



Safer Cars for ASEAN Region

ASEAN NCAP VISION 2030

<Revised Draft Roadmap>

20th October 2017
Safe Driving & Mobility Conference 2017
Marina Bay Sands, Singapore
Dr. Khairil Anwar

Bloomberg
Philanthropies



FIA Foundation
for the Automobile and Society



The Fourth Industrial Revolution

- UBER, the world's largest taxi company
 - >> Owns no vehicle
- FACEBOOK, the world's most popular media owner
 - >> Creates no content
- ALIBABA, the world's most valuable retailer
 - >> Has no inventory
- AIRBNB, the world's largest accommodation provider
 - >> Has no real estate property
- ASEAN NCAP, the world's most
 - >> Owns no proving ground

Tom Goodwin, TechCrunch, March 2015

Current Test & Assessment



50
%

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 50% of the overall rating with a maximum 36 points from three main assessments: offset frontal, side impact and 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). 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, manufacturer is requested to provide evidence that the system is effective, at least in principle, before a test can be allowed.

2012 – 2016 (AOP Single Rating)

Offset Frontal Test

• Maximum score of 16

Side Impact Test

• Compliance with UN R95
• 4-Star & above (September 2013–2014)
• 3-Star & above (2015–2016)

2017 – 2020 (50% of the Overall Rating)

Offset Frontal Test

• Maximum score of 16

Side Impact Test

• Maximum score of 16

HPT Evaluation

• The calculation is based on FRS with a maximum of 4 points

MAXIMUM OF 36 POINTS

25
%

CHILD OCCUPANT PROTECTION

Protection for children in a vehicle is as important as adult protection. Currently ASEAN NCAP is separately rating adult and child.

Instead of a separate rating in 2012–2016 requirement, the new requirement for COP 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)			
Dynamic Assessment (24 Points)		Dynamic Assessment (24 Points)	
Frontal Impact	P series dummy	Frontal Impact	Q series dummy
	PLS PS		Q15 Q3
	3 6		4 4
	Chest 6 6		Chest 2 2
Neck 3 N/A		Neck 2 2	
			Head 4 4
Side Impact		Side Impact	
CRS Based Assessment (12 Points)		CRS Installation Assessment (12 Points)	
CRS Marking		References List Assessment	
CRS to Vehicle Interface		CER Assessment	
8 points per CRS		10 points	
4 points per CRS		2 points	
Vehicle Based Assessment (12 Points)		Vehicle Based Assessment (12 Points)	
Use of CRS on the Front Seats		Provision of Three-point Seatbelts	
5 points		Gabriel's Installation	
Provision of Three-point Seatbelts		2 points	
Gabriel's Assessment		2 Simultaneous Use Seating Positions	
2 points		ISOFIX Availability	
ISOFIX		2 points	
Integrated CRS		Two or more Larger ISOFIX Positions	
2 points		1 point	
		Passenger Airbag Warning Marking and Labeling	
		5 points	

Furthermore, assessment method has 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 labeling. The list of the CRS required for the assessment is as follows.

CRS Installation Assessment			
Group	Model	Score	Remarks
Group 0+	Maxi Cool Cabriolet	8	...
Group 0+	Combi Maltip	8	...
Group 1/2/3	Combi Bion Junior Air	8	...
Group 1/2/3	Britax Baby Safe Plus ISOFIX Base	1	...
Group 0+	Maxi Cool Maltip	1	...
Group 1	Britax Duo Plus	1	...
Group 1/2/3	Britax Parkway SGL	1	...
Q15	Manufacturer Selection	1	...
Q3	Manufacturer Selection	1	...

25
%

SAFETY ASSIST

Promotion of Safety Assist Technologies (SATs) has become of the main pillars in the new road map 2017–2020.

It contributes 25% of the overall rating with a maximum of 18 points focusing on Effective Braking and Avoidance (EBA), SBR, BSI 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 Fitment Rating System (FRS) except for advanced SATs.

Instead of only ESC, ABS is also considered in the new road map 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.

Apart from that, in vision to reduce the number of low-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.

2012 – 2016 (Prerequisite for 5-Star AOP)

Electronic Stability Control

• Driver

• Front Passenger

Seatbelt Reminder

• Driver

• Front Passenger

2017 – 2020 (25% of the Overall Rating)

Effective Braking & Avoidance

• Anti-lock Braking System

• Electronic Stability Control

• Lane Departure Warning System

• Forward Collision Warning System

The calculation is based on FRS with a maximum of 8 points

• Driver

• Front Passenger

• Rear Passenger

The calculation is based on FRS with a maximum of 6 points

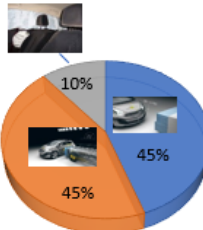
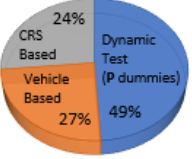
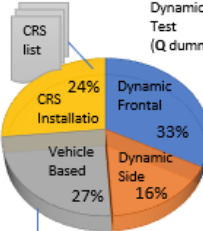
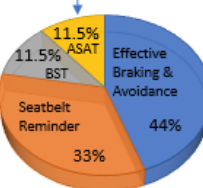
The calculation is based on FRS with a maximum of 2 points

A score of 1 point is awarded for each SAT available in any variant (minimum 1 country for each sector) with a maximum of 2 points

MAXIMUM OF 18 POINTS

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

Current Test & Assessment

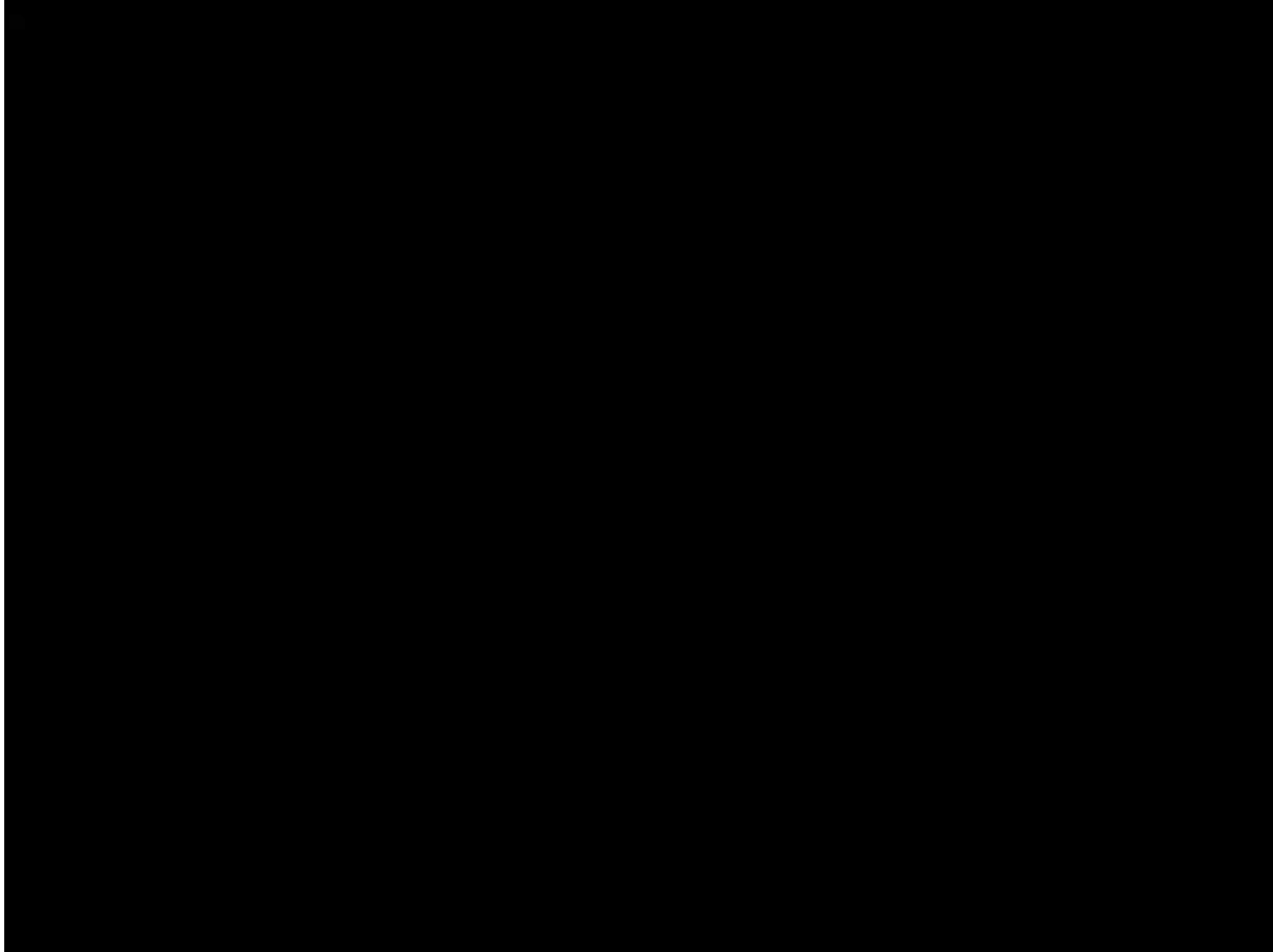
Ratings	2011 - 2016		2017 - 2020	
	Assessment	Weightage	Assessment	Weightage
Adult Occupant Protection (AOP) 	 100% <u>Pre-requisite</u> Pass UNR95 Lateral Collision Test >> 3-star	100% separate rating	 10% 45% 45%	50%
Child Occupant Protection (COP) 	 24% 27% 49%	100% separate rating	 24% 33% 16% 27% Dynamic Test (Q dummies) Dynamic Frontal Dynamic Side	25%
Safety Assist 	ESC & SBR for Driver & Front Passenger >> 5-star	Pre-requisite	 11.5% 11.5% 33% 44% Integrated CRS Effective Braking & Avoidance Seatbelt Reminder ASAT BST	25%
Rating Plate	 *Dual Rating is possible			



+ Grand Prix Awards Every 2 years
 *Safety Performance
 *Most Affordable 5-Star car in each country.

*Credit EuroNCAP for Illustration

5-Star Honda CR-V



Market Coverage

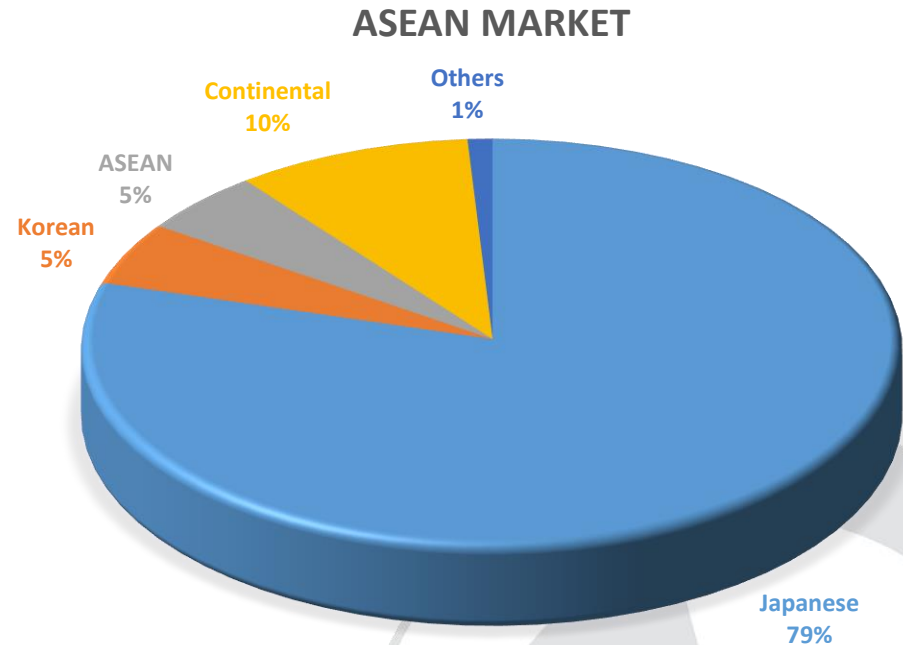
➤ Using 2015 Sales Database (passenger car only)

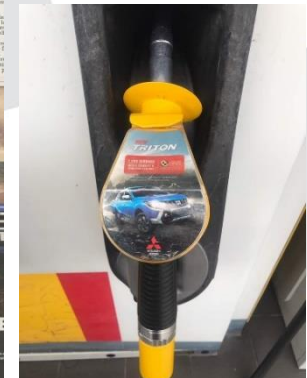
➤ By End of 2016

- **Completed Top 30 models**
- **46 models from Top 60**
- **90% market share**
 - 9 out of 10 cars sold in ASEAN Region are rated with ASEAN NCAP
- **96% are 4-Star & above**

➤ It is estimated about 400 models are being sold in the region by all OEMs

Rank	Number of Units
1-3	Over 100,000 units
4-6	Below 100,000 units
7-11	Below 60,000 units
12-15	Below 50,000 units
16-19	Below 40,000 units
20-28	Below 30,000 units
29-60	Below 20,000 units
61-144	Below 10,000 units
145-400	Below 1,000 units





Sample Ad Cont'



 **TRITON
BAHARU**

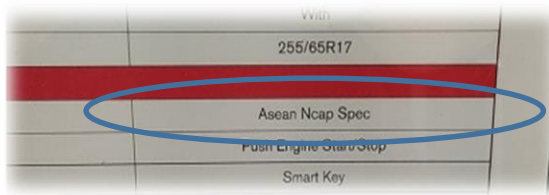
**SATU-SATUNYA PIKAP* DENGAN JAMINAN
200,000KM / 5 TAHUN**


Safety ★★★★★

*Hingga kategori 2.4L
**Sah untuk varian Adventure sahaja

Summary of Achievements

- Does it influence car making?
 - Country with crashworthiness regulation = 1 (Malaysia)
 - Country with specific crashworthiness requirement = 1 (Thailand)
 - Eco Car Project in Thailand
 - ASEAN NCAP (4-Star) widely accepted as reference 'standard' for southeast Asian countries without international crash test regulation.



**ISUZU D-MAX Specification Display
At Phnom Penh, Cambodia**

Most Affordable 5-Star Cars

Countries	Model			ESC, Minimum dual airbag, ISOFIX & Top Tether standard for all variants
Malaysia	Proton Iriz	: RM 41,790		
Thailand	Proton Prevé	: THB 625,000		
Indonesia	Honda BR-V	: IDR 263,100,000		
Vietnam	Honda City	: VND 583,000,000		
Philippines	Honda Jazz	: PHP 968,000		
Singapore	Honda HR-V	: SGD 107,999		
Brunei	Honda HR-V	: BND 36,990		
Laos	Honda City	: USD 22,900		
Cambodia	Honda City	: USD 27,900		

**Price might change accordingly*

➤ Standard Fitment

- ESC
- FR & RR SBR
- Frontal & Side Airbags (4)
- Push Start Button
- ISOFIX & Top Tether

➤ For Premium version

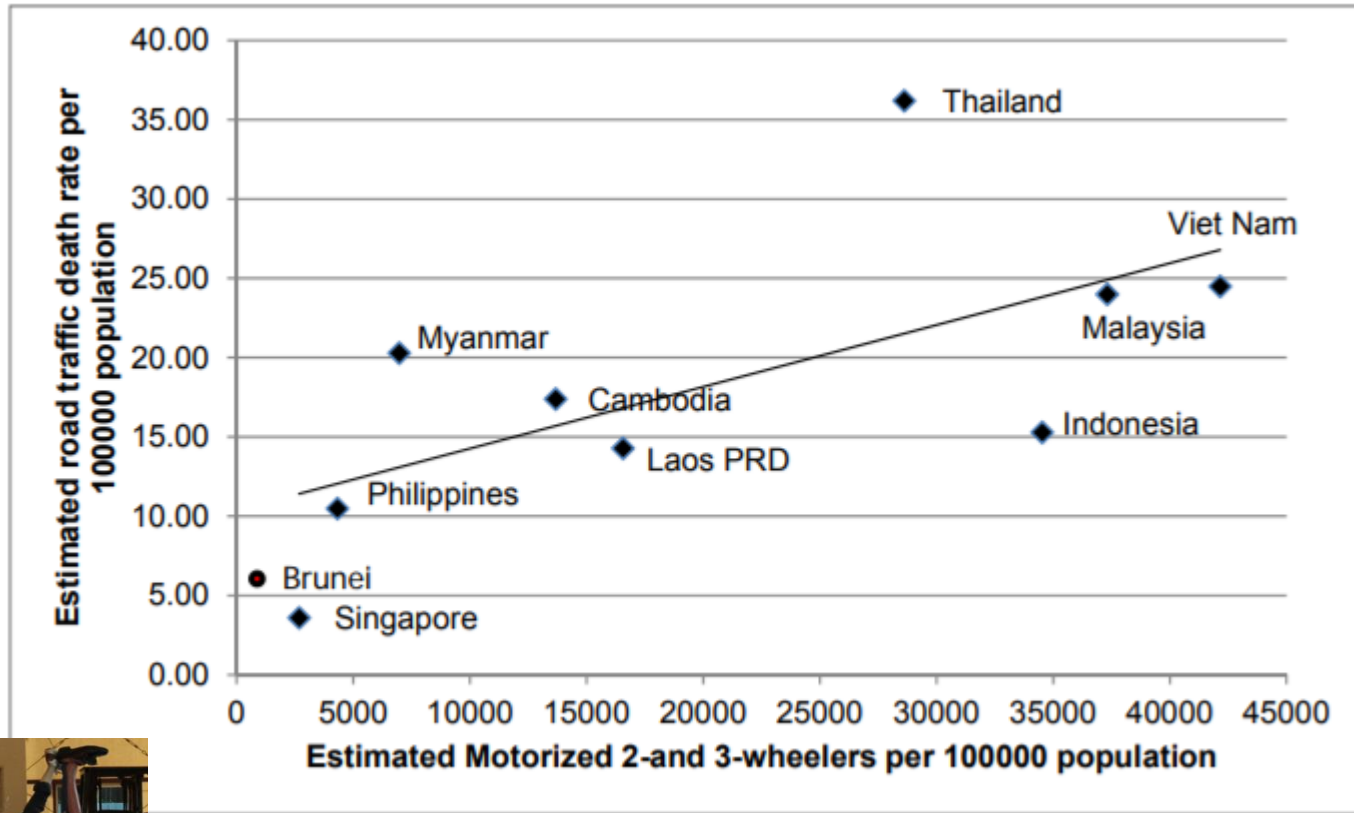
- Curtain Airbags (2)
- Blind Spot Identification
- AEB City
- eCall (accident notification)



Standardization of 7 airbags and ESC for all variants = 5-Star

Minimum Passive Safety Requirement + Offering wide range of additional Passive Safety and Active Safety Products = 5-Star

Wake Up Fighters, jobs still not done...

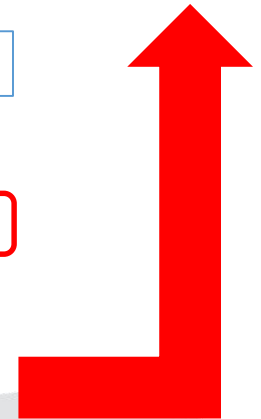


WHO, 2015



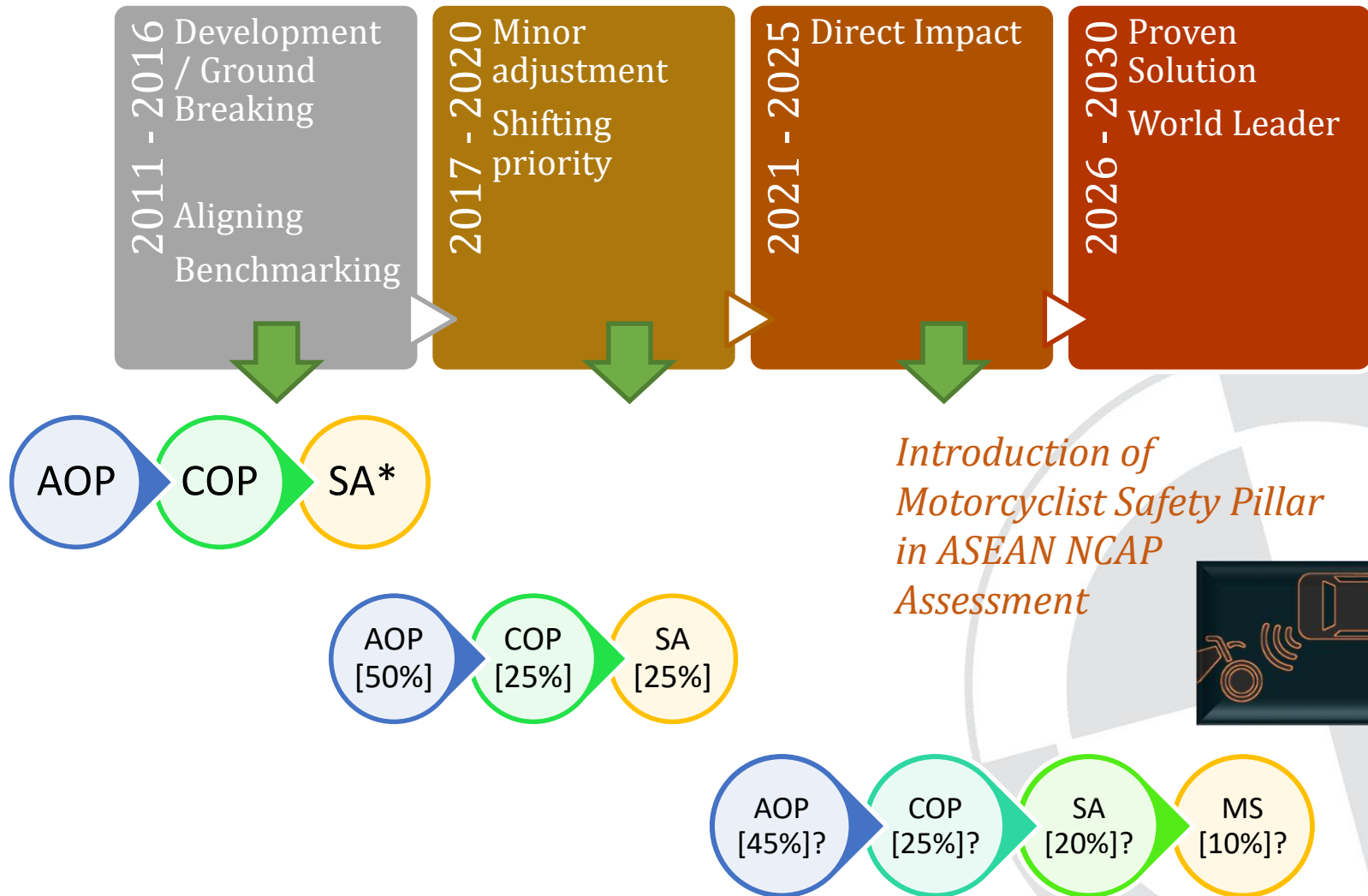
Motorcyclists fatality keep rising!!

Road User	2010	2011	2012	2013	2014	2015
Motorcycle	4,036	4,169	4,178	4,294	4,179	4,203
Car	1,421	1,389	1,435	1,399	1,258	1,358
Pedestrian	626	530	530	455	515	482
Bicycle	192	172	156	159	124	107
Van	97	93	86	80	73	71
Bus	77	29	32	60	29	20
Lorry	202	247	194	210	221	223
4WD	154	151	159	158	129	130
Other	67	97	147	100	146	75
Total	6,872	6,877	6,917	6,915	6,674	6,706



MIROS 2016

Roadmap 2021 - 2030



- Adult Occupant Protection (AOP) and Child Occupant Protection (COP) and Motorcyclist Safety (MS) will combine both Passive Safety and Active Safety.
- Allocation of points will be given based on available DATA.
 - Through research and consultation (Jan – July 2018)

- What kind of data is required?
- A data that could provide the answer;
 - How important is the technology to save lives in ASEAN?
 - How does it improve road safety in other region?
 - Is it applicable to ASEAN road conditions?

Answer ?

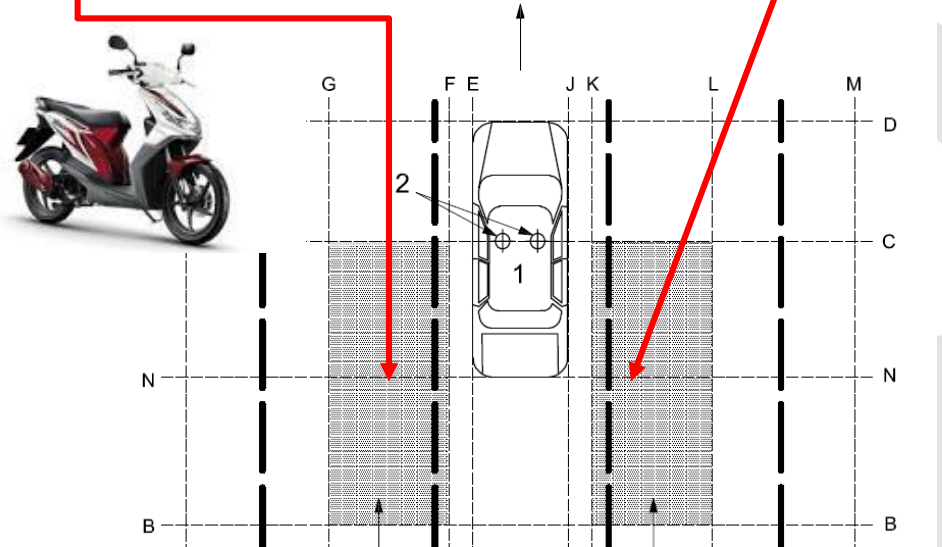
New Concept

	2021 - 2025	2026 - 2030
	ODB 64 SIDE IMPACT 50 HPT ASSESSMENT PEDESTRIAN (ADULT) SEAT BELT REMINDER AEB CITY	New Assessment might be considered upon development of new test facilities in the region
	DYNAMIC TEST Q1.5 & Q3 NEW CRS LIST PEDESTRIAN (CHILD) CHILD PRESENCE DET. REVERSE AEB	New Assessment might be considered upon development of new test facilities in the region
	AEB INTERURBAN AEB PEDESTRIAN LANE DEPARTURE WARN. LANE KEEP ASSIST DRIVER ATTENTION MON. SPEED ALARM (MANUAL)	AEB PEDESTRIAN (NIGHT) AUTOMATIC EMERGENCY STEERING INTELLIGENT SPEED ASSISTANCE TOP SPEED LIMITER
	ECALL	
	BLIND SPOT DETECTION BLIND SPOT VISUALIZATION (SIDE) BLIND SPOT VISUALIZATION (REAR) REVERSING COLLISION AVOIDANCE AUTOMATIC HIGH BEAM	MOTORCYCLIST PROTECTION NIGHT VISION ENHANCEMENT V2X INTERSECTION COLLISION WARNING (JUNCTION ASSIST)

Motorcyclist Safety

- Environmental conditions
 - Flat, dry asphalt or concrete surface
 - $10^{\circ}\text{C} \pm 30^{\circ}\text{C}$
 - Horizontal visibility range greater than 1km
- Subject vehicle
 - Speed: min steady speed 20m/s
- Test target vehicle
 - Honda ICON from Indonesia: height (1053mm), length (1859mm) & width (667mm) >> most selling
 - Closing speed: 1m/s to 3 m/s
- Road geometry: straight road only
- Time of test: day only
- Frequency: 3 trials (left) + 3 trials (right)

- Left side – detectable within the defined area
- Right side – detectable within the defined area
- Optional blind spot warning suppression

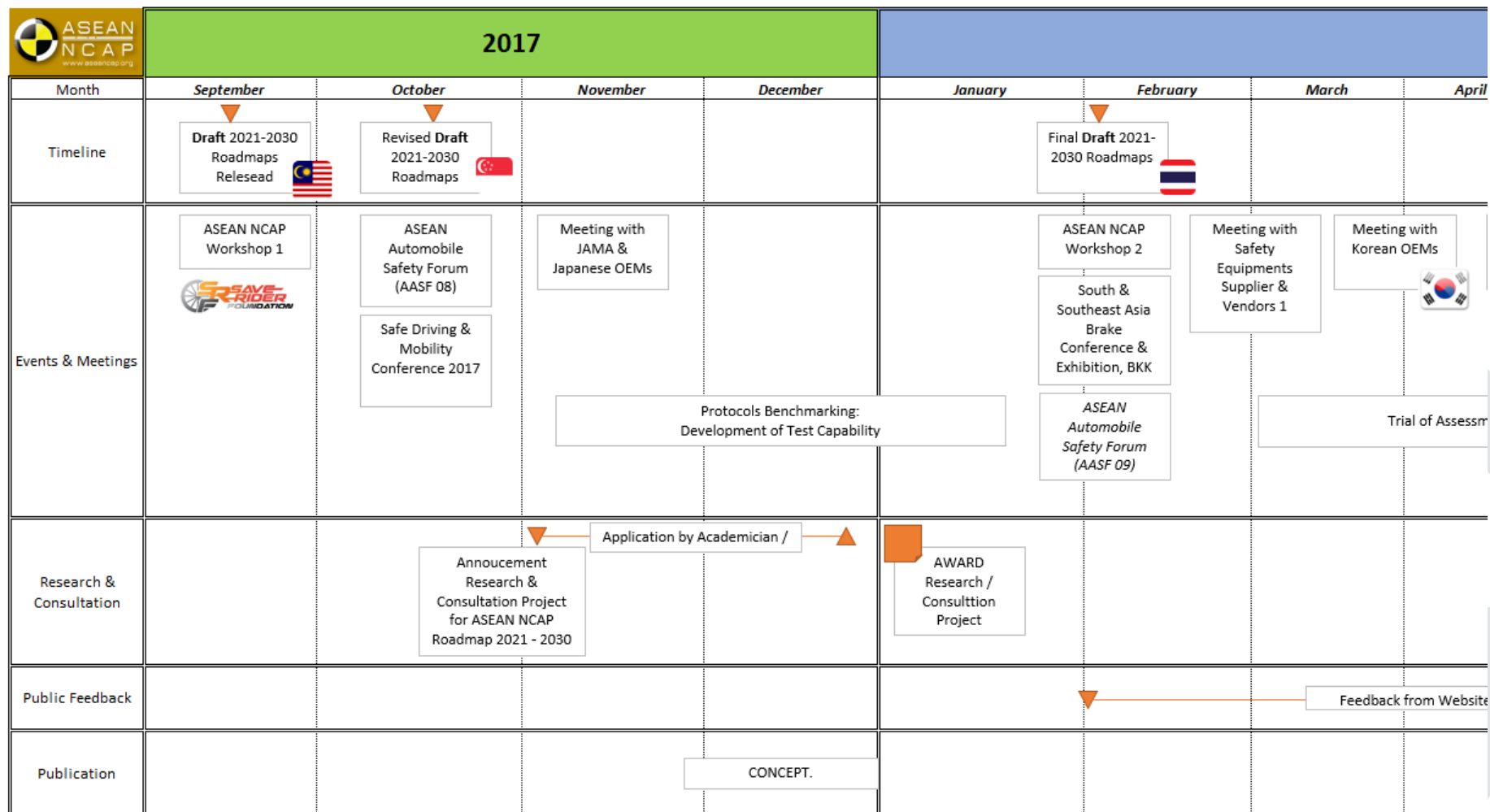


2017 - 2020

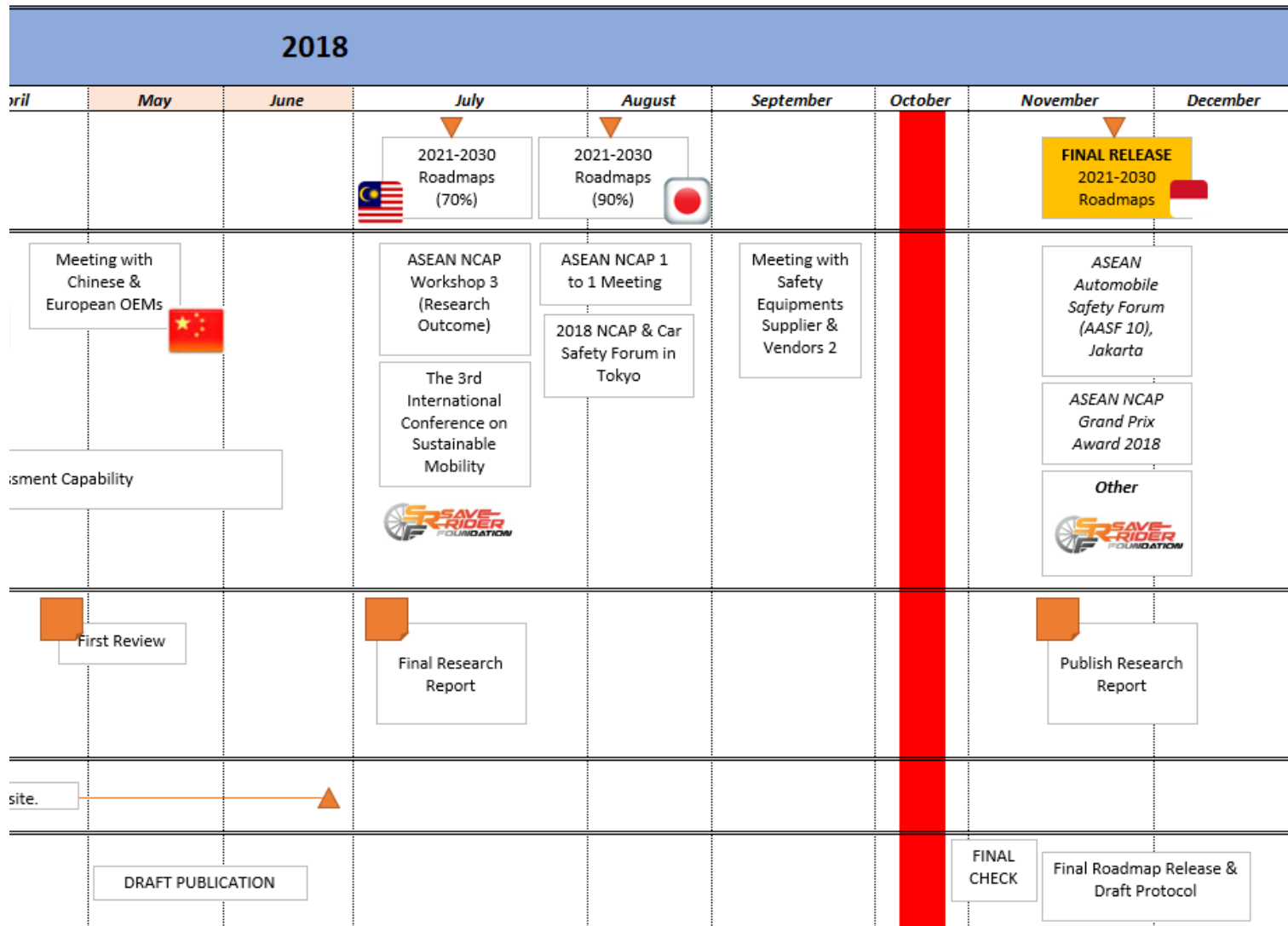
Making AEB more important ?

- 1st June 2018 – All passenger cars in Malaysia are mandatory to install ESC.
- One of the push : ASEAN NCAP 2017 – 2020 protocols
- Future 2021 – 2025 will give more weightage to AEB.
 - Should be able to conduct AEB test (city, inter urban & pedestrian).
 - Pushing for regulatory?

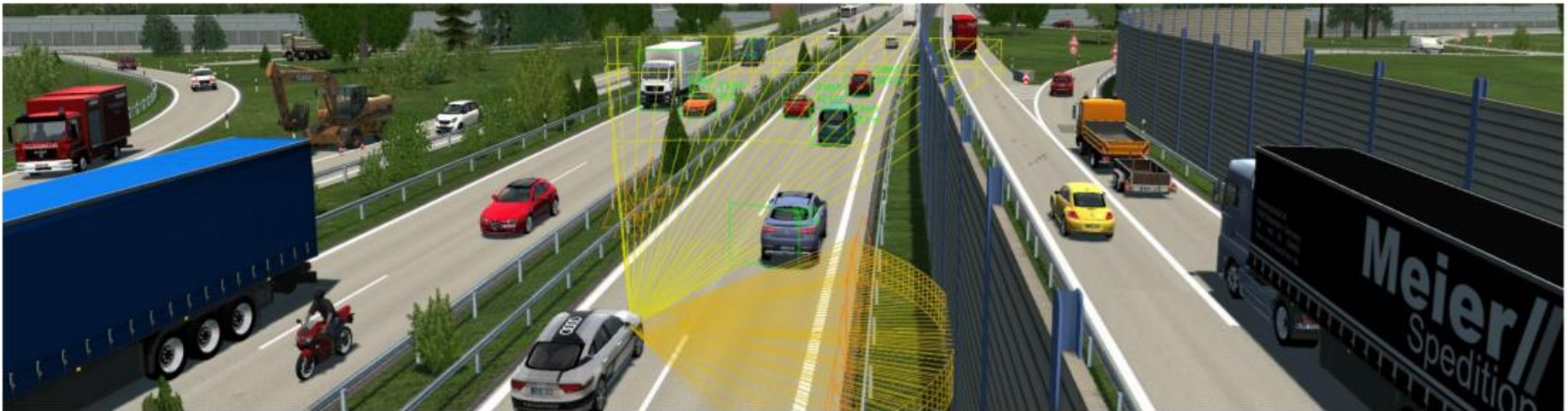
The Plan 1/2



The Plan 2/2



- How to rate Autonomous Cars?



Let's make it OUR Roadmap

