DOD continues quest to make "Iron Man" exosuit for special ops

TALOS project to deliver prototype armored robotic exoskeleton by 2018.

by Sean Gallagher - Jun 2, 2016 6:30pm EEST



An Army soldier wears conceptual "future soldier" armor at the Detroit Auto Show in 2012. If the Special Operations Command's TALOS project is successful, soldiers may wear armored exoskeletons for urban combat in the near future.

US Army

At this week's Special Operations Forces Industry Conference, the US Special Operations Command (USSOCOM) cracked the door open a bit on its Tactical Assault Light Operator Suit (TALOS) program—an attempt to create a powered, armored exoskeleton for use by special operations forces such as the Navy's SEALs and the Army's Green Berets. TALOS is the system that led President Barack Obama to announce in 2014 that "we are building Iron Man."

Navy Commander Anthony Baker of USSOCOM's Joint Acquisition Task Force unveiled the initial list of requirements for TALOS, which is intended to enhance the "comprehensive ballistic protection, situational awareness, and surgical precision and lethality" of special operations troops, particularly in urban combat.

Launched by then-commander of USSOCOM Admiral William McRaven in 2013 as a joint project with the Defense Advanced Research Projects Agency (DARPA), the TALOS program is the latest evolution of "super troop" research that has been underway in secret for decades but has only become practical within the last few years. Initial prototypes demonstrating some of the technologies for

TALOS were developed by MIT under the USSOCOM/DARPA program in 2014, and USSOCOM is now on course to produce a full advanced prototype of TALOS by August of 2018.

As current USSOC commander General Joseph Votel told CNN in October 2015, the TALOS program was precipitated by an unnamed special operations team member's death in combat. "The first guy coming into a particular building was engaged and unfortunately was mortally wounded," he said. "And in the wake of that, we asked ourselves, 'Couldn't we do better in terms of protecting him, of giving him a better advantage when he's at the most vulnerable point that we put our operators?'"

The TALOS exoskeleton is intended to provide ballistic protection from small arms and other weapons, low-light and thermal imaging sensors, and power-assisted limbs. The technologies would allow the TALOS operator to kick in doors and engage enemies in the dark while taking fire.

One of the contenders for the TALOS program is Revision Military's Kinetic Operations Suit, which uses a lower-body powered exoskeleton and a rigid support spine to take the weight of the armor off the frame of the operator. It has in-suit cooling and covers 60 percent of the wearer's body in ballistic armor that can stop a rifle bullet. General Atomics is also working on methods of powering TALOS, including a hybrid power supply that can switch to battery for short periods for stealth purposes.

A promotional video for Revision Military's Kinetic Operations Suit.

Budgeting for this year is focused on accelerating development of the suit and delivering the advanced prototype under what Baker described as a "very vicious timeline." While the full requirements for TALOS have not yet been finalized, so far they include an over-the-horizon communications capability for remote information support for the operator and an ongoing rapid prototyping capability to allow new features to be quickly added to the system. The suit will have an "open architecture," allowing add-on capabilities to be quickly integrated into the system.

Baker added that if the TALOS development project was successful, the suit could see service beyond the special operations community with conventional front-line combat units. But there are still some hurdles to overcome, including figuring out how a TALOS operator can control the suit with a weapon in both hands.

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