ADEPT President's Awards 2025
Entry form

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Award category

Innovation in Place-shaping

Project Title   The Road to AI Schedule Smart Technology in Highways with Triopsis

Local authority entrant   Ringway Jacobs - Cheshire East Highways

Partner/s if applicable   TriOpsis

Headline summary (150 characters max.)

Cheshire East Highways has automated its management of highway maintenance, through an AI-powered system, TriOpsis – a first for the highways industry

Please note we need at least one supporting image per award submission. Upload your image/s below.

📄 PDF   Supporting evidence - TriOpsis.pdf

Video - please paste links to any video evidence here. (Leave blank if not relevant.)

https://youtu.be/SnJTvKwohO8

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

In August 2023, Cheshire East Highways established a partnership with TriOpsis to tackle the significant challenges of scheduling over 52,000 urgent highway defect repairs annually. Supervisors faced difficulties in evaluating jobs based on factors like completion times, traffic management requirements, and resource availability, particularly during the winter months when defects increased. The need for quick turnarounds within the 2- to 5-day response times set by our Code of Practice, complicated the manual scheduling process.

To address these issues, we implemented AI-driven smart scheduling, a method already successful in the utility sector. The TriOpsis Smart Scheduling system, integrated with our Confirm software, enhances resource allocation and scheduling efficiency. By utilising road-based clustering and dynamically adjusting job durations. It uses gang qualifications to automatically assign gangs to the correct categories. The system provides live image streaming of completed repairs, which enhances quality control, representing an innovative blend of AI and real-time data.

Innovation in place-shaping: How has this project shown evidence of improved outcomes for users? (150 words max.)

TriOpsis is producing significant results and potential benefits. These include an 18% productivity increase, 100% gang utilisation, 100% planning automation, and 100% SLA compliance, all achieved with consistent resources during the trial period.

Operationally, the tool processes all outstanding jobs within the system daily, looking as far ahead as our 20-working day response time, generating complete schedules by the next morning for supervisor review. This feature allows new staff to adapt quickly, even without prior experience in gang structure and enabled resource redeployment across the operational team.
 On average we achieved a 2.8% increase in our Operation Performance Indicators for defect response times, compared to the previous year, providing further benefit to our client.

Feedback from operational teams has been positive, recognising the system's ability to free up time for valuable supervisory tasks. Additional advantages include reduced mileage and fuel consumption, through the system, calculating the most effective route.

Innovation in place-shaping: 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.)

The Smart Scheduling Tool has revolutionised highway maintenance scheduling by replacing manual processes with AI-driven automation, leading to improved efficiency and reduced scheduler bias. The system has delivered potential savings through reduced fuel consumption, mileage, and the potential for gang reduction while maintaining KPIs.

Improved scheduling time efficiency allows for better quality control and more time to respond to unplanned emergency tasks. By processing daily data to generate schedules overnight, it has streamlined workflows, enabled proactive supervisor reviews and improved overall operational efficiency, transforming a reactive service into a proactive one. This helps maintenance teams address important areas quickly, reducing downtime and improving overall safety on our network through quicker repairs.

Additionally, it aids early problem prediction, allowing for quick interventions that prevent significant disruptions. AI integration has made operations more efficient and sets a standard for future technology use -facilitating smarter, sustainable infrastructure management in highways.

Innovation in place-shaping: How can the innovation/technology in this project be applied in multiple sectors/areas? (150 words max.)

Triopsis' innovation extends beyond surface analysis. The Smart Scheduling tool, demonstrating an 18% productivity increase and 100% gang utilisation on maintenance works, can be adapted across different areas of the highways service.

This versatile tool is designed to streamline high-volume, short-duration tasks, leading to a substantial reduction in scheduling time and an overall increase in efficiency.

As Cheshire East Highways we aim to further enhance productivity by allowing teams to directly request making safe additional defects identified from the field. Our in-house Street Lighting team is adopting this system to improve scheduling for reactive repairs, column replacements, and maintenance of illuminated signs. This implementation focuses on optimising resource management, ensuring that services are delivered in a timely manner. By integrating these advancements, Cheshire East Highways is committed to enhancing operational performance and responsiveness, ultimately benefiting both the teams involved and increasing overall public and client satisfaction.

Innovation in place-shaping: 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 project's scalability is evident in its structured, phased rollout, allowing seamless integration with established systems like Confirm. This facilitates expansion, with planned additions like overtime

scheduling and adoption by the Street Lighting team.

The system's capacity to handle extensive data and generate overnight schedules supports its ability to scale operations. In an industry which continues to see funding challenges and declining networks, where reactive defects continue to rise, the system continues to turn around higher volumes of workflow. The system adapts to client needs, adjusting to suit different SLA timeframes and adjusting client demands. The ability to change the key parameters, focusing on identifying the most carbon efficient route cannot be done effectively manually over 52,000 defects a year.

A commitment to continuous improvement, incorporating user feedback and evolving features, ensures the system remains relevant and effective. This approach establishes a robust framework for wider application and sustained utility.