

November 2025

Smarter Transport Systems - AI in Transport Competition

Application Guidance



This document is to guide you through the application process for the **‘Smarter Transport Systems – AI in Transport’** competition.

Applicants requiring assistance in completing the application should contact the Innovation Funding Team at innovation_funding@cp.catapult.org.uk as early as possible during the open application process to allow for appropriate support and sufficient time for the completion of the application form.

Good luck with your application!

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Competition Overview

The Department for Transport (DfT), in collaboration with Connected Places Catapult (CPC), is launching the ‘**Smarter Transport Systems – AI in Transport**’ competition to accelerate the adoption of Artificial Intelligence (AI) in shaping the future of the UK’s transport system.

This initiative supports the Government’s [Transport Artificial Intelligence Action Plan](#), which aims to harness AI’s potential, while managing potential risks.

Transport is a large and complex system, and its improvement is inevitably a complex challenge. Advances in AI mean that there are exciting new opportunities to further digitalise and integrate existing systems with innovative AI-driven solutions that can drive efficiency, enhance resilience, improve inclusivity, and ensure that the UK transport system is future-ready.

Key Objectives of the Programme:

1. **Encourage Innovation:** Promote the development of AI solutions that address critical transport challenges.
2. **Highlight ROI Potential:** Showcase the financial and operational benefits of AI solutions to attract investor confidence and demonstrate long-term value.
3. **Support Government Goals:** Align AI innovations with the government’s overarching priorities, including sustainability, accessibility, and efficiency.
4. **Identify Barriers:** Explore practical challenges to implementation and provide strategies for overcoming them.

Programme Structure

The ‘Smarter Transport Systems – AI in Transport’ competition seeks innovative use-case proposals of AI applications that demonstrate scalability, practical feasibility, and measurable outcomes, all aimed towards creating a smarter transport system.

The programme has three phases.

Phase 1

- Up to 25 applicants
- Each receives £1,000
- Focus: develop the proposed use case using a given template
- Time commitment: 2 weeks in January 2026

Phase 2

- Up to 10 applicants progress from Phase 1
- No funding
- Focus: prepare a pitch for a Dragon's Den-like event which will take place in early March (exact date tbc); the panel of 'dragons' will consist of topic-matter experts and senior leaders; participants will receive pitch training.
- Time commitment: 2 days a week for a month (February - March)

Phase 3

- Three finalists will progress from Phase 2
- Each receives up to £13,000
- Focus: develop a business case (based on given template) and receive support from business modelling experts; present at the Connected Places Catapult's Summit taking place on 19 March 2026 in London.
- Time commitment: 2 days a week between April - July 2026.

Eligibility

Eligibility criteria is as follows:

- You must be a UK-registered business.
- You must be an SME, defined as an organisation with less than 250 employees. Note: applications from large organisations (including Universities) will not be accepted.
- Your solution must be between Technology Readiness Level (TRL) 2-6.

For reference:

TRL 2 – Concept Formulated

The basic idea is defined. You've identified the technology concept and its potential application.

TRL 3 – Proof of Concept

Initial experiments or modelling show the concept could work. Early validation in a lab setting.

TRL 4 – Lab Validation

The technology is tested in a controlled lab environment with components integrated.

TRL 5 – Relevant Environment Testing

Prototype tested in conditions that resemble the real-world environment (but not full-scale).

TRL 6 – Demonstration in Relevant Environment

A near-final prototype demonstrated in an operationally relevant setting, showing it works outside the lab.

Challenges

Proposals should focus on one of the following 5 challenge areas:

1. Automating Inspection and Predictive Maintenance

How do we leverage AI to enhance the **efficiency, accuracy, and timeliness of transport asset inspections and maintenance**. Solutions should reduce manual effort, enhance safety, and streamline compliance processes such as MOTs and other statutory checks.

Potential examples include, but are not limited to:

- AI-powered video analytics to detect infrastructure degradation (e.g. cracks, rust, wear).
- Sensor fusion and machine learning models to predict component failure in vehicles or signalling systems.
- Natural language processing to automate the review of maintenance logs and inspection reports.
- AI-enabled scheduling tools to optimise technician deployment and reduce downtime.
- Integration with digital maintenance records to flag overdue or missed inspections.

2. Optimising Network Operations

How do we harness AI to **dynamically manage and optimise transport networks** across all modes - road, rail, maritime, freight, aviation, and active travel. Solutions should enable adaptive capacity planning, incident response, and real-time routing to reduce congestion and improve multimodal coordination.

Potential examples include, but are not limited to:

- Reinforcement learning for adaptive traffic signal control.
- AI-driven timetable optimisation for bus or rail networks.
- Predictive analytics for congestion hotspots and rerouting strategies.
- Real-time fleet coordination for shared mobility services.
- AI-based decision support systems for control centres managing disruptions.

3. Enabling Major Transport Infrastructure Project Efficiencies

How do we apply AI to **improve the planning, delivery, and oversight of large-scale transport infrastructure projects**. Solutions should support investment decision-making, risk management, and stakeholder coordination to deliver projects faster, smarter and more cost-effectively.

Potential examples include, but are not limited to:

- AI-assisted design modelling and scenario testing for new infrastructure.
- Generative AI for drafting and reviewing planning documents and contracts.
- Predictive cost and schedule modelling using historical project data.
- AI-enabled stakeholder sentiment analysis from public consultations.
- Integration of AI with Building Information Modelling (BIM) for real-time project tracking.

4. Building Climate Resilience with AI

How do we develop AI to strengthen **resilience and sustainability** into transport systems facing climate change. Solutions should consider forecasting demand shifts, modelling environmental degradation, and supporting long-term adaptation strategies.

Potential examples include, but are not limited to:

- AI models to predict climate-induced wear on roads, bridges, and rail assets.
- Machine learning for flood risk mapping and transport impact assessment.
- AI-enabled strategic planning to support adaptation of whole transport networks.
- Integration of satellite and sensor data to monitor environmental stressors.
- Demand forecasting under climate scenarios to inform modal shift strategies.

5. Creating an Inclusive Transport System

How can AI make transport systems more inclusive for all users, disabled people, older adults, and underserved communities. Solutions should improve physical access, digital engagement, service design to ensure equitable mobility experiences, enabling personalised assistance, barrier identification, and supporting inclusive planning.

Potential examples include, but are not limited to:

- AI-powered wayfinding tools for visually impaired passengers in stations and terminals.
- Natural language interfaces and voice assistants for journey planning.
- Computer vision to detect and report accessibility barriers (e.g. blocked ramps, broken lifts).
- Generative models that simulate diverse user journeys to identify design gaps AI-enabled feedback analysis from diverse user groups to inform inclusive design improvements.

Out of Scope

1. **Digital Twins (DTs), Digital Shadows, and Simulations**
Although exciting, these technologies are covered by separate Department for Transport initiatives.
2. **Drones/Robots**
Any solutions that involve drones or robots will not be considered.

Equality, Diversity, and Inclusion (EDI)

Promoting equality of access to the competitions and supporting a diverse portfolio of companies is integral to Connected Places Catapult's EDI values. We seek to ensure that the organisations we work with are also committed to demonstrating EDI practices in both current and future projects and in the way they operate. We recommend all applicants demonstrate their commitment to EDI as best as possible in their application.

Following your application, you will need to demonstrate your commitment to upholding equality and diversity practices within your organisation.

Equality, Diversity, and Inclusion defined:

- **Equality:** ensuring that everyone has the same opportunities, and no-one is treated differently or discriminated against because of their personal characteristics. These are nine protected characteristics under the Equality Act 2010.
- **Diversity:** Encompasses the inclusion, engagement, and acknowledgment of the distinct needs of individuals from varied social, economic, cultural, and ethnic backgrounds, as well as different genders, abilities, sexual orientations, religions, and more.
- **Inclusion:** Entails the creation of an environment where individuals or members of groups feel embraced, heard, esteemed, supported, and empowered to achieve their utmost potential, irrespective of their background, identity, or disabilities

How to apply

1. Complete your application form [here](#).
2. You can submit multiple applications; the same solutions cannot be put forward against multiple challenges.
3. Applications will close at 12:00 noon on 21 November 2025. Late submissions will not be considered under any circumstances.
4. If you need any assistance, please contact us as early as possible, so we can support you.
5. Only the information available in your application form will be assessed. No other documentation should be attached to your submission unless this is requested.
6. Keep within the maximum word counts noted in each of the sections of the application form. Any content that exceeds the word count limit will be disregarded.

When answering the application questions please refer to the following:

1. **Be specific:** The responses should be concise and to the point. Stick to the word limit while effectively conveying your proposal's core aspects.
2. **Be clear:** Use clear and straightforward language to convey your ideas. Avoid jargon or overly technical terms.
3. **Align with competition goals:** Illustrate how your innovation aligns with the government's key challenges.
4. **Proofread and refine:** Review your response for clarity, accuracy, and coherence. Ensure that you effectively communicate how your innovation embraces inclusivity for all individuals.

Guidance on Answering Application Questions

You will need to answer 4 questions.

Firstly, you will be asked to pick the one challenge that is most aligned with your solution from the list below.

- Automating Inspection and Predictive Maintenance
- Optimisation of Network Operations
- Enabling Major Transport Infrastructure Project Efficiencies
- AI for Climate Adaptation
- An Inclusive Transport System

Question 1: What is your proposed AI solution? (200 Words) - '*Solution*' scoring criteria

- **Describe Key Features:** Clearly outline the core components of your solution, focusing on how they address the identified challenge.
- **Showcase Innovation:** Demonstrate how your solution stands out whether through technology, process improvements, or user-centric design.
- **Focus on Feasibility:** Provide a high-level view of how your solution can be realistically implemented, ensuring it's practical and impactful.

Question 2: How is your solution innovative? (200 words) '*Solution*' scoring criteria

- **Innovative Elements:** Define the innovative elements of your solution within the context of the challenge it addresses.
- **Field Competitors:** Explain how your solution differs from competitors in this field.

Question 3: Please elaborate how your solution aligns to the competition challenge you have picked above. (200 Words) - '*Challenge alignment*' scoring criteria

- **Clarify the Connection:** Clearly explain which specific elements of the competition challenge your solution addresses and how your solution responds.
- **Demonstrate Relevance:** Show how your solution's objectives, features, and outcomes are designed to tackle the challenge priorities.
- **Substantiate the Fit:** Provide supporting evidence (e.g., research insights, user needs, policy alignment) that demonstrate why your solution fits.

Question 4: How will your solution improve the sustainability, efficiency, accessibility or resilience of transport systems? (200 words) *'Impact' scoring criteria*

- **Quantify Benefits:** Who will benefit? How much will they benefit?
- **Broaden the Perspective:** Explain how your solution contributes to long-term goals for sustainable and inclusive transport
- **Provide Evidence:** Use examples, data, or case studies (where applicable) to support your claims of positive impact.

How your application is assessed

After the deadline, only applications that meet the eligibility criteria and scope of the competition will be formally assessed. Connected Places Catapult reserves the right to declare applications as unsuccessful and out of scope.

Applications will be assessed against the scoring criteria, detailed below.

Notification of Assessment Outcome

You will find out in December 2025 whether you've been successful for Phase One.

Kindly note that we will be unable to provide feedback if you are not successful for Phase One due to the expected large volume of applications.

Successful Applications

If you are successful to join the programme, you will be asked to sign and return all grant funding documentation promptly. Failure to do so will result in a possible withdrawal of the participation offer.

Scoring Criteria

The applications will be marked on their responses against the following three criteria:

Criteria	Weight
Solution <i>(2 questions)</i>	40%
Challenge alignment <i>(1 question)</i>	30%
Impact <i>(1 question)</i>	30%

1. Solution (Weight: 40%)

- Present a clear, innovative solution that directly addresses the challenge.
- Demonstrate practicality and feasibility, supported by evidence.
- Show originality and clarity in approach.
- Articulate how your solution differs from competitors and its potential for scalability.

2. Challenge (Weight: 30%)

- Clearly define the transport challenge your solution tackles.
- Provide evidence of its importance and relevance.
- Explain why solving this challenge is critical for the UK transport sector.
- Ensure alignment with DfT/government priorities (sustainability, efficiency, accessibility, resilience).

3. Impact (Weight: 30%)

- Clearly identify beneficiaries of your solution.
- Present clear metrics or indicators to demonstrate tangible improvements in sustainability, efficiency, accessibility or resilience.
- Demonstrate scalability potential.

Funding

Successful participants will receive grant funding as follows:

- **Phase 1:** Successful programme participants will receive up to £1,000
- **Phase 2:** There is no funding allocated for Phase 2. Successful participants will be responsible to fund their own travel to attend the Dragon's Den event in London (in early March).
- **Phase 3:** Successful programme participants will receive up to £13,000

Funding will be released at the end of each phase, upon receipt and acceptance by Connected Places Catapult of the relevant Phase's outputs.

Phase 1 output: Written use-case which will need to follow this structure:

- **Executive Summary:** A brief overview of the entire business case.
- **Market Problem:** A detailed description of the market problem being addressed.
- **Solution:** A comprehensive outline of the proposed solution.
- **SWOT Analysis:** An analysis of the Strengths, Weaknesses, Opportunities, and Threats.
- **Innovation & Competition Analysis:** An assessment of how your solution is innovative and the competitive landscape.
- **Route to Market:** A detailed plan for bringing the proposed solution to market.
- **Market Impact:** An analysis of the expected impact of the proposed solution on the market.

Phase 3 outputs:

- A comprehensive and persuasive business case inclusive of research, data-gathering and stakeholder mapping (template will be provided)
 - o Success will be measured by the robustness of the business case and the effectiveness of the data discovery process, ensuring participants are ready to take their solutions to the next level.
- Presentation at the Connected Places Catapult's Connected Summit, taking place 18 – 19 March 2026 in London.

Funding Rules

Funding for this competition is provided as **grant funding**, and it is considered outside the scope of VAT.

The funding will be considered a subsidy and awarded under Minimal Financial Assistance (MFA) rules. This means that an organisation is permitted to receive up to £315,000 of state support during the current and previous two fiscal years. Therefore, you must declare any other public aid which your enterprise and any enterprises linked to it may have received during the current and previous two fiscal years. Public aid includes not only grants, but also other assistance such as free or subsidised consultancy provided by a public authority.

Intellectual Property

For intellectual property questions, please refer to the Grant Terms and Conditions that are linked on the application page.

Dates and Deadlines

Please note the dates and deadlines for the competition below. These are indicative timings; we will adhere to this schedule as best as possible. The closing date for applications is **21 November 2025, 12:00 noon**.

Applications submitted after the deadline will not be considered. Extensions will not be granted under any circumstances.

Competition Opens	5 November 2025
Competition Deadline	21 November 2025, 12:00 noon
Application Assessment	December 2025
Phase One	January 2026
Phase Two	February - March 2026
Phase Three	April – July 2026

Contact Details

If you have any questions about the programme, please get in touch with the Innovation Funding Team at Connected Places Catapult:

innovation_funding@cp.catapult.org.uk

We wish you all the best with your application!