



# Land Warrior, LW Strike, Ground Soldier Ensemble: Third Time's the Charm

Lt. Col. Brian Cummings, Product Manager Ground Soldier at PEO Soldier, discusses the key goals for the Ground Soldier Ensemble (GSE) programme

***With the Ground Soldier Ensemble (GSE), the US Army has embarked on its first Army wide Soldier Modernisation Programme (SMP), with the first Increment firmly focussed on Situational Awareness.***

As the then PM Land Warrior, Lt. Col. Cummings has taken Land Warrior through its difficult initial gestational experience through its DOTMLPF and Limited User Test, deployment to Iraq with the 4/9 Manchu battalion where it underwent continual evolution and modification, then further change to deliver a brigade set of the latest Land Warrior Strike variant to the 5/2 Stryker Brigade Combat Team (SBCT) beginning in May. Now as PM Ground Soldier Systems, he leads the GSE programme, which recently down selected to three industry teams led by General Dynamics, Raytheon and Rockwell Collins to undergo a 21 month process which will see prototype systems delivered and in a five year production cycle, deliver 11,538 GSE systems to team leaders and above.

The legacy Land Warrior ensembles, issued to the Manchus are now gone but not forgotten. The bulk of the 454 systems, back after 15 months in Iraq are being used to prep members of the 5/2 SBCT for the new Land Warrior Strike ensemble. The balance of these systems have also been used across the country for further experimentation related to a range of projects, with 39 at Fort Benning for warfighter experimentation and a further 50 Systems at Fort Bliss in support of Future Combat Systems (FCS) to name but two.

The first of the 842 successor Land Warrior Strike kits were delivered on May 11th to the 5/2 SBCT.

Everybody who is going to get these new kits has already been trained with the old Land Warrior equipment, although five additional days have been allocated for conversion time. In principle, Lt. Col. Cummings believes, the 5/2 could turn it on right now and use it without additional training. "The only differences [to its operation] are to the input device, where there is an easier mode for text messaging. There is also the ability to turn the system on or off and log on and access the two EPLRS and one FM network from a single control unit. It is going to have an enhanced software package on it but most of the technology that is in it is pretty much the same."

The biggest difference between the two systems is not physical but rather, Lt. Col. Cummings explains, in the environment in which they were developed. "The Strike system was built with very rapid soldier input from being used in combat. While the 4/9 were over in Iraq for fifteen months, during that time, there were a lot of things that I couldn't make changes to. Top of the list were human factors and reductions in weight. The Strike system now has less volume – a reduction in boxes and cables – and it's a little bit lighter, – we cut about two pounds from the system."

With the GSE, the trend toward ease of use continues, as Lt. Col. Cummings outlined, "We are driving the industry partners to focus in on reductions in weight, size and the overall power management of the system. I don't want them to go out there and recreate a new radio or headsets, they are already out there and

the government can provide that. What I want them to do is to take the basic guts of the system and put more capability in a smaller box."

The software inside GSE is the Soldier Application Software, developed by PM FBCB2 and which will evolve as part of the overall Battle Command product line.

GSE has been closely associated with FCS. The radical overhaul however, of the latter programme, earlier this year, doesn't change things for GSE. Lt. Col. Cummings commented, "We have always considered ourselves a complimentary product to the FCS. Our entire acquisition strategy is actually focused on the Infantry Brigade Combat Team (IBCT) architecture, which doesn't have that many platforms although our system is designed to go into any type of brigade."

The Increment 2 Requirements Document for GSE hasn't yet been fully written but is clearly anticipated to include lessons from Increment 1 much like the experience of the Manchus drove changes to Land Warrior Strike and GSE. Lt. Col. Cummings said, "While we know we want to move toward the Army's Unified Battle Command we are still looking at where we are going to with that Increment and there are going to be a lot of changes as we go forward."

Adaptability is being built into GSE now, to deal with any future changes. Lt. Col. Cummings said, "An example of that is the Soldier Survivability Task Force, working on the different types of plate carriers to reduce the soldier's load. Right now I have a team of my folks on that Task Force that feed me back information to

- ▶ make sure the design for GSE can be modular and adaptable to be able to sit on any kind of body armour that may come along."

GSE is defined very much by the real theme of C4I, while being sensor agnostic when it comes into ISR devices. Lt. Col. Cummings said, "One of the things that didn't go very well in Land Warrior was the weapon subsystem piece. Soldiers didn't like a daylight video sight camera on their weapon but they did like the image capture ability via a stand alone commercial camera and to be able to send it over the network. With GSE, we will have the architecture set up so that any peripheral can be tied into the system. We are also looking at UAV feeds but we are having trouble with some of the streaming video because of bandwidth."

The US Army's Basis of Issue for GSE is 11,538 systems, down to the team leader level. "That is the lowest level that a guy will need a display to graphically depict where he or his buddies are, where he is in the mission set and where he needs to go," explained Lt. Col. Cummings. "Soldiers below team leader will have a radio and will communicate by voice and automatically send only their location back to the team leader."

Land Warrior was in many ways defined by the use of a Helmet Mounted Display (HMD), a key element to every system issued. Experience in Iraq has shown that HMDs are neither the right nor wrong answer, but just one answer to the problem of how to display information. To reflect this, the GSE requirement mandates only the use of a hands free device.

Lt. Col. Cummings explained why. "What I didn't want to do was to take away the innovation from the companies to come back with different solution sets. What we did was come up with the term 'hands free displays' that would leave it open so they could come back with a host of different displays, helmet mounted, mounted on your eye glasses, goggles or they could be quarterback displays on the forearm or on the hand or chest. We wanted to give the companies competing in GSE, the flexibility to pick different types of displays rather than be dictated to on which type to have."

This was fundamentally driven by soldier feedback on their diverse needs. Lt. Col. Cummings' personal view is that soldiers want to pick and choose from a suite of display options. "If you look at nine soldiers, every one of those nine will carry their kit a different way which fits their unique requirements for

how they like to do things and based off their form, fit, function and feel. I think we should be looking at it almost the same way."

While in some areas there is considerable latitude given to the three contractors, in some key elements of GSE the exact opposite is also true. For example the battery, radio, headset ancillaries and connectors for GSE are all Government Furnished Equipment. Lt. Col. Cummings outlined the rationale behind this. "Most of the companies out there have their own individual radios that they would all want to leverage as the transport layer for what they want to use. However, I already have a very good radio for data and voice with ELPRS CNRS so I don't want to have them go back and develop a new radio for me. My power source is the Li 145 battery and that too is a very good battery with a lot of life in it. When you talk to the soldiers in the Manchus and you ask them about what they want, they say lighter and fewer boxes. That is what I want industry to focus in on. I don't want them to focus all their attention on developing another radio or another power source and all the certification that that entails. I just want them to focus in on the basic hardware components and make them as small as they can." ■



GSE incorporates lessons from operations in Afghanistan and Iraq and will provide an Army wide improvement in dismounted situational awareness © DoD