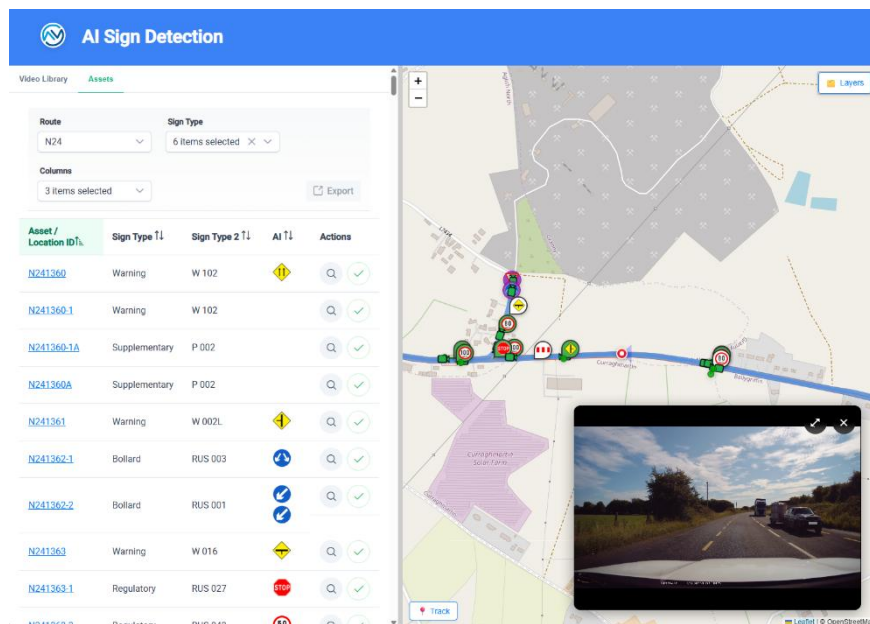




Highways Asset Recognition and Video Analysis



The Nicander Highways Asset Recognition and Video Analysis Service is a web-only tool that allows Local and National Authorities to upload any geotagged dashcam footage and automatically create an asset register, perform visual inspections and monitor condition. No third-party apps to download and no need to redrive the network when models are added or improved. Simply upload your existing dashcam footage and the system automatically detects signs and generates an initial asset register for review and validation. Within minutes, authorities can move from having little or no data to a trusted, network-wide sign inventory that directly supports inspection, maintenance and asset management processes in NAMS.

Road authorities rely on fixed traffic signs to inform, warn and protect road users. These assets form a critical part of the road safety ecosystem, yet many authorities do not hold a complete, current or trusted view of what is installed across their network. Signs have often been installed over decades through multiple schemes and contractors, resulting in fragmented records, duplication, redundancy and inconsistent quality. As expectations around safety, compliance and asset management maturity increase, this lack of visibility creates operational risk and limits effective investment planning.

Nicander's AI Fixed Sign Recognition service provides authorities with rapid, network-wide visibility of their fixed sign assets and is designed explicitly to support modern asset management practice. Using computer vision applied to simple dashcam footage, the service automatically detects, classifies and registers fixed traffic signs, creating a comprehensive and auditable asset record with minimal operational disruption. Integrated seamlessly with the Nicander Asset Management System, NAMS, the service establishes a trusted data foundation that improves safety assurance, supports compliance and enables proactive, evidence-led decision making.

Already proven through national scale trials, the service is scalable, future-ready and aligned to the evolving needs of road authorities.

The Challenge Facing Road Authorities

Incomplete and Fragmented Asset Records

Most authorities do not maintain a complete and up-to-date register of fixed signs. Legacy installations and piecemeal upgrades have resulted in fragmented data sets that make it difficult to plan maintenance, manage risk or justify investment.

Governance and Compliance

Regulators and auditors increasingly expect authorities to demonstrate mature, data-driven asset management practices, supported by auditable records and consistent reporting.

Safety and Operational Risk

Without accurate asset intelligence, authorities cannot be confident that mandatory and regulatory signage is present, visible and fit for purpose. Missing, damaged or obscured signs may go unidentified, while redundant or obsolete signage can increase driver distraction and undermine network clarity.

Resource Intensive Manual Surveys

Traditional sign surveys require skilled engineers to repeatedly drive and stop along the network, manually record asset details and compile data into systems. This approach is slow, costly, disruptive and often delivers incomplete results.

Supporting Safety, Compliance and Asset Management

By providing a complete and auditable inventory of fixed signs, the service supports authorities in demonstrating that signage is present, visible and appropriate. Integration with NAMS ensures that sign assets can be managed through structured asset management processes, supporting safety assurance, governance and regulatory reporting.

The service is designed as a supporting tool for asset management, not a standalone solution. All outputs feed directly into NAMS, enabling authorities to manage signs as part of a broader, integrated asset management ecosystem.

Nicander's AI Fixed Sign Recognition Service Capabilities

Nicander's AI Fixed Sign Recognition service delivers a step change in how authorities establish and maintain their Fixed Sign asset base. The service uses advanced computer vision models to analyse dashcam footage collected during routine network activity, eliminating the need for dedicated survey campaigns.

Automated Asset Discovery

Computer vision models automatically detect and classify fixed traffic signs from camera agnostic dashcam footage, identifying sign type and capturing supporting imagery.

Rapid Asset Registry Creation

Detected signs are registered with accurate geolocation and asset attributes, enabling the creation of a comprehensive networkwide sign inventory in days rather than months.

Desktop Inspection and Validation

A web based interface allows users to review and validate assets remotely, reducing the need for repeat site visits and improving efficiency.

Central Video Archive and Playback

All source video is securely stored, enabling re processing as AI models improve and ensuring long term value from historic data.

Centralised AI

The service centralises all AI processing, enabling the use of more advanced and capable models that deliver higher accuracy. As models are enhanced or new capabilities are introduced, existing footage can be reprocessed without the need to redrive the network, removing reliance on the limited processing capability of mobile devices and protecting long term value from the data.

Seamless Integration with NAMS

The service integrates directly with the Nicander Asset Management System, ensuring sign assets form part of a single, authoritative asset register alongside other highway assets. This enables consistent workflows for inspections, maintenance, reporting and lifecycle management.

AI Capability Roadmap and Future Direction

Nicander's AI Fixed Sign Recognition service has been designed as an extensible computer vision platform aligned to long term asset management maturity.

In Development

Planned enhancements include the introduction of AI models to assess sign condition, including deterioration, damage, visibility and obstruction.

Current Capability

Automated detection, classification and registration of fixed traffic signs using dashcam imagery, fully integrated into NAMS.

Building for the future

Roadmap

We will extend the platform to include road surface condition recognition aligned with PAS 2161 requirements. Using the same data capture approach, this capability will provide authorities with a scalable pathway to AI enabled carriageway condition assessment, supporting consistent, standards aligned reporting without additional survey disruption.

Delivery through 2026