

CASE STUDY

CONDITION BASED MAINTENANCE FOR THE TRAM NETWORK OF AMSTERDAM

The Amsterdam metropolitan area has a metro & tram network consisting of 224 kilometers of tram track and 110 kilometers of metro track. Travelers use these means of transportation for 200 million rides annually. The City of Amsterdam is responsible for the metro & tram network and has to ensure the safety, availability and reliability of the assets while maintaining a cost-efficient asset organization.

CHALLENGE: DIGITALIZING TRAM INFRA

The department of Metro & Tram within the City of Amsterdam has a clear and sustainable future-forward strategy and planning for its asset management. Their roadmap answers to short-term and longer term challenges incorporating digitalization and Industry 4.0 solutions. While implementing the roadmap, the asset organization needs to make smart choices as budgets are tight. For their Tram division, the City of Amsterdam wanted to gain better insights in the condition of the infrastructure assets through maintenance strategies and digitalization which would enable effective decision-making. This will result in a future-proof, safe and efficient tram network. For this project, the City of Amsterdam works together with GVB (public transport operator) and Autech (cloud platform provider).

SUMMARY

CHALLENGE

For their Tram division, the City of Amsterdam wanted to gain better insights in the condition of the infrastructure assets through maintenance strategies and digitalization. This enables effective decision-making and results in a future-proof, safe and efficient tram network.

APPROACH

- Translating strategic policy into a future-proof asset management approach
- Implementing Condition Based Maintenance (CBM)
- Implementation of dashboards with real-time insights into asset health and performance
- Stakeholder and change management: from political arena to technicians

RESULTS

- Better insights and informed decision making through real-time asset health dashboards
- 20% annual cost reduction
- High internal adoption rate on all organizational levels

APPROACH: CONDITION BASED MAINTENANCE

MaxGrip provided an asset manager Tram Infra who is in charge of the maintenance strategies, daily spend and long-term infra budget. His main task is to translate strategic policy into a future-proof asset management approach that maximizes maintenance efficiency. As part of the approach, Condition Based Maintenance (CBM) was implemented. Trams and infra assets were equipped with cameras and sensors to measure sound and vibration levels. Also a yearly recurring laser measurement of the rail profiles is implemented. By using state-of-the-art dashboarding software, the asset manager and his team are getting real-time insights into the health and performance of assets, predicting failure before happening.

Clustered assets

Because of the high number of assets that need to be maintained and kept in operation as much as possible, the assets have been clustered according to function, risk and criticality. The data is used for short-term decision-making and forms the foundation for the longer-term strategy and planning in the asset replacement program.

Pragmatic practice leader

Stakeholder management and organizational sensitivity is important in a municipal organization.

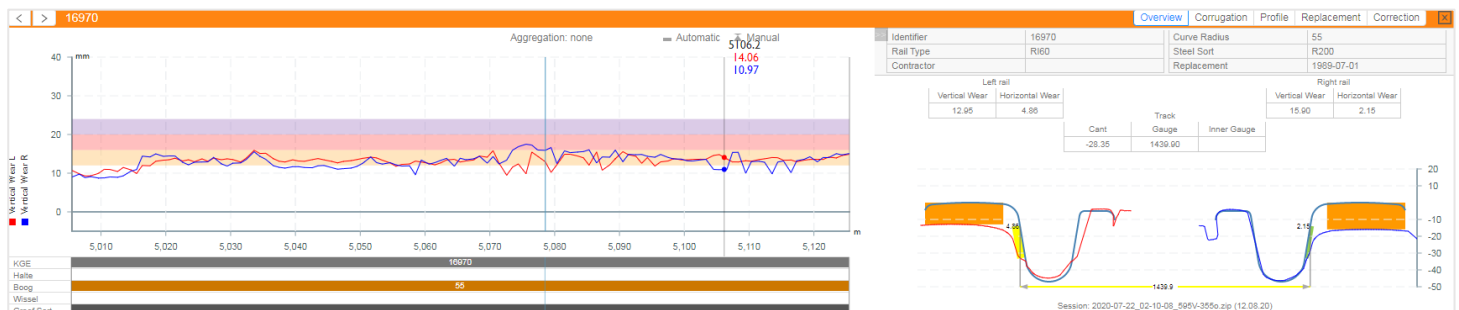
The MaxGrip senior consultant is able to show his added value by performing a balancing act between the political agenda and his asset management practice leadership. He applies a healthy dose of pragmatism to challenges with a focus on getting buy-in from everyone involved.

"As a public organization we do not only need to optimize the value of our infrastructure within the financial boundaries. We also have to prove the right use of our funding. With CBM in Amsterdam, the insights and control it offers, we are taking the next step to make that happen."

*Jacco Zwemer
Director Asset Management MET Amsterdam*

Continuous improvement

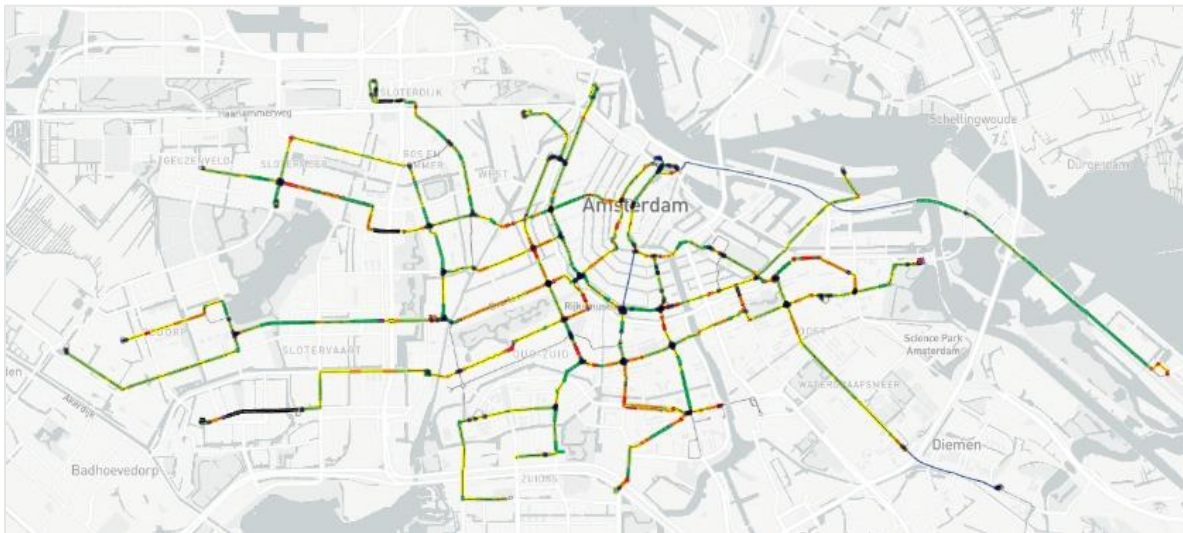
With his team, he encourages a culture of continuous improvement within the Tram asset management organization. Next to digitalizing asset management through implementing CBM, the asset manager constantly signals improvement potential and ensures realization with the team. To promote internal adoption, specific attention is given to celebrating success stories and sharing learnings.



Asset (rail) with condition data (significant wear)

RESULTS: OPTIMIZED MAINTENANCE EFFICIENCY AND 20% COST REDUCTION

CBM makes it possible to focus on the replacements which are really needed and rescheduled according to condition insights. This leads to a cost reduction of 20% annually. CBM has just been fully implemented at the City of Amsterdam's tram division and longer-term results need to be gathered. As the asset organization is set up with real-time dashboards and a long-term asset management plan, that should not be a problem. The outlook is good as Condition Based Maintenance works while the assets are in service. Less downtime is expected resulting in a safer and hassle-free journey for passengers. CBM makes maintenance more plannable which reduces the asset failure rate, optimizes maintenance efficiency and ultimately drives down cost. The MaxGrip consultant plays a pivotal role in stakeholder management, getting a high rate of continuous internal adoption from the political arena to field technicians.



Autech's cloud platform Rail Cloud shows the condition of all assets in a data dashboard.

ABOUT MAXGRIP

MaxGrip consultants enable organizations in asset-intensive industries to achieve continuous improvements on their asset performance, also using the power of Digital Transformation. MaxGrip embraces Industry 4.0 with an APM and maintenance track record of over twenty years in industries like Oil & Gas, Food & Beverages, FMCG and Utilities & Infrastructure. We operate on all continents and have a global presence with three main offices in the Netherlands (HQ), USA and Malaysia.

GET IN TOUCH



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