The purpose of this study is to investigate the feasibility of applying openEHR (an archetype-based approach for electronic health records representation) to modeling data stored in EEGBase, a portal for experimental electroencephalography/event-related potential (EEG/ERP) data management. The study evaluates re-usage of existing openEHR archetypes and proposes a set of new archetypes together with the openEHR templates covering the domain. The main goals of the study are to (i) link existing EEGBase data/metadata and openEHR archetype structures and (ii) propose a new openEHR archetype set describing the EEG/ERP domain since this set of archetypes currently does not exist in public repositories.