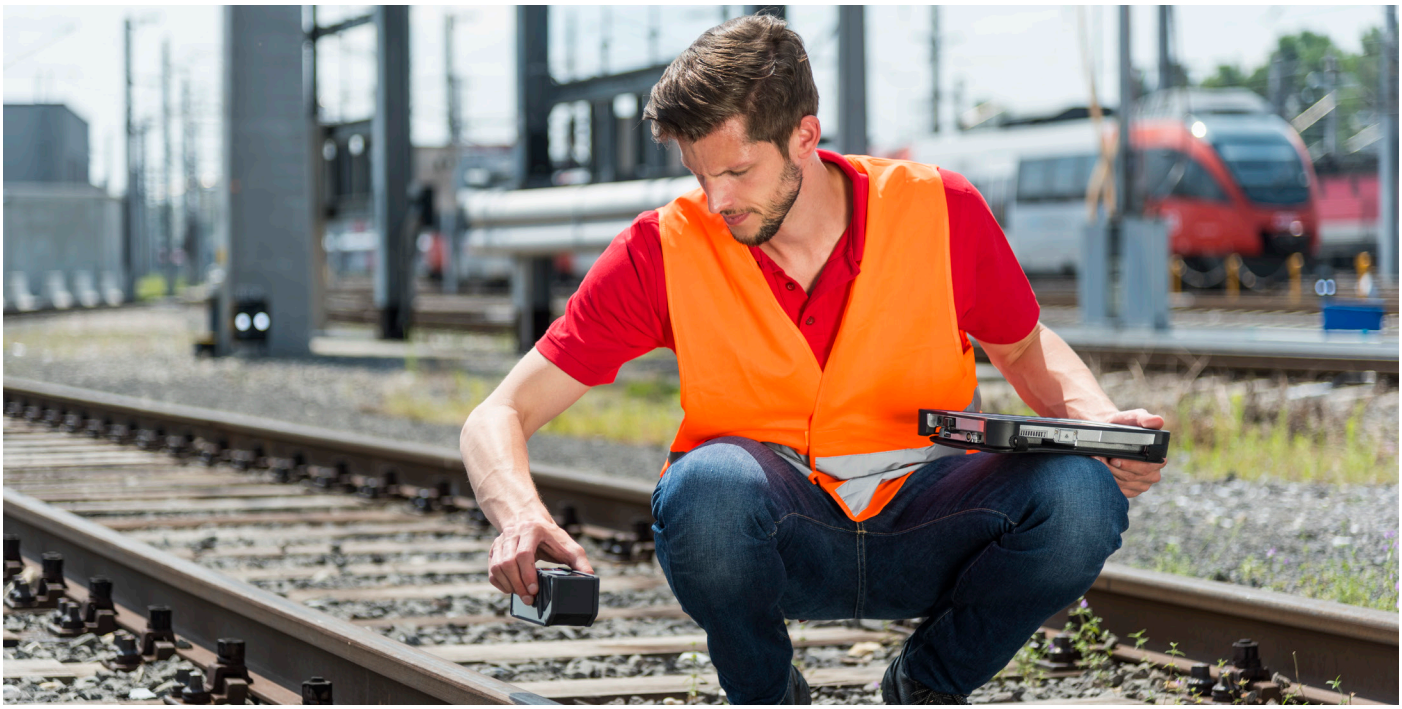
HEXAGON | NEXTSENSE

From Measurement to Demand Planning – Closing the Loop with CALIPRI



Safety is paramount in rail. Regular wheelset measurements are therefore especially important to meet stringent regulations and to guarantee passengers a safe and smooth journey.

These regulations and requirements bring challenges for the customer and operator in their daily business:

- Due to the strict safety requirements the measurements must be taken regularly
- Data needs to be traceable and available long-term
- Global trend for a greener transport
- Industry is in a constant change towards a profit-oriented market
- Railway organisations must be cost-efficient
- Railway transport needs to be attractive for the end user, meaning that delays must be prevented and vehicle availability must be high – therefore, a reliable maintenance workflow is absolutely essential
- Life-cycle costs are not as plannable as desired

CALIPRI measuring devices from Hexagon | NEXTSENSE can make a significant contribution to supporting the maintenance flow.

Both the handheld CALIPRI C42 measuring system and the fully automated on-track wheelset measurement system, CALIPRI X, ensure that the measurement results are in accordance with the

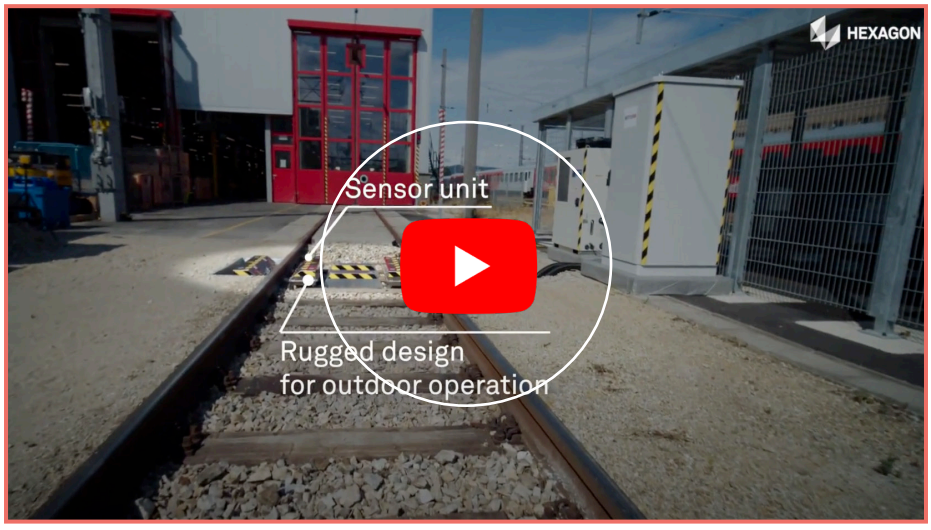
relevant standards. These standards require reliable, highly available and precise measurement data.

CALIPRI C42

The multifunctional CALIPRI C4x series enables the combination of several measurement modules in one measurement device. If, for example, the modules for wheel profile, brake disc, wheel diameter and back-to-back are combined, the result is a measuring device for evaluating a complete wheelset.

CALIPRI Prime, on the other hand, focuses on wheel profile measurement and thus replaces conventional mechanical gauges.

The measurement process is based on laser light section technology. The user guides the sensor over the measurement object by hand. It is not necessary to precisely maintain the distance and angle of the sensor. This is achieved by using the patented CALIPRI principle and its unique tilt correction. During the process, the profile is captured and evaluated from different perspectives. Once measured, the data is immediately ready for analysis and transfer.

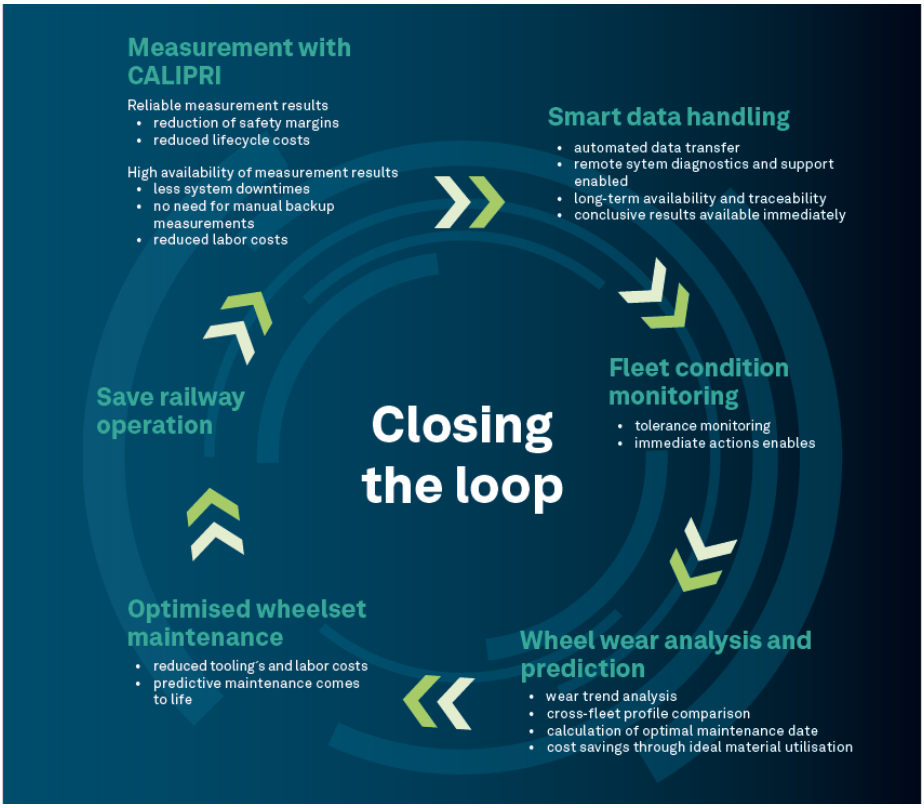


CALIPRI X

The latest product is the CALIPRI X, an automated, permanently installed on-track wheel profile measurement system. It eliminates time-consuming and costly manual wheelset measurement, delivering precise results in seconds and immediately identifying out-of-tolerance areas. The system measures all wheelset parameters according to the European standard EN 15313. Accurate understanding of wheelset condition allows rail operators to move from interval-based to condition-based maintenance – and ultimately true predictive maintenance – enabling better resource planning and significant operational cost savings. The most significant advantage of both CALIPRI C42 and CALIPRI X is: all wheelset parameters can be measured with one and the same measuring device in one measuring

run, such as wheel profile, tyre thickness, run-out, diameter, back-to-back distance, equivalent conicity, camber and wheel toe. The most important parameters and variables are known in seconds, and out-of-tolerance areas are immediately identified.

Combined with CALIPRI Predictor – an easy-to-use cloud storage and analysis tool for all CALIPRI devices – all measurements are automatically, instantly and securely stored in the cloud and wear evolution is evaluated to enable planned downtime based on the as-is and forecasted condition of wheels. This enables predictable and safe operation of the fleet and unplanned downtime caused by wheel condition is eliminated.



The benefit for customers is that these measurement solutions close the loop between measurement, data handling and demand planning. With CALIPRI, the entire process – from performing measurements and monitoring values to planning and executing maintenance – has been digitised as much as possible and predictive maintenance has been brought to life.

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