# Experiment procedure

Overview:

1. Passive
   1. Eyes opened
   2. Eyes closed
2. Active
   1. SSVEPs
      1. 6.2 7.7 10 Hz calibration
      2. 27, 33, 35, 37, 43 Hz calibration
      3. 8.5 12 15 Hz calibration
   2. P-300
      1. True sequence calibration
      2. 9-digits PIN input
   3. Motor Imagery
      1. Calibration
      2. Arbitrary sequence

|  |  |  |
| --- | --- | --- |
| **Experiment** | **Duration, sec** | **Data Label** |
| PASSIVE Eyes opened | 180 | EO |
| PASSIVE Eyes closed | 180 | EC |
| SSVEP 6.2 7.7 10 Hz | 15 | SSVEP10 |
| SSVEP 27, 33, 35, 37, 43 Hz | 25 | SSVEP20 |
| SSVEP 8.5 12 15 Hz | 15 | SSVEP25 |
| P300 True sequence calibration | 30 | PIN4CORR3REP |
| P300 9-digits PIN input | 72 | P300SECRETSPELLER9 |
| MI Calibration | 96 | MICAL |
| MI 4-digits PIN input | 96 | MIPIN |

Total time for the records per single day trial: 709s ~ 12 mins

## Procedure

### Introduction

You are required to follow the instructions provided by the experiment interlocutor.

In case of feeling sick, uncomfortable, irritated stop the experiment and immediately report to experiment interlocutor.

### Setup

Check every channels contact.

Make sure patient is comfortably sitting.

### Eyes opened

1. You are asked to sit back, relax and do nothing.
2. No sound or visual isolation is going to be provided.
3. You are supposed to keep your eyes opened for the given amount of time without any major distractions.
4. No feedback is going to be provided under this session.

### Eyes closed

1. You are asked to sit back, relax and do nothing.
2. No sound or visual isolation is going to be provided.
3. You are supposed to keep your eyes closed for the given amount of time without any major distractions.
4. No feedback is going to be provided under this session.

### SSVEPs

1. 3 different screens are presented one by one with 3, 5 and 3 flickering circles respectively.
2. You are asked to stare at the screen and pay attention to the circle with green outer ring.
3. In case of feeling unwell immediately stop and report to the interlocutor.

### P-300 True sequence calibration

1. You are asked to stare at the screen.
2. 9-digits PIN input board is presented on the screen.
3. You are supposed to look at the corresponding digit of the sequence after each flash.
4. Digits of sequence are flashing for 0.1 second each.
5. Experiment is repeated 3 times.

### P-300 9-digits PIN input

1. You are asked to stare at the screen.
2. 9-digits PIN input board is presented on the screen.
3. You are supposed to look at the corresponding digit of the sequence at each round
4. Each digit is flashing for 0.1 second in ascending order.
5. The process is repeated 4times (corresponding to the total input sequence length).

### Motor Imagery Calibration

1. Fixation cross appears on the screen for 2 seconds.
2. Arrow representing the current MI task is shown on the screen for 1.25 seconds.
3. Until 6 seconds of the current trial fixation cross will stay on the screen and you are supposed to perform certain MI task.
4. A short break of 2 seconds is followed after each trial.

### Motor Imagery arbitrary sequence

1. Fixation cross appears on the screen for 2 seconds.
2. Arrow representing the current MI task is shown on the screen for 1.25 seconds.
3. Until 6 seconds of the current trial fixation cross will stay on the screen and you are supposed to perform certain MI task.
4. A short break of 2 seconds is followed after each trial.