



**PRESS RELEASE**

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## **ASEAN NCAP – SAFER CARS FOR ASEAN REGION**

### *ASEAN NCAP Announced Final Q4 2019 Result on Toyota Corolla Altis*

**Kajang, Malaysia, 16 December 2019** – The New Car Assessment Programme for Southeast Asian Countries (ASEAN NCAP) had the opportunity to perform the second assessment on the new model of Toyota Corolla Altis. ASEAN NCAP first tested the model in 2014 under the 2012-2016 assessment protocol. The sedan performed well under the previous assessment with 5-Star rating for Adult Occupant Protection (AOP) at 14.88/16.00 points and Child Occupant Protection (COP) with 4-Star at 78% compliance.

Under the current assessment, the new Toyota Corolla Altis made an amazing performance in the test in which it obtained a total score of **88.46 points** and thus made it eligible for **5-Star** ASEAN NCAP rating. The overall score was contributed by the three assessed domains with **46.82 points for AOP, 22.35 points for the COP category and 19.29 points for the Safety Assist Technologies (SATs)**.

The new sedan has a standard equipment of seven airbags, seatbelt reminder system for both its frontal occupants and electronic stability control across all its variants that are sold in the South East Asia market. In addition to the standard seatbelt reminder for frontal occupants, the system is available for rear occupants' seats as standard fitment in its Myanmar market. The Corolla Altis offers all the advanced assist technologies that ASEAN NCAP assessed either as standard or optional equipment namely autonomous emergency braking (AEB) for both city and inter-urban, lane departure warning system, forward collision warning system and lane keep assist. Only AEB pedestrian is not available in the model. As part of Toyota's support towards ASEAN NCAP's aspiration to avoid collision with motorcycles, blind spot technology is also available in the model as optional fitment in Brunei, Indonesia, Malaysia, Singapore and Thailand market.

MIROS Director-General and ASEAN NCAP Chairperson, Dr. Siti Zaharah Ishak said:

"I would like to take this opportunity to congratulate Toyota for producing another 5-Star car under their brand. We are pleased that this year we are able to test a variety types of cars; from hatchback, sedan, SUV, MPV, panel vans and even a premium car. From 13 models that we tested this year, 11 successfully achieved 4 and 5-Star ratings, including Corolla Altis. This is indeed a remarkable achievement for ASEAN NCAP. I look forward to have similar or hopefully more achievements by other models in this coming year."

ASEAN NCAP Secretary-General, Professor (Adjunct) Ir. Dr. Khairil Anwar Abu Kassim said:

“The new Toyota Corolla Altis has stepped up from the previous model in which the current model is now equipped with 7 airbags as standard across all its variants available in the South East Asia market. As 2020 will be the final year for the 2017-2020 assessment protocol, we hope other manufacturers are fully prepared with the current protocol and subsequently have begun developing their respective cars in line with the 2021-2025 ASEAN NCAP protocol. Together we will be able to reduce non-safe cars from the market.”

An overview of the third installment result for ASEAN NCAP Q4 2019 is as follows.

- ❖ **Toyota Corolla Altis** achieved **5-Star** ASEAN NCAP rating with an overall score of **88.46 points**. For the **AOP** category, the model obtained **46.82 points**, **22.35 points for COP** and **19.29 points for SATs**.



### **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).

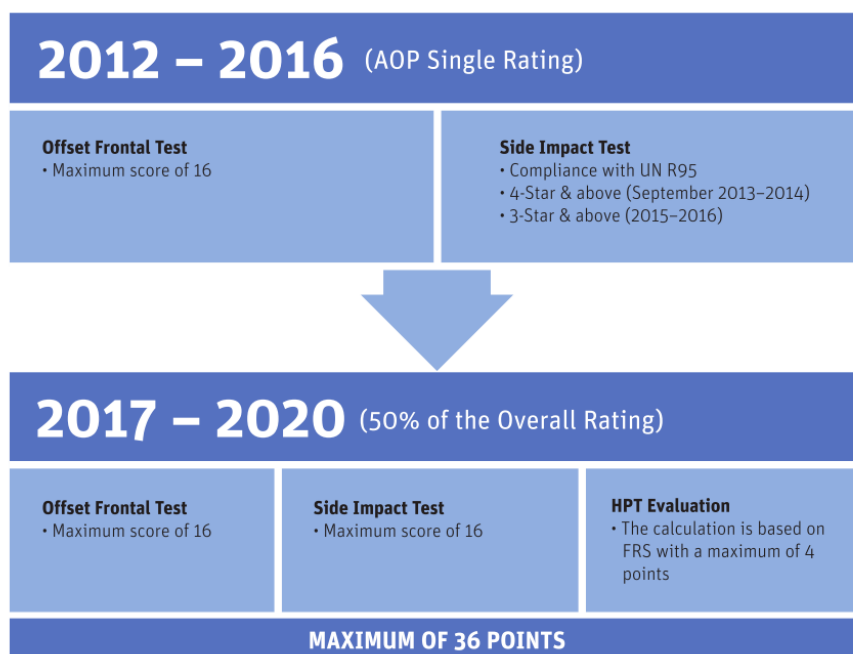
Currently, ASEAN NCAP Steering Committee (SC) is chaired by ASEAN NCAP Chairperson, Dr. Siti Zaharah Ishak and the Technical Committee (TC) is chaired by ASEAN NCAP Secretary-General, Professor (Adjunct) Ir. Dr. Khairil Anwar Abu Kassim.

### ❖ **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)
Frontal Impact	P series dummy		Q series dummy		
		P1.5 P3	Q1.5 Q3		
	Head	3 6	4 4	Head	
	Chest	6 6	2 2	Chest	
	Neck	3 N/A	2 2	Neck	
			4 4	Head	
Side Impact					
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		

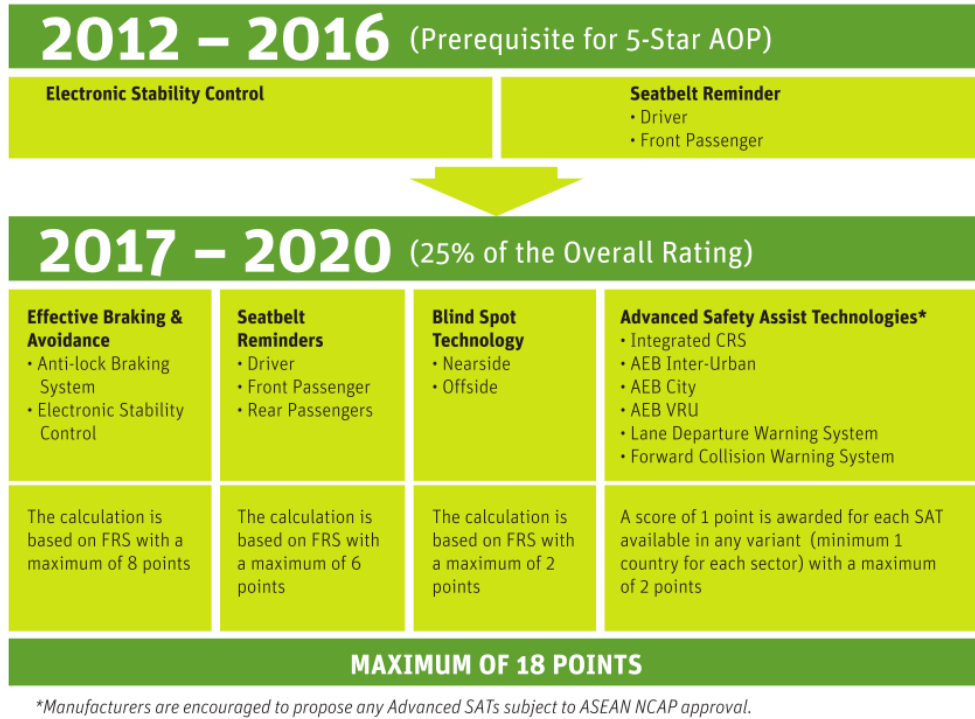


### ❖ ***Safety Assist Technology***

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.



### ❖ **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, ∞
<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 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	
<b>Max. Score (1)</b>	<b>36</b>	<b>49</b>	<b>18</b>			
<b>Normalized Score (2)</b>	<b>actual score / (1)</b>	<b>actual score / (1)</b>	<b>actual score / (1)</b>			
<b>Weighing (3)</b>	<b>50%</b>	<b>25%</b>	<b>25%</b>			
<b>Weighted Score</b>	<b>(2) x (3)</b>	<b>(2) x (3)</b>	<b>(2) x (3)</b>			
<b>Rating</b>	<b>minimum: normalised (2) / actual score by box for the respective star rating</b>					
5-Star	75%	27.0	75%	36.75	60%	10.80
4-Star	65%	23.4	60%	29.40	40%	9.00
3-Star	45%	16.2	30%	14.70	30%	7.20
2-Star	30%	10.8	25%	12.25	20%	3.60
1-Star	20%	7.20	15%	7.35	10%	1.80

**2017-2020  
ASEAN  
NCAP  
RATING**

Overall Score
Total
Min. Overall Score
75%
65%
50%
40%
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.

**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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