Telefónica applies 5G and Artificial Intelligence to healthcare with solutions in ophthalmology and oncology

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Telefónica will present at the Mobile World Congress (MWC) that will be held in Barcelona two innovative healthcare solutions based on 5G connectivity, edge computing and Artificial Intelligence (AI) to determine the need for surgery in people with cataracts and monitor white blood cell levels in cancer patients.

Specifically, “CatEye” consists of a device with 5G connectivity that can determine whether the patient has cataracts to a sufficient degree to advise surgical intervention. To do this, Telefónica has developed, in collaboration with Edgendria Innovación, a specialized optics platform with precision servomotors, applied to a specific camera that, autonomously and without the need for specialized help, takes a photograph of both eyes and sends it via 5G to an Artificial Intelligence that is housed in Telefónica’s edge.

This AI is specialized in searching specific parameters to decide whether the cataract is incipient or requires intervention by an ophthalmologist.

In this solution, Telefónica has worked with the specialized supplier Edgendria Innovación, which has designed and built the device, as well as integrating Artificial Intelligence into it.

The aim of “CatEye” is to help specialist ophthalmologists to delegate certain tasks to their team so that they can intervene at the right time, making better use of their time and expertise resources.

As the device is relatively easy to transport and can be used by a technician, “CatEye” also facilitates access to this type of test for people who have few health resources in their environment.

As for

5G Intelligent Blood Monitoring

, Telefónica adds 5G and edge computing to the PointCheck solution developed by the startup Leuko, which improves the monitoring of critical patients who may suffer severe neutropenia (neutrophils, a type of white blood cell, below the threshold of 500/µl, which usually entails a high risk of infection), as can happen in oncology patients due to the effect of certain drugs or other pathologies.

Leuko's PointCheck is a non-invasive device that allows a video capture of the blood circulation in the capillaries of the patients' ring finger, which is analyzed by a specially trained algorithm to infer whether the patient is currently at risk of severe neutropenia or not.

The integration of the 5G module in the PointCheck device allows the patient to perform this test wherever they are, reliably, securely and with sufficient latency and bandwidth to be able to transmit the video with the metadata captured during the measurement to the algorithm for analysis. In addition, in this pilot Telefónica has deployed this algorithm in its edge computing, maintaining the sovereignty and security of the medical data so that it does not leave Telefónica's network from the time it is captured by the device until it is delivered to the medical staff.

This technological proposal helps patients avoid trips to hospitals where there is a higher risk of infection for immunocompromised people, as well as facilitating routine health checks. This solution also helps the health system to optimize its resources by offering a solution that could be used not only in the home, but also in pharmacies or rural health centers, which would allow access to health resources to a higher percentage of the population.

‘”CatEye’ and

5G Intelligent Blood Monitoring

have been promoted by Telefónica Spain Innovation with the aim of putting technology at the service of patients and healthcare professionals, increasing data transmission capacity, and reducing latency to a minimum.

Protagonists in the Telefónica Agora

Both technological initiatives applied to healthcare will be showcased as part of the presentation

> Technologies for health, from CatEye to 5G Smart Blood Monitoring and Internet of Things

, which will take place in the Telefónica Agora at MWC on Wednesday 5 March, from 11:30am to 12:15pm.

Micaela Martelli, Director of Sector Solutions at Telefónica Spain, highlights:

> Healthcare in Spain faces several challenges due to the fact that we have one of the highest longevity rates in the world, which implies an increase in chronic diseases. Faced with this challenge, technology helps to improve the planning and efficiency of the healthcare system, as well as to optimize the patient experience. With the 5G network, Telefónica enables the development of technological projects focused on solving specific medical situations, such as CatEye and 5G Intelligent Blood Monitoring

For more information: Telefónica at the MWC 2025

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