

#### ASEAN NCAP ROADMAP 2026-2030

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# FOREWORD FROM Ir. Ts. AZHAR Bin HAMZAH Acting Secretary-General, ASEAN NCAP

Since 2011, ASEAN NCAP has contributed aggressively and continuously to elevate vehicle safety standards, raise consumer awareness, and encourage a market for safer vehicles in the region. ASEAN NCAP rated vehicles have played commanding roles in reducing risks of road crashes and injuries in Southeast Asian countries, at the very least.

To date, ASEAN NCAP has successfully produced three assessment protocols, with the inaugural one published for 2012 until 2016. The second was utilized for 2017-2020 term and the current protocol is valid for the term 2021-2025. To put simply, each protocol was released with specific objectives and a special focus. For instance, the current 2021-2025 protocol emphasized on sustainable mobility and technology revolution with the aims to provide further clarity to the consumers. It highlighted the new safe driving technologies potential, creates awareness and explains its benefits to consumers, while concurrently, continue ensuring optimal occupant protection is achieved.

From time to time, the protocol will be reviewed and updated based on the road safety situation within that particular time. In general, ASEAN NCAP is not only looking on the need to add elements and technology inside the upcoming protocol but also the need to improve the existing elements and technology in the



protocol by conducting continuous field research and assessment.

For the upcoming protocol, which is from 2026-2030, the main objective is to assess the vehicle safety technology that could provide solutions to the existing road safety challenges in the Southeast Asian countries. A Series of meetings, discussions and research have been conducted, numerous times and sequences, for the reason to gather and deliberate over the important elements that matter most. Views, ideas, constructive critism and suggestions from all stakeholders such as the OEMs, automotive components suppliers, academicians and NGOs are taken into consideration and shall be harmonized with the aims and direction of ASEAN NCAP future direction.

Last but not least, we would like to thank and congratulate all parties for their continuous and encouraging support throughout these 12 year of demanding journey. All the contributions and time spent by each and every one of you to enhance the ASEAN NCAP protocol are indeed valuable and priceless. We are sure the new protocol will keep on giving positive impacts and makes a real difference to the future of road safety in the region.



# FOREWORD FROM DAVID WARD

Executive President, Towards Zero Foundation (TZF)

The United Nations Decade of Action for Road Safety first launched in 2011 has been the catalyst for a very successful collaboration between Global NCAP and the Malaysian Institute of Road Safety Research (MIROS). Global NCAP's primary objective is to promote the development of New Car Assessment Programmes (NCAPs) around the world so we were delighted when MIROS proposed in 2011 to set up an NCAP for the ASEAN countries. NCAPs have proven to be highly effective in building a market for safety, providing consumers with the information they need to buy the safest car they can afford. This is especially important in ASEAN where many countries are still yet to apply minimum vehicle safety standards. According to the World Health Organisation's (WHO) Global Status Report on Road Safety, only 40 out of 193 UN member states apply 7-8 out of the 8 recommended priority UN vehicle safety standards, with the majority being high income countries. The model of regulatory 'push' via regulations and demand 'pull' via consumer demand and NCAPs has proven to be a successful formula for improved vehicle safety.

Today, Malaysia is a leader in ASEAN of this approach, by applying UN vehicle safety regulations and promoting ASEAN NCAP. Since 2012, ASEAN NCAP has been providing safety ratings for the ASEAN automotive market and in parallel, the Malaysian Government has taken the lead in applying the priority UN vehicle safety standards. For example, Malaysia was the first country in ASEAN to mandate Electronic Stability Control (ESC) in 2018. More recently, Malaysia also announced that motorcycle anti-lock



braking system (ABS) will be mandatory from 2025, becoming only the second country in the region to do so after Thailand. These are great steps forward as both ESC and motorcycle ABS are proven life saving technologies.

ASEAN NCAP has been and continue to be an extraordinary champion of improved vehicle safety across the ASEAN region. Global NCAP is very proud of its success since its inception and is pleased to see its continued push for even better vehicle safety progress through its new roadmap. I would like to wish them all the best for the implementation of this new roadmap which I am sure will encourage further innovation and development in ASEAN's automobile industry and make a significant contribution to the UN Decade of Action goal of halving road deaths and injuries by 2030.

Thank you.





The Towards Zero Foundation (TZF) is a UK registered charity working internationally for a world free from road fatalities and life changing serious injuries by promoting safe and sustainable mobility.

The Foundation endorses the Safe System approach to guide journeys 'towards zero'. The TZF provides a platform for global programmes and partnerships, working for ambitious improvements in public health on our roads in support of the UN's transport related Sustainable Development Goals.

### The TZF's current major projects include:

- The Global New Car Assessment Programme (Global NCAP)
- The Stop the Crash Partnership
- The Commonwealth Road Safety Initiative
- The '50 by 30' campaign to halve global road deaths and serious injuries by 2030

#### Global NCAP advocates for safer vehicles worldwide via:

- Supporting the further democratisation of vehicle safety by encouraging the best practice application of automotive design and technology in all regions of the world.
- Supporting the promotion of consumer information to encourage a worldwide market for vehicles that are both safer and more environmentally friendly.
- Supporting New Car Assessment Programmes (NCAPs) in emerging markets by offering technical support guidance and quality assurance.

# **GLOBAL NCAP**



- Providing a cooperation platform for NCAPs and like organisations around the world to share best practice, to further exchange information, and to promote the use of consumer information to encourage the manufacture of safer cars across the global automotive market.
- Promoting vehicle safety technologies with proven effectiveness and encourage their accelerated use across the globe by increasing consumer awareness and where appropriate by supporting mandatory application.
- Supporting training initiatives in vehicle safety regulatory and rating systems to promote policy making capacity particularly in emerging markets.
- Promoting the use of safer vehicles and technologies by fleet managers in both the public and private sector.

TZF/Global NCAP is pleased to acknowledge funding support from the FIA Foundation and Bloomberg Philanthropies which allows for the continuation of its life saving work and enabling its contribution to the UN Decade of Action goal of achieving at least a 50% reduction in road fatalities and injuries by 2030 (50by30).

Texts provided by Ms. Jessica Truong, Secretary General, Towards Zero Foundation



# 1 INTRODUCTION

NCAP history started back on 1978 when The National Highway Traffic Safety Administration's (NHTSA) began testing and rating vehicles for frontal impact protection using data from crash test dummies. The initiative then continues with the establishment of other NCAPs worldwide. In general, the New Car Assessment Program (NCAP) is a vehicle safety program to evaluate new automobile designs for performance against various safety threats. Assessment tests were conducted in order to evaluate the vehicle standard performance.

The emergence of ASEAN NCAP in December 2011 has brought a paradigm shift to the automotive industry in the ASEAN region. After more than a decade of its existence, ASEAN NCAP has successfully proven that the vehicle safety standards in the ASEAN region has made an amazing progress and tremendously making significant improvements. Most of the new cars on the roads have reached a certain safety standard as stipulated in the UN Decade of Action for Road Safety. In addition, ASEAN NCAP always making strides to be in line with other NCAPs in other regions or continents.

To assert dedication to our continuous and diligent efforts to further elevate road safety in the region, ASEAN NCAP is proud to unveil its 2026-2030 roadmap by outlining its main objective which is to assess the vehicle safety technology that could provide solutions to the existing road safety challenges in the ASEAN region.

This document shall, therefore, present ASEAN NCAP Roadmap 2026-2030 for the purpose of further establishing our motivation toward Safer Cars in Southeast Asia. Our efforts to produce the 2026-2030 roadmap began in July 2022 through a series of internal and international meetings, conferences, seminars, workshops as well as various means of discussions initiated by ASEAN NCAP to gather and deliberate over the important elements to be included. In addition, the roadmap has also been established through fusing all the views offered by OEMs, vendors,



academicians, NGOs and harmonizing it with ASEAN NCAP's future direction.

Thus, by considering all the road safety issues faced in the ASEAN region whilst scrutinizing the latest breakthroughs in vehicle technology, ASEAN NCAP is proud to present this roadmap to the ASEAN general population.

# 2 HISTORY OF ASEAN NCAP

The setting up of ASEAN NCAP is part of a wider effort which falls under the United Nations (UN) Decade of Action for Road Safety 2011-2020 targeted at reducing road fatalities by 50 percent by 2020. The history of the establishment of the ASEAN NCAP or the New Car Assessment Program for Southeast Asian Countries began with the agreement termed between Malaysian Institute of Road Safety Research (MIROS) who was represented by its former Director-General, Prof. Dr. Wong Shaw Voon and Global New Car Assessment Programme (Global NCAP), represented by its Secretary General, Mr. David Ward. The agreement was initiated during the FIA Foundation Annual General Assembly held in New Delhi on 7 December 2011.

The move is in line with the United Nations' aspiration to ensure new vehicles marketed worldwide are equipped with safety features including airbags, safety belt and so on. Thus, the Memorandum of Understanding (MoU) gave MIROS a clear mandate to oversee NCAP operations for ASEAN countries. For that purpose, ASEAN NCAP has obtained MIROS approval to use its crash laboratory, MIROS Provisional CRASE Crash Centre (PC3) located in Ayer Keroh, Melaka. For the record, MIROS PC3 was inaugurated in May 2012 in which ASEAN NCAP has made its first official crash test involving the Toyota Vios on the same day. The test result showed the Toyota Vios was awarded with 4-Star AOP rating. To date, ASEAN NCAP has conducted about 117 collision tests with 145 safety ratings.

In the First and Second Phases of ASEAN NCAP test, they were based on two aspects, namely Adult Occupant Protection (AOP) and Child



Occupant Protection (COP). During these phases, the AOP category was in a star rating form while the COP category was in percentage form. Results for AOP were solely based on the frontal offset crash test. For the Third Phase, which began in 2013, ASEAN NCAP maintained AOP and COP as the main thrust. However, this time safety fitment namely Electronic Stability Control (ESC) and Seatbelt Reminder System (SBR) for both driver and passenger were set as a pre-requisite. Hence, only vehicles fitted with ESC or similar systems but using different names, and also fitted with SBR will be considered for 5-Star rating. This is with the condition that the tested vehicle achieved a total score within the 5-Star range. The purpose of this pre-requisite is to promote the installation of active safety technologies on new models that can prevent a collision from occurring as well as reduce the severity of injury in the event of an accident.

The pre-requisite will basically affect cars that have scored 5-Star range for AOP but will have to be demoted to 4-Star due to the absence of these two technologies. Nevertheless, there are models that have variants fitted with both of these technologies as well as variants with no such fitment. Therefore, for models that successfully obtained a 5-Star rating, ASEAN NCAP produced two ratings to differentiate variants that do not have both of these fitments as well as variants complemented by these two technologies. This means ASEAN NCAP will award 5-Star rating to variants equipped with ESC and SBR while a 4-Star rating for variants that were not equipped with either one or any of the fitment.

In addition, during the Third Phase of September 2013, ASEAN NCAP introduced the side impact (UN R95) as a pre-requisite for 4-Star rating and above. The additional pre-requisite means a model needs to pass the side impact test if it wants to achieve 4-Star rating and above. Subsequently, from 2015 this pre-requisite was revised to 3-Star and above. Another improvement that was made during the Third Phase is the COP category. During this time, the rating for COP was displayed in the form of star rating in the rating plate in addition to the results in percentage.



With the rapid growth of world automotive technology, development of safety technologies that could prevent a collision from happening has also increased. Accordingly, in line with the United Nations Decade of Action for Road Safety and Sustainable Development Goals targets, ASEAN NCAP has developed a single rating system for 2017-2020 by combining three safety domains inclusive of the safety assist technology. which previously only act as a pre-requisite to obtain a 5-Star AOP rating. The objective of the single rating system is also to eradicate confusion among the consumers about the awarded rating as some manufacturers only use the highest rating of one particular domain for their marketing purposes. For the new 2017-2020 rating system, ASEAN NCAP has allocated 50 percent for AOP domain, 25 percent for COP and 25 percent for Safety Assist Technology (SAT). A large portion of the percentage score lies with AOP, which shows it still plays the leading role in the ASEAN NCAP crash test programme. The COP and SAT are equally divided to show the equal importance of both domains. Although the COP percentage is 25 percent, the total score remains the same at 49 points. The SAT domain in this new rating system serves as a platform to further strengthen the safety assist technologies for new vehicles.

Motorcyclists continue to be overrepresented in traffic-related fatalities. According to National Highway Traffic Safety Administration (NHTSA) report published in May 2022, per vehicle miles travelled in 2020, motorcyclists are about 28 times more likely than people in passenger cars to die in a traffic crash. Due to this, ASEAN NCAP is dedicated to ensure the safety of motorcyclists in the ASEAN region as one of our top priorities. Thus, in the 2021-2025 roadmap, ASEAN NCAP proudly introduced a new pillar named Motorcyclist Safety (MS). In summary, the ASEAN NCAP 2021-2025 protocol featured four pillars: AOP, COP, Safety Assist (SA) and MS with weighting percentage of 40 percent for AOP and 20 percent each for the three latter pillars.



# 3 BACKGROUND OF ASEAN NCAP ROADMAPS

A strategic roadmap is a time-based plan underscoring where an organization is, where it plans to go, and how it aims to get there. It is a visual representation that organizes and presents important information related to future plans. Roadmapping, therefore, acts as a significant tool that synchronize efforts toward achieving important goals. In this regard, ASEAN NCAP Roadmap 2021-2030 has been split into two phases; with the first phase being a short-term plan from 2021 to 2025 and the second phase is to be carried out from 2026 to 2030.

In this document, we shall explain in detail our goals for the second phase of the ASEAN NCAP 2026-2030 protocol. It is hoped that our roadmap shall also help car manufacturers to envision their future in the Southeast Asia region. By understanding ASEAN NCAP rating protocols, car manufacturers will hopefully be able to calibrate their short- and long-term goals for the ASEAN market.

The implementation of the second phase will span from 2026 to 2030. The ASEAN NCAP will keep introducing new elements along the way. In the near future, ASEAN NCAP also wishes to carry out high impact research related to newly-invented vehicle technologies in order to gauge their effectiveness in the ASEAN context.



# 4 OVERVIEW OF ASEAN NCAP ROADMAP 2026-2030

In brief, the ASEAN NCAP Roadmap 2026-2030 shall feature four pillars, namely Adult Occupant Protection (AOP), Child Occupant Protection (COP), Safety Assist and Motorcyclist Safety (MS). For each of these pillars, there shall be additional elements and improvements to the previous rating systems as we strive toward an increased car safety standard to suit the ASEAN context.

## 4.1 Adult Occupant Protection

AOP will maintain its two crash assessments, namely the frontal and side impact tests. There is a slight change with regards to the use of the dummy. WorldSID dummy shall be used to replace the ES-2 dummy for the side impact test. The score for frontal impact, side impact and Head Protection Technology (HPT) will be maintained. The UNR135 for the side impact test remained as prerequisite for HPT.

#### 4.2 Child Occupant Protection

ASEAN NCAP shall maintain five items under the COP pillar. All items' scores will remain the same except for Child Presence Detection (CPD). An increase of 60 percent will be added from the previous protocol score. In addition, there will be changes in the use of child dummy for both frontal and side impact tests. Q1.5 and Q3 child dummies shall be replaced by Q6 and Q10 child dummies. The CRS reference list will be updated for the upcoming protocol.

# 4.3 Safety Assist

In this roadmap 2026-2030, ASEAN NCAP shall include a new item called Lane Support under the Safety Assist pillar. Lane Support consists of two sub-items which are Lane Keep Assist (LKA) and Lane Departure Warning (LDW) where a total of 1 point will be awarded to respective sub-item making the overall total of 2 points.



In addition, the new roadmap will also extent its assessment on Autonomous Emergency Braking (AEB) technology. At the beginning of AEB introduction, ASEAN NCAP featured AEB City and AEB Inter Urban, where two scenarios were tested when a car approaching the rear of another vehicle: where the target vehicle has stopped (CCRs) and where the target vehicle is moving but at a several speeds (CCRm). A new scenario will be introduced to the current test protocol under AEB Inter Urban where the moving target vehicle in front of the assessed vehicle suddenly brakes (CCRb). Thus, an additional score of 20 percent will be added to the current score of AEB Inter Urban.

Advanced SATs shall be rewarding 2 points under Safety Assist with OEMs being able to select any technology that is suitable to reduce road casualties. In this area, car manufacturers are encouraged to introduce a technology that will benefit road users and help prevent a road crash. Effective Braking and Avoidance (EBA) and Seatbelt Reminder (SBR) points will remain the same as the previous protocol.

### 4.4 Motorcyclist Safety

ASEAN NCAP remains totally committed to ensure the safety of motorcyclists in the ASEAN region. It is a known fact that motorcyclists make up the biggest group and represent 80 percent of the total number of road users in ASEAN countries. Unfortunately, the region has also witnessed a tremendous increment in terms of motorcyclist fatalities, hence, the issue of powered two-wheeler safety must not be overlooked. A new item namely Autonomous Emergency Braking for Motorcycle (AEB Motorcycle) and Adaptive Driving Beam (ADB) shall be introduced under the MS pillar for the 2026-2030 roadmap.

AEB for Motorcycle (AEB Motorcycle) is the technology that is able to detect the presence of a stationary motorcycle in order for the assessed



car to avoid colliding with the targeted vehicle. This technology is a significant milestone for vehicle safety as it is targeting to reduce the number of fatalities involving motorcyclists. ASEAN NCAP shall reward 6 points to this newly introduced item.

Adaptive Driving Beam (ADB) is an advanced driving assist technology for an automobile headlight that provides drivers with visibility of high contrast and illuminance at night without causing temporary blindness to other drivers in a projected light's glare. The adaptive beam pattern is able to change based on the presence of oncoming vehicles or objects that are automatically recognized by the on-board computer vision system. ADB technology will be placed under the same item as Auto High Beam (AHB) technology. Additional 1 point will be added for the ADB technology installed, making the total score for AHB and ADB, 3 points.

Items such as Blind Spot Detection (BSD)/ Blind Spot Visualization (BSV), Pedestrian Protection and Advanced MST shall be maintained under the MS pillar with the same scoring point as the 2021-2025 protocol. Last but not least, Advanced Rear View (ARV) mirror scoring point will be reduced for 25 percent from the previous protocol.





AEB for Motorcycle test conducted by ASEAN NCAP.



The final calculation in the ASEAN NCAP Roadmap 2026 -2030 is as follows:

	AOP		СОР			
	Item	Max	Item	Max		
ASEAN	Frontal	16	Frontal	16		
N C A P	Side	8	Side	8		
2026-2030	HPT Evaluation	8	CRS Installation	12		
			Vehicle Based Assessment	13		
			Child Presence Detection	5		
Score		32		54		
Weighting		40%		20%		
Slanting = Fitment Rating System						
	AOP (%)		COP (%)			
5 🇯	80		75			
4 🜟	70		60			
3 🝁	60		50			
2 🝁	50		40			
1 🍁	40		30			



Safety Assist		Motorcyclist Safety	
Item	Max	Item	Max
EBA	6	BSD/BSV	8
SBR	6	Rear View Technology	3
AEB City	2.5	AHB / ADB	3
AEB Inter Urban	5	Pedestrian Protection	2
Lane Support	2	AEB MC	6
Advanced SAT	2	Advanced MST	2
	23.5		24
	20%		20%
Safety Assist (%)		Motorcyclist Safety (%)	
75		60	
60		50	
40	40		
30		30	







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