

Press release

Czech government approves Weigh In Motion system by Kistler for direct law enforcement

System allows reliable tracking and fining of overloaded trucks to prevent road damage

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In May 2019, KiTraffic by [Kistler](#) has officially been approved for use by the Czech Metrology Institute (CMI) to help prevent road damage. The system is based on the [Weigh In Motion \(WIM\)](#) technology from Kistler and allows the tracking and fining of overloaded trucks. The comprehensive solution is already in use on a highway leading from Prague to the Northwest, with the potential to be used across the Czech Republic.

Overloaded trucks pose a real threat to highways and roads. Excess weight impacts the road surface to a factor of four, according to the Fourth Power Law. Discovered in the 1950s in the USA, the law states that the relationship between vehicle weight and its impact upon the road surface is not linear. Instead, heavier vehicles increase the impact by the factor of four, making each additional kilogram a hazard. Weigh In Motion (WIM) systems for direct enforcement are a convenient alternative to mobile scales for local and national authorities looking to fine weight limit violations. Kistler now offers authorities a complete high-speed WIM system that draws on the company's decade-long experience in the field of measurement technology. "We have been providing sensors for direct enforcement WIM systems in both the Czech Republic and Hungary for several years now", Tomas Pospisek, Global Market Development Manager for Road & Traffic EMEA at Kistler Group, stated. "Combined with our expertise in collecting and analysing data from the sensors, our practical experience has allowed us to build a system that is very precise. All its components are streamlined and work really well together."

Easy handling and maintenance

The high-speed WIM system KiTraffic by Kistler is comprised of Lineas brand quartz sensors integrated into the road, cameras, hardware and software. Fining overloaded trucks is made easy by weighing every passing truck. If it exceeds the weight limit, the KiTraffic system sends the exact weight and a photograph of the vehicle, including its license plate, to the authorities' office. Employees can then research the owner in a national database and print a standard letter to fine the owner. During the instalment of the new system on the highway, local authorities' employees benefitted from

Kistler's experience. The experts conducted on-site training sessions on how to best use the equipment and how to make minor repairs to the system, such as repairing cracks in the road surface.

Tried and tested technology

Kistler first installed the system with the system integrator and Kistler partner SPEL on a brand-new section of the highway D7 in the Czech Republic. In December 2018, CMI visited Kistler and SPEL at the new site in order to witness the accuracy of the WIM system at first hand. The team first weighed vehicles from categories B (a VW transporter), C (a six-axle truck) and D (a bus) on stationary scales and then in motion via the high-speed WIM system. The maximum error margin permitted by CMI is 5% per vehicle and 11% per axle – a test the Kistler system passed without problems. "This error margin is factored in by the system to make sure no vehicle is fined incorrectly", Pospisek explained.

The International Organization of Legal Metrology (OIML) and the Swiss Federal Institute for Metrology METAS certified the WIM system, which helped facilitate its quick approval in the Czech Republic. "There is currently no Pan-European certificate for WIM systems," Pospisek said, "however, having already obtained a more general measuring certificate, the OIML helped us to get approved in the Czech Republic. This meant we were able to skip some tests and save time."

Potential for use on more roads all over the world

Now that the system has been approved officially, the WIM station for direct weight enforcement on the D7 highway is ready for action. But it does not end there as plans to open 15 WIM stations on Czech highways have already been put forward. There is also a lot of potential on regional roads, which are often damaged by overloaded trucks travelling short distances. Kistler is already working on system approval in other countries. So far, direct enforcement via WIM is legal in the Czech Republic, Hungary and Russia, which means that there are many more opportunities for the reliable and easy-to-use system.

Image material (please name the Kistler group as picture source)



The Weigh In Motion system KiTraffic by Kistler has been approved for direct weigh enforcement in the Czech Republic. It has already been installed on a highway from Prague to the Northwest.



The KiTraffic system consists of Lineas quartz sensors, cameras and software.



Integrated into the road, the KiTraffic sensors weigh passing vehicles accurately and reliably.



The accuracy of the KiTraffic sensors was ensured during the certification process where stationary scales verified the actual weight of vehicles.

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About the Kistler Group

Kistler is the global market leader for dynamic pressure, force, torque and acceleration measurement technology. Cutting-edge technologies provide the basis for Kistler's modular solutions. Customers in industry and scientific research benefit from Kistler's experience as a development partner, enabling them to optimize their products and processes so as to secure sustainable competitive edge. Unique sensor technology from this owner-managed Swiss corporation helps to shape future innovations not only in automotive development and industrial automation but also in many newly emerging sectors. Drawing on our extensive application expertise, and always with an absolute commitment to quality, Kistler plays a key part in the ongoing development of the latest megatrends. The focus is on issues such as electrified drive technology, autonomous driving, emission reduction and Industry 4.0. Some 2,200 employees at more than 60 facilities across the globe are dedicated to the development of new solutions, and they offer application-specific services at the local level. Ever since it was founded in 1959, the Kistler Group has grown hand-in-hand with its customers and in 2018, it posted sales of CHF 475 million. About 8% of this figure is reinvested in research and technology – with the aim of delivering better results for every customer.