Hand in this glove could cut operator fatigue

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http://media.gm.com/media/us/en/gm/company_info.detail.html/content/Pages/news/us/en/2016/jul/0706-gm-nasa.html

(Tech Xplore)—NASA's special glove is playing a role in a new partnership with General Motors and Bioservo Technologies.

Bioservo will combine technology from its SEM Glove (Soft Extra Muscle) technology with the RoboGlove. The latter is a "force-multiplying battery-powered wearable" developed by GM and NASA.

GM and NASA paired in an initiative that included the launch of a

humanoid robot into space in 2011.

The SEM (Soft Extra Muscle) technology mentioned was invented by Professor Hans von Holst (neurosurgery), Professor Jan Wikander and Doctor Johan Ingvast, Ph.D (mechatronic engineering).

What is SEM exactly? The technology features "intention detection" logic that activates the support if, and only if, the wearer initiates movement with a natural and intuitive movement intention. Sensors on the fingertips detect minute pressure changes. The response facilitates the intended movement.

The company issued news about "finding new life on Earth in health care, manufacturing and other industrial applications though a licensing agreement between GM and Bioservo Technologies AB, a Swedish medical technology company."

Basically, the glove is coming down to earth, and it means business, not space.

Marty Linn, General Motors manager of advanced technology and principal engineer for robotics, shakes hands with Robonaut 2 (R2), a humanoid robot developed by GM and NASA during a nine-year collaboration that also led to development of the RoboGlove, an exo-muscular device that enhances strength and grip through leading-edge sensors, actuators and tendons that are comparable to the nerves, muscles and tendons in a human hand. GM is licensing the RoboGlove intellectual property to Bioservo

"Combining the best of three worlds – space technology from NASA, engineering from GM and medtech from Bioservo – in a new industrial glove could lead to industrial scale use of the technology," said Tomas Ward, the Bioservo CEO.

Bioservo's role: it will develop a new grasp assist device for industrial

use. It will cut the fatigue experienced in hand muscles and increase operator's efficiency.

"Research shows fatigue can occur within a few minutes of continuously gripping a tool," said the company. "The successor to RoboGlove can reduce the amount of force that a worker needs to exert when operating a tool for an extended time or with repetitive motions," said Kurt Wiese, vice president of GM Global Manufacturing Engineering.

James Vincent in *The Verge* commented that with the glove's deployment, it will join "a growing number of products designed to make factories safer and more efficient."

Associate News Editor CNET, Andrew Krok said, "The underlying tech can go beyond the assembly line—it could be used to help in physical therapy, as well."

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He said Bioservo is to combine its own tech with RoboGlove. The result will be a product that can support a variety of industries.

According to a news release, "GM intends to be the first U.S. manufacturing customer for the refined robotic glove and will test it in some of its plants. Bioservo will make and sell the new glove for a

variety of uses including medical rehabilitation and any place additional gripping strength is needed."

More information: media.gm.com/media/us/en/gm/co … ul/0706-gm-nasa.html