EEG-BIDS: An extension to the brain imaging data structure for electroencephalography

* With EEG systems gaining traction in the commercial market, manufacturers make their own EEG hardware that store the data in a specific format. Working with data stored in different formats across the EEG databases can be a challenge.
* BIDS (originally developed for MRI) addresses this problem by providing a standard format for data coming out of the EEG and imaging modalities
* It works on the FAIR principle which stands for findability, accessibility, interoperability, and reusability. Findability and reusability are achieved by the metadata and interoperability by using the existing standard formats. Accessibility is achieved by the repositories that build on BIDS.
* BIDS was also developed to meet the needs of the neuroscientific workflows.
* BIDS specification recommends two official data formats namely, European Data File and the Brain Vision Core Data Format.
* The BIDS format is as follows:
  + In the BIDS directory tree, there is a root which contains files describing the data set in general (README, dataset\_description.json), participants(participants.tsv) and other JSON files containing information about the TSV files.
  + Next to the root is the stimuli and source data directory that can be used to store the study data.
  + The most important directory is the subject directory for each participant. Each subject directory further has subdirectories according to the modality.
  + The EEG modality is further split to contain the raw EEG data and the associated metadata in sub-XX\_task-YY\_eeg.<extension>, channel data containing the information about the recording parameters in sub-XX\_task-YY\_channels.tsv, electrode and its placement information in sub-XX\_task-YY\_electrodes.tsv and sub-XX\_task-YY\_coordsystem.json, respectively, and the details of the parameters of the experiment like trial onset, duration etc in the sub-XX\_task-YY\_events.tsv file.