PRESS RELEASE **FOR IMMDEDIATE RELEASE**

ASEAN NCAP – SAFER CARS FOR ASEAN REGION

ASEAN NCAP Released 4th Quarter 2020 Results in Light of a New Normal Assessment

Kajang, Malaysia, 17 October 2020 – The New Car Assessment Programme for Southeast Asian Countries (ASEAN NCAP) today released the results of five models that it recently assessed. Due to the global restrictions imposed due to COVID-19 pandemic ASEAN NCAP drew up a new guideline in which all cars with kerb weight of less than 1400 kg should be crash tested at the Malaysian Institute of Road Safety Research's (MIROS) crash lab facility, that is MIROS PC3. The five models that ASEAN NCAP assessed during this quarter of 2020 were four Toyota models namely Toyota Hilux, Fortuner, Corolla Cross and INNOVA whilst the fifth model is the Malaysian local car, Proton X50.

The first model that ASEAN NCAP assessed during this quarter was Toyota's pickup truck, **Toyota Hilux**. Based on the evidences provided by Toyota which proved the new Hilux has the same structural platform and crashworthiness system as its predecessor tested in 2015, ASEAN NCAP has agreed to extend the 2015 Hilux's offset deformable barrier (ODB) score for adult occupant protection (AOP) to the assessment on the current model. In addition to this, ASEAN NCAP conducted a collaborative test with Toyota which was done in-house at Toyota's lab in order to assess the performance of its child occupant protection (COP). The in-house test, comprising both the frontal offset test and the side impact test for COP, were done because the 2015 test used child P-dummies in the assessment whereas the current assessment is using child Q-dummies. Under the current assessment, the new Toyota Hilux performed well with an overall score of **83.42 points** in which it was awarded with **5-Star** ASEAN NCAP rating. Based on the overall score, the pickup truck obtained **45.74 points for AOP, 22.47 points for COP** and **15.21 points for Safety Assist Technologies (SATs)**. The current Hilux model is equipped with the same safety features as the 2015 model with three airbags, Anti-lock Braking System (ABS) and Seatbelt Reminder System (SBR) for both driver and front passenger as standard across all its variants. Electronic Stability Control (ESC) is available as a standard fitment for the Brunei, Singapore and Vietnam market whilst standard 7 airbags features are offered in Brunei and Vietnam. Other SATs namely Autonomous Emergency Braking (AEB) City, AEB Inter-Urban, Lane Departure Warning System (LDW), Forward Collision Warning System (FCW) and Lane Keep Assist (LKA) are offered either as standard or optional in the Hilux.

The second Toyota model that ASEAN NCAP assessed was the **Toyota Fortuner**. This is the second assessment that ASEAN NCAP conducted on the SUV in which its first result assessment was announced in 2016 with 5-Star rating extended from the Toyota Hilux's 2015 results. Thus, for the second assessment this year, ASEAN NCAP has also agreed to extend the new Toyota Hilux's AOP and COP results assessed under ASEAN NCAP 2017-2020 rating system to the 2020 Toyota Fortuner model. This is based on the technical evidence provided by Toyota that showed the SUV was based on the Hilux's platform and it has the same crashworthiness restraint system as the pickup truck. As such, the new Fortuner successfully achieved **5-Star** rating with a cumulative score from the three assessed categories slightly higher than of Hilux's at **87.46 points**. From this accumulated score, the seven-seater SUV obtained **47.27 points for AOP category, 22.13 points for COP and 18.06 points for SATs**. The Fortuner is equipped with three airbags, ESC, ABS and SBR for its frontal occupants as a standard equipment across all its variants. The new SUV also offers vehicle safety technologies either as standard or optional fitment in the available countries that are AEB City, Inter-Urban, LDW, FCW and LKA.

Another Toyota's model that underwent ASEAN NCAP assessment was the **Toyota Corolla Cross**. This is the first time ASEAN NCAP is assessing the model of which has made a splendid performance by obtaining an overall score of **88.61 points** placing it as **5-Star** ASEAN NCAP rating. From this score the Corolla Cross received **45.85 points (AOP), 22.63 points (COP) and 20.14 points (SATs)**. The tested Corolla Cross was equipped with ESC and SBR for driver and front passenger as a standard fitment across all variants. In addition, a number of vehicle safety technologies are available in the hatchback namely AEB City and Inter-Urban, Blind Spot Technology (BST), LDW, FCW and LKA either as standard or optional in all the available countries in South East Asia. Whilst AEB VRU/Pedestrian is currently only offered in the Thailand market.

Toyota recently launched its latest INNOVA model in South East Asia. The model was first assessed by ASEAN NCAP in 2016 and as such Toyota has provided technical evidence that the new model in 2020 has similar structural design and crashworthiness restraint system as the one that ASEAN NCAP tested in 2016. Therefore, ASEAN NCAP has extended the INNOVA's 2016 ODB score for AOP to the current model's assessment. As the previous rating system (2012-2016) used a P-dummy for COP, thus, ASEAN NCAP conducted a collaborative test with Toyota which was done in-house at Toyota's lab in order to assess the COP performance of the vehicle. The in-house test, comprising both the frontal offset test and the side impact test for COP, were done because the 2016 test used child P-dummies in the assessment whereas the current assessment is using child Q-dummies. For the assessment that ASEAN NCAP recently performed on the new **Toyota INNOVA**, it had successfully obtained a total score of **82.69 points** which entitles it to **5-Star** ASEAN NCAP rating. For the **AOP** category the 7- to 8-seater MPV received **45.90 points, 21.51 points for COP and 15.28 points for SATs**. The Toyota INNOVA has three airbags (frontal occupants and knee airbags), ABS and ESC, SBR for driver and front passenger as standard. The model also offers standard seven airbags for certain available markets.

The fifth result is the new **Proton X50**, the latest SUV of a Malaysia local brand. This model made an impressive performance in the assessment by achieving **5-Star** rating with an overall score of **84.26 points** with **43.64 points for the AOP category, 21.17 points for COP and 19.44 points for SATs**. The tested X50 has four airbags and it is fitted with SBR for both frontal occupants, ABS and ESC as standard across all variants. The SUV will be available in the Malaysia and Thailand market in which it offers BST for both sides of the vehicle as an optional equipment. It also offers all the safety assist technologies that are assessed by ASEAN NCAP either as standard or optional fitment.

MIROS Director-General who is also ASEAN NCAP Secretary-General and Acting Chairman, Adjunct Prof. Ir. Ts. Dr. Khairil Anwar Abu Kassim said:

"This year is quite a unique year for us in which we began to conduct our new normal of assessment on recently released new cars. This is because due to the COVID-19 pandemic both the ASEAN NCAP inspectors and OEMs representatives based in other South East Asia countries are not allowed to travel across borders to crash lab facilities in order to conduct ASEAN NCAP assessment. Despite the challenge, we are proud on the number of cars that we assessed this quarter have successfully received 5-Star rating. As such we can see that car manufacturers have incorporated all the safety elements that ASEAN NCAP has stipulated in our 2017-2020 protocol. This shows that the NCAP program has made significant impact towards car manufacturers to be proactive in ensuring that the cars they produced are able to achieve 4- to 5-Star ASEAN NCAP rating that can benefit all consumers."

An overview of the ASEAN NCAP Q4 2020 results are as follows.

- The new **Toyota Hilux** was awarded with **5-Star** ASEAN NCAP rating with an overall score of **83.42 points**. The score from each category are 45.74 points for AOP, 22.47 points for COP and 15.21 points for SATs.

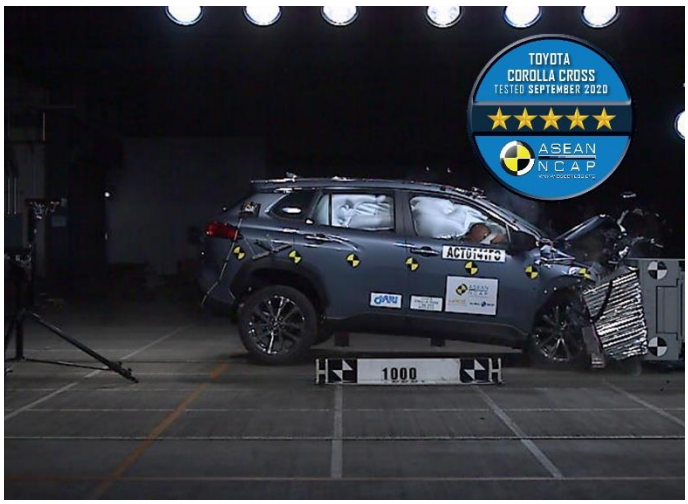
- The **Toyota Fortuner** acquired an accumulated score of **87.46 points**, which placed it at **5-Star** rating. Based on this total score, the SUV's points were 47.27 points for AOP, 22.13 points for COP and 18.06 points for SATs.

- The **Toyota Corolla Cross**, Toyota's hatchback model, achieved **5-Star** ASEAN NCAP rating with a total score of **88.61 points**. For each category the model scored 45.85 points (AOP), 22.63 points (COP) and 20.14 points (SATs).

- **Toyota's MPV, the INNOVA** achieved an overall score of **82.69 points** which makes it eligible for **5-Star** rating. In the ASEAN NCAP assessment, the latest released MPV obtained 45.90 points for AOP, 21.51 points for COP category and 15.28 points for SATs.

- The new **Proton X50** received **5-Star** ASEAN NCAP rating with an accumulated score of **84.26 points**. The breakdown score for the SUV was based on 43.64 points for AOP, 21.17 for COP and 19.44 points for SATs.


TOYOTA HILUX
TESTED AUGUST 2020
ASEAN NCAP
ACT 0055


TOYOTA
COROLLA CROSS
TESTED SEPTEMBER 2020
ASEAN NCAP
1000


TOYOTA INNOVA
TESTED AUGUST 2020
ASEAN NCAP
ACT 0060

ASEAN NCAP

ASEAN NCAP is a new addition to the NCAP organizations around the world, which is targeted to enhance safety standards, raise consumer awareness and thus encourage a market for safer vehicles in the Southeast Asia region (ASEAN community). This is a collaborative effort by MIROS and Global NCAP, in which the latter funded the pilot phase of the project. ASEAN NCAP is also supported by the membership of Automobile Associations from Malaysia (AAM), the Philippines (AAP), Singapore (AA Singapore), Cambodia (AAC) and Thailand (RAAT).

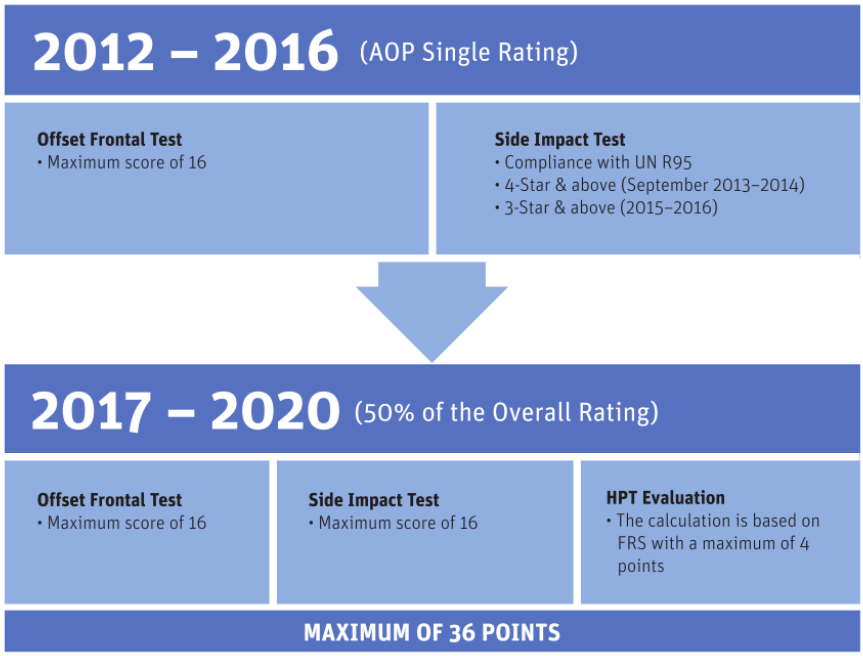
Currently, ASEAN NCAP Steering Committee (SC) is chaired by ASEAN NCAP Chairperson, Dr. Siti Zaharah Ishak and the Technical Committee (TC) is chaired by ASEAN NCAP Secretary-General, Professor (Adjunct) Ir. Dr. Khairil Anwar Abu Kassim.

- ***Adult Occupant Protection***

Starting from 2017 until 2020 instead of a separate rating for AOP and COP, a single rating system is introduced in which AOP contributes to 50% of the overall rating with a maximum 36 points from three assessments; offset frontal, side impact and head protection technology (HPT) evaluation.

The test protocol for offset frontal test remains the same except for the inclusion of Q dummies replacing the existing P dummies. On the other hand, the requirement for side impact test has improved considerably from a legislation test (UN R95) to a more comprehensive test.

In addition, realizing the need to further improve the safety of occupants from side impacts, ASEAN NCAP has introduced additional requirement on the fitment of HPT in which the score is based on Fitment Rating System (FRS).



❖ ***Child Occupant Protection***

Protection for children in a vehicle is as important as adult protection. The new COP requirement for 2017–2020 comprising 25% of the overall safety rating. This step is taken to ensure a vehicle receives the highest star award and also provides the best protection for the child.

Child Occupant Protection							
2012–2016 (COP Single Rating)				2017–2020 (25% of the Overall Rating)			
Dynamic Assessment			(24 Points)	Dynamic Assessment			(24 Points)
		P series dummy				Q series dummy	
		P1.5	P3			Q1.5	Q3
Frontal Impact	Head	3	6	Frontal Impact	Head	4	4
	Chest	6	6		Chest	2	2
	Neck	3	N/A		Neck	2	2
				Side Impact	Head	4	4
CRS Based Assessment			(12 Points)	CRS Installation Assessment			(12 Points)
CRS Marking		8 points per CRS		References List Assessment		10 points	
CRS to Vehicle Interface		4 points per CRS		OEM Assessment		2 points	
Vehicle Based Assessment			(13 Points)	Vehicle Based Assessment			(13 Points)
Use of CRS on the Front Seats			5 points	Provision of Three-point Seatbelts			1 point
Provision of Three-Points Seatbelts			1 point	Gabarit Installation			2 points
Gabarit Assessment			2 points	2 Simultaneous Use Seating Positions			2 points
ISOFIX			3 points	ISOFIX Usability			2 points
Integrated CRS			2 points	Two or more Largest ISOFIX Positions			1 points
				Passenger Airbag Warning Marking and Disabling			5 points

The assessment method has also been improved in the new protocol for dynamic assessment by introducing Q dummies replacing P dummies. Q dummy provides better biofidelic reponse compared to P dummy. In addition, side impact test assessment has been added to the dynamic assessment criteria. CRS based assessment section has been repaced by CRS installation assessment. As for Vehicle Based Assessment, there will be apparent changes which includes additional requirement on passenger airbag warning, marking and disabling. The list of the CRS required for the assessment is as follows.

CRS Installation Assessment				
	Category	CRS	Direction	Interface
Reference List	Group 0+	Maxi Cosi Cabriofix	Rwd	B _ _ _
	Group 0+/I/II	Combi Malgot	Rwd	B _ _ _
	Group 0+/I/II	Combi Malgot	Fwd	B _ _ _
	Group II/III	Combi Buon Junior Air	Fwd	B _ _ _
	Group 0+	Britax Baby Safe Plus ISOfIx Base	Rwd	_ I L _
	Group 0+/I	Maxi Cosi Milofix	Rwd	_ I _ S
	Group 0+/I	Maxi Cosi Milofix	Fwd	_ I _ S
	Group I	Britax Duo Plus	Fwd	_ I _S
	Group II/III	Britax KidFix XP	Fwd	B I_ _
OEM	Q1.5	(Manufacturer Selection) Baby Safe Plus ISOFIX Base		
	Q3	(Manufacturer Selection) ISOFIX		

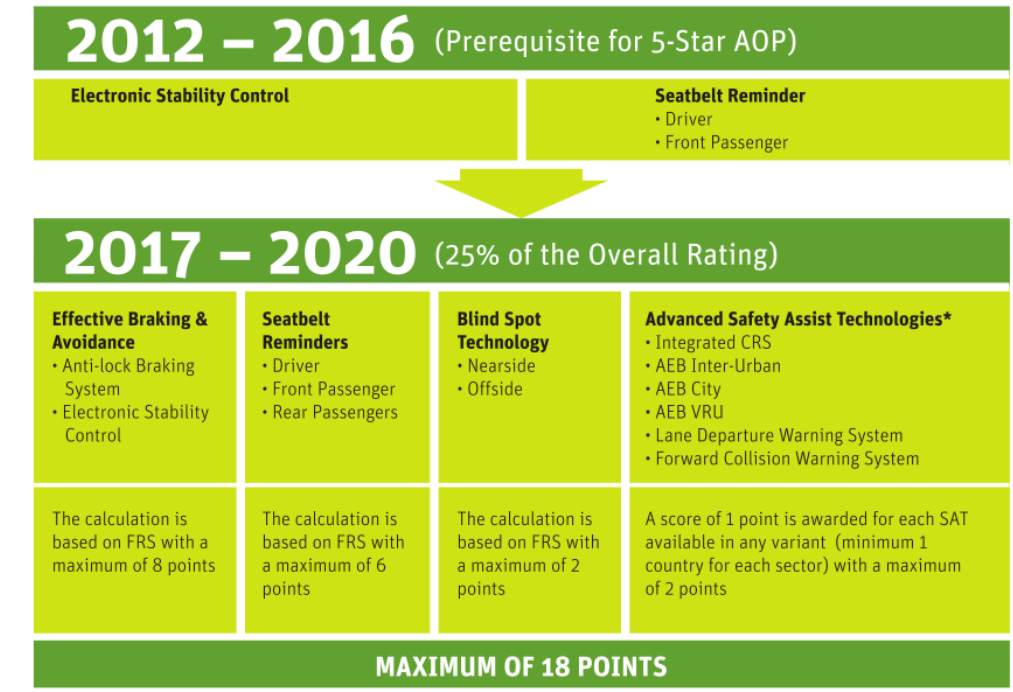
❖ ***Safety Assist Technology***

Promotion of Safety Assist Technologies (SATs) has become one of the main pillars in the new rating system for 2017–2020. It contributes 25% of the overall rating with a maximum of 18 points focusing on Effective Braking and Avoidance (EBA), Seatbelt Reminder (SBR), Blind Spot Technology (BST) and Advanced SATs. This differs significantly from previous requirement in which only ESC and frontal SBR systems are considered as prerequisite for 5-Star AOP rating. Furthermore, the score calculation for all four elements is based on FRS except for advanced SATs.

In addition to ESC, ABS is also considered in the new rating system under EBA. Based on ASEAN NCAP's observation, ABS fitment rate in certain ASEAN countries is still lacking and it is still being offered as optional rather than standard equipment. As an encouragement for vehicle manufacturers, incentive is given to those vehicles fitted with rear SBRs in addition to frontal SBR. This is also part of ASEAN NCAP's mission to increase wearing rates among rear passengers beyond legislation approach.

With the vision to reduce the number of lane-changing/merging crashes especially involving motorcycles, ASEAN NCAP introduces additional incentive for vehicle equipped with BST. This is part of ASEAN NCAP's strategic approaches in curbing the number of accidents and injuries involving

motorcycles in the region. Furthermore, as a way forward for autonomous vehicle initiative around the world and harmonization with other NCAPs, advanced SATs such as AEB and several others are also included.



❖ ***Fitment Rating System***

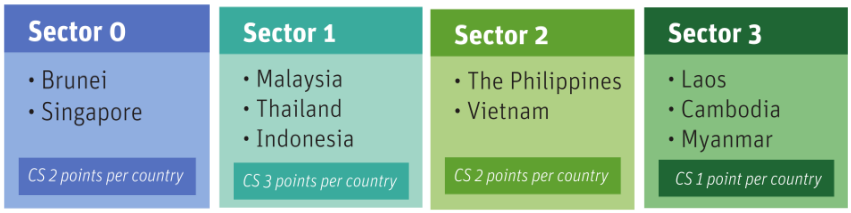
It is recognized that ASEAN NCAP has changed the landscape of automotive safety in the region. Apart from the increasing number of vehicles with higher ASEAN NCAP ratings, the demand for those vehicles among the consumers is gaining as well. Nevertheless, the positive impact is still imbalance as the safety features of specific models sold are not necessarily similar among the countries in the region and sometimes can be adversely different. Thus, ASEAN NCAP has formulated a Fitment Rating System (FRS) in order to minimize the substandard treatment.

The system applies for technologies i.e., HPT, EBA, SBR and BST. For FRS, ASEAN NCAP has developed a formula for car technology fitment score (CTFS) summarized as follows.

$$CTFS = \frac{\sum_{i=1}^{i=n} \propto_i CS_i}{\sum_{i=1}^{i=n} CS_i} \; x \; TFS$$

CTFS – Car Technology Fitment Score
CS – Country Score
TFS – Technology Fitment Score
∝ – Fitment Rating Score

Each CS is determined based on the criteria and ∝ is listed in the respective FRS tables. It is to be noted that the value of TFS has been set forth for HPT (4 points), EBA (8 points), SBR (6 points), and BST (2 points). As for the CS, the value is based on the sectors the countries represent. The philosophy behind the country score is the 3-5-2 concept that was introduced by ASEAN NCAP in 2013. Generally, the 10 countries in the region are divided intor three tiers (3 [Laos, Cambodia, Myanmar] - 5 [Malaysia, Thailand, Indonesia, the Philippines, Vietnam, 2 [Brunei, Singapore]) based on their similarities in terms of road safety situation and automotive industry. The concept is further refined and categorized into four sectors; Sector 0, Sector 1, Sector 2, and Sector 3. Each country in the same sector represents similar CS. For example, in Sector 0, both Brunei and Singapore carry similar CS of 2 points each.



Fitment Type	Details	Fitment Rating Score, ∝
Fitment Rating System for Head Protection Technology		
Option A	Vehicle model is equipped with HPT as standard equipment	1
Option B	Vehicle model is equipped with HPT as optional equipment	0.5
Option C	Vehicle model is not equipped with HPT	0
Fitment Rating System for Effective Braking and Avoidance		
Option A	Vehicle model is equipped with ESC as standard equipment	1
Option B	Vehicle model is equipped with ESC as optional equipment but ABS as standard equipment	0.5
Option C	Vehicle model is not equipped with ESC but equipped with ABS as standard equipment	0.375
Option D	Vehicle model is equipped with ESC and ABS as optional equipment	0.25
Option E	Vehicle model is not equipped with ESC but equipped with ABS as optional equipment	0.125
Option F	Vehicle model is not equipped with either ESC or ABS	0
Fitment Rating System for Seatbelt Reminders		
Option A	Vehicle model is equipped with SBR for driver, front passenger and rear passengers as standard equipment	1
Option B	Vehicle model is equipped with SBR for driver and front passenger as standard equipment but rear passengers as optional equipment	0.75
Option C	Vehicle model is equipped with SBR for driver and front passenger only as standard equipment	0.5
Option D	Vehicle model is equipped with SBR for driver only as standard equipment	0.25
Option E	Vehicle model is not equipped with SBR	0
Fitment Rating System for Blind Spot Technology		
Option A	Vehicle model is equipped with BST for both nearside and offside as standard equipment	1
Option B	Vehicle model is equipped with BST for both nearside and offside as optional equipment	0.5
Option C	Vehicle model is equipped with BST for one side only as standard equipment	0.5
Option D	Vehicle model is equipped with BST for one side only as optional equipment	0.25
Option E	Vehicle model is not equipped with BST	0

From Dual Rating to Single Star Rating

From 2012, the dual rating system has able to increase the availability of safer cars in the market. ASEAN NCAP recorded almost 90% cars with 4-Star and above in its evaluation until August 2015. The result shows that the current system has benefited the market.

However, the weakness of the system was detected particularly in the promotion of safety. Most of the cars were promoted as country based not on regional based. Hence, manufacturers intend to promote higher ratings compared to the lower ones.

The new rating system emphasizes on current and future. The AOP (current) will be given the most allocation to strengthen the crashworthiness of the cars. The future COP and Safety Assist is resilient to produce and promote better ASEAN car specifications in the future. The basis of the division is equally important to current and future. As collision avoidance is essential, protecting the child in cars is an obligation. Both are equally important to future of safer cars and require similar attention.

	AOP		COP		Safety Assist*		2017–2020 ASEAN NCAP RATING
	ODB	16	Dynamic Assessment Frontal	16	Effective Braking & Avoidance	8	
	SIDE	16	Dynamic Assessment Side	8	Seatbelt Reminders	6	
	HPT Evaluation*	4	Installation of CRS	12	Blind Spot Technology	2	
			Vehicle Based Assessment	13	Advanced SATs	2	
Max.Score (1)		36		49		18	
Normalized Score (2)	actual score / (1)		actual score / (1)		actual score / (1)		
Weighing (3)	50%		25%		25%		Overall Score
Weighted Score	(2) x (3)		(2) x (3)		(2) x (3)		Total
Rating	***minimum: normalised (2) / actual score by box for the respective star rating***						Min. Overall Score
5-Star	75%	27.0	75%	36.75	60%	10.80	75%
4-Star	65%	23.4	60%	29.40	40%	9.00	65%
3-Star	45%	16.2	30%	14.70	30%	7.20	50%
2-Star	30%	10.8	25%	12.25	20%	3.60	40%
1-Star	20%	7.20	15%	7.35	10%	1.80	30%

ASEAN NCAP Rating Plate – Results Simplified for Public Consumption

The result of the test is primarily for public consumption i.e. for consumers to consider the quality of safety protection offered by the car model based on NCAP assessment. As ASEAN NCAP has moved to a single rating scheme, consumers can simply refer to the star rating which comprises the accumulated score of the three main assessments on the safety aspects of the car model; AOP, COP and SAT.

About MIROS – The Malaysian Institute of Road Safety Research (MIROS) was established in 2007 as an agency under the Ministry of Transport Malaysia to serve as a central repository of knowledge and information on road safety. The findings derived from research and evidence- based intervention programmes provide the basis for the formulation of new strategies, legislations, policies, and enforcement measures, governing road safety at the national level. Principally engaged in research, MIROS collaborates closely with local and international government agencies and private bodies to further the cause of road safety.

In 2014, the ASEAN Transport Ministers had appointed MIROS as the ASEAN Road Safety Centre. The aims of this centre are to promote and provide knowledge on road safety issues among ASEAN Member States which includes road traffic laws and regulations, data management, standards development, and road safety awareness and education.

About Global NCAP – Global NCAP is a non-profit organization registered in the United Kingdom which aims to encourage the worldwide availability of independent consumer information about the safety of motor vehicles.

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