Special Operations Forces May Get "Iron Man" Suit
News
Posted by : Randy
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TAMPA, Fla. (AP) -- In the 2008 movie "Iron Man," the main character becomes a superhero after building a suit of armor with an exoskeleton that gives him incredible strength.

Today, elite US special operations forces may be a few short years away from donning a similar suit, one that can monitor the user's vital signs, give him real-time battlefield information and be bulletproof from head to toe. The suit might eventually have other features unheard of only a few years ago, including an exoskeleton made of liquid armor, smart fabrics that could help stop hemorrhaging, enhanced sensory capabilities and Google Glass-like visuals.

The Tactical Assault Light Operator Suit (TALOS) project is coordinated through the Special Operations Command headquarters at MacDill Air Force Base in Tampa. Prototypes are expected to be shown to military commanders in June, with hopes that the suit will be given to high-risk units in 2018.

While the project sounds like something out of a science fiction novel, its mission is simple, said James Geurts, the Deputy for Acquisition of the U.S. Special Operations Command at MacDill.

"We've lost a lot of guys to gunshot wounds and explosions," he said. "If there's anything I can do to more rapidly field technology, give better protection, better capability, any progress, I think we've done well."

Some companies working on the TALOS project are in Tampa this week for the International Special Operations Forces conference. The four-day event showcases special military technologies, gadgets and tools - from pen-like systems collecting chemical vapors to underwater robots. Several top analysts and military brass are also scheduled to speak, including SOCOM commander, Adm. William McRaven.

McRaven is widely credited with initiating the TALOS project. Last year, he described SOCOM's unique approach to the project: By harnessing the expertise of professional engineers, the creativity of students and possibly even "local garage tinkerers," the military will end up with a truly innovative project.

"I am very committed to it because I'd like that last operator we lost to be the last one we ever lose in this fight or the fight of the future, and I think we can get there," McRaven said last July.

What might be more remarkable than the whiz-bang technology of the suit is how Geurts and his team are reaching out to recruit contractors in non-traditional ways.

SOCOM has held "Monster Garage"-type events for people with potential ideas, and even Geurts acknowledged: "It's certainly not the traditional Department of Defense model."

"Looking for (hash)collaborators to help (hash)invent the next generation of (hash)sof combat gear via (hash)talos (at)SOFTALOS," Geurts tweeted in September.

Frost & Sullivan Aerospace and Defense Senior Industry Analyst Brad Curran said this approach is

novel for the military.

"A trend of toward seeking more academic and industry input is picking up as DoD seeks to save research and development funds, shorten acquisition schedules, and leverage commercial technology," said Curran.

The biggest current challenge is making the suit light and comfortable for the soldier.

"For every pound the operator has to carry in armor, there's an additional energy supply," said Dan Stamm, a research scientist at Battelle, an Ohio-based defense contractor that's the lead contracting consultant on the TALOS project.

Dan Rini, president of Rini Tech in Orlando, is one of the contractors on the project. His company has made a "personal thermal protection system" for the military that runs off a 3 1/2 pound battery and uses cold water and tubes to keep people cool.

Rini said he's trying to adapt that invention to the TALOS suit.

"We don't want that person inside the suit to get overcome by heat stress," Rini said "He might have to be in it for a long time."

Michael Fieldson , the civilian TALOS project manager, said the battery pack for the cooling system and the exoskeleton present the biggest weight hurdles.

"Nature did a pretty good job of designing the human body and we're trying to mimic that," said Fieldson. "Hollywood did a pretty good job of showing us what Iron Man could do on the screen, and the system may do some of those things - but we're not planning on flying."

Whether the suit is adopted by special operations forces, even in part, will remain to be seen, said Curran. He suggested that partial exoskeletons to help ease the strain on solder's knees would be likely used first.

"It is more likely that certain aspects of the suit research will be applied incrementally, rather than a complete rollout all at once," he said. "Integrated helmets with communications, night vision, and heads-up visor displays that are used by pilots may be deployed by ground troops as well. Lighter weight and less bulky body armor with better ballistic protection is needed by all. I think at least some aspects of the research will be applied in the near future."