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# ASEAN NCAP PROTOCOL



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**2025**

## FITMENT RATING SYSTEM

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## **Preface**

Where text is contained within square brackets, this denotes that the procedure being discussed is currently being trialled in ASEAN NCAP. Its incorporation in the Test Protocol will be reviewed at a later date.

During the test preparation, vehicle manufacturers are encouraged to liaise with the laboratory and to check that they are satisfied with the way cars are set up for testing. Where a manufacturer feels that a particular item should be altered, they should ask the laboratory staff to make any necessary changes. Manufacturers are forbidden from making changes to any parameter that will influence the test, such as dummy positioning, vehicle setting, laboratory environment etc.

It is the responsibility of the test laboratory to ensure that any requested changes satisfy the requirements of ASEAN NCAP. Where a disagreement exists between the laboratory and manufacturer, the ASEAN NCAP secretariat should be informed immediately to pass final judgement. Where the laboratory staff suspect that a manufacturer has interfered with any of the setup, the manufacturer's representatives should be warned that they are not allowed to do so themselves. They should also be informed that if another incident occurs, they will be asked to leave the test site.

Where there is a recurrence of the problem, the manufacturer's representatives will be told to leave the test

site and the Secretariat should be immediately informed. Any such incident may be reported by the Secretariat to the manufacturer and the persons concerned may not be allowed to attend further ASEAN NCAP tests.

**DISCLAIMER:** ASEAN NCAP has taken all reasonable care to ensure that the information published in this protocol is accurate and reflects the technical decisions taken by the organisation. In the unlikely event that this protocol contains a typographical error or any other inaccuracy, ASEAN NCAP reserves the right to make corrections and determine the assessment and subsequent result of the affected requirement(s).

In addition to the settings specified in this protocol, the following information will be required from the manufacturer of the car being tested in order to facilitate the vehicle preparation. A vehicle handbook should be provided to the test laboratory prior to the assessment.

# ASSESSMENT PROTOCOL – FITMENT RATING SYSTEM

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**NEW CAR ASSESSMENT PROGRAM FOR  
SOUTHEAST ASIAN COUNTRIES  
(ASEAN NCAP)**

**ASSESSMENT PROTOCOL — FITMENT RATING  
SYSTEM**

**1 INTRODUCTION**

ASEAN NCAP has significantly elevated automotive safety standards in the Southeast Asia region. Aside from the increasing number of vehicles with higher ASEAN NCAP ratings, the demand for such vehicles among the consumers can now be clearly seen. Nevertheless, there is still imbalance in the positive impact as the safety features of specific models are not necessarily similar across the region and this can sometimes have adverse effects.

In order to reduce the substandard treatment, ASEAN NCAP has developed the world's first Fitment Rating System (FRS). This document shall deal with the assessment of FRS for Head Protection Technology (HPT), Child Presence Detection (CPD), Effective Braking and Avoidance (EBA), Seatbelt Reminder (SBR), Autonomous Emergency Braking (AEB), Blind Spot Technology (BST), Advanced Safety Assist Technology (SAT), Advanced Rear Visualization (ARV) and Auto High Beam (AHB).

## **2 METHODS OF ASSESSMENT**

### **2.1 Information Required from Manufacturers**

2.1.1 Before the above-mentioned technologies can be evaluated by ASEAN NCAP, it is necessary for the manufacturers to provide ASEAN NCAP with detailed information prior to an assessment. Please refer to ASEAN NCAP Guideline for Test Model Form Version 2.0.

2.1.2 ASEAN NCAP will carry out the verification process through its counterparts in the respective countries to ensure the information provided to ASEAN NCAP is valid.

### **2.2 Performance and Functionality Assessments**

2.2.1 In order to determine whether or not the technologies are eligible to be included in the rating calculation, the performance and functionality assessments have to be conducted.

2.2.2 Refer to ASEAN NCAP Assessment Protocol – Adult Occupant Protection Version 1.0 for the assessment of HPT and ASEAN NCAP Assessment Protocol – Safety Assist Version 1.0 for the assessments of SBR system, EBA specifically Electronic Stability Control (ESC) and Anti-lock Braking System (ABS), BST and Advanced SATs.

2.2.3 Vehicles of which systems meet the requirements will be eligible for further FRS calculation and determination of final points for respective technologies. Otherwise, more information will be requested from manufacturers and ASEAN NCAP will decide for a retest or otherwise.

## **2.3 Determination of Car Technology Fitment Score (CTFS)**

2.3.1 Generally, the score for each technology, which is called *CTFS* (Car Technology Fitment Score), is calculated primarily based on the tested model equipped with the technology sold in the respective country and type of fitment. The formula for *CTFS* is as follows;

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

where *CTFS* is the Car Technology Fitment Score,  $\alpha$  is the Fitment Rating Score, *CS* is the Country Score and *TFS* is the Technology Fitment Score.

2.3.2 The value for *CS* is based on the sectors the countries represent. The philosophy behind the *CS* 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 and Myanmar] – 5 [Malaysia, Thailand, Indonesia, the Philippines and Vietnam]) – 2 [Brunei and Singapore]) based on their



similarities in terms of road safety situation and automotive industry.

2.3.3 The concept is further refined and categorized into four sectors; Sector 0, Sector 1, Sector 2 and Sector 3. Basically, each country in the same sector represents similar CS. Table 1 lists the four sectors with their associated countries and respective CSs. For example, in Sector 0, both Brunei and Singapore carry similar CS of 2 points each.

| <b>SECTOR 0</b>                   | <b>SECTOR 1</b>                   | <b>SECTOR 2</b>                   | <b>SECTOR 3</b>                  |
|-----------------------------------|-----------------------------------|-----------------------------------|----------------------------------|
| Brunei                            | Malaysia                          | The Philippines                   | Laos                             |
| Singapore                         | Thailand                          | Vietnam                           | Cambodia                         |
|                                   | Indonesia                         |                                   | Myanmar                          |
| <i>CS of 2 points per country</i> | <i>CS of 3 points per country</i> | <i>CS of 2 points per country</i> | <i>CS of 1 point per country</i> |

Table 1: The CS for each Sector

2.3.4 As for  $\alpha$  and *TFS*, the values differ among the technologies, which will be further explained in the following sections.

## 2.4 Overall Process Flow

The overall process flow and respective references are illustrated in Figure 1.

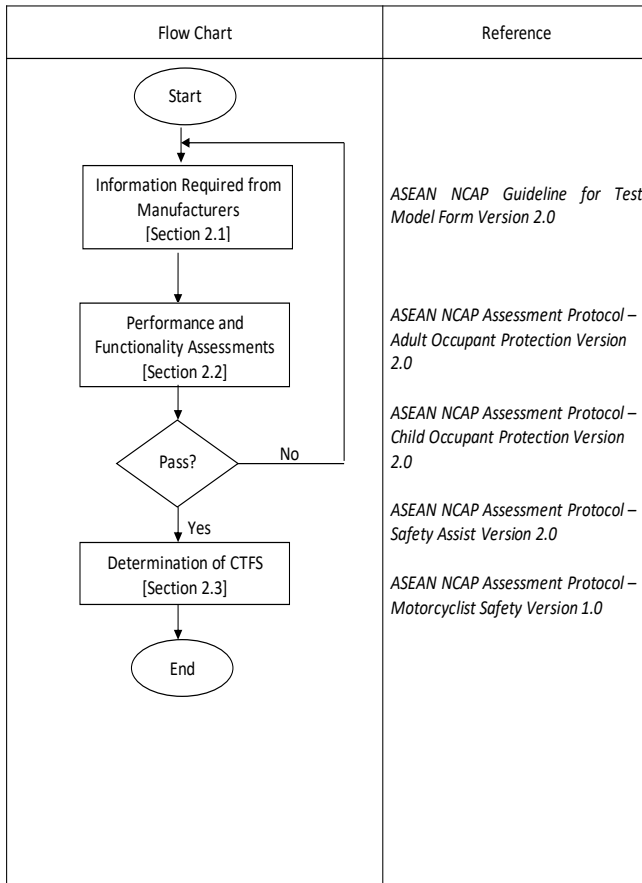


Figure 1: Overall Flow Chart of FRS

### **3 FITMENT RATING SCORE FOR HEAD PROTECTION TECHNOLOGY**

3.1 Realizing the need to improve the safety of occupants from side impacts, ASEAN NCAP has introduced Head Protection Technology (HPT) as part of Adult Occupant Protection (AOP) score. The *TFS* for HPT is 8 points.

3.2 HPT can be other than an airbag, as long as it protects the head. However, for technologies other than the conventional curtain or head airbags, the manufacturer is requested to provide evidence that the system is effective, at least in principle, before an assessment can be carried out.

3.3 There are three fitment types applied for HPT. Table 1 lists the  $\alpha$  values for each fitment type. An example of the HPT calculation is shown in APPENDIX I.

| <b>Fitment Type</b> | <b>Details</b>   | <b>Fitment Score, <math>\alpha</math></b> | <b>Rating</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   |               |

Table 1: Fitment Rating Score for HPT

## **4 FITMENT RATING SCORE FOR CHILD PRESENCE DETECTION**

4.1 Another highlight of COP is the introduction of Child Presence Detection (CPD) technology for a child left unattended in the car. Realizing that CPD technology could be an efficient technique to protect a child when he/she is forgotten in car unknowingly by parents.

4.2 CPD is a system that will sense the presence of children when they are left unattended in car and thus generate an alarm which will give a warning to the parent or people in the surrounding. The manufacturer is requested to provide evidence that the system is effective, at least in principle, before an assessment can be carried out.

4.3 ASEAN NCAP has introduced the Child Presence Detection (CPD) as part of Child Occupant Protection (COP) score. The *TFS* for CPD is 2 points.

4.4 There are three fitment types applied for CPD. Table 2 lists the  $\alpha$  values for each fitment type. An example of the CPD calculation is shown in APPENDIX II.

| <b>Fitment Type</b> | <b>Details</b>   | <b>Fitment Rating Score, <math>\alpha</math></b> |
|---------------------|--|--|
| Option A            | Vehicle model is equipped with CPD as standard equipment | 1  |
| Option B            | Vehicle model is equipped with CPD as optional equipment | 0.5  |
| Option C            | Vehicle model is not equipped with CPD                   | 0  |

Table 2: Fitment Rating Score for CPD

## **5 FITMENT RATING SCORE FOR EFFECTIVE BRAKING AND AVOIDANCE**

5.1 In 2012 to 2016, ASEAN NCAP only considered Electronic Stability Control (ESC) as a prerequisite for 5-star AOP rating. Since 2017, instead of only ESC, the new requirement has included Anti-lock Braking System (ABS) in the assessment. For the 2021 to 2025 protocol, both technologies contribute major points in Safety Assist pillar.

5.2 Both ABS and ESC represent the Effective Braking and Avoidance (EBA) which is part of the overall Safety Assist score. The *TFS* for EBA is 6 points.

5.3 There are six fitment types applied for EBA. Table 3 lists the  $\alpha$  values for each fitment type. An example of the EBA calculation is shown in APPENDIX III.

| <b>Fitment Type</b> | <b>Details</b>   | <b>Fitment Rating Score, <math>\alpha</math></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 both 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  |

Table 3: Fitment Rating Score for EBA

## **6 FITMENT RATING SCORE FOR SEATBELT REMINDER SYSTEM**

6.1 The Seatbelt Reminder (SBR) system is part of the overall Safety Assist score. In 2012 to 2016, ASEAN NCAP only considered SBR system for driver and front passenger as a prerequisite for 5-star AOP rating.

6.2 Starting from 2017, as an encouragement for vehicle manufacturers, incentive is given to vehicles fitted with rear SBRs in addition to frontal SBRs. This is part of ASEAN NCAP's mission to increase the wearing rates among rear passengers beyond legislative approach. The total *TFS* for SBR system is 6 points.

6.3 There are six fitment types applied for SBR system. Table 4 lists the  $\alpha$  values for each fitment type. An example of the SBR calculation is shown in APPENDIX IV.



| <b>Fitment Type</b> | <b>Details</b>  | <b>Fitment Rating Score, <math>\alpha</math></b> |
|---------------------|---|--|
| Option A            | Vehicle model is equipped with SBR for driver, front passenger and rear passengers with seat occupant's detection as standard equipment | 1  |
| Option B            | Vehicle model is equipped with SBR for driver, front passenger and rear passengers as standard equipment                                | 0.75   |
| Option C            | Vehicle model is equipped with SBR for driver and front passenger as standard equipment but rear passengers as optional equipment       | 0.625  |
| Option D            | Vehicle model is equipped with SBR for driver and front passenger only as standard equipment  | 0.5  |
| Option E            | Vehicle model is equipped with SBR for driver only as standard equipment  | 0.25   |
| Option F            | Vehicle model is not equipped with SBR  | 0  |

Table 4: Fitment Rating Score for SBR system

## 7 FITMENT RATING SCORE FOR AUTONOMOUS EMERGENCY BRAKING

7.1 In the 2021 to 2025 protocol, ASEAN NCAP shall focus on Auto Emergency Braking (AEB) Technology; which is a feature to alert drivers to an imminent crash and help them use the maximum braking capacity of the car.

7.2 AEB city and AEB Inter-urban is part of the overall Safety Assist score. ASEAN NCAP believes that AEB is an important technology, which has been well-received by most car manufacturers. The *TFS* for AEB City is 2.5 points and AEB Inter Urban is 3.5 points.

7.3 There are three fitment types applied for AEB. Table 5 and Table 6 list the  $\alpha$  values for each fitment type. An example of the AEB City and Inter-Urban calculation is shown in APPENDIX V.

| <b>Fitment Type</b> | <b>Details</b>  | <b>Fitment Rating Score, <math>\alpha</math></b> |
|---------------------|---|--|
| Option A            | Vehicle model is equipped with AEB City as standard equipment | 1  |
| Option B            | Vehicle model is equipped with AEB City as optional equipment | 0.5  |
| Option C            | Vehicle model is not equipped with AEB City                   | 0  |

Table 5: Fitment Rating Score for AEB City

| <b>Fitment Type</b> | <b>Details</b>   | <b>Fitment Rating Score, <math>\alpha</math></b> |
|---------------------|--|--|
| Option A            | Vehicle model is equipped with AEB Inter-Urban as standard equipment | 1  |
| Option B            | Vehicle model is equipped with AEB Inter-Urban as optional equipment | 0.5  |
| Option C            | Vehicle model is not equipped with AEB Inter-Urban                   | 0  |

Table 6: Fitment Rating Score for AEB Inter-Urban

## **8 FITMENT RATING SCORE FOR ADVANCED SAFETY ASSIST TECHNOLOGIES**

8.1 ASEAN NCAP realizes the importance of increasing the number of Advanced Safety Assist Technologies (SATs) in the region. With that in mind, the manufacturer may choose to obtain a maximum score of 3 points from two options with one of the options through FRS.

8.2 There are two fitment types applied for each Advanced SATs. The *TFS* for each Advanced SAT is 1 point. Table 7 lists the  $\alpha$  values for each fitment type. An example of one of the Advanced SATs (Lane Departure Warning) is shown in APPENDIX VI.

8.3 There is no limit to the number of Advanced SAT to be proposed. Nevertheless, the maximum score allocated for

Advanced SAT is 3 points. If the total point is more than 3 points, the maximum point for this section remains 3 points.

| <b>Fitment Type</b> | <b>Details</b>  | <b>Fitment Rating Score, <math>\alpha</math></b> |
|---------------------|---|--|
| Option A            | Vehicle model is equipped with Advanced SAT as standard or optional equipment | 1  |
| Option B            | Vehicle model is not equipped with Advanced SAT                               | 0  |

Table 7: Fitment Rating Score for Advanced SATs

## **9 FITMENT RATING SCORE FOR BLIND SPOT TECHNOLOGY**

9.1 Blind Spot Technology (BST) is part of the overall Motorcyclist Safety score. With the mission to reduce the number of lane-changing or merging crashes especially involving motorcyclists, ASEAN NCAP has introduced additional incentive for vehicle model equipped with BST.

9.2 This is part of ASEAN NCAP's strategic approach in curbing the number of accidents and injuries involving motorcycles in the region. The *TFS* for BST is 8 points.

9.3 There are five fitment types applied for BST. Table 8 lists the  $\alpha$  values for each fitment type. An example of the BST calculation is shown in APPENDIX VII.

| <b>Fitment Type</b> | <b>Details</b>   | <b>Fitment Rating Score, <math>\alpha</math></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  |

Table 8: Fitment Rating Score for BST

## **10 FITMENT RATING SCORE FOR ADVANCED REAR VISUALIZATION**

10.1 ASEAN NCAP is also of the opinion that collision with motorcyclists can be avoided if a car driver is more alert of his surroundings within a 30-meter radius. Hence, Advanced Rear Visualization (ARV) technology will help in determining the presence of motorcycles and other small vehicles.

10.2 This is part of ASEAN NCAP's strategic approach in curbing the number of accidents and injuries involving motorcycles in the region whereby ARV shall aid and

improve the driver's view as a tiny camera is placed at the rear end (displayed on top of the rear mirror) of the car.

10.3 ASEAN NCAP has introduced additional incentive for vehicle model equipped with ARV. The *TFS* for RVT is 4 points.

10.4 There are three fitment types applied for ARV. Table 9 lists the  $\alpha$  values for each fitment type. An example of the RVT calculation is shown in APPENDIX VIII.

| <b>Fitment Type</b> | <b>Details</b>   | <b>Fitment Rating Score, <math>\alpha</math></b> |
|---------------------|--|--|
| Option A            | Vehicle model is equipped with ARV as standard equipment | 1  |
| Option B            | Vehicle model is equipped with ARV as optional equipment | 0.5  |
| Option C            | Vehicle model is not equipped with ARV                   | 0  |

Table 9: Fitment Rating Score for ARV

## **11 FITMENT RATING SCORE FOR AUTO HIGH BEAM**

11.1 In the ASEAN context, it is found that in certain areas, the condition of motorcycles on the road is not up to the mark whereby some of their equipment are not in working order. For example, the headlight or the tail light might not work.

11.2 Such an issue pertaining to conspicuousness of motorcyclists will definitely result in a dangerous situation; which could eventually lead to road crashes. Perchance, with the Auto High Beam (AHB) function, this problem may reach a solution and in turn may result in a reduction of motorcyclist fatality in the ASEAN region.

11.3 Thus, ASEAN NCAP has introduced additional incentive for vehicle model equipped with AHB which part of the overall Motorcyclist safety score. *TFS* scores for AHB is 2 points.

11.4 There are three fitment types applied for AHB. Table 10 lists the  $\alpha$  values for each fitment type. An example of the AHB calculation is shown in APPENDIX IX.

| <b>Fitment Type</b> | <b>Details</b>   | <b>Fitment Rating Score, <math>\alpha</math></b> |
|---------------------|--|--|
| Option A            | Vehicle model is equipped with AHB as standard equipment | 1  |
| Option B            | Vehicle model is equipped with AHB as optional equipment | 0.5  |
| Option C            | Vehicle model is not equipped with AHB                   | 0  |

Table 10: Fitment Rating Score for AHB



## APPENDIX I

### Fitment Rating System for Head Protection Technology

| COUNTRY                | FITMENT TYPE | $\alpha \times CS$ | CS | CTFS        |
|------------------------|--------------|--------------------|----|-------------|
| <i>Brunei</i>          |              | 0                  | 0  | <b>6.00</b> |
| <i>Singapore</i>       |              | 0                  | 0  |             |
| <i>Malaysia</i>        | Yes          | Option A<br>3      | 3  |             |
| <i>Thailand</i>        |              | 0                  | 0  |             |
| <i>Indonesia</i>       | Yes          | Option B<br>1.5    | 3  |             |
| <i>The Philippines</i> |              | 0                  | 0  |             |
| <i>Vietnam</i>         |              | 0                  | 0  |             |
| <i>Laos</i>            |              | 0                  | 0  |             |
| <i>Cambodia</i>        |              | 0                  | 0  |             |
| <i>Myanmar</i>         |              | 0                  | 0  |             |

TFS     8.00

| Fitment Type    | Details   | Fitment Rating Score, $\alpha$ |
|-----------------|---|--------------------------------|
| <i>Option A</i> | <i>Vehicle model is equipped with HPT as standard equipment</i> | <i>1</i>                       |
| <i>Option B</i> | <i>Vehicle model is equipped with HPT as optional equipment</i> | <i>0.5</i>                     |
| <i>Option C</i> | <i>Vehicle model is not equipped with HPT</i>                   | <i>0</i>                       |

## APPENDIX II

### Fitment Rating System for Child Presence Detection

| COUNTRY                | FITMENT TYPE | $\alpha \times CS$ | CS | CTFS        |
|------------------------|--------------|--------------------|----|-------------|
| <i>Brunei</i>          |              | 0                  | 0  |             |
| <i>Singapore</i>       |              | 0                  | 0  |             |
| <i>Malaysia</i>        | Yes          | Option A<br>3      | 3  |             |
| <i>Thailand</i>        |              | 0                  | 0  |             |
| <i>Indonesia</i>       | Yes          | Option B<br>1.5    | 3  |             |
| <i>The Philippines</i> |              | 0                  | 0  | 1.50        |
| <i>Vietnam</i>         |              | 0                  | 0  |             |
| <i>Laos</i>            |              | 0                  | 0  |             |
| <i>Cambodia</i>        |              | 0                  | 0  |             |
| <i>Myanmar</i>         |              | 0                  | 0  |             |
| <b>TFS</b>             |              |                    |    | <b>2.00</b> |

| Fitment Type    | Details   | Fitment Rating Score, $\alpha$ |
|-----------------|---|--------------------------------|
| <i>Option A</i> | <i>Vehicle model is equipped with CPD as standard equipment</i> | <i>1</i>                       |
| <i>Option B</i> | <i>Vehicle model is equipped with CPD as optional equipment</i> | <i>0.5</i>                     |
| <i>Option C</i> | <i>Vehicle model is not equipped with CPD</i>                   | <i>0</i>                       |

## APPENDIX III

### Fitment Rating System for Effective Braking and Avoidance

| COUNTRY         |     | FITMENT TYPE | $\alpha \times CS$ | CS          | CTFS |
|-----------------|-----|--------------|--------------------|-------------|------|
| Brunei          | Yes | Option B     | 0                  | 0           | 3.00 |
| Singapore       |     |              | 1                  | 2           |      |
| Malaysia        |     |              | 0                  | 0           |      |
| Thailand        |     |              | 0                  | 0           |      |
| Indonesia       |     |              | 0                  | 0           |      |
| The Philippines |     |              | 0                  | 0           |      |
| Vietnam         |     |              | 0                  | 0           |      |
| Laos            |     |              | 0                  | 0           |      |
| Cambodia        |     |              | 0                  | 0           |      |
| Myanmar         |     |              | 0                  | 0           |      |
| <b>TFS</b>      |     |              |                    | <b>6.00</b> |      |

| Fitment Type    | Details   | Fitment Rating Score,<br>$\alpha$ |
|-----------------|---|-----------------------------------|
| <i>Option A</i> | <i>Vehicle model is equipped with ESC as standard equipment</i>                               | 1                                 |
| <i>Option B</i> | <i>Vehicle model is equipped with ESC as optional equipment but ABS as standard equipment</i> | 0.5                               |
| <i>Option C</i> | <i>Vehicle model is not equipped with ESC but equipped with ABS as standard equipment</i>     | 0.375                             |
| <i>Option D</i> | <i>Vehicle model is equipped with both ESC and ABS as optional equipment</i>                  | 0.25                              |
| <i>Option E</i> | <i>Vehicle model is not equipped with ESC but equipped with ABS as optional equipment</i>     | 0.125                             |
| <i>Option F</i> | <i>Vehicle model is not equipped with either ESC or ABS</i>                                   | 0                                 |

## APPENDIX IV

### Fitment Rating System for Seatbelt Reminders

| COUNTRY         |     | FITMENT TYPE | α x CS | CS         | CTFS        |
|-----------------|-----|--------------|--------|------------|-------------|
| Brunei          | Yes | Option A     | 2      | 2          | 4.20        |
| Singapore       | Yes | Option C     | 1.25   | 2          |             |
| Malaysia        | Yes | Option B     | 2.25   | 3          |             |
| Thailand        | Yes | Option D     | 1.5    | 3          |             |
| Indonesia       |     |              | 0      | 0          |             |
| The Philippines |     |              | 0      | 0          |             |
| Vietnam         |     |              | 0      | 0          |             |
| Laos            |     |              | 0      | 0          |             |
| Cambodia        |     |              | 0      | 0          |             |
| Myanmar         |     |              | 0      | 0          |             |
|                 |     |              |        | <b>TFS</b> | <b>6.00</b> |

| Fitment Type | Details   | Fitment Rating Score, α |
|--------------|---|-------------------------|
| Option A     | Vehicle model is equipped with SBR for driver, front passenger and rear passengers with seat occupant's detection as standard equipment | 1                       |
| Option B     | Vehicle model is equipped with SBR for driver, front passenger and rear passengers with seat occupant as standard equipment             | 0.75                    |
| Option C     | Vehicle model is equipped with SBR for driver and front passenger as standard equipment but rear passengers as optional equipment       | 0.625                   |
| Option D     | Vehicle model is equipped with SBR for driver and front passenger only as standard equipment  | 0.5                     |
| Option E     | Vehicle model is equipped with SBR for driver only as standard equipment  | 0.25                    |
| Option F     | Vehicle model is not equipped with SBR  | 0                       |

## APPENDIX V

### Fitment Rating System for AEB City

| COUNTRY         |     | FITMENT TYPE | α x CS | CS | CTFS        |
|-----------------|-----|--------------|--------|----|-------------|
| Brunei          |     |              | 0      | 0  | <b>1.88</b> |
| Singapore       |     |              | 0      | 0  |             |
| Malaysia        | Yes | Option A     | 3      | 3  |             |
| Thailand        |     |              | 0      | 0  |             |
| Indonesia       | Yes | Option B     | 1.5    | 3  |             |
| The Philippines |     |              | 0      | 0  |             |
| Vietnam         |     |              | 0      | 0  |             |
| Laos            |     |              | 0      | 0  |             |
| Cambodia        |     |              | 0      | 0  |             |
| Myanmar         |     |              | 0      | 0  |             |
| <b>TFS</b>      |     |              |        |    | <b>2.50</b> |

| Fitment Type    | Details  | Fitment Rating Score, α |
|-----------------|--|-------------------------|
| <i>Option A</i> | <i>Vehicle model is equipped with AEB City as standard equipment</i> | <i>1</i>                |
| <i>Option B</i> | <i>Vehicle model is equipped with AEB City as optional equipment</i> | <i>0.5</i>              |
| <i>Option C</i> | <i>Vehicle model is not equipped with AEB City</i>                   | <i>0</i>                |

### Fitment Rating System for AEB Inter-Urban

| COUNTRY         |     | FITMENT TYPE | α x CS | CS | CTFS        |
|-----------------|-----|--------------|--------|----|-------------|
| Brunei          |     |              | 0      | 0  | <b>2.63</b> |
| Singapore       |     |              | 0      | 0  |             |
| Malaysia        | Yes | Option A     | 3      | 3  |             |
| Thailand        |     |              | 0      | 0  |             |
| Indonesia       | Yes | Option B     | 1.5    | 3  |             |
| The Philippines |     |              | 0      | 0  |             |
| Vietnam         |     |              | 0      | 0  |             |
| Laos            |     |              | 0      | 0  |             |
| Cambodia        |     |              | 0      | 0  |             |
| Myanmar         |     |              | 0      | 0  |             |
| <b>TFS</b>      |     |              |        |    | <b>3.50</b> |

| Fitment Type    | Details   | Fitment Rating Score, α |
|-----------------|---|-------------------------|
| <i>Option A</i> | <i>Vehicle model is equipped with AEB Inter-Urban as standard equipment</i> | <i>1</i>                |
| <i>Option B</i> | <i>Vehicle model is equipped with AEB Inter-Urban as optional equipment</i> | <i>0.5</i>              |
| <i>Option C</i> | <i>Vehicle model is not equipped with AEB Inter-Urban</i>                   | <i>0</i>                |

## APPENDIX VI

### Fitment Rating System for LDW

| COUNTRY                |     | FITMENT TYPE | $\alpha \times CS$ | CS | CTFS |
|------------------------|-----|--------------|--------------------|----|------|
| <i>Brunei</i>          | Yes | Option A     | 2                  | 2  | 0.50 |
| <i>Singapore</i>       | Yes | Option A     | 2                  | 2  |      |
| <i>Malaysia</i>        | Yes |              | 0                  | 3  |      |
| <i>Thailand</i>        | Yes | Option A     | 3                  | 3  |      |
| <i>Indonesia</i>       | Yes | Option A     | 3                  | 3  |      |
| <i>The Philippines</i> | Yes |              | 0                  | 2  |      |
| <i>Vietnam</i>         | Yes |              | 0                  | 2  |      |
| <i>Laos</i>            | Yes |              | 0                  | 1  |      |
| <i>Cambodia</i>        | Yes |              | 0                  | 1  |      |
| <i>Myanmar</i>         | Yes |              | 0                  | 1  |      |

**TFS**      **1.00**

| Fitment Type    | Details   | Fitment Rating Score, |
|-----------------|---|-----------------------|
| <i>Option A</i> | <i>Vehicle model is equipped with LDW as standard or optional equipment</i> | <i>1</i>              |
| <i>Option B</i> | <i>Vehicle model is not equipped with LDW</i>                               | <i>0</i>              |

## APPENDIX VII

### Fitment Rating System for Blind Spot Technology

| COUNTRY                | FITMENT TYPE    | $\alpha \times CS$ | CS          | CTFS        |
|------------------------|-----------------|--------------------|-------------|-------------|
| <i>Brunei</i>          | Yes<br>Option E | 0                  | 2           | <b>5.60</b> |
| <i>Singapore</i>       | Yes<br>Option B | 1                  | 2           |             |
| <i>Malaysia</i>        | Yes<br>Option A | 3                  | 3           |             |
| <i>Thailand</i>        | Yes<br>Option A | 3                  | 3           |             |
| <i>Indonesia</i>       |                 | 0                  | 0           |             |
| <i>The Philippines</i> |                 | 0                  | 0           |             |
| <i>Vietnam</i>         |                 | 0                  | 0           |             |
| <i>Laos</i>            |                 | 0                  | 0           |             |
| <i>Cambodia</i>        |                 | 0                  | 0           |             |
| <i>Myanmar</i>         |                 | 0                  | 0           |             |
| <b>TFS</b>             |                 |                    | <b>8.00</b> |             |

| Fitment Type    | Details   | Fitment Rating Score,<br>$\alpha$ |
|-----------------|---|-----------------------------------|
| <i>Option A</i> | <i>Vehicle model is equipped with BST for both nearside and offside as standard equipment</i> | 1                                 |
| <i>Option B</i> | <i>Vehicle model is equipped with BST for both nearside and offside as optional equipment</i> | 0.5                               |
| <i>Option C</i> | <i>Vehicle model is equipped with BST for one side only as standard equipment</i>             | 0.5                               |
| <i>Option D</i> | <i>Vehicle model is equipped with BST for one side only as optional equipment</i>             | 0.25                              |
| <i>Option E</i> | <i>Vehicle model is not equipped with BST</i>   | 0                                 |

## APPENDIX VIII

### Fitment Rating System for Advanced Rear Visualization

| COUNTRY                |     | FITMENT TYPE | α x CS | CS | CTFS        |
|------------------------|-----|--------------|--------|----|-------------|
| <i>Brunei</i>          |     |              | 0      | 0  | <b>3.00</b> |
| <i>Singapore</i>       |     |              | 0      | 0  |             |
| <i>Malaysia</i>        | Yes | Option A     | 3      | 3  |             |
| <i>Thailand</i>        |     |              | 0      | 0  |             |
| <i>Indonesia</i>       | Yes | Option B     | 1.5    | 3  |             |
| <i>The Philippines</i> |     |              | 0      | 0  |             |
| <i>Vietnam</i>         |     |              | 0      | 0  |             |
| <i>Laos</i>            |     |              | 0      | 0  |             |
| <i>Cambodia</i>        |     |              | 0      | 0  |             |
| <i>Myanmar</i>         |     |              | 0      | 0  |             |

TFS      **4.00**

| Fitment Type    | Details   | Fitment Rating Score, α |
|-----------------|---|-------------------------|
| <i>Option A</i> | <i>Vehicle model is equipped with ARV as standard equipment</i> | <i>1</i>                |
| <i>Option B</i> | <i>Vehicle model is equipped with ARV as optional equipment</i> | <i>0.5</i>              |
| <i>Option C</i> | <i>Vehicle model is not equipped with ARV</i>                   | <i>0</i>                |



## APPENDIX IX

### Fitment Rating System for Auto High Beam

| COUNTRY         |     | FITMENT TYPE | α x CS | CS         | CTFS        |
|-----------------|-----|--------------|--------|------------|-------------|
| Brunei          |     |              | 0      | 0          | <b>1.67</b> |
| Singapore       |     |              | 0      | 0          |             |
| Malaysia        | Yes | Option A     | 3      | 3          |             |
| Thailand        | Yes | Option A     | 3      | 3          |             |
| Indonesia       | Yes | Option B     | 1.5    | 3          |             |
| The Philippines |     |              | 0      | 0          |             |
| Vietnam         |     |              | 0      | 0          |             |
| Laos            |     |              | 0      | 0          |             |
| Cambodia        |     |              | 0      | 0          |             |
| Myanmar         |     |              | 0      | 0          |             |
|                 |     |              |        | <b>TFS</b> | <b>2.00</b> |

| Fitment Type    | Details   | Fitment Rating Score, α |
|-----------------|---|-------------------------|
| <i>Option A</i> | <i>Vehicle model is equipped with AHB as standard equipment</i> | <i>1</i>                |
| <i>Option B</i> | <i>Vehicle model is equipped with AHB as optional equipment</i> | <i>0.5</i>              |
| <i>Option C</i> | <i>Vehicle model is not equipped with AHB</i>                   | <i>0</i>                |

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