UEx Space Support Element Enhancements to Phase I and Phase II Operations

By LTC Richard Dow

Since August 2004, Army Space Support Elements (SSEs) have been providing Space support in garrison to their respective Unit of Employment x (UEx) headquarters and subordinate units, by comprehensively integrating and coordinating Space capabilities into Phase I and Phase II planning, training and operations. As of May 2005, the Army has four Active Component SSEs, one of which is currently deployed with the 3rd Infantry Division (3ID) in Iraq. The other three SSEs (10th Mountain Division, 101st Airborne Division and 4th Infantry Division) will deploy within the next year.

The training and integration requirements for each of these UEx headquarters, as they prepare for combat, has involved each SSE with the planning, integration and coordination of Space support throughout their staff sections. These garrison Space support efforts are ensuring that each UEx headquarters and their subordinate units will deploy with a significantly enhanced ability to fully access and exploit all available Space capabilities.

The following real-world examples describe how these SSEs have supported their staff sections in their collective effort to fully integrate Space capabilities for enhanced combat readiness.

Support to the G-2

• Coordinated the development of commercial satellite imagery "basic loads" for use and access by the G-2 section. These "basic loads" include 1 meter and sub-1 meter imagery for their entire respective areas of responsibility (AOR). The total basic loads range from 200-270 gigabytes of imagery.

• Developed standard processes, division of labor, file formats and imagery working groups to rapidly develop customized and relevant imagery products for all staff sections. The 3ID SSE supported the implementation of the "3ID Imagery Coordination Cell" to synchronize their units' imagery requirements between the G-2 Imagery Cell, the Geospatial Information and Services (GI&S) Section and the SSE.

• Developed redundant means to acquire and exploit Space-based Electronic Intelligence from In-band Signaling (IBS) broadcasts.

• Supported the acquisition of software licenses and associated operator training of specialized National Geospatial-Intelligence Agency (NGA) imagery software (Broadcast Remote Intelligence Technology Enhancement, or BRITE) which retrieves and processes NTM imagery.

• Provided analysis on the capabilities and integration of a specialized intelligence broadcast capability into division intelligence operations, and served as lead for acquiring this capability (in coordination with G-7).

Support to the Geospatial Information and Support Section

• Coordinated for GI&S Soldiers to receive imagery software training with SMDC's Spectral Operations Resource Center (SORC).

• Assisted in the distribution of archived commercial unclassified satellite imagery to other staff sections and Brigade Combat Teams.

• Assisted in the acquisition of the most recently archived commercial unclassified satellite imagery of post training areas and the Joint Readiness Training Center.

Support to the Staff Weather Office

• Coordinated the collaboration of Tactical Space Environment Network Display and Space Support Enhancement Toolset capabilities to generate and interpret Space analysis and effects products for the staff.

• Provided dedicated Space analysis expertise for the monitoring, analysis and reporting on multiple Space weather products and their effects on division operations.

SGT Tobias Mitchell, part of the 3rd Infantry Division Space Support Element pulls a map off the plotter. *Photo by MAJ Jim Rozzi*

Support to the G-3

• Provided Space architectural expertise to support the operational integration of all divisional Blue Force Tracking (BFT) capabilities into a Common Operational Picture (COP). This included coordination with the BFT mission management center, multiple BFT program managers and much education regarding the Space-based aspects (capabilities, limitations, cost-benefit analysis and vulnerabilities) of each BFT capability.

• Developed Standard Operating Procedures (SOPs) ("battle drills") and integration capabilities for personnel recovery (combat search and rescue, downed-pilots, mission Soldiers) missions involving Space-based BFT capabilities (e.g. combat survivor evader locator, Miniature Transmitter (MTX), Grenadier BRAT, Force XXI Battle Command Brigade and Below, or FBCB2).

• Coordinated the acquisition of additional MTX BFT devices to be distributed and employed by organic forces during specialized missions.

• Supported the development and dissemination of imagery maps for current training and real-world operations, to include the acquisition of recently collected unclassified commercial satellite imagery to support real-world Department of Homeland Security missions.

• Supported the G-3 Air Section with the development of unclassified imagery maps for use in personnel recovery missions.

• Developed uniquely tailored satellite linkages to track and integrate FBCB2 and other BFT device data feeds into the division COP.

• Developed Space operations sections for Division Tactical SOPs, and Space annexes for operations plans and contingency plans.

• Developing tactics, techniques and procedures to access and exploit their command's use of Overhead Non-Imaging Infrared capabilities to provide definitive discrimination on the detection, location and identification of specific tactical infrared events.

(See SSE, page 12F)

Space support enhances division's planning efforts

By Debra Valine

The last time the 10th Mountain Division (Light Infantry) deployed, the Plans and Operations officer had to rely on terrain maps for battlefield awareness. It was all they had. The next time 10th Mountain deploys things will be different. Soldiers will have access to Space.

In July 2004, the U.S. Army Space and Missile Defense Command transitioned a Space Support Element to the 10th Mountain Division at Fort Drum, N.Y. The SSE is made up of three Space operations officers and one noncommissioned officer. They are trained in exploiting Space-based capabilities to improve battlefield awareness for the warfighter.

"In the past, I kind of bumped around because I did not know where to get this expertise," said COL Michael Coss, 10th Mountain Division Plans and Operations officer. "When the Space operations officers first showed up, I had no idea what they would do. Since they've been assigned, we have had four command post exercises and in every case, they have provided me with the kinds of operational capabilities on the battlefield that the UEx headquarters is charged to do. There is no turning back. We are dependent on technology. It is a tremendous enhancement, but you have to have experts that can keep it up and create workarounds when something is not functional. Our Space experts provide us that."

The 10th Mountain SSE includes LTC Dennis Brozek, MAJ Joseph Bolton and MAJ Brain Soldon, all SMDC-trained Space operations officers and SSG Lee Rawlins, a satellite maintainer/operator. This is the second of four teams SMDC has transitioned into the new units of employment (UEx). The 3rd Infantry Division received the first team in June 2004. That team is now with 3rd ID in Baghdad. Another SSE was assigned to the 101st Airborne Division (Air Assault) and the 4 Infantry Division in July 2004 and plans are to assign SSEs to all the divisions by 2007.

"I was originally assigned to SMDC's G-3 (Plans and Operations) in July 2002, straight out of the Command and General Staff College at Fort Leavenworth, Kan.," said Brozek, who had flown attack helicopters for 14 years before being selected to become a Space operations officer. He attended the FA40 Space Operations Officer Qualification Course in Colorado Springs, Colo.

"I was the first one on the ground at Fort Drum, but I already knew the two majors who were coming in," Brozek said. "It was like starting from ground zero in a new environment. There was no support, no plan for setting up a new section as part of the UEx. As we worked through the logistics issues of setting up a new section, I was

(See Division Planning, page 13F)

MAJ Jim Rozzi stands in water near the I-Direct antenna after a heavy rain. *Photo by SGT Jennifer Swift*

Support to the G-6

• Supported the coordination for SMART-T operator training and commissioning of satellites by leveraging the expertise of SMDC's Extremely High Frequency (EHF) Network Operations Manager (NOM).

• Supported the development of real-world Space and Space-related data feeds into the global command and control system common operational picture architecture.

• Supported the restructuring of the Division Data Management process (how to enhance "data mining", especially for Space and Space-based products, databases, analysis etc.).

• Assisted G-6 NCOs with specialized satellite coordination and request processes to Regional Satellite-Communication Support Centers.

Support to the G-7 (Force Modernization)

• Supported the development of a UEx distribution plan for Space-based BFT devices.

• Supported coordination with outside defense contracting "vendors" to assess emerging Space-based materiel capabilities for possible and actual use by UEx staff sections and subordinate commands (e.g. GPS-enabled digital camera).

• Supported the analysis of a wide variety of Document Assistance Review Team issues regarding the size, composition and equipment sets for both UEx SSEs and organic Fires Brigade Space operations officers. These efforts directly resulted in an approved increase in the quantity of SSE Soldiers to support pending real-world deployments.

Other Command Group/Staff Support

• Supported the Public Affairs Office Staff with the installation and commissioning of satellites for commercial PAO SATCOM video systems.

• Supported the mobile command group's Command and Control Vehicle (C2V) with the experimental integration of a wide-band SATCOM system. This experimentation lead to the standardization of this capability into a C2V.

• Provided one of the command groups an initial entry wide-band SATCOM capability.

• Supported the G-5 (Future Operations) with the development of imagery maps for future operations.

• Developed numerous Space briefings, Officer Professional Development classes, information papers, studies and analysis, lessons, insights and after action reports regarding Space operations capabilities and how UExs can best access and exploit all available Space capabilities. This leadership education support has been provided to all staff sections and many subordinate commands.

From August to November 2005 five new SSEs will be activated. These include I Corps, 1st Cavalry Division and the 25th Infantry Division from the Active Component and the 34th (Minnesota Army National Guard) and 35th (Kansas Army National Guard) Infantry Divisions from the Reserve Component. These future SSEs will likewise provide similar garrison Space support to their headquarters as they learn from their combat-experienced predecessors. The SMDC SSE Tiger Team continues to collect and analyze data on the operations and effectiveness of all SSEs. From this analysis, refinement to doctrine, equipment and training will continue to occur for the benefit of all tactical Army and Joint Space forces and the units they support.

LTC Rick Dow is an FA40 officer assigned to U.S. Army Space and Missile Defense Command, Future Warfare Center and serves as the SMDC/ARSTRAT "Trail Boss" command lead for Space Support Element fielding. His previous SMDC assignment was the Intelligence, Surveillance and Reconnaissance team leader, FDIC. His experience includes 15 years as a Military Intelligence officer, having served in various tactical intelligence command and staff positions, as well as a combat development tour working Tactical Exploitation of National Capabilities requirements and concepts. He is a graduate of the Space Operations Officer Qualification Course and recently graduated from Webster University with a master's degree in Space Systems Operations and Management.

SGT Tobias Mitchell and SSG Ronnie Anglin operate the SATURN. *Photo by MAJ Jim Rozzi*

explaining what the SSE would add to the division.

"We're all watching the 3rd ID SSE to see how they set up," Brozek said. "We will be providing the same support within the theater. It won't be a mirror operation, but it will be the same type of support."

The SSE officers use their expertise to plan, integrate and coordinate Space mission areas into all aspects of the UEx. The team is involved in anything that goes to, through or from Space, such as blue force tracking, satellite imagery and global positioning systems – position, velocity and navigation of the GPS, Brozek said.

Having an embedded SSE helps the unit understand Space and they communicate what Space can do across domains such as intelligence, surveillance and reconnaissance, geospatial information and services products and blue force tracking.

"We talk in terms of two capabilities: Space support to lethality and Space support to force protection," said LTC Rick Dow, SMDC's command lead for SSE fielding. "Space support to lethality comes from commercial Space sources or other sources of targetable information such as ONIR (overhead on-imaging Infrared) . Knowing where the targets are and how to get them enhances lethality. Space support for force protection means providing Space-based blue-force tracking for situational awareness and understanding."

"Understand that the SSE relies heavily on reach-back to SMDC because that is where the expertise is," Brozek said. "We have a SATURN system for communication so that we can talk to the experts to get the answers we need." SATURN – Space Application Technology User Reachback Node – provides unprecedented global wideband commercial satellite communications to the warfighter.

"I think it is incredibly important for the SSEs to be assigned to the divisions. All the branches of the military – particularly the Army – depend very heavily on Space for dependency on satellite communications systems; imagers – both national technical means, government and commercial; and GPS systems," Brozek said. "The amount of receivers is growing so fast it is incredible. The need for bandwidth is growing at a tremendous rate. We need someone at the division who has the knowledge of how it works and knows who to go to get help. The amount of assets being pushed to the division is growing because Space is now down to the muddy boot level – to the Soldiers. Without someone to translate that expertise, the Soldiers would not be able to get the information."

Coss said the key is having the SSE as an in-house conduit to all the Space-based capabilities available.

"There is a series of Space-based products and services that previously I did not know where to get," Coss said. "I had no conduit; now I do. I used to go to my terrain guys to see if I could get an image or go to someone else about a satellite communication link that wasn't working. There are so many things linked to Space now, such as GPS and other devices. Having trained Space operations officers assigned to the division gives me a staff expert in leveraging Space-based products, platforms and services.

"This area has become so important to the way we fight," Coss said. "We have taken risks with some of our systems by reducing capabilities because we thought we could use joint capabilities to fill the gap. The bridge between the services is sustained by Space-based products."

SMDC started having Space operations officers in 1998 when the Army started creating functional areas. The first formal FA40 Space Operations Officer Qualification Course was in 2001. To date 128 Space operations officers have graduated from the course. The next class is scheduled to begin in June.

Each SSE receives an additional three-week refresher course before being assigned to a division.

"Because this was such a new mission and concept for us, it was good for them to get the refresher training and get updated on the equipment. It changes frequently," said LTC Michael Powers, chief of SMDC's Space Proponency Office.

"The biggest reason they were put into the divisions was to provide that continuous planning capability," Powers said. "Before we started fielding the SSEs to the divisions, we would send in an Army Space Support Team just in time before deployment. The SSE provides continuous integration so that the SSE is part of the team."