Introduction to Weigh-in-Motion (WIM)

Purpose of WIM

- **Overloaded vehicles** are the main cause for damaged roads

Purpose of high speed WIM:
- Reduce number of overloaded vehicles (enforcement)
  - Reduce damage of roads (damage is proportional to 4\textsuperscript{th} power of axle weight)
  - Enhance safety (overloaded vehicles are more dangerous)
- Charge by weight
  - Fair road charging (tolling - heavier vehicles pay more for road usage)
  - Efficient weighing (load of truck is weighed when entering and exiting e.g. a coal mine)
- Gather statistical data
  - Make road maintenance and road planning more efficient

![Number of overloaded vehicles (Bridge in Istanbul)](image)

![WIM Installation](image)
• Kistler Lineas® sensors based on piezo quartz technology measure the weight of a passing vehicle at virtually any speed (high speed WIM).
• WIM is much more efficient than static weight bridge as vehicle do not have to slow down.

• The Kistler datalogger evaluates the sensor signals and computes axle weights.
Kistler Offering for WIM

- **Lineas® sensors (9195)**
  - Fast installation (minimal time of road closure)
  - High measurement accuracy
  - Low maintenance costs (long term stability)

- **WIM System (9835)**
  - Highest accuracy up to +/-2.5% for GVW
  - OIML R134 certified (accuracy class 5)
  - Able to monitor up to 4 traffic lanes
  - Wide speed range (0 ... 250 km/h)
  - Measuring range up to 50 tons axle load

- **Services**
  - Extended warranty options for up to 5 years
  - On-site installation support and training
  - Calibration support