Integrated Soldier Systems
INDUSTRY FORUM

Friday 12 June 2015
CQ Functions, Melbourne
# AGENDA
**INTEGRATED SOLDIER SYSTEMS BRANCH INDUSTRY FORUM**
Friday 12 June 2015 | Level 1, CQ Functions Centre, 123 Queen Street, Melbourne VIC

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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<tbody>
<tr>
<td>08:45 - 09:30</td>
<td>Registration</td>
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<tr>
<td>09:30 - 09:35</td>
<td>Welcome and opening remarks</td>
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<tr>
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<td><strong>Brigadier Simon Welsh</strong> – Director General Integrated Soldier Systems Branch</td>
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<tr>
<td>09:35 - 09:50</td>
<td>Keynote</td>
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<td><strong>Major General Paul McLachlan</strong> – Head Land Systems Division</td>
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<td>09:50 – 10:05</td>
<td>Armaments Systems Program Office</td>
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<td><strong>Mr Malcolm McKeith</strong> - Director</td>
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<td>10:05 – 10:20</td>
<td>Soldier Modernisation Systems Program Office</td>
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<td><strong>Mr David O’Brien</strong> - Director</td>
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<tr>
<td>10:20 – 10:35</td>
<td>Soldier Modernisation Systems Program Office - Sustainment</td>
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<td><strong>Mr Greg Weichard</strong> - Director</td>
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<tr>
<td>10:50 – 11:00</td>
<td>Break – Morning Tea</td>
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<td>11:10 – 11:25</td>
<td>Clothing Systems Program Office</td>
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<td><strong>Colonel Shaun Hoffmann</strong> - Director</td>
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<td>11:25 – 11:40</td>
<td>Health Systems Program Office</td>
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<td><strong>Mr Troy Quinn</strong> - Director</td>
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<td>11:55 – 12:10</td>
<td>‘Diggerworks’</td>
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<td><strong>Colonel Mark Jennings</strong> - Director</td>
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<td>12:10 – 12:25</td>
<td>Tender De-briefings</td>
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<td><strong>Mr Dennis Cleary</strong> - DMO Procurement and Contracting Branch</td>
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<td>12:25 – 12:40</td>
<td>Engineering in the Land Environment</td>
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<td><strong>Mr Paul Grant</strong> - Land Engineering Agency</td>
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<td>12:40 – 12:50</td>
<td>Summary and Close</td>
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<td><strong>Brigadier Simon Welsh</strong> – Director General Integrated Soldier Systems Branch</td>
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<tr>
<td>12:50 – 14:00</td>
<td>Industry Defence Networking Expo and working lunch</td>
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Integrated Soldier Systems Branch

BRIG Simon Welsh

Diggerworks
COL Mark Jennings

Clothing Systems Program Office
COL Shaun Hoffmann

Armament Systems Program Office
Mr Malcolm McKeith

Soldier Modernisation Systems Program Office
Mr David O’Brien

Land Systems Division, Integrated Soldier Systems Branch
<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
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<tbody>
<tr>
<td>Enhanced Combat Helmet</td>
<td>$358</td>
</tr>
<tr>
<td>Night Vision Goggle Mount</td>
<td>$223</td>
</tr>
<tr>
<td>ECW sleeping bag</td>
<td>$220.00</td>
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<tr>
<td>Bivi Bag</td>
<td>$140.00</td>
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<tr>
<td>Silk Line</td>
<td>$27.00</td>
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<tr>
<td>Foam mattress</td>
<td>$8.00</td>
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<tr>
<td>Insect protector</td>
<td>$12.00</td>
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<tr>
<td>Shelter individual</td>
<td>$57.00</td>
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<tr>
<td>Sleeping ensemble $464:</td>
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<tr>
<td>ECW sleeping bag</td>
<td>$220.00</td>
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<tr>
<td>Bivi Bag</td>
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<td>Insect protector</td>
<td>$12.00</td>
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<tr>
<td>Shelter individual</td>
<td>$57.00</td>
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<tr>
<td>Hydration System</td>
<td>$117</td>
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<tr>
<td>Tiered Body Armour System (includes load carriage, ammunition pouches and belt)</td>
<td>$3173</td>
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<tr>
<td>Snipe Pack (new) approx $940</td>
<td></td>
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<tr>
<td>Mystery Ranch Medium Pack approx $300</td>
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<tr>
<td>Small Assault Pack (SF only) approx $150</td>
<td></td>
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<tr>
<td>Large Field Pack 05 approx $330</td>
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<tr>
<td>Pelvic Protection System:</td>
<td></td>
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<tr>
<td>Tier 1 (under garment, not visible) $56</td>
<td></td>
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<tr>
<td>Tier 2 (over garment, not shown) $231</td>
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<tr>
<td>Ballistic and Laser Ocular Protection System - Sunglasses $169</td>
<td></td>
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<tr>
<td>Night Aiming Device approx $630</td>
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<tr>
<td>F88SA2 Austeyr rifle $3695</td>
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<tr>
<td>Australia F88 Advanced Combat Optical Gun Sight $1488</td>
<td></td>
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<tr>
<td>24h Combat Ration Pack 1 Man $40.83</td>
<td></td>
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<tr>
<td>Individual first aid kit $248.15</td>
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<tr>
<td>Crye Multicam Combat Coat approx $140</td>
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<tr>
<td>Crye Multicam Combat Trouser comprising Near Infra Red attenuation, 7 graduated colours and Flame Resistant Defender M, approx $210</td>
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<tr>
<td>Flyer’s Gloves $20</td>
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<tr>
<td>Current Version 5 Terra Combat Boot $192</td>
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<tr>
<td>Integrated removable elbow pads $15</td>
<td></td>
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<tr>
<td>Integrated removable knee pads $20</td>
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<td>Socks $5</td>
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First Principles Review

- The First Principles Review of Defence was commissioned by the Minister for Defence in August 2014 following the Government's 2013 election commitment. The Government considered the review on 24 March and the Minister announced the outcome on Wednesday 1 April 2015.
- The focus of the review was on ensuring that Defence is fit for purpose, is able to respond to future challenges and deliver against its outputs with the minimum resources necessary.
- On 11 May 2015 the Minister for Defence announced the establishment of the Oversight Board to monitor the progress of implementation of the First Principles Review recommendations. The Oversight Board’s primary function is to provide advice to Government on the implementation of the First Principles Review recommendations over a two year period.


Defence White Paper

- The Prime Minister and the Minister for Defence announced on 4 April 2014, that Defence would produce a new White Paper to be released in 2015.
- Defence White Papers are the Government's most important guidance about Australia's long-term defence capability. They allow the Government and community to understand the opportunities and challenges for Australia's future defence and security needs.
- A comprehensive consultation process was conducted to support the development of the White Paper, with input from across Government, industry, the Australian public, Australia's allies and regional partners.
- Following the release of the 2015 Defence White Paper, Defence will publish a 10-year Defence Capability Plan and a Defence Industry Policy Statement to provide defence industry with greater certainty about the Government’s key priorities and timeframes.

ARMAMENTS SYSTEMS PROGRAM OFFICE (ARMTSPO)

Malcolm McKeith
Director
Malcolm.mckeith@defence.gov.au
Key Roles and Activities

- **Small Arms Fleet**
  - Supports the sustainment and disposal of commercial off the shelf, military off the shelf and specialised weapons up to 7.62mm (not including crew served weapons) and attachments.

- **Direct Fire Support Weapons Fleet**
  - Supports the sustainment, maintenance and disposal of machine materiel rifles, grenade launchers and anti-armour weapon fleet to a number of weapon mounts, sighting systems and training aids.

- **Surveillance Systems Fleet**
  - Supports the sustainment, maintenance of Night Fighting Equipment, Thermal and Laser, Optical Surveillance Equipment, and Night sighting systems.
Key Roles and Activities (cont)

Land 40 Phase 2 – Direct Fire Support Weapons
- Responsible for the delivery of a new 84mm M3 Carl Gustaf guns, fitted with a Night Sight capability. The project has delivered 437 M3 Carl Gustaf and a BAE Systems thermal sight, completed in Dec 10.
- Light Weight Automatic Grenade Launcher (LWAGL) and a Fire Control System.

Land 125 Phase 3C – Soldier Enhancements (Lethality) Enhanced F88
- Responsible for the delivery of an enhanced version of current F88 weapon system: lighter, modular and with improved ammunition interoperability 40mm Grenade Launcher Attachment (GLA).

Land 53 Phase 1BR – Night Fighting Equipment Replacement
- Responsible for the delivery of an improved military off the shelf (MOTS) Night Vision Goggles (NVG); and a more ergonomic helmet mounting systems (Mounts and Head Harnesses) and Laser Aiming, Illumination Device (LAID) and Laser Aiming Illumination Range Finding Device (LAIRD) for small arms weapons.

Update & Upcoming Activities
- Completed F88SA2 production.
- Commence the enhanced F88 Low Rate Initial Production (LRIP) production in Dec 14.
- Armament Fleet Upgrade Repair (AFUR) contract signed with Thales Mar 15.
- Introduction into use of EF88 LRIP configuration to 1 RAR commencing in Jun 15.
Projects

• **Land 40 Phase 2 – Direct Fire Support Weapons**
  – Managed as a “Project of Concern”

• **Land 125 Phase 3C – Soldier Enhancements (Lethality) Enhanced F88**
  – The Enhanced F88 based on F88SA2 with Grenade Launcher Attachment – Thales Australia.
  – Finalising evaluations of weapon ancillaries including day sight, night sights, fore grip, torch and bipod.
  – 2nd Pass - Mid 2015.

• **Land 53 Phase 1BR – Night Fighting Equipment Replacement**
  – Tender Closed Jul 14.
  – Initial evaluation completed Dec 14.
  – Finalising evaluations of ancillaries.
  – 2nd Pass Mid 16.
Future Outlook

• **Current/upcoming opportunities**
  – The Standing Offer Small Arms Targets RFT has been rescheduled for release in Mar 16. (Tranche 1).
  – The Standing Offer Small Arms Targets RFT new requirements (Tranche 2 TBC).

• **Industry Visit Program**
  – Contact ISSB Industry e-mail.
ARMTSPO Key Staff

Director
Malcolm McKeith
(03) 9282 5982

Deputy Director
Andrew Kerley
(03) 9282 3836

Sustainment Manager
LTCOL Perry Gunder
(03) 9282 6441

Project Manager Land 40 Ph 2
LTCOL Byron Cocksedge
(03) 9282 4799

Project Manager Land 125 Ph 3C
LTCOL Justin Tate
(03) 9282 4409

Project Manager Land 531BR
Martin Pawlukowski
(03) 9282 6542

Chief Engineer
Robert Webster
(03) 9282 5238

National Fleet Manager Small Arms
Tracey Henderson
(03) 9282 6364

National Fleet Manager DFSW
Shane Balfour
(03) 9282 5307

National Fleet Manager Surveillance Systems
Craig Taylor
(03) 9282 6764
Soldier Modernisation Systems Program Office (SMSPO) Projects

David O’Brien
Director
David.obrien17@defence.gov.au
Key Responsibilities

Land 125 – Phase 3B
- Responsible for the delivery of the Soldier Enhancement Version 2 – Survivability (Soldier Combat Ensemble)

Land 2110 – Phase 1B
- Responsible for the delivery of improved capabilities against both existing and emerging Chemical, Biological, Radiological and Nuclear (CBRN) threats, including environmental hazards

Special Forces Program
- Major Projects including Land 3025 Phase 1 (Deployable Special Operations Engineer Capability), JP199 (Establishment of SOCOMD) and JP 2088 (Equipping TAG (East))
- A Minor Project for Static Line Parachutes - delivery of 5000 static line parachutes
Land 125 Phase 3B – Soldier Survivability

• **Existing Standing Offers for:**
  – Ballistic, Laser & Ocular Protective Eyewear
  – Tiered Combat Helmet (SCE-15)
  – Combat Hearing Protection (SCE-15)
  – Protection Equipment (Hard and Soft Armour)
  – Load Carriage Equipment

• **Current tenders:**
  – **Combat Hearing Protection** – Tender was released on 15 Oct 14 for SCE 16-17 and closed on 25 Feb 15
  – **Tiered Combat Helmets** – Tender was released on 15 Oct 14 for SCE 16-17 and closed on 25 Mar 15
Land 2110 Phase 1B

- Scoped to provide improved capabilities against both existing and emerging CBRN threats, including environmental hazards
- The Project is seeking technologically mature capabilities (Commercial Off The Shelf (COTS) or Military Off The Shelf (MOTS)) items
- The five key capability ‘pillars’ of the CBRND capability are:
  - Detection, Identification and Monitoring
  - Warning and Reporting
  - Physical Protection
  - Hazard Management
  - Medical Support
- Tender released on 15 Jan 15 and closes on 15 Jun 15
- Second Pass Approval planned for Apr 17
- Initial Operational Capability - FY 20/21
- Final Operational Capability – FY 21/22
SMSPO (Projects) Key Staff

Director
David O’Brien
(03) 9282 3725

Deputy Director
Katy Blake
(03) 9282 5603

Project Director
Land 125 Phase 3B
LTCOL J-P Ouvrier
(03) 9282 4249

Project Director
Land 2110 Phase 1B
Glenn Streatfeild
(03) 9282 7210

Program Director
Special Forces
Pat Meehan
(03) 9282 4925
Soldier Modernisation Systems Program Office (SMSPO) Sustainment

Greg Weichard
Director
greg.weichard@defence.gov.au
Key Roles, Activities and Achievements

Soldier Combat Ensemble Fleet (3,000 line items)
  – Combat Protective Equipment includes body armour, helmets, eye and hearing protection, load carriage equipment

Field and Aerial Delivery Equipment Fleet (1,700 line items)
  – Personal Field Equipment includes canteens, packs, trunks
  – Non Lethal Force Equipment includes shields, batons,
  – Aerial Delivery Equipment includes parachutes, rigging equipment
  – Adventurous Training Equipment includes kayaks, abseiling, ropes

Chemical, Biological, Radiological, Nuclear and Explosive Defence (5,500 line items)
  – Equipment used for detection and protection in a Chemical, Biological, Radiological, Nuclear or Explosive hazard environment
Future Tenders for Field Equipment

• **Multi-tools**
  – October - December 2015 release
  – $2.0 - $2.75m over 5 years

• **Duffle Bags**
  – October - December 2015 release
  – $5.0 - $6.5m over 5 years

• **Face Paint, Camouflage**
  - January - March 2016 release
  - $1.2 - $1.7m over 5 years

• **Field Water Heater**
  - January - March 2016 release
  - $200 - $300k
CLOTHING SYSTEMS PROGRAM OFFICE (CLOSPO)

Colonel Shaun Hoffmann
Director
shaun.hoffmann@defence.gov.au
Key Roles and Activities

• **Combat Clothing** - Uniforms, footwear and clothing accessories worn specifically for the conduct of combat operations

• **Non-Combat Clothing** - Uniforms, footwear and clothing accessories worn for the purpose of military duties other than the conduct of combat operations. It includes clothing of a military and non-military nature and personal protective clothing

• **Accoutrements** - Items worn to distinguish service, corps and trade, rank and special appointments. Includes Metal Insignia, Embroidered Insignia, Sashes, Lanyards and Aiguillettes. Accoutrements are worn with both combat and non-combat clothing
Current Key Activities

• **Combat Uniforms**
  – AMCU
  – GP Jacket Roll-out
  – Combat Boot Suite

• **Non-Combat Uniforms**
  – Ongoing ceremonial requirements
  – Modernisation of uniform design and performance
Development Activities

- **Task**: To modernise the design, fabric, fit and function of selected Non Combat Garments.
  - 1st to be assessed: The Army Service Dress Uniform.
  - The design advancements are:
    - **Cut/Design**: To modernise the design in order to enhance the fit to suit body shapes whilst retaining the overall look.
    - **Size Range**: Introduce a commercial sizing range.
    - **Fabric**: Current fabric is perceived to be hot, heavy and uncomfortable to wear. A new fabric is being considered that is lighter and more breathable, thus providing greater wearer comfort.
  - Other areas of consideration include Maternity Wear, Utility Jackets and Service Dress Shirts.
Current and Future Tenders in 2015

Current

• **Swords and Accessories**
  – Evaluation stage
  – Deed Signature anticipated Jul 15

• **Combat Undergarments**
  – Evaluation Stage
  – Deed Signature anticipated, Aug 15

• **Combat and Flyers Gloves**
  – Evaluation Stage
  – Deed Signature anticipated, Nov 15
HEALTH SYSTEMS PROGRAM OFFICE (HLTHSPO)

Troy Quinn
Director
Troy.quinn@defence.gov.au
Key Roles and Activities

• Acquisition, fleet management, and through life support of medical and dental equipment, medical and dental consumables, and pharmaceuticals.
  – Over 15,000 items (low value / high turnover)
  – Introduction of new and additional medical and dental capability.
  – Acquisition and fleet management of combat rations.

• Significant streamlining of procurement in pharmaceuticals, consumables and combat rations through introduction of separate Prime Vendor Contracts.
Projects

- **JP2060 Ph2B Deployable Health Capability** – Address specific capability gaps in the treatment aspects of surface and air evacuation, disease and injury prevention, and facilities, logistics and equipment.
  - 17 health initiatives / 86 discrete procurements
  - Nearing completion, scheduled to close end of 2015.

- **JP2060 Ph3** – refresh and further enhance the ADF’s existing Deployable Health Capability through a ‘whole of system’ approach to acquisition and support.
  - First Pass Approval scheduled for 2016.
Future Outlook

• Current/upcoming opportunities

  – Prime Vendor contract for Combat Rations will be retendered during 2016

  – Prime Vendor contract for Pharmaceuticals will be retendered early 2016
Integrated Soldier Systems Development Directorate (ISSDD)

DIGGERWORKS

Colonel Mark Jennings
Director

diggerworks@defence.gov.au
Key Roles and Activities

Diggerworks is to identify options and deliver integrated soldier combat systems solutions in order to enhance the capability of the combatant.

**Soldier Combat System**
- ‘The equipment used by a soldier to apply lethal or non-lethal effects, communicate and gain situational awareness, survive, sustain, move and operate as part of a team within the close combat environment’.

**Soldier Combat Ensemble**
- ‘The integrated soldier systems that are designed to provide protection to individual combatants from physical threats and the environment as well as facilitating an efficient means for an individual to carry Mission Essential Equipment in a close combat environment’.
The effects required at subsequent layers provide collective benefits, but still need to be physically integrated with an individual combatant’s SCE. Different equipment solutions may be required at different ‘layers’ to allow the individual to complete their particular role.
Adaptive Methodology

- **Identify the problem or requirement**
  - From the field
  - From our allies
  - From threat analysis
  - From modernisation concepts

- **Analyse options**
  - Technology evaluation
  - Industry engagement

- **Develop or identify the integrated solution**
  - Science and Technology
  - Design Engineering
  - Test and Evaluation

- **Report to Army and hand off to a Systems Program Office for acquisition.**
SYSTEMS INTEGRATION

• Definition:
  – The soldier is an integrated system, not an aggregation of individual components (remove the Christmas tree effect).

• Scope:
  – Physical interfaces between equipment that comprises the SCS
  – Physical integration with the human being
  – Not functional interfaces between equipment (project responsibility)
  – Not functional integration with the human being (project responsibility)

• Diggerworks Role:
  – Reducing/eliminating negative ‘emergent properties’ of the SCS when equipment is combined.
  – Refining the physical interfaces between equipment and the operator
  – Providing feedback to projects and Army on SCS integration concerns

• Examples:
  – Documentation reviews for projects within the SCS context to identify Compatibility and Integration concerns (e.g. Function & Performance Specifications (FPS), Tender Specifications)
  – Equipment physical interface assessments via SCS integration SOP
  – Human factors advice
  – Working groups with projects to provide the ‘whole of SCS’ context during project development to eliminate issues as early as possible.
  – Working groups with industry and providing feedback on physical equipment design issues to minimise any potential impact on the SCS.
SCS Integration Modes

• Mode 1 - Carriage
• Mode 2 - Attach
• Mode 3 – Connect (Power/Data)
• Mode 4 – Full Integration (New capability/legacy equipment)
• Diggerworks mainly concerned with Modes 1, 2, and 4, but will play into Mode 3 via LAND 125 Ph 4.
CURRENT DCP SCS PROJECTS

Survivability
The close combatant’s ability to protect against weapon impacts and environmental conditions.
• L125-3B (Soldier Combat Ensemble)

Situational Awareness/Command & Control (C2)
Situational Awareness is the close combatant’s ability to identify and discern. C2 enables the close combatant to direct, coordinate, and control personnel, weapons, equipment, information and procedures to accomplish the mission.
• L531BR (NFE)
• L75/200 (BMS)
• DISR-A initiatives

Lethality
The close combatant’s ability to detect, recognize, and destroy the enemy targets.
• L125-3C (EF88 and Ancillaries)
• L40-2 (LWAGL)
• Small Arms Mod Plan
• 60 mm Minor
• CLV upgrades

Mobility
The close combatant’s ability to move about the battlefield with accompanying load to execute assigned missions.
• L125-3B (SCE)
• Rough Terrain Vehicle Minor

Sustainability
The close combatant’s ability to operate for extended periods in a tactical environment.
• **Definition:**
  – *Continually improve SCS.* Find solutions that enhance the performance of the soldier.

• **Scope:**
  – Enhancing the SCS through:
    • Identifying alternate COTS/MOTS options for current equipment meeting a specific function in the SCS, and
    • Capitalising on market innovation and new opportunities for Army.

• **Diggerworks role:**
  – Monitoring the market (and providing an open door to the market) for innovative technologies and products that may be useful in the SCS,
  – Engagement with users and their chain of command to identify weaknesses and opportunities to improve the SCS, and
  – Analysing and communicating the results to Army.

• **Examples:**
  – Desktop evaluations of products based on technical data,
  – Physical inspections of new products,
  – Reporting on equipment demonstrations, and
  – Equipment evaluations.
LCE (TBAS V5) Scalable options

• HV / AP plate carrier with conformal SAI or stand alone HBP (5kg target)
  – Side plate option for thoracic

• Integrated LCE (chest, belt or both)
  – Removable chest platform
  – T0 Heavy designed to integrate with vest
  – Load sharing system future path

• Fragmentation / Stab & Spike vest (1.5kg target)
  – Suitable for PKO, lower threat operations or in conjunction with HV carrier for high frag threat.
  – Option to add extremity protection (arms, pelvic)

• Objective to deliver scaled protection balancing:
  – Mobility
  – Protection
  – thermal burden.
DEVELOPMENTAL T&E: BALLISTIC PLATE & SOFT ARMOUR BFD
SCS Evolution – The Journey

ADF Combatant 1999

ADF Combatant 2012

ADF Combatant 2013

ADF Combatant 2015
Diggerworks Key Staff

Director
COL Mark Jennings
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Deputy Director
Darryl Kewin
(03) 9282 4594

Chief Engineer
Tim Efthymiou
(03) 9282 6609

Industry Liaison
MAJ Angus Hindmarsh
(03) 9282 5230

Please email diggerworks@defence.gov.au if you wish to contact the team directly on proposed enhancements to the soldier combat systems.
www.defence.gov.au/dmo

equip and sustain the Australian Defence Force