Cortical Dynamics Australian Patent Grant

Cortical Dynamics

July 9, 2010

BPH Corporate (BPH) investee company Cortical Dynamics Limited (Cortical) is pleased to announce that the patent "Method of monitoring brain function" has been sealed as Australian Patent No. 2004206763. Cortical has developed an extensive patent portfolio which is currently going through National Phase filings in Australia, New Zealand, Japan, China, US and Europe.

Cortical is working towards the commercialization of the BAR monitoring system which assists in the measurement and monitoring of patient brain activity during anaesthesia. It is anticipated that this will provide clinicians and researchers with an improved ability to detect and accurately quantify the effects of a wide range of drugs on brain function, in particular the effects of a number of widely used anaesthetic agent's not detectable using current commercially available approaches.

Cortical's vision is to be a leading brain function monitoring company with an excellent reputation for innovation, product development and strong commercial management.

BPH intends listing Cortical on the Australian Securities Exchange later this year.

David Breeze
Chairman

Brain Anaesthesia Response (BAR) Monitoring System Technical Information

The BAR monitoring system utilises a number of innovative developments to the understanding of the physiological aspects of how the rhythmic electrical activity produced by the brain, the electroencephalogram (EEG), can be better used to monitor brain function. The approach used is fundamentally different from all other devices currently available in the market in that its underlying algorithm produces EEG indexes which are directly related to the physiological state of the patient. This is in stark contrast to other systems on the market which produces EEG indexes based on statistical approaches that depend on the trial-and-error identification of anaesthetic induced EEG regularities in patients undergoing a variety of operative procedures. The BAR system also provides much greater sensitivity to anaesthetic drug effect enabling the monitoring of a wider range of anaesthetic agents, some of which are not properly detected by the competing technologies.

The BAR Monitor consists of a forehead electrode sensor, a Data Acquisition Module (DAM), and a graphical user interface (GUI). The end-to-end testing of the functionality of these components was accomplished by recording and analysing the electroencephalogram (EEG) of five healthy participants. EEG recorded using the BAR Monitor was found to be comparable to that recorded using a state of the art research-grade EEG recording system. The resulting measures of brain activity calculated by the DAM were assessed to be, within the limits of uncertainty, identical to those calculated using independently configured benchmark software. Finally, the GUI functioned correctly in terms of allowing the user to control and monitor all aspects of the recordings.

From a clinical monitoring perspective, recent improvements in the ability of the BAR Monitor to detect a wide range of anaesthetic drug effects allow a full suite of testing and calibration trials to occur prior to the monitors full production and distribution. The sensor layout has been modified to increase the level of the brain electrical activity detected and the DAM has been fine tuned to improve the BAR Monitors resilience to signal noise.

These improvements have increased the quality of the collected data. Improving the fidelity of the input signals will further enhance the sensitivity of the BAR Monitors ability to detect anaesthetic drug effects as well as increasing its robustness in dealing with the noisy electrical environment of the operating theatre.

The BAR monitoring system comprises a consumable self-adhesive electrode sensor, a Data Acquisition Module (DAM), and the BAR terminal, as shown below in the Schematic Diagram: