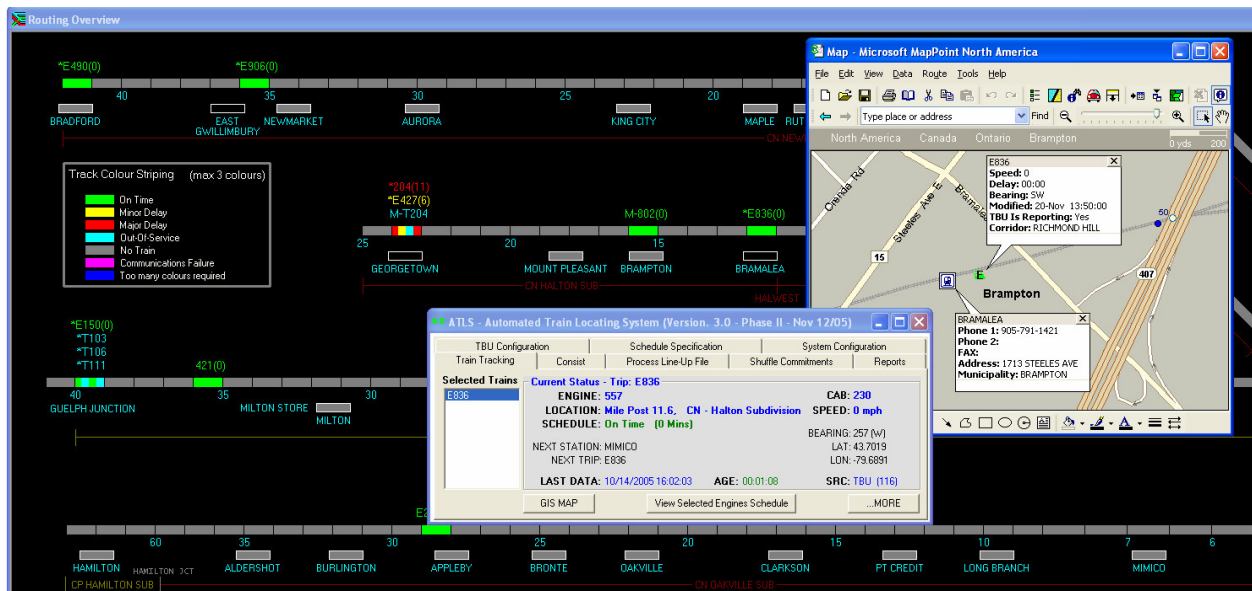


TMM – Automatic Rail Vehicle Locating System (ARVL)

Condor's Train Movement Manager (TMM) general purpose train control and monitoring product provides a proven scalable foundation for a full range of dispatching systems. The ARVL interface provides real-time updates of Train ID, location, speed, direction, locomotive alarms, consist, routing information and schedule adherence. The information is displayed by TMM and/or a GIS map interface either locally or via a web page over an intranet and/or the internet.

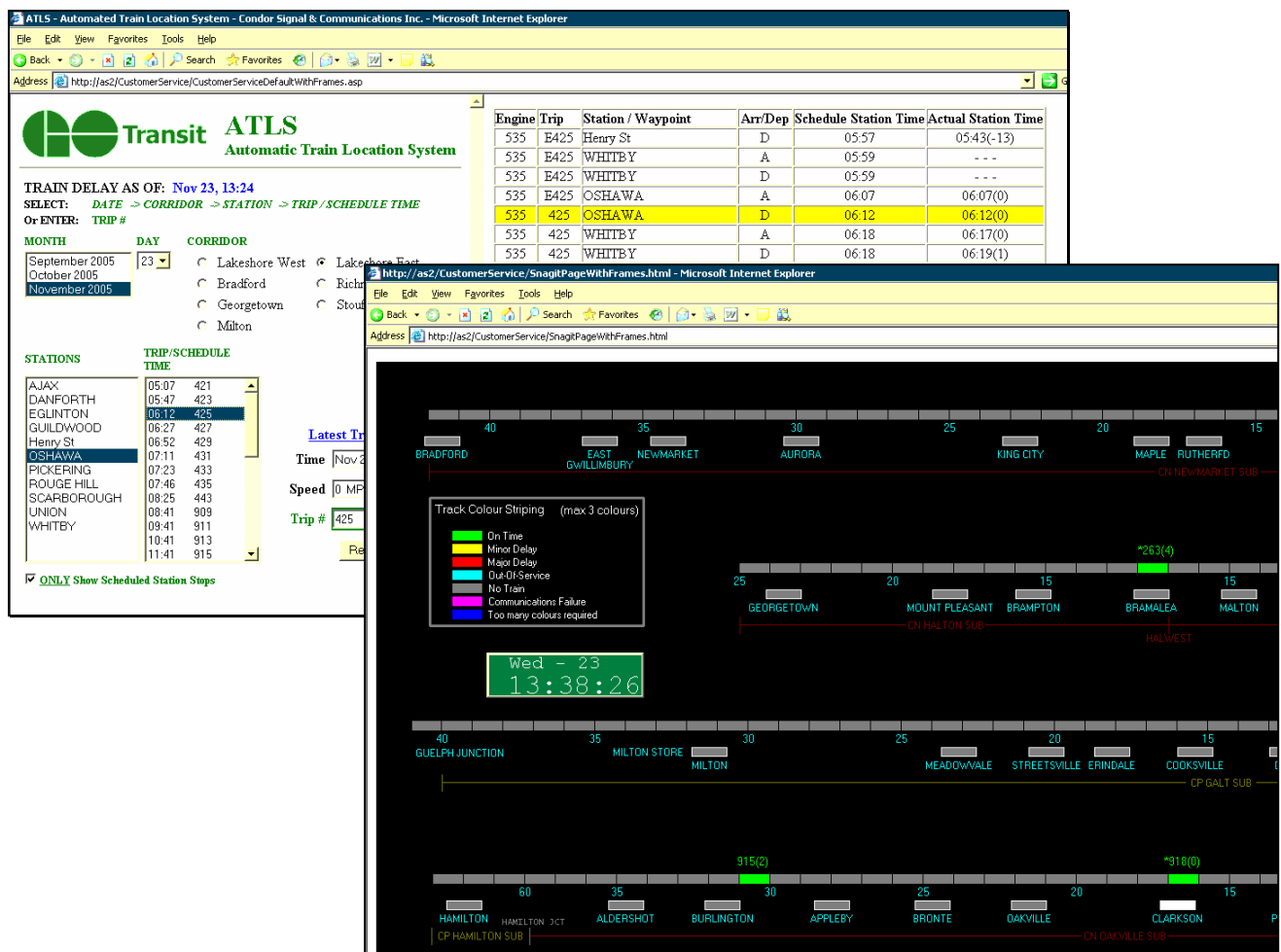


GO Transit's ATLS System (Rail Coordinator's Overview)

Standard Features

- **Web View** provides remote users with the current location and status of all monitored rail equipment in a graphical CTC-type display. Pages are also provided to support reports such as historic schedule adherence, location, track speeds, etc.
- **Microsoft MapPoint® 2004 COM Add-in** displays any information available in TMM's tracking database on a GIS map, such as: Train ID, location, speed, direction, and schedule adherence. Wayside information such as milepost and signal locations are also displayed. Database driven display properties allow users to tailor map information and add geographic / railway feature objects independently, such as locations of wayside bungalows, snow blowers, storage facilities, etc.
- **Seamless integration** of control center functionality combining CTC, Forms, SCADA and wayside supporting subsystems such as AEI readers and hot box detectors. Connection to existing railroad systems using standards such as XML and SOAP.
- **Executive and Operational Reporting** including standard and user customizable reports. Reporting functionality is supported for current and historical data by a fully redundant Microsoft SQL Server database configured in a Hot Standby configuration. Microsoft Access is included and utilized in a standard configuration.
- **Schedule Viewer** provides real-time updates of schedule adherence, and prediction of current delays based on GPS location. Track speed profiles can be used to enhance the prediction.

- Centralized Alarm System** built on MS SQL Server, provides a fully independent alarm facility with intelligent alarm filtering and alarm suppression. The alarm system information is distributed to a graphical viewer operating on an unlimited number of workstations or PDAs. The workstations may be on a local network and/or on an intranet/internet. Detailed and summary reports are available through MS Access or any application capable of connecting to MS SQL Server. User configurable automated E-mail and Pager notification to selected personnel tied to individual alarms.
- Secondary Equipment Tracking** allows GPS tracking of rail maintenance equipment, including track vehicles and construction equipment, etc.. Equipment differentiation allows the GIS map application to filter and identify various equipment types and/or status using unique standard map icons or user supplied icons.
- Data Imports/Exports** are supported by MS SQL Server in a myriad of standard formats. Multiple protocols are supported, including XML, SOAP & FTP.



The screenshot displays the ATLS (Automated Train Location System) web interface. On the left, there are navigation menus for selecting a date (Nov 23, 2005), a corridor (Lakeshore West), and a station (OSHAWA). A table lists station stops with their respective times. The main area features a track performance map showing various rail lines (CN Newmarket, CN Halton, CP Galt, CN Oakville) with colored bars indicating train status. A legend explains the color coding: On Time (green), Minor Delay (yellow), Major Delay (red), Out-Of-Service (blue), No Train (grey), Communications Failure (magenta), and Too many colours required (purple). A digital clock shows the current time as 13:38:26 on Wednesday, Nov 23.

Engine	Trip	Station / Waypoint	Arr/Dep	Schedule	Station Time	Actual Station Time
535	E425	Henry St	D	05:57	05:43(-13)	
535	E425	WHITEBY	A	05:59	---	
535	E425	WHITEBY	D	05:59	---	
535	E425	OSHAWA	A	06:07	06:07(0)	
535	425	OSHAWA	D	06:12	06:12(0)	
535	425	WHITEBY	A	06:18	06:17(0)	
535	425	WHITEBY	D	06:18	06:19(1)	

Web Views of Current and Historical Performance