

VCATS

Vehicle Classification and Tracking System

TransCore's VCATS offers accurate vehicle detection, classification, and image capture in a compact enclosure, without the need for in-ground sensors.

Leveraging TransCore's proven Vehicle Capture and Recognition System (VCARS) technology, VCATS accurately tracks vehicles throughout a toll zone, classifies them using advanced artificial intelligence, and automatically captures license plate images.

All-Overhead AVDC in a Compact Form Factor

VCATS houses all vehicle detection, license plate image capture, and classification technology within a single 26" x 14" x 10" overhead enclosure, including front and rear automatic license plate recognition (ALPR) cameras, a fisheye dome camera for detection and tracking, and an advanced system-on-module processor. The dome fisheye camera faces downward to detect, track, and classify vehicles throughout a 180-degree field of view—regardless of the vehicles' direction of travel.



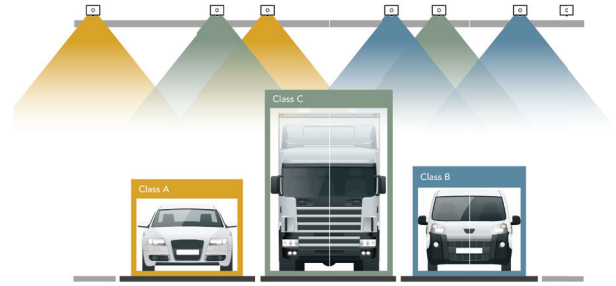
Tracking and Classifying with Neural Networks

Motion and object detection algorithms—which run on VCATS's onboard processor—uniquely identify and track vehicles throughout the entire toll zone. As vehicles move through the toll zone, they trigger the unit's ALPR cameras. Simultaneously, VCATS begins classifying each vehicle using convolutional neural networks trained with previously verified classification images. This results in reliable profile-based classification and axle count, if needed.

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Positioning

In an ORT zone, TransCore deploys two VCATS units per lane—each offset from its respective lane stripes. This configuration provides redundancy for AI-based classification and wheel detection by capturing each side of the vehicle. Because most of the coordination and processing occur onboard, VCATS units only require AC power input and a single Ethernet communication link.



VCATS Advantages

- ▶ Enables 100% overhead ALPR and AVDC within a single enclosure
- ▶ Larger vehicle detection ranges
- ▶ Tracking throughout the zone
- ▶ Neural network profile-based classification
- ▶ Predefined location image triggering and data capture throughout the zone
- ▶ High-confidence tracking of vehicles in straddle and lane-changing scenarios
- ▶ Redundant, high-power system-on-module processors
- ▶ Sensor locations that declutter lane centers and stripes
- ▶ Internal control and sensor systems to enhance remote monitoring and access



For more information:

Call
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