

# Project Insights

# SNC Lavalin Rolling Stock Structural Integrity Monitoring

Resonate Systems partner with clients to design and build measurement and test systems tailored to their project and application needs.

When project demands are not met by off-the-shelf systems, customers are often left to compromise on project outcomes.

Our integrated turn-key systems aim to bridge that gap and deliver exactly what the client requires.

Supported by a team of mechanical, electrical, and computer systems engineers, we guide our clients from initial requirements gathering, concept designs and prototypes, through to deployment and testing.

With an ever-growing list of deployed systems, our development team are able to leverage hardware and software designs from past projects to rapidly deliver systems built on tried and tested architectures.

Thanks to our philosophy and approach, every project we take on board results in a highly flexible, tailored and cost-effective system.

To assist **SNC Lavalin** in monitoring the structural integrity of rolling stock, **Resonate Systems** developed a customised measurement system for a long-term study; including components such as a web front-end to data, enabling end users to request and inspect data remotely.

To gain a full understanding of the dynamic environment and loads rolling stock is subject to over its lifetime, the custom data acquisition system measured static and dynamic strain and GPS data.

**Resonate Systems** designed and developed the system to be rugged and capable to monitor for a period of 12 to 18 months. The system also provided remote data uploads to a dedicated web portal.

The systems were installed in locations subjected to high level of vibration and with limited opportunities to perform inspection and maintenance once in the field. As such, the design had to be robust, simple to operate and verified/approved for rail use

With clearly defined measurement requirements from **SNC Lavalin** and to meet the project objectives, **Resonate Systems** defined how to best acquire data and specified the full set of necessary infrastructure required to meet the client's objectives.

Through this project, **Resonate Systems** demonstrated a broad range of capabilities by having designed and built the custom onboard monitoring system, undertaking the on-site installation, developing a tailored web data access portal and through the provision of timely client reports.



## Resonate Systems

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