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Heavy goods traffic safely under control

Commercial vehicle enforcement with Weigh In Motion by Kistler proves itself in Luxembourg



Lineas sensors installed on the A6 in Luxembourg for Weigh In Motion and more, with KiTraffic Plus by Kistler: it was possible to use the existing sign gantry for the camera systems.



Installing the Kistler Lineas sensors – the centerpiece of the new KiTraffic Plus Weigh In Motion system on the A6 motorway in Luxembourg

Luxembourg is implementing commercial vehicle enforcement to meet the EU's requirements. To achieve this, the country's road traffic authority is opting for Weigh in Motion by Kistler: the complete KiTraffic Plus system weighs trucks and delivery vans without interrupting motorway traffic, providing the basis for efficient weight enforcement.

Maintaining and safeguarding roads and bridges now presents a monumental challenge in numerous countries around the world. Not only is the infrastructure aging in many places; traffic volumes are also rising steadily, and overloaded vehicles are increasing the risk of accidents and causing more wear and tear on the road network. In 2015, the European Union responded to these issues by issuing its new Directive 2015/719, which standardizes the permitted maximum weight for each type of commercial vehicle, as well as obligating the member states to implement commercial vehicle enforcement and report the results to Brussels.

Responsibility for the construction, maintenance and operation of national roads in the Grand Duchy of Luxembourg is assigned to the National Roads Administration (Administration des ponts et chaussées), an authority overseen by the Ministry of Mobility and Public Works. The Administration, which has around 1,200 employees, provides services such as winter clearance, maintenance of roads including tunnels, lighting and signage, updating of map data and much more besides. Its remit also includes providing infrastructure for the police and customs authorities to implement speed and weight enforcement. The new EU Directive presented Luxembourg with the task of setting up at least one commercial vehicle enforcement station.

The manager responsible for this project at the National Roads Administration struck up initial contact with Kistler in 2018 at Intertraffic, the global traffic technology trade fair in Amsterdam. A market study undertaken by the Administration soon made it clear that Weigh In Motion (WIM) by Kistler would be the solution of choice. Automatic weight measurement during travel plus optical vehicle detection and recording ensure

efficient preselection of trucks and vans, which are then weighed statically again and checked for any other violations (tires, dimensions, validity of documentation, and more).

Certified accuracy at high speeds

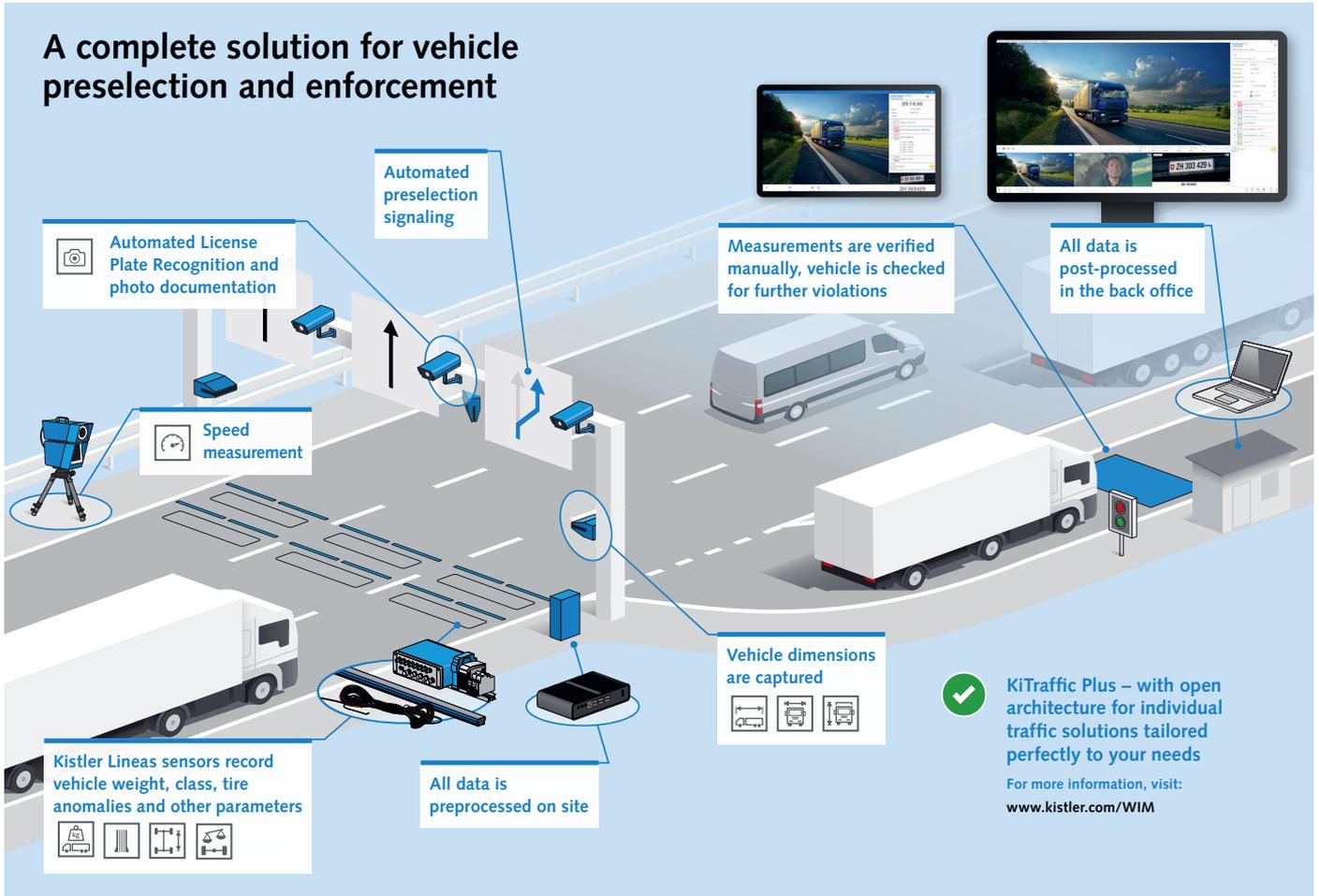
Several reasons prompted the Administration to opt for Kistler and its complete KiTraffic Plus solution. First and foremost, this system has a decisive advantage: it is certified (to OIML-R134) as capable of reliably measuring commercial vehicles moving at high speeds (trucks: 90 km/h, vans: 130 km/h). The Luxembourg system achieves accuracy of five percent of the vehicle's total weight, with the help of two rows of Kistler Lineas WIM sensors and induction loops installed in the road surface on each of two traffic lanes.

Kistler was also able to score points thanks to its many years of experience with Weigh In Motion projects all over the world: these compact sensors can be installed in the road without major effort, and they measure reliably for many years once they have been calibrated. The new WIM installation is located about two kilometers after the border on the A6 motorway coming from Belgium. Several hundred meters of the road surface were renewed ahead of time so there would be no need to replace the sensors after a few years because of scheduled maintenance.

Last but not least, KiTraffic Plus from Kistler features a flexible modular system: a complete measuring chain – from sensor through to software – that can be tailored to customers' individual requirements by adding a range of components such as dimension scanners, numberplate recognition (ANPR) and tire detection. Another benefit: the statistical data acquired by the WIM system can be used to optimize the timing of commercial vehicle enforcement, and to calculate the remaining useful lifetimes of roads and bridges.

Alongside the WIM sensors, the Luxembourg solution uses overview cameras: the images they capture make it easy for the inspecting officers to identify vehicles intended for preselection. These features, combined with high-accuracy

A complete solution for vehicle preselection and enforcement



The KiTraffic Plus Weigh In Motion system from Kistler (schematic view) offers a complete solution for precise truck enforcement, including total weight, axle load, dimensions, speed, tires and additional parameters.

weighing in moving traffic, result in highly efficient enforcement: the police enforcement squad can see overweight and other violations directly on their tablets, so officers can initiate the pursuit – leading to high success rates at the checkpoint.

An efficient complete solution – from sensor to software

The electronic equipment required for the Weigh In Motion system, including the WIM Data Logger, can be delivered prewired and preconfigured on request, and is accommodated in a control cabinet located near the sensor installation. The police tablets connected to the WIM system run Kistler's Checkpoint software, which clearly displays all information on the detected vehicle at a glance. A stationary PC equipped with Kistler Checkpoint is also available at the checkpoint for access if required. However, this option has hardly been used thus far because operating the tablets gives the officers more flexibility to choose the location for the mobile team, and the tablets function reliably.

The Weigh In Motion solution from Kistler has been operating since summer 2022 and has thus far proven to be highly reliable in practice: as well as enabling efficient preselection, automated weight detection of overloaded vehicles at high speeds supports handling of the entire process. A denser commercial vehicle enforcement network contributes to road safety and reduces



The overview image and the values measured for the recorded vehicle are clearly displayed on the officers' tablets with the help of the Kistler Checkpoint software.

the pressure on the infrastructure – and it also encourages compliance with regulations, thus helping to ensure fair competition in Europe.

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Protecting infrastructure and improving road safety

Weigh In Motion
The key to sustainable road management and protection

Smooth ride on the data highway
New, cost-effective infrastructure projects. Optimize your traffic monitoring to the next level with KISTLER's Statistics from Kistler

How much longer will your bridge hold up?
Clear insights into monitoring of a support structure - with Weigh in Motion by Kistler

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