

// Project Case Study

# TyreWatch

## Tyre management project paves way for autonomous commercial vehicles

Artificial intelligence and vehicle monitoring help reducing breakdowns and cut costs

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We work with  
**Innovate UK**

 **UK SPACE  
AGENCY**

**CATAPULT**  
Satellite Applications

## WHAT IS TYREWATCH?

TyreWatch combines tyre pressure and vehicle monitoring, hybrid communications and artificial intelligence to provide tyre management for lorries and trucks, significantly reducing breakdowns and accidents, and proffering various financial benefits.

Developed by Tructyre in collaboration with the University of Portsmouth and the Satellite Applications Catapult with £1.2 million funding from Innovate UK, it has now been spun out into its own company. The technology will aid the move to autonomous commercial vehicles, and has already demonstrated significant potential for exports.

## SUCCESS AND ACHIEVEMENTS

The Catapult supported Tructyre in a number of ways. We led the development of the user requirements of the service, led the assessment of the proof of concept against the requirements and supported envisaging, and subsequently the re-draft, of the overall project funding bid.

Then, during development, the Catapult's technical team designed the software element of the communications switch, using our specialist knowledge of satellite communications. Although terrestrial communications will be sufficient in many situations, the hybrid option will allow the system to be used anywhere globally.

Later, we worked with Tructyre to ensure that the research and development that had been done matched the bid outline, as this is an essential part of any Government-funded project. We also provided business development support to Tructyre, looking at issues such as health and safety and data protection requirements that would be needed to move the project to a commercial venture.

Tructyre itself was later bought by a major tyre manufacturer, but in May 2018 TyreWatch was spun out as a separate company. We have put the new company in contact with others that could provide opportunities such as export and white labelling, which in turn should generate a growth in jobs from the current team of 10.

## THE CHALLENGE

For commercial vehicles, tyres are the most common cause of avoidable roadside failures, according to fleet tyre service provider Tructyre. With this in mind, the company chose to develop an end-to-end system that could generate alerts for all relevant parties, including drivers, fleet operators and service providers, ensuring tyres are used optimally and any repairs are done as efficiently as possible.

Tructyre and Portsmouth University approached the Catapult to help with development of a funding bid to Innovate UK in 2016 as part of Innovate's £20 million investment into communications for connected and autonomous vehicles (CAVs) – the first tranche of the Government's £100 million Intelligent Mobility Fund. The focus of the 'Pathway to Autonomous Commercial Vehicles' project was requirements for heavy vehicles, each of which can have tyres of different sizes: these cannot easily be repaired by the side of a road and any breakdowns can cause severe traffic delays, which in turn affects many other businesses.

The Catapult contributed its knowledge of funding bids and business development, and also became a project partner, developing the software that would enable the communications to switch to using satellites when terrestrial signals were not available.

## WIDER BENEFITS TO SOCIETY

The TyreWatch system has a number of economic and environmental benefits. For example, tyres that are inflated to the correct pressure last longer, resulting in less waste, and allow the vehicle to operate more efficiently, using less fuel.

Pre-emptive repairs and replacements can significantly reduce the risks of breakdowns and crashes, and the associated risks of injuries and damage to vehicles. Fewer breakdowns and crashes also lessens the impact on the road network, both in terms of carriageway repairs and of blocked lanes, which in turn decreases the pollution caused by cars queuing to pass the site.

“ Without the funding we received from Innovate UK, we could never have developed the TyreWatch service, our new company would not exist and our team would not have these jobs. The Catapult's support in that process was vital. They've also been really supportive subsequently, putting us in touch with companies that will make a difference to our future in the UK and open up possibilities for exports. ”

**Glenn Sherwood**  
CEO, Tyrewatch  
[www.tructyre.co.uk](http://www.tructyre.co.uk)

“ We saw a real opportunity in the PACV project when we first met Glenn's team, and it was exciting to be involved from the outset. This type of service will make a real difference road safety now and to the evolution of large autonomous vehicles in the UK, and could help to make the UK a leader in this field. ”

**Jim Hammond,**  
Business Development Manager  
Satellite Applications Catapult

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