

Video: Mind-controlled quadcopter demonstrates new possibilities for people who are paralyzed

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Imagine living a life in which you are completely aware of the world around you but you're prevented from engaging in it because you are completely paralyzed. Even speaking is impossible. For an estimated 50,000 Americans, this is a harsh reality. It's called locked-in syndrome, a condition in which people with normal cognitive brain activity suffer severe paralysis. Credit: NSF

With support from the National Science Foundation (NSF), biomedical engineer Bin He and his team at the University of Minnesota have created a brain-computer interface with the goal of helping people with disabilities, such as paralysis, regain the ability to do everyday tasks.

Currently, the researchers are testing out their system using a flying object known as a quadcopter, and controlling it with someone's thoughts! For the experiments, the team uses both an actual flying quadcopter and a virtual one. In both experiments, the interface is non-invasive, so there are no implants. Participants wear an electroencephalography, or EEG, cap with 64 electrodes. When the participant thinks about a specific movement, neurons in his or her brain's [motor cortex](#) produce tiny electric signals, which are sent to a computer. The computer processes the signals and sends directions through a Wi-Fi system to direct the quadcopter.

He and his team chose the quadcopter for this testing phase to keep [participants](#) engaged, but the interface is designed to help in the real world with [everyday tasks](#), such as turning on the lights or surfing the internet.

Provided by National Science Foundation

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