

## ‘Iron Man’ exoskeletons to give Diggers superhuman strength



Victoria Cross recipient Dan Keighran with Australian Defence Apparel CEO Matt Graham in Melbourne.  
Picture: Aaron Francis

REBECCA PUDDY THE AUSTRALIAN 12:00AM September 27, 2016

Australian troops are set to gain superhero strength, with trials of the latest powered titanium exoskeletons likely to take place next year.

Australian Defence Apparel chief executive Matthew Graham said the technology, which is being developed with the US Army’s elite special operations command, could then be rolled out to the general army in 2018.

The custom-made titanium suit clips around the body, with its spine taking the weight of a soldier’s pack.

“Version one is not powered but we are currently working on a powered version for the US,” he said. “In the US, it’s called the Iron Man Project.”

The powered suits sense muscle reflexes and activate to take the weight of the soldier’s movement.

While the company featured its exoskeleton at a major gathering of military and defence industries in Adelaide this month, it could not be photographed, Mr Graham said.

Australian war hero and winner of the Victoria Cross Dan Keighran said soldiers bore long-term physical damage from carrying packs that sometimes weighed more than their body weight.

“Your knees and joints do suffer,” he said. “This technology doesn’t take away from any danger and as a soldier you’re still vulnerable. But where this will help is getting casualties out of hot zones, letting us do our job faster and being used for rehabilitation.”

The technology forms part of the significant research under way internationally to find ways to increase the performance of soldiers, through physical means, psychological means or diet.

Mr Graham said the company was working with the army to develop the next generation of army uniforms using e-textiles, in which communication data is passed through fibre, eliminating the need for cables.

After criticism from senator Nick Xenophon over the company's decision to outsource the manufacture of army dress uniforms to China, Mr Graham said Australian Defence Apparel was focused on innovation and advanced manufacturing.

“It's unfortunate that the textile clothing and footwear industry in Australia has been over the last 20 years moving offshore quite dramatically,” Mr Graham said. “While we do maintain our Bendigo factory and the margins are quite low, we have just commercialised our new backpack frames and have interest from the UAE and the US, so that could turn into an export earner.

“It's an example of what the Prime Minister is referring to as innovative manufacturing.”

A Defence spokeswoman said army capability could be increased through minimising vulnerabilities to errors and fatigue. “An important area of user-centred design for the future will be the design of semi-autonomous vehicle systems to take full account of the strengths and weaknesses of the human user,” the spokeswoman said.

“Research is also ongoing into how to nutritionally sustain and effectively train military personnel to operate at their peak of performance when it matters most.”