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Vehicle Weigh-in-Motion (WIM)  
Solutions for Weigh Stations,  
Enforcement and More

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**Proven Weighing Reliability and Ease of Use for High Volume  
Commercial Vehicle Weight Enforcement Applications**

**METTLER TOLEDO**



For more than 15 years, **METTLER TOLEDO**, the world's largest manufacturer of weighing systems, has offered solutions for commercial vehicle weight enforcement and screening, data collection for transportation planning, industrial applications, and more. Installed across the U.S. and around the world, **METTLER TOLEDO's** fixed facility weigh station solutions and virtual weigh station solutions continue to prove their operational reliability and accuracy in high volume applications.

Combined with **METTLER TOLEDO's** comprehensive project management and after-sales support, our WIM systems offer the reliability, accuracy, cost effectiveness and ease of use for which **METTLER TOLEDO's** weighing solutions have long been known.

## Load Cell-Based WIM Systems

**METTLER TOLEDO's** WIM solutions are based on load cell technology (strain gauge).

As a vehicle passes over the scale, the system records the weights measured by each platform and adds them together to obtain the axle weight. The scale is placed in the travel lane perpendicular to the direction of traffic.

Load cell type WIM scales are regularly used in weigh station ramp presorting systems, for data collection systems, and for industrial weighing. Load cell scales typically require permanent installations with some minor excavation into the road.



### **METTLER TOLEDO's** load cell-based WIM solutions:

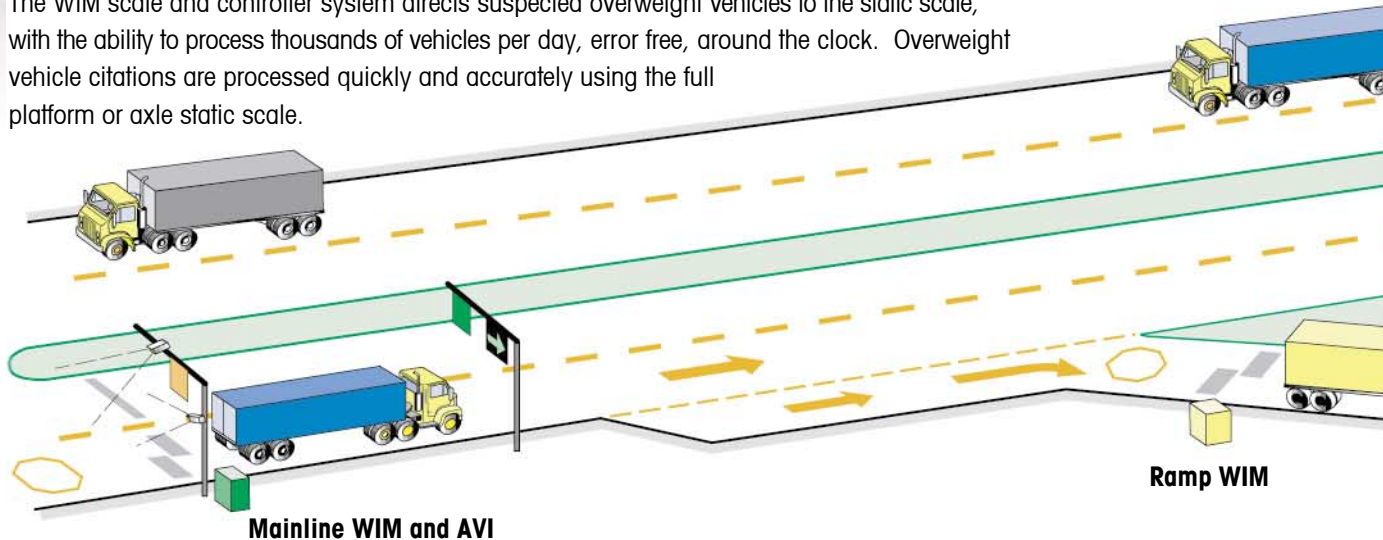
- Use the most accurate vehicle weighing technology available today.
- Measure vehicle speed, thereby eliminating the need for axle sensors.
- Measure individual wheel loads and detect wheel load imbalances.

## Fixed Facility Weigh Station Solutions

For fixed facility weigh stations, METTLER TOLEDO provides Weigh-in-Motion (WIM) systems, static scales, and peripheral equipment such as over height detectors, directional signals, variable message signs, AVI interface, and vehicle classification equipment.

### How Fixed Facility WIM Systems Work

The WIM scale and controller system directs suspected overweight vehicles to the static scale, with the ability to process thousands of vehicles per day, error free, around the clock. Overweight vehicle citations are processed quickly and accurately using the full platform or axle static scale.

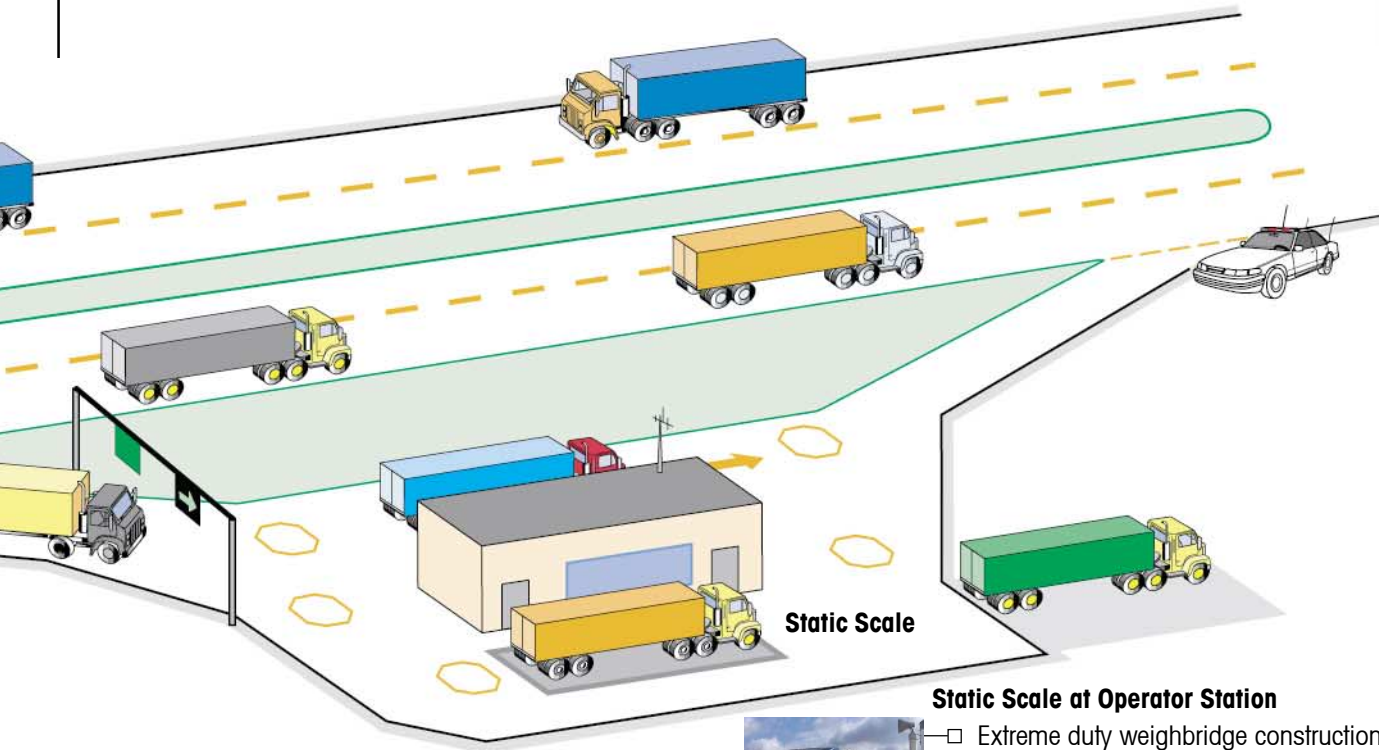


### Fixed Facility WIM System Benefits

- Safely, efficiently and accurately weighs thousands of vehicles per day with legal-for-trade accuracies.
- Minimal operator intervention is required because of the system's fully automatic operation.
- Ability to combine the weighing operation with other commercial vehicle safety and compliance checks at one facility.
- Ability to network multiple facilities into a statewide data network.

### Ramp/Mainline WIM Scale

- Staggered platform configuration eliminates need for costly, maintenance intensive axle sensors.
- 8 load cells per system results in superior weighing accuracy, even if the vehicle drives across scale off-center, at speeds up to 80 mph.
- Auto-calibration via static scale interface eliminates the need for costly regular calibration.
- Rugged construction ensures reliable operation and long life.
- Designed to comply with ASTM 1318-02 requirements.
- Stainless steel, hermetically sealed load cells provide ultimate corrosion protection, even in salt prone environments.
- Stainless steel sheathed load cell cables provide an extra level of lightning protection.



**Static Scale**

**Static Scale at Operator Station**



- Extreme duty weighbridge construction designed for high traffic loads and harsh conditions.
- METTLER TOLEDO DigiTOL® load cell technology for fast, error-free operation, superb lightning protection, and easy maintenance.
- METTLER TOLEDO JAGXTREME terminal, the industry's most advanced, provides high reliability and maximum user flexibility.
- Operator Interface (including graphics panel for operator control and identification of vehicle location).
- Robust, user-configurable software that provides:
  - Instant weight, size, and other violation notification.
  - Single screen reporting of static and WIM data.
  - Simple, one touch control of traffic signs.
  - Multiple reporting options including vehicle type classification, daily reports, monthly reports, summary violation reports, and WIM accuracy reports.
  - Interface to AVI, cameras, dimensioning, and other peripheral equipment.
  - Monitoring of vehicle traffic including notification of vehicle backups with automatic traffic control.
  - Remote reporting and diagnostics via modem, RS 422/485, or fiber optic link.
  - CVISN compatible.



**Peripheral Devices**

- AVI (Automatic Vehicle Identification) on mainline
- Overheight detector at ramp WIM
- Sort signs and variable message signs for traffic control
- Inductive loops for vehicle tracking



# Virtual Weigh Station Solutions

Cost effective and flexible, METTLER TOLEDO's virtual weigh station solutions provide a high-tech approach to curbing overweight vehicles that may take alternative routes (secondary roads and bypasses) to avoid weigh stations.

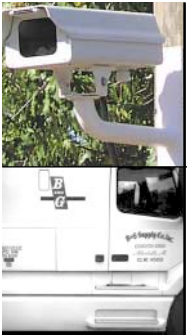
METTLER TOLEDO's unattended virtual weigh station solutions includes a WIM and video capture system, which provide accurate, reliable weighing and image capture at speeds up to 70 mph. The system captures weight, speed, vehicle class, and provides remote communication to a patrol vehicle, weigh station or traffic control center.

## How Virtual WIM Systems Work

As vehicles cross the WIM scale, a photo overview image of the vehicle, as well as a close up of the cab door, is captured. If the vehicle is overweight, the image, weight data and speed data are stored for remote retrieval or are instantly transmitted via a wireless connection to a laptop computer in a nearby, hidden, patrol car. An enforcement officer can connect to the WIM system via a wireless connection and a laptop computer, and then observe the weights of passing vehicles on the computer screen, and pull over likely violators.

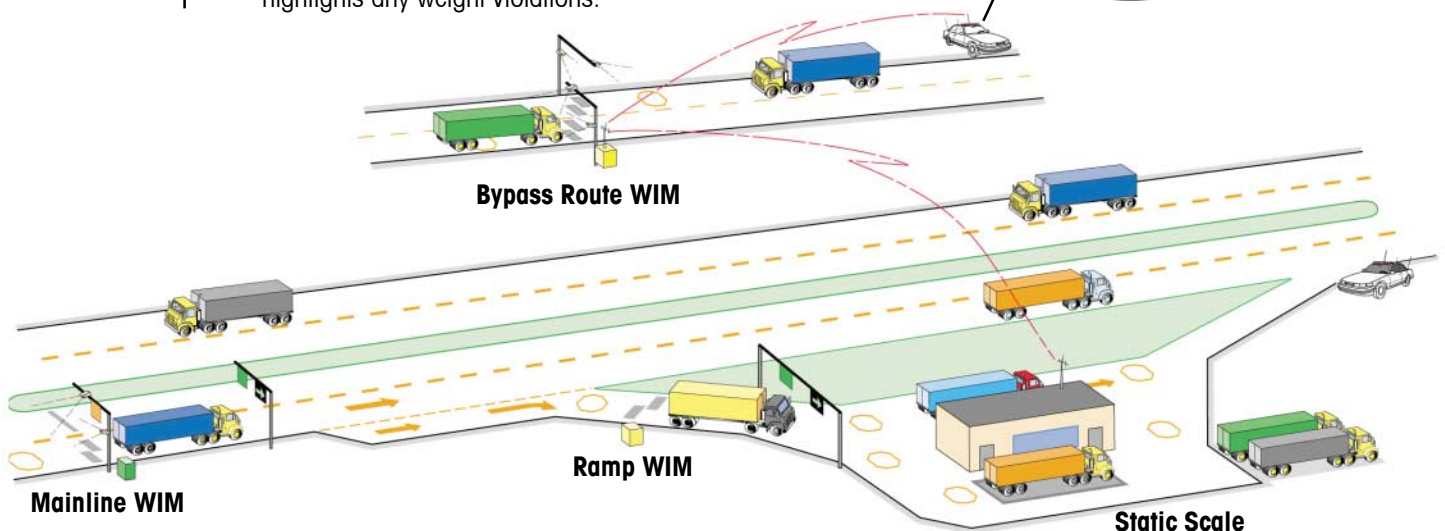
## Virtual WIM System Benefits:

- Accurate, reliable, and efficient weight enforcement at a fraction of the cost of a fixed facility weigh station.
- Provides instant information for mobile enforcement officers to stop vehicles most likely to be in violation of weight limits.
- Continuous image capture and storage can be used to monitor for repeat weight or speed violators. Data is downloaded remotely via a modem or Ethernet link.
- System can store vehicle traffic data, which can be used for traffic and enforcement planning.



## Video Capture System

- High resolution 2/3" progressive scan camera technology.
- Wide angle and close up cameras to capture overall vehicle image and cab door detail.
- Weatherproof camera enclosure with integral heater and fan.
- Software ensures optimum image capture, inserts weight data onto image, and highlights any weight violations.





**Project Management Support**

METTLER TOLEDO's comprehensive on-site support helps ensure a smooth, timely project installation and start up. Services include:

- Engineering assistance
- Construction management
- System start-up
- Operator training

**After Sales Support**

METTLER TOLEDO's extensive network of trained service technicians, along with a comprehensive warranty, helps ensure maximum system uptime and low operating costs. Maintenance contracts are also offered, providing you with years of trouble-free weighing operations.

**Global Availability and Support**

Mettler Toledo has offices in 37 countries around the World, with over 1000 certified technicians able to meet your local needs, quickly and competently.

**Other WIM Solutions**

Mettler Toledo also provides WIM solutions for other vehicle weighing applications such as border crossings, toll roads & bridges, seaports, and trucking terminals.



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