



MILESIGHT RADARV

Next-level Radar-Video Fusion Technology

A MILESIGHT TECHNOLOGY MOMENT



What is Radar-Video Fusion and Why Does It Matter?

Radar-Video Fusion is an innovative solution that **deeply integrates millimeter-wave radar with video camera**, combining the strengths of both sensing modalities to achieve all-weather, all-scenario precise target detection and intelligent recognition. Radar provides motion information of targets (such as position, speed, and direction), while cameras deliver high-resolution video images and handle image recognition and classification. Working in synergy, the two significantly enhance detection accuracy, reduce false alarms, and improve system **robustness** in complex environments.

What is "Robustness"?

"Robustness" is a term commonly used in engineering, computer science, and artificial intelligence. It refers to a system's ability to maintain normal operation when faced with interference, anomalies, or uncertain conditions.

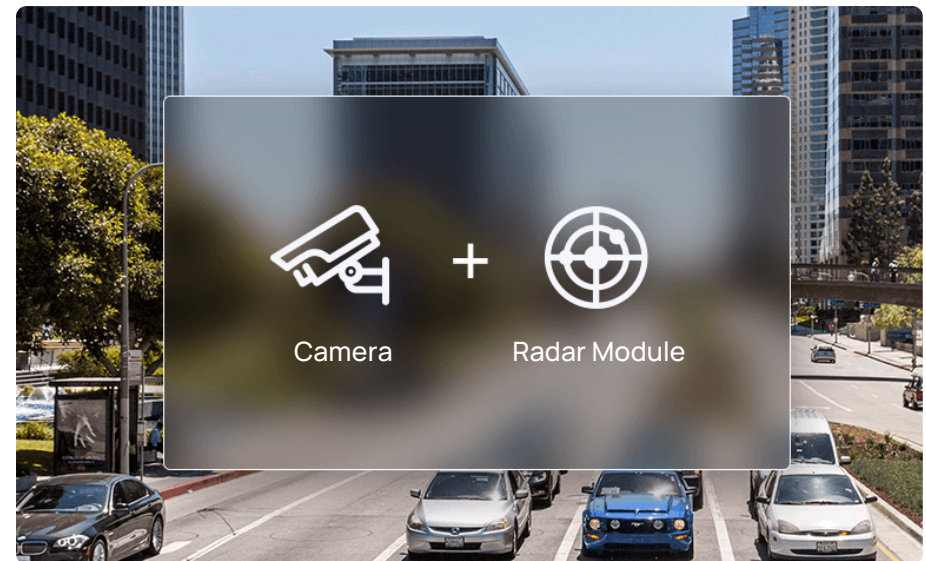
In surveillance systems, robustness can be explained with examples:

If the system continues to operate stably and accurately under challenging conditions such as bad weather, varying lighting, or environmental noise - without frequent false alarms or missed detections - it demonstrates high robustness.

In short

Robustness = Anti-interference + Stability + Fault tolerance

In surveillance products, a system with strong robustness is often more reliable, capable of adapting to complex and unpredictable environments.



How Does Radar-Video Fusion Work?

Radar-Video Fusion integrates a millimeter-wave radar with a high-performance video camera to achieve precise vehicle monitoring through the following mechanisms:



Radar Sensing:

The built-in radar continuously emits electromagnetic waves and captures reflections to measure real-time vehicle distance, speed, and azimuth. It provides stable detection even under challenging conditions such as darkness, fog, rain, or snow.



Data Fusion:

An onboard intelligent algorithm fuses vehicle positions from the radar coordinate system with lane-specific visual data from the camera, effectively filtering visual false positives (e.g., shadows, reflections, or moving foliage) and enhancing detection accuracy and reliability.



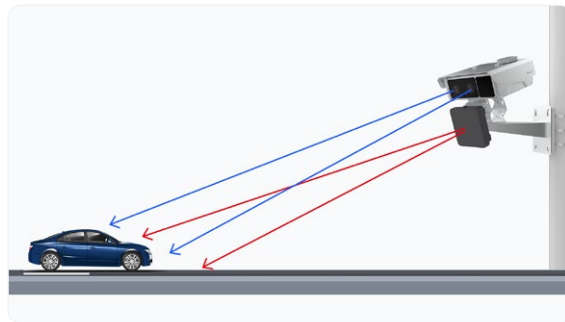
Video Recognition:

The camera simultaneously captures images and applies edge AI algorithms to recognize vehicles and extract license plates (ANPR), generating structured data including plate numbers, vehicle type, and color.

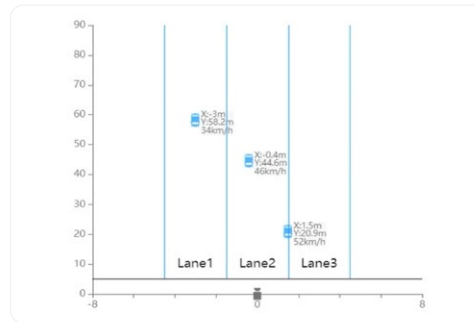


Event Triggering and Data Transmission

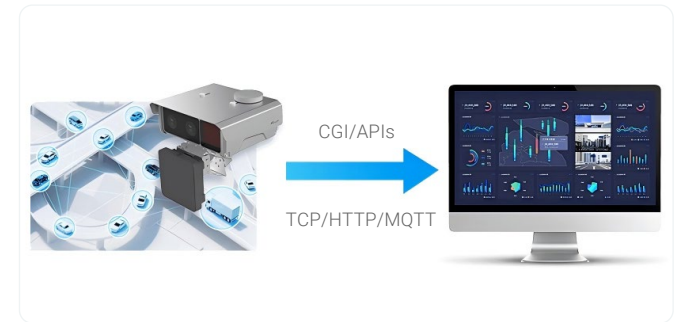
When the radar detects a vehicle entering the monitored area, the camera automatically localizes and tracks the vehicle, triggering recognition and capture, and outputting comprehensive structured information.



Radar Sensing & Video Recognition



Data Fusion: Radar Coordinate Data + Lane Data



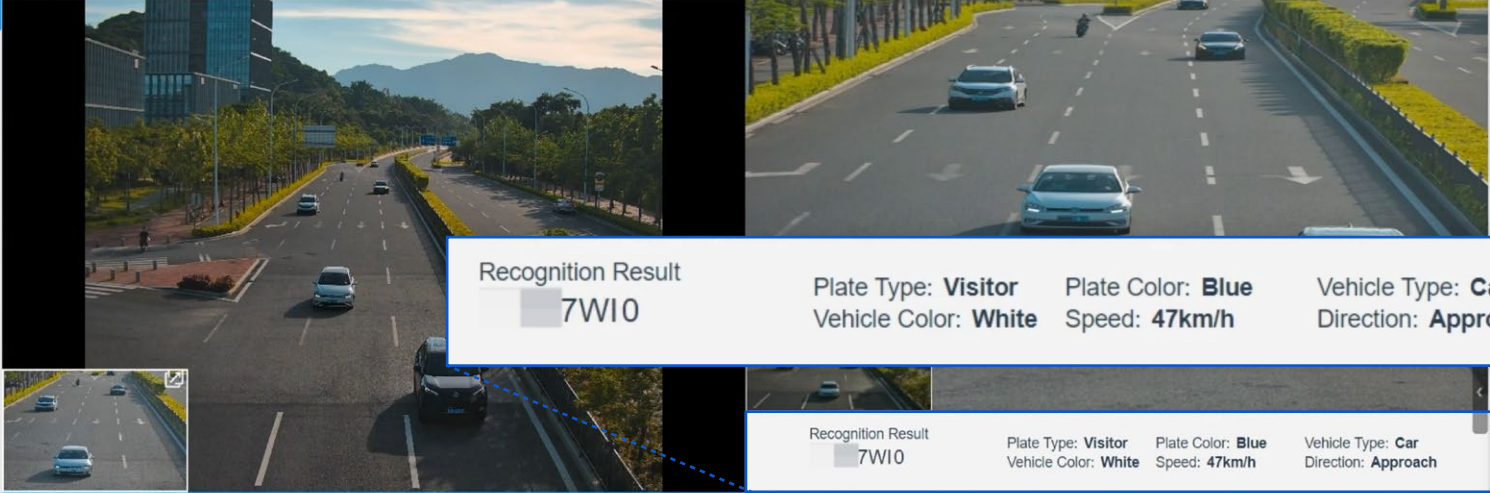
Event Triggering and Data Transmission

RadarV on Live

Milesight · Traffic Sensing Camera

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Stream 1 LPR



Recognition Result

7W10

Plate Type: **Visitor** Plate Color: **Blue** Vehicle Type: **Car**
 Vehicle Color: **White** Speed: **47km/h** Direction: **Approach**



Recognition Result

7W10

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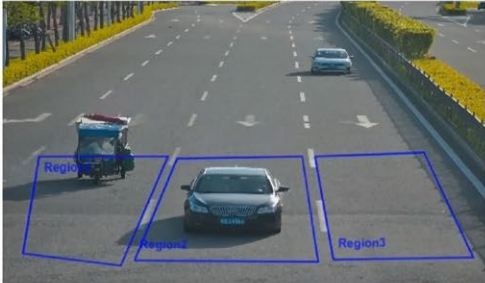
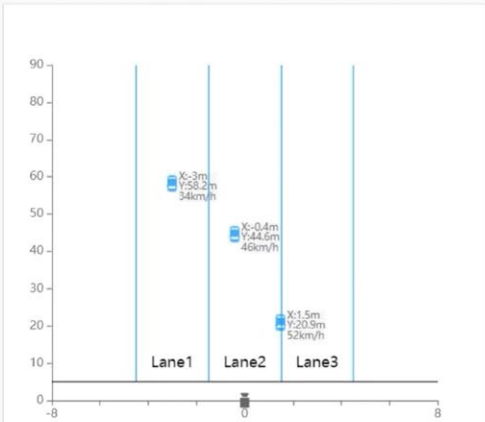
No.	Event Type	License Plate	Snapshot	Plate Type	Speed	Direction	Detection Region	Time	Operation
6	LPR	7W10		Visitor	47km/h	↓ Approach	2	2025-07-03 19:14:18.735	Q
5	LPR	LB78		Visitor	60km/h	↓ Approach	3	2025-07-03 19:14:18.423	Q
4	LPR	2G69		Visitor	48km/h	↓ Approach	2	2025-07-03 19:14:15.879	Q
3	LPR	5L08		Visitor	26km/h	↓ Approach	1	2025-07-03 19:13:59.313	Q

Radar Configuration Interface

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- Media
- Network
- Storage
- Traffic
 - LPR
 - Radar Configuration**
 - Violation Management
 - Smart Search
- Interfaces
- Data Transmission
- System

Radar Configuration

Road and Installation

Road Information

Number of Lanes: 3

Width of Each Lane: 3 m (3~6)

Direction of Lanes: **Lane1** Lane2 Lane3

Approach: ×

Installation Information

Installation Location: 0 m (-12~12)

Installation Height: 6 m (2~10)

Radar Tilt Angle: 0 ° (0~15)

Camera Direction: 0 ° (-30~30)

Radar Test: **Stop**

Detection Settings >

Schedule Settings >

Traffic Information >

Save

What is Milesight RadarV Technology?

RadarV is Milesight's self-developed radar-video fusion technology and the core innovation behind Milesight radar products.

Milesight RadarV sets a new benchmark in intelligent traffic management.

By combining **advanced 3D radar module with multi-lane, multi-object tracking and the innovative Milesight PlateXpert ANPR technology**, the system delivers highly reliable speed measurement together with enriched vehicle information, including type, brand, and license plate details.

With this integrated approach, **every speeding incident can be accurately detected and documented**, enabling authorities to regulate traffic more effectively while ensuring solid, admissible evidence for enforcement and legal use.

Cutting-edge Radar Performance

Precise Speed Detection

Feature-Rich ANPR



Tailored for Demanding Traffic Applications

Multi-functional Detection

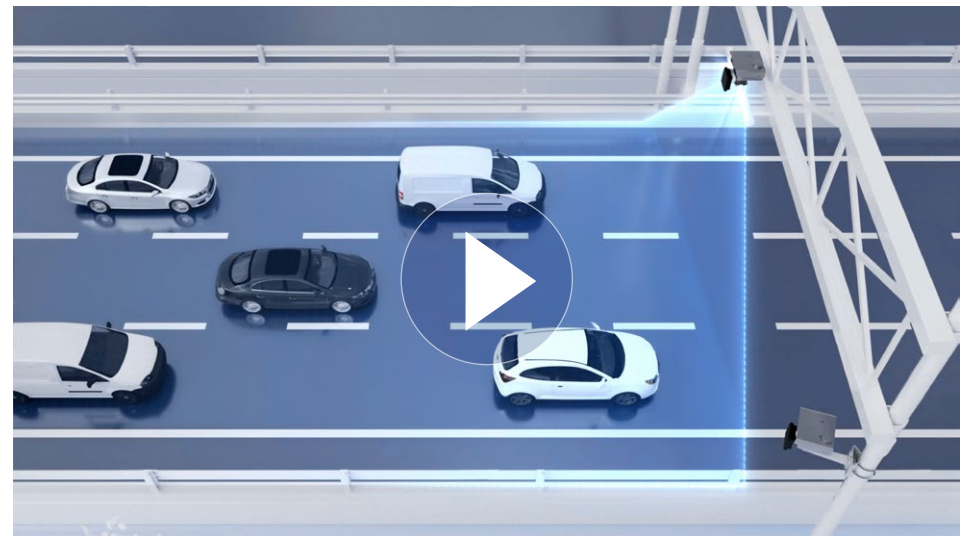
Ultra-clear Imaging

Unmatched Radar Performance, Unrivaled Speed Detection

With the ability to detect vehicles traveling at speeds of up to **320 km/h**, Milesight RadarV ensures accurate monitoring even in high-speed traffic scenarios. Supporting coverage of **2 to 3 lanes** simultaneously and tracking up to **32 targets** at once, it delivers exceptional performance for multi-lane environments, enabling reliable and comprehensive traffic enforcement.



► Click to Watch Video



Beyond Speed Detection, Into Insight with Feature-Rich ANPR

RadarV sets a new standard in traffic monitoring with uncompromising precision. Powered by an advanced AI ISP chip and intelligent AI algorithms, it achieves an **impressive 99% vehicle capture rate and 98.8% ANPR accuracy**, made possible by the integration of PlateXpert technology - Milesight's proprietary ANPR technology.

Designed for high-speed scenarios, RadarV reliably captures critical details - **including various plate attributes and vehicle attributes, such as plate color and vehicle brand** - while maintaining **minimal false positives**. Its performance remains consistent under challenging lighting and adverse weather conditions, ensuring dependable results around the clock.

Vehicle Type

Motorized Vehicle:

Car
 SUV
 Van
 Bus

Fire Engine
 Ambulance
 Truck
 Motorbike

Non-motorized Vehicle:

Bicycle
 E-Scooter NEW

Vehicle Brand

Audi
 Toyota
 Buick
 Aston Martin
 Mercedes-Benz
 BMW
 Mazda

Tesla
 Honda
 Volkswagen
 Ford
 Jeep
 Lexus
 Maybach

Plate Color

Vehicle Color

Multi-line Plates

Special Characters

ADR Plates

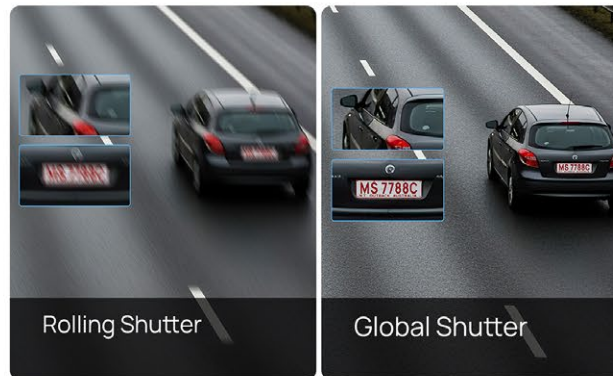
Clarity That Drives Accuracy: Core Imaging Technologies of RadarV

RadarV ensures unmatched imaging performance through its advanced technologies. With **Frame Parity Flashing** for capturing license plates and vehicle bodies clearly under varying exposures, **Global Shutter** for blur-free captures of fast-moving vehicles, and dual **740nm/850nm wavelength options** for superior night vision, RadarV delivers crystal-clear images that guarantee accurate recognition in every scenario.

► Frame Parity Flashing



► Global Shutter



► 740nm/850nm IR Wavelength



RadarV in Versatile Applications & Scenarios



Scenarios:



Related Products: Milesight RadarV Cameras



AI Road Traffic Radar Pro Bullet Plus Camera



DualVision TrafficX Radar Camera

————— Make Sensing Matter —————

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