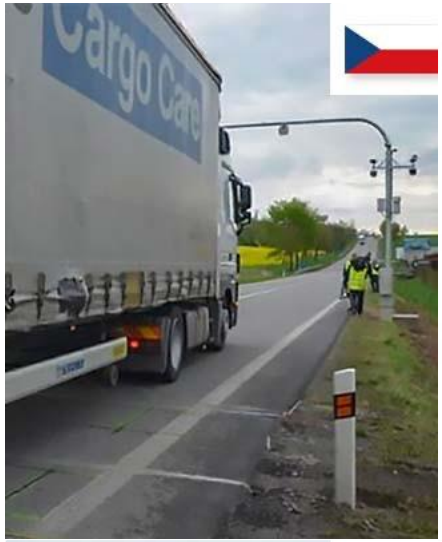
FORM 15, ATTACHMENT B
Summary of Overweight Enforcement in Foreign Countries using the WIM System
PROPOSAL TO AMEND NIST HANDBOOK 44, SECTION 2.25

Country	Operation Year	References for Local Standard	GVW	Axle Load	Speed	Confidence
Czech Republic	2015	OIML R134, COST 323 and ASTM E1318	± 5%	± 11%	N/A	95%
Hungary	2018	OIML R134	± 5%	± 8~16%*	10-90 MPH	90%
Russian Federation	2015	Federal Standard	± 5%	± 11%	10-85 MPH	95%
China	2016	OIML R134	± 5~10%*	± 8~16%*	0-65 MPH	90-95%
France[1]	*In development* • Target Accuracy: COST A(5) and B(10), and OIML R134-1 at 2-10% error for GVW and 4-32% error for axle weight • Accuracy Compliance: 95% compliance • Test Speed: 50 km/h ~ 120 km/h • Calibration procedure was developed and currently is under review by the French Legal Metrology Organization and its National Testing Laboratory. • Direct enforcement is under control of the competent authorities – Ministries of Transport, of Interior, and of Justice, the French Legal Metrology Organization for certification, and a few other organizations involved in road traffic enforcement.					
Brazil[2]	*In development* • Assessment of the performance for long-term. Tested the weighing accuracy over time. COST 323 A(5) (maximum GVW error < 5%) was degraded to B(10) (maximum GVW error < 10%).					

* depending on vehicle type

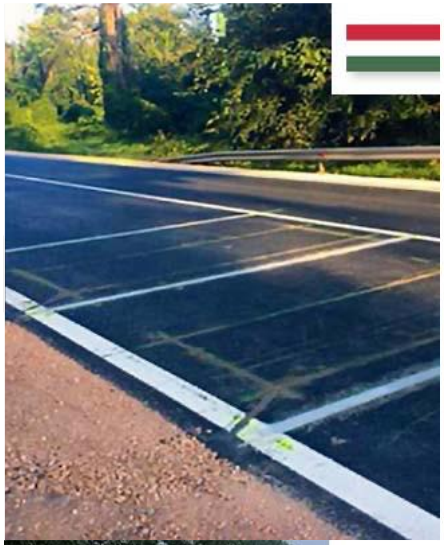
[1] David Bétaille & Benard A. Jacob (2022), Paving the way to use WIM systems for direct enforcement in France, Transportation Research Board Annual Meeting
[2] https://www.labtrans.ufsc.br/wp-content/uploads/2020/12/Test-Site-for-Evaluation-of-High-Speed-WIM-and-ITS-Solutions-Brazilian-Conditions.pdf



Czech Republic

Weight enforcement

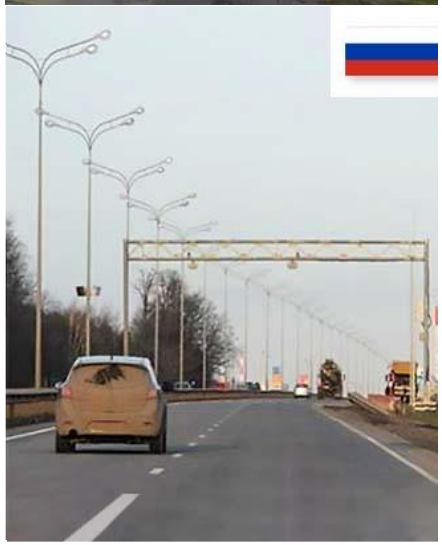
- 20 sites / 60 lanes / 240 Lineas sensors
- First European country to introduce HS-WIM direct enforcement
- Process was launched in 2010 (legal changes) and went into operation in 2015
- Kistler delivered sensors for local WIM partners
- 4 sites now in regular direct enforcement operation



Hungary

Tax evasion / overloading «detection»

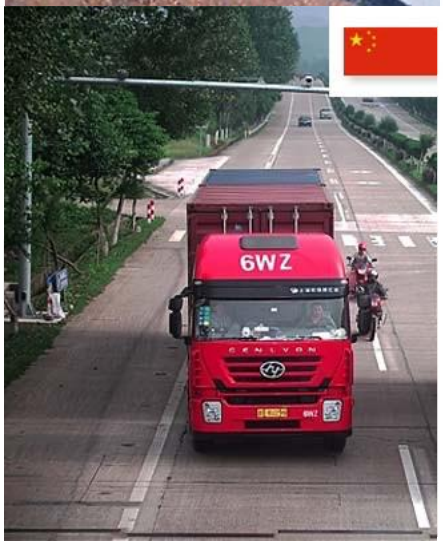
- 89 sites / ~250 lanes / ~ 1500 Lineas sensors
- Nationwide project of monitoring loads on highways
- Application: direct weight enforcement (part of ETC)
- Accuracy A(5) and B(7) depending on sensor configuration
- Motivation: to eliminate negative impact of overweight vehicles and prevent tax avoidance (VAT); tax authorities are involved in project financing



Russian Federation

Statistics and weight enforcement

- Installations in several districts
  - Moscow
  - Saint Petersburg
  - Novgorod
  - Novosibirsk
  - Kaliningrad
  - Tatarstan
  - ... and many others



China

Weight enforcement

- > 1500 lanes / > 5000 Lineas sensors
- Preselection of overloaded vehicles before the entrance of expressway
- Direct enforcement of overloaded vehicles at free-flow provincial road & ordinary road

Required Accuracy:

- GVW accuracy: 5% - 10%, confidence interval 95%
- Single axle rate load: 30 ton, maximum overload capacity 150%

Reference) https://www.kistler.com/en/solutions/traffic-solutions/weigh-in-motion/