CATAPULT
Connected Places

National Highways Hazard Protection on Roads Accelerator

Programme Scope

1. Introduction

Background

The National Highways Hazard Protection on Roads Accelerator is a programme delivered by Connected Places Catapult (The Catapult) that aims to stimulate innovation around the challenge of further helping to protect road users in England from hazards.

England already has some of the safest roads in the world. The number of road deaths is lower in England than in almost every country within Europe, ranking just behind the top performers, Norway Sweden and Iceland, with 25 deaths per million inhabitants in 2022.

Safety is and will always be the number one priority for National Highways. The organisation aims to reduce the number of people killed or seriously injured on England's roads by 50% by 2025 (against the 2005 - 2009 baseline) with a longer-term ambition of achieving a zero-harm network. To achieve this, innovation will be needed to further help protect road users and operators in England from all causes of collisions and harm, including hazards.

This accelerator programme will foster innovation by inviting SMEs to propose innovative solutions to further help protect road users, addressing specific challenge areas. For this accelerator, we see hazards as any circumstance on roads that drivers may not have anticipated and will need to react to.

About the Programme

This programme will be run in two stages. In stage one, up to 10 SMEs will be selected to work with National Highways, Connected Places Catapult and Tier 1 suppliers to design trials that address one of the programme's challenges, over a 3-month period. The SMEs can be awarded £15K - £30K of funding during this phase to cover their costs. Following a down selection, approximately 5 SMEs will be awarded up to £60K in stage two to deliver their trials over a 5-month period.

Alongside the trialling of their solutions, the SMEs will be guided through a bespoke programme tailored to their requirements, including procurement readiness, product development support and business modelling coaching. These activities will be co-designed with each SME to support them in growing their businesses and adapting their propositions to National Highways' requirements.

About this Document

This Programme Scope document will detail the challenges that the accelerator aims to address. These challenges were identified following a collaborative process designed to ensure that the accelerator identifies the most promising innovations that have the potential to be integrated into BAU, leading to impact around managing hazards on our roads.

2. Partners

National Highways

National Highways, formerly the Highways Agency and later Highways England, is a government-owned company which plans, designs, builds, operates and maintains England's motorways and major A roads, known as the strategic road network (SRN). It also sets highways standards used by all four UK administrations, through the Design Manual for Roads and Bridges. National Highways manages and improves the SRN to make journeys safer, smoother and more reliable. Its priorities are safety, customers and delivery.

The Connected Places Catapult

Connected Places Catapult is the UK's innovation accelerator for cities, transport, and place leadership. They provide impartial 'innovation as a service' for public bodies, businesses, and infrastructure providers to catalyse step-change improvements in the way people live, work and travel. They connect businesses and public sector leaders to cutting-edge research to spark innovation and grow new markets and run technology demonstrators and SME accelerators to scale new solutions that drive growth, spread prosperity, and reduce carbon emissions.

3. Challenges

The National Highways Hazard Protection on Roads Accelerator is looking for innovative solutions to address the following 5 challenges. To apply to the Accelerator, your technology, product or service must align to at least one of these challenges and you must be able to demonstrate how your solution will help solve or contribute towards the challenge(s) you identify.

Challenge 1: Gathering data about hazards on roads

This challenge includes all technologies outside of our existing radar solutions which contribute to identifying and gathering data on hazards on roads. The goal is to layer several detection technologies together to increase the overall performance of the system. Example solution areas could include CCTV data analytics, satellite data and in-car data (including GPS, vehicle sensors, driver-reported data etc.).

Challenge 2: Streamlining hazard responses

This challenge aims to streamline and accelerate the best response to a hazard, including automatically notifying drivers, automated responses to and clean-up of hazards, and notification of appropriate professionals (e.g., traffic officers) when needed. The ultimate goal is to develop an end-to-end system optimised to respond quickly and accurately to hazards being addressed through this programme.

Challenge 3: Improving driver notification of hazards

This challenge aims to improve the notification of drivers once a hazard is identified or to ensure that road users are made aware of its presence and how to respond to it (including if they are distracted, for example). Solution areas may include signs and signals, radio notifications, satnav notifications and integration and any other method. The goal is to ensure that both planned and unplanned hazards are easy to understand and safely navigate around for road users.

Challenge 4: Improving testing of hazard detection technology

The goal of this challenge is to quickly, cost effectively and accurately assess the performance of any hazard detection technology. This may take place in a real or simulated environment (e.g. a game engine) and may contribute to assessing the real-world performance of the technology, de-risking rolling out software updates, and making credible performance data available to those who need it. Another area of

focus for this challenge is to generate datasets on hazard detection performance which could later be used for AI/ML applications.

Challenge 5: Influencing drivers to reduce unsafe behaviour

The goal of this challenge is to reduce unsafe behaviour from drivers as much as is feasible by encouraging safe, legal driving. Although the majority of drivers comply with the law and drive safely, there are still some drivers who act unsafely, for example holding and using mobile phones. The goal is to identify and accelerate any innovations which could reduce this or other types of unsafe behaviour.

4. Further Information

If you are still unsure about whether your company and solution would fit the programme scope, please contact Natasha Giroux, the Accelerator Programme Manager, at natasha.giroux@cp.catapult.org.uk.

Please also join our Application Support Webinar on 21 November at 14:00 - 15:30. You can apply to attend this event here.