



The research commercialisation office of the University of Oxford, previously called **Isis Innovation**, has been renamed **Oxford University Innovation**

All documents and other materials will be updated accordingly.
In the meantime the remaining content of this Isis Innovation document is still valid.

URLs beginning www.isis-innovation.com/... are automatically redirected to our new domain, www.innovation.ox.ac.uk/...

Phone numbers and email addresses for individual members of staff are unchanged

Email : enquiries@innovation.ox.ac.uk

Navigating Blind – Solutions for increasing mobility for the visually impaired

Assisted Vision are developing non-invasive visual aids for the blind that uniquely use a blind person's residual sight to enable safer mobility and enhanced social engagement based on 3D mapping of the users local environment.

Severe sight loss robs people of their ability to see their loved ones and to walk around with confidence in crowded or dimly lit environments. While blindness is the reality for over 300,000 people in the UK and up to 30 million people worldwide, it is rarely complete and as many as 90% of those considered blind have some remaining sight. We have developed a set of smart glasses to access this remaining sight and restore a great deal of independence and quality of life.



Using a combination of three-dimensional cameras, see-through augmented reality displays and cutting edge computer vision algorithms, we are able to detect and boost the presence of nearby objects in an intuitive and easy to use manner.

The information from the cameras is used to determine how far away parts of the visual scene are. We are then able to selectively enhance the brightness and contours of nearby objects, while disregarding the distracting background. Our unique display system brings out the

key features of objects and some of our participants have commented that they are able to see faces better than they have for decades.

The enhanced image is presented on see-through displays. This allows people to use their remaining vision as normal and importantly does not occlude the eyes from outside, allowing for natural social interactions with nearby people.

We have funding from Google and have partnered with the Royal National Institute of Blind People (RNIB) and are now performing the UK's largest test of augmented vision for the sight impaired with over one hundred people scheduled to take home our smart glasses for extended



periods. This important study will provide us with valuable market data from which we can prepare our product for commercialisation.



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