



A wireless Augmentative and Alternative Communication System

This new system is an **Augmentative and Alternative Communication system (AAC)** that allows people with language disabilities to communicate through icons without the intervention of external support. The design is formed by two low-cost separated blocks (selection of the symbols and voice reproduction) with a wireless communication, so it facilitates its scalability, to adapt it to user's vocabulary, and mechanical and intellectual skills. Partners to further develop the system and/or to establish commercial agreements along with technical cooperation are sought.

The Challenge

Worldwide, approximately 1.3 % of the population has declared a limitation in the communication process, with a wide range of ages and skills. So it requires greater flexibility in the design of AAC systems, having to adapt to potential users with very different characteristics like age (elderly and children), intellectual ability (advanced vocabulary or limited) or ability to control new technologies. Currently people use AAC systems based on pictographs using basically two systems: *communication boards* (this is a low cost solution, which allows communication without words, but it needs to know the pictographic system and the meaning of each of the symbols) and *electronic communicators* (it used specific platforms or software running on standard digital platforms such computer, tablet or Smartphone, creating products fragile and high costs). This new AAC system combines advantages of actual systems in a unique simple and low cost, that improve as much as possible the quality of life of users, so it is versatile and easily adaptable to the intellectual level of the user.

The Technology

The new AAC system consists of two blocks linked by a low-power wireless communication protocol. The first block is the *blade holder* which is formed by communication sheets ($n < 256$), where can insert the communication symbols printed, for the user, on paper (it is possible to configure each sheet with a variable number of symbols: from 4 to 60). It is a flexible, low cost and low consumption block so it is not needed to change the battery during its lifetime (> 2 years with a use of 2000 selections/day). The second one is the symbol record/player block that has a reduced dimensions so making it very easy to carry and can be transported on a belt or on the wheelchair. As the symbol information and voice recordings are digital, it is very easy to connect this unit to other digital communication systems such as smartphones or internet.

Innovative advantages

- Flexible design that can adapt to users with different characteristics and mechanical and intellectual skills.
- Require minimal external support for configuration.
- Possibility to work with 256 communication sheets robust to shocks and drops.
- The audio record/player can easily be connected/replaced by some other communication interfaces: phone, mobile, digital communication via skype or similar,...
- Allows communication between doctor and patient (disabled person or foreign) with specific vocabulary.

Current stage of development

Prototype available ready for testing on users.

Applications and Target Market

The technology could be of interest for companies devoted to manufacturing equipment for:

- People with language disabilities, special schools.
- Health care, community health centres

Reference number

MKT2012/0118_H

New AAC system, economic, simple and scalable interface for the selection of symbols and vocabulary



The blade holder is flexible, low cost and low consumption. It is possible to work simultaneously with 256 communication sheets



The symbol record/player controls and configures the wireless sheets and reproduces digital messages

Business Opportunity

Technology available for licensing with technical cooperation

Patent Status

Priority application

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