platoon and company level,” Coile said. “The terminals provide network capability to the smaller outpost environment and extend the coalition and network presence further out into the AOR.”

“SNAPs allow tactical comms to be where it needs to be--at the tip of the spear,” said John Lundy, SNAP logistics management specialist.

MOVEABLE IN A SNAP

Compared to other PM WIN-T satellite terminals, SNAP terminals have a smaller silhouette and are easily transportable either by vehicle or by helicopter. Newer technology has



Lt. Col. Gregory Coile
Satellite Communications

enabled engineers to design the terminals to weigh in at only 300-400 pounds and fit into three transit cases. Their modular design allows for varying dish and antenna sizes to appropriately satisfy mission requirements.

“SNAP is designed to provide beyond line of sight communications to a small unit at a forward operating base out in the middle of nowhere where they are unable to use any of their line of sight radios either due to terrain or distance,”

Lundy said. “The SNAP’s transit case design allows a user to put it in the back of a Humvee, or into a helicopter.”

Because they can be packed in transit cases and have low power requirements, SNAPs are easy to move around the battlefield, providing an expeditionary element to the force. As priorities change and more resources are needed in different locations, they can be quickly deployed and set up for quick network accessibility.

INTEGRATEABLE IN A SNAP

SNAP terminals, which were designed to have the maximum interoperability within the Army and with Joint Forces, can tie into the greater WIN-T network. Currently they are interoperable with WIN-T Increment 1, and going forward they will interoperate with Increment 2. SNAPs can link into the Regional Hub Nodes, the Unit Hub Nodes, and into Deployable Ku Earth Terminals (DKET), which provide much larger bandwidth capabilities and volume distribution.

“SNAP was designed to be a smaller footprint with similar capability to augment the WIN-T network, to link into the same hubs, and talk to STTs (Satellite Transportable Terminals) in that same mesh,” Coile said.

WIN-T Increment 1, the former Joint Network Node (JNN) program, is a communications network that enables the exchange of voice, video, and data throughout the tactical Army. Currently, it is fielded to 76 percent of the total force. While WIN-T Increment 1 provides satellite communications at the quick halt to the battalion level and above, Increment 2 will bring the initial on the move capability to those at the company level.

“SNAP is easy to transport, easy to set up, and it takes some of the stress off of the JNN network,” said Danny Hite, SNAP logistics management specialist.

In conjunction with larger terminals and to increase network capability for the warfighter, SNAPs have also been used on larger bases such as to support the infrastructure or for training

COALITION COMMS-ABLE IN A SNAP

To support communications in a coalition environment SNAP terminals, along with SIPR/NIPR data packages, also support a third data package that can run the Combined Enterprise Regional Information Exchange System (CENTRIXS) International Security Assistance Force (ISAF) network, or CX-I. The CX-I network is the US component of the Afghan Mission Network, which was developed to enable the 45-nation coalition in Operation Enduring Freedom to effectively communicate, establish situational awareness across the entire coalition, share information, and operate on a common security enclave.

“Because we purposely ensure that SNAP is interoperable with the rest of the kit inside of WIN-T, it can be configured to be another receive node for that (CX-I) capability,” Coile said.

Currently, SNAP operates exclusively on Ku-band, however PdM SATCOM is in the process of certifying Ka and X-band capability to take advantage of the Department of Defense’s (DoD) Wideband Global SATCOM satellites, Coile said. Ka, X and Ku-band are radio frequencies used for satellite communications. While Ka and X-band are used on military satellites, Ku-band is used on commercial satellites. Because the DoD has high efficiency requirements, using Ka and X is more efficient and effective than Ku-band, and there is a significant cost savings by not having to lease commercial satellite time. The only drawback to these frequencies is that the amount of bandwidth X and Ka-band provide is limited and has to be prioritized by the combatant commander, Coile said.

BCT-COMPATIBLE IN A SNAP

As Brigade Combat Teams (BCT) continue to be deployed, the need for improved communications capabilities steadily increases. In response the Army is augmenting the network with commercial SNAP terminals. Some BCTs deploying are now being enhanced with 20 SNAPs, catapulting the number of satellite terminals a BCT receives for the network from eight to 28, Lundy said.

With over 400 terminals in southwest Asia SNAP is the most fielded satellite terminal in theater.

Since SNAP terminals are commercial-off-the-shelf equipment, they take advantage of the most current technology available. Changes in terminal capabilities such as encryption devices can be made as soon as new terminals are produced. Since they are not PoRs and each purchase is its own entity, the PM has greater flexibility to insert emerging technologies more rapidly into the SNAP baseline, Hite said.

If the Army had to follow its acquisition cycle in every instance, it would never be able to meet the requirements of the field, said Sal Granata, project leader for SNAP. Until new systems can be fielded, systems such as SNAP bridge the gap between the ideal solution for the Soldier and what is actually coming down the pike.

“The biggest challenge that Soldiers in the field face is that the requirement for information exceeds the ability of the system to respond within the acquisition cycle and therefore there will always be a need for interim solutions,” Granata said. “SNAP is the interim solution of choice for the Warfighter’s information needs.”

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