



Future Combat Systems: Leap-ahead Capabilities Now

We're listening to our Soldiers and commanders in the field, and we are giving them the capabilities they need—as fast as we can so that they can win the current fight. . . . We're able to do this because of the development efforts that have matured [Future Combat Systems] technology over the last few years.

Army Chief of Staff General George W. Casey, Jr.,
Pentagon, 26 June 2008

Introduction

Continuous modernization is the key to enhancing Army capabilities and maintaining a technological advantage over any enemy America faces. Future Combat Systems (FCS)—the core of the Army's modernization effort—will provide Soldiers an unparalleled understanding of their operational environment, increased precision and lethality, and enhanced survivability. FCS uses a combination of new manned and unmanned air and ground vehicles, connected by robust networks, to allow Soldiers to operate more effectively in the complex threat environment of the 21st century.

FCS and its capabilities will continue to be integrated into the force over the next two decades,

using a process known as “spin-outs” to insert new technologies as they become available. However, the Army is currently accelerating delivery of FCS capabilities to Soldiers in the infantry brigade combat teams (IBCTs), providing new technologies to forces in war zones three years ahead of schedule. Emerging technologies such as robots and ultralight drones (Spin-out 1 technologies) provide immediate leap-ahead capabilities to infantry units in Iraq and Afghanistan.

Changes to the FCS Program

In essence, FCS is a joint and networked system of systems with four major components: manned ground vehicles, unmanned systems, the FCS network and Soldiers. The platforms are connected



Future Combat Systems Spin-out 1: Enhanced Capabilities for the Infantry Brigade Combat Team

More Battle Command

- Joint software programmable radio with multiple waveforms to share more information
- FCS network links—Abrams, Bradley and High-mobility multipurpose wheeled vehicle (HMMWV) brigade, battalion and company command vehicles
- Connection to unattended sensors
- Connection to joint network

**Network
Integration**



Accelerations

**Small
Unmanned
Ground
Vehicle
(SUGV)**



Non-Line-of-Sight Launch System (NLOS-LS) with Precision Attack Munitions (PAM)

- Precise fires on moving and stationary targets out to 40 kilometers
- Greatly reduced manning for firing elements
- Forward entry and special operations forces fires capability (can air drop)

**NLOS-LS
with PAM**



Unmanned Platforms

- Provides **enables** Soldiers on high-risk mission in complex terrain
 - searching, breaching, clearing buildings and tunnels
 - remote reconnaissance and detection/neutralization of booby-traps, landmines and explosive threats
- Provides persistent surveillance using layered sensors (less "dead space")
- Provides Soldier standoff for surveillance, reconnaissance and lethal engagements
- Provides communications relay to extend ranges to facilitate aerial operations

Unattended Ground Sensors (UGS) – Tactical/Urban

- Provides small units remote, rapid alert about people or vehicles 24/7
- Detects people and heavy tracked/wheeled vehicles
- Monitors greater area with fewer people; early warning at platoon level
- Increases force protection
- Provides persistent surveillance using air platform/sensors (less "dead space")

UGS-Urban



UGS-Tactical



**Class I
Unmanned
Aerial
Vehicle
(UAV)**



Source: Headquarters, Department of the Army



by an advanced network architecture that will permit connectivity with other services and is to be incorporated into the Army's brigade-sized modular force structure. FCS provides Soldiers with cutting-edge technologies and capabilities for the asymmetric warfare environment.¹

In the past five years of combat operations, IBCTs have been in the highest demand. As a result of capability gaps found in the IBCTs—during 2007 and 2008, operational needs statements from IBCT commanders were almost double the number from heavy brigade combat team (HBCT) commanders—the Army is adjusting the FCS and complementary programs to provide necessary capabilities to infantry units first. These capabilities will increase effectiveness and survivability of IBCTs during offense, defense and stability operations.² Recent success achieved during equipment tests and evaluations by Soldiers of the HBCT in the Army's Evaluation Task Force (AETF) at Fort Bliss, Texas, further reinforce and corroborate the decision to move FCS spin-out capabilities to the IBCTs.

Several of the capability gaps within an IBCT reside in intelligence, surveillance and reconnaissance (ISR). FCS enhanced capabilities for the IBCTs include the following ISR capabilities for the Soldier:

- Class I Unmanned Aerial Vehicles;
- Unattended Ground Sensors—Tactical/Urban;
- Small Unmanned Ground Vehicles;

- Non-Line-of-Sight Launch System (NLOS-LS) for organic, high-volume, precision fires previously absent in these light formations; and
- improved battle command with better network assets—joint tactical radio system ground mobile radio (JTRS GMR) and an integrated computer system (ICS) for high-mobility multipurpose wheeled vehicles (HMMWVs, or humvees) as well as battle command software.

ISR platforms in combat are not new; Soldiers in Iraq and Afghanistan have been using an early test version of the SUGV for years. Soldiers use the SUGV and other robots to clear caves and bunkers, search buildings, cross minefields, and defuse improvised explosive devices (IEDs). Buoyed by that success, the Army began sending the Micro Air Vehicle—an early version of the Class I UAV—to infantry units in Iraq. What is new, however, is the accelerated delivery of key cutting-edge technologies in significant quantities in response to a joint operational needs statement from the combat zone calling for an increase in lower-level unit ISR assets.

Implications for the U.S. Army

Starting in July 2008 at Fort Bliss, the FCS equipment will undergo a Preliminary—Limited User Test (P-LUT) focused on the IBCT. This test is intended to refocus the previously scheduled HBCT Limited User Test. The results from this testing effort will



¹ For additional information on FCS, see AUSA's Torchbearer National Security Report "A Transformed and Modernized U.S. Army: A National Imperative," April 2007, http://www.ausa.org/PDFdocs/TBSecRpt/TB_FCS_3Apr07.pdf.

² See AUSA's Torchbearer National Security Report "The U. S. Army's Role in Stability Operations," October 2006, <http://www.ausa.org/PDFdocs/TBSecRpt/TB-StabOps.pdf>.



support doctrine, organization, training and material development efforts. The formal LUT, scheduled for Fiscal Year 2009, will become the basis of the Spin-out 1 acquisition decision.

In conjunction with changing the development and fielding strategy to focus on infantry first, the Army will submit a reprogramming request to align funding with this decision. This request comes from the Army's ongoing review of the entire FCS program and reflects the decision to move more aggressively to support current operations with FCS capabilities. The overall cost of the FCS core program would not be affected by the recent changes.

Secretary of Defense Robert M. Gates has lauded this restructuring of the FCS program as it "focuses on what they can do near-term to help the infantry brigades."³ The modifications to FCS will have a positive effect on the current fight in Iraq and Afghanistan, as well as on overall counterinsurgency efforts. Specifically, the FCS network provides the means by which to share and disseminate large amounts of data (such as biometric information), providing enhanced communications and intelligence for counterinsurgency efforts. In addition, FCS sensors and situational

awareness tools will eliminate the need for heavy armor used in defense against IEDs in Iraq.

Vital to National Security

The Army is growing to meet global requirements and will add six IBCTs along with more special operations forces (SOF), including civil affairs and psychological operations units, to meet the demands of today and tomorrow. Capabilities for infantry formations are the most readily exchangeable with U.S. Marine Corps and SOF units. Land forces across the joint force will benefit from mature FCS technologies. Maintaining America's technological edge over potential adversaries, providing better protection and giving Soldiers significantly improved capabilities to accomplish their mission argue for FCS now.

In fielding advanced technology to Soldiers for the current fight, the Army has accomplished its part. Now, Congress and the Department of Defense must continue to adequately fund the FCS program in its entirety and in a timely and predictable manner. Failure to do so will only delay delivery of the very best capabilities to Soldiers who are currently serving in harm's way.



³ "Gates Believes FCS Restructure 'Deserves Support,'" InsideDefense.com, 26 June 2008.

Future Combat Systems has moved far beyond the concept stage, and the first spin-outs will give Soldiers the edge they need in facing the ever-changing threats of the continuing war on terrorism.