



Hikvision Solution for Road Transport

Keeping road users safe throughout their journeys

HIKVISION[®]

Background

Driving heavy vehicles is among the most dangerous occupations in Australia. In 2023, out of 1,257 road fatalities, 258 were linked to road transport operations. Given that heavy vehicles represent about 1 in 20 vehicles on the road but account for 1 in 6 fatalities, the fatality rate is disproportionately high. Heavy vehicle accidents not only cause catastrophic damage to human lives but also to road infrastructure.

The amount of travel time wasted annually in Australia due to road accidents varies significantly based on factors like location, traffic volume, and accident severity. Key points to consider include:

Economic Impact: Infrastructure Australia estimates that road congestion could cost the economy around AUD 39.8 billion annually by 2031, factoring in time lost, fuel wasted, and other economic costs. A significant portion of this congestion is caused by road accidents, which can lead to substantial delays.

Accident Frequency: Thousands of road accidents occur each year in Australia, many leading to traffic delays. Even minor accidents can result in significant hold-ups.

Time Lost: Depending on the severity and location, road accidents can cause traffic hold-ups ranging from a few minutes to several hours, especially on major highways or key urban roads.

Cumulative Effect: The cumulative impact of these delays can amount to hundreds of thousands of wasted hours annually, illustrating the broader issue of road congestion exacerbated by accidents. Advancements in vehicle technology aim to mitigate these risks. The integration of artificial intelligence and high-definition cameras in modern systems not only enhances safety but also actively influences driving behavior and driver alertness, aiming to reduce the frequency and severity of accidents.

PAIN POINTS

Security Issues: Theft of cargo, hijacking, and vandalism are significant security concerns, particularly in remote or poorly monitored areas.

Documentation and Reporting: Maintaining accurate records for audits, insurance, and regulatory compliance can be cumbersome, requiring significant administrative effort.

HIKVISION SOLUTION

CCTV Surveillance around and in the vehicle monitors for and records any activity, providing evidence for criminal or civil investigations.

Hik-Connect databases all information in a secure and structured manner making retrieval easy. Video evidence is secure and compliant to chain of evidence requirements.

PAIN POINTS

Safety Concerns

Accidents and Fatalities: Heavy vehicles are often involved in more severe accidents due to their size and weight, leading to a higher risk of fatalities and significant property damage. Driver fatigue, poor weather conditions, and long hours on the road further exacerbate this risk.

Driver Health and Well-being:

The nature of long-haul driving, with extended periods of sitting and irregular sleep patterns, can negatively impact drivers' physical and mental health, increasing the risk of accidents.

Driver Shortages and Retention

Driver Shortages: The road transport industry often faces a shortage of qualified drivers, partly due to the demanding nature of the job and an aging workforce. Recruiting and retaining skilled drivers is a significant challenge.

Training and Skill Development:

Continuous training is necessary to ensure that drivers are up-to-date with safety protocols, regulations, providing comprehensive training programs can be costly and time consuming.

HIKVISION SOLUTION

Leveraging Technology to Enhance Safety in Road

Transport Operations:

By integrating advanced camera systems and artificial intelligence, managers can actively monitor and improve driver safety through comprehensive scorecards. HikCentral Professional's On Board Security route and driver module generates safety scores based on critical factors, including driving hours and the detection of risky events such as excessive G-force, speeding, and driver alertness. This proactive approach allows for real-time feedback and targeted interventions, significantly reducing the likelihood of accidents and enhancing overall road safety.

Driver Scorecards can be used to incentivize good driving behaviour which in turn reduces operating costs and improves the company's public profile. These savings could be channeled back into bonus schemes, better training resources. The overall effect is happier and safer employees, lower staff attrition and recruiting costs and therefore a more profitable business.

Managing your Return on Investment

Operational Costs

Operating costs are a significant pain point for any transport business. This page will explain how investing in Hikvision's on-board solutions can positively affect your operating costs which could include:

Fuel Costs: Fuel is one of the largest expenses for road transport operations, and fluctuations in fuel prices can significantly impact profitability. Efforts to improve fuel efficiency can be hindered by factors like traffic congestion and inefficient routing and aggressive driving.

Maintenance and Repairs: Regular maintenance is crucial for the safety and reliability of heavy vehicles, but it can be costly. Unexpected repairs due to breakdowns or accidents can also lead to unplanned downtime and increased expenses. Premature wear on brakes and tires increases with aggressive driving behaviour.

Insurance Costs: High accident rates and the potential for significant damage increase insurance premiums for road transport operators. Managing these costs while maintaining adequate coverage is a persistent challenge.

Unclaimed Damage Costs: Some damage just isn't worth claiming for as they fall under excess levels or adversely affect the company's insurance ratings and no-claims bonuses. These unclaimed costs can add up over the year and produce a significant problem if not mitigated against.

Company Profile Costs: Although difficult to quantify unless obvious, the cost to a company for having a bad reputation on the road should be a key concern for managers. Lost opportunities, contracts and clients occur when high profile accidents occur and the company suddenly finds their logo on the evening news.

How Investing In Hikvision Cameras Can Save You Operational Expenditure

Based on 100 vehicles, typical ongoing data and software subscription costs.

Annual investment: $100 \times \$750 =$ **\$75,000**

Risk reduction of 50%* through proactive management of driving behaviour using scorecards to incentivise safer driving

So 50% reduction in unclaimed crashes –
Approx. \$1500 saving per veh = **\$150,000**

Some savings on fuel, maint and repairs due to less aggressive driving –
Approx. 5% or \$500 per veh = **\$50,000**

50% less insurance claims saving on excess payouts and premium increases – Approx. \$1500 per veh = **\$150,000**

Total Net Saving: **\$275,000**



Solution: Refrigerated Truck

Temperature Sensor AE-MW6702

Front and rear
Temperature sensors



Roadview Camera

AE-VC259T-S

Placed on the windscreen



Indoor Cargo view Camera

AE-VC211T-IRS

Placed centrally at the front of the cargo area, this camera looks rearward capturing activity inside the refrigerated zone.



Video Out Integrated To Radio

Analogue Video output from DVR fed to OEM Head unit for video and telemetry



Network Enabled 4 Channel DVR AE-MD5043(1TB)

Placed under the seat, the DVR is concealed from tampering. Records and processes 4 analogue channels to a 1 TB SSD. 4G/WIFI connectivity back to Hik-Connect Teams provides the User great access to data and video on demand.



Outdoor rear view Camera

AE-VC253T-IT

Placed under the Platform to capture activity at the rear of the vehicle. IP rated and robust to handle the harsh cement environment.



Solution: Cement Truck

Outdoor Side view Camera

AE-VC224T-IT

Placed on the sides of the Cab, this camera captures activity along the side of the vehicle.



Outdoor rear view Camera

AE-VC253T-IT

Placed under the Platform to capture activity at the rear of the vehicle. IP rated and robust to handle the harsh cement environment.



Indoor cabin and road view Camera

AE-VC211T-IRS

Placed centrally at the rear of the cabin, this camera looks forward capturing the driver and passengers as well as the road.



Network Enabled 4 Channel DVR

AE-MD5043(1TB)

Placed under the seat, the DVR is concealed from tampering. Records and processes 4 analogue channels to a 1 TB SSD. 4G/WIFI connectivity back to Hik-Connect Teams provides the User great access to data and video on demand.



Solution: Construction Truck

In-cabin View Camera

AE-VC211T-IRS

Onboard video monitoring. It is usually installed on the roof of the car to monitor the situation in the car, and is suitable for a variety of application scenarios such as trucks and buses.



Side View Camera

AE-VC224T-IT

Onboard video monitoring. Outdoor camera, with waterproof and dustproof outdoor certification, it is usually installed on the side of the vehicle to monitor the road conditions on both sides.



Analog BSD Camera

AE-VC236T

Onboard video monitoring. Outdoor camera, with waterproof and dustproof outdoor certification. It can also be used for blind spot detection function.



Roadview Camera

AE-VC259T-S

The special shape makes it particularly suitable for mounting on the front windshield for the detection of road conditions ahead.



Video Out

Integrated To Radio

Analogue Video output from DVR fed to OEM Head unit for video and telemetry.



Network Enabled 4 Channel DVR

AE-MD5043(1TB)

Placed under the seat, the DVR is concealed from tampering. Records and processes 4 analogue channels to a 1TB SSD. 4G/WIFI connectivity back to Hik-Connect Teams provides the User great access to data and video on demand. Use of 360 AVM increases views to 7.



360° View Assist

Integrated To Radio

2D and 3D views stitched together from fisheye cameras on side and rear of vehicle.



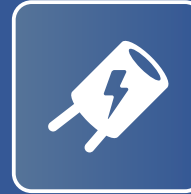


Product Features



Driver Behaviour Analysis

Hikvision's AI processing accurately detects Distraction and Alertness through the use of pattern matching, Per Close techniques and facial recognition algorithms. The Hikvision AI can detect, Sleepiness, Yawning, smoking, food and drink, handheld device.



Robust Wide Range Power Supply

Hikvision included a Super-cap array, supporting a wide range (9- 36VDC) power supply to it's Mobile range, this protects memory and camera electronics from corruption and failure.



Forward and Pedestrian Collision Warning

Hikvision's AI processing accurately detects oncoming obstacles such as other vehicles, cycles and people, alerting the driver through audible warnings. Sensitivity can be set.



Conforms to ISO Standards

Complies with electro-magnetic compatibility standards ISO 7605, shock and vibration testing to EN50155 and many other local and international standards making it one of the most robust platforms on the market today.



Blind Spot Detection

Hikvision's AI processing accurately detects obstacles such as other vehicles, cycles and people to the side and rear of the vehicle while it is moving, alerting the driver through audible warnings. Sensitivity can be set.



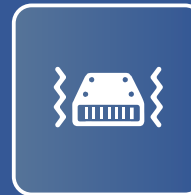
No Break Power off Recording

The first Mobile DVR to add this technology, ensures no video is lost if the power is cut off. This is achieved with a Super-cap array.



Speeding and G-force Alerts

The MDVR includes internal GPS and G-Force Sensors to alert for speeding (configurable threshold and posted speed and geo-fence rules) and G-force threshold non compliance. Events, email alerts can be created for near real time notifications.



Robust Design Suited to Mobile Applications

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4-Channel MDVR

AE-MD5043

- 4-ch TVI + 4-ch 5MP IPC via PoE switch
- Pluggable anti-vibration SSD box, 2 x 2.5 inch HDD/SSD (2TB for each), 1 x SD card
- 3G/4G, 5.8G WIFI, GNSS GPS,
- H.265 compression AES128 Encryption
- 9 – 36VDC ≤ 45 Watts (800mA with 4 cams)
- 206 × 219 × 60 mm (8.1 × 8.62 × 2.36 inch)
- 1.6 kg (3.5 lb)
- CE, FCC, EN50155, EN45545, EN50121, E-mark, CB, RoHS, WEEE

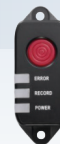


MDVR

Status Panel G-Force Sensor

DS-1530HMI

- Three colour Status LED
- Build-in Gyroscope and Sensor
- Emergency Button
- Built-in IR Sensor for Remote Control
- 80mm * 30mm * 19mm



Status

Buzzer/Loud Speaker

AE-MW7601

- Built-in 8Ω 5W speaker, the volume up to 110 dB
- Supports multiple alarms (LED, Beeps, Messages)
- RS485 interface
- IP69K
- 5-Pin aviation connector
- 3.8"(L) × 1.7"(W) × 5.0"(H)



Buzzer

360° Assist View Monitor

AE-VE242A-A

- Support 4 channels of 720p TVI cameras
- 3D panoramic splice the front, rear, left and right images of the vehicle body
- 4-way HDTV input, 1-way HDTV output
- TF Card Slot
- IR Remote Control or HAT-360 App



360 AVM

Monitor

DS-MP1301(AE) 7 inch Monitor DS-MP1302(AE) 7 inch Touch Screen

- 7-inch TFT LCD
- Real-time live view switched by analog signal inputs 2-ch alarm input
- 3-ch video input including one channel connecting to the mobile DVR,
- Bracket or dash mounted



MONITOR

Outdoor Analog

- Progressive scan CMOS Up to 720P resolution
- Low illumination, 0.1 lux @ (F1.2, AGC ON), 0 lux with IR
- Supports auto electronic day & night switch
- Supports auto white balance
- Supports left & right mirror mode
- IP 68 protection level



**AE-VC153T-IT
(720P)(2.8mm)**



**AE-VC124T-IT
(1080P) (2.1mm)**

**AE-VC253T-IT
(1080P)(2.1mm, 2.8mm)**

**AE-VC224T-IT
(1080P) (2.1mm,
2.8mm, 3.6mm)**

Road-View Analog (ADAS)

- Adopts progressive scan CMOS to prevent motion image aliasing
- 1080P 2MP 2.8mm Lens
- Supports highlight compensation
- Adopts automatic white balance
- Shock-proof design and aviation plug
- Supports built-in mic
- Supports DVR AI for ADAS



AE-VC155T 2.1MM AE-VC259T-S 2.1MM

Internal Cameras with Driver Behaviour Analysis (DSM)

- Adopts progressive scan CMOS
- Up to 720P resolution 2MP 6mm Lens
- 0.1 lux @ (F1.2, AGC ON), 0 lux with IR
- Shock-proof design and 4-pin DIN connector
- Supports DVR DBA AI Algorithms



AE-VC154T-IT



AE-VC2521T-IT

Internal Cameras

- Adopts progressive scan CMOS
- Up to 1080P resolution 2MP 6mm Lens
- 0.1 lux @ (F1.2, AGC ON), 0 lux with IR
- Shock-proof design and 4-pin DIN connector



AE-VC211T-ITS



AE-VC143T-IT

HIKVISION

Australia

Sydney office

46 Brookhollow Ave, Baulkham Hills, NSW 2153

Hotline: +61 1300 976 305