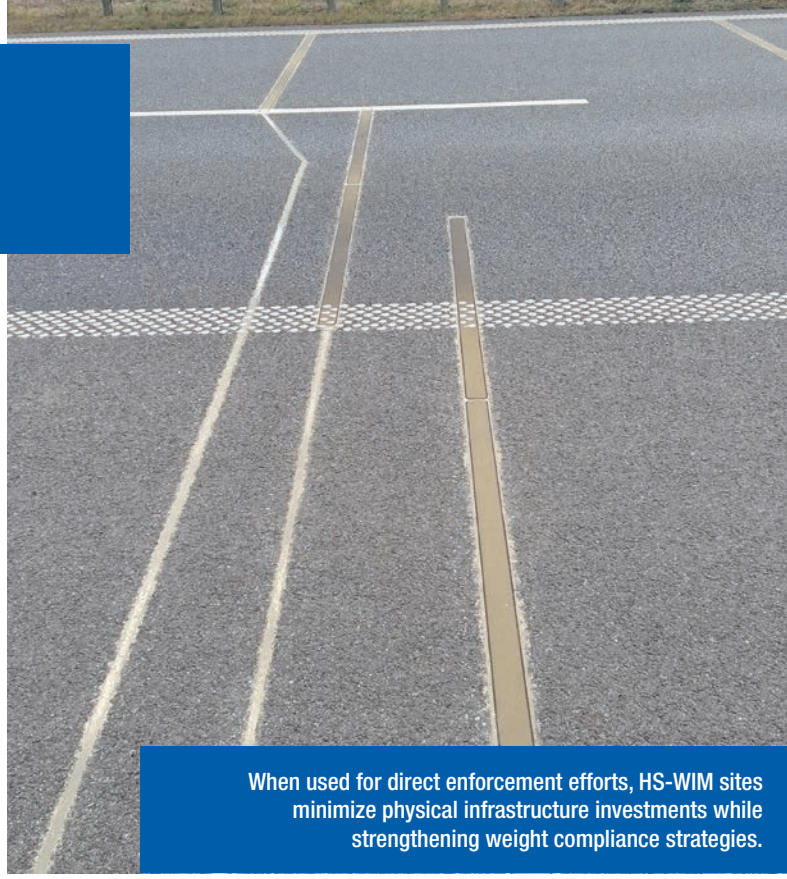
• Application Note •
HS-WIM Strip Sensors for Direct Enforcement



When used for direct enforcement efforts, HS-WIM sites minimize physical infrastructure investments while strengthening weight compliance strategies.

Development of a High-Accuracy and Reliable HS-WIM for Direct Enforcement

In the world of road transportation, ensuring compliance with weight regulations is paramount. High-Speed Weigh-in-Motion (HS-WIM) systems for direct enforcement have gained prominence as a sophisticated solution that combines cutting-edge hardware and software to achieve the accuracy and reliability necessary for effective weight regulation.

The global push for HS-WIM in direct enforcement is gaining momentum. Governments and road agencies worldwide are keen on implementing these systems, which offer increased control without substantial physical infrastructure investment. APM's HS-WIM solution, built around Intercomp's Strain Gauge Strip Sensors, is designed to ensure that all measurements meet stringent tolerances. Specific software algorithms validate each vehicle weighing record to confirm reliability, preventing unwarranted overloading penalties.

"The appeal of direct enforcement with High-Speed Weigh-in-Motion (HS-WIM) for road authorities lies in its capability to operate automatically, 24/7. The ability to collect data from every vehicle presents a powerful proposition," explains Leonardo Guerson, Intercomp's WIM Product Manager and Application Engineer. "Moreover, as these systems incur lower operational costs compared to traditional weigh stations, it becomes feasible to establish more sites. This expansion allows for comprehensive insights into the weight characteristics of every vehicle on the road."

At a High-Speed Weigh-in-Motion (HS-WIM) site in Poland, strip sensors are deployed to facilitate free-flow vehicle weighing for all traffic, including vehicles traveling on the highway shoulder.

The pursuit of accuracy and reliability was the cornerstone of APM Pro's approach. The Poland-based Intelligent Transportation Systems (ITS) integrator conducted a thorough study into the long-term stability of various HS-WIM sites and technologies. Sensors employing Strain Gauge Strip Sensors displayed exceptional stability, holding calibration over time and delivering consistent results across varying temperature conditions. APM chose Intercomp Strain Gauge Strip Sensors for their HS-WIM system with the goal of ensuring consistent operation year-round, regardless of environmental factors.

Poland's Overload Control program is a shining example of the impact of Strain Gauge Strip Sensors. APM PRO deployed 44 lanes equipped with HS-WIM systems based on these sensors for road transport compliance. These systems monitor overloading and preselect overloaded vehicles for further weighing, using a combination of ANPR, CCTV, and 3D scanning technologies to comprehensively understand each passing vehicle's characteristics.

As vehicles traverse the HS-WIM site, a collaboration of technologies comes into play, with Variable Message Signs conveying speed limits and traffic rules. ANPR and CCTV cameras capture license plates and vehicle images, while a 3D scanner measures vehicle dimensions. Non-compliance prompts alerts on VMS signs, directing drivers to pull over for administrative weighing, while compliant vehicles continue uninterrupted.

APM Pro's commitment to innovation and reliability, along with Intercomp Strain Gauge Strip Sensors, serves as a solid foundation for effective HS-WIM systems in direct enforcement. This innovative approach has made a global impact, particularly in Europe and the Middle East, where over 100 lanes of high-performance HS-WIM systems have recently been installed.

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