ABSTRACT: Deep Brain Stimulation (DBS) is an increasingly more common and effective therapy for drug-resistant Parkinson’s disease and essential tremor, and is becoming more widely experimented with for other neurological problems. Transcranial acoustoelectric imaging (tAEI) is a novel modality with the potential to map DBS currents, effectively enabling unprecedented feedback for the rapidly developing DBS technologies. Ideally, the high resolutions of tAEI can be used to increase accuracy of DBS lead placement and provide crucial, unique feedback to ensure optimal stimulation over time. However, complications of focal aberrations and navigation integration are still undergoing optimization before utilization in clinic.