

# New smart key software enhances security for homes and businesses

October 27 2014, by Marie Daniels

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Computer scientists and security specialists have created an innovative electronic smart key system that aims to provide a safer and more flexible security system for homes and businesses.

Funded by the UK's innovation agency, the Technology Strategy Board, eLOQ is a new software [system](#) for the creation and management of electronic keys and [locks](#) which cannot be copied or picked.

Other benefits over a traditional, mechanical lock and key system include; restricting access to specific locks/areas based on date and time; the ability to view an audit trail held in the keys and locks; and the 'blacklisting' of lost or stolen keys without the time and expense of physically replacing locks.

eLOQ was created by Dr John Murray, from the University of Lincoln's School of Computer Science; Nandagopal Raja Lakshminarayanan, the Knowledge Transfer Partnership associate; and Peter Corlett from the company Lincoln Security.

Dr Murray said: "In many companies, key control is an issue and often a compromise with security. If a key is lost, the security level either plummets or a costly replacement exercise is required. eLOQ aims to eliminate the issues of keys being copied or lost, as our keys are electronic, they can be easily administered using the latest computer technology. The main aim of this software was to ensure the system could be audit trailed, which we have achieved."

eLOQ keys can be programmed with bespoke access privileges for each user, detailing what locks they can open and when. A single key can open over 3,000 locks or groups of locks.

An audit record of all events is stored in both the locks and the keys. Each time a key is used at a lock, a record of the lock ID, date, and time is stored in the key, and a record of the [key](#) ID, date, and time is stored in the lock.

The software offers a simple but secure log-in procedure and once logged in the administrator can manage the system easily from one computer.

Peter Corlett, from Lincoln Security, said: "We aim to support traditional locksmiths who wish to embrace the benefits of 21st Century technology solutions. The system is designed to offer not only secure access to your home or business, but a greater degree of flexibility and intelligence not otherwise possible with traditional mechanical locks and keys."

eLOQ offers several software packages ranging from the home to large business sites.

The project was funded through the Knowledge Transfer Partnerships (KTP) programme, a part government-funded scheme to encourage collaboration between businesses and universities in the United Kingdom.

Provided by University of Lincoln

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