

# THE NEW GENERATION: ELECTRONIC IOLS

*Restoring vision using a smart, active intraocular lens for cataract surgery*

SAV-IOL (Swiss Advanced Vision) is working towards the world's first active, electronic intraocular lens implant for cataract surgery through the R-TASC Project. This new lens represents a real leap forward in vision restoration: smart, real-time autofocus.

Current IOLs on the market suffer from optical compromises, including a limited visual accommodation range, loss of light, or unwanted visual disturbances. One of the last unexplored terrains in the IOL field is the use of an active lens, which overcomes the optical limitations of traditional passive lenses.

SAV-IOL is striving to meet this challenge with the R-TASC Project by designing an innovative lens that is equipped with an autofocus system able to detect the distance of objects in its visual field. Mimicking the human lens, the autofocus system sends signals that trigger micro-pumps to alter the curvature of the optical membrane through liquid displacement – in real time; in fact, the process occurs at 0.2 seconds, a speed equivalent to the accommodation of a healthy human eye.

The design of an active system clearly requires careful consideration when it comes to the power source – especially in the eye. In the case of R-TASC, the device is powered by solar energy coupled with induction technology, which effectively charges the lens during use, reducing the need for patient interaction.

The lens is sited in front of the iris and, in the case of natural lens removal, is fitted alongside a monofocal lens. SAV-IOL has plans to develop an “app” that allows the lens to be modified remotely after surgery (for calibration, pre-set accommodation modes, and more).

The R-TASC project comes off the back of a short but fast-paced history of innovation. In 2016, SAV-IOL launched its first lens – a premium IOL with a patented extended depth of focus (EDOF) optical technology called “Instant Focus.” In 2017, came Lucidis – an affordable refractive EDOF IOL that was very well received by the market. Following on from this success, Harmonis, a customizable EDOF IOL with an online configurator, was launched in 2018. In September 2019, SAV-IOL released specialized toric versions of Lucidis and Eden IOLs to correct astigmatism, completing its current portfolio of products.

By bringing active lenses to patients in a market that has yet to see progress in this area, SAV-IOL is securing its position as a true pioneer. And, despite being in development, R-TASC is much more than a pipedream; SAV-IOL is currently looking for an investment to raise the capital required to bring this lens to the market – and that will be a major step forward for the whole IOL field.

*For more information, visit [sav-iol.com](http://sav-iol.com).*

