


# Delivering Future Combat Systems (FCS) While at War

LTG Michael A. Vane



*"I believe our ground forces are the center of gravity for the all-volunteer force and that we need to make sure that force is correctly shaped and sized, trained and equipped to defend the Nation."*

*— ADM Michael G. Mullen, U.S. Navy, Chairman, Joint Chiefs of Staff*

A strong team of government and industry personnel, including Soldiers from the 5th Brigade, 1st Armored Division, AETF, at Fort Bliss, TX, are delivering FCS today. Here, Soldiers prepare to clear a building using an FCS Small Unmanned Ground Vehicle (SUGV) during Acceleration Testing in January 2008. (U.S. Army photo courtesy of FCS(BCT).)

# Report Documentation Page

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In simple terms, Army modernization deals with equipping the Army's Future Modular Force. The Chairman's focus on "correctly" equipping ground forces frames the Army's approach to FCS. While upgrading current equipment to meet Current Force needs, we are also modernizing the Army to deal with the complex and challenging future. A strong team from government and industry, including Soldiers from the 5th Brigade, 1st Armored Division, Army Evaluation Task Force (AETF), at Fort Bliss, TX, are delivering FCS today. The AETF recently completed new equipment training and began evaluating the first set of FCS spin out (SO) capabilities. As MG Charles A. Cartwright, Program Manager (PM) Future Combat Systems (Brigade Combat Team) (FCS(BCT)), so accurately stated, "The days of Microsoft® PowerPoint slides are over."

Since entering the System Development and Demonstration phase at Milestone B in May 2003, the FCS program progressed rapidly and evolved in numerous ways. FCS increased from 14 to 18 systems at one point, but returned to 14 systems with the 2008 budget submission. The fielding tempo also changed, especially with the July 2004 addition of SOs for selected technologies across the force beyond the FCS(BCT). We accelerated selected FCS technologies while delaying others for further study and development. However, ongoing conflicts in Afghanistan and Iraq forced the Army to balance current warfighting needs with modernization by shifting resources from FCS to support the current fight. The demands of war will continue to challenge the Army's ability to maintain the balance. The net result is an FCS program that looks rather different in terms of time and schedule, but remains true to the goal of providing a strategically responsive, Joint interdependent, precision maneuver force

that is dominant across the full range of military operations.

## Operational Environment Challenges

In 2004, the Army jump-started the transformation of direct combat units from division-based to brigade-based by leveraging the FCS Unit of Action organizational design. Today's modular units were designed to better operate across the entire spectrum of conflict while conducting full-spectrum operations (offense, defense, stability and civil support). This Modular Force has performed superbly across the globe, but faces an adaptive enemy and ever-changing environment. Since the Afghanistan invasion, combatant commanders submitted hundreds of Operational Needs Statements (ONS). These statements identify Current Force shortfalls and request materiel or other solutions, such as doctrine, training, organization, etc., to close those gaps. These ONS show that field commanders are mainly requesting better battle command, lethality, survivability and sustainment. Interestingly, each of these capability areas coincides with one of the seven original FCS Key Performance Parameters. While commanders in contact request things that are immediately available (i.e., not future capabilities), these ONS serve to ensure that the materiel solutions underway within the FCS program are on track to provide Soldiers the types of capabilities they need.

The lessons learned from current operations are also driving changes in FCS materiel and the FCS(BCT) design. While the bulk of the FCS(BCT) unit design remains intact, we have changed the FCS(BCT) to address capability gaps from current operations and new projections of the future operational

environment. Adding the Army Lightweight Counter Mortar radar is a clear example of the Current Force influencing the Future Force. To maximize the embedded training and mission-rehearsal capabilities in FCS manned ground vehicles, master trainers were added to the FCS(BCT). Current operation nonlethal activities are also leading to organizational change. We added Judge Advocate General, Civil Affairs and Engineer, elements to address planning activities across the spectrum of conflict. Additional FCS(BCT) changes under consideration include more intelligence fusion and route clearance elements.

Through a continuing, disciplined assessment process, materiel requirements are also adapting. For example, examining improvised explosive device threats led to upgrading armor for manned vehicles to prevent penetrations. Another current operations example affecting product design is the addition of "floating" seats to prevent the transmission of blast



A Soldier on the move with his SUGV during Experiment 1.1 held at White Sands Missile Range (WSMR), NM. (U.S. Army photo courtesy of FCS(BCT).)

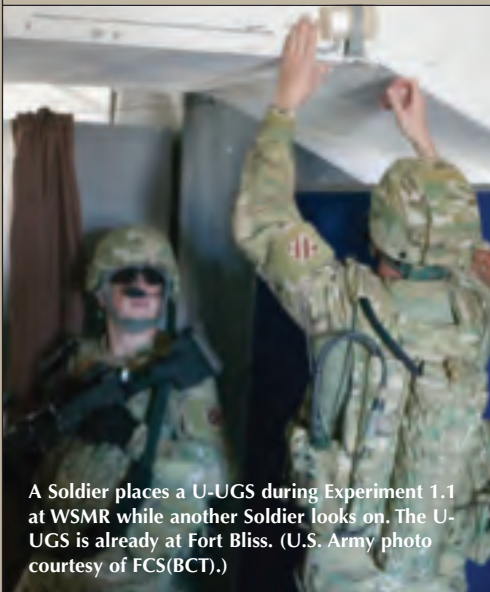
Here, Soldiers prepare a Bradley B-Kit during SO exercises in January 2008. (U.S. Army photo courtesy of FCS(BCT).)



energy through the vehicle hull to a Soldier's body. Development of parallel capabilities helps to ensure that revisions are keeping pace through almost annual updates. Although change is always difficult in terms of costs and schedule, the FCS program has made great strides to meet the challenges of a changing operational environment.

The Army's preeminent challenge is to reconcile expeditionary agility and responsiveness with the staying power, durability and adaptability to carry a conflict to a victorious conclusion, no matter what form it eventually takes. We must design, develop and resource Army forces for each unit to operate across the entire spectrum of conflict with little augmentation. Of course, the breadth of this approach presents physical and mental challenges. To achieve full-spectrum-capable land forces, we

are moving from a platform-centric modernization strategy to one that focuses on an organization's overall capabilities. Fortunately, the FCS(BCT) was born of an organizational approach using the collective FCS family of systems as the foundation.



A Soldier places a U-UGS during Experiment 1.1 at WSMR while another Soldier looks on. The U-UGS is already at Fort Bliss. (U.S. Army photo courtesy of FCS(BCT).)

The campaign of learning continues through multiple analytical efforts including the Capabilities Needs Analysis (CNA). The CNA process identifies requirements and capability gaps to support Joint-required capabilities across doctrine, organization, training, materiel, leadership and education, personnel and facilities. The Army Capabilities Integration Center (ARCIC) leads this analysis in its "thinking for the Army" role — easy to say, but hard to do. It is especially important to have a group of dedicated professionals looking beyond today's issues and exploring how to best prepare the Army to meet the Joint Force Commander's requirements of tomorrow. Our links with academia, industry and labs around the country are essential to helping us learn and to developing and bringing capabilities into the force. Through our concept development,

experimentation efforts and role as the Army's capability integrator, we work to make sure the Army remains a valued interdependent, Joint team member. We stress moving from the Current to the Future Force and not the Current versus the Future Force.

### Future Force Integration Directorate (FFID)

Key to the Army's success in delivering FCS while at war is ARCIC's FFID that directs the AETF. Established in April 2007, its mission is to synchronize the delivery, preparation and evaluation of all FCS-related capabilities. The FFID represents a new way of developing and fielding capabilities for the Army. Building on the Army's experience with Stryker, the FFID brings together the materiel developers (PM FCS(BCT), FCS Lead Systems Integrator, etc.), the testing community (U.S. Army Test and Evaluation Command) and the requirements community (ARCIC, U.S. Army Training and Doctrine Command (TRADOC) Schools and Centers, Center for Army Lessons Learned, etc.). The goal is to develop and field the best possible materiel while simultaneously creating the doctrine; tactics, techniques and procedures; organization; and training procedures needed to deliver a complete capability package to units rather than simply giving them new equipment and letting them develop everything else on their own. In short, there should not be "drive-by" fieldings to units in contact where they figure it out by themselves.

A Soldier trains with a T-UGS at WSMR. (U.S. Army photo courtesy of FCS(BCT).)



The FFID integrates modernization efforts in support of Army transformation to provide FCS to operational units by FY10 and the first FCS(BCT) around the year 2016. The FFID will sustain an environment for the successful testing, evaluation and integration of capabilities for the Current and Future Modular Forces. They will also accelerate the delivery of select FCS capabilities to the Current Force to reduce operational risk before fielding the first FCS(BCT). The FFID will develop organizational training and leader development products, synchronize and coordinate plans for developmental activities, develop doctrine and organization products, apply lessons learned, and update and synchronize systems development documents. FFID employs the AETF to confirm that products are ready for the fight.

AETF will build and train a combat-ready force, thoroughly grounded in current and emerging Army doctrine, and incorporate all FCS technologies and capabilities to create the Army's first FCS(BCT) and complete all development and test requirements. To demonstrate the importance of FCS, the Army has already committed more than 1,000 Soldiers to the AETF while prosecuting the war. Seasoned combat veterans are putting FCS technologies through extensive evaluations and tests to ensure that we deliver complete capability packages. We will have doctrine, leader development and training products arrive along with the materiel as the Army fields FCS to fighting units.

### Critical Steps Forward

This year represents a critical step forward for FCS. For the first time, the program is using procurement funds to deliver FCS systems and components for evaluation. Non-Line-of-Sight Launch Systems, Integrated Computer Systems for network, and Urban and Tactical Unattended Ground Sensors (U-UGS/T-UGS) are already at Fort Bliss. Furthermore, the team will conduct numerous evaluations of FCS SO capabilities in 2008. The first Technical Field Test began in late February, and will be followed by the Limited User Test in June and the Future Force Integrated Mission Test in July. This year is critical to the Army's plan for fielding selected FCS capabilities to all BCTs beginning with 6 BCTs in 2010, while adding 15 FCS(BCTs) at a rate of 1 per year beginning in 2016.

A strong team from government and industry is delivering FCS today at Fort Bliss, to ensure Soldiers of tomorrow have the correct equipment. Everything they do leads to a Soldier having to close with and engage the enemy in direct and close combat. As we work through the challenges to bring the FCS(BCT) to fruition, this tenet must remain at the forefront. Everything we do must support the Soldier.

LTG MICHAEL A. VANE is the Deputy Commanding General, Future Director, ARCIC TRADOC. He holds a B.S. from the U.S. Military Academy and an M.S. in joint command, control and communications from the Naval Postgraduate School. Vane is a graduate of the Signal Officer Basic and Air Defense Artillery Officer Advanced Courses, the U.S. Army Command and General Staff College and the U.S. Army War College.