



CONCEPTING, ANALYSIS, SYSTEMS SIMULATION & INTEGRATION



Future Combat Systems (FCS) Mounted Combat System (MCS)

The U.S. Army Tank Automotive Research, Development and Engineering Center's (TARDEC's) Motion Base Technologies team's mission is to develop and apply real-time manned/hardware-in-the-loop capabilities to assess Soldier and vehicle performance in moving vehicle environments, as well as to develop vehicle and subsystem performance specifications and identify potential problems early in the system development process.

One of the team's key projects has been the FCS MCS, which provides offensive maneuvering capabilities to close with and destroy potential enemy threats. The MCS is capable of conducting mounted operations and mounted operations supported by dismounted infantry and supporting dismounted infantry operations in all environments. It can provide direct support to dismounted infantry in an assault, defeating bunkers and breaching walls during a tactical assault.

The MCS is highly mobile and maneuvers out-of-contact to positions of advantage. The system delivers precision fires at a rapid rate to destroy multiple targets at standoff ranges quickly, and it complements the fires of other systems in the FCS Brigade Combat Team. Utilizing the same lethality mechanism, the MCS will fire a Beyond Line-of-Sight (BLOS)-Capable Munition to engage targets from BLOS. This capability will allow the MCS to be more lethal at greater ranges and to increase the MCS's survivability.

TECHNOLOGY DRIVEN. WARFIGHTER FOCUSED.



Recent Successes

FCS XM1202 Mounted Combat System's Firing Platform Motion Base Simulation

TARDEC's Motion Base Technologies team recently completed testing of the MCS firing test rig with gun/turret drive stabilization and ammunition handling system in a relevant environment. The testing utilized the turret motion base simulator at TARDEC's Ground Vehicle Simulation Laboratory in Warren, MI. TARDEC's simulator offers full 6-degrees-of-freedom motion with high dynamic capacity that is not available in the commercial sector.

The test objective was to mature turret system technologies via prototype demonstration. To accomplish this, TARDEC's Motion Base Technologies team partnered with General Dynamics Land Systems and Aberdeen Test Center. TARDEC's role included testing the platform, which consisted of an MCS turret structure, automated ammunition handling system, 120 mm primary weapon assembly and fire control subsystem. TARDEC's Motion Base Technologies team used the testing laboratory's capabilities and applied modeling and simulation technologies to create an operational "on-the-move" environment for firing platform and MCS testing.

