

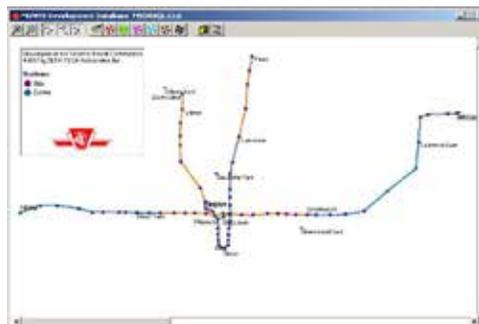
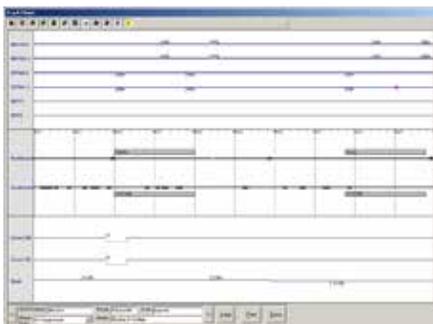
**PROTRAN**  
TECHNOLOGY

A Harsco Rail Company



**MOWIS®**

## MAINTENANCE OF WAY INFORMATION SYSTEM



**An enterprise solution for managing railways' and transits' track assets.**

- Manage track assets graphically
- System map and track charts
- Manage defects, inspection, and maintenance
- Compatible with handheld inspection devices
- Component forecasting modules

### What is MOWIS?

The MOWIS software package is an enterprise wide maintenance of way information system for providing insight into your track assets and system needs. Developed for transit and railway systems, it includes modules for displaying system maps, track charts, and detailed data on key track components and infrastructure.

MOWIS manages all detailed information on the various track components in use, including inspections, component failures, maintenance plans, maintenance repairs, and installation data. MOWIS can be utilized by track maintenance employees to provide a near real-time record of track and infrastructure components, as well as the detailed condition of the track.

Simple point-and-click interfaces provide data with just a few clicks. No more searching through paper reports or faxing and emailing documents. Any data required by an employee is available at any time

### How does MOWIS work?

MOWIS records failures of track components as entered by the maintenance of way track inspectors and roadmasters. From the list of failed components, MOWIS produces work orders to be assigned to track gangs to repair those defects. MOWIS also records when a defect is repaired and the components used in that repair. MOWIS has an up-to-date record of the condition of the track for the entire system at any time. In addition, MOWIS can also keep a running inventory of the available components to be used for repairs, including the item descriptions and stock numbers.

MOWIS can record inspection reports and track defects from inspectors' visual inspections, NDT testing, geometry car testing, and rail wear testing. MOWIS becomes the central database for all track related information. Reports can incorporate data from multiple sources and provide maintenance employees with a complete description of the track condition.

### Benefits:

- Improves safety
- Reduces manual data entry errors
- Maximizes operating profits
- Optimizes equipment and track asset utilization
- Decreases maintenance cost
- Expedites planning and operations
- Provides immediate access to information
- Enforces correct behavior for system maintenance

The screenshot shows a software window titled "Patrol Trouble" with a grey background and a blue title bar. The window contains a form with the following fields and values:

Zone:	51 Yonge Upper	Number of Defects Found:	7
Patrol Zone:	Y4	Current Defect Number:	1
Date:	06/01/2001		
Type:	J-Bolts		
Defect Type:			
Switch No:	0		
Beginning Chainage:	421 + 88		
Ending Chainage:	0 + 0		
Direction:	NB		
Rail side:	WR		
Defect Severity:	Brown		
Work Order No:	294	Issue Date:	06/01/2001
Job Order No:	none	Close Date:	00/00/0000
Memo:	broken		

At the bottom of the window, there are four buttons: "Save and Exit", "Delete", "Edit", and "Exit".

MOWIS can record and monitor track inspector defects and defect repairs.

# MOWIS® MODULES

## MAINTENANCE OF WAY INFORMATION SYSTEM

### MOWIS Modules:

MOWIS is a modular application suite. This allows the client to select only or all of the capabilities needed to support their rail network.

### System Map Module:

The system map module of MOWIS provides a graphical display of the entire rail system with the option to display track component failures and / or rail defects. The system map provides direct access to condition data at each track location and station, including photographs. The system map also provides access to the track chart based on the data in the database. The user can display the additional levels of data by clicking on the desired station or segment. The system map is the basis of MOWIS and provides access to the other available modules.

### Track Chart Module:

The track chart module displays updated data corresponding to paper track charts. The track chart displays detailed track information describing the rail, track fixation, curves, grade, stations, structures, turnouts, diamonds, expansion joints, and lubricators. The user can select which of these are displayed on the track chart. Additional data, such as installation date, related inventory, and repaired defects are available by clicking on the component displayed on the track chart. The track chart can also be scrolled to allow the user to locate the desired segment of track to be displayed.

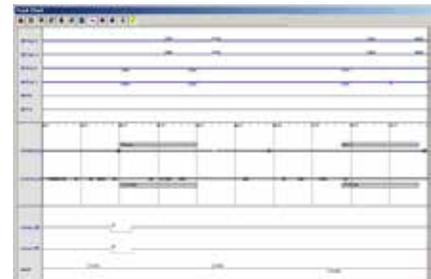
The track chart module can also display track inspection data and component failure data. This provides maintenance and supervisory personnel with references to locate component failures and to identify the proper materials required for repairs

### Features:

- Graphical display overview of the entire system
- Provides summary display of defects, by severity category, in easy-to-read visual format
- Displays real-time track charts
- Log and track component failures
- Forecasts track component failures and rail life
- Easily retrievable detailed descriptions of track segments
- Summary report for defects and repairs
- Easily imports inspection data from a variety of sources



The system map module of MOWIS provides a graphical display of the entire rail system together with outstanding track defects.



The track chart module can display a "realtime" track chart of any segment of the rail system.

# MOWIS® MODULES

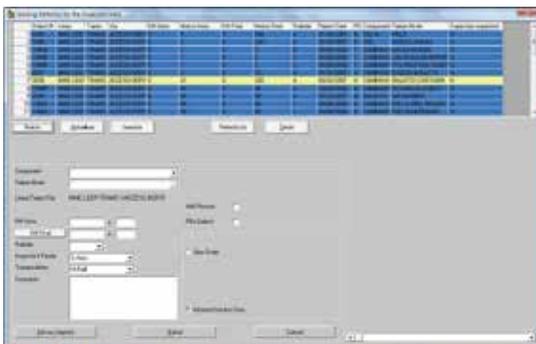
## TRACK INSPECTION, TRACK DEFECTS AND FORECASTING

### Track Inspection Module:

Provides the ability to record track inspections from a variety of sources. MOWIS includes utilities to record visual inspections recorded on paper or on handheld computers (PDAs). MOWIS has additional utilities to read data files from a variety of track geometry vehicles, NDT testing vehicles, and rail wear measurement systems.

PDA software is available to record inspections and defects. The software records locations including GPS coordinates of the inspections and defects to provide more accurate identification of the reported defects. PDA software is currently available for track inspection, tie inspection, and turnout inspections, with other packages in development (e.g. signal inspection).

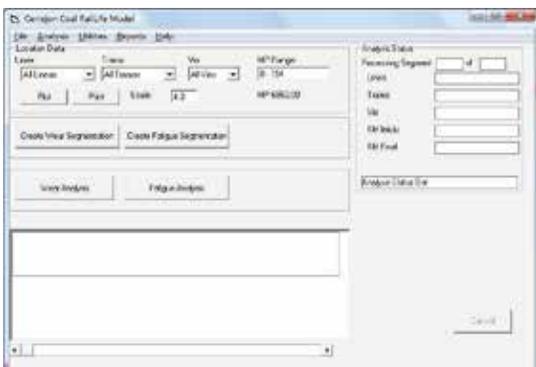
Each of these utilities is designed to minimize the user input and effort and to maximize the availability of track related data. The track inspection module can provide timely reports on missing or delayed inspections to alert the user.



### Track Defect Module:

Records track defects identified during the inspections. Defect priority can be assigned based on FRA 213 standards or on the proprietary standards of a property. Defect repairs can be recorded as a new inspection or using a work order system that can include the materials used for the repair.

The track defect module includes reporting functions that allow a user to look at defects based on components, dates, priorities and locations. Users can look for reoccurring defects to properly address the underlying cause, rather than just repeatedly making the same repairs.



### Forecasting Modules:

Are available for forecasting the expected life of various track components. These modules are designed to use the MOWIS data and provide the user with forecasts of track maintenance and overhauls to maintain the track to the desired standards.

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