Objective
With the growing number of people with severe disabilities who live longer and the growing use of computers for social interactions, we introduce an ambitious objective of The Multimedia Authoring and Management using your Eyes and Mind (MAMEM) project, i.e., a more natural human computer interfaces based on electroencephalography (EEG)/Eye movements (EMs) technologies.

Hypothesis
A platform for computer use based on EEG and Ems reading technologies will enable better multimedia authoring and management for disabled people. This may help to reduce the Marginalizing of such individuals and enable them to keep up with the rest of the society in a digitized world.

Methods
• First, the device's clinical requirements are to be defined using literature reviews, focus groups and questionnaires that will be passed to the potential users.
• Later, the technological partners will create a prototype according to these clinical requirements.
• Next, clinical trials will be conducted with the patients to assess the feasibility and usability of the system. During the clinical trials stage, three cohorts of individuals with disability (Parkinson disease, neuromuscular conditions and tetraplegia following spinal cord injury) from two countries will be enrolled. The participants will test a set of prototype applications dealing with multimedia authoring and management.
• In an interim stage, the device will be modified in light of these trials and then a next set of trials will be preformed.

Results
The results of the project so far have been a list of clinical requirements which the platform should fulfill, based on literature surveys, focus groups and questionnaires passed to the potential users. The methods used to assess the requirements also produced several conclusions:
• Computer is commonly used among disabled people and it is important to them in several aspects.
• Disabled people experience some difficulties in computer operation.
• It seems there is a general positive attitude among the potential users and their caregivers towards an EEG/Ems based assistive device.
• The clinical requirements were passed to the technological partners who will later produce a prototype that will be tested in the clinical trials stage.

Conclusions
A platform based on EEG and Ems reading for computer use could offer a solution for Marginalized individuals such as disabled people. The current results in the project so far support this hypothesis. The next stages of the project include creating a prototype and testing it in clinical trials with the potential users.

References

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