

KISTLER

measure. analyze. innovate.

**Get the most out
of future WIM
installations**



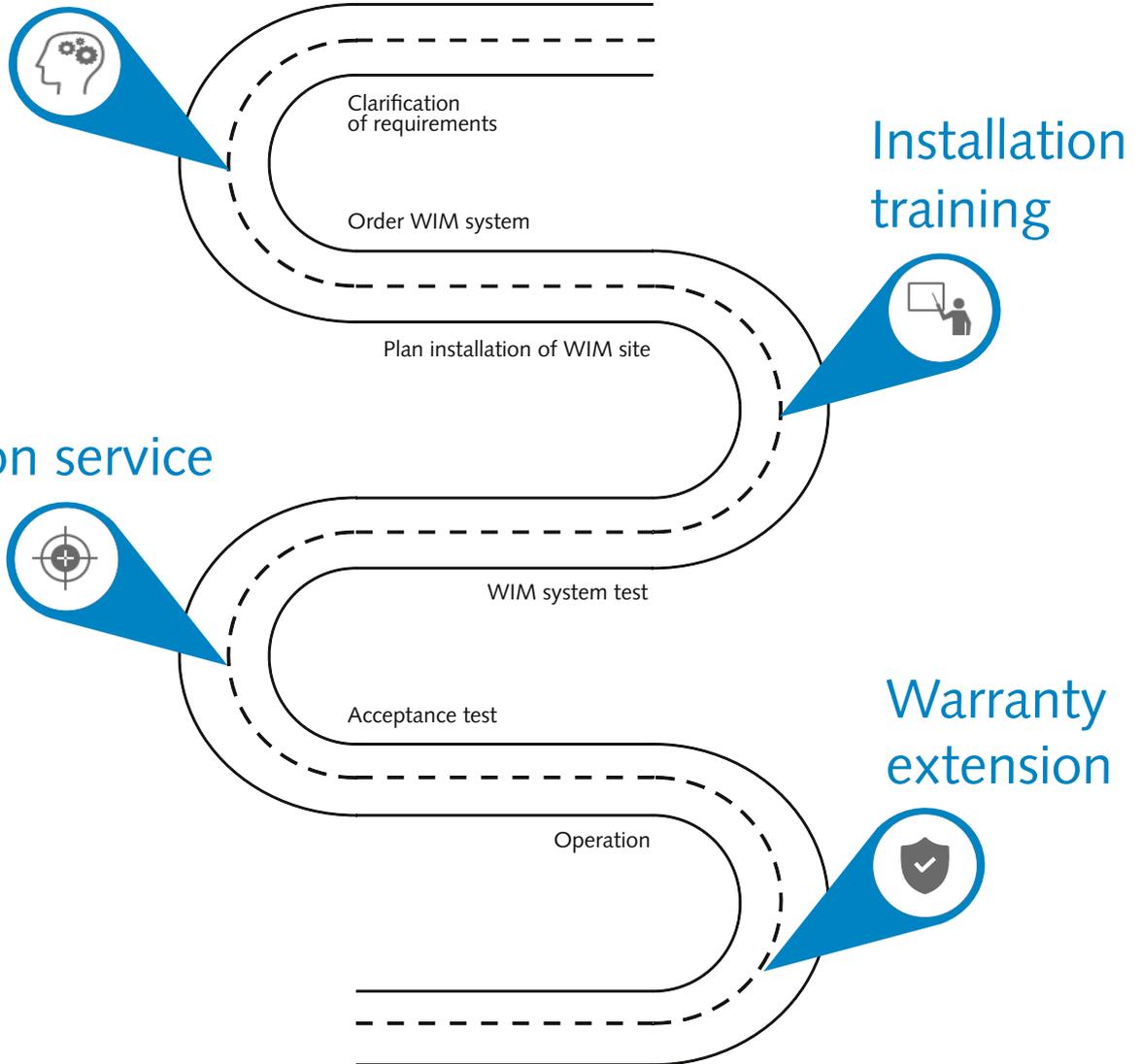
Weigh In Motion services

The key to a sustainably managed & well
protected road infrastructure.

WIM services along the whole life cycle

Structural Road Analysis

Demand for WIM



Calibration service

Kistler know-how is provided along the whole life cycle of a WIM installation.

Weigh In Motion (WIM) is implemented by many different users around the world for various applications related to the weights and axle loads of road vehicles. The WIM sensors are installed in many types of roads and provide their signals to WIM electronics in a cabinet nearby the road. There, the traffic data is processed, stored and provided to the end user. Many factors affect the quality and reliability of the measurement data of a WIM installation.

Accurate Weight In Motion is a challenge. Sensors on, in or under the road pavement measure dynamic axle loads - often

under harsh traffic and environmental conditions – and calculate the static vehicle weights and axle loads of the passing vehicles without any control over the driving behavior of the passing vehicles. Because of the specific nature of the measurement conditions, a successful implementation requires specific knowledge and experience. Over the past decades Kistler has acquired a lot of practical experience along the different phases of the life cycle of a WIM installation. This know-how is made available to customers with the new WIM services.



Visual inspection of the road surface.

Structural Road Analysis

Road and traffic conditions have an influence on the accuracy of a WIM system and on the lifetime of installed WIM sensors. Therefore, it is crucial to evaluate the road conditions before the WIM installation.

During the Structural Road Analysis, the road surface and pavement structure will be evaluated using a falling weight deflectometer (FWD) and road surface scanners. The measured data will be used to assess the properties of the pavement surface and the structural behavior of the road pavement, in order to determine the optimal spot on this given road for a WIM installation.

A report will summarize the performed measurements and assessments. In addition, a recommendation on where to install the Lineas WIM sensors and an estimation on the achievable gross vehicle weight (GVW) accuracy is provided.

By using the Structural Road Analysis, customers benefit from:

- Estimations of the achievable GVW accuracy prior to installation
- Getting the optimal WIM accuracy on a given road
- Extend WIM sensor lifetime due to selection of best road conditions
- Protect their investment

Installation training

A proper WIM sensor installation is another crucial factor for the accuracy, reliability and durability of a WIM system. The installation has to be performed according to the procedures described in installation instructions. To ensure high quality of WIM sensor installations, the installation crew has to be certified by Kistler. Kistler will provide an official certificate to each participant who successfully passed the installation training.

For WIM system installation, Kistler supports the customer with:

- Training of full installation procedure
- Know-how of Kistler service engineer on site
- Certification of all members of installation that passed the training
- Project consultation – support for your specific application



Installation of a Lineas WIM sensor.

Calibration service

Calibration is an important factor to achieve the best accuracy and reliability of a WIM system. A correct calibration will lead to enhanced confidence in the data output of the system. In addition to regular calibration the performance of Kistler WIM systems can be improved even further by compensating for the effects of specific road and traffic conditions at the site. Kistler service engineers provide their know-how and support on the whole calibration process either on site or remotely via phone or internet. Calibration service includes following steps:

- Definition of the set-up for a successful calibration such as: selection of the types and weights of the vehicle, number of calibration runs, driving speeds etc.
- Verification of the correct execution of the calibration procedure, including the static weighing procedure, calculation of the reference weights and execution of the calibration runs
- Calculation of calibration and optimization factors
- For installations with tilted Lineas WIM sensors a calibration of the lateral driving position further improves the accuracy of the WIM system
- After successful calibration, a formal report will be provided



Calibration run with a reference vehicle.

Warranty extension

Get up to 60 months of protection on Kistler WIM equipment. Supplement our standard warranty with up to 48 extra months of added protection and take advantage of a portfolio of dedicated services to extend your WIM system's operational lifespan. Coverage includes all Kistler road and Kistler roadside equipment, such as Lineas WIM sensors and the Kistler WIM data loggers. Our repair policy guarantees fast replacement in case of damage – so your system will operate smoothly and successfully throughout your WIM project.



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Increase efficiency with cavity-based

Take the lead – right from the start

Biomechanics
Force measurement solutions for motion analysis, sports performance diagnostics, rehabilitation and ergonomics.

Safe braking thanks to efficient maintenance

Brake force measurement in the Rail transport sector
Innovative and accurate for periodic brake force testing

Flexible to create and easy to integrate

Weigh-In-Motion
Measuring equipment for a wide variety of traffic data collection, enforcement and toll collection applications

Now OIML-certified in 10

Increase efficiency with cavity-based

Measuring equipment for demanding T&M applications

Test & Measurement
Sensors and signal conditioning hardware

Achieve maximum efficiency and stable operation with combustion dynamics monitoring

Thermoacoustics
Measuring combustion dynamics in high-temperature environments

Analyzing and commanding sophisticated machining processes

Cutting force measurement
Precision measuring systems for machining

Find out more about our applications:
www.kistler.com/applications

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