

## EEG Data

The EEG data has been recorded using the BioSemi acquisition system (<http://www.biosemi.com>), which is a portable system with 32 electrodes covering the whole scalp. The electrodes are integrated in a head-cap that greatly facilitates the operation of the system, as shown in Fig. ???. The data has been acquired from one healthy person without any experience with Brain Computer Interface systems.

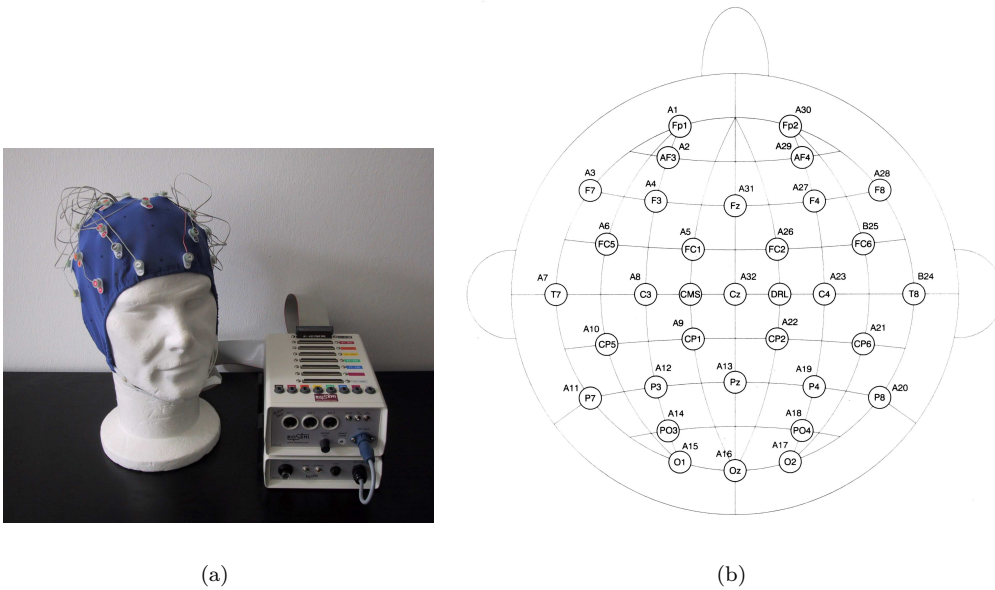


Figure 1: (a): Portable 32-channel BioSemi acquisition system. (b): Placement of the 32 electrodes over the scalp.

## Protocol

The data has been collected using the following protocol: the person had to concentrate repetitively on a mental task for a given amount of time and to switch directly from a task to another, without passing through a resting state. The data was recorded during three consecutive days. Each day, the person performed 5 recording sessions lasting 4 minutes, with an interval of around 5 minutes in-between. During each recording session the person had to concentrate on three different mental tasks: imagination of repetitive self-paced left and right hand movements and mental generation of words starting with a given letter. The person had to change every around 20 seconds between one mental task and another under the instruction of an operator.