



Deploying Connected and Automated Mobility Services

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ACCELERATING
THE SELF-DRIVING
REVOLUTION



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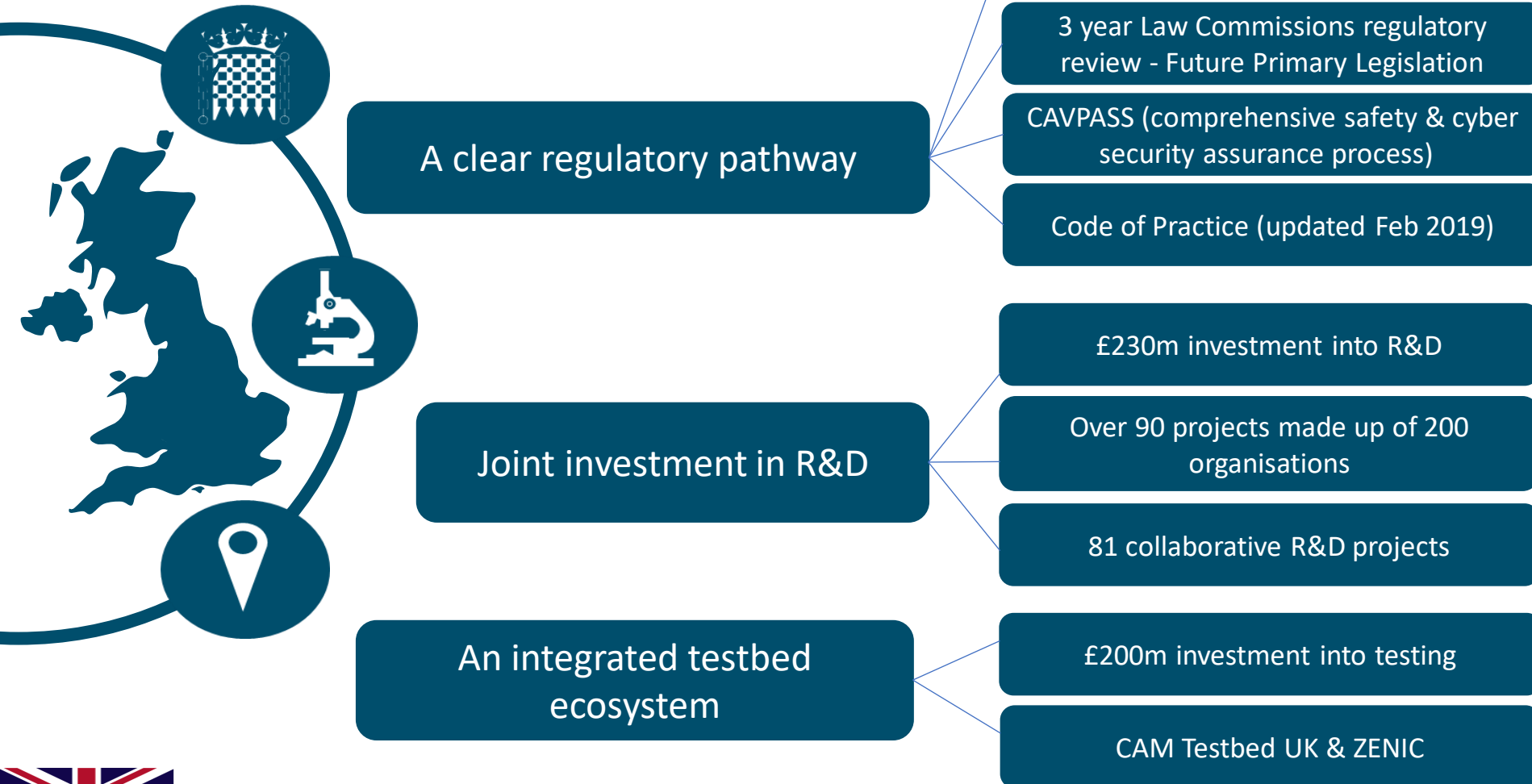
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Government plans to support CAM in the UK

CCAV – Phase One



ZENZIC⁴
SELF-DRIVING REVOLUTION



The next phase of government support in CAM

CCAV is considering launching collaborative R&D competitions, co-funded between Government and industry to progress CAM in the UK.

There is a strong political drive to **build upon the initial phase of CR&D** into CAM and move it into a **phase of early commercialisation**.

The aim of potential interventions would be to target early commercial self-driving service opportunities and support the growth of the UK supply chain to fill technology gaps necessary for safe and secure deployments.

The CCAV ambition to progress CAM technologies, products and services into commercial offerings.

The current thinking is focused on:

- **Strand 1. Commercialising Connected and Automated Mobility: Deployments**
- **Strand 2: Connected & Automated Mobility: Mass Transit**

Future competitions could focus on:

- **Strand 3: Supply chain**

This slide deck covers current thinking on what Strand 1 and Strand 2 could cover.

Strand 1 - Commercialising CAM: Service Deployments

The aim of this competition would be **to target early commercial self-driving vehicle opportunities and also support the growth of the UK supply chain to fill technology gaps necessary for their deployment.**

Projects would need to align with the nine principles of the Future of Mobility Urban Strategy where appropriate.

Projects must develop a new automated passenger or goods service to the point of commercial deployment.

Passenger service - must improve on and integrate into existing transport systems, -enhancing how the public move and encouraging people to active and public journeys, wherever appropriate.

Public roads - If your project uses public roads it must comply with the DfT Code of Practice: Automated Vehicle Trialling, relevant standards for safety and security. You must work with DfT and its agencies to audit your safety and security cases before on-road trials or service deployments begin.

It is intended that the services deployed here could be sustainably operated beyond the life of the project.

Projects could focus on one or more of the following themes:

Commercial connected and automated mobility deployments:

- **Logistics services**
- **Passenger services**

In either Public or Private Spaces

- **Public Vs Private Spaces**
 - Public Spaces: to which the public have **unrestricted** access.
 - Private Spaces: to which the public have **restricted** access

Out of scope projects could:

- be early-stage research into automated driving systems
- include testing or deployments of drone technologies in public spaces
- include aircraft or waterborne craft
- include rail vehicles
- are dependent on export performance
- are dependent on domestic inputs usage

Strand 1 - Commercialising CAM: Service Deployments

Grant funding:

- Project total grant funding request could be between £0.5m and £9.0M.
- The total project grant should not exceed 50%
- Government grant intervention rates would follow existing “Industrial Research” or “Experimental Development”
- Project proposals must be collaborative and involve multiple organisations
- A 3% levy on the grant award is payable to fund Zenzic, who will support projects in their delivery and exploitation as part of Zenzic’s wider CAM ecosystem activities. – NB – this is not matchable AND will need to be self-funded by the consortia.

Project Delivery Constraints

Any UK based organisation or public sector body (specifically Transport and Local Authorities) is able to lead the project consortium.

RTOs and ROs are able to be members of consortia but cannot lead.

Each project must start by 1 March 2023, end by 31st March 2025 and carry out all project work in the UK and intend to exploit the results from or in the UK.

Deployment projects should take a holistic approach:

When considering the deployment of CAM services, the end-to-end service should be assessed and appropriate project partners (funded and un-funded) and subcontractors should be sought to support the delivery of the project.

Critical areas of considerations should be:

- Consumer (user)
- Operator
- Local Authority
- OEM/ASDE (e.g. vehicle or CAM Platform)
- Software e.g AV stack/ADS
- Communications and data infrastructure
- Security
- Hardware requirements, e.g. sensor provider (Radar/Lidar/Vision), IMU/ECU, localisation etc.
- Insurance and legal
- Safety Case
- Engineering or Test services (system integration/Complex systems)
- Tool requirements e.g. simulation
- Regulation/standards e.g. VCA/DfT
- Other research

Strand 2 - Commercialising CAM: Mass Transit - feasibility studies

The aim of this competition would be to:

- **Carry out research to build a business case for using CAM services as a Mass Transit option.**
- **Up to £200k grant funding with projects completing before Nov. 2023**

Projects would need to align with the nine principles of the Future of Mobility Urban Strategy where appropriate.

CCAV is seeking proposals where CAM could deliver a significantly more cost-effective, and low carbon solution than traditional public transport options.

Projects must identify a **new application for CAM as a mass transit solution** on a segregated route and quantify the real-life potential of a suitable solution.

Proposed automated vehicle services must be on physically segregated infrastructure: that are not open to public access – for vehicles, pedestrians, or cyclists, etc. This may include tracks, disused railway routes, etc.

Projects could need to consider the following themes:

- Economic, social, and decarbonisation benefits (considering HMT's Green Book)
- Integration into existing public transport networks – including active travel – with consideration of connected infrastructure, on demand and Mobility as a Service technologies
- Connecting underserved routes, locations, or populations to employment centres, education opportunities and larger population centres
- Ensuring safety and security (including cyber security)
- Ensuring accessibility and inclusivity of the service

Projects could consider the use of CAM:

- On new infrastructure
- On disused infrastructure or infrastructure that otherwise requires costly upgrades (i.e., rail lines)
- In rural, semi-rural or urban environments

Strand 2 - Commercialising CAM: Mass Transit - feasibility studies

Grant funding:

- Project total grant funding request could be between £50k and £200k.
- For feasibility study projects, you could get funding for your eligible project costs of:
 - up to 70% if you are a micro or small organisation
 - up to 60% if you are a medium sized organisation
 - up to 50% if you are a large organisation
- You can get funding for your eligible project costs of up to:
 - 80% of full economic costs (FEC) if you are a Je-S registered institution such as an academic
 - 100% of your project costs if you are an RTO, charity, not-for-profit organisation, public sector organisation or research organisation
- Project proposals must be collaborative and involve multiple organisations
- The 3% Zenzic levy is not applicable for this strand of the competition.

Project Delivery Constraints

To lead a project, organisations would need to be a UK registered business of any size, RO, RTO or public sector organisation and collaborate with 1 other UK registered organisation.

All projects would need to include a local/regional authority or a local or regional transport authority and a CAM technology provider or infrastructure provider

Each project must start by 1 January 2023, end by 30th November 2023 and carry out all project work in the UK and intend to exploit the results from or in the UK.

Approximate Competition Timing

Deployment and Feasibility:

- Launch: May 2022
- Bids in: July 2022
- Award: October 2022
- Project Delivery: Jan 2023-March 2025 / November 2023 for Feasibility Studies

Supply Chain:

- Launch: September 2022
- Bids in: Nov 2022
- Award: February 2023
- Project Delivery: April 2023 – March 2025

Things to consider:

What are the risks and rewards?

- Solution to real world problems
- Sustainable solutions – not demo or trial
- Forward looking technology

What is the role/expectations from an consortia member?

- Collaboration key
- LA provides the context for services/problems
- Local transport know how

What is the business case?

- Public sector body 100% funded

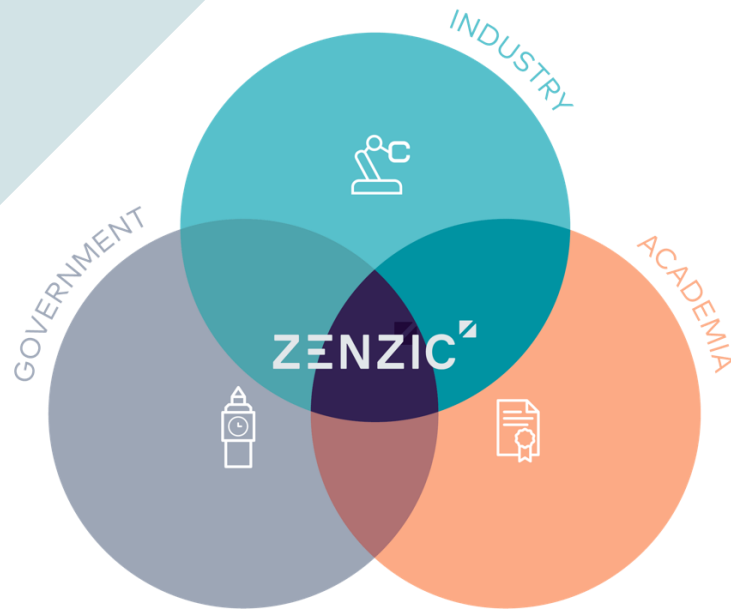
How to get involved?



About Zenzic

**Enabling the UK to
be a world leader in
the development
and deployment of
CAM by 2030.**

Bring together industry, government, and
academia across all relevant sectors to
develop and deploy CAM in the UK.



ZENZIC

Insights

Hold the strategic vision and roadmap for the UK CAM ecosystem, providing informed guidance to government, industry and academia.

Innovation

Channel investment into targeted CR&D into late-stage tech and SME Scale-Up programmes accelerating new technology the CAM market opportunity.

Collaboration

Provide the trusted brand and front door to a collaborative CAM supply chain, promoting and driving inwards investment.

Effective Innovation relies on both Insights and Collaboration.

Interoperable,
complementary
and competitive

BIRMINGHAM

LONDON

A

ASSURED CAV

Urban parking

Limit of controllability

B



Highly connected
real-world and digital
environments

CONVEX

Data
Virtual

C

CAVWAY

Controlled environments
Configurable junctions
Flexible connectivity

D

UTAC

Millbrook – Culham

Secure site
Controlled and semi-controlled

E

**Smart
Mobility
Living Lab
London**

Public and private
London roads
Digital and real-world testing

Zenzic strategic projects



**Interoperable
simulation**



**Safety case
framework**



**Cyber
resilience**



**Consumer
safety rating**



**V&V through
simulation**



**Zenzic CAM
Scale-Up**



**V2X Data
services**



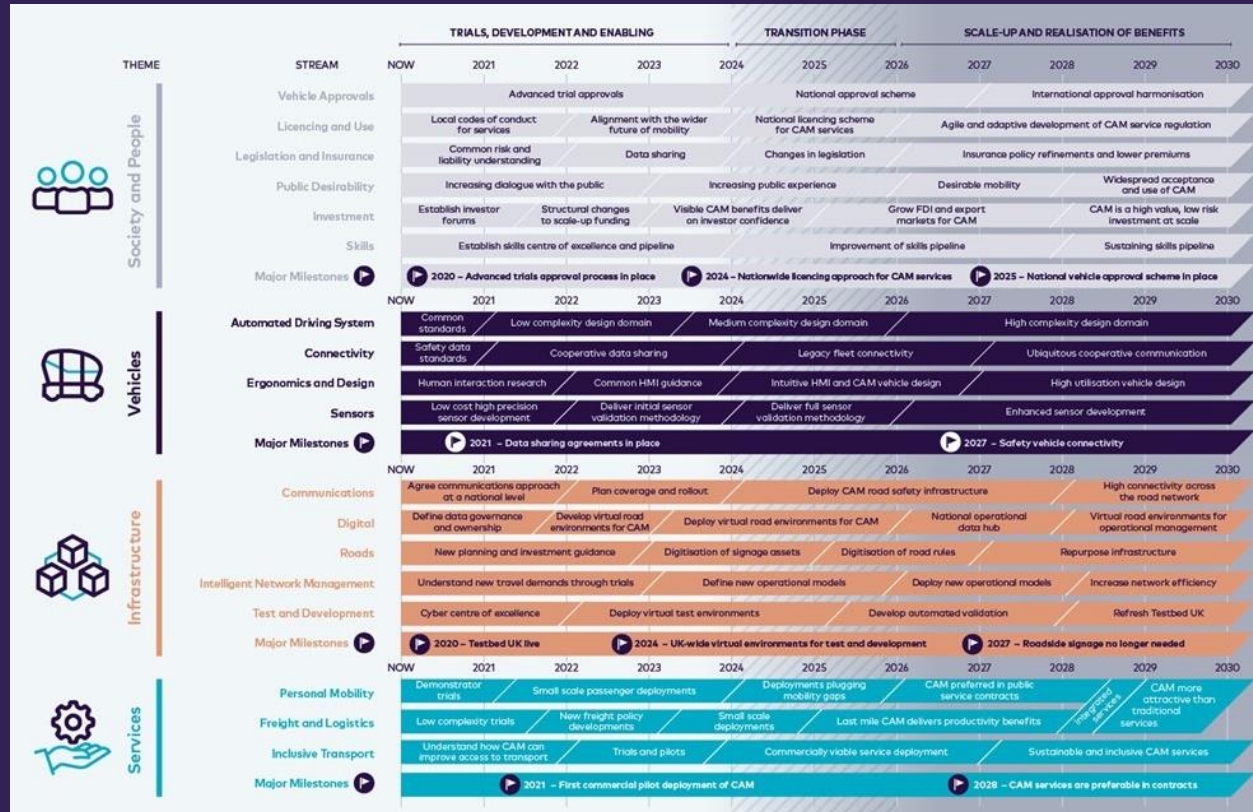
"By 2030, the UK is benefiting from proven connected and automated mobility, with an increasingly safe and secure road network, improved productivity and greater access to transport for all.

Next-generation services and technology and designed and developed in the UK, powered by high-value skills and a strong supply-chain, driven by public demand.

We are a world leader"

UK CAM Roadmap to 2030 – Vision Statement

UK consensus view: CAM Roadmap to 2030



200+ organisations contributed to the roadmap

300+ individuals contributed to the roadmap

Milestones are connected through almost

600 unique relationships

"... the roadmap highlights significant challenges that require cross industry support such as cyber resilience, use of simulation environments, sign-off and type approval, and in-use compliance ... Connected and Automated Mobility is the future and the roadmap provides a direction and a well ordered set of critical enablers"

- Craig Stephens, Director: Controls & Automated Systems R&A, Ford Motor Company





CCAV, Innovate UK, KTN, Zenzic Event

Industry engagement event

Date: Tuesday 24 May
Time: 12.00 – 4.00 (TBC)
Location: National Digital Exploitation Centre (NDEC),
The Regain Building,
Mill Lane,
The Works,
Ebbw Vale,
Wales
NP23 6GR

Agenda could include presentation from CCAV, explanations from Innovate UK on how to apply, elevator pitch sessions from industry and the chance to network.

The event will be available to attend online.



Thank you

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