

News story: Department for Transport to invest record amounts in small businesses

An active retro reflector for unambiguous object localisation Plextek Services Ltd (SME) The development of a tagging system for vehicles which can bounce back a unique radar signal in order to provide exact vehicle recognition. This information can be used to support intelligent and autonomous transport systems. Reducing road congestion and improving road safety. £29,970.00 Smart wind barriers for traffic and bridge protection City, University of London Developing a proof of concept prototype smart wind barrier for bridges which adapts to the existing weather conditions in order to maximise the protection to the vehicles while reducing the force on the underlying structure. Improving safety of bridges and reducing the amount bridges are closed in high-wind conditions. £29,894.00 Advance flat panel antenna for satellite communication On-The-Move: an innovative approach towards the Internet of Things for the rail industry Heriot-Watt University Developing a prototype of a flat panel antenna solution which will enable reliable broadband connectivity for high-speed rail services. Improving customer journeys through improved internet connectivity. £30,000.00 Development of a hydrophobic, freezing temperature sensing, and self-heating road coating system University of Plymouth Developing a proof of concept for a smart coating material which could prevent the formation of ice on roads in wintery conditions. Improving road safety in winter conditions. £30,000.00 Enhancing performance analysis of complex transit systems Ito World (SME) Delivering a prototype visualisation tool for a multi-modal transport system through combining real-time and historic data. This will be used to provide a live, detailed, view of the transport system's performance and provide recommendations for improvement. Enabling transport operators to have live information on the performance of the transport system, enabling better planning. £30,000.00 A compact hydrogen powered range extender Newcastle University Developing and testing a prototype free-piston engine generator, which operates on hydrogen fuel and could be used a range extender for road vehicles. Reducing Carbon Dioxide emission and improving air quality. £29,274.18 Universal Train Access Ramp Cecence Ltd (SME) Developing and laboratory testing a ramp made of lightweight composite materials. This will enable one ramp to be used for all trains and be lighter and easier to use than existing ramps in stations. Improving the accessibility on the transport system. £30,000.00 Range extender hybrid electric motorcycle University of Nottingham The development of a hybrid gas/electric motorcycle which is capable of being used directly as a range extender for an electric aircraft. Facilitating and improving the utilization of electric flight for short journeys. £30,000.00 Integrated platform for booking and allocating recharging slots for electric taxis EV Technology Limited (SME) Developing an electric taxi management system which provides live information and booking of charging stations, which will support the uptake of electric taxis by private hire companies. Supporting the uptake of electric vehicles for taxis, reducing transport emissions and improving air quality. £30,000.00 Vehicle to

grid controller with modular communications V2G EVSE Limited (SME) Developing a prototype for a vehicle to grid electric charging station controller, which will enable optimal charging across multiple vehicles, managing energy demand. This will include modular communications which will provide information to a central system. Improving the charging of electric vehicles. £29,050.00

Agile airspace collaborative decision making Winsland Ltd (SME) Developing a software demonstrator enabling the better use of airspace through effectively managing military airspace. This will enable use of this airspace for civil aviation when not being used for military purposes. Improving the utilisation of airspace and reducing air travel times. £30,000.00

Hyperloop beta HYPED Ltd (SME) The development of a software tool which will model the technical feasibility of Hyperloop and inform the potential economic and social impact of Hyperloop on the transport system. Informing DfT evidence base and monitor development of the technology. £29,952.00

Signly Disruption App Signly Ltd (SME) The development of an application which will enable better access to rail disruption information for deaf and hard of hearing passengers, who cannot hear or might miss station announcements, through providing the travel information directly to their personal device. Improving customer journeys and passenger experience. £28,980.00

Smart charging stations for accurate and reliable electric vehicle battery monitoring University of Liverpool Developing improved monitoring and diagnostic techniques for batteries in order to support the reliability of electric vehicles and optimize charging to maximise battery life. Improving the charging of electric vehicles. £26,337.48

Proof of concept for an innovative dynamic power transfer technology (electric roads) Algret Innovations LTD (SME) Developing a working prototype for a direct contact electric system, enabling the safe charging of vehicles on the road. This could be used as an alternative way of charging vehicles which spend significant idle, such as taxis queuing. Developing alternative ways of charging electric vehicles to support uptake. £30,000.00