



PROCEEDINGS

ASEAN NCAP: TOWARDS AUTONOMOUS

19 DECEMBER 2017 • MIROS, SELANGOR, MALAYSIA

CO-ORGANIZED BY:





Published by:

**New Car Assessment Programme for Southeast Asian Countries (ASEAN NCAP)
Malaysian Institute of Road Safety Research (MIROS)**

Ground Floor, Lot 127, Jalan TKS 1,
Taman Kajang Sentral,
43000 Kajang, Selangor DE, MALAYSIA.



For citation purposes:

Khairil Anwar, A.K., Mohd Hafzi M.I., Yahaya A., Zulhaidi M.J., Salina M., Mohd Hafiz J., Hisham A. & Aqbal Hafeez A. (Eds.) (2018). Proceedings of ASEAN NCAP: Towards Autonomous, Kuala Lumpur: MIROS.



Cover & Concept Design:

Aqbal Hafeez Ariffin, Khairil Anwar Abu Kassim & Zulhaidi Mohd Jawi

Image on Cover Page:

natanaelginting / Freepik

Typeface: Arial, Bebas, Calibri, Cubano, Museo & Rockwell

Size: 7-36 pt



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SEMINAR PROGRAMME

19 DECEMBER 2017 • MIROS, SELANGOR, MALAYSIA

AM	0830	Registration
	0915	Opening Speech 1 YBhg. Tan Sri Datuk Seri Lee Lam Thye (Chairman of MIROS Board of Directors)
		Opening Speech 2 Mr. Alias Isa (VIRES Country Manager)
		ASEAN NCAP New Roadmap: Where Are We Heading, Are We Ready for Autonomous Car? Ir. Dr. Khairil Anwar Abu Kassim (Secretary General of ASEAN NCAP)
	0945	ASEAN NCAP Results Release
	1000	Autonomous Emergency Braking (AEB) Demonstration
	1015	Tea Break
		Session 1:
		• Presentation 1 (MIROS)
		• Presentation 2 (GreenTech Malaysia)
		• Presentation 3 (ITS Association of Malaysia)
		• Presentation 4 (Universiti Putra Malaysia)
	1245	ASEAN NCAP Collaborative Holistic Research (ANCHOR) Framework
	0100	Lunch
PM	0200	Individual Session:
		• Presentation 5 (VIRES Simulationstechnologie GmbH)
		• Presentation 6 (Nissan Motor Asia Pacific)
		• Presentation 7 (Geely Research Institute)
		• Presentation 8 (ASEAN NCAP)
	0345	Tea Break
	0400	Industry Readiness Forum Towards Autonomous: Vehicle & Industry 4.0 Expert Penallists: VIRES Simulationstechnologie GmbH, MSC Software, Geely Research Institute, Uber Malaysia, Universiti Teknologi Malaysia, REKA Moderator: MIROS
	0500	End of Seminar

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Marius Dupuis (VIRES Simulationstechnologie GmbH), Harshad Chitre (MSC Software), Liu Weiguo (GEELY Research Institute (GRI)), Joel Soh (Uber Malaysia), Dr. Hairi Zamzuri (UTM), & Nazirul Amin Thalha (REKA)

Moderator: Azhar Hamzah (MIROS)

SESSION 1

Presentation 1

Malaysia's Readiness for Autonomous Vehicle

Objectives of Presentation:

- ★ To gauge Malaysia's readiness for Autonomous Vehicle (AV) and establish the direction as well as requirements for the country to move toward a fully autonomous-driven environment;
- ★ To understand the applicable laws and regulations related to AV implementation in Malaysia; and
- ★ To determine the conditions of lane marking and road signage along selected expressways and federal roads in Malaysia.

Summary:

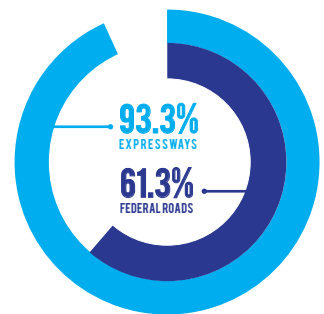
The Society of Automotive Engineers (SAE) has divided Levels of Automation into several ratings ranging from 'No Automation' (Level 0) to 'Full Automation' (Level 5). So what is special about Automation, especially Autonomous Vehicle (AV)? To its proponents, AV is considered to be the solution to the increase in road accident rates including in Malaysia where 90% of road crashes were due to human errors. This situation has resulted in a loss of around RM9 billion to the national economy. Hence, AV is expected to elevate the level of road safety in this country. In addition to improving network efficiency and reducing environmental pollution as the possibility of using Private Vehicle (PV) can be reduced, AV is also touted to increase productivity among drivers in which a lot of time is spent today in traffic congestion, especially in the Klang Valley. One study found that Malaysian car drivers spend 5.5 billion hours being stuck in traffic jam. However, despite all the advantages promised by AV, the question remains as to how far Malaysia is ready to shift to a fully autonomous environment. This presentation reviews several factors that affect the country's readiness including legislation, policy, infrastructure, security and public acceptance.

A study was conducted to achieve the above goal. Among others, the study has determined the condition of road marking in Malaysia. This is because road conditions can have a bearing on the extent to which AV is viable in the country. Among the key findings presented is the fact that the Road Transport Act 1987 outlines that every motor vehicle can only be operated by a licensed driver- 'human drives motor vehicle'. In terms of signage at intersections, 93.3% of expressways and 61.3% of federal roads were found to be adequate for AV. Whereas for signage along curves, 97.9% of expressways and 99% of federal roads were deemed adequate for AV. The study also included surveys where on average, respondents agreed that AV could shorten travel time, lower insurance rates, ease traffic congestion and reduce road crashes, but at the same time they fear AV would encounter difficulty in the event of unexpected on-the-road situations. Of the total respondents, 47% of them are interested in owning AV. As a way forward, the presentation suggested a study be conducted to find out more about the opportunities and challenges offered by AV and at the same time, Research & Development on the technology and concept need to be improved. Additionally, AV policies are also important to prepare the country towards achieving Level 5 of Automation as outlined by SAE. ■

Hizal Hanis Hashim

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In terms of signage at intersections, 93.3% of expressways and 61.3% of federal roads were found to be adequate for Autonomous Vehicles.

SESSION 1

Presentation 2

Autonomous Vehicles (AVs) from the Perspective of Green

Objectives of Presentation:

- ★ To introduce Malaysia Green Technology Corporation or Greentech Malaysia;
- ★ To underline the Green Technology Master Plan (GTMP); and
- ★ To provide an insight into Autonomous Vehicle from the perspective of Green.

Summary:

Greentech Malaysia is an implementing agency championing Green Technology, under the purview of the Ministry of Energy, Green Technology and Water (KeTTHA) Malaysia. The agency began as Pusat Tenaga Malaysia in 1998 before it was renamed a year later following a launch by the then Prime Minister of Malaysia, Dr. Mahathir Mohamad. During its twenty years of establishment, Greentech Malaysia has been involved in development of commercial buildings energy audit guidelines, formation of clean development mechanism energy, EE & EC guidelines for electrical and thermal based energy equipment, low carbon cities framework & assessment system as well as the Green Technology Master Plan. The three thrusts highlighted by Greentech Malaysia are Green Culture, Green Technology and Green Economy, while emphasis has been placed on three interconnected pillars namely Social, Economy and Environment. In its role, GreenTech Malaysia is mainly focused on several areas including Green Technology and Innovation, Low Carbon Mobility, Smart Sustainable Cities, Green Catalyst as well as Sustainable Energy & Green Advisory. In short, Greentech Malaysia believes that the “Future is Green Economy”.

The situation today whereby increasing levels of CO₂ have increased the amount of heat trapped thus raising the environment’s and earth surface’s temperature, necessitates the introduction of the Green Technology Master Plan (GTMP). Under such a plan, it is hoped that the public transport modal share for all major cities in Malaysia will rise from 20.8% in 2013 to 40% in 2030. It is also important to note that under GMTP, it is projected that the EEV (energy efficient vehicles), Hybrid and EV (electric vehicles) will totally dominate the roads in Malaysia by 2030 as opposed to the current trend with only 32.6% EEV in use. In terms of Autonomous Vehicles (AVs), GreenTech Malaysia believes that deployment of such a technology has to be in line with the three interconnected pillars as mentioned above. Indeed, AV has a place in our transportation system as it provides opportunities including working while commuting, on-demand service for accessibility to public transport, reclamation of space for pedestrians and cyclists, improved fuel efficiency, etc.

From the environmental point of view, AV could mark a shift from individual vehicle ownership to shared transport system, thereby reducing emission of hazardous gases and ensuring better air quality. Moreover, the AVs ability to interact with a network of other vehicles could see less traffic congestion. From the economic perspective, introduction of AVs will culminate in higher productivity and improved time cost among commuters, aside from eliminating human errors which have been blamed for a majority of road accidents. Lastly, from the social viewpoint, AVs have the potential to allow enhanced connection to people with limited mobility, reduce the need for parking and guarantee safer travels on the road. All in all, the opportunities for a better future with AVs are enormous. ■

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In terms of Autonomous Vehicles (AVs), deployment of such a technology has to be in line with the three interconnected pillars: Green Culture, Green Technology and Green Economy.

SESSION 1

Presentation 3

Malaysia's Plan for Autonomous - Who is in Charge?

Objectives of Presentation:

- ★ To introduce Intelligent Transport System (ITS) Association of Malaysia;
- ★ To underline the ITS Association of Malaysia's role in promoting Intelligent Transport System in the country; and
- ★ To persuade various parties to join ITS Malaysia to work toward Autonomous Vehicle (AV).

Summary:

Intelligent Transport System (ITS) Association of Malaysia promotes development and deployment of advanced technology to deliver safer, more efficient and environmentally sustainable transport. At present, ITS Association of Malaysia which was founded in 2007, has 344 individual members aside from 23 corporate members. In general, ITS is involved in nine traditional sectors encompassing Advanced Traffic Management Systems, Safety System, Advanced Public Transport Systems, Advanced Traveller Information Systems, E-Payment Systems, Commercial Vehicle Operations, Advanced Vehicle Control and Safety Systems, Emergency Management Systems and Information Warehousing Systems. The ITS Master Plan was in fact formulated by the Ministry of Works Malaysia. In recapping the key milestones, it must be noted that Dewan Bandaraya Kuala Lumpur's SCATs system in the 1970s laid the early foundation for Intelligent Transport System in the country. Later, traffic control and surveillance systems were introduced by Lembaga Lebu Raya Malaysia (LLM). Several major developments took place in the 1990s which changed the face of ITS in the country, namely deployment of Touch & Go as the sole Electronic Toll Collection (ETC) system, DBKL real-time traveller information system as well as The Third ITS Asia Pacific Seminar in Kuala Lumpur which paved the way for the establishment of ITS Malaysia Strategic Plan, and subsequently ITS Master Plan for the country.

Since the 1970s, ITS in Malaysia has further advanced through introduction of the Automatic Traffic Collection System (HPU), Persada PLUS traffic monitoring system, Integrated Transport Terminal in Cheras and Automated Awareness Safety System (AWAS). In discussing the evolutionary pathway of ITS in Malaysia, it is clear that the country has moved from standalone elements to a fully integrated system. It is also predicted that Malaysia shall soon be moving toward partially automated systems before finally arriving at the full automation stage. To usher this new age, the Ministry of Works Malaysia has drafted the Malaysian Intelligent Transport System Blueprint 2017-2022 which includes the Internet of Things Roadmap, National Public Transport Plan and Malaysia' Transport Strategy, among others. Also essential is the National Traffic Management Centre whose objective is to integrate and centralise traffic and other data information to be disseminated to relevant agencies. All these are done to prepare for an environment whereby 75% of all cars on the road will be autonomous by 2035. In short, industry players and government agencies are all in charge and have to accept that continuous and disruptive changes are 'the new normal'. ■

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Image: Freepik

The Ministry of Works Malaysia has drafted the Malaysian Intelligent Transport System Blueprint 2017-2020 towards preparing for an environment whereby 75% of all cars on the road will be autonomous by 2035.

SESSION 1

Presentation 4

Malaysia's Plan for Autonomous - Who is in Charge?

Objectives of Presentation:

- ★ To understand government's initiatives to support Automation;
- ★ To assess the infrastructure of Malaysian roads to suit Autonomous Vehicle (AV);
- ★ To gauge the Research & Development toward achieving Automation in Malaysia; and
- ★ To persuade automotive industry players to lend support to the work initiated by local researchers and scientists.

Summary:

In 2015, a total of 489,606 crashes took place on Malaysian roads. Of this number, 80.6% cases were found to involve human factors. In other words, 4 out of 5 road crashes were the result of human mistakes. Even more alarming, Malaysia has recorded the highest road death percentage in the ASEAN region. Three factors that influence road safety include the environment, human and vehicle. The solution to the above problem may lie on the Concept of Smart City whereby, among other things, emphasis is given on big data, cloud computing, intelligent system, smart city, smart house, smart community and also the human needs encompassing convenience and happiness. Nevertheless, it should be fully understood that affordability is of prime importance for a certain technology to be adopted.

To guarantee the country keeps abreast with the latest land transport technology as well as the Global Automotive Roadmap, the Malaysian Automotive Policy 2014 states that several advancements shall take place by 2020, 2030 and 2040. Ultimately, cars will be driven by hydrogen fuel. In addition, the Automotive Roadmap also forecast the advent of intelligent mobility whereby vehicles shall boast integrated digital engineering, advanced active safety, big data movement and be driven by green materials. Somewhere along the road, local researchers are also hoping to make further improvements to the Wireless Optical Vehicle Communication System which includes the modem, optical fibre cable, router, hub etc. They have also embedded an advanced control system for autonomous vehicle. But local scientists require support from the automotive industry in terms of sponsoring real cars for them to test the system they have been enthusiastically working on. Clearly, Malaysians possess the algorithm to achieve automation but the real question is how far will local industry players lend their support to turn this dream into reality. ■

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Image: Freepik

The solution to the road safety problem may lie on the Concept of Smart City whereby, among other things, emphasis is given on big data, cloud computing, intelligent system, smart city, smart house, smart community, etc.

INDIVIDUAL SESSION

Presentation 5

Virtual Testing of Highly Automated Driving Functions

Objectives of Presentation:

- ★ To emphasise the importance of multi-modal testing approach in the development of Autonomous Vehicle (AV);
- ★ To introduce VIRES Virtual Test Drive software as a support for development, test and validation of automated driving, driver assistance and active safety systems in virtual environments; and
- ★ To emphasise the need for real-world test, virtual scenarios and training of AI components on real world and synthetic data for Highly Automated Driving Functions.

Summary:

Of foremost importance, Autonomous Vehicles (AV) need to be safe. To achieve this aim, a multi modal testing approach has to be implemented whereby simulation is a necessity for autonomous vehicle development. In order for a system to be given proper license, Artificial Intelligence (AI) drivers must undergo several Training and Testing stages comprising the AI Gym, Real-Road Data, Proving Ground Data and Synthetic Data. In the end, AI drivers will be awarded the appropriate certification. Standard and validated tools are in addition required for such a purpose and this is where VIRES Simulationstechnologie comes in.

The VIRES Virtual Test Drive software supports the development, test and validation of automated driving, driver assistance and active safety systems in virtual environments. It has been a partner in standardisation initiatives through OpenDRIVE which deals with network, OpenCRG which deals with road surface and OpenSCENARIO which deals with manoeuvring. With its technical know-how and capability, VIRES has also partnered several research projects initiated by both the industry and academics. An aspect that must be emphasised in order to produce comparable certification is the standardisation for environment simulation, hence VIRES has also provided tools for offline and real-time testing, creating event space and qualifying safety with AI. To create virtual environments (including traffic, road contact etc.), VIRES tries to get a workflow into the system. The autonomous system will then have to make a perception of the system which VIRES - through OpenCRG and OpenDRIVE- will simulate. Ultimately, the AI will undergo different scenarios which can become complex including simple steering, two-lane changes, two-lane changes and emergency braking, lane change right/left, overtaking as well as traffic jam and corridor.

Aside from the above, VIRES also provide camera perception including high-low dynamic range, real-time performance, image output on monitor, configurable distortion and blurring, fish eye capabilities with various weather and light conditions. In summary, VIRES Simulationstechnologie is highly involved in the development of safe approach to AV which consists of safety life-cycle tool chain, closed loop reinforcement learning, virtual test drives, sensor dynamic model etc. It is therefore without doubt that Highly Automated Driving requires real-world test, virtual scenarios and training of AI components on real world and synthetic data. ■

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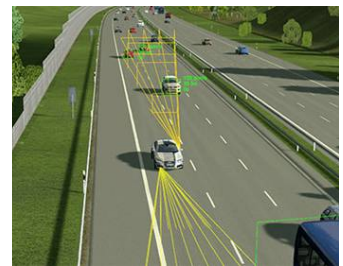


Image: Vires

Highly Automated Driving requires real-world test, virtual scenarios and training of Artificial Intelligence (AI) components on real world and synthetic data.

INDIVIDUAL SESSION

Presentation 6

Nissan Autonomous Driving

Objectives of Presentation:

- ★ To explain Nissan Motor's approach toward alleviating some of the social issues affecting the world population;
- ★ To underline Nissan Motor's commitment to reduce road crashes and improve comfort/safety of car drivers and passengers alike; and
- ★ To unveil Nissan Intelligent Drive ProPILOT System that will make driving both enjoyable and safer.

Summary:

Among the social issues faced by today's global population include Energy Depletion, Global Warming, Traffic Congestion and Road Accidents. As a means to alleviate some of the problems affecting us, Nissan Motor has been actively working on Electrification of Vehicle as well as Autonomous Drive Vehicle Intelligence. As a matter of fact, Nissan is currently the global leader in Electric Vehicle based on its total annual sales. In terms of market share of EV, Nissan has about 318,000 cars on the road compared to its nearest rivals. Its technology has also been able to improve driving distance to 400 km with battery capacity of 40 kWh. As for Vehicle Intelligence, various barriers are fitted in Nissan cars to help drivers and passengers alike. These barriers help to avoid crash (blind spot information, forward emergency braking, around view monitor) and assist in reducing injury (SRS airbag system, zone body construction etc.) in the event where a crash is unavoidable.

In 2007, Nissan came up with the industry's first Lane Departure Prevention and Distance Control Assist. Three years later, the Blind Spot Intervention was invented whereas the Moving Object Detection and Back Up Collision Intervention were conceived in 2011 and 2012 respectively. Nissan again proved itself as the industry's pioneer through its Forward Emergency Braking technology which was unveiled in 2013. As such, it is only appropriate that Nissan currently has its eyes on developing the autonomous drive technology. In 2016, the Japanese car maker has successfully developed the single lane autonomous drive. However, its ultimate ambition is to mass produce the autonomous drive capability at intersections by 2020 for the US, Japan and China markets before moving toward the "driverless" technology by 2030. Codenamed Nissan ProPILOT, its Driver Assistant System which integrates the ECM, EPS, VDC, front camera, ADAS ECU and Electric Parking Brake aims to keep a safe distance from the preceding vehicle while moving up to 30 to 100 km/h. At the same time, the system will control the steering to stay in lane if there are markers on both sides of the lane. It is also interesting to note that if there is no preceding vehicle, Nissan ProPILOT will maintain speed whereas in the event of tailing another vehicle, the system is programmed to follow, stop and hold stopping position. At intersection, the system will detect other vehicles and pedestrians and will not cross until the way is clear, aside from being alert for unexpected obstacles. In Japan, the Nissan ProPILOT has been fitted into the Serena, X-Trail and Leaf. Clearly, the system has taken the stress out of highway driving and successfully embodies Nissan's tagline of an innovation that excites. ■

Kansui Aoki

Nissan Motor Asia Pacific

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Image: Nissan

Nissan's ultimate ambition is to mass produce the autonomous drive capability at intersections by 2020 for the United States, Japan and China markets before moving towards the "driverless" technology by 2030.

INDIVIDUAL SESSION

Presentation 7

G-PILOT

Objectives of Presentation:

- ★ To provide an overview of Geely Group which was founded in 1986 and acquired shares in Proton in 2017;
- ★ To introduce Geely's INTEC brand technologies, which were designed around a "humanized intelligent drive" concept;
- ★ To explain the company's autonomous driving technology guided by the evolution of Intelligent Drive technology G-PILOT; and
- ★ To underline Geely's commitment in becoming part of the change by continuously investing in Intelligent Drive technology.

Summary:

Geely is a young company which started in 1986 before making a jump into the automotive industry some 11 years later. In 2003, the Zhejiang Geely Holding Group Ltd was officially founded which paved the way for Geely Auto to be listed in the HK Stock Exchange in 2005. Soon, in 2006, Geely Group became the largest shareholder of Manganese Bronze Holding. In 2010 the company bought Volvo Cars Corporation and in 2017, it acquired shares in Malaysian car manufacturer Proton and agreed on a technology joint venture with Volvo. Setting a Production and Sales volume target of around 2 million cars by 2020, Geely has placed itself as among the Top 10 Auto makers, besides being the most competitive and respected Chinese auto brand.

In terms of Research & Development, the company has several strategies which include Product Platform, Safety, Energy Diversity as well as Intelligent Technology. The Safety Strategy is based on the 'people-oriented' concept and intensive research on traffic and accidents, applying safety identification circle to provide comprehensive protection to driver. The Intelligent Technology Strategy, on the other hand, is focused on "intelligent connectivity" and "intelligent driving" as its core and will be unveiled in the coming decade. During its Technical Brand launch, Geely has introduced the INTEC brand technologies which were designed around a "humanized intelligent drive" concept developed to give occupants a better driving experience and higher level of safety. INTEC which would help in building connection among people, car and technology will boast Intelligent Force (GPOWER), Intelligent Safety (GSAFETY), Intelligent Netlink (GNETLINK), Intelligent Health (GHEALTH) as well as Intelligent Drive (G-PILOT)-full intelligent driving and controlling robot. Clearly, Intelligent Driving offers plenty of benefits in the sense that it promises better safety, comfort and flexibility. At same time, the technology would reduce traffic, parking time and CO₂. In terms of its roadmap, the G-PILOT 1.0 was first introduced in 2014, whereas G-PILOT 2.0, 3.0 and 4.0 would be available on the road from 2018 to 2024. Among its features are Adaptive Cruise Control, Lane Departure Warning, Park Assist, Blind Spot Detection, Adaptive High Beams and Crash Detection and Avoidance.

Liu Weiguo

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GEEELY Research Institute (GRI)

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Image: Geely

Geely has introduced the INTEC brand technologies which were designed around a "humanized intelligent drive" concept developed to give occupants a better driving experience and higher level of safety.

INDIVIDUAL SESSION

Presentation 7

G-PILOT

Summary (cont'd.):

In future, Geely foresees the technology to allow for hands free and eyes free autonomous driving. G-PILOT 1.0 has already offered driver assistance (feet off), while Partial Driving Automation (hands off) will be available in G-PILOT 2.0. Additionally, G-PILOT 3.0 and G-PILOT 4.0 will provide Conditional Driving Automation (eyes off) and High Driving Automation (mind off) experience. In Malaysia, such a technology will be available in Proton's SUV the Boyue. Hence, Geely will be bringing the intelligent driving technology to our shore in a Proton, which is the pride of the nation, in 2018. The challenges that await automation however include capability of Artificial Intelligence, vulnerability to hacking and big data integration, among other things. At the same time, new rules and regulations need to also be drafted. Nevertheless, Geely is committed in becoming part of the change by continuously investing in Intelligent Drive technology. ■



Image: Geely



Image: Geely



Image: Pexels

INDIVIDUAL SESSION

Presentation 8

Child Safety in Autonomous Emergency Braking (AEB) Equipped

Objectives of Presentation:

- ★ To stress on car occupants' safety notwithstanding the latest technology;
- ★ To provide explanation as regards child occupant's safety through fitment of Autonomous Emergency Braking (AEB); and
- ★ To emphasize that Child Restraint System (CRS) shall remain an important component in ensuring the child passenger's safety.

Summary:

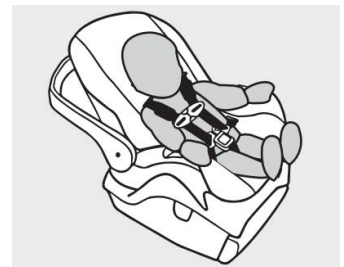
Child occupant safety inside a vehicle is one of the most worrying topics discussed at ASEAN NCAP. There have been incidents in which a child could have been saved if he/she was properly restrained. Even the vehicle itself plays a significant role in providing protection to the child occupant with fitment of the child safety system (Isofix). As a matter of fact, the Child Occupants Safety is included in ASEAN NCAP Vehicle Assessment along with Adult Occupant Protection (AOP) and Safety Assist Technology (SAT). This is seen a positive step toward promoting the importance of using CRS, which is able to minimise the risk of a child being fatally injured when involved in an accident.

When talking about Autonomous Vehicle (AV), most people expect occurrence of collision to be completely avoided. Nevertheless, in actuality, the Child Restraint System (CRS) shall continue to be an important component in ensuring the child passenger's safety. In the Autonomous Emergency Braking (AEB) test using child dummies which was carried out inside two different passenger cars (luxury and economy) under city drive condition at a speed of 30 km/h, ASEAN NCAP found that the child dummies in both cases would suffer serious injuries if left unrestrained. Likewise, if CRS is used but the child remains unbelted, ASEAN NCAP's experiment proves that the child passenger will be seriously injured in the event of a road crash. All in all, the CRS must be properly used with the child passenger belted at all time to promote safe travelling with children, regardless of whether the vehicle is autonomous or otherwise. ■

Yahaya Ahmad

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ASEAN NCAP's experiment proves that child passenger in unbelted CRS will be seriously injured in the event of a road crash.

INDUSTRY READINESS FORUM

Towards Autonomous: Vehicle & Industry 4.0

Expert Panellists:

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Objectives of Forum:

- ★ To provide a platform for expert panellists to share information with respect to Industry 4.0;
- ★ To share knowledge on Autonomous Vehicle planning & manufacturing; and
- ★ To provide an opportunity for Question & Answer between participants and expert panellists.

Summary:

Based on information from Wikipedia, Industry 4.0 is a name for the current trend of automation and data exchange in manufacturing technologies consisting of cyber-physical systems, the Internet of things, cloud computing and cognitive computing. The Vehicle & Industry 4.0 Forum, therefore, features the likes of Mr. Harshad Chitre who represents MSC Software which is one of the ten original software companies and a global leader in helping product manufacturers to advance their engineering methods with simulation software and services. On the other hand, Mr. Nazirul Amin Thalha is very much involved in REKA whose research in video processing has led to the invention of the Ubiquitous Autonomous Car Gear, a car self-assemble kit to turn an ordinary car into an autonomous one. Also in the line-up is Mr. Joel Soh from Uber Malaysia, a global taxi technology company headquartered in United States, operating in 633 cities worldwide. The company recently signed a deal to buy up to 24,000 autonomous vehicles from Volvo. In a small number of U.S. cities, passengers can already hail a ride inside a driverless taxi but not without a human operator inside the vehicle. According to Mr. Soh, Malaysia has one of the best road networks in the region but Autonomous must come with regulations imposed by the Government. Dr. Hairi Zamzuri from UTM on the other hand believes full automation is still a long way ahead. For now, the general consensus is that people are still apprehensive to ride in a driverless vehicle. As a consequence, AV must demonstrate basic roadworthiness and capabilities by passing safety assessments before being slowly introduced to the masses. Having been in the industry for a few years, Nazirul Amin Thalha from REKA noticed the difference in road designs across Malaysia, whereby as an example, the roads in Melaka are wider compared to Kuala Lumpur. Hence, Automation requires more studies especially with respect to Artificial Intelligence in order to be accepted by the public. In recapping the points raised by the expert panellists, the moderator opines that Autonomous in Malaysia is still in its early stages and done mainly in isolation. Nevertheless, autonomous vehicles do bring a myriad of benefits for a smart nation although much planning needs to be carried out before they can be realised. In addition, the authorities must provide more flexibility with rules and regulations in an effort to keep pace with the rise of autonomous vehicle technology. ■

Moderator:

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INDUSTRIAL REVOLUTION

1.0

Mechanization, steam and water power



2.0

Mass production and electricity



3.0

Electronic and IT systems, automation



4.0

Cyberphysical systems, IoT, networks



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Autonomous Vehicles do bring a myriad of benefits for a smart nation although much planning needs to be carried out before they can be realised.

ACKNOWLEDGEMENT



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