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IOT explores new applications for its optical technology to personalize smart glasses

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IOT, a Spanish company specializing in ophthalmic lens technologies, is exploring how its expertise in optical personalization and advanced manufacturing can contribute to the development of future generations of smart glasses and augmented reality glasses. One of the main challenges facing these devices is integrating each user's prescription without compromising visual quality or comfort, while also making production at scale viable.

Augmented reality glasses incorporate optical elements that guide digital images to the eye, allowing them to be superimposed on the real world. Integrating each person's vision correction requires both functions to coexist and maintain their quality within a comfortable design. Adding to this challenge is the need to manufacture devices at scale that are adapted to different visual needs without sacrificing personalization.

The scale of visual needs makes this challenge particularly significant. According to information published by the World Health Organization in February 2026, myopia could reach 3.36 billion cases by 2030, while presbyopia could reach 2.1 billion. These projections underscore the importance of incorporating optical personalization into the development of new forms of digital interaction.

"Prescriptions are an essential part of many people's experience with their glasses. Integrating them from the design stage of new devices makes it possible to address visual quality, comfort and digital functions together. That is one of the areas where optical expertise can add the most value," explains José Alonso Fernández, co-founder and CINO of IOT.

IOT combines expertise in personalized lens design, software and advanced manufacturing technologies to provide tools to manufacturers and technology partners. Those capabilities include Light-Form, the light-based 3D technology whose application in progressive lenses has already reached the market. The company is researching its potential to incorporate prescription optical surfaces onto substrates used in augmented reality devices.

This line of research aims to expand the possibilities for integrating prescriptions into augmented reality devices. The challenge is not only to adapt the optics to each user, but also to study how to bring that personalization to scalable production processes. The application of these capabilities to smart glasses is still in the research phase.

The progress comes amid the development of immersive technologies. In April 2026, the European Commission cited a forecast placing the global market for virtual worlds above 800 billion euros in 2030. This ecosystem includes devices with applications in fields such as the optical industry.

"The experience accumulated in lens personalization makes it possible to provide solutions to new technological challenges. From Spain, we can develop specialized expertise and turn it into useful tools for an international industry," Alonso adds.

Process efficiency is also part of this work. The development of Light-Form includes making efficient use of materials and reducing resource consumption as technological objectives, alongside optical precision. These capabilities expand the foundation for researching future applications.

Through these lines of research, IOT connects its track record in ophthalmic optics with the personalization and scalability challenges posed by future generations of devices, strengthening its role as a technology partner to the industry.

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