

KEY BENEFITS

IMPROVED PRODUCTIVITY



Dynamic and fully-automated weighting means no need for vehicles to stop, leading to a much more efficient weighing process, improving operations for example in congested sites such as ports or freight terminals

EASY IDENTIFICATION OF OVERLOADED VEHICLES



Identification of overloaded vehicles is straightforward, helping the infrastructure operator to minimize the risk of overloaded vehicles damaging the roads and enabling the road network to keep running smoothly and increase enforcement revenues

SAFETY AND ENVIRONMENT



Prevention of vehicles' excess weight, with consequent reduction of safety risk (stretching the potential braking distance of heavy vehicles) and extra pollution

ADVANCED ANALYTICS



Real-time data collection and analysis, combined with an Advanced Analytics model, facilitating and optimizing traffic monitoring, predictive maintenance and control activities

INTEGRATED ASSET MANAGEMENT



Full integration with other road infrastructure monitoring equipment such as video-surveillance, IoT sensors for structural health monitoring and traffic management systems to streamline asset management operation

LOWER OPERATIONAL COSTS



Overweight vehicles have a very significant (exponential) impact on road surface wear. Easy monitoring and enforcement of overweight vehicle allows to keep operational road costs under control. Moreover, our solution has minimal installation and maintenance costs combined with low power requirements, enabling a cost-efficient weighing process



Take advantage of our extensive experience in deployment and calibration of WIM stations to design the right solution for your business

HEADQUARTERS

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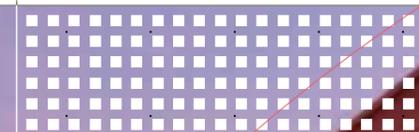
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Advanced Technology Solution for a smarter
and safer mobility ecosystem



LIBRA / S
weigh-in-motion solution



Fully integrated, tailor-made solution based on a modular architecture with best in class components.

LIBRA/S is the integrated **Weigh In Motion** solution developed by SINELEC to provide a flexible end-to-end dynamic weighing tool to cope with several use cases. The solution is built over Gavio Group's experience in managing over 4,500 km of toll road concessions.



LIBRA / S
weigh-in-motion solution



Main Field Components

STRIP

WIM strip sensors based on Quartz technology (Kistler Lineas®) easily installed in the road pavement to provide highly accurate measurement signals

DATA LOGGER

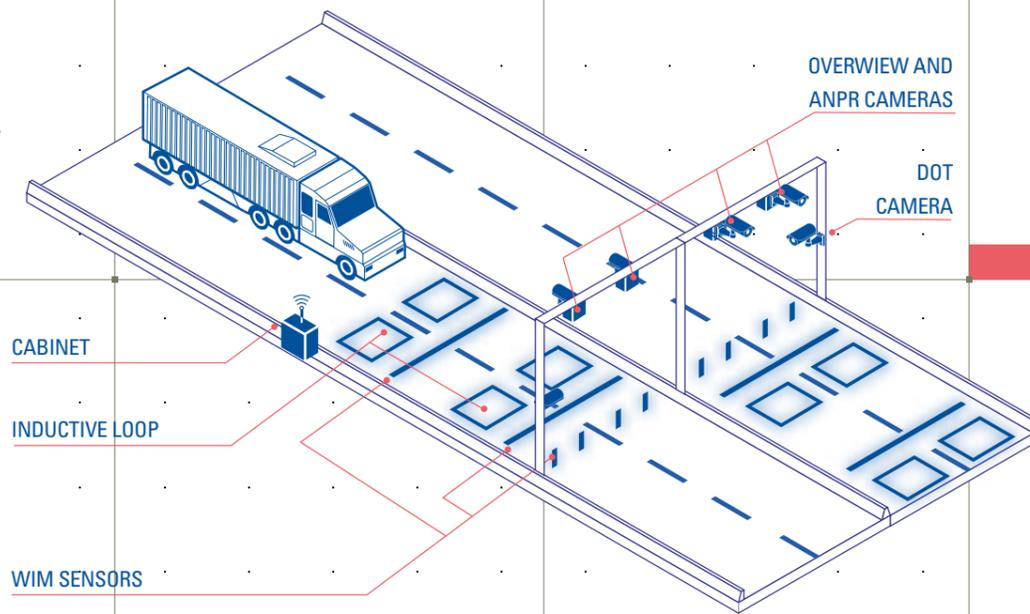
WIM data logger with loop card specifically designed by Kistler to process signals from Quartz sensors that allows customers to monitor traffic data in real time and to gather vehicle data.

CAMERAS

The system can be completed with overview cameras, license plate recognition system, Kemler code reader and, for the USA market, DOT camera

General Characteristics

Provide highly detailed information, including overall **vehicle weight**, **axle weight**, **type of vehicles**, **length of the vehicle** and **speed** with high level of accuracy



Use Cases

ASSET MANAGEMENT

- To monitor and safeguard road infrastructures
- To reduce maintenance costs for road pavement
- Enable predictive maintenance

STATISTICAL TRAFFIC DATA

Allow the collection of a wide range of traffic data for planning, traffic management and statistical analysis

LOGISTICS - GATE MANAGEMENT

- Help reducing congestion and speeding up in the access gates
- Fully-automated weighing process

TOLLING

Enable the application of tolling policies based on the actual weight and hence road consumption

ENFORCEMENT

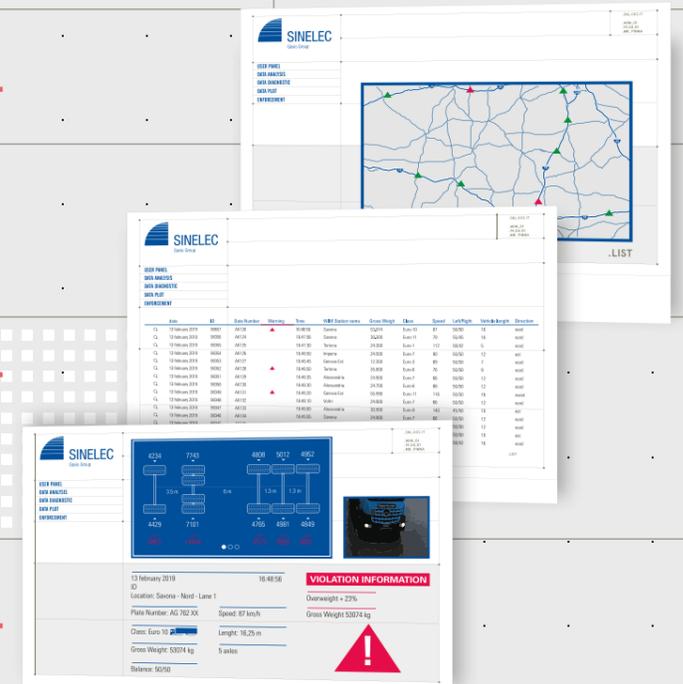
To verify remotely the non-compliance with the legal weight limits

Libra/s WIM Solution provide an integrated multistations Operational Control Center.

Simple and clear bird-eye overview of the stations including diagnostic state

Compact list view for easy understanding of overweight passages over the entire monitored infrastructure

Detailed information about overweight passages available in one click



Solution Outputs

The SINELEC, WIM Solution generates a large variety of vehicle data such as:

- Gross vehicle weight
- Axle information (wheel and axle load, axle distance, number of axles, wheel with single tire or dual tires)
- Vehicle speed
- Vehicle length
- Imbalance (difference left/right in %)
- Time between vehicles (traffic density)
- Violations
- Driving behavior
- Vehicle classification
- Number plate number and overview image
- DOT number (for USA market)
- Kemler plate code

Solution Features

- OIML R134 certified layouts available
- Accurate and reliable weight measure at all speeds (range 3-250 km/h)
- Specific layouts for stop & go traffic available
- Different layouts for different accuracy requirements according to COST 323 and ASTM E1318-09 (up to 2,5% GVW accuracy)
- Unique quartz technology makes sensors highly stable and durable
- Not-affected by weather or traffic conditions (operating range temperature from -20 to 65 °C)
- Easy installation inside any type of road pavement (solid asphalt, drain asphalt and concrete)
- Low maintenance cost – even in continuous long-term operation
- Unlimited lane coverage