



Automatic Track Inspection

<p>Project Automatic Track Inspection</p>
<p>Client Washington Metropolitan Area Transit Authority (WMATA)</p>
<p>Location Washington D.C., United States of America</p>
<p>Dates & Duration 2019 – 2023 (48 months)</p>
<p>Services Provided</p> <ul style="list-style-type: none"> ▶ Subject Matter Expertise.

Background

Washington Metropolitan Area Transit Authority (WMATA) developed their Automatic Track Inspection (ATI) project to move to train-based inspection for track assets. When implemented, improvements in workforce safety, inspection quality and asset knowledge will improve efficiency, reduce service delays and lower operational costs.

The introduction of ATI will allow WMATA to significantly reduce in-traffic inspections, improving train performance while simultaneously reducing the likelihood of contact between staff and trains. A decrease in the need for contracted staff to support in traffic inspections reduces operational expenditure, with longer term asset condition improvements providing further savings.

Scope of Work

Network Rail Consulting (NRC) was responsible for:

- ▶ Defining the organizational requirements;
- ▶ Defining the asset data required to allow safe operation of the network and confirming reliable asset condition information;
- ▶ Defining the track inspection vehicle functional requirements. The organizational and asset data requirements identified were used to produce the solicitation package and support option selection;
- ▶ Developing new or updated standards, processes, procedures. Program implementation including organizational change;
- ▶ Completing vehicle and system acceptance, and verification of the system effectiveness through parallel testing of new inspection vehicles and onboard equipment; and
- ▶ Providing support for data management, operation, compliance and Risk Based and Reliability Centered Maintenance (RBM/RCM).

Key Project Outputs

NRC delivered the below key outputs in the following phases:

Phase 1:

- ▶ Defined data requirements; and
- ▶ Defined data collection methods for each required data set.

Phase 2:

- ▶ Developed the Request For Proposal (RFP) requirements for vehicle construction; and
- ▶ Automatic Track Inspection (ATI) systems Vendor selection.

Phase 3:

- ▶ Updated existing WMATA documentation for ATI implementation;
- ▶ Proposed limit values for asset condition, monitoring and deterioration prediction;
- ▶ Risk assessments for new inspection process;
- ▶ New/augmented inspection processes to support ATI implementation
- ▶ Created automated track inspection routes with associated diagrams;
- ▶ Developed defect reporting protocols; and
- ▶ Developed data upload, condition analysis, and condition reporting processes.

Phase 4: On arrival of the vehicles

- ▶ Reviewed ATI equipment performance to confirm effectiveness; and
- ▶ Staff training and mentoring.

Phase 5:

- ▶ Monitored the inspections to confirm compliance and condition reporting; and
- ▶ Managed condition reporting within the WMATA Enterprise Asset Management (EAM) system.

Additional output for phase 5 – dependent on contingent time usage:

- ▶ RBM/RCM assessment to further tailor inspection frequencies.