

M³ Module: Overload

The **Overload Module** detects overweight trucks using WIM (Weigh-In-Motion) sensors embedded in the road and verifies violations with mobile weight sensors operated by police officers. It ensures accuracy through **sensor calibration**, using specific calibration vehicles and calculating deviation factors per site, lane, and vehicle type.

The module logs detailed event information, including plate number, time of passage, axle loads, total weight, and percentage overload. Violations are classified as **potential** (detected by WIM) or **verified** (confirmed by mobile sensors), and can be filtered by adjustable tolerance levels to focus on the heaviest offenders.

For easy analysis, the system provides **graphical representations** of axle loads and vehicle class, highlighting overloaded axles and exceeded weight limits. It also tracks calibration vehicle passages, manages calibration factors, and supports configurable refresh intervals for mobile sensor data, ensuring ongoing precision in overload detection and enforcement.

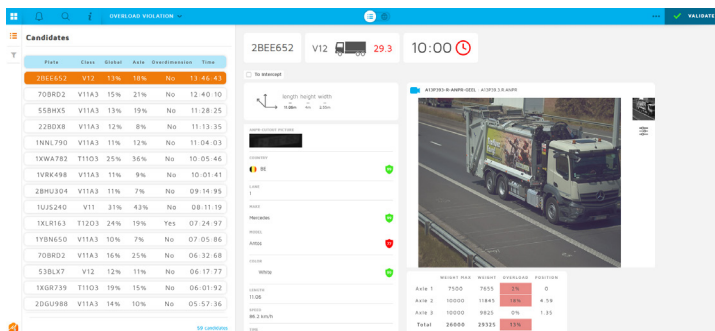


Plate	Class	Site	Axis	Overload	Time
2BEE652	V12	13%	16%	No	11:46:41
708802	V1A3	15%	21%	No	12:40:10
559KX5	V1A3	13%	19%	No	11:28:25
2280X8	V1A3	12%	8%	No	11:13:35
1ANL790	V1A3	11%	12%	No	11:04:03
1XWA782	T105	25%	34%	No	10:05:46
1V8K488	V1A3	11%	9%	No	10:01:41
2BMJ304	V1A3	11%	7%	No	09:14:35
1UJ5240	V11	31%	43%	No	08:11:19
1ALR163	T1203	24%	19%	Yes	07:24:37
1Y8N650	V1A3	10%	7%	No	07:05:06
708802	V1A3	16%	25%	No	06:32:68
53BLK7	V12	12%	11%	No	06:17:77
1S8B739	T103	19%	15%	No	06:01:52
20GU988	V1A3	14%	10%	No	05:57:36

WEIGHT DATA	WEIGHT	OVERLOAD	PERCENT
AXLE 1	7000	7000	0%
AXLE 2	10000	10000	0%
AXLE 3	10000	9825	0%
AXLE 4	10000	9825	0%
Total	38000	38000	0%



Key Features

- Detects overweight trucks using **WIM sensors** and verifies violations with mobile weight sensors.
- Calibrates WIM sensors using calibration vehicles and calculates deviation factors to ensure accuracy.
- Tracks **plate number**, **passage time**, **axle weights**, **gross weight**, and **percentage overload**.
- Differentiates potential and verified violations.
- **Graphical display** of overloaded axles and vehicle class.
- **Highlights violations with color coding** for quick analysis.
- **Adjustable tolerance levels and refresh intervals** for mobile sensor data.
- Supports recalculation and updating of calibration factors.