



# Mounted Soldier System: Three Systems Become One

Lt. Col. Stephen M. Rogers, Product Manager Mounted Soldier System, outlines Increment 2's path to its Summer LUT

**Vehicle crews can benefit just as much from the soldier modernisation technologies being adopted by their dismounted brethren. After successful use of the initial Helmet Mounted Display (HMD) of the Mounted Warrior programme in Iraq and now Afghanistan, the US Army's Mounted Soldier System (MSS) is the next step on the path to transform the activities of commanders, drivers and gunners. MSS Increment 2 is bringing in a suite of three hardware subsystems; Microclimate Cooling, Cordless Communications and a new HMD, all of which will take part in a major network exercise and Limited User Test (LUT) later this Summer.**

## LUT

The MSS LUT begins in June and is part of the Network Integration Exercise (NIE), a consolidated event where roughly a dozen systems including MSS will be tested at Fort Bliss, Texas, from June with the Capstone Exercise scheduled for mid July.

Work on Mounted Warrior has transitioned to become Inc 1 of MSS. The Mounted Warrior HMD video display systems were first deployed with the 4/9 Manchu Stryker equipped battalion in 2007 in Iraq. Subsequently, in response to an urgent requirement, 51 systems were, in February 2010, dispatched to the 5/2 Stryker Brigade Combat Team (SBCT) in Afghanistan to be installed in their Stryker Reconnaissance Vehicle (RV).

Lt. Col. Rogers, Product Manager MSS said, "They are currently being used and they were being transferred to the 2nd Stryker Cavalry Regiment. The plan is that 1/25 SBCT will also take control of those systems. They are being utilized and reports and feedback from the folks using them are extremely positive. The equipment has now been placed as Theatre property. When the unit that currently has that equipment has a transfer of authority to

a new unit that comes in and replaces them, they will do a joint inventory of all the equipment. That now includes our systems that are both mounted on the platforms and individually worn equipment."

MSS Inc 1 was acquired only in limited numbers and no further acquisition is planned although further urgent requirements could be met as required. The next step will be to field Increment 2 which consists of three subsystems: a new HMD, a cordless communications system and a micro climate cooling system which will be integrated with the crew's clothing and protection.

## New HMD

Lt. Col. Rogers outlined the differences between the first generation HMD on the Mounted Warrior and what will occur under Inc 2. "Mainly the differences are technical in nature," explained Lt. Col. Rogers. "We have taken some of the firmware out of the B-Kit, the part of the box that is installed on the vehicle and moved it into the controller that is soldier worn. We have also integrated the control that is used for the vehicle's display portion into the cordless communication. There is now one soldier worn device as opposed to two that are worn by the soldier. That basically diminishes the bulk and cabling on the soldier."

HMDs from two vendors are being considered and will go into the LUT. The decision to go with an HMD rather than a wrist mounted solution was largely informed by a user jury in November 2009. Lt. Col Rogers said, "there is unanimous feedback that they wanted the HMD. We have pretty much already ruled out the wrist mounted stuff."

## Schedule

From the LUT, the goal is to have a Milestone C decision in 4Q 2011, from Mid September onwards although that date has inevitably come under pressure along with

other programmes, as a result of delays arising from the Continuing Resolution Authority.

The three systems will come in together rather than be staggered. Lt. Col. Rogers said, "We consider the three subsystems as the MSS in its entirety. You have to have those three systems to meet the Mounted Soldier requirement. When you stagger you have to come in and touch the same unit several times and that is just a no go from the start. Our plan is to field at the same time."

## Commonality

Commonality is an important issue between the various soldier programmes. Lt. Col. Rogers gives the example of work between MSS and Air Warrior and Nett Warrior respectively. "We are using a solution developed by Air Warrior and have made some changes and managed that configuration collectively. MSS took the microclimate cooling technology and that is what we are going to put into combat platforms. We are looking at an Engineering Change Proposal to that contract to help us with the initial production of the microclimate cooling system on mounted platforms."

"Another commonality is the HMD for Nett Warrior and MSS. During the LUT, we are looking at Stryker positions where we want to put a third bulkhead connector on DVs so that when the dismounted squad leader or team leader sits in the back of the DV, we can determine the best place for him to take the connection so that he can maintain Situational Awareness (SA) and look at the displays and sensors that are on the platform once he gets in there." The LUT will help answer the question of where that can best be located and be utilised from an integration perspective."

De-confliction between the multiple programmes to ensure components of the soldier systems are integrated across different platforms or clothing equipment is being

► achieved through the formation of an Integrated Project Team. Lt. Col. Rogers cites the areas of soldier protective equipment and cooling and individual equipment as particular areas of interest for MSS.

Links outside of PEO Soldier are formed too. Lt. Col. Rogers said, "We are also co-ordinating with the chem-bio folks to make sure that we are not doing something to destroy the integrity of those particular protective systems with cooling hoses and as they penetrate the protective garment to attach to the cooling vest soldiers wear against their bodies."

Conflicts in term of requirements are resolved via the TRADOC Capability Manager-Soldier who has the purview of de-conflicting soldier type requirements as far as material development is concerned. Within PEO Soldier, there is a Soldier Systems Integration team that also looks at the consolidated soldier requirements.

**Weight and bulk**

While the weight requirements for vehicle mounted soldier systems are inevitably less pressing than for their dismounted counterparts, there are nonetheless still important weight limits that can't be exceeded. Conversely, volume and bulk can take a higher priority. Lt. Col. Rogers said, "We have bulk and volume requirements that we also need to meet that, quite honestly, depend on the platform. The Bradley is one of the tightest platforms to move around in and the ability to safely ingress and egress out of the smallest diameter hatch on the platform becomes one of the critical challenges for MSS."

There are no current unique clothing requirements for MSS although Lt. Col. Rogers said that the Plate Carrier, a new addition to the MSS Capability Production Document (CPD) can be used as part of the protection equipment that MSS crew members will wear. There are also no

specific hearing requirements other than to meet the protection levels current CVC Helmets provide.

Beyond MSS, there is work looking at technology insertion and pre-planned product improvement. These include implementing wireless SA to the crew members. Right now the video display is wired and the project team is looking at moving to a wireless connection. The current wired-only connect for the initial MSS as configured today effectively precludes a SA feed or any PLI when dismounted and un-tethered from cabling. How that is technologically achieved, remains to be seen.

There is currently no programmatic buy in for MSS from the US Marines although the US Navy has adopted the Air Warrior/Soldier ensemble. ■



Crew members from 2 SCR shown here operating in Maiwand, Afghanistan. The unit will receive Mounted Warrior/MSS Inc 1 HMDs later this year. The equipment was originally shipped to meet an ONS from the 5/2 SBCT which has since become a theatre equipment asset used by rotating assets © DoD