

Real-world performance of the TrafSense road monitoring system

Highlights from ITS European
Congress, Seville, May 19-21, 2025



**EUROPEAN
CONGRESS**
SEVILLE
19-21 May 2025
Clean, resilient and
connected mobility.





TrafSense: Capabilities and real- world performance

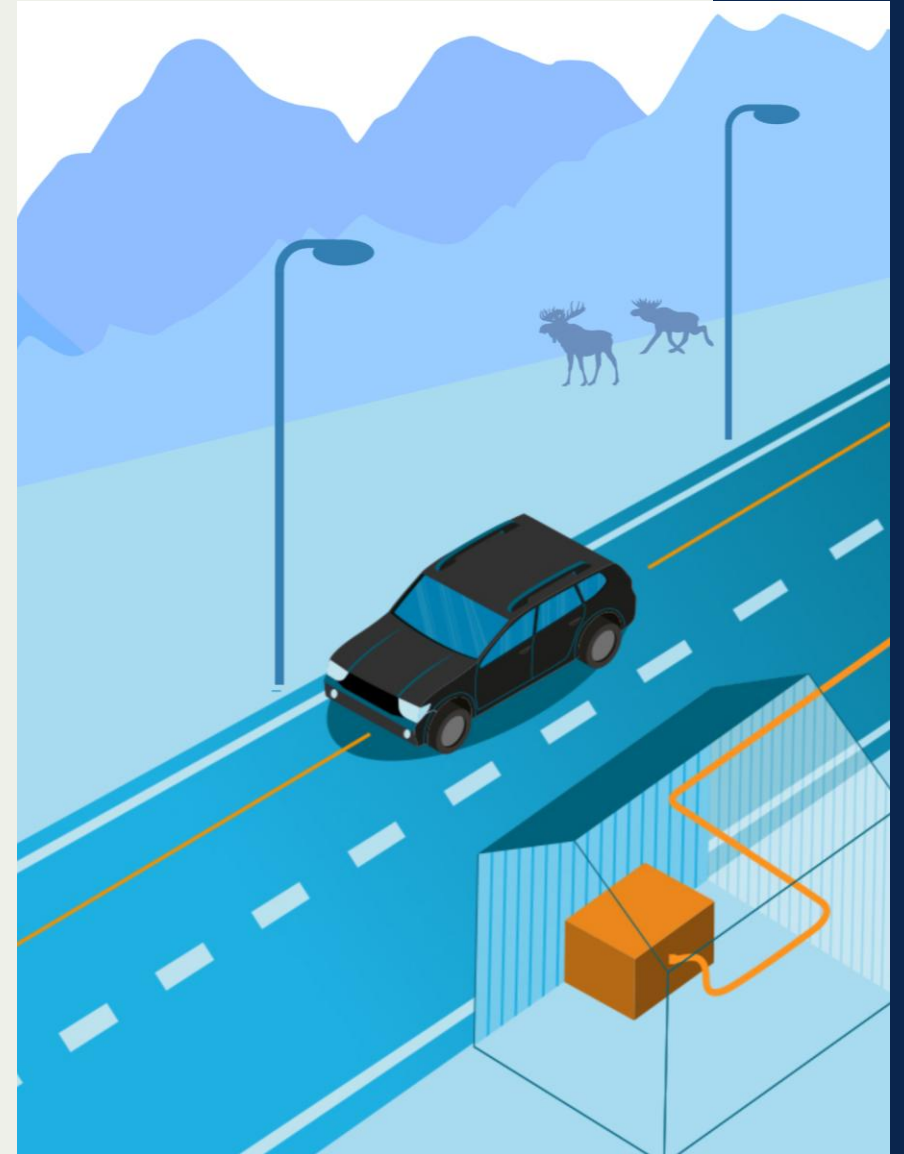
Automatic Incident Detection (AID)

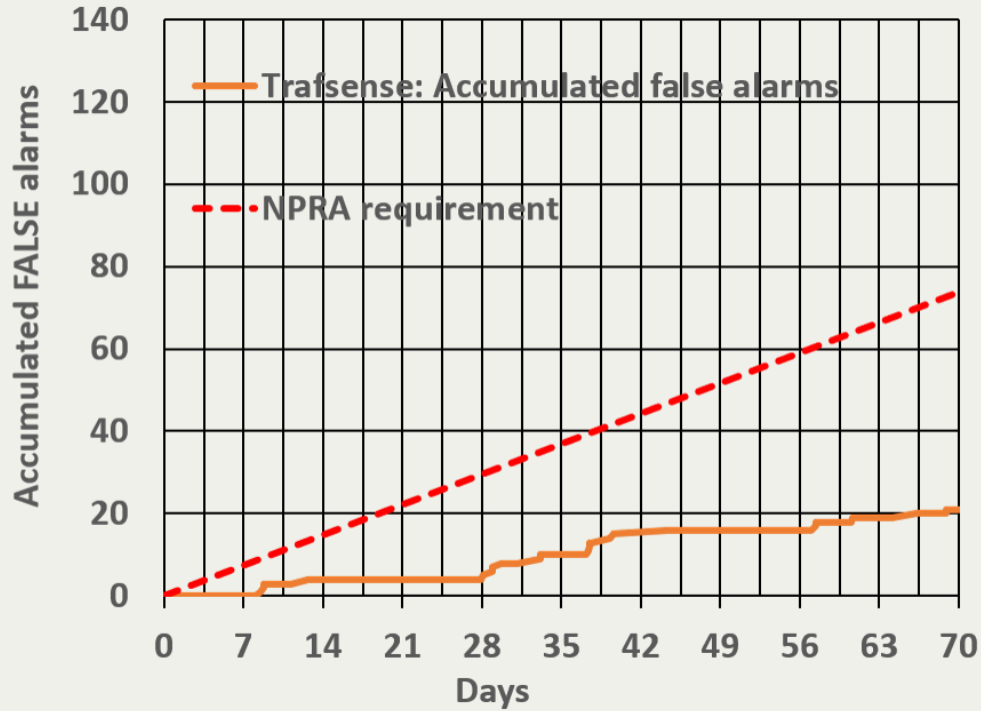
Accuracy of AID and its added value

Queue detection

Vehicle tracking

Traffic flow analysis





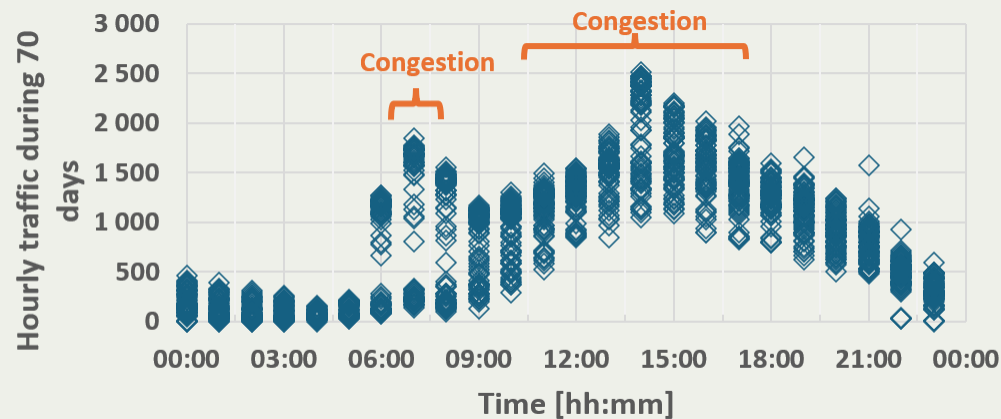
Less than 0.28 false alarms per km per 24h

Based on 1.5 million passing vehicles over 70 days

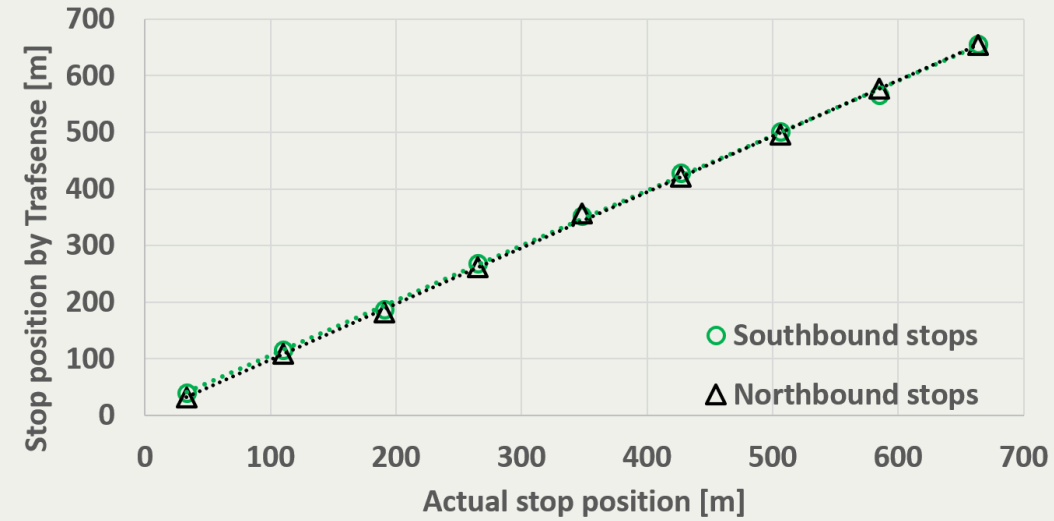
The Norwegian Public Roads Administration (NPRA) requirement: < 1 false alarm per km per 24 hours

71 149 passing vehicles between each false alarm

Equals 80 hours between each false alarm



Automatic Incident Detection (AID)



Standard deviations

Stop position: 6 m

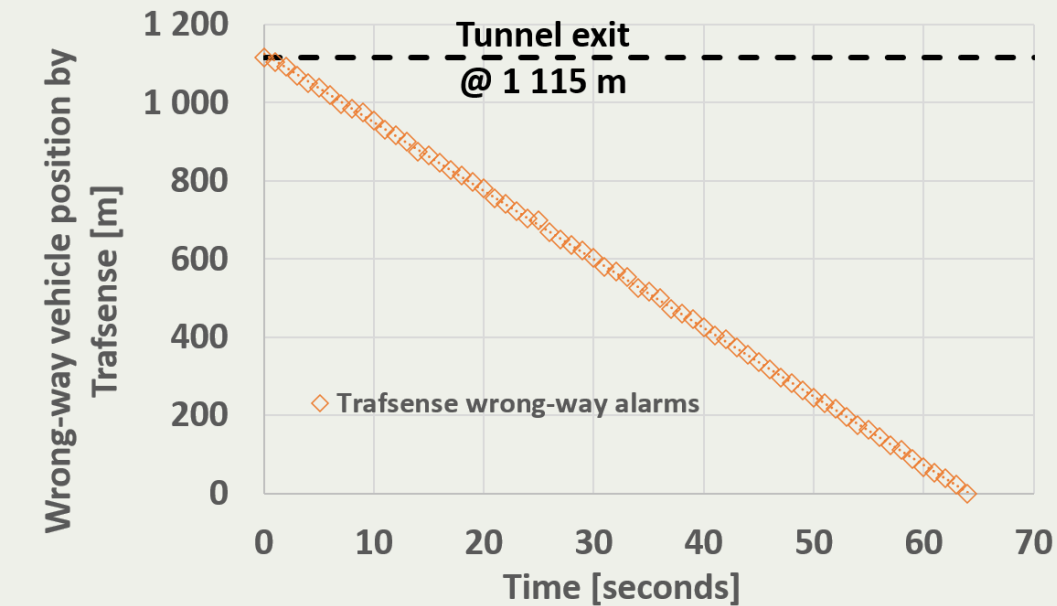
Wrong-way vehicle: 10 m

Mean Time to Detect

Stopped vehicle: 11 seconds

Wrong-way vehicle: 3 seconds

The Norwegian Public Roads Administration (NPRA) requirement: < 20 seconds



Accuracy of AID



**Joint tunnel demo w/
the Norwegian Public
Roads Administration**

Precise detection of stop
positions of vehicles trapped
in a tunnel by smoke

Playback functionality available for
the road operator for
identification of the stop
positions of trapped vehicles

Potentially life-saving info

Video cameras within the
visible spectrum are blinded
by smoke



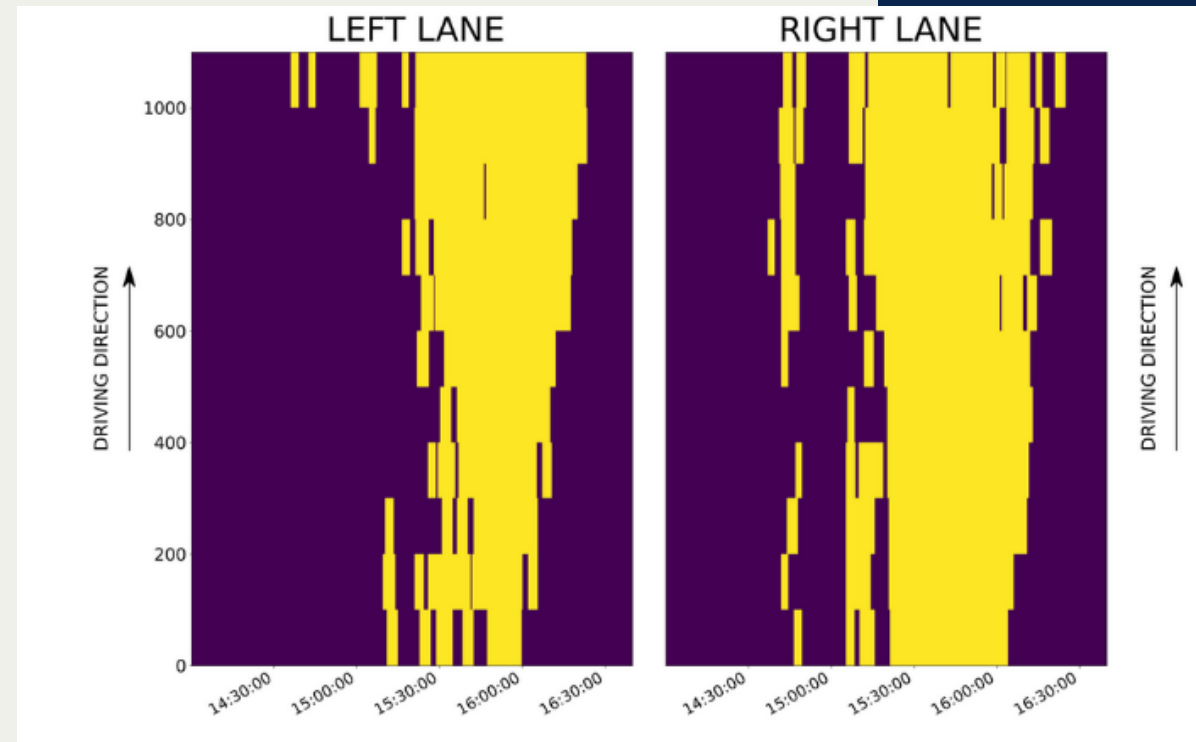
Added value of accurate AID



Queue detection

Percentage queue per lane is reported every three minutes

Spatial resolution 100 m





Carriageway at 100 km/h

Blue line: Vehicle in right lane

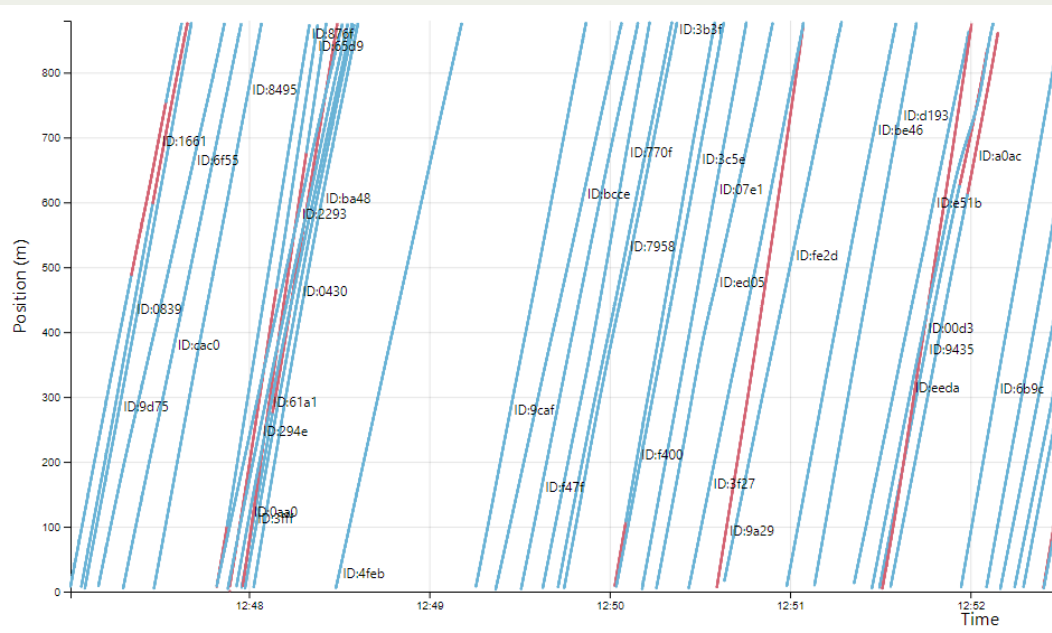
Red line: Vehicle in left lane

Lane changes, overtaking, and exits
detected

Updated 65 times
per second

Spatial resolution 1 m

Vehicle length estimated

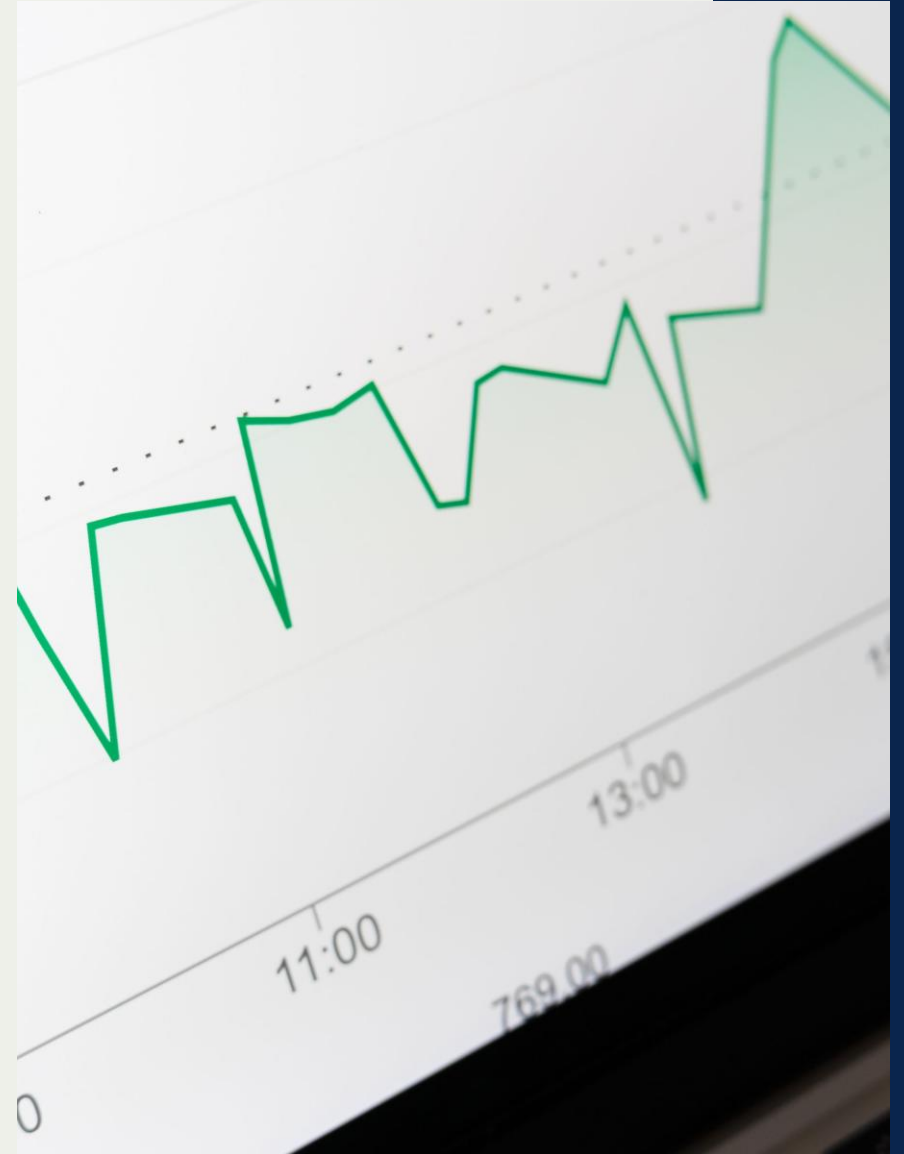


Vehicle tracking



Traffic flow analysis

Gathering data on vehicle density, speed distribution, and driving patterns may provide both vital insights into sub-optimum road signage or design, and real time information on the actual driving conditions.





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