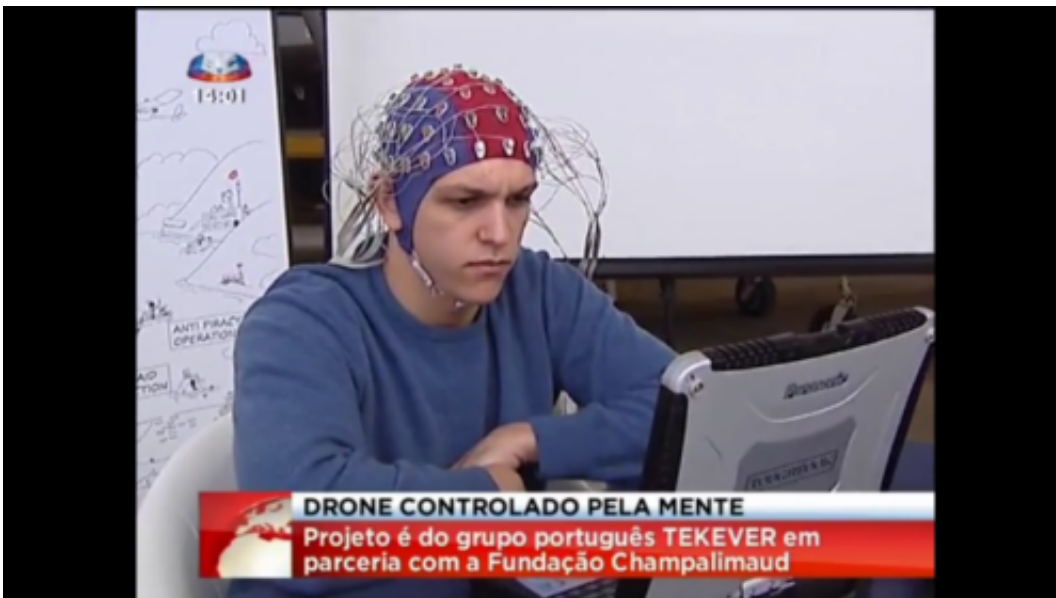


# Brain signals turn into drone commands in Lisbon presentation

February 27 2015, by Nancy Owano

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Credit: TEKEVER

Can we expect a time when aircraft will be directly controlled by the human brain? And what about mind-controlled drones? Imagine that, using an EEG (electroencephalogram) cap tracking neural activity, a man flies a drone with his brain.

"Amazing what you can do if you put your mind to it," said a BBC presenter, who recently witnessed such a feat. He visited an [airstrip](#) on the outskirts of Lisbon, Portugal, to see the technology in action.

Brainflight is the name of the project. Brainflight is the result of an effort among four organizations – Tekever, the Champalimaud Foundation, Eagle Science and Technische Universität München in Germany. Tekever develops technologies for the enterprise, aerospace, defense and security markets. The effort involves a person's mental activity, detected through a cap, to pilot an unmanned vehicle. The person's cap monitors brain activity. Specifically, for this presentation in Lisbon, team members used EEG systems to measure brain waves noninvasively, and used algorithms to convert brain signals into [drone](#) commands. The electricity flowing through the pilot's brain acted as [input](#) to the drone's control system.

The demo signifies something bigger than mind-controlled drones. The technology could eventually be used in commercial flights. One might think the team is suggesting the new approach would mean there was no need for human pilots. That, however, is not part of the vision. The vision is not to replace them but to support them. It could be more a matter of de-risking missions rather than deposing human pilots. "If BCI [brain-computer interface] is adopted in the future as a method of control for aircraft (both manned and remotely piloted)," said the Tekever team, "then the project will potentially benefit the entire pilot community (from ultralight and general aviation to commercial aviation). Through the operant BCI approach, we believe people will be able to pilot aircraft just like they perform everyday activities like walking or running. This will mean that pilots will be able to focus on higher cognitive activities while still being able to operate such a complex system as an aircraft (akin to how professional sportsmen can focus on the tactical aspects of movement without worrying about maintaining proficiency on the basic game skills for example)."

The vision may seem far-fetched but, said BBC's Dave Lee, didn't we once say that about driverless cars? On Wednesday, *Engadget's* Jon Fingas said you probably won't be using Brainflight to fly anything larger

than a small drone in the near future. Tekever is hopeful, though, that its technology will [change](#) how we approach transportation. The underlying technology, he added, would also let people with injuries and physical handicaps steer vehicles.

If and when the technology is ready, will people be ready to accept its capabilities? Questions would fall into the what-if category. What if someone were drowsy while wearing the cap and fell asleep? What if the person had a seizure? The BBC report quoted Ricardo Mendes, Tekever's chief operating officer. Mendes said the technology would incorporate safety measures to counteract the effects of someone having, for example, a seizure while piloting. He told the BBC that "There are algorithms on board that prevent bad things from happening."

**More information:** [tekevernews.blogspot.com/2015/ ... o-control-drone.html](http://tekevernews.blogspot.com/2015/...o-control-drone.html)

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