Exoskeleton will carry closer touch with digital world

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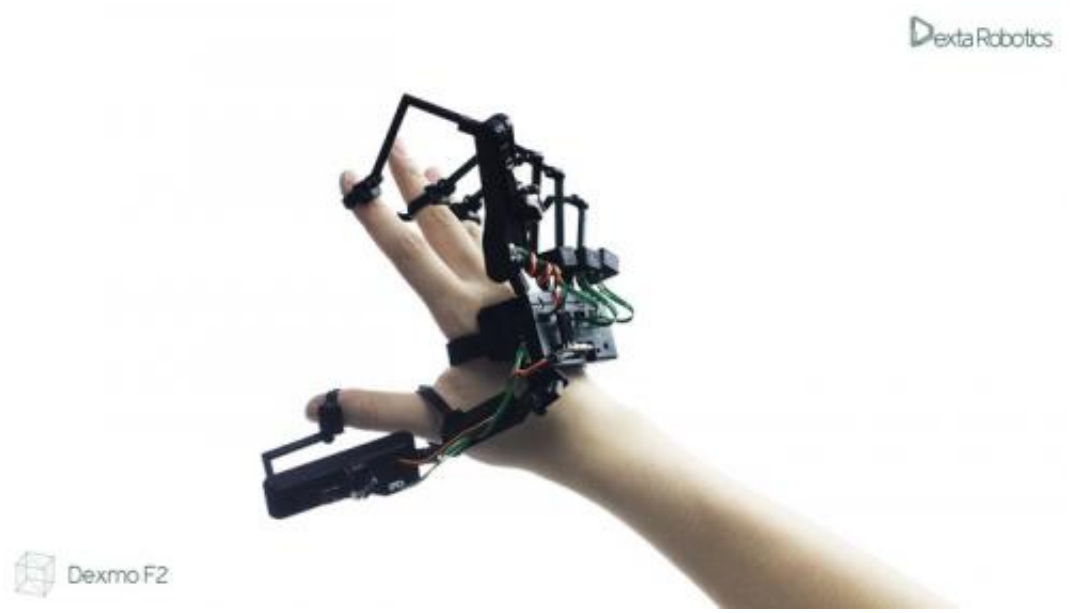

A team of roboticists in China is behind Dexmo, a hand-capturing device that uses a mechanical exoskeleton. The exoskeleton is designed for the user to touch the digital world. It will transmit a person's finger movement on to several rotational sensors and the data is transmitted directly to a device or back to a host computer, where the team's SDK performs their special kinematics algorithm to regenerate a hand model.

In a promotional video on Kickstarter, where they are seeking funding,

they said, if Oculus Rift lets a person see the digital world, wouldn't it be great if there were a way to touch the digital world? They are introducing the Dexmo Classic and the Dexmo F2. The Classic is a wearable exoskeleton system that captures 11 degrees of freedom of hand motion. The F2 has the additional capability to provide digital force feedback. They said that they began work in this direction after noticing "the lack of affordable hand motion capturing devices in the field of robotics and VR," and so they started their Project Dexmo. Instead using of expensive sensors such as IMUs and flex sensors, the team said they used inexpensive rotational sensors, along with injection molded plastic parts, so that the cost of the device was reduced.

For VR developers, Dexmo comes with an SDK that provides examples with the group's built-in hand regeneration algorithms. They can use Dexmo along with any positioning tracking methods of their will, said the group, and Dexmo provides special support examples for perception neurons by Noitom and the STEM system by Sixense. Dexmo is wireless, transmitting data through Bluetooth serial support, and they said it works even next to a strong magnetic field, as it does not use magnetometers. The exoskeleton that they developed moves freely during normal controlling mode.

They have turned to Kickstarter with a goal of raising $200,000. A pledge of $158 is fulfilled with a Dexmo development kit that contains one pair of Dexmo Classic. Two Dexmos are wirelessly inner communicated via 2.4G radio, and they require one Bluetooth serial port for communication. Estimated delivery is May next year. A pledge of $359 gets the development kit with one pair of Dexmo F2 that provide digital (on/off) force feedback. Estimated delivery is June next year. The people behind the project is Dexta Robotics of Shenzhen, China. They said, "We are trying our best to keep the price down so more people can get into the field of virtual reality."

What can do you do with Dexmo? Robotocists, they said, can use it to control the robotic hand. With F2 they can remotely feel an object or feel an obstacle while controlling a robotic arm. With some positional tracking methods. they can even perform difficult tasks such as remote bomb disposal. VR developers can leverage the Dexmo SDK for a range of positional tracking methods.

More information: — www.kickstarter.com/projects/1 … to-touch-the-digital

— www.dextarobotics.com/products/Dexmo