Vehicular Safety Technologies (VSTs)

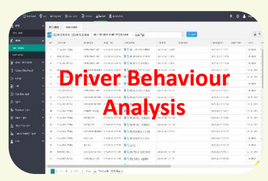
Common VSTs improve driver's/rider's situational awareness and monitor signs of fatigue or distraction

On-road solutions				On-site solutions			
Advanced Driver/Rider Assistance System (ADAS/ARAS)	**Driver Status Monitoring Systems (DSMS)**	**Driver/Rider Behaviour Monitoring System (DBMS/RBMS)**	**Blind Spot Detection**	**360 Degrees Camera**	**Proximity Sensors**	**Access Control**	**Video Analytics**
• Forward collision warning • Lane departure warning • Headway monitoring warning • Pedestrian detection	Alerts driver of: - Fatigue - Distraction - Smoking - Phone usage	Tracks: • Speeding • Harsh Acceleration • Harsh Cornering • Excessive Braking	Detects vehicles and pedestrians in blind spots when turning or changing lanes	Provides real-time view of area surrounding vehicle	Alerts driver when a person or an object is too close to vehicle	Authenticates worker before operation of equipment	• Geofencing for exclusion zones • Detects proximity and calculates trajectory • Traffic management

Productivity Solutions Grant (PSG) - Fleet Safety Management System (FSMS)

- **Companies from all industries are eligible to apply for the grant**. The solution broadly covers one or more of the following aspects – driver behavior monitoring, driver fatigue assessment/warning, anti-collision avoidance/warning and blind spot detection. Companies can more effectively manage driver deployment based on driving behavior, monitor and improve their drivers' safety performance, and reduce accident risks. Furthermore, the recorded data can help with post-accident investigations
- Supports pre-approved solutions with up to 50% grant support and capped at $30,000 per firm
- Company can apply for PSG if they meet the following criteria:
  - must be registered and operating in Singapore
  - purchase/lease of the solution must be used in Singapore
  - has a minimum of 30% local shareholding
  - Company's Group annual sales turnover should not exceed S$100 million, OR its employment size should not exceed 200 employees
- As of 2 January 2024, about 900 small and medium-sized enterprises (SMEs) have adopted pre-approved solutions under the FSMS to improve safety of their drivers

Fleet Safety Management

ADAS	Blind Spot Detection	DSMS	DBMS	Proximity Sensors	Video Analytics	360 Degrees Camera
						

Scan for PSG packages

WSH Tech Resources

Visit the WSH Technology page on the Ministry of Manpower's website for more information

WSH Institute

MINISTRY OF MANPOWER

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https://www.mom.gov.sg/workplace-safety-and-health/wsh-technology

Examples of VSTs Installation for Heavy Vehicles

On-road deployment

Vehicle Mounted Cameras, ADAS, DBMS, and DSMS

Side and back cameras to widen driver's field of view

In-cabin display monitor to show surrounding of vehicle

DSMS – Driver facing camera to detect signs of fatigue or distraction

ADAS – Sensors installed on vehicle to provide alerts for collision avoidance

DBMS – System installed in vehicle to track and record driver behaviour data

Image source: Grid Plus

On-site deployment

Proximity Tag-based System

Scan for PSG packages

Image source: Automation Support Services

Proximity Computer vision-based System

Scan for PSG packages

Image source: Solaris CES

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