# Regressed Aperiodic Spectral Decomposition (RASD)

ID: 2012-037

**Executive Statement:**

A groundbreaking method for extracting detailed cognitive fingerprints from EEG data, enhancing diagnostic accuracy.

**Technology Overview:**

RASD is an innovative technique designed to dissect and analyze time-series wave data, particularly from EEG, to identify individual cognitive process signatures. By decomposing wave data into aperiodic components, it distinguishes between general experimental effects and unique individual responses, paving the way for precise diagnostics in neuropsychiatry.

**Key Advantages:**

- Enhanced diagnostic precision through individual cognitive fingerprints
- Ability to separate nomothetic and ideographic information for clearer analysis
- Improved statistical significance in experimental results
- Systematic graphical representations aligned with experimental conditions
- Potential for identifying robust biomarkers for neuropsychiatric conditions

**Problems Addressed:**

- Overcomes the limitations of traditional ERP analysis methods like peak-picking
- Addresses the inadequacy of atomistic approaches by capturing holistic wave information
- Solves the issue of non-systematic graphical representations in earlier methods

**Market Applications:**

- Development of precise biomarkers for diagnosing neuropsychiatric conditions
- Enhanced cognitive experiment analysis in research and clinical settings
- Application across a wide range of phenomena, including EKG, geological, and mechanical diagnostics