



### TYPE OF RESULT

- [ New technology ]**
- New product
- New service
- New knowledge or skill



### COMMERCIAL MATURITY LEVEL

- Conceptual idea
- Proof of concept (design)
- Validated in a controlled environment
- [ Validated in a real environment ]**
- Successfully implanted



### PROTECTION LEVEL

- [ Non- applicable ]**
- Patent
- Software
- Know - how
- Utility model

### Description of the solution. Problem solved

According to the World Health Organization, around 360 million people are suffering from hearing disability, which is approximately 5% of the world's population. Among those affected by this condition, 32 million are children. Deaf people have to face significant communication barriers that, together to the lack of sign language interpreters and other means, make harder for them to carry out their daily activities independently.

The DaVoz device is intended to contribute to deaf people's autonomy and their social and working life, improving their life quality. This device is able to interpret sign language and translate it into synthesised voice thanks to a system using a volumetric sensor and artificial intelligence.



This way, the device allows to transform the gestures of the sign language into a temporary data series (a succession of measured data in specific moments and chronologically listed), by identifying the hands movement and the use of the artificial intelligence that is able to automatically interpret the signal received and convert it into synthesised voice.

Also, during the conversion process, different signals parameters are genera-

ted and supervised automatic classification systems are used. This means that system learns the meaning of the gestures and, subsequently, it learns to synthesise gestures into voice, which allows to interpret any sign language, even any invented language. Therefore, by capturing new data and generating new models, synthesised voice can be translated and reproduced in any language.

This solution may help people suffering from hearing disabilities to be less dependent on interpreters, contributing to their autonomy and making easier their integration in social and working life.

Besides, the sensor could be used in electronic/intelligent devices which is useful to browse the internet, to go through images or to zoom images only by the hand's indications.

### Fields of commercial application

Overall, this solution can be used in a wide range of areas, since its main goal is to break barriers and to improve the life quality of hearing disabled people. In addition to this, intelligent device manufacturers should be interested in this sector since there are high number of the population especially 360 million people suffering from hearing disability all over the world.

### Market opportunity

Globally, millions of people suffer from hearing disabilities, affecting their normal lives due to the existing communication barriers. According to the WHO, this problem is increasing since 1,1000 million of young people around the world, among 12 and 35 years, are in risk of suffering from hearing loss due to the continued exposure to noise.

Only in Spain, more than a million people are affected by deafness and 72% of them are people aged over 65. According to the Spanish Institute of Elderly and Social Services (Imsero), 173,000 people hold a recognised certificate of hearing disability with a degree greater or equal to 33%. Similarly, it is believed that between 70,000 and 100,000 people use sign language in Spain, more than 300,000 in France and around 200,000 in Germany.

### Competitive advantage

- **Novelty.** There is no similar solution on the market.
- **Low cost.** This application has been developed by using low-cost technological components, making this device affordable to everyone.
- **Easy transportation.** This device is lightweight and can be used in any laptop or desktop.
- **Easy to use.** This solution is easy to use, which it becomes more attractive for its potential users.
- **Versatility.** Since it can be adapted to collect new data and create new models, this device can be used in other languages.
- **High reliability.** This invention stands out due to the reliability of the volumetric sensor, which is used to transform the movement of three phalanges, carpal and metacarpal of each finger in temporary three-dimensional series

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