

PRESS RELEASE

FOR IMMEDIATE RELEASE

## ASEAN NCAP – SAFER CARS FOR ASEAN REGION

### *Three 5-Star Results Announced for ASEAN NCAP Q2 2018*

**Kajang, 7 May 2018** – The New Car Assessment Programme for Southeast Asian Countries (ASEAN NCAP) recently performed three of its latest crash tests for the second quarter of 2018. The three tested models were Hyundai IONIQ Hybrid, Toyota Rush and Toyota C-HR.

The Hyundai IONIQ Hybrid is the fifth model tested by ASEAN NCAP after Hyundai i10, EON and Elantra. Under the assessment for 2017-2020 rating system, the Hyundai IONIQ has made a splendid performance in the test by achieving an overall score of **91.98 points**, which placed it as **5-Star** ASEAN NCAP rating. The model's total score comprised **46.34 points over 50.00 for Adult Occupant Protection (AOP) category, 21.48 points over 25.00 for Child Occupant Protection (COP) and 24.17 points over 25.00 for Safety Assist Technologies (SATs)**. The model is currently available in Malaysia and Singapore market, fitted with seven airbags, it has effective braking and avoidance technologies such Electronic Stability Control (ESC) and Seatbelt Reminder System (SBR) including for rear passenger standard across all variants. In addition, the IONIQ also offers several advance safety technologies for both market such as Autonomous Emergency Braking (AEB) for City, Inter-Urban and Vulnerable Road Users technologies, Lane Departure Warning (LDW), Forward Collision Warning (FCW) Systems and Lane Keep Assist (LKA).

In this quarter, ASEAN NCAP is also testing the new Toyota Rush for the second time. Rush's first assessment was conducted in 2015 where the model was awarded with 4-Star rating for both AOP and COP categories at 12.47/16.00 and 82%, respectively. The Toyota Rush under the new rating system fared very well under ASEAN NCAP 2017-2020 rating system where it achieved **5-Star** rating with a cumulative score of **84.03 points**. Based on the overall score, the new Rush obtained **43.25 points for AOP, 21.33 points for COP and 19.44 points for SATs** categories. The model has made tremendous improvement by installing ESC, Antilock Braking System (ABS) and SBR for frontal and rear passengers as standard fitment.

The Toyota C-HR is the third assessment that ASEAN NCAP performed. The C-HR made an excellent performance in which it was awarded with **5-Star** rating with a total score of **91.31 points**. For the **AOP category**, the C-HR scored **49.72 points**, it achieved **20.86 points for COP and 20.73 points for SATs**. Other than being equipped with seven airbags, the hatchback model also has ABS, ESC and SBR



for frontal occupants fitted as standard in all variants. The Toyota C-HR also comes with other advance safety technologies namely AEB for City, Inter-Urban and Vulnerable Road Users technologies, LDW, FCW and LKA. But these are only offered for the Singapore and Thailand market.

All of these three models are equipped with ISOFIX and top tether as standard. Additionally, both the Hyundai IONIQ Hybrid and Toyota C-HR are equipped with Blind Spot Technology (BST). For Hyundai IONIQ Hybrid, BST is placed as a standard equipment in Singapore but it is available as option in Malaysia. As for the Toyota C-HR, BST is fitted as a standard part in Malaysia, Indonesia and Singapore. For the Thailand market, BST is offers as an option for C-HR and it is not available in Brunei.

The result release for ASEAN NCAP latest crash test results was held in conjunction with the opening of MIROS Gallery. The new MIROS Gallery was opened by the Honourable Datuk Seri Hj. Saripuddin bin Hj. Kasim, Secretary General of Ministry of Transport Malaysia. The new gallery is built with the main objective to showcase MIROS achievement in forming a safer automotive ecosystem in Malaysia. During the opening, ASEAN NCAP and MIROS also acknowledged several of our key research collaborators for the betterment of road safety.

ASEAN NCAP Secretary-General, Ir. Dr. Khairil Anwar Abu Kassim said:

“ASEAN NCAP recently organized a Blind Spot Technology development test on some of the popular models currently available in the market. This is according to our new rating system for 2017-2020. Based on this test, we have obtained significant results that the BST for Hyundai IONIQ Hybrid and Toyota C-HR have functioned according to ASEAN NCAP requirements for both the left and right side area of the vehicles in which they have detected the presence of the motorcycle rider in the blind spot zone. Hence, subsequent to the crash tests that we performed recently, this is the first time we are releasing the results for our BST development test.

“ASEAN NCAP is proud that the models we released today achieved 5-Star rating. Other than significant crashworthiness structure of the car built to protect the vehicle occupants, the tested models are also equipped with advanced safety assist technologies that could prevent a crash from occurring or reduce the severity of the injury to the victims. We encourage consumers to utilize the NCAP safety rating in their decision making process when purchasing a vehicle for themselves and their family members.”

The overview of ASEAN NCAP Q2 2018 results are as follows.

- ❖ The **Hyundai IONIQ Hybrid** is awarded with **5-Star** rating by making an impressive achievement with a total score of **91.98 points**. The hatchback's score is accumulated from the three assessed domains with 46.34 points for AOP, 21.48 points for COP and 24.17 points for SATs.
- ❖ The new **Toyota Rush** has made it eligible for **5-Star** ASEAN NCAP rating with an overall score of **84.03 points**. The SUV obtained this score based on 43.25 points for AOP, 21.33 points for COP and 19.44 points for SATs categories.

- ❖ The **Toyota C-HR** achieved an overall score of **91.31 points** with **5-Star** rating. The model's result is totaled from AOP at 49.72 points, COP at 20.86 points and SATs with 20.73 points.





## **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).

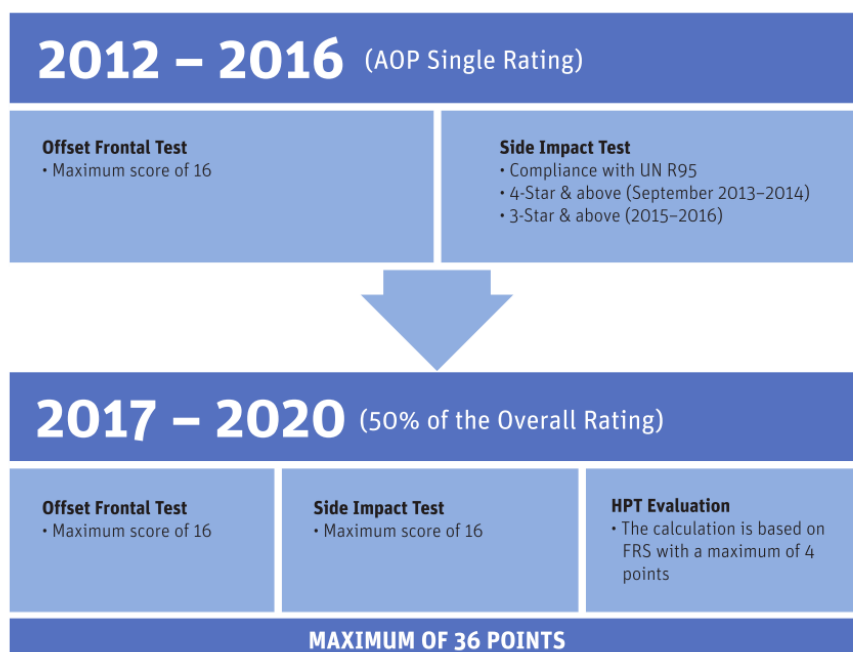
Currently, ASEAN NCAP Steering Committee (SC) is chaired by ASEAN NCAP Chairman, Prof. Dr. Wong Shaw Voon and the Technical Committee (TC) is chaired by ASEAN NCAP Secretary-General, Ir. Dr. Khairil Anwar Abu Kassim.

### **❖ 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)
Frontal Impact	P series dummy		Frontal Impact	Q series dummy	
	P1.5	P3		Q1.5	Q3
	Head	3		Head	4
	Chest	6		Chest	2
	Neck	3		Neck	2
		N/A	Side Impact	Head	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 response compared to P dummy. In addition, side impact test assessment has been added to the dynamic assessment criteria. CRS based assessment section has been replaced 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**

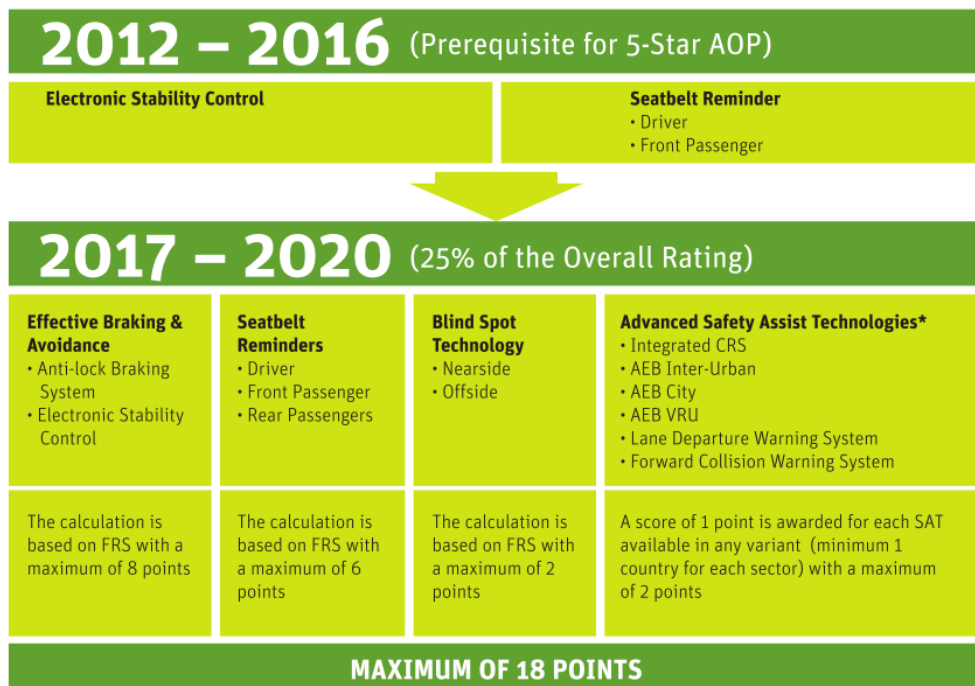
Promotion of Safety Assist Technologies (SATs) has become one of the main pillars in the new rating system for 2017–2020. It contributes 25% of the overall rating with a maximum of 18 points focusing on Effective Braking and Avoidance (EBA), Seatbelt Reminder (SBR), Blind Spot Technology (BST) and Advanced 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.



*\*Manufacturers are encouraged to propose any Advanced SATs subject to ASEAN NCAP approval.*

### ❖ 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.

$$CTFS = \frac{\sum_{i=1}^{i=n} \alpha_i CS_i}{\sum_{i=1}^{i=n} CS_i} \times TFS$$

CTFS – Car Technology Fitment Score  
 CS – Country Score  
 TFS – Technology Fitment Score  
 $\alpha$  – Fitment Rating Score

Each CS is determined based on the criteria and  $\alpha$  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 into 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.

Sector 0	Sector 1	Sector 2	Sector 3
<ul style="list-style-type: none"> <li>• Brunei</li> <li>• Singapore</li> </ul>	<ul style="list-style-type: none"> <li>• Malaysia</li> <li>• Thailand</li> <li>• Indonesia</li> </ul>	<ul style="list-style-type: none"> <li>• The Philippines</li> <li>• Vietnam</li> </ul>	<ul style="list-style-type: none"> <li>• Laos</li> <li>• Cambodia</li> <li>• Myanmar</li> </ul>
CS 2 points per country	CS 3 points per country	CS 2 points per country	CS 1 point per country

Fitment Type	Details	Fitment Rating Score, $\alpha$
<b>Fitment Rating System for Head Protection Technology</b>		
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
<b>Fitment Rating System for Effective Braking and Avoidance</b>		
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
<b>Fitment Rating System for Seatbelt Reminders</b>		
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
<b>Fitment Rating System for Blind Spot Technology</b>		
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 been 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*		
	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
<b>Rating</b>	<b>minimum: normalised (2) / actual score by box for the respective star rating</b>						<b>Min. Overall Score</b>
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%

**2017-2020  
ASEAN  
NCAP  
RATING**

### ***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) is an agency under the Ministry of Transport (MOT) Malaysia focusing on road safety R&D activities.

**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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