

New technology set to transform railway performance on Transport for Wales network

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A pioneering video system is set to dramatically improve safety and performance on the railway in Wales and across the Borders.

Transport for Wales has partnered with One Big Circle Ltd to fit smart cameras on trains to automatically record, analyse and report vegetation risks on the Wales and Borders routes.

It will be the first time technology has been used in this way in the rail industry.

The Automated Intelligent Video Review system (AIVR) is a lightweight train-borne device that sits inside the windscreen of the train cab and automatically captures video data and other telemetry as the train travels the network.

It is designed to measure changes in the infrastructure each time a train runs the route, as vegetation changes naturally it can be tracked through an early warning heat map which is used to allocate resources. This way, hazardous leaf fall, signal sighting and intrusive growth can be managed proactively and without the need to put people on the track. In poor weather if a tree had been damaged by gale

force winds and was leaning closer to the track than normal or at risk of blocking a driver's view of a signal, the system would pick this out and alert the management team, before an incident was to occur.

The data, which will be collected throughout the seasons, is transmitted instantly via 4G and accessed securely via the cloud. The video can be reviewed instantly and shared with key working groups and response teams in TfW and our partners in Network Rail.

Seasonal planning Manager at Transport for Wales, Rick Fisher, said: "Our services run over more than 1,000 miles of track so staying up to date with changes to the environment is crucial to running a safe and reliable railway for our customers.

"This technology is a huge leap forward for us and will allow us to work closely with our partners in Network Rail to deal with challenges as they emerge."

Transport for Wales Safety and Assurance Director Leyton Powell said: "We first saw this technology in September and were so impressed that we commissioned a trial to cover all routes.

"We're the first train operator in the UK to deploy the AIVR system on our routes and we're delighted to be at forefront of using this innovative technology. With management of the Core Valley Lines infrastructure shortly coming under TfW we really think this could make a huge difference to the way we respond to create massive customer, safety and performance benefits."

One Big Circle are a team of software and hardware engineers with expertise in digital video. Based in Brunel's iconic Engine Shed at Bristol Temple Meads station they have more than 30 years' experience in video systems, integration and analytics working with a range of industries. They have worked heavily in sport enabling instant video replays of sporting action at all levels of sport from grassroots to professional.

Emily Kent, Director of One Big Circle, said: "We are delighted to be working with Transport for Wales. They quickly saw the benefits that AIVR could bring to their network operations, and their collaborative, open approach means we have rapidly moved from trial stage to formally having AIVR onboard. This clearly demonstrates TfW's ambitions to harness innovative technologies to help meet their challenges, and we are excited to be delivering this cutting edge video system as well as exploring further innovations with them."

Photo credit: TfW