Information Sheet

Smart EEG Electrodes

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**What is the purpose of the study**? The aim of this project is to compare and contrast the Electroencephologram (EEG) signals obtained from commercially available electrodes versus novel dual layer electrodes. The signals from each type of electrode will be analysed and a comparison will be made in terms of the quality of signal obtained from the respective electrodes, namely – the signal to noise ratio (SNR). The goal is to demonstrate that the dual layer electrode provides cleaner signals (higher SNR) than that of the commercial electrode.

**Why have I been chosen?** You have been selected as a possible participant in this investigation because you are healthy and belong to the appropriate age group for the study (older than 18 years). A minimum of 15 volunteers are being sought.

**Do I have to take part?** It is up to you to decide whether or not to take part. If you decide to take part, you will be given this information sheet to keep and will be asked to sign a consent form. If you decide to take part, you are free to withdraw at any time and without giving a reason.

At the end of the experiment and in the weeks after you’ll have the option to ask any questions/give feedback on the experiment.

**What will happen to me if I take part?** A head strap will be worn, and electrodes will be attached, this procedure is non-invasive. One electrode will be situated within the strap, another electrode will be situated behind the ear, and a third situated on the cheek.

You will be asked to do 10, 120 second EEG recordings, the first recording will be with your eyes open, the second - eyes closed, the third – you will be asked to stare at a moving pattern. The fourth reading – you will be asked to stare at a moving pattern but this time, random disturbances in the pattern will occur, the fifth – you will be allowed to observe your brain signals and you will be asked to alter this signal by thinking about particular activities. These 5 recordings will then be repeated with a different electrode set up.

While you are performing the activity, if you consent, you will be videoed to add additional context to the data. Due to the nature of this experiment this video cannot be anonymised. Any data from you experiment, including the videos, will be made available on an open access database.

The experiment will take approximately 30 minutes.

**The experiment is not suitable for those diagnosed with Epileptic symptoms.**

The experiment is non-invasive and of minimal risk.

**Will my taking part in this study be kept confidential?** The EEG files will be given non-identifiable numbers and if you opt in to the video recording it will be saved under this number also. Due to the nature of this experiment **this video cannot be anonymised**. Any forms provided by yourself will be kept in a locked filing cabinet for 10 years, then destroyed.

**What will happen to my data?** Your anonymised data and video will be published on the universities’ Open Access Database, available for staff and students to access. This data will be used for testing and evaluating algorithms by other researchers. The data will be available for 10 years, when it will be deleted. Your data will also be used in the report for this project.

If you wish for your video to be removed at any time after the experiment, you can email the researcher at Bernd.Porr@glasgow.ac.uk.

**Who is funding the research?** The study is financially supported by Glasgow University’s internal funding for MEng projects.