UK GOVERNMENT-FUNDED PROJECT DEMONSTRATES FIRST OF ITS KIND 'ON THE MOVE' SAFE TRANSFER OF VEHICLE CONTROL BETWEEN THREE DRIVING MODES

ENCODE demonstrates cyber-secure vehicle operations swapping control from manual driver to autonomous operation and remote teleoperation on the public highway in London and Oxford

> Control of vehicles on public highways in Oxford and London seamlessly and securely passed in three stages between a driver, a self-driving robot and a remote teleoperator
> Proof of Concept central to advancing the application of driverless and teleoperated vehicles for use in logistics networks
> Innovate UK & CCAV's ENCODE project delivers transferable responsibility for vehicle control in a cyber-secure context
> Project partners include StreetDrone, ANGOKA Ltd, Coventry University, Oxfordshire County Council and TRL/SMLL

Oxford, UK, March 29, 2022. In the first live public road demonstration of its kind, an Innovate UK and CCAV-funded project demonstrated technologies to transfer the control of vehicles operating on the public highways in Oxford and London across three states from manual driving to an autonomous self-driving state and finally tele-operated control by a remote driver operating from a control centre.

Watch control being safely transferred between driver, autonomous vehicle systems and a remote teleoperations driver while a vehicle is in motion

The self-driving vehicles and remote teleoperations were managed by StreetDrone, a leading developer of technologies that deliver efficiencies in supply chain logistics in order to illustrate how automation can be progressively introduced into industrial contexts. This 'autonomy + teleoperations' approach enables more complex tasks to be managed by remote teleoperations drivers while autonomous systems can manage vehicle operations in more straightforward contexts.

Project ENCODE is part of StreetDrone's portfolio of trials of technologies focused on delivering efficiencies to the supply chain that includes the automated and teleoperated management of HGV deliveries at Nissan Sunderland (5G CAL).

Central to ENCODE is the safe transfer of control across the multiple driving states by virtue of the cybersecurity of the operating systems. This element of the project was managed by ANGOKA, an IoT security company and StreetDrone partner focused on protecting machine-to-machine connectivity for transport and smart city applications.

Coventry University's Systems Security Group, part of the Centre for Future Transport and Cities (CFTC) led on the threat and risk assessment for the underpinning technology and the live trials on public roads was enabled by Oxfordshire County Council and TRL & the Smart Mobility Living Laboratory with the live vehicle tests taking place in Oxford and the Royal Arsenal in London.

Mike Potts, StreetDrone's CEO said, "*The success of this trial conducted not in a controlled environment but out on the public highway, is blending autonomous technologies with teleoperation to prove an advanced level of technology readiness that can now deliver much-needed efficiencies into the supply chain. Where tasks are too complex for autonomous technologies, teleoperations steps in. This integration provides a 'ready-now' solution and it has been a sight to behold to see it in operation.*"

Dr Giedre Sabaliauskaite, Associate Professor at CFTC said, "*To gain public acceptance and trust for such systems, it is very important security assurance processes are addressed through the design and engineering cycle. The demonstration done through the ENCODE project offers an opportunity for the consortium to establish a rigorous assurance cycle, ultimately for wider sectoral and public acceptance.*"

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Enquiries

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