



QUANTIC

The UK Quantum Technology Hub
in Quantum Enhanced Imaging

THALES



What's inside that building?



The ability to know what is hidden around a corner or behind a wall could provide a crucial advantage in many situations, from collision avoidance to search and rescue for emergency services. QuantIC researchers are working with global industry leader Thales to make this a reality.

QuantIC is working with Thales to develop camera systems which enable one to image around a corner. The early work has demonstrated this capability using both localised arrays of SPADs and more recently utilising a distributed pixel approach to improve performance.

Thales has brought its considerable expertise and track record in the design of imaging systems to the project to develop mathematical and computer based models. It has identified potential for this technology to offer competitive advantage in the defence, security and transportation sectors.

Recent results have shown that the distributed pixel system can track objects in real time with a more than 50m stand off distance.

These types of imaging systems have become possible as a result of significant development in recent years in both detector and source technologies in particular, detectors with single photon sensitivity and timing resolution in tens of picoseconds. This has been coupled with mathematical analysis of the signal and noise to track the image.

Application area	Through building visualisation
Estimated Component Cost	As laboratory demonstrator ~ £30k In volume < £10 k depending on range required
Present Performance Specs	Tracks hidden objects in real-time, more than 50m stand off, more than 3m around corners Position updates every second Low laser power (2 mW) at 780 nm 3 single pixel detectors with small (1") collection optics
Latest Publications	Gariepy, G. et al. Detecting and tracking of moving objects hidden from view. Nat. Photon. 10, 23-26 (2016)

For more information, please contact:

Dr Michael Fletcher
QuantIC Business Development Manager
michael.fletcher@glasgow.ac.uk

Professor Daniele Faccio
Project Technology Lead
D.Faccio@hw.ac.uk

www.quantiac.ac.uk

 @QuantIC_QTHub