Thursday, March 5, 2026

ADEPT President's Awards 2026

Entry form

Award category	Deploying Innovation and Technology
Project Title	Smart Roads, Safer Networks: Transforming Highways with AI Video Intelligence
Local authority	Cheshire East Highways - Ringway Jacobs
Partner/s if applicable	Vaisala

Headline summary (150 characters max.)

Cheshire East Highways uses AI video analysis to improve safety, cut costs by 40%, reduce disruption, and deliver fast, accurate road condition data

Deploying Innovation and Technology: How has this project used digital innovation and/or the imaginative use of new or existing technology? (150 words max.)

Cheshire East Highways transformed road condition monitoring by embedding AI powered video analysis (RoadAI) directly into routine operations. Instead of relying on costly, infrequent SCANNER and CVI surveys, officers now capture high quality condition data using mobile devices during normal inspections, eliminating the need for specialist survey vehicles or traffic management. Road AI automatically identifies defects, classifies condition using PAS 2161 categories and integrates outputs seamlessly into the council's asset management system. Cloud hosted dashboards enable real time collaboration, replacing static reports and manual spreadsheets. This approach provides full network coverage, 24hour data availability and continuous insight into network deterioration. It also supports proactive maintenance planning, decarbonisation through reduced vehicle movements and safer working by minimising time spent on the live network. The programme demonstrates a highly innovative application of existing hardware combined with advanced AI video intelligence, creating a scalable, modernised alternative to traditional survey methods.

Deploying Innovation and Technology: How has this project shown evidence of improved outcomes for users and communities? (150 words max.)

This programme delivers clearer public benefits through safer roads, fewer delays and more effective use of resources. The shift to AI enabled video analysis removes the need for survey vehicles and traffic management, significantly reducing disruption for residents and businesses, particularly on highspeed routes. Faster, more accurate data enables earlier maintenance interventions, helping prevent potholes and surface failures before they impact road users. With condition information available within 24 hours, teams can quickly respond to emerging issues, improving network reliability and reducing long-term deterioration. The programme also contributes to decarbonisation by cutting unnecessary vehicle movements and minimising repeat site visits. Video-supported evidence has enabled the council to recover over £100,000 from third-party damage, ensuring funds are reinvested directly into local infrastructure. Together, these outcomes improve safety, environmental performance and the overall quality of the road network for communities.

Deploying Innovation and Technology: How has this project shown evidence of the transformation of a service/department/organisation by changing behaviours, delivering savings or improving ways of working? (150 words max.)

This programme has fundamentally reshaped how Cheshire East Highways manages its £7 billion

network. By replacing SCANNER and CVI surveys with continuous AI based monitoring, teams have shifted from reactive, compliance driven reporting to proactive asset management. Staff now work with real time intelligence, allowing them to prioritise interventions based on actual deterioration rather than year old snapshots. Survey staffing requirements reduced from two FTEs to one, enabling redeployment to higher-value work without reducing workforce capacity. Traffic management needs fell by up to 80%, improving safety and freeing resources for core operations. Cloud-based collaboration has modernised internal workflows, replaced manual data handling and accelerated approvals. Behaviours have changed across the organisation, with officers using shared dashboards and video evidence to plan, validate and communicate decisions. This represents a step-change in efficiency, accuracy and culture, embedding digital capability at the heart of service delivery.

Deploying Innovation and Technology: How can the innovation/technology in this project be applied in multiple sectors/areas? (150 words max.)

The technology and approach are highly transferable across both the highways sector and wider public services. Any organisation collecting field data, whether for assets, infrastructure or compliance, can adopt the model using standard mobile devices and cloud-based analytics. Within highways, the system can be expanded to footways, cycleways, structures, signage and drainage, creating a unified, AI enabled asset inventory. Beyond transport, similar video-based AI can support housing inspections, utilities monitoring, environmental services and estate management. The approach also aligns with PAS 2161, establishing a national framework for consistent condition monitoring that other authorities can easily adopt. Because implementation relies on software, existing devices and simple workflows, barriers to entry are low. The model demonstrates how routine operational activity can be transformed into a continuous, data-rich evidence base for decision making, offering repeatable value across sectors focused on safety, maintenance, compliance or risk management.

Deploying Innovation and Technology: How does this project demonstrate scalability and resilience - the ability to use technology in a wider scope and in a way that encourages longevity of use? (150 words max.)

The programme is inherently scalable, using standard mobile devices and a cloud-based AI platform that can be expanded without additional survey vehicles or specialist equipment. By aligning early with PAS 2161, the project ensures resilience through national standards that support long-term consistency and future technological updates. The workflow is simple to replicate, officers record video during normal duties, AI processes it automatically and data flows directly into existing asset management systems. This makes scaling to footways, cycleways, signage and other assets straightforward. Cloud hosting provides resilience through secure data storage, version control and real time access for all stakeholders. Continuous monitoring reduces operational risk by removing unnecessary traffic management, improving sustainability and ensuring service continuity even during resource pressures. With proven cost savings, reduced emissions, rapid deployment and strong supplier support, the approach is designed for longevity, adaptability and wider adoption across local authorities and infrastructure operators.

All categories: please add anything else that supports your award entry

RoadAI – Green Claims
Green Claims Team liaises with Cheshire Police to identify responsible parties.
Identified responsible parties or their insurers are billed for repair costs.
Approximately £100k+ has been claimed for RTC-damaged barriers.
A video of the barrier before damage is used as a reference point.
Previous video footage can be reviewed to determine when the damage occurred.
RoadAI identifies RTC-related barrier damage.

Grit Bins
CE Map Viewer lists over 430 grit bins in Cheshire East.
A desktop review using RoadAI and Google Maps was carried out to verify locations.
Highway operatives are visiting each verified grit bin to confirm location, assess condition, and refill.
An additional 180 unlisted grit bins were found across the network during the review.
After reconciling different data sources, over 500 grit bins have now been identified.

Safety Barriers

RoadAI helps locate safety barriers not listed in existing inventories such as QGIS and Confirm.
Newly identified barriers are added to the asset inventory.
Additional previously unlisted safety barriers have been identified.

Boundary Signs
A request was made to identify the number and type of Cheshire East/Cheshire boundary signs on cross-border roads- we used RoadAI to carry out this request.
167 cross-border roads were inspected.
38 of these roads were found to have Cheshire-specific boundary signs.

Completed Work Schemes & As-Built Checks
RoadAI supports updating Confirm by helping identify chainages for specific assets.
As-built drawings help identify the types of assets affected by the scheme.
RoadAI assists in locating the chainages that need updating for each asset.