



**World premiere in Brain to Brain communication:  
French company Axilum Robotics ensures the success of the experiment thanks to  
its new robot for Transcranial Magnetic Stimulation**

September 9th 2014, Strasbourg –Axilum Robotics, specialized in the development of medical robots, reports the publication in [PLOS ONE](#) of the first human Brain to Brain communication experiment, using non-invasive techniques and without contribution of the peripheral nervous system, whose success was ensured thanks to its new robot for Transcranial Magnetic Stimulation (TMS).

The experiment has been possible thanks to a collaboration with the Berenson Allen Center for Non-invasive Brain Stimulation at Beth Israel Medical Center, the Harvard Medical School, the University of Barcelona and the Spanish company Starlab.

Binary coded words have been transmitted via internet from an emitter's brain located in India and equipped with an EEG cap allowing the real-time analysis of signals from cerebral activity, into a receptor's brain located in Strasbourg, who was stimulated by a robotized Transcranial Magnetic Stimulation system, triggering or not phosphenes (flashes of light), for de-coding the message.

This experiment demonstrated the feasibility of brain to brain communication. It opens the door to further research on potential applications, particularly in the medical field.

It has been made possible thanks to the high precision and repeatability allowed by the robot developed by the French company Axilum Robotics.

A worldwide innovation, TMS-Robot has been developed specifically for TMS and includes unique, patented hemispheric arm architecture. It automates the application of this non-invasive brain stimulation technique, currently implemented manually, with a high level of safety and with improved accuracy and repeatability.

TMS is a pretty recent technique. There is a growing range of applications for TMS, from neuroscience research to the treatment of neurological and psychiatric disorders such as drug-resistant major depression.

*"Our team is proud about the choice of our technology for this experiment. The success of this project shows the interest of the robot to optimize the precision of Transcranial Magnetic Stimulation and for the realization of complex stimulation protocols, hard to implement by hand »* explains Michel Berg, CEO of Axilum Robotics.

**About Axilum Robotics**

Axilum Robotics is a spin-off from the ICubeMedical Robotics team and has been founded in 2011.

Based on an ICube proof of concept, the company has developed and commercializes the first robot specifically designed for Transcranial Magnetic Stimulation (TMS).

In a fast-growing market, Axilum Robotics' ambition is to become the global leader in robotic solutions for TMS.

Axilum Robotics is ISO 13485 certified for its Quality Management System since 2013, has received CE mark and Health Canada licence for TMS-Robot in 2013 and benefits from an exclusive patent license agreement (US 8,303,478).

Five centers have already been equipped with Axilum Robotics' TMS-Robot.

[www.axilumrobotics.com](http://www.axilumrobotics.com)

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