



# Diggerworks Kicks Off

Due to recent operational experience, Australia is investing in rapid development, adaptation and integration management via the new Diggerworks organisation

**Australia, as with every other nation pursuing soldier modernisation, is seeking to integrate its soldier system and adding capability while reducing burden and doing so against a background of meeting both the requirements of current operations while transitioning to longer term, operational requirements. Recognising there's no single, simple answer to this, the Australian Army has established Diggerworks to establish the way forward and to manage that ongoing process with Diggerworks' role being to facilitate and coordinate the collaboration between agencies in defining and delivering soldier combat systems (SCS) capabilities.**

Diggerworks is one route. It is however designed to support the second major thrust of Australia's strategy; the Soldier Combat Development Cycle. Together they will be used to develop requirements for those who are involved in close combat within the Brigade Rotation Model adopted by Australia with the equipment being delivered through a concept of rapid, adaptive acquisition, although this is not yet a defined term with the capability procurement system.

Col. Jason Blain, Head of the Integrated Soldier Systems Development Directorate, Australian Army, gave the example of his recent experience commanding the 6 Royal Australian Regiment Battlegroup in operations in Afghanistan, conducting prolonged dismounted patrols in the Green Zone supporting the Afghan National Army, "Equipment was tailored for the Iraq theatre and we had great body armour systems that gave us great protection but with limited agility and mobility, not suitable for dismounted patrols. We also had a huge increase in the first couple of months in 2010 in radio controlled IEDs. The need for that rapid change to adapt to the threat and adapt to the enemy was persistent and we had to change our capability procurement process to meet that."

Diggerworks is a virtual organisation but at its base is the Army's Integrated Soldier Systems Development Directorate and also includes the Modernisation and Strategic Planning Army, Capability Development Group, Defence Materiel Organisation and Defence Science and Technology Organisation.

The key areas being addressed by Diggerworks are the continual improvement of the Soldier Combat System; enhancing the performance of the soldier and in particular

the close combatant. Col. Blain said, "We look at the soldier, the integration on the soldier, how that soldier integrates with the Tactical Small Unit that he is fighting in whether that be a fire team or section, a platoon or a patrol in Afghanistan and also how he integrates to a higher level."

Diggerworks identifies what needs to be modified for an evolutionary process to procure continual enhancement of soldier systems. Defining exactly what integration on the soldier means has many different definitions, depending on the perspective of those involved. "For us," explained Col. Blain, "It is ensuring that we have put a configuration plan and management on what the soldier carries to get that balance right, across those key aspects of what we expect that close combatant to undertake."

For configuration management, Col. Blain argues cites the need to become more prescriptive in stating what soldiers wear. "Like other armies, we have lost a bit of that control and we are to go back to a configuration plan and management where we put discipline to what we put on our soldiers because we cannot afford soldier to carry the weight they are but they also want to optimise how they do their job."

The Australian Army is currently adopting a tiered approach to equipping the Soldier. Tier 1 is a specialist, which ranges from helicopter flight crew or an SASR diver characterized by specific requirement and small number. Tier 2 is the Close Combatant, defined as being exposed to the threat the most and requires a different level of protection and different level of agility. Tier 3 is the General Combatant with a reduced exposure to threat with the equipment characterised by less frequent enhancement and modification. Col. Blain commented, "We are looking at ensuring that the body armour systems for our Close Combatant are different to a General Combatant because of the role the other takes and that has impacts on real estate; what he can carry, how much he can fit on to that body armour system from weight and mass and it is particularly important as we introduce more technology."

Procurement requirements are aligned to the Army's Force Generation model which has three phases, beginning with the Ready phase in which the brigade or elements of it are deployed on operation or at high readiness to move, moving to a Rest phase then a

Readying phase where new equipment and modifications to the soldier combat systems takes place.

Col. Blain said, "For too long we have waited for systems put in place during operations to the detriment of the soldier and the system itself. This mode of acquisition and government acquisition needs to be able to align with our key user as an Army in its own rotation model."

"Key to this is user engagement. We cannot progress a development or a modification to equipment without being involved very closely with the user. From what we learnt from the US Marine Corps experience, they gained that rapid feedback from the soldiers as they rotate on operations, conducting those activities where the user is giving us their requirements so we are able to inform ourselves what the next iteration needs to be. Importantly, we are also able to see what is achievable and not achievable and therefore disregard what can't be achieved from the rotation under that three year, twelve month brigade rotation."

These modernisation concepts will inform future technologies and capabilities, notably the Land 400 project which will deliver a new fighting vehicle to the Australian Army.

"Seeing what we will dismount our close combatants from is critical to understanding what we are doing with the Soldier Combat System at the individual level. As we go to Land 400, we start going through a hierarchy of integration. We need to consider how we are actually integrating soldiers from the Tactical Small Unit into that combat team level and battlegroup level. We will so look at the Combined Arms Fighting system (CAFS) as our key integration area, focused on the Combat team to battlegroup level."

The Diggerworks organisation will take requirements and either look at COTS or MOTS solutions or develop it themselves, then test and evaluate that before handing off to a programme for acquisition. Standard procurement guidelines will govern that process. Col. Blain said, "A difficulty we face at the moment is our process of identifying the solution is quite rapid but the acquisition process to go out to tender or buy it is not as quick. We are working on identifying how we can actually fix that."

"It is critical that we test as fast as possible so we don't marvel at the solution too long, get it out there, get it with soldiers, test it and then get it into theatre but importantly,

► get the soldier comfortable with his equipment. There is fair bit of investment that goes in to ensure that the trialling of the equipment part is done right. We cannot allow ourselves to continue to give equipment to soldiers without it being supported by doctrine and a training base so it is part of our remit to ensure that the training and what goes with that piece of equipment is followed through before they deploy."

Once acquired, equipment can expect to be modified or replaced regularly. Col Blain explained, "We are looking at a continual enhancement approach we will want to refresh the capability based on what we see coming up from that initial planning and proposal part. We don't need to focus too much. We will continue to develop as we get user feedback and as technology changes. We are no longer going to buy big and buy less often. We want to buy more times and we want to be able to buy those continually and continue to refresh the close combatant soldier system and then get the feedback which is critical to us understanding if the equipment is being used in the first place." If it is being received well by the soldiers, it will progress to the next modification process.

The three year cycle is seen as key to reducing the total number of systems that would be purchased at each point ready for training, allowing the procurement or modification of smaller number of equipment but more frequently. This approach is not without its challenges. Col. Blain said, "The issue there will be inventory management and how we maintain multiple lines of equipment in smaller numbers."

Diggerworks is now recognised by the Army as the central authority for the configuration and integration of the close combatant. Col Blain said, "This is new. It makes a lot of sense but we haven't been doing this, we haven't actually put discipline into ensuring that we have one authority for what goes onto the soldier. It is step forward and we are already seeing the payoff from that."

**The equipment**

The recent deployment of the Tiered Body Armour System armour system is seen by Col. Blain as the endorsement of the methodology being adopted by Diggerworks, namely giving it to a wide range of different close combatants to get feedback on what needs to be implemented in the development, taking it past a design review board, independent trials authorities trial it to get objective feedback then getting industry on line ready to go to produce this in the number we need for the brigade going along.

Australia has deployed force in Afghanistan with Crye MultiCam. Feedback is now being collated to help Diggerworks develop an Australianised pattern which will eventually become the Australian combat uniform across the board. Other priorities for Diggerworks include developing a detailed anthropometrics picture of the Australian soldier following an initial short study. Diggerworks is also helping develop an Australian

standard of ballistic measurement that more closely meet military requirements.

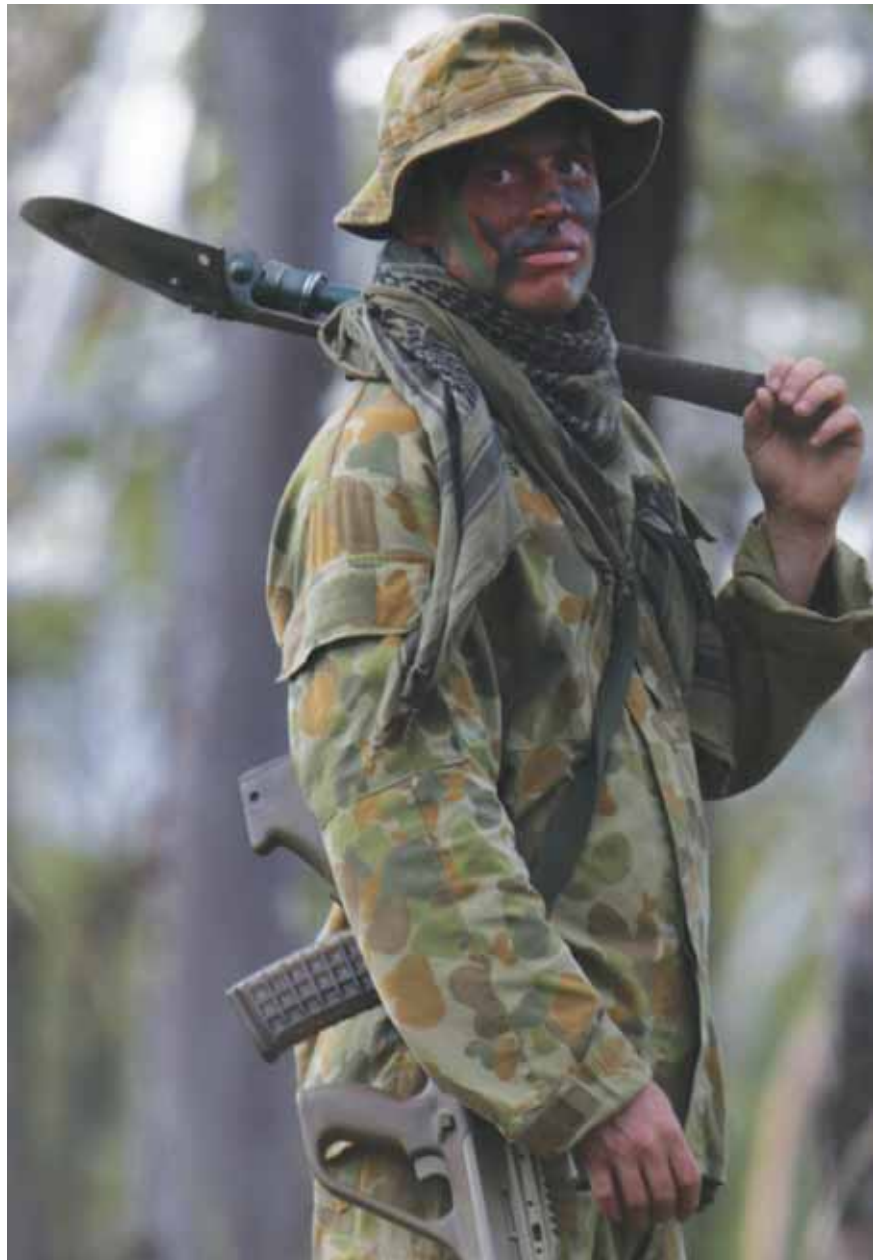
The key project in Soldier Modernisation in Australia remains Land 125 with the current Phase 3A delivering the systems Situational Awareness and communications capability 3B providing the Soldier Combat Ensemble (SCE) and 3C addressing the enhanced Austeyr assault rifle. Addressing Phase 3B in which Diggerworks is most closely involved Col Blain outlined the SCE as a sub- system of the overall Soldier Combat System encompassing those items that a combat soldier wears to provide him the ability to carry equipment or provide physical protection from the environment and threats.

Outlining the stage beyond this Col. Blain said, "Land 125 Phase 4 will be our ongoing soldier enhancement

project. We are in a pretty good position here because Phase 4 will continue to support the development of the soldier combat system up to and past 2020. When we do start drawing down from Afghanistan, Phase 4 becomes the principle player in ensuring that we can continue this refresh this enhancement aligned to the Army's force generation model."

"At the end of the day the principle role of the close combatant is to carry out lethal effects and the great technology out there is fantastic but if it does not allow the soldier to have the confidence or ability to deliver his main effect we need to look at whether that is actually important enough to actually put on the soldier." ■

*Col. Jason Blain was speaking at Soldier Technology 2011.*



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