



# Next-level detection and visualization with radar-video fusion

TRAFFIC AND  
URBAN MOBILITY

**AXIS**<sup>®</sup>  
COMMUNICATIONS

# Next-level detection and visualization with radar- video fusion

In Axis radar-video fusion devices, we completely integrate two powerful technologies: radar and video. Video analytics provide precise localization and object classification, while radar analytics add distance, direction, speed measurement, and classification – all powered by deep learning. The result is improved scene intelligence combined with the forensic value of video. Radar-video fusion enables you to detect wrong-way driving and identify the vehicle at the same time. It's also possible to measure speeds while capturing the vehicle's license plate. With two products in one device, it's easy to install, configure, maintain, and clean, making this a cost-effective solution.

## Wrong-way detection with vehicle identification

Radar-video fusion technology enables wrong-way detection with vehicle identification by combining radar and video analytics. Early radar detections are integrated into the camera view, providing reliable alerts that are confirmed by video analytics with license plate capture software. Our analytics support multiple line-crossing scenarios, ensuring reliable alarms to quickly stop wrong-way drivers. By identifying wrong-way driving vehicles through LPR, the system enables accurate detection and identification of the violating vehicle for a prompt response.



### **AXIS Q1686-DLE Radar-Video Fusion Camera**

AXIS Q1686-DLE Radar-Video Fusion Camera is an Axis radar-video fusion device that provides enhanced detection in challenging weather and lighting. It uses radar to accurately track vehicle speed and direction, and a camera to deliver high-resolution images. The pixel density of the images enables license plate recognition at high speeds to identify wrong-way driving and speeding vehicles. AXIS Q1686-DLE can monitor vehicle speeds up to 200 km/h (125 mph) and is based on an open platform compatible with various video management systems and third-party software.

# Use cases with Axis Radar-video fusion technology

## Speed monitoring with vehicle identification

Axis radar-video fusion devices ensure reliable vehicle identification with visual confirmation 24/7 at high speeds, up to 200 km/h (125 mph). The devices seamlessly integrate speed measurement, license plate capture, and vehicle identification, also under challenging lighting conditions. Additionally, they provide easy access to valuable metadata.

## Identify wrong-way driving vehicles with LPR

An Axis radar-video fusion device detects wrong-way driving by using line-crossing analytics. By running multiple line-crossing scenarios simultaneously on the edge, the same object must cross two virtual lines to trigger an alarm. This ensures more reliable alarms, reducing false notifications and allowing security personnel to focus on real threats. As a result, they can manage more cameras efficiently, saving time and costs. Wrong-way driving detection can also be connected to automatic fining and saved as forensic evidence. When combined with AXIS License Plate Verifier, the radar-video fusion camera enables real-time license plate recognition using AI-powered software.

## Traffic data collection

An Axis radar-video fusion device gathers detailed data on the number of speeders using a road and the specific times of their violations. It also helps to gain insights into the direction in which the speeders were traveling and allows for the identification of violators after the events have occurred, making it possible to administer fines or other enforcement measures.

# Why Axis for traffic and urban mobility

- An open, flexible, and scalable platform compatible with various partners, hardware, and software
- Durable, high-quality products with clear imaging in all conditions, including bad weather and dark tunnels
- Sustainable innovation aligned with new policies, including energy efficiency
- Proven leader in cybersecurity solutions, ensuring traffic data remains safe, secure, and compliant

**For more information, please contact your Axis representative and let us know how we can support your needs.**