

When it comes to our highways, smarter means safer



“Colas has dedicated itself to achieving zero casualties through the use of intelligent solutions”

Lee Rushbrooke

Lee Rushbrooke, chief executive of Colas, discusses technological advances that are helping to keep road workers safe

Imagine a future where your environment is an active partner in maintaining your personal safety, your journey time and even collaborating with personal in and out-bound communications. That future is already happening.

Regrettably, human error is still the primary cause of incidents connected with roadworks across the globe. In the UK Colas has been at the forefront in making significant advances in lowering the risk to road workers through initiatives such as Highways England's 'Aiming for Zero' programme and the Road Worker Safety Forum (RoWSaF). Despite this, in a 10-year period from 2006 a total of 15 road workers lost their lives on the strategic road network.

Over a five-year period between 2006 and 2011 there were a reported 149 collisions with Impact Protection Vehicles (IPVs) on the Highways England road network alone (TRL, 2012).

Working individually and with a wide array of partner companies, Colas has dedicated itself to achieving zero casualties through the use of intelligent solutions, greater use of Bluetooth and GPS data linking with personal mobile-based apps that enable real-time reporting of potential danger.

Education and technology

Alongside these initiatives we have focused on changes to methodologies and education - including support of our SAID+ road safety training courses that are recognised as some of the best in the industry and student

safety training via our Business in the Community initiative in schools.

These forms of outreach are mirrored in technology terms by Colas' Project Yellow that utilises the latest technology to improve road worker safety. Project Yellow is a second phase development of an initiative first championed by Colas in 2011/12 with its IPV 360 system.

The Project is intimately linked with the arrival and increasing adoption of autonomous vehicles that intelligently detect the presence of highway workers and work zones, navigating them whilst retaining absolute control, removing in the process the traditional ingredients of highway incidents including driver error, fatigue and distraction.

Talking vehicles

Before this perfect scenario of autonomous, inter-connected routeways fully arrives, we have in the meantime made large strides in having intelligent highway works vehicles with the ability to talk (or shout) to other road users by means of navigation systems or in-vehicle systems using vehicle-to-vehicle (V2V) connectivity or even 5G networks.

These systems will deliver exponentially higher safety margins but stop short of actually taking control of the vehicle and avoid collisions and subsequent injuries completely.

The next stage in the road safety evolution is our Project Yellow solution - a system developed jointly by highways specialist Colas Ltd, Aximum Electronic Products (a Colas Group Company) and software experts Foxstream.

The system uses thermal imaging and video analytics to cleverly allocate approaching vehicles into 'threat categories' and prioritise those that pose the greatest collision risk with highway works vehicles or workers close by.

When a vehicle that poses a collision risk is detected by the analytics system, an audible and visual warning activates and vehicle lighting can be initiated, providing an increased awareness of the presence of the works vehicle to the approaching road user vehicle.

In addition, a wireless alarm is provided for workers undertaking works on foot away from their vehicle to ensure they are immediately aware of a high collision risk scenario, allowing them to retreat to a place of safety.

The system is equipped with a high accuracy GPS and Internet of Things (IoT) connectivity solution that will allow real-time monitoring of the vehicles position and directly upload data to the Datex II traffic data interface. This allows satellite navigation manufacturers to utilise this information to warn road users of the location of the workforce.

The Department for Transport Road Casualties Report in 2014 estimated the cost at £2 million each of the 1,732 deaths on our road network. Project Yellow will enable the highways industry to make a priceless contribution to safety via technology, real time reporting of risk and connectivity within emergency vehicle fleets and roadside recovery vehicles. In doing so, it will ameliorate the emotional and economic bill to the nation. A smarter, safer future has arrived. 🚗