



## Method and Apparatus for Localization of Bioelectrical Sources

Epilepsy is a neurological disorder that involves a sudden surge of electrical activity over a short time duration that produces seizures that range from hardly noticeable to completely disabling. Treatments for epilepsy can be invasive, time consuming and expensive.

Current invasive treatment and diagnostic tools require two high risk procedures, opening the skull and placing electrodes on the exposed brain, in order to gather electrical brain activity data and a second surgery, using that data, to remove abnormal brain tissue.

This innovation utilizes noninvasive measurement, such as EEG or MEG, in conjunction with a FINES algorithm for 3-D localization of neural activity in the brain. The accuracy of source localization for pre-surgical planning for patients suffering from epilepsy can be enhanced with reduced estimation errors.

### Features & Benefits

- Non-invasive mapping of the brain for pre-surgical planning for epilepsy treatment procedures
- Improve patient outcome and reduced risk
- Reduction in number of surgeries, surgical time, hospitalization and resulting expenses
- Elimination of complicated surgical procedures, e.g. skull removal
- Application to other neurological conditions through accurate brain mapping of electrical activity

### Technology Status

Human testing of the bioelectrical source localization algorithm has been performed.

### IP Status

Patent Pending (International Publication Number: PCT/US2004/029725 and US Application Number 20060251303)

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UM Docket Z05027

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