

PRESS RELEASE

An 'eye tracker' device to control elements without contact

- *The Tekniker technology centre designs all the mechanics and electronics for a highly innovative 'eye-tracking' device*
- *The Hiru device, launched in January 2021 by the Basque start-up Irisbond, allows users to select a screen option or a floor when in a lift by means of visual contact*

[Eibar, 13 April 2021] – Is it possible to carry out daily activities to select a screen option, a floor when using a lift or to withdraw cash from an ATM by using eye contact only? Digital progress knows no limits and the way we interact with different devices is rapidly changing. Proof of this offered by 'eye tracker' systems such as Hiru, a multi-platform technological device that has the potential to become a wonderful asset not only for people with reduced mobility suffering from diseases such as ALS, for instance, but for practically everybody because, nowadays, touching a surface that has been in contact with Covid-19, for example, has the potential of becoming a source of infection.

As regards the future, it is believed that this technology will eventually become a major tool to further developments, for instance, in the field of automated autonomous transport.

Available as from January 2021

The device was launched in January 2021 by [Irisbond](#) a Basque start-up company and has received specialised support from the [Tekniker](#) technology centre, a member of the Basque Research and Technology Alliance (BRTA), to develop all the mechanics and electronics for a product that can be connected to other devices such as tablets or PCs via USB ports.

In order to do so, Tekniker, an organisation that has extensive experience with regard to developing electronic products, certification processes and in-house testing procedures, has focused on the device's electronic design (hardware, low-level drivers, base software to develop its own operating system) and its mechanical and aesthetic features.

“In order to launch the first multi-platform ‘eye-tracking’ device in the market we needed the assistance of specialists in luminics, optics and electronics. Thanks to Tekniker, we found a perfect partner to supplement Irisbond’s expertise and jointly develop a very forward-looking project that, for the first time ever, will enable interactions with devices running on any kind of operating system just by establishing eye contact”, explains Eduardo Jauregui, co-founder and CEO of Irisbond.

This electronic device is equipped with a low-consumption microphone, a DDR4 memory, an infrared LED lighting system and a state-of-the-art CMOS sensor that allows the device to acquire and process images sent via USB to a PC or a tablet.

Integration is another key element in terms of design. In this regard, major efforts have been made by Tekniker’s Design, Manufacturing and Assembly department to produce a sturdy, modern, compact and appealing design capable of meeting all the requirements applicable to an electronic device. “It mustn’t be forgotten that one of the potential applications for this particular piece of equipment consists in using it the vicinity of a tablet for control purposes. As we are dealing with a portable device, size is especially critical”, say other engineers at the technology centre.

The end result of the work done to date is a state-of-the-art ‘eye-tracker’ characterised by internal processing capabilities, high resolution and less consumption that is also smaller, cheaper to manufacture and features high-speed image acquisition. Another outstanding and highly competitive advantage is that it is the only device of its kind that can run on all three major platforms currently used by tablets y smartphones: Microsoft (Windows), Apple (iOS) and Android.

A rigorous certification process

A rigorous and successful CE and FCC marking process was carried out to launch and sell the product developed by Tekniker and Irisbond in Europe and the United States. It took less than

a year to develop, test, certify and market a product than can nowadays be sold all over the world.

“Devices to be launched into the market have to meet a number of minimum requirements as established in the pertinent regulations. In the case of electronic devices such as Hiru, the unit must pass electromagnetic compatibility tests (EMC) and prove that certain requirements are met with regard to electrical safety and safety of use”, adds the technology centre.

The experience of the technology centre with regard to electronic products of this kind coupled with its certification processes have played a crucial role. Tekniker, moreover, has its own in-house testing instruments to validate solutions internally.

“At Tekniker, we deploy methodologies from the inception of a device (hardware and software) that meet all standards in terms of accreditation requirements for a product to be launched on an international scale and, if necessary, also apply for CE marking, UL certification, FDA accreditation or GL certification”, say experts from the technology centre.

Thanks to this solution, companies will be able to carry out initiatives associated with devices to be controlled by eye contact. In fact, a number of potential applications have already been addressed in sectors related to the automotive business, neuromarketing, research, smart homes, robotics, health and education.

“Thanks to this project, a pathway has been opened to explore other fields and develop projects that will be far more ambitious”, says Jauregui.

Concerning Tekniker

Tekniker is a technology centre specialised in Advanced Manufacturing, Surface and Product Engineering, and ICTs for manufacturing. Its mission is geared towards fostering growth and wellbeing through R&D&I actions aimed at society and enhancing competitiveness in the business fabric in a sustainable manner. Tekniker is a member of the Basque Research and Technology Alliance (BRTA).

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