



**PRESS RELEASE**

**FOR IMMEDIATE RELEASE**

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

### *Announcement of ASEAN NCAP Q3 2019 Result on Mitsubishi Outlander PHEV*

**Kajang, Malaysia, 9 July 2019** – The New Car Assessment Programme for Southeast Asian Countries (ASEAN NCAP) today released the result of its latest assessment on the new Mitsubishi Outlander PHEV a Plug-in Hybrid Electric Vehicle.

The Mitsubishi Outlander PHEV is the seventh Mitsubishi model assessed by ASEAN NCAP and the first PHEV model that ASEAN NCAP tested. The new SUV model made a remarkable performance in the assessment by obtaining an overall score of **87.61 points** which places it within the range of **5-Star** rating. The Outlander PHEV's total score was based on **45.45 points for Adult Occupant Protection (AOP)**, **21.33 points for Child Occupant Protection (COP) category** and **20.83 points for the Safety Assist Technologies (SATs)**. As of the released date, Indonesia is the only market where Mitsubishi decided to introduce the 5-seater SUV. The model is equipped with seven airbags together with Anti-lock Braking System (ABS), Electronic Stability Control (ESC), Blind Spot Technology (BST) and Seatbelt Reminder System (SBR) for frontal occupants as standard fitment. The model also offers other vehicle safety technologies that are Autonomous Emergency Braking (AEB) for City, Inter-Urban and Vulnerable Road Users as well as Forward Collision Warning System.

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

"I would like to congratulate Mitsubishi Motors for producing another 5-Star vehicle in their line-up. We are delighted to have tested the first plug-in hybrid electric vehicle through the Outlander model. Although the model will be only available in the Indonesia market, we hope it will be a start to have it available in other South East Asian countries as well. Furthermore, by producing such a vehicle that offers fuel saving technology, I'm confident this SUV will be beneficial to Indonesian vehicle consumers."

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

"On behalf of ASEAN NCAP, I would like to say how proud we are for having the opportunity to test the first PHEV in our assessment. Similar to the previous Mitsubishi SUV model that we tested, the Mitsubishi Outlander PHEV is also offering safety technologies that are able to avoid collision from happening or mitigate the severity of injuries in the event a crash happened. But most importantly,

this time Mitsubishi also made the initiative to include Blind Spot Technology (BST) equipment as a standard fitment in their latest model. This shows manufacturers have started to follow ASEAN NCAP recommendations in order to have better options in viewing motorcyclist safety. Hence, they installed BST in their models and we are glad that Mitsubishi is one of them.”

The overview of ASEAN NCAP Q3 2019 result is as follows.

- ❖ The new **Mitsubishi Outlander PHEV** was awarded with **5-Star** ASEAN NCAP rating with an overall score of **87.61 points**. The SUV’s score for each category were **45.45 points for AOP**, **21.33 points for COP** and **20.83 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).

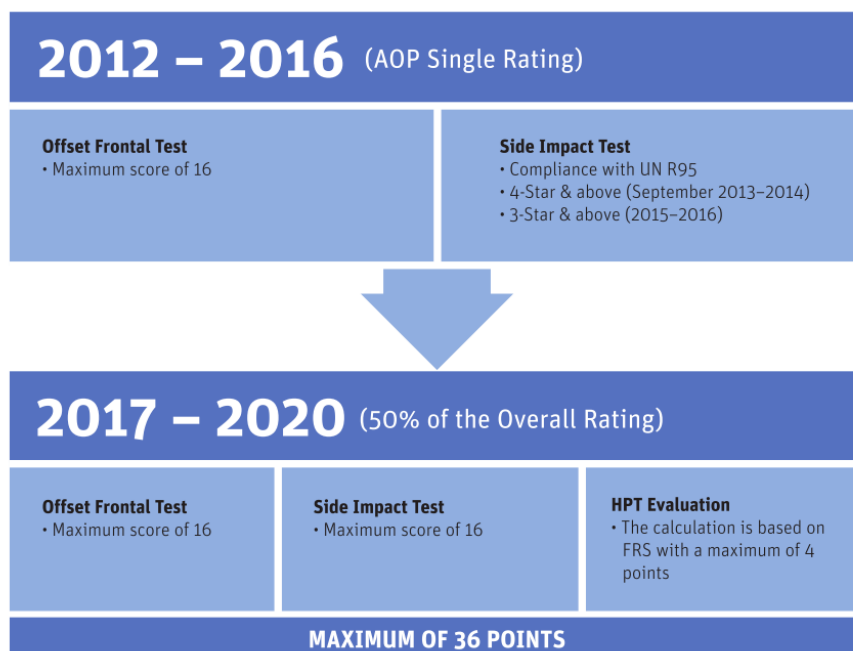
Currently, ASEAN NCAP Steering Committee (SC) is chaired by ASEAN NCAP Chairperson, Dr. Siti Zaharah Ishak and the Technical Committee (TC) is chaired by ASEAN NCAP Secretary-General, Professor (Adjunct) Ir. Dr. Khairil Anwar Abu Kassim.

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

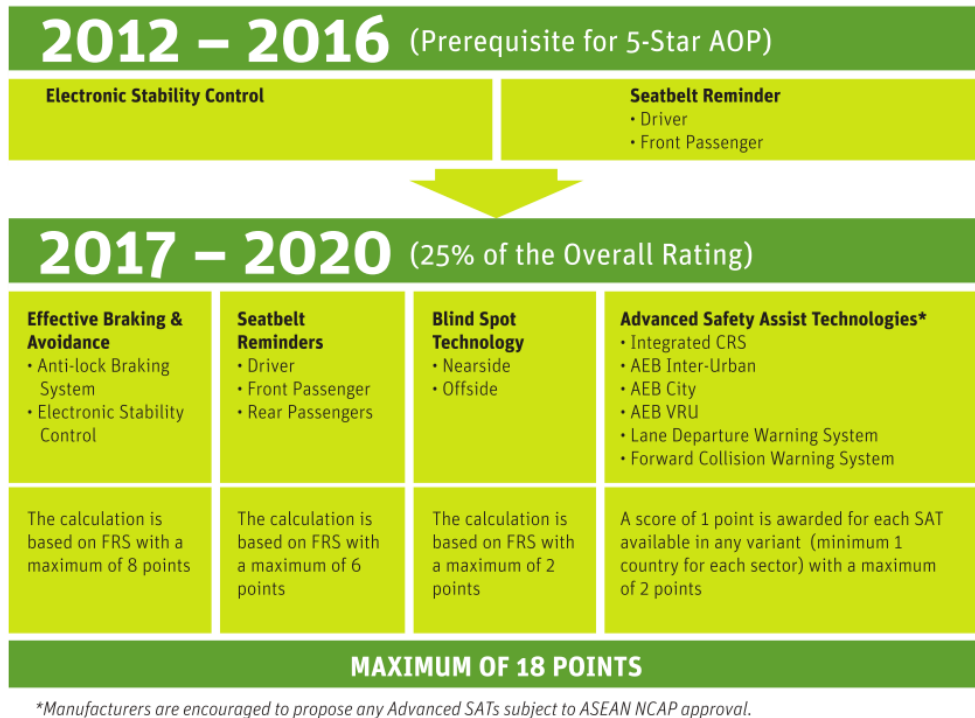
CRS Installation Assessment				
	Category	CRS	Direction	Interface
Reference List	Group 0+	Maxi Cosi Cabriofix	Rwd	B _ _ _
	Group 0+/I/II	Combi Malgot	Rwd	B _ _ _
	Group 0+/I/II	Combi Malgot	Fwd	B _ _ _
	Group II/III	Combi Buon Junior Air	Fwd	B _ _ _
	Group 0+	Britax Baby Safe Plus ISOfix Base	Rwd	_ I 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, $\propto$
<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	<b>2017-2020 ASEAN NCAP RATING</b>
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	
<i>Max. Score (1)</i>		36		49		18	
<i>Normalized Score (2)</i>		actual score / (1)		actual score / (1)		actual score / (1)	
<i>Weighing (3)</i>		50%		25%		25%	Overall Score
<i>Weighted Score</i>		(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>					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) 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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