Land 125 Phases In

Land 125 addresses the challenges of moving from buying individual components to acquiring an integrated system for the Australian soldier, with Phase 3 of Land 125 due for imminent endorsement

The planned equipment within Phase 2B of Land 125, Australia's soldier modernisation programme (SMP) is now acquired. This consists of the Selex Personal Role Radio, enhanced combat helmet, personal protective padding for the knees and elbows, Individual Combat Load Carriage Equipment - known colloquially as 'Icicle' and the Thermal Weapon Sight, the Qioptiq VIPR2, carried at the section level. Preparatory work for Phase 3 is well under way and, at the end of the year, the Australian Government is due to consider the first of the sub-phases for approval, allowing the project office to commence the acquisition phase of the system. The system being considered within this phase of Land 125 is the Battle Management System - Dismounted (BMS-D), Phase 4, likely to be tasked with achieving an integrated soldier system, will not be considered for initial approval before the middle of 2010.

Initially separate, Australia has opted to align their mounted and dismounted BMS requirements, producing a common system with common software and training using the same software. In regards to the lethality element, a contract has been let with Thales Australia to undertake design changes to the weapon will allow it to continue in service until at least 2030.

Lieutenant Colonel Colin Mattey, Project Director, Land 125 Soldier Combat System, discussing the BMS said, "It is going to be the brains of the next stage, it is going to give us enhanced situational awareness via a common operating picture so that we can more quickly understand what the Red forces are doing."

Users of the BMS will be issued with a monocular and tablet display with secure Type 1 data, communicated through the command chain via the wideband Raytheon Microlight radio carried at platoon HQ level and narrowband Harris AN/PRC-152 at section and team leader level.

The system will be integrated with current body armour and load carriage. The Land 125 team are currently doing some in-house investigation for integration and this is currently in the hands of a small team of soldiers lead by a Warrant Officer to refine the ergonomics of the design.

"We do have some challenges with the BMS at the moment," Lt. Col. Mattey explained. "One of the things we are going to do once we get into acquisition and finalise the design is to bring down the weight and minimise the volume of the system. We also need to look at better ways of generating and managing power and some of the human factors outcomes again."

The three broad parts of the lethality component of Land 125 are to develop or redesign the Austeyr F88 rifle so that it has an open architecture, embedded interoperability in terms of the ammunition and to investigate new technologies to enhance it as a tool of the rifleman. There are four planned variants for this weapon system; standard, commander, marksman and a grenadier.

A preliminary design review for the new F88 took place in March 2009. The design features a new modular open architecture with an embedded electronic architecture, steel "super rail" for an under barrel grenade launcher while retaining the current floating barrel design.

Lt. Col. Mattey said, "We are trying to getting to the point where the users themselves can reconfigure it to fulfil the four basic configurations. We are also looking to integrate the grenade launcher so that the trigger comes inside the main trigger guard rather than being external to it so the soldier no longer has to switch from outside to inside and vice versa."

Following a successful demonstration of an electronic architecture for the F88, Land 125 is going ahead with this capability. Lt. Col. Mattey said, "We are now looking to do this in Phase 3, so that when we get to Phase 4, we will have a weapon that is ready to start integrating onto a soldier system. The electronic architecture will provide the basis of power to systems and also use those same conduits for data."

Land 125

- **1996** - Capability Definition Study
- **2000** - Project Definition Phase – Spiral Development Action Plan
- **2004** - Phase 2B
- **2005** – Phase 3
- **2010** – Phase 4

The final design has yet to be finalised but it is likely to house the power supply in the stock which will be connected to the rail.

Addressing broad requirements for Phase 4, Lt. Col. Mattey said, "The real challenge for Phase 4 is about optimising the power, weight and space on the soldier and also achieving a measure of control. What we don't want to do is for him to become a slave to the tools. The soldier's problem is that he has multiple interfaces, multiple locations, increased complexity in his systems and in the nature of his combat. Increased mental load and increased power requirements means he needs to carry increased weight. He is then going to have reduced situational awareness and potentially reduced speed and greater error."

"We also want to achieve an integrated soldier system while retaining enough modularity so that the soldier can tailor what he needs for his task. If for example he comes to the end of a period of warfighting and the operational situation shifts to peace enforcement, the last thing he wants is to have his helmet and body armour on when he is trying to deliver humanitarian aid. We need to be able to change our stance but retain the ability to use the system."

The system being considered within the current phase of Land 125 is the Battle Management System - Dismounted © DoD

Lt. Col. Mattey also emphasised the enduring need for security in the system, an issue that currently precludes the effective substitution of wireless links for cabling on the soldier. A balance is also being sought in terms of the degree of integration with vehicles, both as a source of power supply and a means of access to external communication and applications, not to mention the potential for stowage of what would otherwise have to be carried on foot by soldiers.

Lt. Col. Mattey said, "Within the infantry we break them down to even more detail; the mechanised infantry, motorised infantry and light infantrymen. On top of that we need to add in offensive support, combat support and our logisticians. We haven't cracked the whole thing yet but what we want to do is optimise the system for the Dismounted Close Combatant and then adapt for those whose also need components of the system." ■