



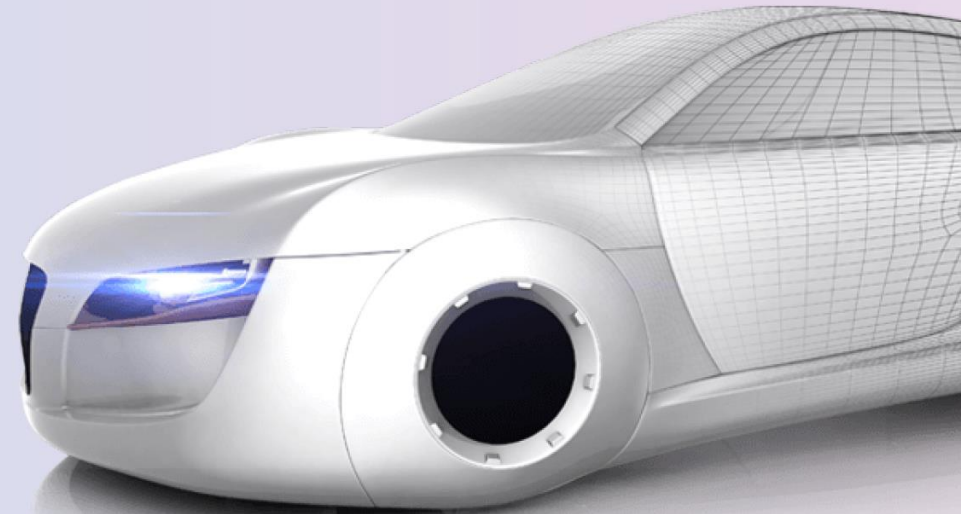
DUBAI WORLD CONGRESS  
FOR SELF-DRIVING TRANSPORT

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# Lessons and Impact of UK Autodrive

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# ARUP

Project Overview  
Project Impact  
Lessons Learnt  
New developments



UK Autodrive

## UK AUTODRIVE

### The Hype

Autonomous vehicles have been long purported to bring a myriad of benefits – *reducing congestion and emissions*, increasing *free time*, *improving mobility* for the elderly and disabled, allowing *cities to re-shape* more liveable spaces...



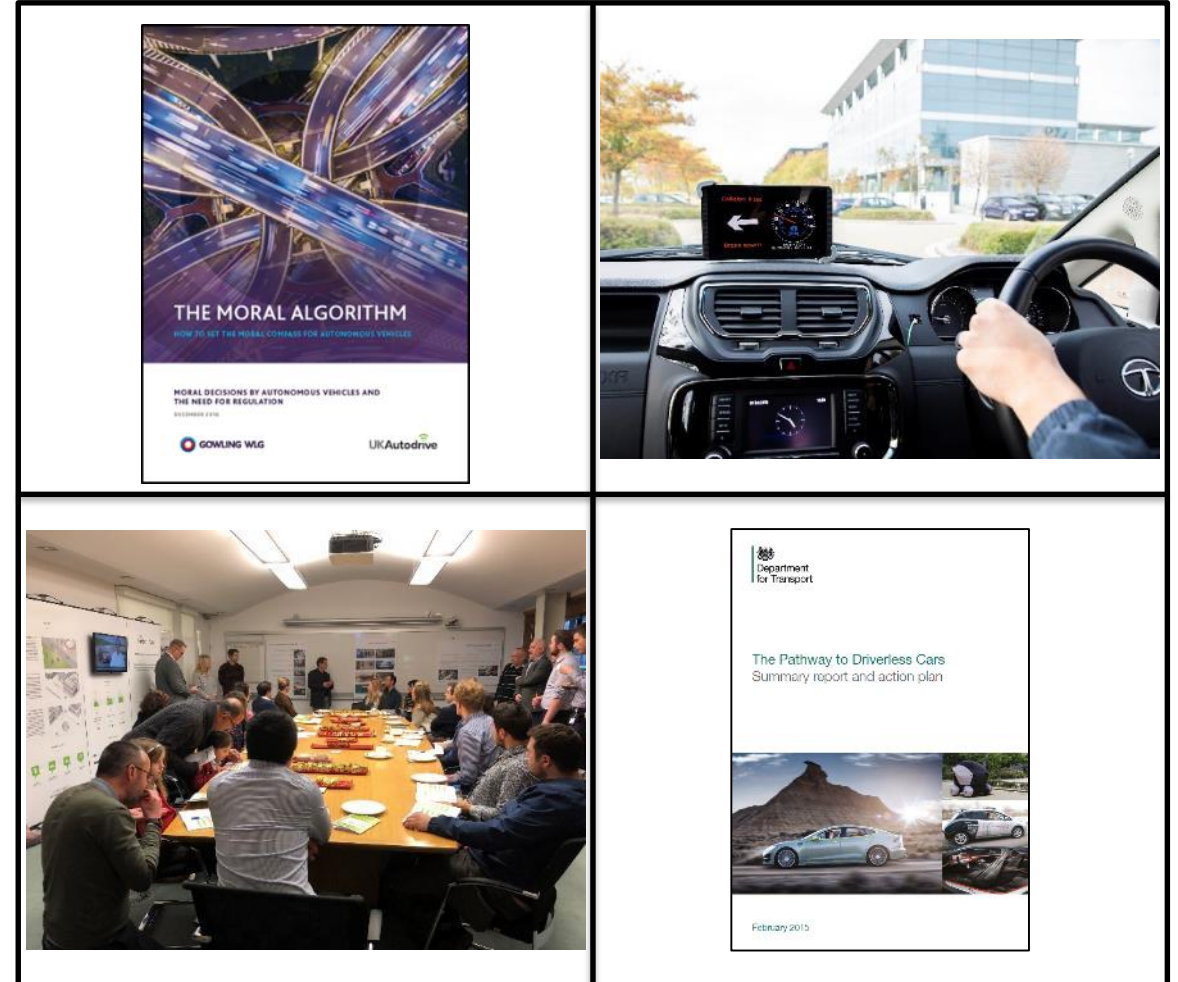
## UK AUTODRIVE

How do we get there?

What's the reality? It's more than just developing technology:

- *Social* – user acceptance, ethics, ownership
- *Technical* – technology robustness, security, interoperability, infrastructure...
- *Economic* – cost, business models
- *Political* – codes, standards, regulations

This approach requires collaboration between cities, tech providers, researchers, insurers, the public...



## UK AUTODRIVE

What is UK Autodrive?

A response to these challenges - a UK Government supported, *collaborative research and development project* to explore the realities of putting connected and autonomous vehicle technology into our cities – through academic studies, technology development, public engagement and *real world demonstrations*

ARUP



CATAPULT  
transport Systems



GOWLING WLG



A HONDA COMPANY  
MIRA



RDM  
GROUP

TATA  
TATA MOTORS  
EUROPEAN TECHNICAL CENTRE

THALES



UNIVERSITY OF  
CAMBRIDGE



## UK AUTODRIVE

What did we do?



Public attitudes



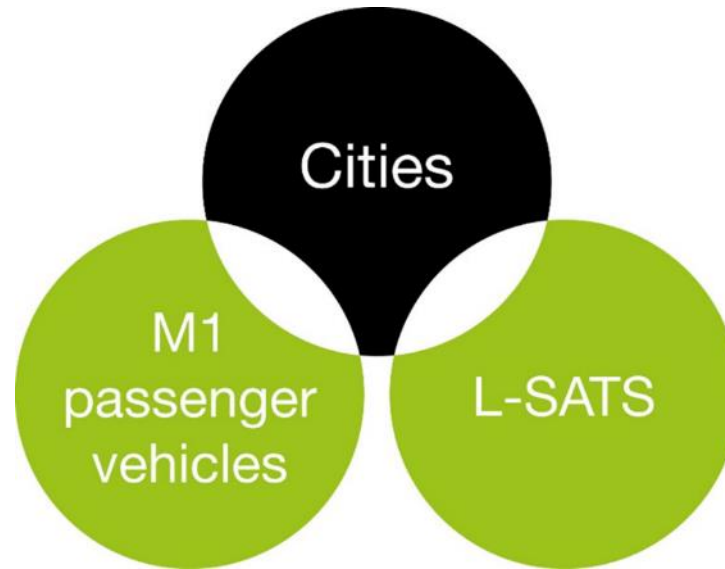
Potential impact on congestion



Business models for self-driving fleets



Legal and insurance issues



## UK AUTODRIVE

What **impact** did we have?

Delivered *inclusive design* with stakeholder groups



Got the *public talking* about their concerns, aspirations and ambitions



## UK AUTODRIVE

What **impact** did we have?

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Successfully *navigated*  
*Coventry ring road* with  
autonomous technology!



Examined *interoperability*  
*challenges*, influencing  
European legislation





## UK AUTODRIVE

What **impact** did we have?

Engaged with the  
*emergency services* to  
explore impacts on them



Demonstrated how  
CAVs can fit into a  
*broader mobility  
framework*

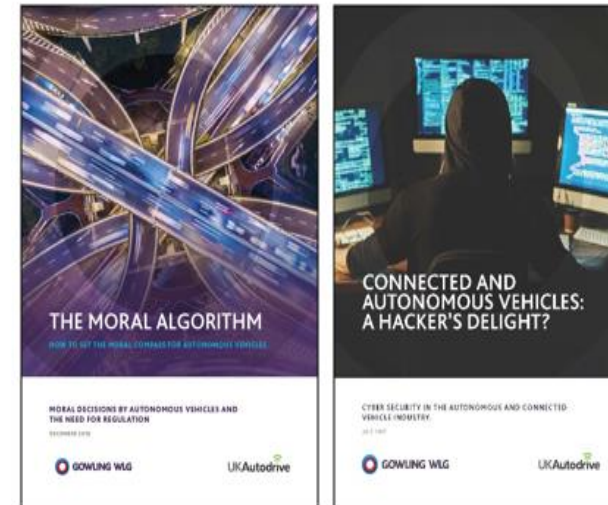


What **impact** did we have?

Modelled *impacts on emissions, congestion and travel time*



Demonstrated *thought leadership* on topics such as data, ethics and insurance



## City perspectives

- Provided *two very different cities* - Milton Keynes and Coventry - with a view of the possible
- Successful demonstrations of the technology have given the cities *confidence to move forward* with plans to enhance the public realm through the adoption of low-carbon autonomous public mobility services
- Modelling has identified that wide-spread changes to infrastructure will not be needed. Capacity gains up to 20% with *no big infrastructure spend*



## Technology perspective

- Provided a platform for companies to demonstrate that the *digital skills and desire* exist to rapidly develop autonomous technologies and apply them to *complex mobility problems*
- Highlighted the need for a *robust communications network* to operate connected and autonomous vehicles efficiently and effectively
- Unearthing big *challenges with respect to cyber security* – now front and centre with car manufacturers and the UK Government's National Cyber Security Centre



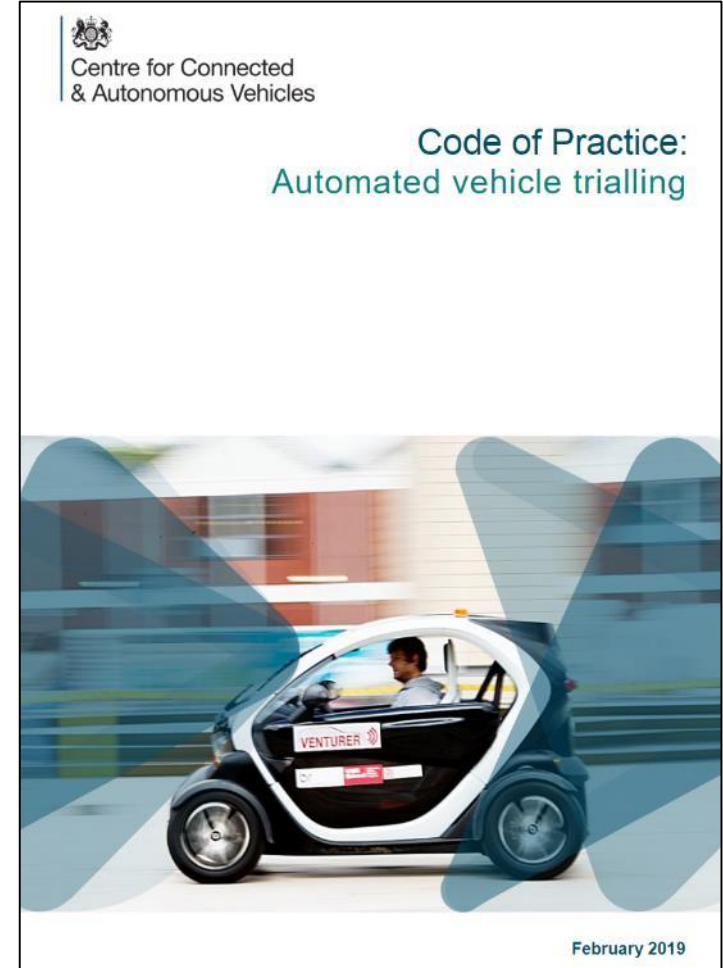
## User perspective

- UK Autodrive got public *thinking and talking* about how they would like to use future transport technologies to improve their daily lives:
  - Hospital trips
  - The school run / other trips with young children
  - Social shared mobility to address loneliness
  - Improved access to mobility services
- UK Autodrive has worked closely with the emergency services to enable them to respond to incidents and *provide help quicker*



## Government activity

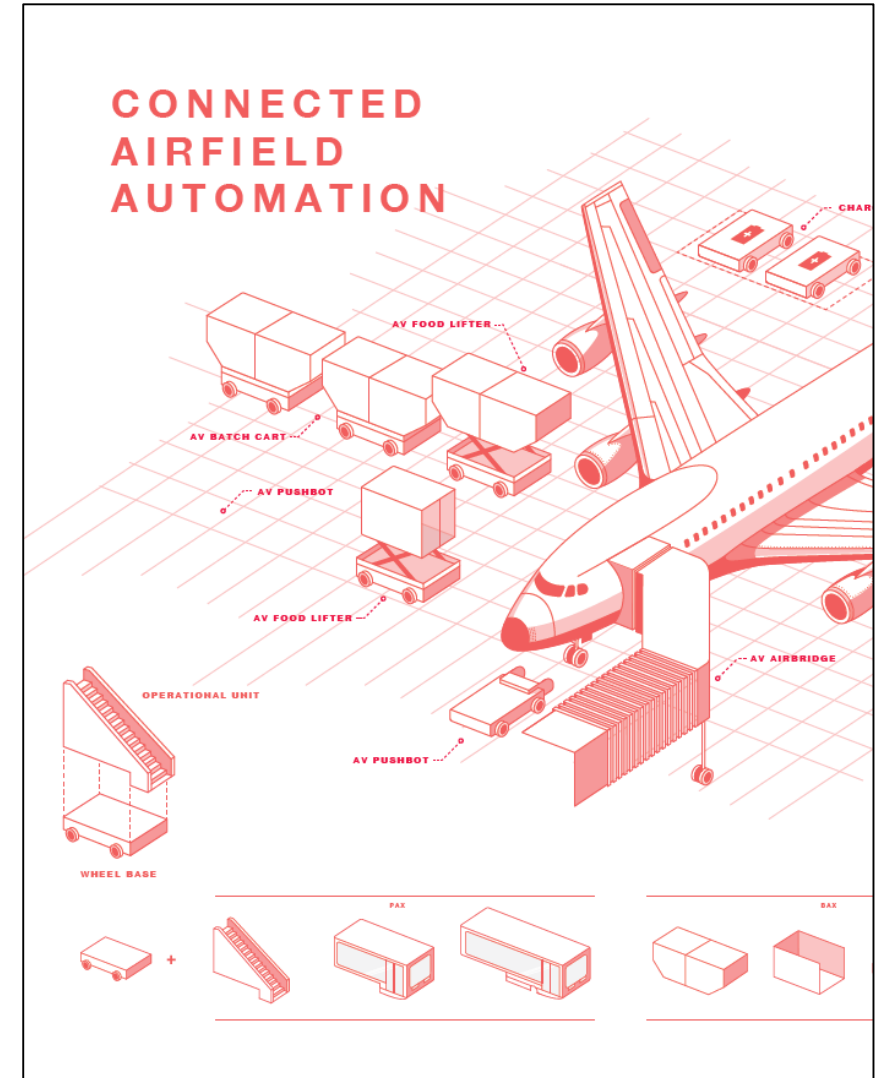
- UK Government continues to support the development of *automated mobility solutions*
- Code of Practice: *Automated vehicle trialling* has been revised and updated based on learnings from initial projects
- Centre for Connected and Autonomous vehicles *continues* to support collaborative research and development



What are we doing **now**?

## Thought leadership

- Consideration about the application of *automated vehicles* in a airport environment
- Development of applications for both *landside and airside automation*
- Identification of *routes to implementation* in complex operational environments



What are we doing **now**?

## Scheme feasibility studies

- Use of highly-automated buses, to *provide metro-style services*
- *Affordable solutions* for applications where ridership levels would not support traditional solutions
- *Whole system design* matches vehicles to infrastructure to produce optimised solution which is *flexible and expandable*





## Conclusions

- UK Autodrive has provided the confidence that highly-automated vehicles have a role in future mobility systems
- Development in these digital technologies is continuing with rapid innovation. Governments and cities need to decide how they want to adopt the technology.
- New business models will be enabled by the adoption on automated technologies and some existing business models will be come obsolete



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## Thank you for listening

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