

HEXAGON

Enhancing Wheelset Measurement Efficiency

ÖBB STADLER Service GmbH, Vienna, Austria



Automated and handheld CALIPRI wheelset measurement systems ensure flexible, cost-effective maintenance to ensure the availability and reliability of rolling stock.

For train wheel profile measurement, ÖBB STADLER Service GmbH uses Hexagon's CALIPRI measurement devices for quick, exact and reliable measurement with unmatched repeatability. The recent introduction of a fully automated wheelset measurement system has transformed maintenance efficiency and enhanced their condition-based and predictive maintenance capabilities to ensure the cost-effective safe operation of rail vehicles.

ÖBB STADLER Service GmbH – a joint venture between the Austrian Federal Railways (ÖBB) and the Swiss

company STADLER – operates as a maintenance partner for major rail companies like WESTbahn and Deutsche Bahn, focusing primarily on STADLER KISS double-decker electric trains. The company provides comprehensive maintenance services not only to their main clients but also to other railway operators, ensuring high operational standards and reliability across the board. At their maintenance workshops in Vienna, they currently service 32 vehicles, which have a combined mileage of more than 12 million kilometers per year.

CALIPRI Systems in Use Since Day One

Before establishing the joint venture in 2017 and relocating maintenance operations to Vienna, the STADLER Service team was based in Linz. Since 2011, they have maintained Westbahn's fleet of KISS double-deck electric units there.

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Bernhard Knapp, Project Manager at ÖBB STADLER Service GmbH

Bernhard Knapp, Project Manager at ÖBB STADLER Service GmbH, who has been involved from day one, highlights the collaboration with Hexagon to enhance their maintenance processes:

“We’ve been a convinced user of Hexagon’s CALIPRI systems since the beginning, initially measuring with the CALIPRI C42 handheld device,” he says. The C42 is known for its durability and precision in measuring wheel profiles. *“It’s a super stable measuring device. It works great in the workshop, and there are zero problems with dust and dirt. We’ve also appreciated Hexagon’s attention to continually improving the device over the years.”*

In 2023, they expanded their toolkit by integrating the CALIPRI X on-track wheelset measurement system, which offers significant advantages due to its automated, high-precision measurements.

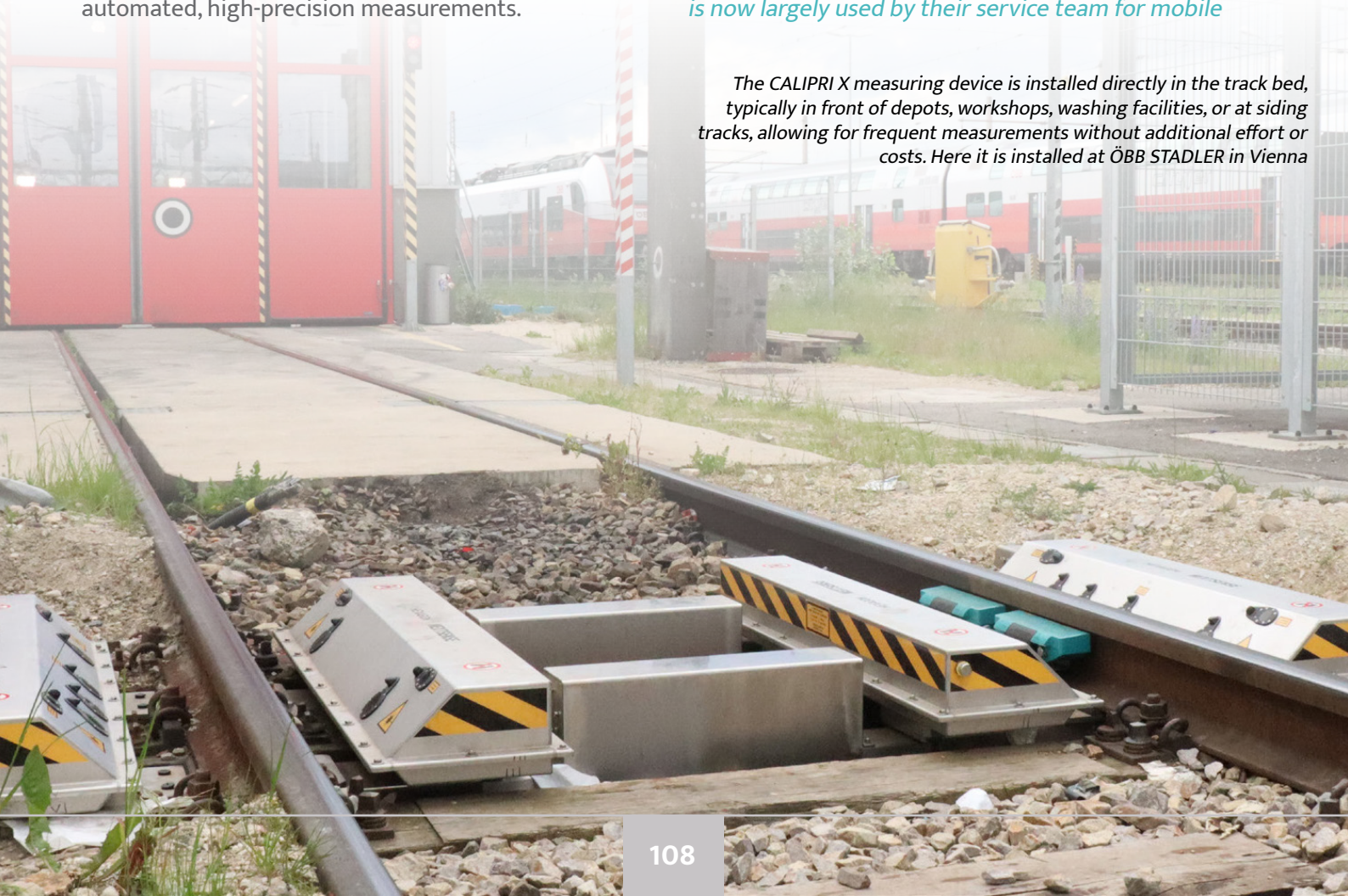
Time and Cost Savings

Installed in front of the maintenance hall, CALIPRI X allows for fully automated measurements to be taken at speeds of up to 30 km/h per pass. It delivers precise results in seconds, removing the need for time-consuming and costly manual inspection and significantly reducing the time vehicles need to spend in the maintenance hall.

“By the time the vehicle comes to a standstill in our hall, we have already automated all the wheelset data in our system. This saves us so much time,” says Knapp. *“We work day and night shifts for our customers and of course have very tight time slots for maintenance. The efficiency that CALIPRI X brings is critical here and helps maintain high vehicle availability. It’s also a big plus that it works year round in all weather conditions, be it snow, ice, rain or the heat in summer. A lot has happened in technology in the last few years and four years ago we didn’t believe reliable automated measurement like this was possible.”* says Knapp.

“Hexagon has proven it is possible. CALIPRI X delivers flawless, high-quality measurement results – it’s a great support for us.” Everything at the Vienna workshop is now fully automated with CALIPRI X. Their C42 device is now largely used by their service team for mobile

The CALIPRI X measuring device is installed directly in the track bed, typically in front of depots, workshops, washing facilities, or at siding tracks, allowing for frequent measurements without additional effort or costs. Here it is installed at ÖBB STADLER in Vienna





By the time the vehicle comes to a standstill in the hall, all wheelset data is already automatically saved in the system

maintenance at a customer's site and also as a back-up handheld measurement device.

Measurement Precision and Data Utilisation

ÖBB STADLER Service uses their CALIPRI systems to measure the wheel profile, diameter and back-to-back distance. Both CALIPRI C42 and CALIPRI X deliver highly accurate measurements ensuring exacting standards are met.

“We are required to meet tolerances in the small tenths or hundredths range. It’s no problem at all for CALIPRI C42 and CALIPRI X to ensure these tolerances and accuracies,” says Knapp. The measurement data gathered from these devices is then fed into their ERP system, where it is automatically evaluated, documented and added into each vehicle’s maintenance record.

Improved Efficiency and Predictive Maintenance

“We need to identify clear trends and necessary steps in good time to get the best mileage out of a wheel,” says Knapp. The precise and reliable measurement data provided by their CALIPRI systems play a pivotal role in helping ÖBB STADLER Service improve their maintenance planning and procedures. In particular, recurring automated data collection from CALIPRI X and the accurate understanding of wheel wear condition enable condition-based and predictive maintenance, better resource planning, and significant cost savings for their customers.

Long-Standing Partnership and Future Plans

“Our cooperation with Hexagon has been excellent for over a decade now”, says Knapp. “The Customer Care Team is great – we appreciate the close collaboration, quick support, and fast resolution of any potential challenges. We at ÖBB STADLER are truly happy to have such a supplier.”

Looking ahead, ÖBB STADLER Service GmbH plans to continuously measure their expanding fleet with CALIPRI X *“with more crossings and more measurements,”* and also offer automatic wheelset measurement as a service to third-party customer vehicles.

Hexagon is a global leader in digital reality solutions, combining sensor, software and autonomous technologies. We are putting data to work to boost efficiency, productivity, quality and safety across industrial, manufacturing, infrastructure, public sector and mobility applications.

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The CALIPRI C42 handheld device is used in the ÖBB STADLER workshop and remains reliable and unaffected, even in dusty or dirty environments