

Predictive Maintenance and Automated Asset Management for Transit Authority



The Challenge

The Utah Transit Authority (UTA) needed to establish a maintenance schedule based on actual use instead of preset times that unnecessarily removed equipment from revenue service. The UTA runs more than 225 rail cars and engines and 1,000 surface vehicles. It is required to meet federal mandates to monitor the condition of and make timely repairs to railcars and equipment components, reducing breakdowns and ensuring efficient, safe operations. A solution had to be rugged and reliable for metal cars and components in extreme weather.

The Asset Management Solution

An RFID-based system was deployed at UTA's Jordan River Service Center in Salt Lake City. RFID tags attached to equipment had a 100% read rate as they traveled at 15 mph through a read zone with an array of RFID antennas and readers. Data collected at each read zone was transmitted to a dedicated UTA server hosting resource management software, where the information was recorded and linked to event notification modules for predictive maintenance.



The system boosted accuracy of asset auditing, with an error rate of less than .05% compared to 29% when conducted manually. The automated process also reduced man hours, lowering labor costs and freeing staff for other tasks. In addition, the system optimized spare parts stocking by eliminating the need to overstock for unexpected repair and maintenance and allowing parts to be ordered as needs are anticipated.

Conclusion

The solution provides UTA a platform to track the health of components by associating life miles, life hours and rebuild history throughout the useful life of equipment. By incorporating this previously unavailable data into its asset management model, UTA can perform predictive maintenance and asset lifecycle analytics.