

Organisation	Justfone (Galashiels)	Dolaugu (Berkshire)	SingMai Electronics (Ayr)	Cybertronix (Berkshire)	I2C Systems (Nottingham)
Project Title	Public space CCTV deployment innovation	EZCCTV – Cost-effective rapid deployment CCTV system	High resolution CCTV camera design with flexible deployment method	Low power CCTV with novel mechanical mounting options	Agile and self-powered public space CCTV phase 1
Project Description	<p>In order to obtain expert advice on the intricacies of balancing power demand with power available, we have partnered with a battery manufacturer and solar energy specialist who will work with us to refine our overall solution so that we can incorporate a range of power options into our design.</p> <p>We have also partnered with a company who specialise in mechanical lifting and positioning systems for large industry applications including nuclear and industrial automation. Innovative mechanical clamping and supports would be proposed to handle attachment to a range of heights and surfaces.</p> <p>We propose an enclosure which is similar in design to equipment housings used in the offshore subsea industry made from either stainless steel or aluminium which can withstand very rough treatment.</p>	<p>Our completed system is designed to make extensive use of commercial-off-the-shelf components and open-source software libraries to bring down the cost to the end user. In order to bring additional cost efficiencies, we will also sponsor an open-source development team.</p> <p>In this 6 month project we will undertake analysis of software and battery management modules to ensure that the system meets the needs of the customer, the end-user and the general UK CCTV community, and to ensure that any problems are derisked and potential benefits fully explored.</p> <p>As part of this study we will also develop a prototype installation system for testing against the broad requirements, and develop a laboratory/bench prototype of the camera system for performance testing.</p>	<p>We aim to design a camera solution which will be easily deployable by a single person without special equipment and to be transported to the site without special vehicles. The camera will securely self-attach to a height of at least 4.6 metres. It will also be possible for the single operator to remove the camera.</p> <p>The camera will be self-powered, have local, secure storage and will utilise secure programmable devices, allowing 'software' upgrades to future-proof the design. It will also be capable of imaging to starlight conditions without requiring additional lighting, saving power and weight.</p> <p>The camera and deployment method are both custom designs to satisfy as many of the project requirements as possible.</p>	<p>We propose to design a low power camera, using a low power Arm processor (small computer), camera module and wifi module.</p> <p>The camera attachment mechanisms we would develop involve a cam (like a set of cam cleats - from sailing - mounted on a bracket) to lock the equipment in place, such that the weight of the equipment itself acts to tighten the cam cleat and secure the camera and power arrangement in place. A 'super strong' switchable lifting magnet, combined with a main sheet block (a pulley with a cam cleat) could be used for lamp posts or any ferrite metal surfaces.</p> <p>We also have all the software and hardware designs required to view live, record locally on camera or centrally, retrieve/playback recordings and export evidence.</p>	<p>A key part of our study will be investigating how to securely place the camera in a raised location where the use of aerial platforms or specialist operatives is prohibitive.</p> <p>I2C Systems plan to further develop a feasibility study into a market leading CCTV solution "Rapid Deployment Self-Sustained System (RD3S)" which is specifically designed to address the CCTV needs of local councils and SME's across the UK. RD3S will deliver a technologically advanced, modular, self-powered, multi-fixing and cost effective CCTV solution that will be quick and easy to deploy and maintain.</p>
Expertise/Background	Justfone was founded with a vision to combine Telecommunications and Industrial Control to provide Machine to Machine (M2M) solutions. The project team have experience across business communications, the energy sector, design engineering and intellectual assets.	Dolaugu is a micro SME which undertakes research and development activities. It has recent experience in taking a new product to market, and development of a CCTV solution for care homes, Dolaugu's project team has CCTV experience within the armed forces and transport sector, as well as production design.	SingMai develop video and image processing designs that have found their way into Korean mobile phones and the International Space Station. In addition to CCTV and security experience, their project group has experience in the broadcast TV and remote video inspection sectors.	With experience in cybernetics and control engineering, Cybertronix have also been delivering remote network CCTV systems since 2001, alongside CCTV solutions powered by solar and wind since 2006.	I2C offer a range of CCTV and security systems and have clients within the health, local authority and education sectors. The project team has experience in electrical engineering and installation of large-scale access control systems.