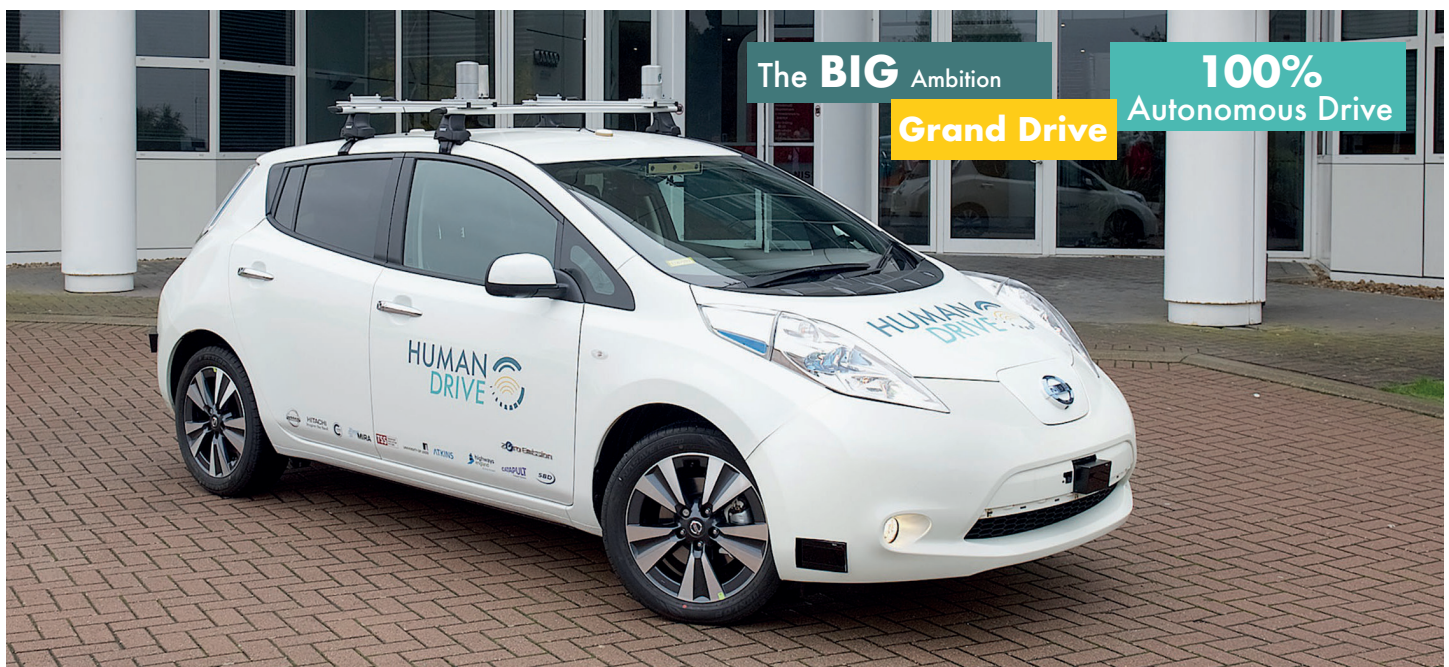




## Using machine learning to develop **natural, human-like vehicle control**

The ten member HumanDrive consortium has an ambitious target; to develop a human-like autonomous driving system that will drive a 200+ mile journey across the UK, through live traffic and in natural conditions. This 30-month project is part funded by the Centre for Connected and Autonomous Vehicles (CCAV) via Innovate UK and will finish in late 2019.

The most complex autonomously controlled journey yet attempted in the UK, the HumanDrive project will develop a prototype Connected and Autonomous Vehicle (CAV) with the aim of successfully demonstrating a live traffic, end-to-end journey in a variety of settings, including country roads, A-roads and motorways.



The project is being led by Nissan, supported by Hitachi Ltd., Cranfield University, Aimsun Ltd., HORIBA MIRA, University of Leeds, Atkins, Highways England, Secured by Design and the Transport Systems Catapult.

Discover more at [humandrive.co.uk](http://humandrive.co.uk)

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## OBJECTIVES

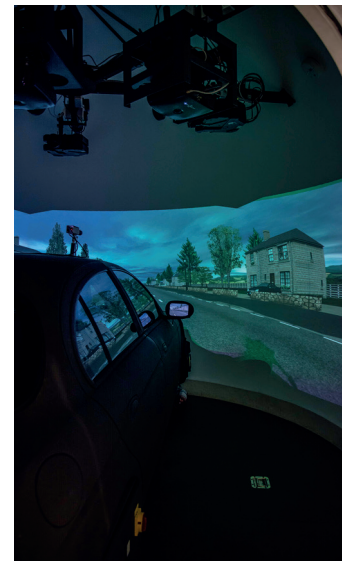
One of the most significant and innovative aspects of the project will be the development of an advanced vehicle control system, designed to allow the vehicle to emulate a 'natural' human driving style using machine learning. Before the car is introduced to UK roads, the system will be developed and subjected to a robust testing process using a range of facilities, including simulation, hardware in the loop, private test track and small sections of public roads.

## HumanDrive will:

1. Develop a vehicle capable of safe autonomous driving, in a range of conditions
2. Develop a machine learning system able to satisfactorily demonstrate 'natural' autonomous driving
3. Demonstrate a 200+ mile autonomous drive across the UK
4. Develop testing, validation and safety methodologies which position UK industry and academia at the forefront of autonomous vehicle knowledge and expertise
5. Develop a tailored Cyber Security Framework for the CAV sector
6. Understand the implications of CAVs on the wider transport system in terms of traffic and infrastructure.



Developing an AI to enhance the user's comfort, safety and experience



## BENEFITS

Successful completion of this project will take the UK one step closer to having autonomous vehicles on the road, helping the UK government to fulfil its Future of Mobility Grand Challenge.

### Society

CAVs have the potential to significantly improve safety on our roads, reduce pollution and congestion, increase accessibility for vulnerable groups, enhance our public transport, support business and the economy, release driver time for other uses, ease the pressure on a stretched transport infrastructure, and develop the transport network across the whole UK (and beyond). Furthermore, it will mimic the driving behaviour of human beings, providing an

enhanced experience for the occupants and ultimately helping with acceptance of these new technologies.

### Establishing UK capability in CAVs

An estimated 1m CAV jobs will be created in the UK by 2035. HumanDrive is supporting this by helping to develop the necessary UK capabilities to establish a thriving CAV ecosystem.

### A destination for R&D

The UK is a leader in CAV research, development and testing, backed by significant government investment, world-leading universities, and an open and innovative business environment. Learnings and technologies from this project will help to develop the autonomous vehicles and fleets of tomorrow.

Discover more at [humandrive.co.uk](https://humandrive.co.uk)  
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