

Reims

HealthHub™ – Predictive Maintenance with Track & CatenaryTracer™

Alstom further optimizes infrastructure maintenance for Reims’ tramway line with the implementation of HealthHub™ and its Track & CatenaryTracer™ devices: Combining data analytics and innovative monitoring tools which allow the collection of accurate and reliable data from the infrastructure.



KEY BENEFITS

Improve significantly the infrastructure availability and cost-effectiveness :

Thanks to the high levels of accuracy in the measurement, continuous monitoring and data analytics developed by Alstom, predictive maintenance is made possible.

Light tools and no environmental impact

Our train-mounted installation removes the need of specific heavy measurement trains as it is embedded to the commercial trains in service.

Greatly reduces the safety hazards

Decrease of survey crews working along the track and disruption due to track possessions

It includes data analytics capabilities and cloud-based software delivering predictive assessment of the asset status.

Country..... France

Context..... As part of the 30 years’ railway maintenance contract awarded to Alstom for Reims tramway line, Alstom strives to optimize its maintenance costs while increasing the infrastructure availability but also improving passenger experience and comfort. Alstom proposed to the operator the use of HealthHub with Track & CatenaryTracer for its infrastructure monitoring. This innovation ensures a continuous assessment of the health of the infrastructure, delivering accurate up-to-date rail and catenary measures. Data collection and analysis are made more efficient, in such a way that predictive maintenance is replacing classical time-based maintenance.

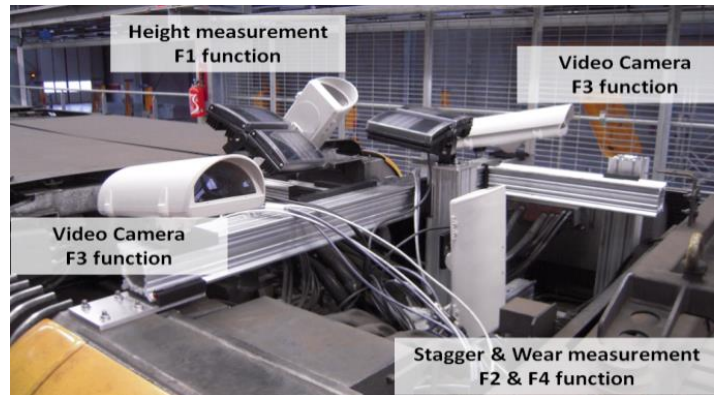
Solution..... In 2014, Alstom commissioned the first TrackTracer™, delivering track monitoring and health assessment services and enabling customers to switch from reactive to predictive maintenance. In the meantime, CatenaryTracer™ has been developed, it is a catenary monitoring service relying on cameras, data processing and image analysis. Both tools are part of HealthHub, the Alstom’s predictive maintenance service providing user-friendly asset health reports & dashboards, and based on Alstom’s data analytics predicting the remaining useful life of these components.

While allowing a greater status follow-up of the infrastructure, it will also enable to decrease the number of manual maintenance inspections and measurements by more than 50%, improving the maintenance workforce efforts and allocation.

PROJECT HIGHLIGHTS

Contract scope	Full turnkey maintenance: Infrastructure + Rolling stock
Contract duration	2011-2041 (30 years)
Track length	22Km
Fleet size	22 cars
HealthHub	HealthHub™ with infrastructure monitoring equipment in service since mid 2014

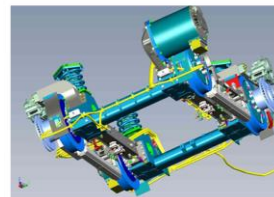
CatenaryTracer™ - Inspection devices installed on the roof of the tramway



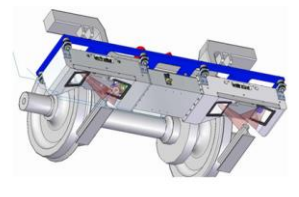
TrackTracer™

- Fully automated measurement system installed on a specific trolley and the tramway:
 - Laser camera
 - Infra Red Camera
 - Video Camera
 - Accelerometers
- Wireless automatic data transmission to the data center enabling fast data analysis and infrastructure health assessment.
- Smart automatic data processing delivering maintenance reports and raising alerts on default.
- User friendly interface accessible from a web platform.
- Recurrent analysis by mounting equipment on the tramway for corrugation monitoring.

Sensors mounted on bogie
Accelerometers on each axis + gyros + GPS



Beam
Dedicated support with all sensors + 3D cameras



TrackTracer™ - Laser beam installed on the white Alstom trolley



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