

# PACV Supporting the next generation of autonomous vehicles

Major vehicle manufacturers are now delivering motor vehicles with connected services for drivers, including real-time traffic and weather reports and accident or road works warnings. More applications are on the way, and the technology systems that support them will enable the increasing number of autonomous vehicles that will soon be cruising down our roads and highways.

This Pathways to Autonomous Connected Vehicles Project is developing an innovative solution to monitor key information from the vehicle and predict safety risks based on analytics. It will build on a prototype which monitors tyre pressures and temperatures in commercial vehicles, combined with always-on network connection.

Through development of specialist software and satellite enabled connectivity, the management of wheel position for commercial vehicles, logistics and passenger services will operate in a safe and more efficient environment for autonomous mobility.



## Challenges

Ensuring full connectivity at all times through hybrid GRPS and Satellite communications

Ensuring data is transmitted at high enough frequency for intelligent decisions to be made without human intervention

Customer understanding and education about the opportunities the system can bring

## Objectives

To create a satellite enabled industry leading intelligent tyre telematics system to improve vehicle safety now

To research and develop enhanced communication between vehicles and roadside infrastructure or urban information systems

To support the wider drive towards the development and implementation of autonomous vehicles.

# Satellite Data and Autonomous Vehicles – A Hybrid System

We are all familiar with GPS, the Global Positioning System, which is the best known of the global navigation satellite systems (GNSS) that provide accurate timing and positioning data. However, whilst satellites are deemed more robust and secure than mobile networks they do have points of failure e.g. high rise buildings in urban areas can sometime block signals.

As a result, for truly autonomous vehicles to operate unmanned, they will need seamless connectivity and therefore there is a need to develop a hybrid communications system which will combine the best of Wi-Fi, 3- 4- and 5G mobile networks but also satellite communications. In order to provide a continuous and cost effective communications solution. There will also be a need to ensure that only the necessary data is sent at any time to the remote operator.



## Looking Ahead...

1. The Intelligent mobility market is estimated to be worth £900 billion per year globally by 2025

2. The United Nations 2030 Global Goals have highlighted that intelligent transport systems will be crucial to achieve their targets:

Good Health & Wellbeing – halving the number of global deaths & injuries from road traffic accidents by 2020

Sustainable Cities & Communities- by 2030 there should be access to safe, affordable, accessible & sustainable transport for all

3. New funding calls for Connected and Autonomous Vehicles are due in 2017 as part of the Government's £100million Intelligent Mobility Fund.

*“These projects will help to profoundly change the way we travel within years, transforming our roads by making travel a simpler experience for drivers, reducing accidents and helping traffic flow more smoothly. They will also bring great benefits to our society and the wider economy by opening up new routes for global investment. This is a landmark moment and will allow Britain to lead the way in the testing of connected and autonomous vehicles.”*

**Patrick McLoughlin, Transport Secretary**