GLASSWARE FOR AMYOTROPHIC LATERAL SCLEROSIS (ALS)

DESCRIPTION OF THE TECHNOLOGY

The Medical Research Institute Hospital La Fe and the Polytechnic University of Valencia have developed a new communication platform optimized for Google Glass ® and specialized in Amyotrophic Lateral Sclerosis (ALS). The use of the new platform will have a positive impact on quality of life and empowering people with moderate to severe disabilities, improving their communication skills, facilitating their interaction with the Health System and improving the remote control of existing appliances. To accomplish this goal, researchers have designed and developed a platform composed by a Google Glass device and a mobile terminal (iOS or Android).

The platform primarily aims to ease communication, allowing remote use of other electronic devices and facilitating virtual health consultations in order to monitor patient's health status avoiding home visits. The platform is a customizable technology so that it can be adapted to each person's disability and to the different stages of the same individual condition.

The platform software, using Google Glass®, can connect to other intelligent electronic devices such as speech synthesizers, health weareables and/or home appliances. The software also allows instant messaging on iOS and Android to establish two-way communication with Google Glass®.

MARKET APPLICATION SECTORS

With this platform and software any electronic device can be controlled virtually so that the number of applications is unlimited, being of special interest to:

1. Companies of alternative communication.
2. Companies of home automation.
3. Companies with health applied technologies.

TECHNICAL ADVANTAGES AND BUSINESS BENEFITS

- **Usable for a large number of people**: adaptable to people with moderate to severe disability, regardless of the type and cause (stroke, spinal cord injury, neurodegenerative diseases ...).

- **Adaptable to patient condition changes:** the software can be adapted to disability in cases of progressive conditions such as ALS.

- Great usability: Unlike conventional devices, the device is practical and wearable, thereby increasing patient's independence.

- Improvement of patient health monitoring: The software allows patients to manage and send their own health data, collected by other wearables or through Google Glass ®, to their hospital or health center, making continuous virtual patient monitoring possible, consequently avoiding home visits.

- **Easy access to the application:** as a downloadable software, it would be easily available to any Smartphone or Tablet in the world, only requiring a change in the language selection menu.

- **Scalable:** the platform can be used not only for ALS but in a broad spectra of areas and users.

CURRENT STATE OF DEVELOPMENT

A prototype of the platform was tested successfully. The prototype, focused on the communication applications, allowed the patient to send messages and images selected from an option menu to a family member Smartphone. This option menu, designed with the collaboration of an ALS patient with severe disability, includes a number of basic communication functions relating to mood, needs or desires of the patient and questions about his/her health and physical condition.

The preliminary prototype platform allows control by the movements of your eyes (blinking).

Pending developments:

This preliminary experience confirms the usability of the software, now the objective is the development of the technology in order to make the adjustments necessary for each user such as the way they interact with the application and the development necessary to enhance the control of remote appliances and access to medical care.

Further development will incorporate head movement and manual control already available for Google Glass ®.

Researchers will finalize the development for the connection to home automation hardware, so devices that already exist for patients with severe disability (voice synthesizers, control electronic apparatus via tablets or computers, etc ...) can be also easily controlled from a Google Glass ®.

INTELLECTUAL PROPERTY RIGHTS

Software developed by the Medical Research Institute Hospital La Fe and the Polytechnic University of Valencia

COLABORATION SOUGHT

We are interested in finding companies interested in signing cooperation agreements for the development of the application.

RELATED IMAGES

Image 1: Google Glass ®

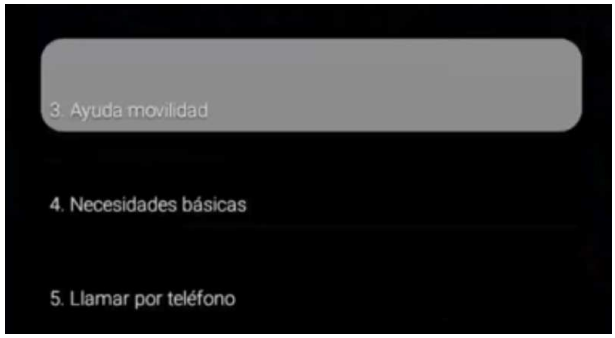

Image 2: Interface with the options menu in the designed prototype

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