Conventional Motor Imagery (MI)

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Experimental paradigm

52 healthy subjects (24 female and 28 male, mean ± standard deviation: 26±2.5 [range: 24-32 years]) were recruited for our experiments. No subjects reported any neurological disorders. Written informed consent was obtained from all participants before the experiments.

We conducted using the motor imagery (MI) paradigm. The subject concentrated the command displayed on a screen. Each trial started by fixating on a cross in the middle of the screen. After 3 sec, one of three arrows (left, right, and down) randomly appeared on the screen for 4 sec. The subjects imagined movements of the left-hand, the right-hand, and the foot according to the arrows displayed on the screen (left, right, and down) based on the arrow direction (Figure 1). During the next 3 sec, the blank screen was given. We collected 150 trials (50 trials per class) from each subject.

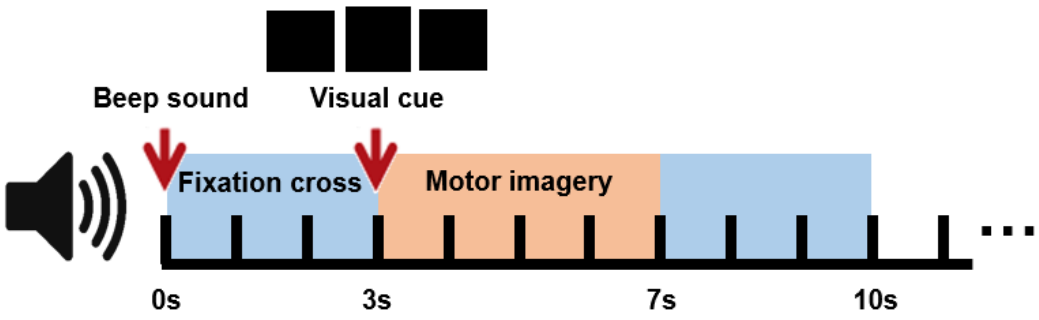

Figure 1. Experimental paradigm

Data recording

EEG signals were acquired via a BrainAmp (Brain Product) device with 70 Ag/AgCl electrodes according to the 10/20 international system (Figure 2) and 6 EMG channels and 1 EOG channel were used to check artifacts. The reference and grounding electrodes were mounted on the nose tip and AFz respectively. The sampling frequency rate was 1000 Hz, and a 60 Hz notch filter was applied to the EEG signal. All impedances were maintained below 10 kΩ.

Data file description

We provide raw data that can be converted to any form. All data sets are basically stored in the General Data Format for biomedical signals, one file per subject. Each subject in the one folder contains three pieces of data. The EEG data is stored in a binary .eeg file. It consists of 77-channels which all “measured” a sinusoid signal including 70-channel EEG, 6-channel EMG, 1-channel EOG. The files

with .vhdr and .vmrk directly belong to the .eeg file specifying additional information. In contrast to the actual data, they are not in a binary format, so you can open them. The vhdr-file contains general additional information and the vmrk file contains name and time point of the markers you see above.