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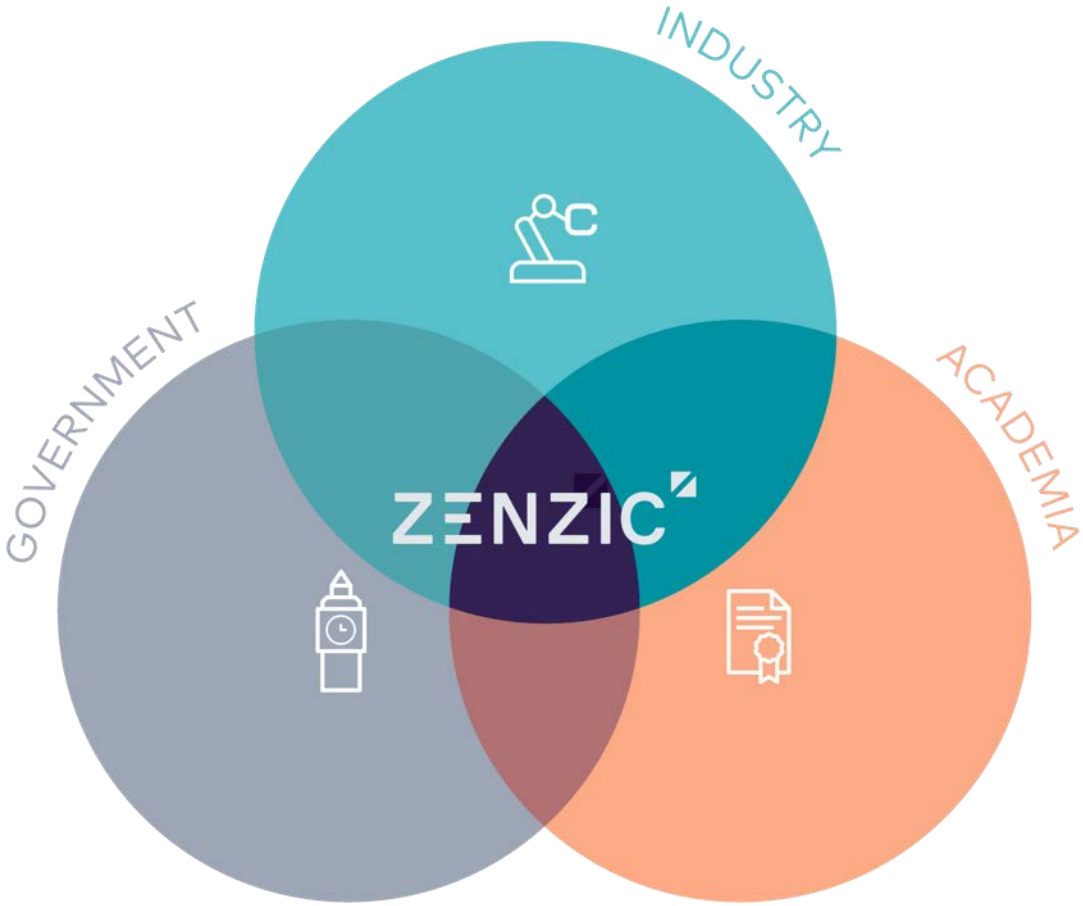
SELF-DRIVING REVOLUTION

UK Connected and Automated Mobility Roadmap to 2030

CAM Creators Update

United Kingdom

Championing the UK connected and automated mobility (CAM) ecosystem



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CAM Testbed UK

- **HORIBA MIRA-Coventry University CAV Testbed**
  Urban parking
  Limit of controllability
  Connected and configurable

- **Midlands Future Mobility**
  Highly connected real-world and digital environments

- **Convex**
  Data
  Virtual

- **CAVWAY**
  Configurable junctions
  Flexible connectivity

- **Millbrook-Culham Urban Testbed**
  Secure site
  Controlled and semi-controlled

- **Smart Mobility Living Lab**
  Public and private
  London roads
  Digital and real-world testing

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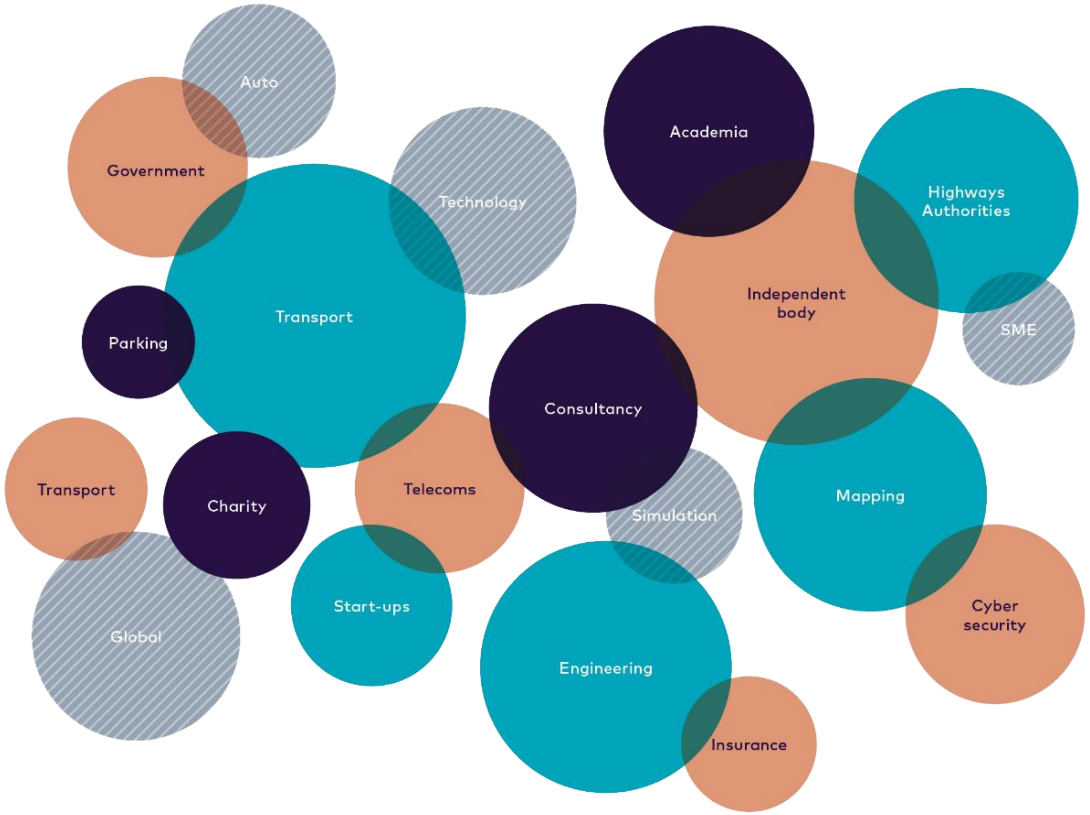
Data Parking Rural Highways Urban Physical Virtual

Coordinating a cross-sector ecosystem towards long-term benefits

Cross-sector ecosystem



Successful at-scale deployment of CAM

- Safety & security
- Productivity
- Economic growth
- Access to transport

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The Roadmap provides direction for businesses, investors and policy makers for the mobile future. It is a tool, created by and intended for multiple sectors, forging new relationships and achieving collaboration across industries.

Collaborative view

Reduction of risk

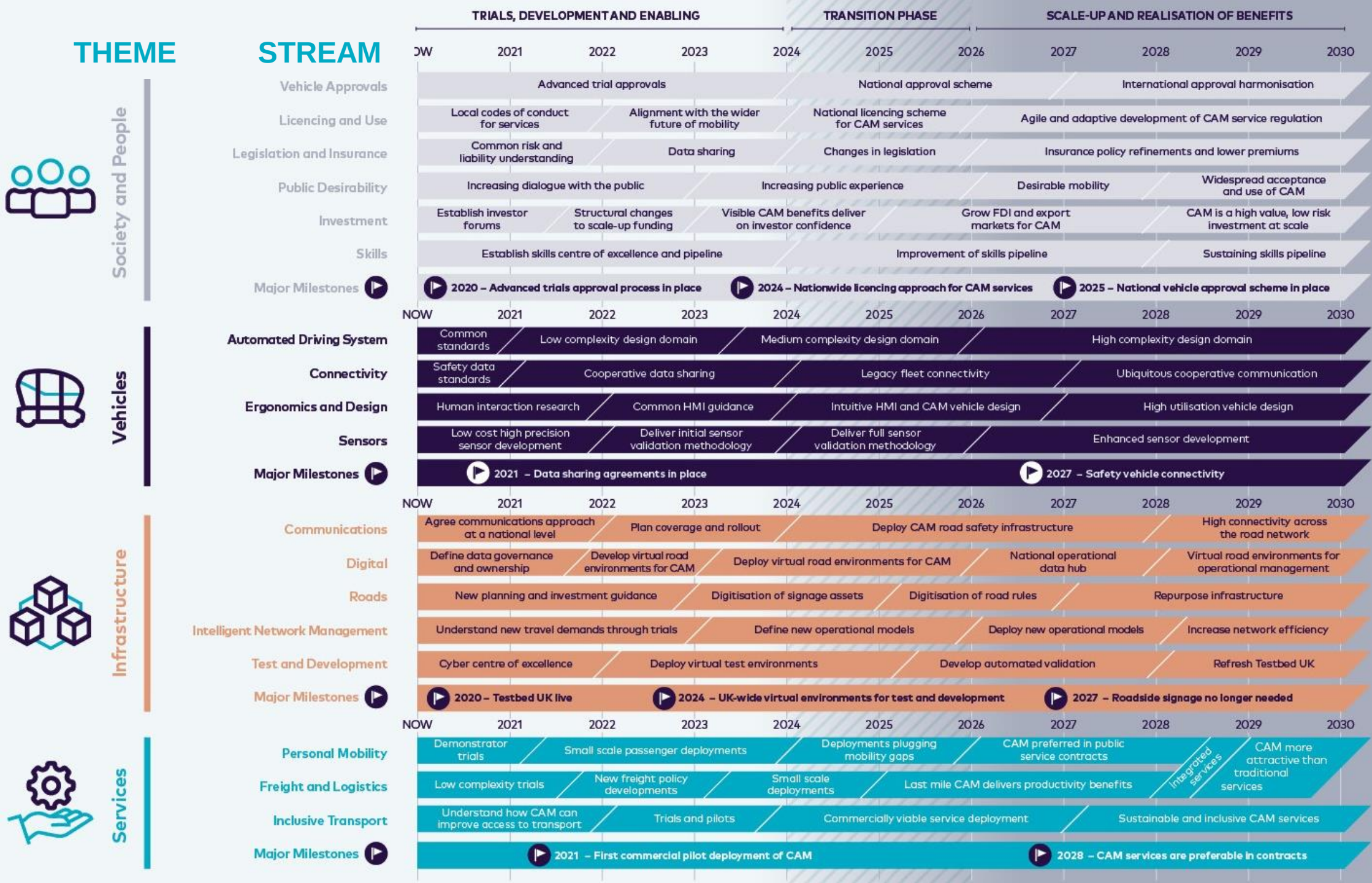
Insights

Shared vision

"By 2030, the UK is benefitting 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 are designed and developed in the UK, powered by high value skills and a strong supply chain, and driven by public demand, we are a world leader."

2030 Vision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SCALE-UP AND REALISATION OF BENEFITS
THEME
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NOW 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030
Society and People
Vehicle Approvals
Advanced trial approvals
National approval scheme
International approval harmonisation
Licencing and Use
Local codes of conduct for services
Alignment with the wider future of mobility
National licencing scheme for CAM services
Agile and adaptive development of CAM service regulation
Legislation and Insurance
Common risk and liability understanding
Data sharing
Changes in legislation
Insurance policy refinements and lower premiums
Public Desirability
Increasing dialogue with the public
Increasing public experience
Desirable mobility
Widespread acceptance and use of CAM
Investment
Establish investor forums
Structural changes to scale-up funding
Visible CAM benefits deliver on investor confidence
Grow FDI and export markets for CAM
CAM is a high value, low risk investment at scale
Skills
Establish skills centre of excellence and pipeline
Improvement of skills pipeline
Sustaining skills pipeline
Major Milestones
2020 – Advanced trials approval process in place
2024 – Nationwide licencing approach for CAM services
2025 – National vehicle approval scheme in place
NOW 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030
Vehicles
Automated Driving System
Common standards
Low complexity design domain
Medium complexity design domain
High complexity design domain
Connectivity
Safety data standards
Cooperative data sharing
Legacy fleet connectivity
Ubiquitous cooperative communication
Ergonomics and Design
Human interaction research
Common HMI guidance
Intuitive HMI and CAM vehicle design
High utilisation vehicle design
Sensors
Low cost high precision sensor development
Deliver initial sensor validation methodology
Deliver full sensor validation methodology
Enhanced sensor development
Major Milestones
2021 – Data sharing agreements in place
2027 – Safety vehicle connectivity
NOW 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030
Infrastructure
Communications
Agree communications approach at a national level
Plan coverage and rollout
Deploy CAM road safety infrastructure
High connectivity across the road network
Digital
Define data governance and ownership
Develop virtual road environments for CAM
Deploy virtual road environments for CAM
National operational data hub
Virtual road environments for operational management
Roads
New planning and investment guidance
Digitisation of signage assets
Digitisation of road rules
Repurpose infrastructure
Intelligent Network Management
Understand new travel demands through trials
Define new operational models
Deploy new operational models
Increase network efficiency
Test and Development
Cyber centre of excellence
Deploy virtual test environments
Develop automated validation
Refresh Testbed UK
Major Milestones
2020 – Testbed UK live
2024 – UK-wide virtual environments for test and development
2027 – Roadside signage no longer needed
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Services
Personal Mobility
Demonstrator trials
Small scale passenger deployments
Deployments plugging mobility gaps
CAM preferred in public service contracts
Integrated services
CAM more attractive than traditional services
Freight and Logistics
Low complexity trials
New freight policy developments
Small scale deployments
Last mile CAM delivers productivity benefits
Inclusive Transport
Understand how CAM can improve access to transport
Trials and pilots
Commercially viable service deployment
Sustainable and inclusive CAM services
Major Milestones
2021 – First commercial pilot deployment of CAM
2028 – CAM services are preferable in contracts

The Roadmap is a toolkit

What are the Roadmap tools?

- Interactive Roadmap
- Roadmap report
- Roadmap overview
- Insight workshops

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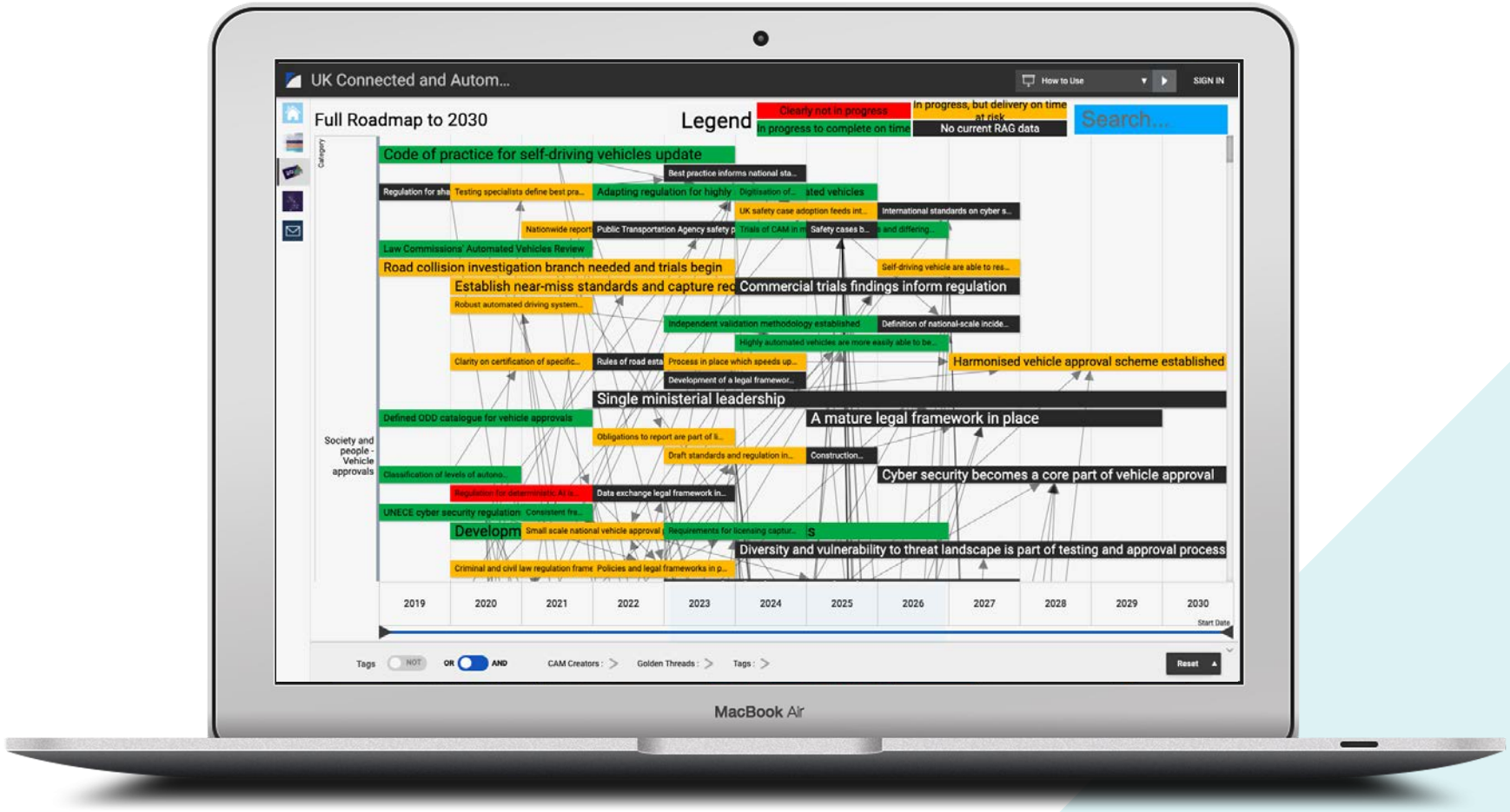
The interactive Roadmap – Home to the **Roadmap's rich activity and relationship data**



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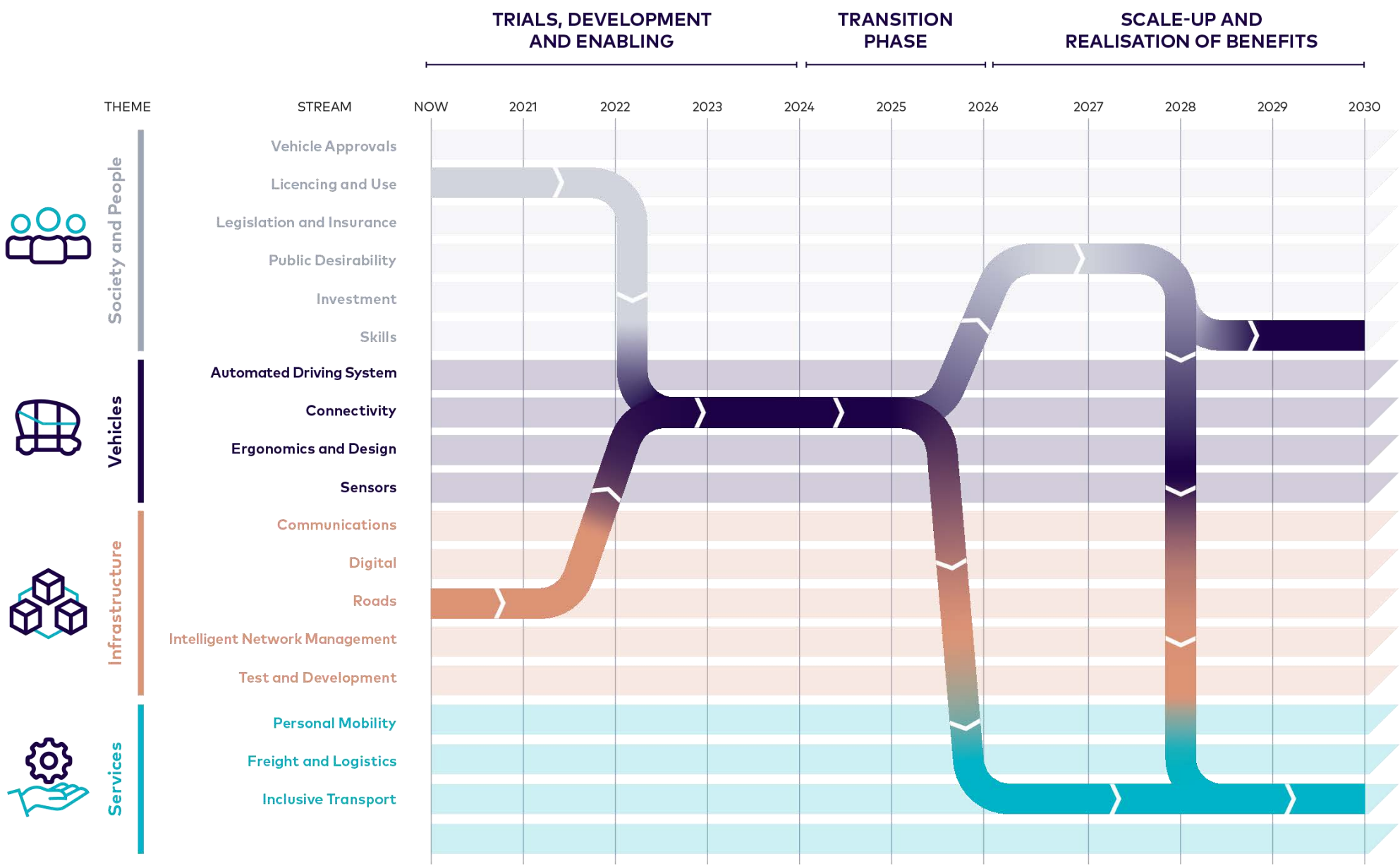
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Inclusive Transport

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The CAM Creators Update

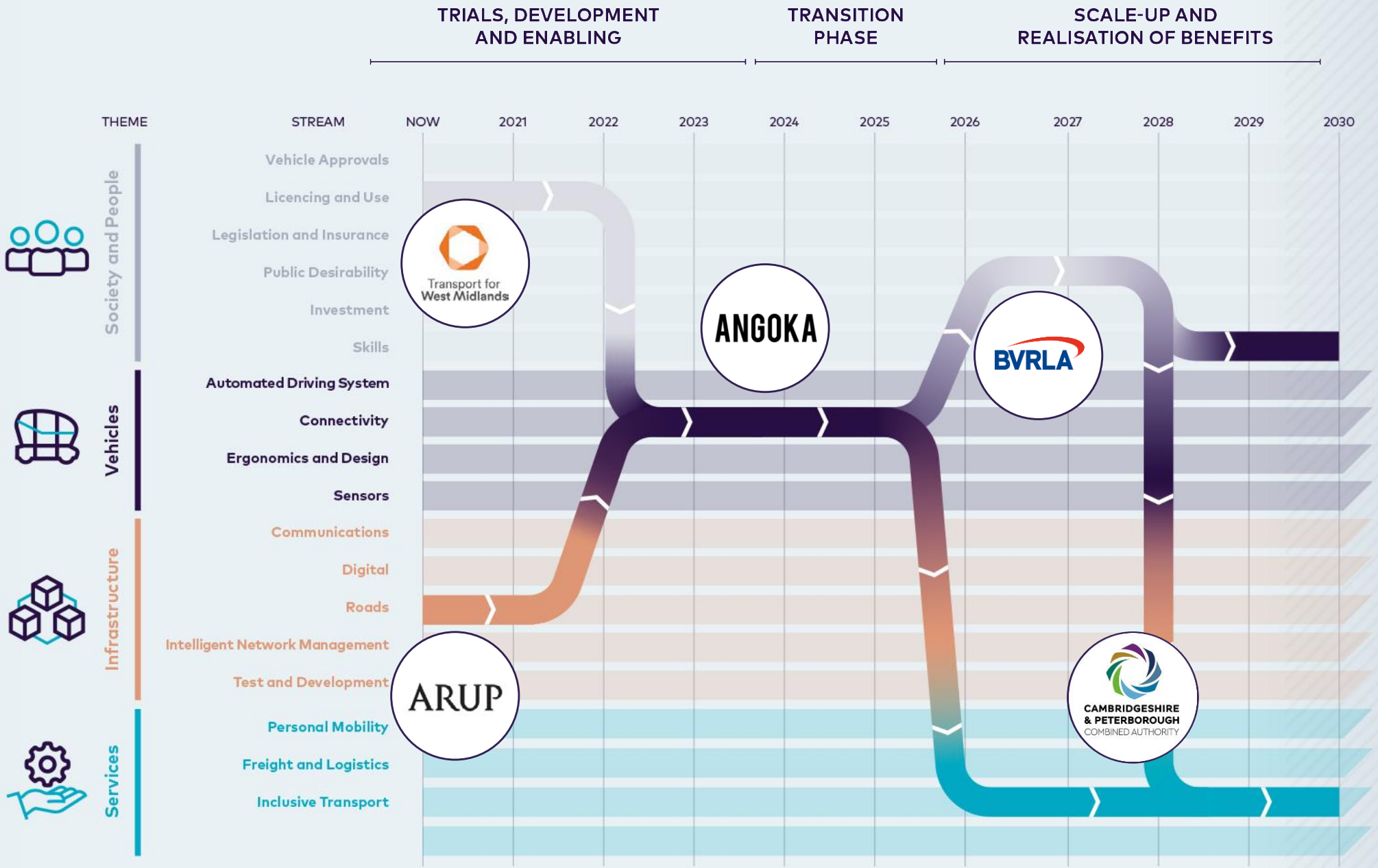
The Roadmap and CAM ecosystem working together

Plan
Progress
People

Real-world

- Industry
- Government
- Academia

By ensuring real-world progress is reflected in the Roadmap, and vice versa, we can sharpen consensus and accelerate progress.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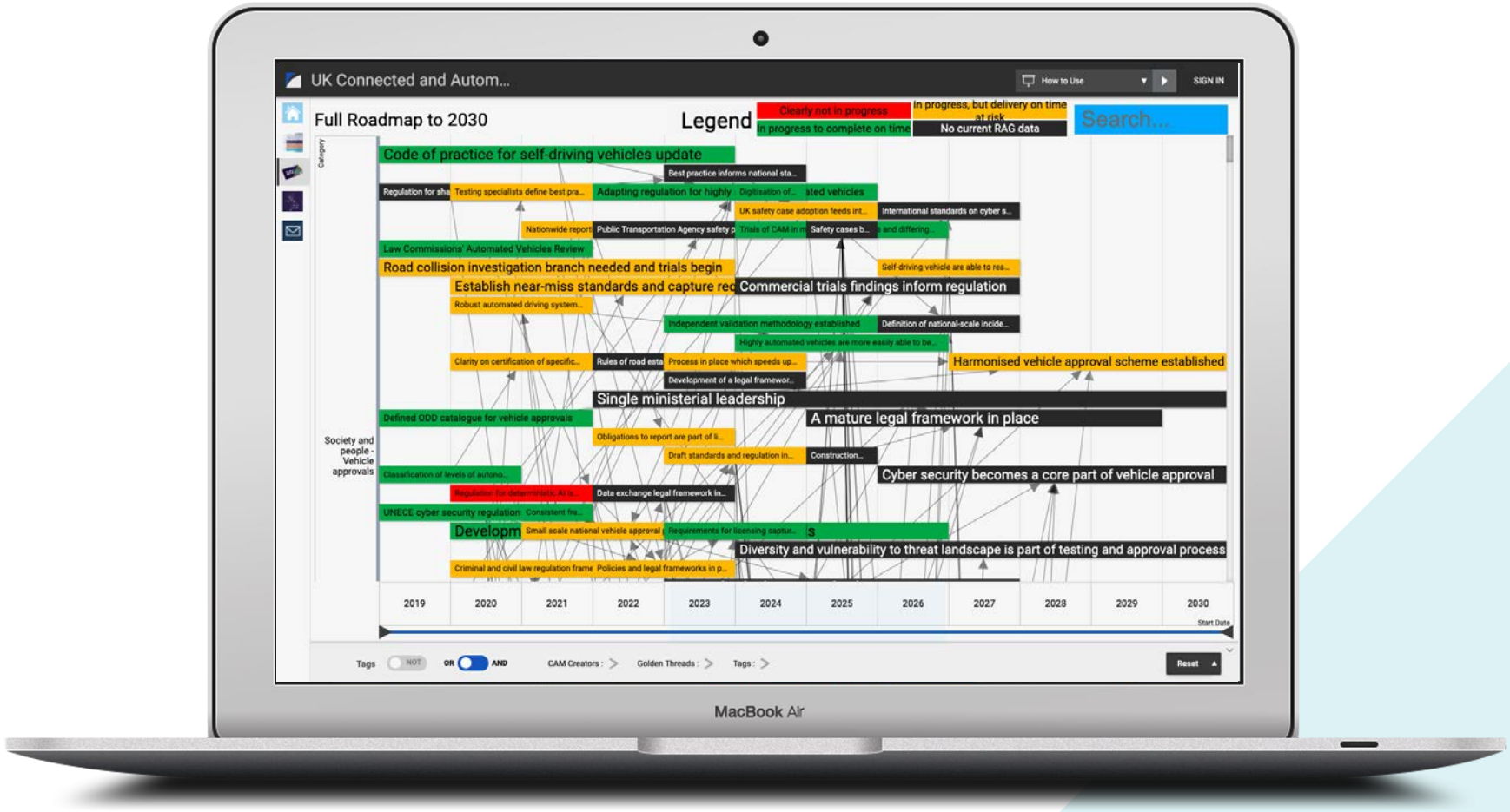
Personal Mobility
Freight and Logistics
Inclusive Transport
Transport for West Midlands
ANGOKA
BVRLA
ARUP
CAMBRIDGESHIRE & PETERBOROUGH COMBINED AUTHORITY

The interactive Roadmap – Home to the **Roadmap's** progress data



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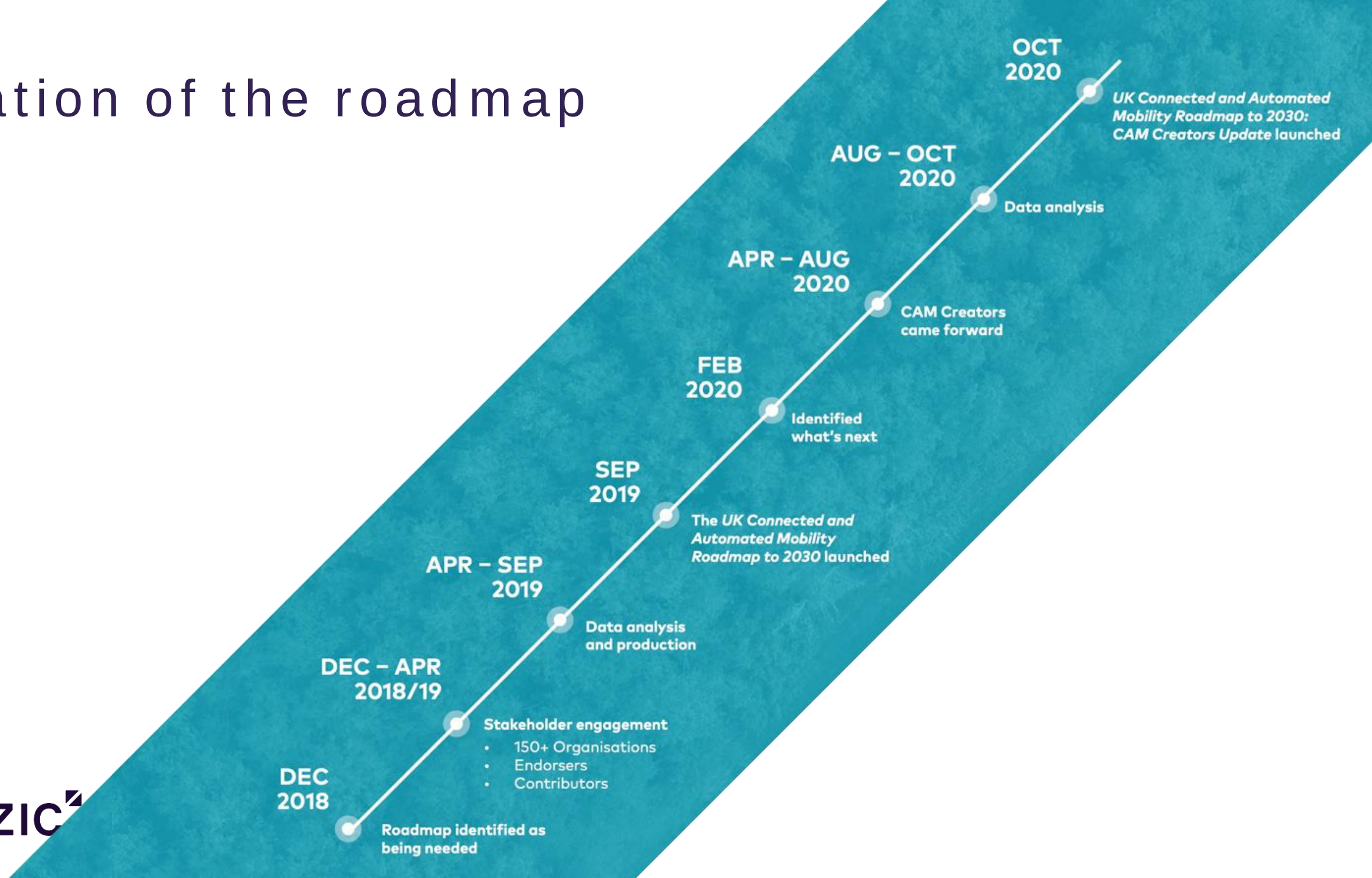
Creation of the roadmap



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200+
Organisations

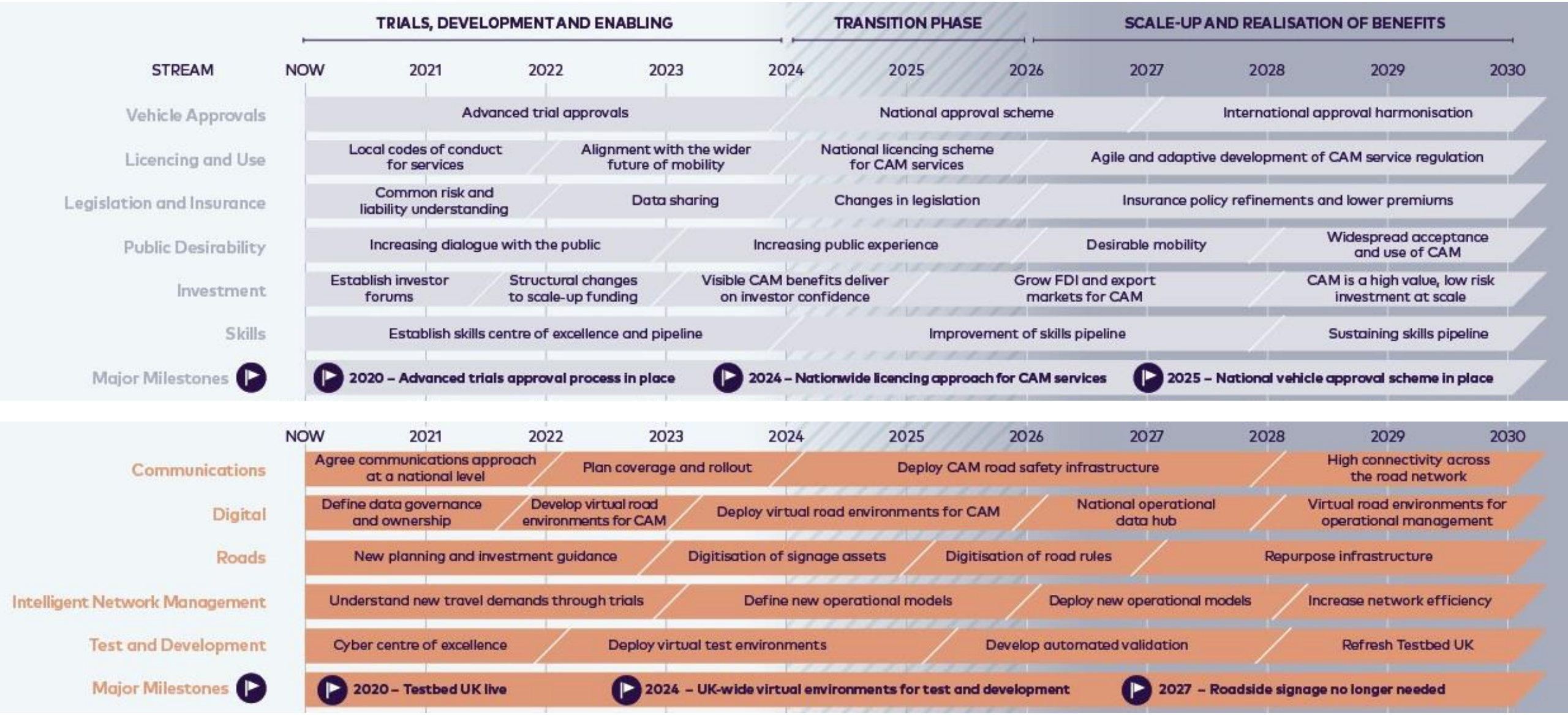
117
CAM
Creators

1600+
NEW
Data Points

300+
Individuals

250+
Milestones
in Action

AVL
waze
NOVA MODUS
TRANSPORT TECHNOLOGY FORUM
UCL
Thatcham Research
BUCKINGHAMSHIRE COUNTY COUNCIL
AXA
Applus IDIADA
fta Leading UK Logistics
sciencewise
OMNICAV
telent
Driver & Vehicle Standards Agency
RICARDO
FIVE AI
UNIVERSITY OF SURREY 5G INNOVATION CENTRE
MEDC MICHIGAN ECONOMIC DEVELOPMENT CORPORATION
GoMedia
SIEMENS Ingenuity for life
Park IT
QINETIQ
FORD MOBILITY
Visteon
FRANKLIN ENERGY
Met Office
Loughborough University
ERTRAC
UNIVERSITY OF LEEDS Institute for Transport Studies
ATKINS Member of the SNC-Lavalin Group
UNIVERSITY OF Southampton
WMG THE UNIVERSITY OF WARWICK
CYNAM
IDE INSTITUTE of DIGITAL ENGINEERING
Innovate UK
RAC Foundation
COSTAIN
KPMG
EDAG
elgin
highways england
ALTRAN
Vehicle Certification Agency
Travelai
Clearview Intelligence making journeys work
GSMA
Atos
smart CAMBRIDGE
ADA
aimsun. A Siemens Company
ARUP
IRM INFORMATION RISK MANAGEMENT ALTRAN GROUP
spectris
BRUNTINGTHORPE
THALES
Immense Enabling Intelligent Mobility
BVRLA
valuechain
CHORDANT
RACE
TRL
AURRIGO DRIVERLESS TECHNOLOGY
eatron TECHNOLOGIES
INRIX
CIHT
BOSCH
WSP
ABI
OXFORDSHIRE COUNTY COUNCIL
NOMINET
cpt
SyntheSys
Ordnance Survey
Wireless Infrastructure Group
ANGOKA
ADDISON LEE GROUP
appyparking
VIVACITY
FRAZER-NASH CONSULTANCY
CATAPULT Connected Places
bsi.
ageUK Love later life
Ofcom making communications work for everyone
ADVANCED PROPULSION CENTRE UK
AESIN AUTOMOTIVE ELECTRONICS INNOVATION
reed mobility
Brake the road safety charity
Department for Transport
VALERANN MAKING ROADS SMART
National Cyber Security Centre a part of GCHQ
automotive council UK
Burges Salmon
HORIBA MIRA
MILLBROOK
dg:Cities
oxbotica
DAC BEACHCROFT
ARRIVAL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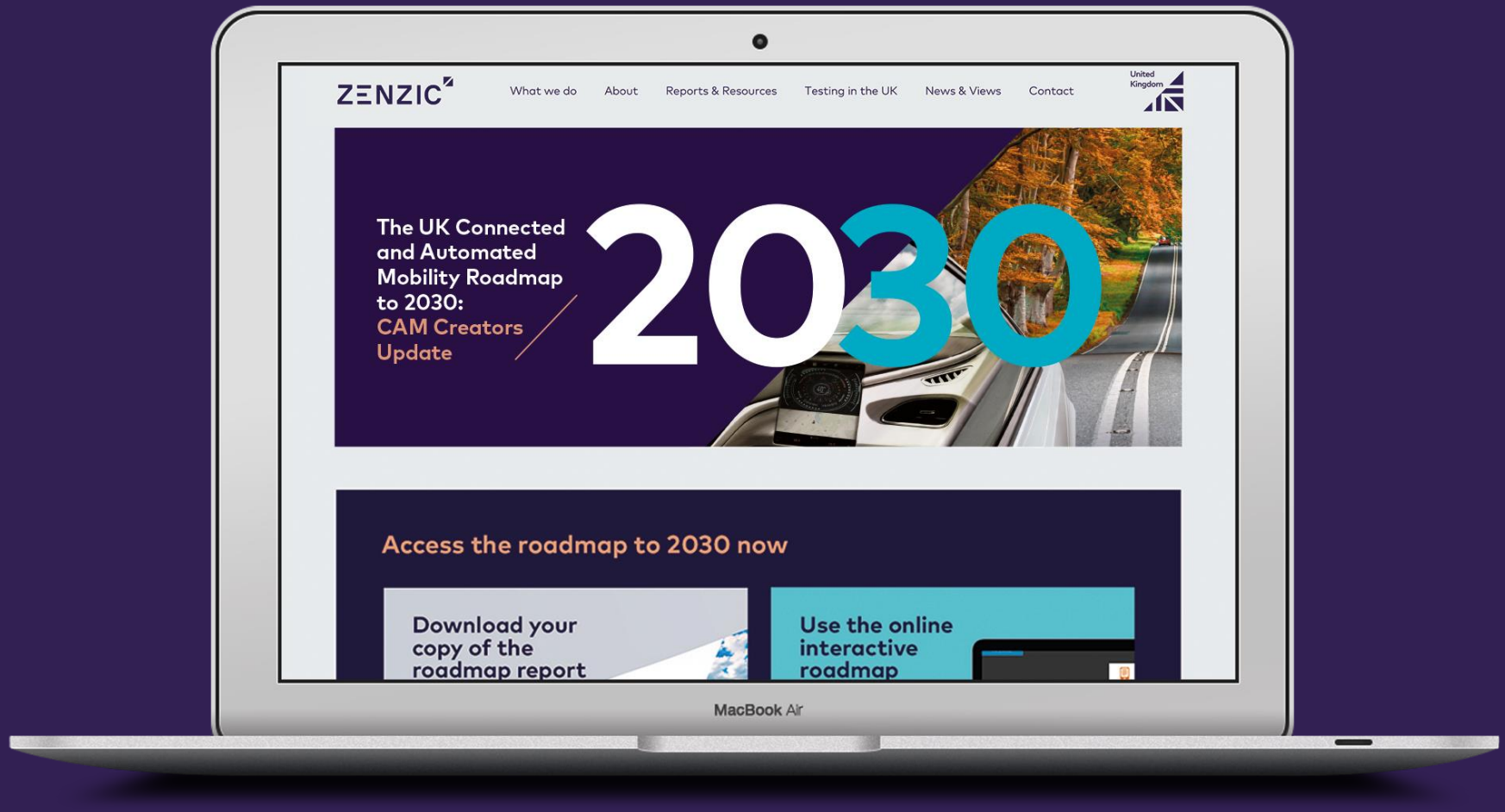
Want to find out how the Roadmap can benefit your organisation and CAM projects?

Access the interactive Roadmap at
zenzic.io/roadmap

Contact Zenzic
info@zenzic.io



Thank you