
a·til·ze
Proven Solutions to Reduce Road Accidents That Malaysia Should Implement
#shifthappens
we now live in a predictive economy

# Recent Significant Road Accidents in Malaysia

Genting Highlands Bus Crash
**July 27, 2016**

Bus Crash in Karak Highway
**Sept 01, 2016**


Muar Bus Crash
**Dec 24, 2016**


Bus Driver on phone while driving
**Dec 26, 2016**

Serian Bus Crash (fatal death)
**Dec 27 2016**

Federal Bus Crash in 5 Cars
**Jan 08, 2017**

© Atilze Digital Sdn Bhd. All rights reserved. All ideas and materials presented in this document are the intellectual property of Atilze Digital Sdn Bhd. Unauthorised use and/or reproduction of part or parts of this document, electronic or otherwise, is strictly prohibited.

# Initiatives in Malaysia to Reduce Road Accidents

Electronic Stability Control (ESC) by ASEAN NCAP compulsory for new passenger vehicles in 2018

Shell-MIROS, iRAP program uses a vehicle outfitted with advanced technology to analyse expressways and federal roads nationwide

Safe Steps by Prudential to create and distribute road safety educational videos on 17 Fox channels, expecting to reach 80 million households in SEA

Focus "On the Road not on the Hand" campaign study shows 80% of accidents were caused by human negligence, including using mobile phones while driving

Automated Awareness Safety System (AWAS), a Kejara demerit system with AES to educate and raise driver awareness

Performance Monitoring Hub System, using a GPS blackbox tracker to locate buses via SPAD's Command Control Centre (CCC)


" From 2010-2015, there is an ***increased trend*** of road accidents from 400K to a staggering near 500K !! "

*Traffic Branch Bukit Aman*

© Atilze Digital Sdn Bhd. All rights reserved. All ideas and materials presented in this document are the intellectual property of Atilze Digital Sdn Bhd. Unauthorised use and/or reproduction of part or parts of this document, electronic or otherwise, is strictly prohibited.


a·til·ze
WE ARE LIVING IN A DIFFERENT ERA
Products
1970s
Products + Services
1990s
Preventive Centric
2000s
Predictive Centric
Today

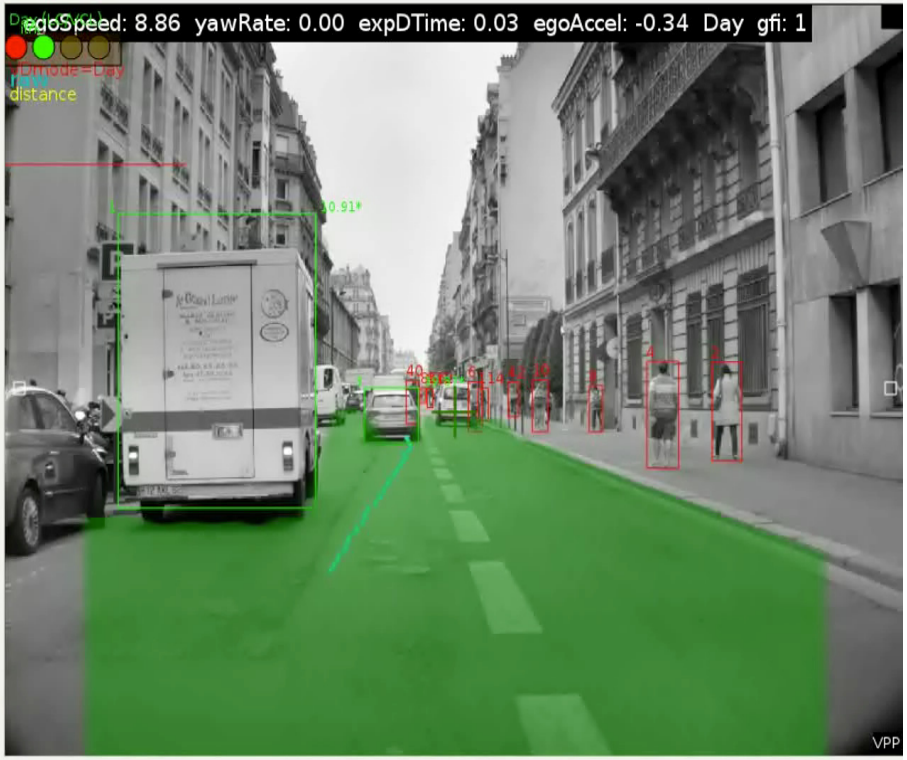
# Connected Advanced Driver Assistance Systems (ADAS)

**Proven to reduce commercial vehicle related road accidents by 82% !!**

*"There is a necessity for cars in Malaysia (and also other ASEAN countries) to be equipped with **Blind Spot Detection System** as the trend of road accidents in the region is alarming, with motorcycle fatalities making up a very high percentage.*

*There are also other trade names introduced by other manufacturers such as Side Assist, Active Blind Spot Assist, Rear Vehicle Monitoring System, Side Blind Spot Alert and Lane Watch"*

Mohd Hafiz, Senior Research Officer with MIROS




*1.5 sec early warning can prevent 90% of rear collisions, 2.0 seconds warning can prevent almost all crashes! – AXA Insurance*

© Atilze Digital Sdn Bhd. All rights reserved. All ideas and materials presented in this document are the intellectual property of Atilze Digital Sdn Bhd. Unauthorised use and/or reproduction of part or parts of this document, electronic or otherwise, is strictly prohibited.


SAMSUNG
1.3
a·til·ze
Connected Car

# Case studies

Government Incentive for Connected ADAS

70% refund for companies that implement ADAS in their fleet

In addition 3 insurance companies offer 10% discount to participating fleets


May 2016
Announcement

© Atilze Digital Sdn Bhd. All rights reserved. All ideas and materials presented in this document are the intellectual property of Atilze Digital Sdn Bhd. Unauthorised use and/or reproduction of part or parts of this document, electronic or otherwise, is strictly prohibited.

Government Incentive for Connected ADAS

Tax incentive to senior drivers installing ADAS

Japanese government will legislate Automatic Emergency Braking Laws for buses and trucks

Year 2016 Announcement


© Atilze Digital Sdn Bhd. All rights reserved. All ideas and materials presented in this document are the intellectual property of Atilze Digital Sdn Bhd. Unauthorised use and/or reproduction of part or parts of this document, electronic or otherwise, is strictly prohibited.

# Korea

## Public buses

The government is implementing Connected ADAS starting with 15,000 buses in 2016 and 135,000 buses in 2017

This policy will also be extended to taxis, trucks and lorries


ChosunBiz

뉴스 증권 부동산 정책·금융 기업 Weekly Biz 오피니언

기업 ·

첨단 운전자 보조 시스템 'ADAS'… 車 충돌 미리 경고, 사고 93% 줄인다

기사

첨단 운전자 보조 시스템 'ADAS'… 車 충돌 미리 경고, 사고 93% 줄인다

**Advanced driver assistance systems 'ADAS' ... vehicle pre-collision warning, reduce 93% of accidents**

Last month, one of the Cheonan taxi company car was equipped with Advanced Driver Assistance System (ADAS) on their 62 taxis. A car rental company in Jeju last month, 45 new car was equipped with ADAS. It is a national car rental companies, taxis equipped with ADAS is the first time. The sensor consist of a camera and monitors the front of the vehicle to prevent accidents. The equipment sounds an alarm when there are risks while driving.

About 90% of traffic accidents are caused by the driver error. This means accidents can be reduced by a large margin if we provide advance warning if there are risk of a collision to the driver.

In 2012, Federal Transportation Safety Board (NTBS) analyzed that ADAS can prevent 93.7% of consumer vehicle and 82.3% of commercial vehicle dead related accidents. Because of the benefits of ADAS, some countries, such as Europe and the United States mandated the use of ADAS and discounts on vehicle insurances.

**Korean government implementing ADAS starting with 15,000 buses in 2016 and 135,000 buses next year. This policy will also be extended to taxis, trucks and lorries.**

© Atilze Digital Sdn Bhd. All rights reserved. All ideas and materials presented in this document are the intellectual property of Atilze Digital Sdn Bhd. Unauthorised use and/or reproduction of part or parts of this document, electronic or otherwise, is strictly prohibited.

# China

Chinese Research Institute of Highway Ministry of Transport

During the tests, 300 units of ADAS were installed on buses and trucks, then driven for 15 million kilometers. The vehicles equipped with ADAS showed:

- 27% decrease in forward collision warning per 100 km
- 26% decrease in unintended lane departures per 100 km
- 39% decrease in the number of headway warnings per 100 km
- 21-35% decrease in the average “Risk Ratio”


May 2016

© Atilze Digital Sdn Bhd. All rights reserved. All ideas and materials presented in this document are the intellectual property of Atilze Digital Sdn Bhd. Unauthorised use and/or reproduction of part or parts of this document, electronic or otherwise, is strictly prohibited.

# Taiwan

## Public buses

The Taiwanese government has mandated use of ADAS in all inter-city buses since 2016

The government provides 49% subsidy in 2016


© Atilze Digital Sdn Bhd. All rights reserved. All ideas and materials presented in this document are the intellectual property of Atilze Digital Sdn Bhd. Unauthorised use and/or reproduction of part or parts of this document, electronic or otherwise, is strictly prohibited.

Government Mandate for Connected ADAS

All trucks and buses must have LDW, FCW and AEB

50% and up to 30,000 Euro refund for companies that implement ADAS in their fleet in 2016


© Atilze Digital Sdn Bhd. All rights reserved. All ideas and materials presented in this document are the intellectual property of Atilze Digital Sdn Bhd. Unauthorised use and/or reproduction of part or parts of this document, electronic or otherwise, is strictly prohibited.

# Connected ADAS

- ✓ ADAS system for safety and better driving
- ✓ Safety features are designed to avoid collisions and accidents by offering technologies that alert the driver to potential problems, or to avoid collisions by implementing safeguards and taking over control of the vehicle

Driver Assistance System by Image Processing

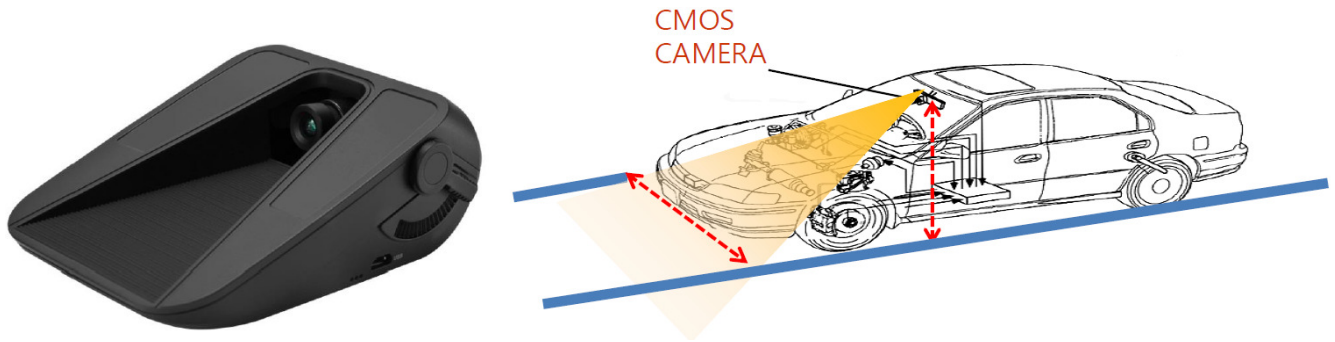
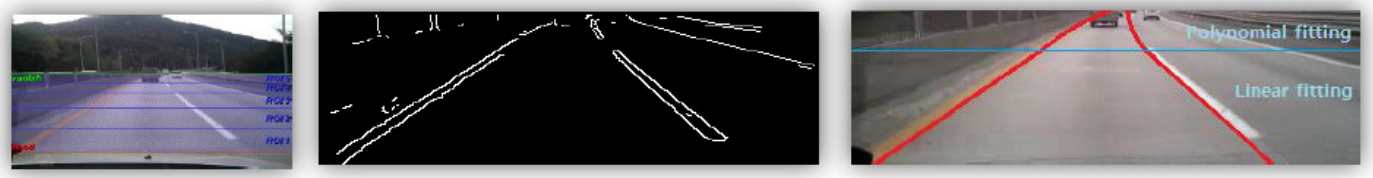



Image Processing Technologies




© Atilze Digital Sdn Bhd. All rights reserved. All ideas and materials presented in this document are the intellectual property of Atilze Digital Sdn Bhd. Unauthorised use and/or reproduction of part or parts of this document, electronic or otherwise, is strictly prohibited.

# Connected ADAS

## Vehicle & Object Detection Algorithm (VODA)

Motion capture of the Driving image through camera

Lane extraction by reversal effect

Calculate the distance between Wheel and Lanes


Checking Day and Night status using by the recorded images

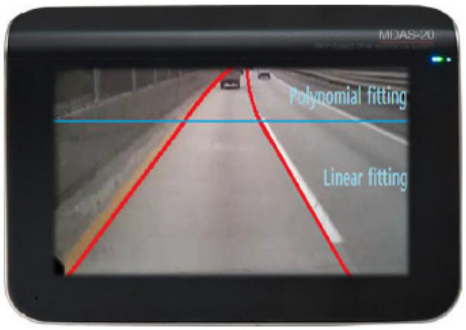
© Atilze Digital Sdn Bhd. All rights reserved. All ideas and materials presented in this document are the intellectual property of Atilze Digital Sdn Bhd. Unauthorised use and/or reproduction of part or parts of this document, electronic or otherwise, is strictly prohibited.

# Connected ADAS

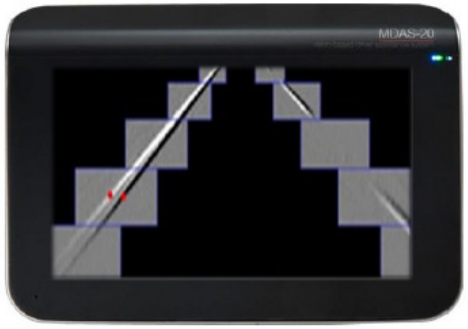
## Lane Detection Algorithm (LDA)

Motion capture of the Driving image through camera

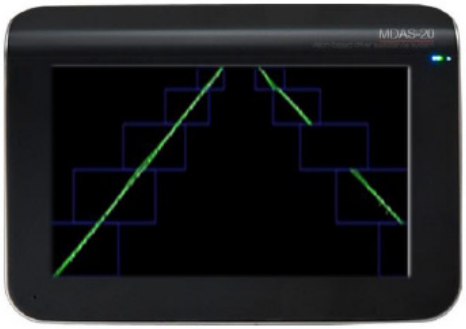
Lane extraction by reversal effect




Calculate the distances between Lanes



Concerned area



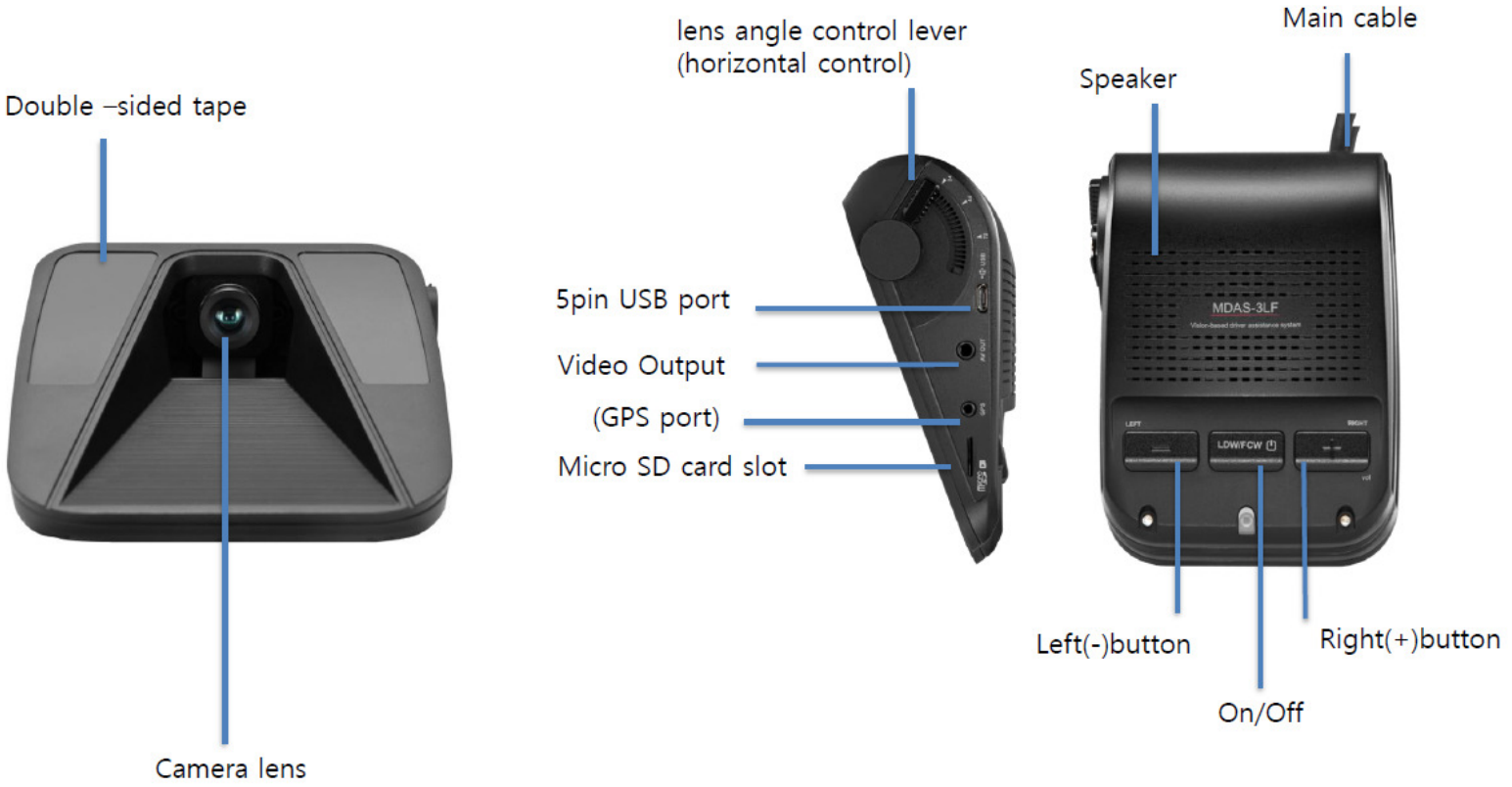
Edge extract

Calculate the distance between Wheel and Lanes

© Atilze Digital Sdn Bhd. All rights reserved. All ideas and materials presented in this document are the intellectual property of Atilze Digital Sdn Bhd. Unauthorised use and/or reproduction of part or parts of this document, electronic or otherwise, is strictly prohibited.

# Connected ADAS

## The Connected ADAS Hardware




© Atilze Digital Sdn Bhd. All rights reserved. All ideas and materials presented in this document are the intellectual property of Atilze Digital Sdn Bhd. Unauthorised use and/or reproduction of part or parts of this document, electronic or otherwise, is strictly prohibited.

# Connected ADAS

## Connected ADAS Functions


### Forward Collision Warning (FCW)

**FCW alert occurs when the vehicle approaches to the front vehicle too fast and detects a high risk of collision by TTC (Time To Collision), driving over 30km/h**


### Lane Departure Warning (LDW)

**LDW alert occurs when the driver unintentionally departures the lane without turning signal operation while driving over 45km/h**


### Digital Video Recording (DVR)

**1CH. DVR(Dash Cam) support Normal and Event Mode**
**Normal Mode : Continuously records the road ahead while the vehicle is in motion**
**Event Mode : Records video when the impact is detected by G-Sensor while driving**


### Front Vehicle Start Alarm (FVSA)

**FVSA inform the driver if your car is stopped after 2 seconds when the front car moves forward**

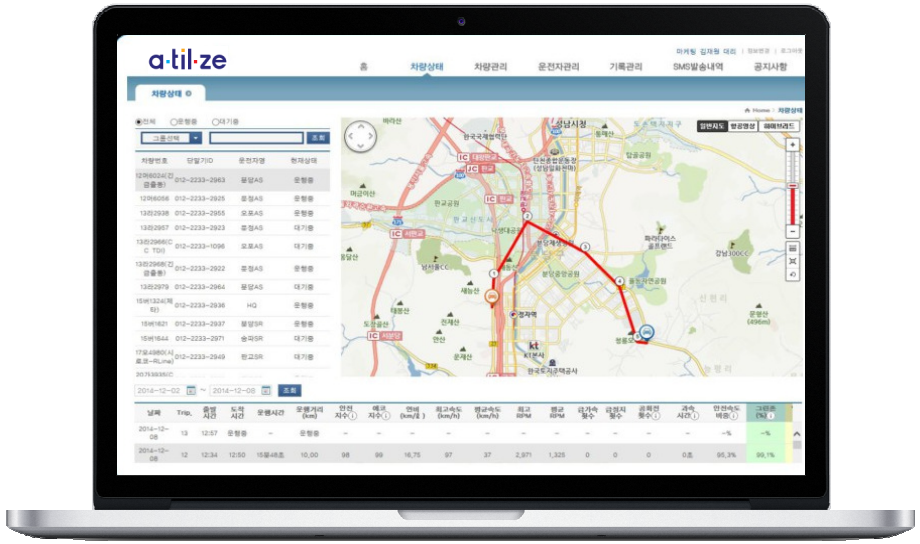
### Forward Proximity Warning (FPW)

**When the car is moving slowly towards the front car under low speed (0km ~ 30Km) environment, it warns the driver for the probability of accidents.**

© Atilze Digital Sdn Bhd. All rights reserved. All ideas and materials presented in this document are the intellectual property of Atilze Digital Sdn Bhd. Unauthorised use and/or reproduction of part or parts of this document, electronic or otherwise, is strictly prohibited.

# Connected ADAS

## Data collected by the Atilze Drive Solution



**OBDII**

Speed (highest & average)
RPM
Distance (Mileage)
Trip count
Departure & arrival time
Duration of trip
Fuel consumption
Fuel efficiency (km/l)
Battery Voltage level
Coolant Temperature
Analyze vehicle performance
Vehicle/Car condition in real-time

**G-Force and Accelerometer**

Hard braking
Fast acceleration
Number of idling
Over speeding time
Safe speed ratio
Safety score
Eco score
Detect car accidents (high G-force impact)
Driving Pattern Analysis (DPA)/behaviour

**GPS**

Location of vehicle (GPS coordinate)
Road side address
Date
Time

**ADAS**

Real-time video and picture recording (DVR)
Auto emergency recording by G-sensor
Lane Departure Warning System (LDWS)
Front Collision Warning System (FCWS)
Front Vehicle Start Alarm (FVSA)
Forward Proximity Warning (FPW)
Stop and Go Reminder
Speed Limit Detection

© Atilze Digital Sdn Bhd. All rights reserved. All ideas and materials presented in this document are the intellectual property of Atilze Digital Sdn Bhd. Unauthorised use and/or reproduction of part or parts of this document, electronic or otherwise, is strictly prohibited.

# Proposed Action Plan

- Need to create awareness about the benefits of Connected ADAS in Malaysia
- General Insurance companies should consider Connected ADAS as a solution to reduce claim rate
  - GI companies uses classical telematics for UBI. However, telematics needs lots of data to be captured for length of time and match causation to correlation. Connected ADAS provides proven immediate results due to real-time feedback to drivers and prevent incidents from happening
- Detariffication offers a financial incentive for commercial vehicles (buses and trucks) to participate in the Connected ADAS program
- Our recommendation for phase 1 deployment is to target all buses and commercial fleet companies
- Implement legislature that requires all commercial vehicles to be installed with Connected ADAS
- Connected ADAS collects lots of data. We can utilize advanced data-driven analytics for monitoring of vehicles, driver driving behaviour and for strategic planning of road usage to relevant government authorities (MoW, JKR, MoT, JPJ; etc.)

© Atilze Digital Sdn Bhd. All rights reserved. All ideas and materials presented in this document are the intellectual property of Atilze Digital Sdn Bhd. Unauthorised use and/or reproduction of part or parts of this document, electronic or otherwise, is strictly prohibited.

# ~~ Thank You ~~

## Contact Information


Name: Gerard K M Lim

Phone: +60.12.218.2300

Email: gerard@atilze.com


© Atilze Digital Sdn Bhd. All rights reserved. All ideas and materials presented in this document are the intellectual property of Atilze Digital Sdn Bhd. Unauthorised use and/or reproduction of part or parts of this document, electronic or otherwise, is strictly prohibited.