

ATLANTA TRANSIT AUTHORITY SAVES TIME, MONEY ON RAIL MAINTENANCE

The Metropolitan Atlanta Rapid Transit Authority (MARTA) is reporting major time savings from its deployment of a decision-support system for rail corridor maintenance planning and operations.

MARTA has reduced the time it spends analyzing automated track geometry and verifying exceptions or defects using Bentley Optram software from Bentley Systems.

MARTA's Track and Structures division maintains 77km of track, three rail yards, 38 rail stations and thousands of assets. Previously, it took a large investment in man-hours to review and compile track condition data. Now, MARTA is able to make more informed decisions about proactive maintenance with less labor.

"We can plan maintenance during off-peak hours, and the planning tools allow us to address maintenance concerns proactively," said Tim Elsberry, acting assistant director of MARTA's Track and Structures division. "We can address multiple problems during a single system shutdown."

MARTA began using the Bentley Optram solution for rail condition analysis and planning in 2006. The system interoperates directly with MARTA's enterprise asset management system to automatically generate work orders and capture progress, history, and cost information that can be used to plan future maintenance and construction projects. With the ability to practice proactive maintenance, MARTA hopes to reduce maintenance and renewal costs by 20 percent, as well as reduce track defects.

"In the maintenance industry, it's well documented that reactive maintenance costs two to four times more than proactive maintenance," Elsberry said. "By having advanced planning tools and functions, maintenance organizations can reduce reactive work and increase planned outage time. Whereas reactive maintenance is often the result of a failure or downtime, planned maintenance is performed in the off-peak hours and minimizes the impact on customers."

Bentley Optram was put into place as part of Phase I of MARTA's Business Transformation Program (BTP), launched in October 2006. The BTP, which encompasses a reengineering of business processes and operations, along with the replacement of multiple legacy information technology systems, is slated for completion in 2008.

In Phase I, MARTA implemented an integrated system involving components of Oracle Enterprise Resource Planning (ERP) software, Maximus Enterprise Asset Management (EAM) software, and the Bentley Optram suite.

Booz Allen assisted MARTA in putting its system requirements together. Maximus led the project, and brought in Bentley Optram.

MARTA had been using an older Computerized Maintenance Management Software (CMMS) product since 1993, but it was heavily customized and was not integrated with the organization's other enterprise systems.

"Our goal was to have an integrated suite of tools that truly worked together," Elsberry said.



Field inspectors walk the track and use a hand-held device running Maximus MobileFocus software to record inspection data. The Bentley Optram system provides a visual reference as to where work is scheduled and has been performed. The system also interfaces with track geometry information, providing the ability to visualize all channels of the rail telemetry data.

Under the old system, automatic track geometry data (provided by an outside contractor) was manually analyzed for exceptions, then put into a spreadsheet to generate work orders. That data can now be loaded into Bentley. The system automatically identifies exceptions and assigns work orders through Maximus, which has cut the amount of time it takes to complete the process by 70 percent.

The Bentley Optram product suite provides track managers with a concise view of the rail infrastructure through digital track charts, rail assets, and attributes, and it combines information regarding system performance and maintenance activity over time.

The system provides a graphical display of the rail lines and all assets along the corridor. By clicking on the display, MARTA personnel can see the attribute data for any asset, and access past work order information.

"I can filter the data to see all of the work I've done on a particular line," Elsberry said. "If there is an area that's received a lot of attention, we may need to take a closer look at our maintenance strategy to get to the underlying problem."

MARTA expects the system to extend asset life by up to 10 percent through improved maintenance practices, and could reduce track geometry defects by 90 percent. The system has reduced the amount of time work crews must take control of the track for repairs, and the division is operating with a budget surplus for the first time.

www.bentley.com/optram