



# Using IVMS to improve safety outcomes

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### Cameras

The Driver and Forward-facing camera is mounted under the rear-view mirror and causes no obstruction of driver's field of view. The Rearward facing external mirrors are mounted under the side mirrors.



### Driver State Sensing (DSS)

The driver facing sensors and camera uses highly intelligent infrared sensors to detect fatigue and distraction. The camera and sensors are generally positioned on top of the dash outside the driver's field of view. They do not cause any obstruction.

### MTData & TDA Tablet

Tablet set up in the cab may vary depending on space available on the dash, other installed devices and make/model of the vehicle may also affect the installation standard. By default, the tablet is designed to be mounted in a rugged support in the central area of the dashboard without obstructing driver's field of view.

### Driver State Sensing (DSS) – Seat Vibration

The seat vibration device is fitted under the seat of the driver. The seat vibration mechanism is not visible to the driver.

Driver State Sensing (DSS) – Seat Vibration

### In-Vehicle Unit (IVU)

The IVU is mounted within the cab under the dashboard of the vehicle or under the driver's seat. Installation position may vary between vehicle models. The unit is not visible from the driver's seat and requires professional installation of its wiring system.

In-Vehicle Unit (IVU)



### Intelligent Access Program (IAP)

The Intelligent Access Program (IAP) is a national program developed in partnership with all Australian road agencies. It uses satellite tracking and wireless communication technology to remotely monitor where, when, and how heavy vehicles are being operated on the road network. MTDData is a certified service provider to supply the required IAP units for Higher Mass Limits (HML) vehicles operating in regulated regions.

Other government schemes and regulated usage will be addressed by the technology in accordance with local legislation applicable in geographies where Toll operates.

Road usage charges, among other Costs, can be better managed in the future through the use of Telematics.

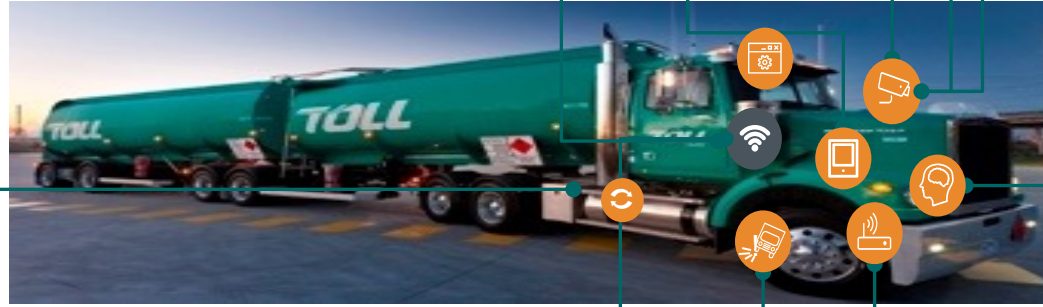
### MTData + Toll Driver App (TDA) + In-Cab Tablet

MTData is a key communication and safety device for drivers and managers. The Toll Driver App (TDA) will also be running on the in-cab tablet, allowing electronic signatures to be captured at the delivery with full integration to My Toll, as well as B2B integration with customers. MTDData provides real-time driving alerts and fatigue breach notifications allowing drivers to correct behaviour.

MTData also offers access to multiple other functions, including on-board navigation, messaging, and text-to-voice.

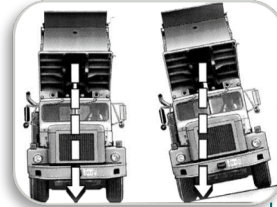


Intelligent Access Program (IAP)



### Turntable Indicators

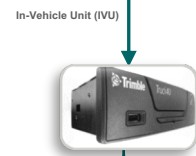
Just pneumatic fifth wheel designed for rollback applications. Makes changing tankers faster and safer by decreasing the risk of incorrect hitching.



### Rollover Detection

The rollover sensor provides an alert to the driver in case tilt or yaw tolerances are exceeded. The rollover sensor is different from an accelerometer as it measures static yaw and tilt versus change in g-forces.

Rollover Detection



### Sensor Hub

The Sensor Hub integrates with the IVU to aggregate sensor data, becoming a broker of information and a service provider to third parties. Thus, virtually limitless expanding Toll's possibilities in using new sensor technology from third parties connected to one in-cab gateway. Examples would include cold chain monitoring, cargo tracking, temperature sensors, security sensors.

### In-Vehicle Camera Unit

The in-vehicle camera kit contains:

1. Road-facing camera
2. Internal driver-facing camera
3. 2 external, rear-facing cameras
4. Infrared driver-facing camera

This system allows for simultaneous capturing of road- and driver-view video footage linked to an event, without the risk of tampering.

The camera kit can help reduce driving-related incidents, generating savings on fuel, maintenance and other damages and insurance claims.



1x Forward-facing



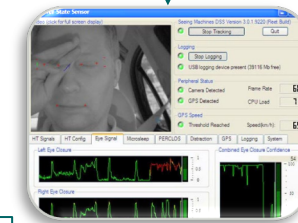
1x Driver-facing

2 x Rear Facing External Side Cameras



Driver State Sensing (DSS)

1x Face and Eye Tracking (Fatigue)



### In-Vehicle Unit (IVU)

The IVU consists of a single on-board computer mounted into the vehicle's cab. The IVU collects engine data and can assist in tele-diagnostics for preventive and predictive maintenance. It also offers extensive customisation options. The on-board unit can be used to monitor a variety of variables, from the vehicle's location, G-force events and engine data through to doors opening or loads exceeding temperature or weight tolerances.

### Driver State Sensing (DSS)

Using proprietary face and eye tracking algorithms, the DSS system detects the symptoms of fatigue and proactively alerts affected drivers helping prevent fatigue-related incidents.

The system uses a combination of in-cab driver sensor, a forward-facing camera and 24/7 monitoring to assist safety compliance.

# In-Cab Driver Technology

## FATIGUE MANAGEMENT



**CAMERA**  
(DRIVER FACING)

**SEAT**  
(VIBRATES)

- Fully Automated
- Real-Time Monitoring
- Driver Audio Alarms
- Driver Seat Vibration
- Management Alerts

## GPS TRACKING



**MTDATA**  
(ON-ROAD)

- Location & Direction
- Distance & Speed
- Waiting Times & Breaks
- Driver Behaviour
- G-Force (Hard Corner/Breaking)

## MONITORING CAMERAS



**EXTERNAL**  
(TRAILER FACING)

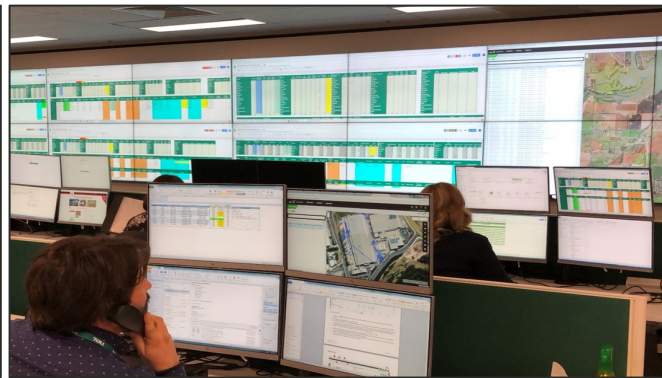
**INTERNAL**  
(ROAD FACING)

**INTERNAL**  
(DRIVER FACING)

- Real-Time Feedback
- G-Force Activated
- Driver Activated
- Secure Footage
- Quick uploads



**IN CAB**





# Trailer technologies

Pressure Valve Safety for compartments, rollover isolation



Rollover protection

ABS/EBS



Load weight cells on all axles

Auto steer axles (only on 23m)

**Thank you**