



AUTOMOTIVE

# VISION SERIES



MILITARY, SPECIALTY, URBAN TRANSPORTATION,  
LOGISTICS AND AIRPORT GROUND VEHICLES



# Smart Technology Empowered ADAS

**O**ur ADAS is designed and developed to address the safety operations within the sectors of Military vehicles, Specialty vehicles, Urban Transportation vehicles, Airport Ground vehicles, Logistics vehicles, Material Handling and Construction vehicles. Our ADAS solution are designed to

- (1) Be driver centric to enhance user experience
- (2) Increase driver awareness to road situations to save lives and reduce the cost of ownership
- (3) Educate drivers on safe driving to create safer roads

Our bespoke solutions are scalable to meet the most challenging environment addressing Vulnerable Road Users (VRUs) [E.g. Pedestrians, Cyclists, Motorists and Vehicles].

Our full suite of ADAS comprise of Automotive Vision (AMV) series with 360 Cameras providing a ONE STOP solution as follows:

- 1 Forward Collision Warning
- 2 Lane Departure Warning
- 3 Blindspot Detection Warning on VRUs
- 4 Driver Safety Module to monitor driver's fatigue and safety breaches. Customisation can also be done depending on customer requirement.
- 5 Recording of near miss and accidents
- 6 Lidar to improve detection against adverse weather environment and terrain

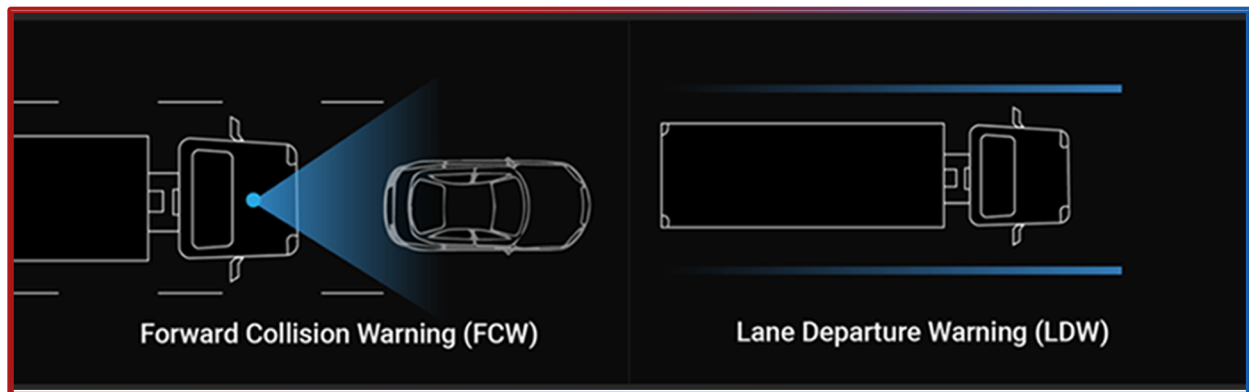
**W**e also provide Fleet Management System (FMS) to allow customers to manage their Fleet operations. Together with our AMV ONE STOP solution and FMS, customers are able to mitigate accident risks, improve reputation and mitigate any direct and indirect costs resulting from any accidents.



# Main Features of AMV For Military Vehicles, Urban Transportation Vehicles, Specialty Vehicles, Logistic Vehicles and Airport Ground Vehicles

## 1. Front ADAS – Forward Collision Warning and Lane Departure Warning

Our solution uses lightweight AI engine designed for embedded platforms for efficient compute utilization for ADAS. We are able to build custom AI engines suitable for embedded systems that consume less power and detect vehicular traffic and pedestrians effectively. Our AI engine can detect different types of objects in different lighting conditions.



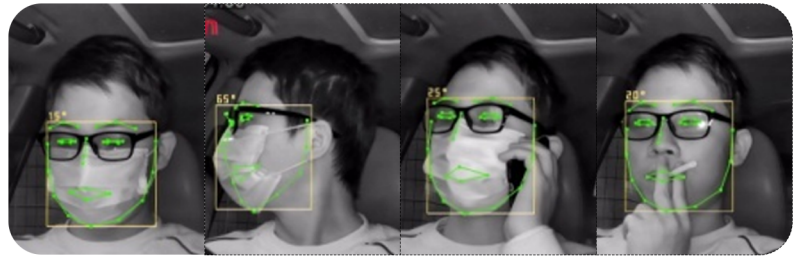
*Our lane departure warning is compliant to UN ECE R130 standards or similar*





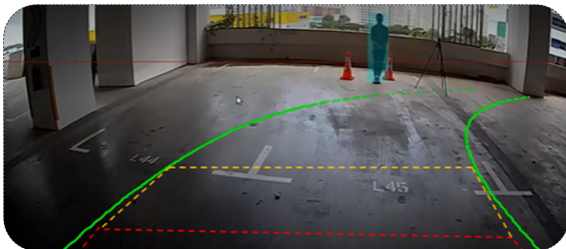
## 2. Configurable Driver Safety Module (DSM)

We use computer vision aided by AI and image processing techniques for detecting faces, face orientation and eyes to extract information from operating environment for machine learning.



This will help us accurately monitor the driver alertness while driving and alert for any distraction or drowsiness fatigue, cell phone usage and smoking accurately. Our algorithm can be customised apart from the mentioned four basic functions (e.g. Driver's Authentication) - depending on customer's required specifications.

## 3. Rear ADAS



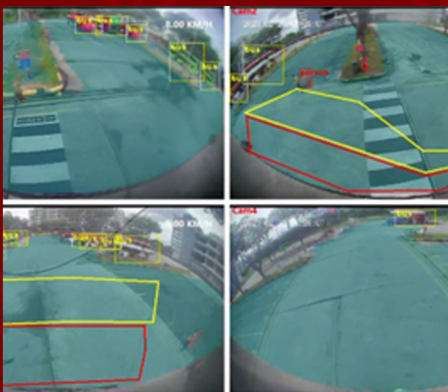
*Dynamic Reverse Steering with  
OSD detection + Lidar Integration*

Our solution allows Dynamic Reverse Steering Detection with OSD. We can scale up our solution to integrate with LIDAR to circumvent weather and terrain and customise alerting zone and strategies based on customers' requirement



## 4. 360 Cameras

Our all-round blind spot detection solution use vision-based detection system with Artificial Intelligent video analytics solution to alert both the drivers as well as the VRUs during accidents-prone scenarios. Our solution is designed to address scenarios pertaining to wide turning at junctions, side swipes and filtering lanes. Our solution includes dynamic detection during turning at junctions and eradicate unwanted alert on VRUs on sidewalks for improve user experience. Our solution includes a 360 stitched view which can be display out from the monitor.



**Dynamic Detection Zone**



**Improve user experience**



**360 Stitched view**

*Our blind spot solution is compliant to UN ECE R151 standards or similar*



# Technical Specification for ADAS and 360 Camera and Processor



## Front Facing Camera

- DC: 12V
- Anti-vibration: ISO 16750-3 (Max 17.3G)
- Operating temperature: -20 degree Celsius to +70 degree Celsius
- IP69K rated
- Wide Dynamic Range (WDR) function
- 720P 60°FOV
- 940nm dual band pass filter



## Inward Facing Camera

- DC: 12V
- Anti-vibration: ISO 16750-3 (Max 17.3G)
- Operating temperature: -20 degree Celsius to +70 degree Celsius
- IP69K rated
- 720P 90°FOV with IR LED
- Advanced Vision Algorithms Video Analytics Driver Safety Module
- Other FOV available: 120°



## Rear Facing Camera

- DC: 12V
- Anti-vibration: ISO 16750-3 (Max 17.3G)
- Operating temperature: -20 degree Celsius to +70 degree Celsius
- IP69K rated
- 720P 120°FOV with IR LED
- Object detection
- Other FOV available: 150°



## Processor

- Working voltage (with four cameras): DC +11V ~ +32V
- Operating temperature: -40 ~ +75 °C
- Video Input Signal: AHD
- Storage: 2.5" SSD (Max 4TB)
- Interfaces: CANBUS, RS485, RS232, Ethernet
- IO ports: 3x Inputs, 2x Outputs
- Wireless connectivity: 4G, GPS



## 360 Camera

- Image device: 1/3.2" CMOS
- FOV: 160° HFOV
- Power supply: 12 VDC
- Scanning system: Progressive scanning
- Resolution: 1280 x 960P
- Video output: AHD
- Operating temperature: -20°C - 70°C
- Anti-vibration: ISO 16750-3
- Image mode: Mirror/Normal image switchable

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