QUANTIC

The UK Quantum Technology Hub
in Quantum Enhanced Imaging

LOCKHEED MARTIN

Seeing through scattering media

LOCKHEED MARTIN

QUANTIC

The UK Quantum Technology Hub in Quantum Enhanced Imaging

The ability to see through scattering media, e.g. fog, smoke, dust, and clouds, provides a significant advantage in a number of scenarios.

It is estimated that the loss in pilot visibility associated with the dust cloud created by a helicopter landing in a sandy environment, known as a brownout, costs the U.S. Military around $100 million per year.

It is reported that brownout accidents account for ¾ of all helicopter accidents in Afghanistan and Iraq. Many of these accidents could have been avoided had the pilot's vision not been compromised, or if an effective on-board imaging system had been deployed.

Researchers at QuantIC are developing technologies to see through scattering media using the latest quantum technologies. These cameras can provide accurate and reliable visualisation in these scenarios and have the potential to significantly reduce the number of accidents.

Working with Lockheed Martin and Sikorsky Helicopters, our researchers are benchmarking the performance of a new technology demonstrator developed at QuantIC in real world scenarios to improve performance, robustness and understand how to further develop and optimise our technology to meet industry needs.

Application area	**SPAD array imager**
Estimated Component Cost	As laboratory demonstrator ≈ £20k In volume < £10k
Present Performance Specs	Gated imaging at video frame rates at distances up to 100m 256 by 256 pixels 10ns gate length <10ms latency
Latest Publications	Dutton, N et. al. 320×240 oversampled digital single photon counting image sensor, IEEE Symposium on VLSI Circuits, 2014

UK NATIONAL QUANTUM TECHNOLOGIES PROGRAMME

For more information, please contact:

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

Professor Jonathan Leach
Project Technology Lead
J.Leach@hw.ac.uk

www.quantic.ac.uk
@QuantIC_QTHub