



Axilum Robotics announce the installation of a new robotic system for Transcranial Magnetic Stimulation in Miami, USA

Strasbourg, Jan. 25th, 2017 - Axilum Robotics, specializing in the development of medical robots, today announced the installation of a robotized system for image-guided Transcranial Magnetic Stimulation (TMS) at Florida International University in Miami, Florida, USA.

The Center for Advanced Technology and Education (CATE) at FIU, directed by Dr. Malek Adjouadi, PhD is leading a research conducted by Dr. Mercedes Cabrerizo, PhD, Ms. Niovi Rojas and Co-investigator Dr. Sergio Gonzalez-Arias, MD at Baptist Health South Florida Hospital to study the brain connectivity in relation with the seizure focus in the brain by the integration of EEG, EKG, and TMS to have a better understanding of EEG connectivity networks of inter-ictal epileptiform discharge activities with the ultimate goal of treating patients with Epilepsy and to extend these protocols to other neurological disorders.

"This new project seeks to establish an integrated neuroimaging approach augmented with repetitive transcranial magnetic stimulation (rTMS) with the aim of localizing the seizure focus in order to treat the brain area thought to be the source of the seizures. The causality of this neurological disorder is studied in view of our strong and ongoing collaborations and clinical partnerships we have built over the years at leading hospitals and institutions (Baptist Hospital, Miami Children's Hospital, and the FIU-Herbert-Wertheim College of Medicine). Thus, experimental results, as observed empirically, can serve to redefine or re-evaluate our theoretical assumptions. Particularly, epileptic disorders are characterized by a neuronal imbalance between excitatory and inhibitory states of the neuron at the cortical level.

With the robot-assisted and image-guided TMS machine and its compatible EEG/EKG modules housed at our Center, we are now positioned to provide a noninvasive evaluation and modulation to the excitable cortical networks related to epilepsy with an added interest to the therapeutic effects that these magnetic pulses can have on the individual spike patterns and seizure frequency. Also by performing brain mapping research in context with 3D source localization, we can delineate the volumes of lesions of key brain dysfunctions in direct relations to the eloquent cortex. Our strategy to address the problem of intractable epilepsy is neuro-modulation using our TMS system on specific targets in the brain." details Dr Cabrerizo.

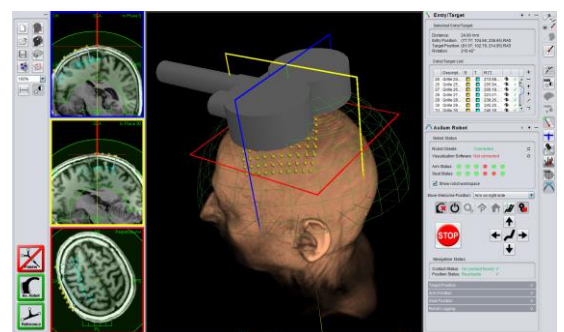
TMS applications are numerous, ranging from neuroscience research to the treatment of neurological or psychiatric diseases resistant to drug treatments, which are the subject of increasing clinical investigations.

Axilum Robotics TMS-Robot is the first and only robot developed specifically for TMS. The hemispherical architecture of its arm is patented. It is intended to safely automate and improve the accuracy and repeatability of this non-invasive and painless brain stimulation technique, which is usually implemented manually.

"Our team is proud about the choice of our technology by this worldwide leading research center in neuroscience" explains Michel Berg, CEO of Axilum Robotics. "We are convinced that this robotized system built with our partners from Localite and MagVenture, will help the team to implement innovative TMS protocols".

About Dr. Cabrerizo

Dr. Mercedes Cabrerizo is an assistant professor with the department of Electrical and Computer Engineering at Florida International University (FIU) in Miami, FL, USA. Her research interests are in signal processing and neuroscience. She was affiliated with the Brain Institute department at Miami Children's Hospital doing signal and image processing of medical data, especially patients with Epilepsy, to help medical doctors assess the location in the brain of such neurological disorder. Also, she is currently collaborating with the Neurology department from Baptist Health South Florida in developing new algorithms in order to localize in 3D, with the highest precision, the damaged area of the brain to be surgically resected. Also, she is leading a project that studies the induced changes in EEG and ECG signals by TMS in patients suffering from Epilepsy, Parkinson, and other neurological disorders.



About Axilum-Robotics

Axilum Robotics was founded in 2011 in Strasbourg, France, by a team of leading experts in medical robotics. The objective of the company is to provide researchers and health care professionals with robotic solutions to improve both technical medical procedures and medical resources management.

TMS-Robot is the first CE marked medical 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 license for TMS-Robot in 2013 and benefits from an exclusive patent license agreement (US 8,303,478 ; Ca 2,655,433 ; EP 2032 066 B1). 13 centers in 7 countries have already been equipped with Axilum Robotics' TMS-Robot.

Axilum Robotics TMS-Robot is not FDA cleared – For investigational use only in the USA.

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