



Safer Cars for ASEAN Region

ASEAN NCAP Protocol 2021-2025

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Bloomberg
Philanthropies

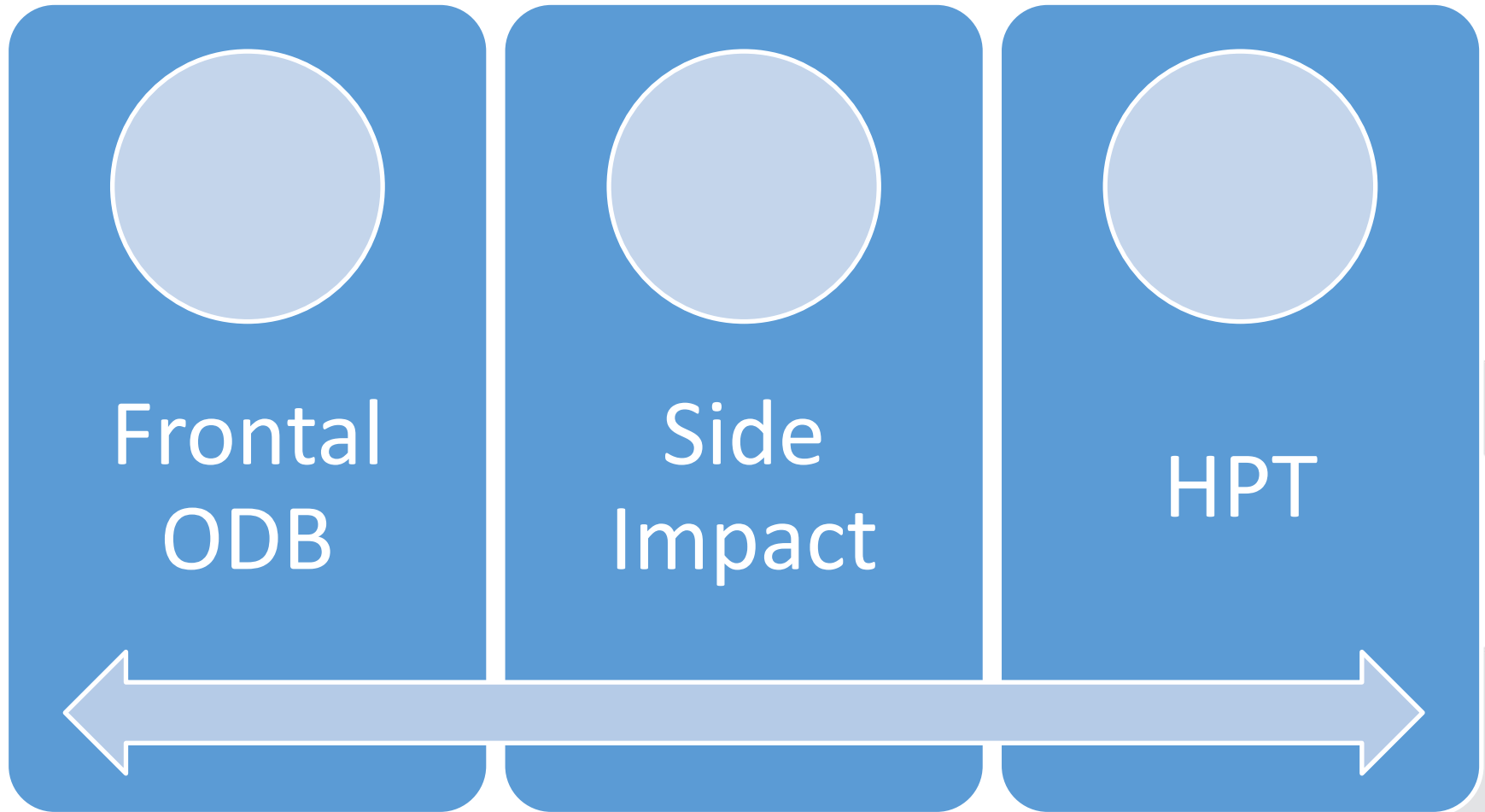


FIA Foundation
for the Automobile and Society

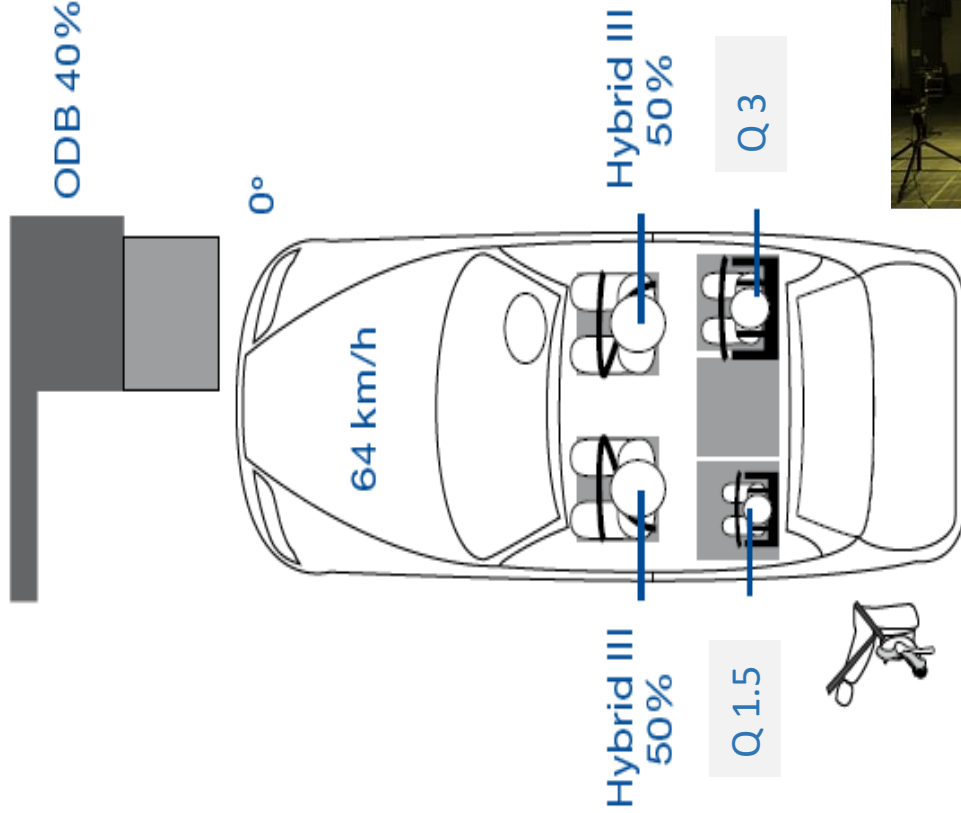


	AOP			COP			SAFETY ASSIST			MOTORCYCLIST		
	Item	Point	Max	Item	Point	Max	Item	Point	Max	Item	Point	Max
	ODB	-	16.00	Frontal	14.83	16.00	EBA	3.00	6.00	BSD/BSV	0.40	8.00
	SIDE	-	8.00	Side	6.75	8.00	SBR	-	6.00	ARV	2.00	4.00
	HPT Evaluation	7.40	8.00	Installation	11.11	12.00	AEB City	2.39	2.50	AHB	0.95	2.00
				Vehicle Based	13.00	13.00	AEB Inter-Urban	2.54	3.50	Ped. Protection	-	2.00
				CPD	0.25	2.00	Advance SATs	2.00	3.00	Advance MST*		2.00
Score		7.40	32.00		45.94	51.00		9.93	21.00		3.35	16.00
Normalized Score		0.23			0.90			0.47			0.209375	
Weighting		40%			20%			20%			20%	
Weighted Score		9.25			18.01			9.45			4.19	
Maximum Star Rating		0			5			3			2	

Adult Occupant Safety (AOP) Assessment

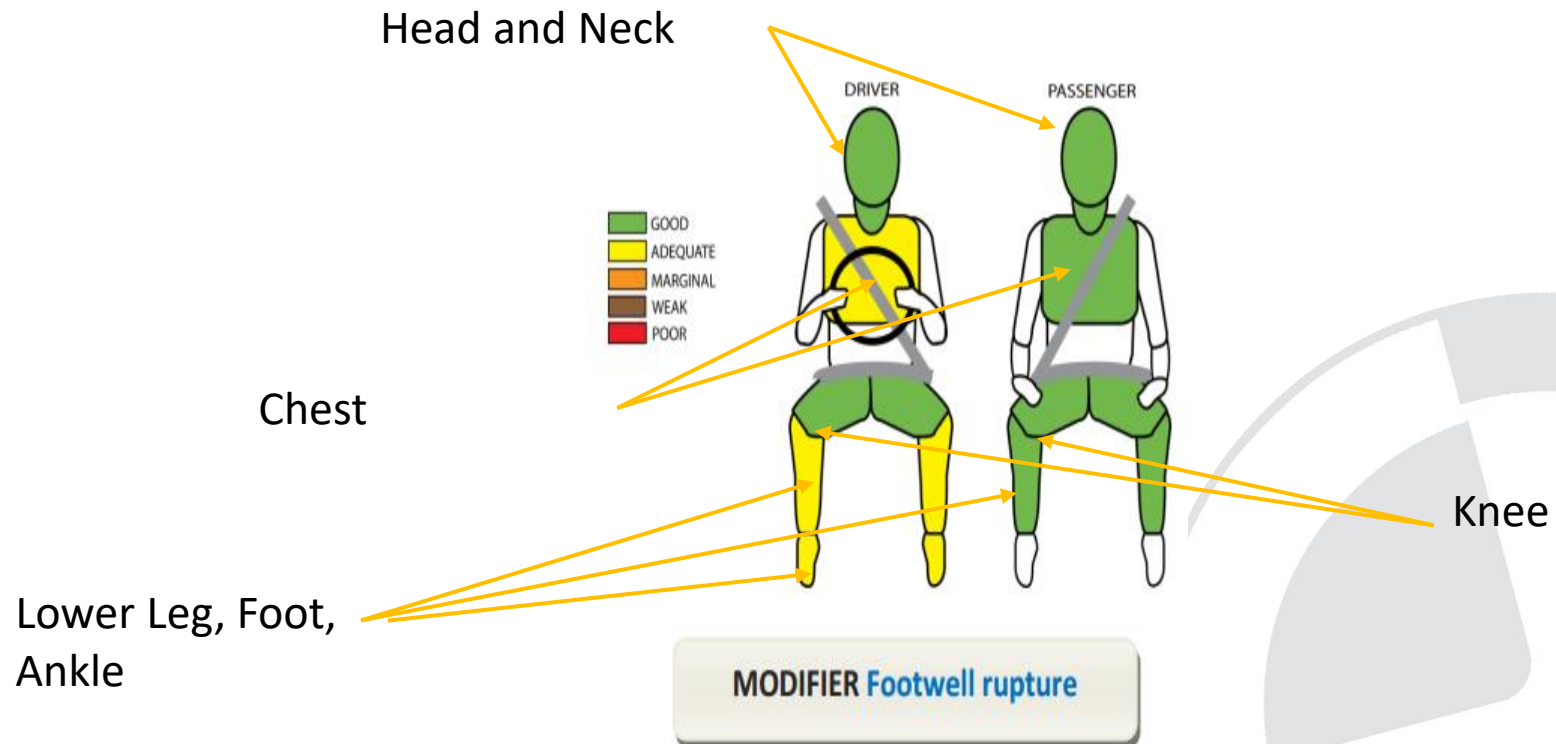


Frontal Offset Test



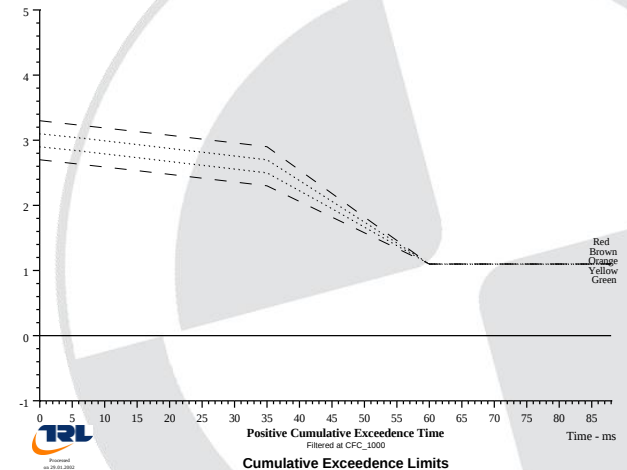
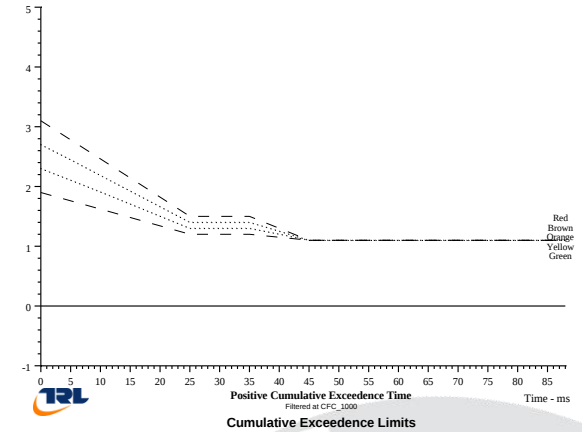
Frontal Offset Test





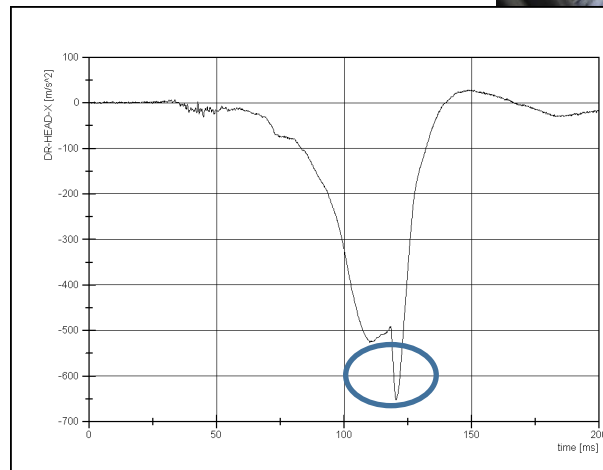
Head and Neck

HEAD AND NECK			
Head			
Scoring		4	0
HIC 15	500		700
3ms Acc	72g		80g
Modifier			
Scoring		-1	0
Unstable Contact on the Airbag Modifier (-1)	Yes		No
Hazardous Airbag Deployment Modifier	Yes		No
Incorrect Airbag Deployment Modifier	Yes		No
Steering Wheel Displacement		Sliding	
Fore/aft Displacement	110 mm		90 mm
Vertical Displacement	88 mm		72 mm
Lateral Displacement	88 mm		72 mm
Neck			
Scoring		4	0
Tension	2.7kN @ 0 msec 2.3kN @ 35msec, 1.1kN @ 60msec		3.3kN @ 0 msec 2.9kN @ 35msec, 1.1kN @ 60msec
Shearing	1.9kN @ 0 msec, 1.2kN @ 25 - 35msec, 1.1kN @ 45msec		3.1kN @ 0 msec, 1.5kN @ 25 - 35msec, 1.1kN @ 45msec
Extension	42 Nm		57 Nm



Head and Neck -Modifier

- Unstable Contact



Spike more than 5g & 3ms

Hazardous Airbag Deployment

- Airbag unfolds sweep across the face
- Airbag material deploys rearward within the head zone at more than 90m/s



Incorrect airbag deployment

- Airbag does not fully deploy in the design manner



Steering Column Displacement



CHEST		
Head		
Scoring	4	0
Compression	22mm	42mm
Viscous criterion	0.5m/s	1.0m/s
Modifier		
Scoring	-1	0
Restraint System Integrity	Yes	No
Obvious direct Loading to Chest	Yes	No
Integrity of passenger Compartment	Yes	No
Scoring	-2	0
A Pillar Displacement	Sliding	
100 mm below the lowest level of side window aperture	110 mm	90 mm
Shoulder Belt Load (> 6KN)	Yes	No

Restraint System Integrity



Compartment Integrity

- *Lack of at least two separate load paths* capable of resisting further collapse of the passenger compartment . Load paths that are deemed to have *failed* are:
 - a-pillar to roof cantrail (e.g. severe bucking of a-pillar or roof)
 - a-pillar to door to b-pillar (e.g. severe buckling or separation of door or hinge/latch failure)
 - a-pillar to door sill (e.g. severe bucking or separation of sill)
- floor pan or under floor structure, including transmission tunnel, sub-frame or chassis (e.g. severe bucking or separation)
- Separation of trans-fascia tube from a-pillar (including partial separation with significant loss of strength)
- Separation of A-pillar from sill or floor pan (including partial separation with significant loss of strength)
- Severe collapse of door aperture
- Severe rotation of a-pillar

Compartment Integrity

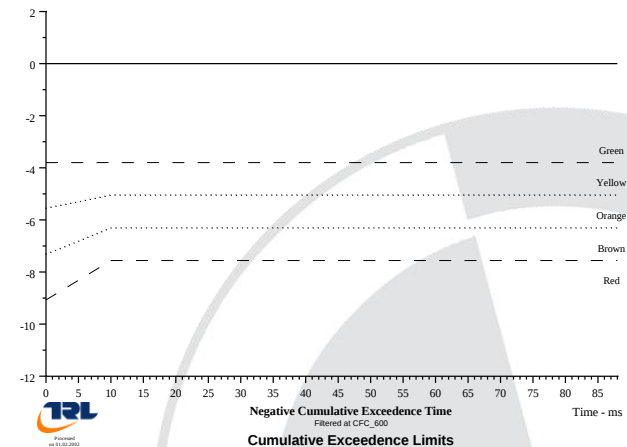


Compartment Integrity



Knee Femur and Pelvis

KNEE		
Knee, Femur and Pelvis		
Scoring	4	0
Knee Slide	22mm	42mm
Femur Compression	3.8kN	9.07kN @ 0 msec 7.56kN @ 10msec
Modifier		
Scoring	-1	0
Variable Contact	Yes	No
Concentrated Loading	Yes	No
Incorrect Airbag Deployment	Yes	No



Knee Area Modifier



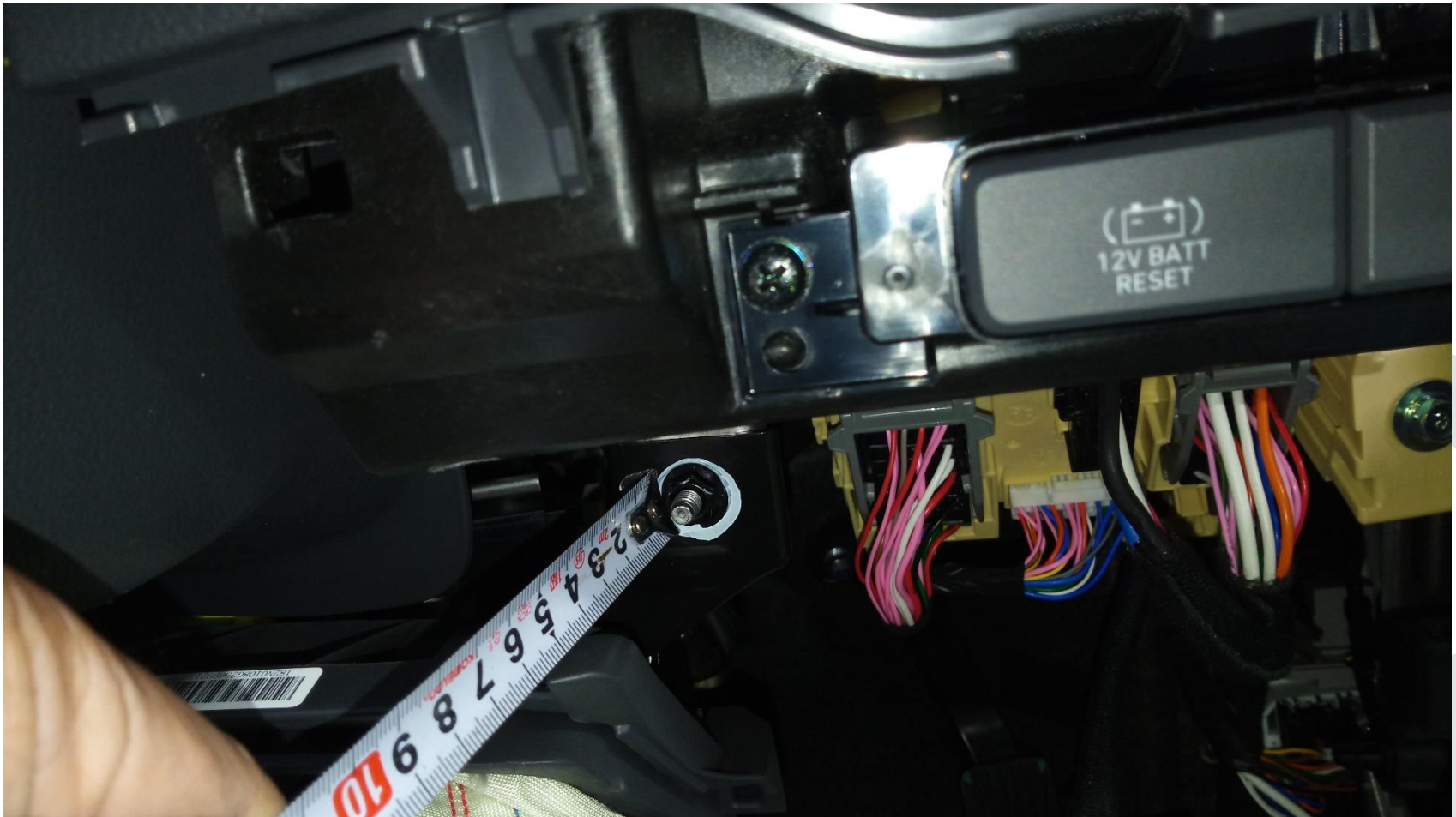
Knee Area Modifier



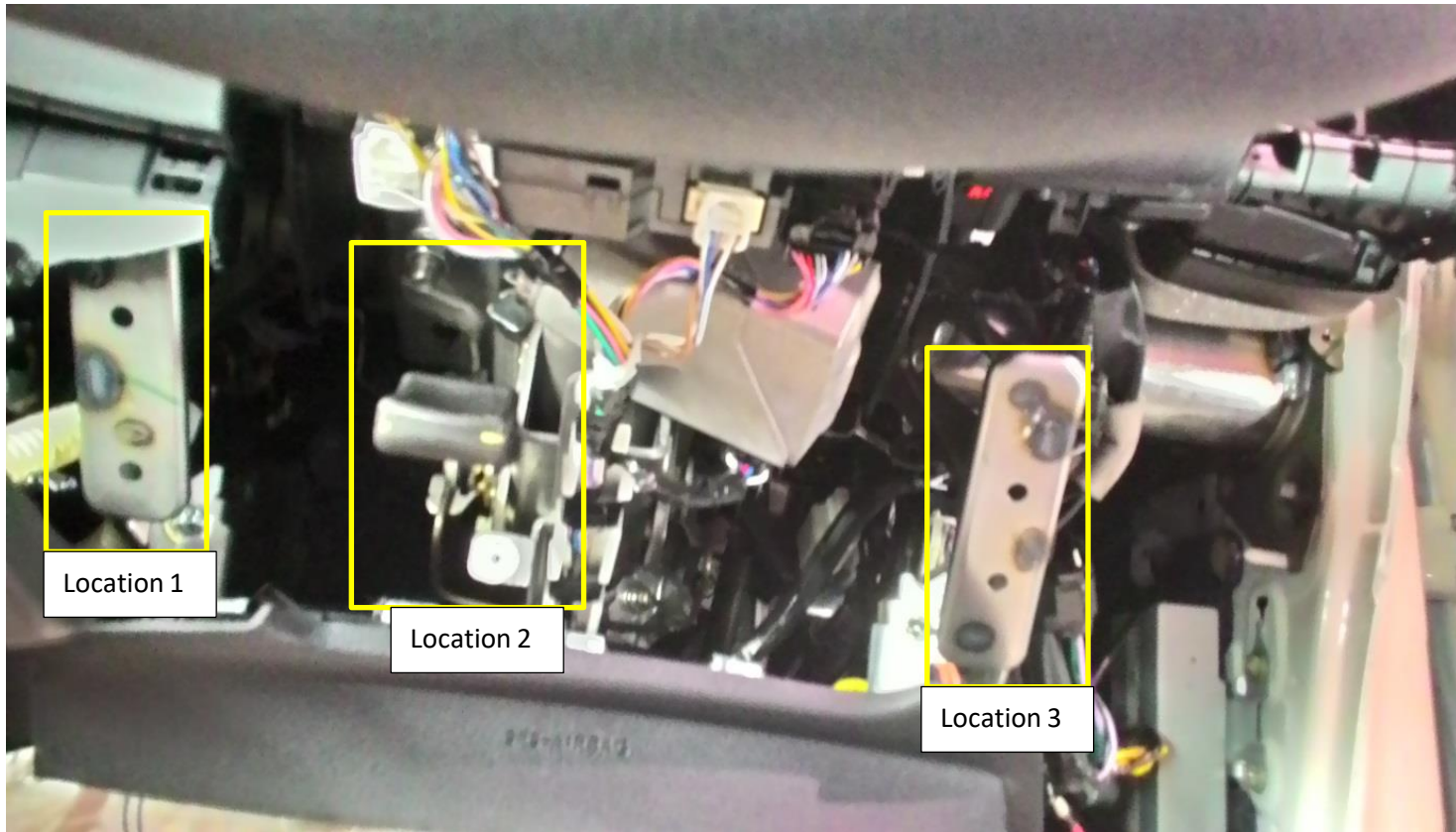
Knee Area Modifier



Knee Area Modifier



Knee Area Modifier



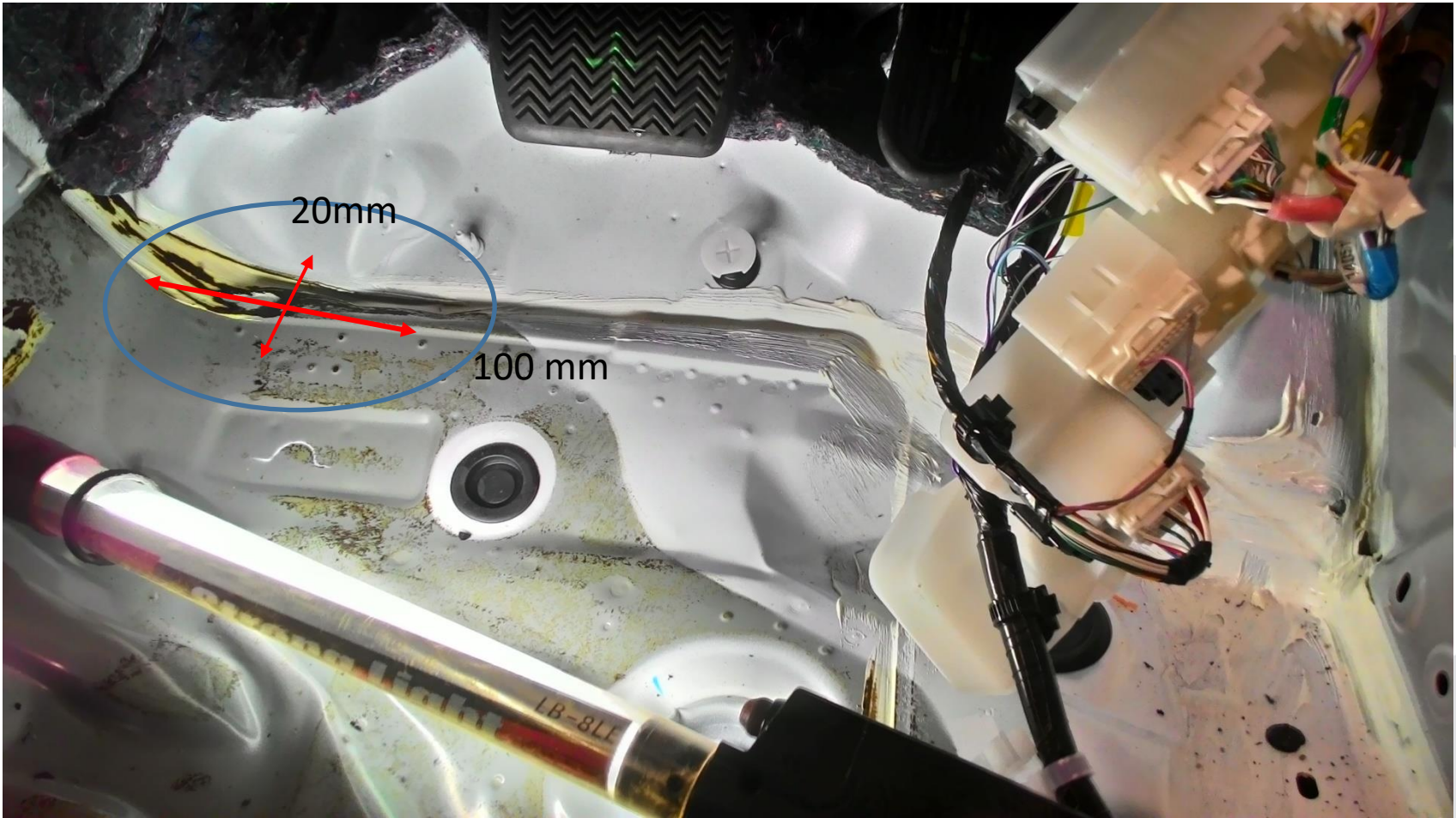
Lower Leg Foot and Ankle

Lower Leg, Foot and Ankle		
Lower Leg		
Scoring	4	0
Upper Compression	2KN	8KN
Lower Compression	2KN	8KN
Upper Tibia Index	0.4	1.3
Lower Tibia Index	0.4	1.3
Modifier		
Scoring	-1	0
Maximum Pedal Vertical Displacement - mm	Sliding	
Accel Vertical Displacement	88 mm	72 mm
Brake Vertical Displacement	88 mm	72 mm
Clutch Vertical Displacement	88 mm	72 mm
Foot and Ankle		
Scoring	4	0
Maximum Pedal Horizontal Displacement - mm	Sliding	
Accel Horizontal Displacement	100 mm	200 mm
Brake Horizontal Displacement	100 mm	200 mm
Clutch Horizontal Displacement	100 mm	200 mm
Modifier		
Scoring	-1	0
Footwell Rupture	Yes	No
Pedal Blocking	175	50

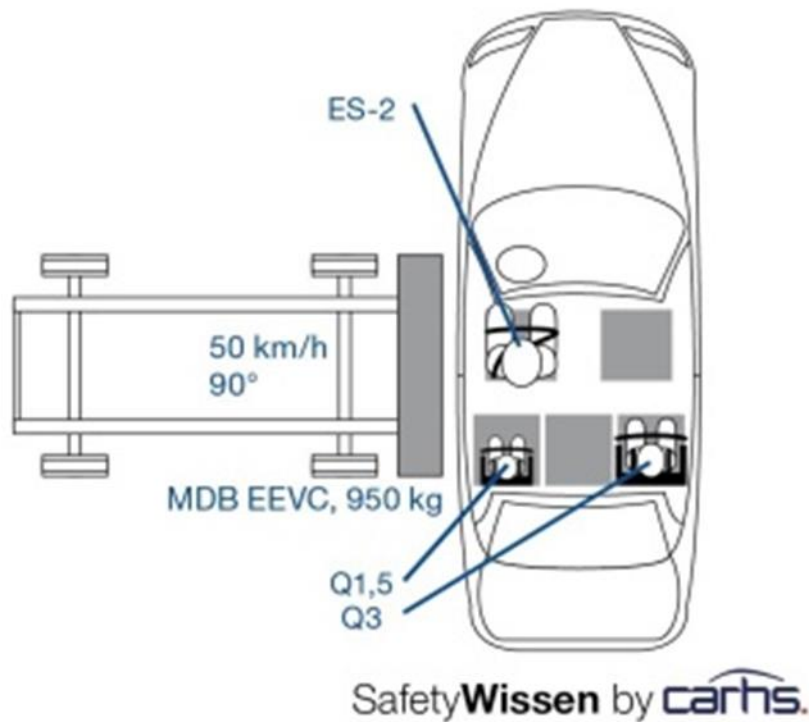
Foot Area



Footwell Rupture

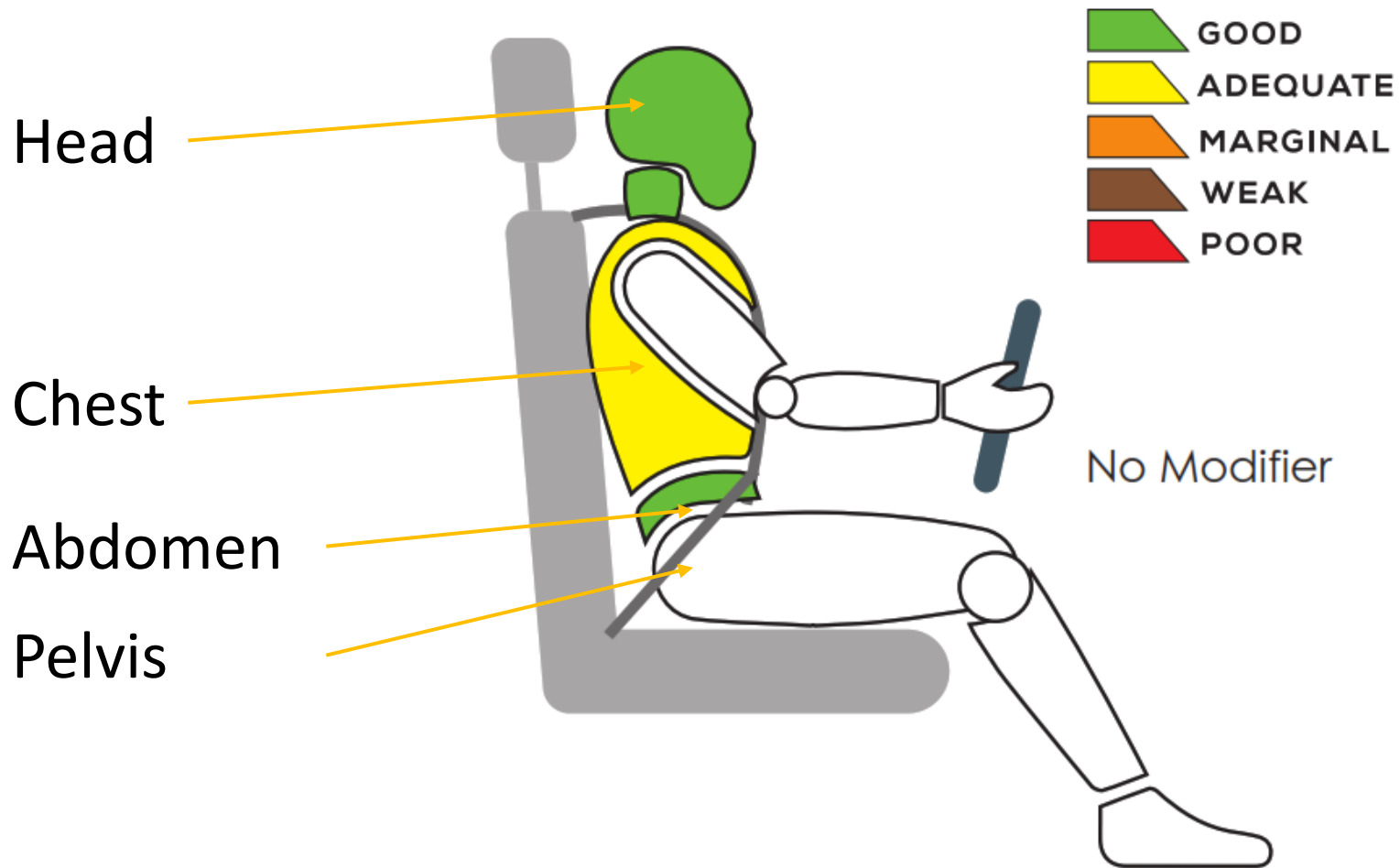


Test Configuration – Side Impact



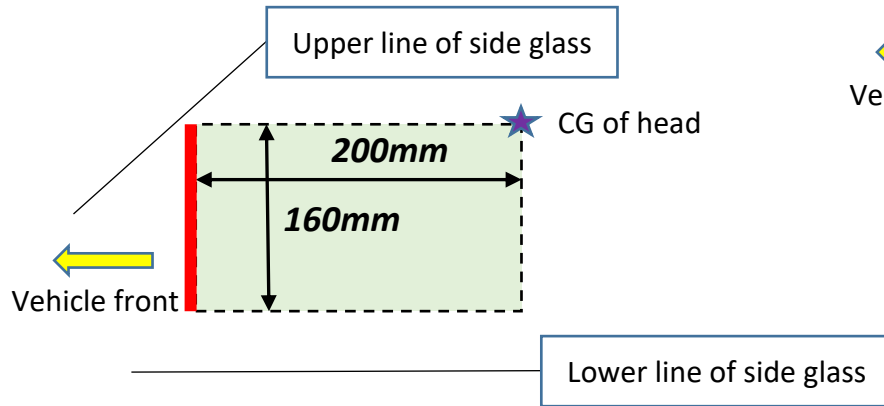
Side Impact Test



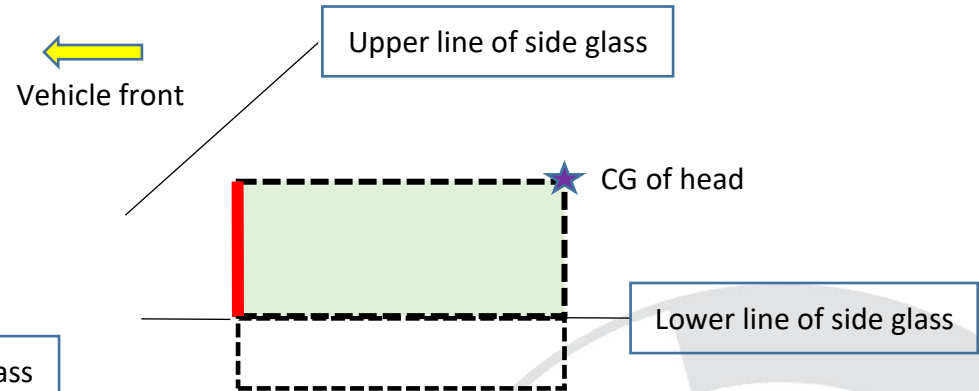


HPT Evaluation- Front

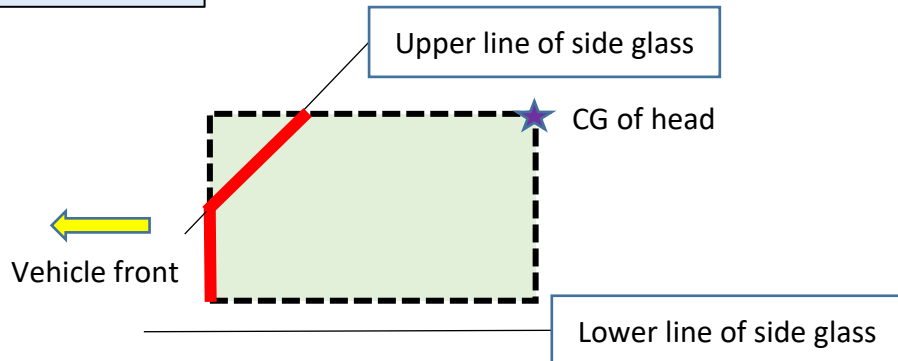
Case 1



Case 2

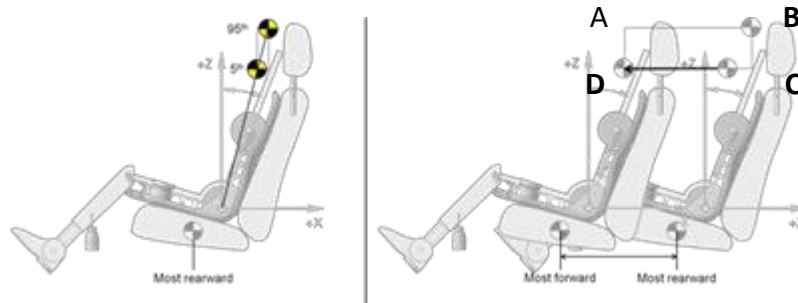


Case 3

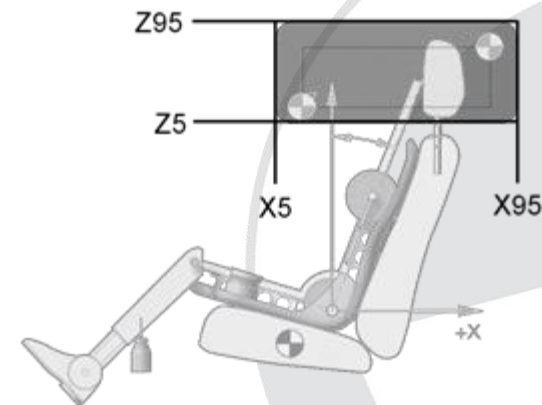
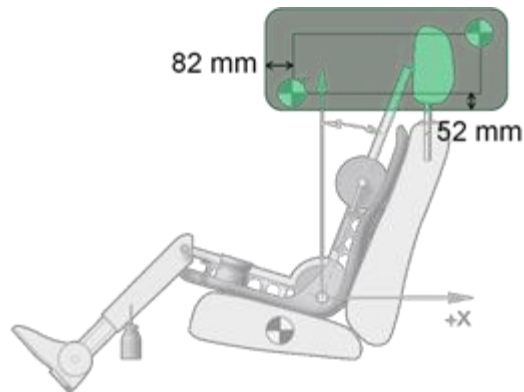


It is possible to allow combination of Case 2 and Case 3

HPT Evaluation - Rear



	X-position	Z-position
A	XCoG,5th	ZCoG,95th
B	XCoG,95th	ZCoG,95th
C	XCoG,95th	ZCoG,5th
D	XCoG,5th	ZCoG,5th



Child Occupant Safety (COP) Assessment



Dynamic



CRS
Installation



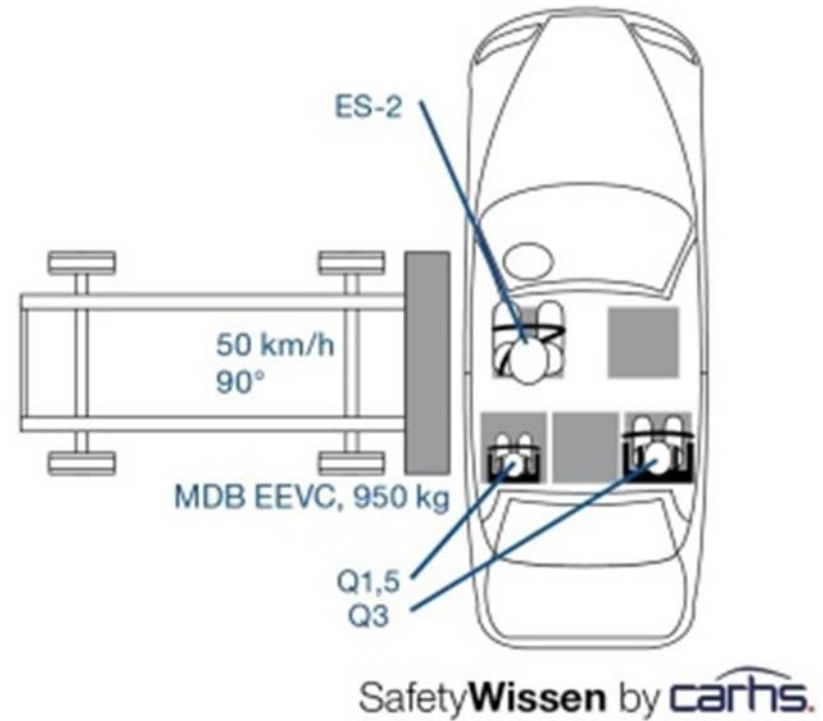
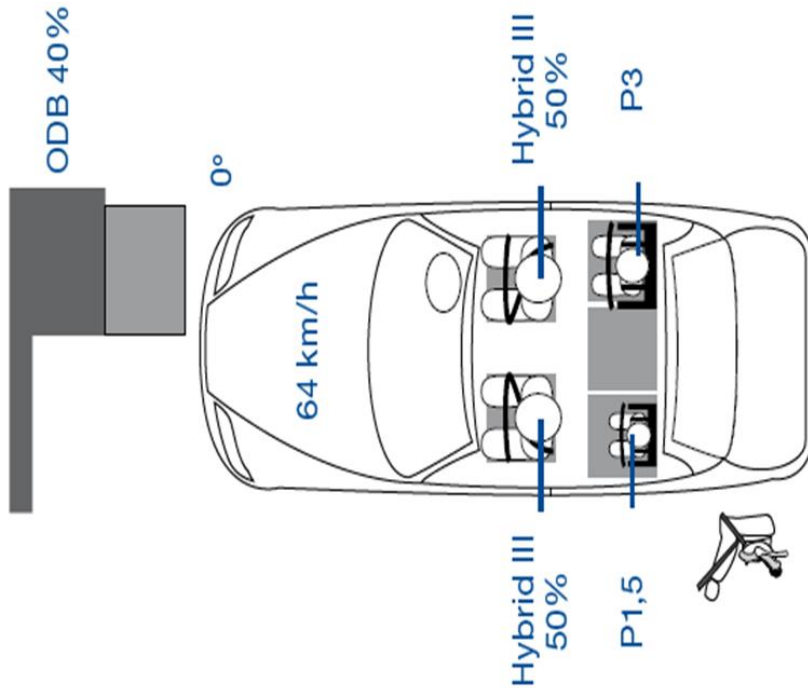
Vehicle
Based
Assessment



Child
Present
Detection



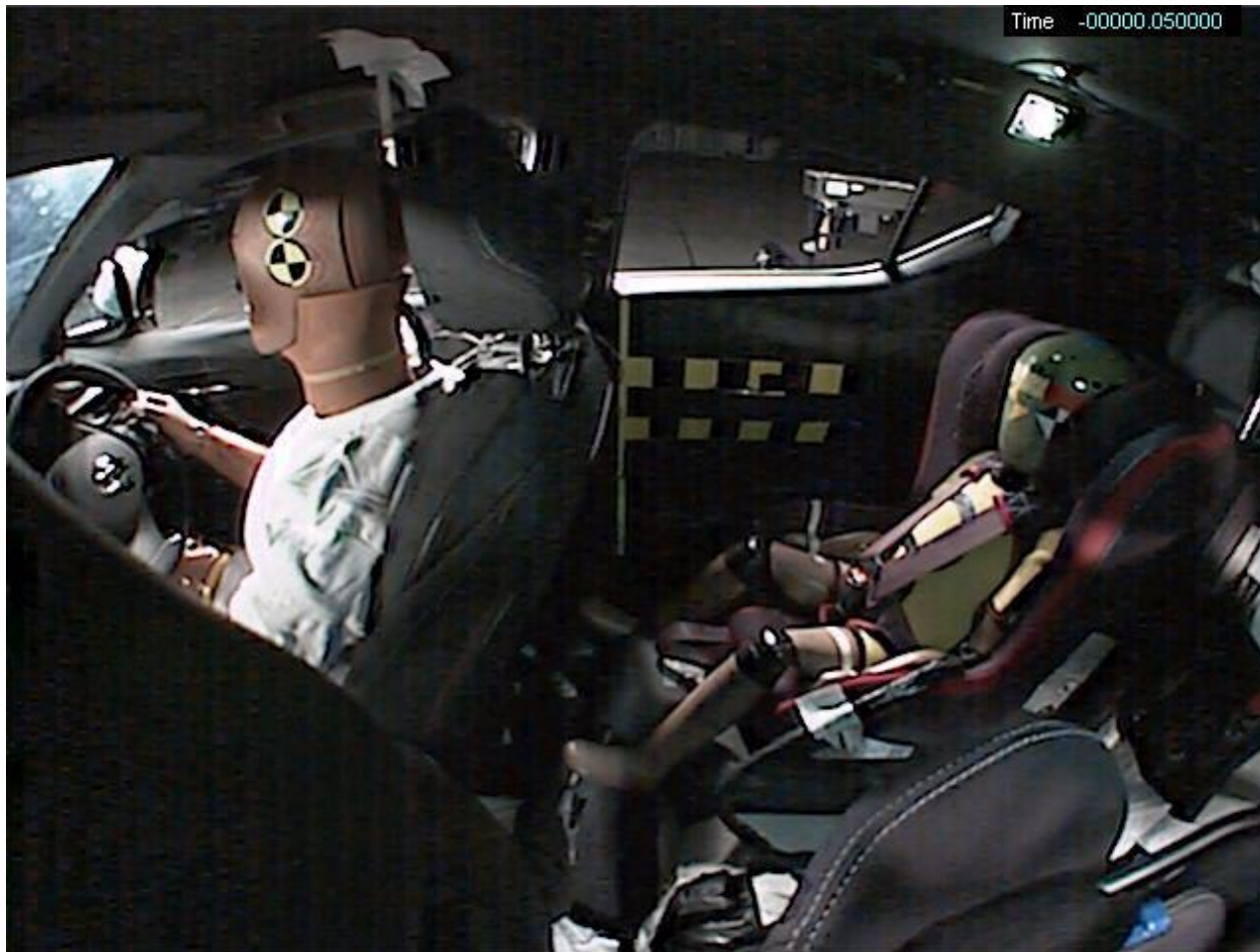
Dynamic Test



Dynamic Test



Dynamic Test



Installation Assessment

CRS	DIRECTION	SEAT POSITION						
		FRONT	2ND ROW			3RD ROW		
		PASSENGER	LEFT	CENTRE	RIGHT	LEFT	CENTRE	RIGHT
Maxi Cosi Cabriofix	Rwd	EXEMPT	PASS	PASS	PASS	N/A	N/A	N/A
Combi Malgot	Rwd	EXEMPT	PASS	PASS	PASS	N/A	N/A	N/A
Combi Malgot	Fwd	PASS	PASS	PASS	PASS	N/A	N/A	N/A
Combi Buon Junior Air	Fwd	PASS	PASS	FAIL	PASS	N/A	N/A	N/A
Britax Baby Safe Plus ISOFIX Base	Rwd	EXEMPT	PASS	EXEMPT	PASS	N/A	N/A	N/A
Maxi Cosi Milofix	Rwd	EXEMPT	PASS	EXEMPT	PASS	N/A	N/A	N/A
Maxi Cosi Milofix	Fwd	EXEMPT	PASS	EXEMPT	PASS	N/A	N/A	N/A
Britax Duo Plus	Fwd	EXEMPT	PASS	EXEMPT	PASS	N/A	N/A	N/A
Britax KidFix XP	Fwd	PASS	PASS	FAIL	PASS	N/A	N/A	N/A
Takata MINI*	Rwd	EXEMPT	PASS	EXEMPT	PASS	N/A	N/A	N/A
Takata MIDI I-SIZE*	Fwd	EXEMPT	PASS	EXEMPT	PASS	N/A	N/A	N/A

PASS : Install without problem, FAIL : Safety critical problem, EXEMPT : Installation not allowed, N/A : Not available

*Manufacturer's selection

2021 CRS list

CRS Installation Assessment					Seating Position							SCORING			
					Front	2nd row			3rd row						
					Pass	Left	Centre	Right	Left	Centre	Right	Pass	Fail	Exempt	Score
Reference List	Category	CRS	Direction	Interface											
	Group 0+	Peg-Perego Primo Viaggio SL	Rwd	B _ _ _	Exempt	Pass	Pass	Pass	Fail	Exempt	Fail	3	2	2	60.00%
	Group 0+ / I / II	Joie Stages	Rwd	B _ _ _	Exempt	Pass	Pass	Pass	Fail	Exempt	Fail	3	2	2	60.00%
	Group 0+ / I / II	Joie Stages	Fwd	B _ _ _	Pass	Pass	Pass	Pass	Pass	Exempt	Pass	6	0	1	100.00%
	Group II / III	Combi Buon Junior Air	Fwd	B _ _ _	Pass	Pass	Pass	Pass	Pass	Exempt	Pass	6	0	1	100.00%
	Group 0+	Maxi Cosi Cabriofix + Family Fix	Rwd	_ I L _	Exempt	Pass	Exempt	Pass	Exempt	Exempt	Exempt	2	0	5	100.00%
	Group 0+ / I	Joie Every Stage Fx	Rwd	_ I _ S	Exempt	Pass	Exempt	Pass	Exempt	Exempt	Exempt	2	0	5	100.00%
	Group 0+ / I	Joie Every Stage FX	Fwd	B _ _ _	Exempt	Pass	Exempt	Pass	Exempt	Exempt	Exempt	2	0	5	100.00%
	Group I	Maxi Cosi Titan Pro	Fwd	_ I _ S	Exempt	Pass	Exempt	Pass	Exempt	Exempt	Exempt	2	0	5	100.00%
OEM	Group II / III	Britax Kidfix 2 R	Fwd	B I _ _	Exempt	Pass	Exempt	Pass	Exempt	Exempt	Exempt	2	0	5	100.00%
	Q 1.5	XXXX Baby Safe Plus ISOfix Base			Exempt	Pass	Exempt	Pass	Exempt	Exempt	Exempt	2	0	5	100.00%
	Q3	XXXX Isofix			Exempt	Pass	Exempt	Pass	Exempt	Exempt	Exempt	2	0	5	100.00%

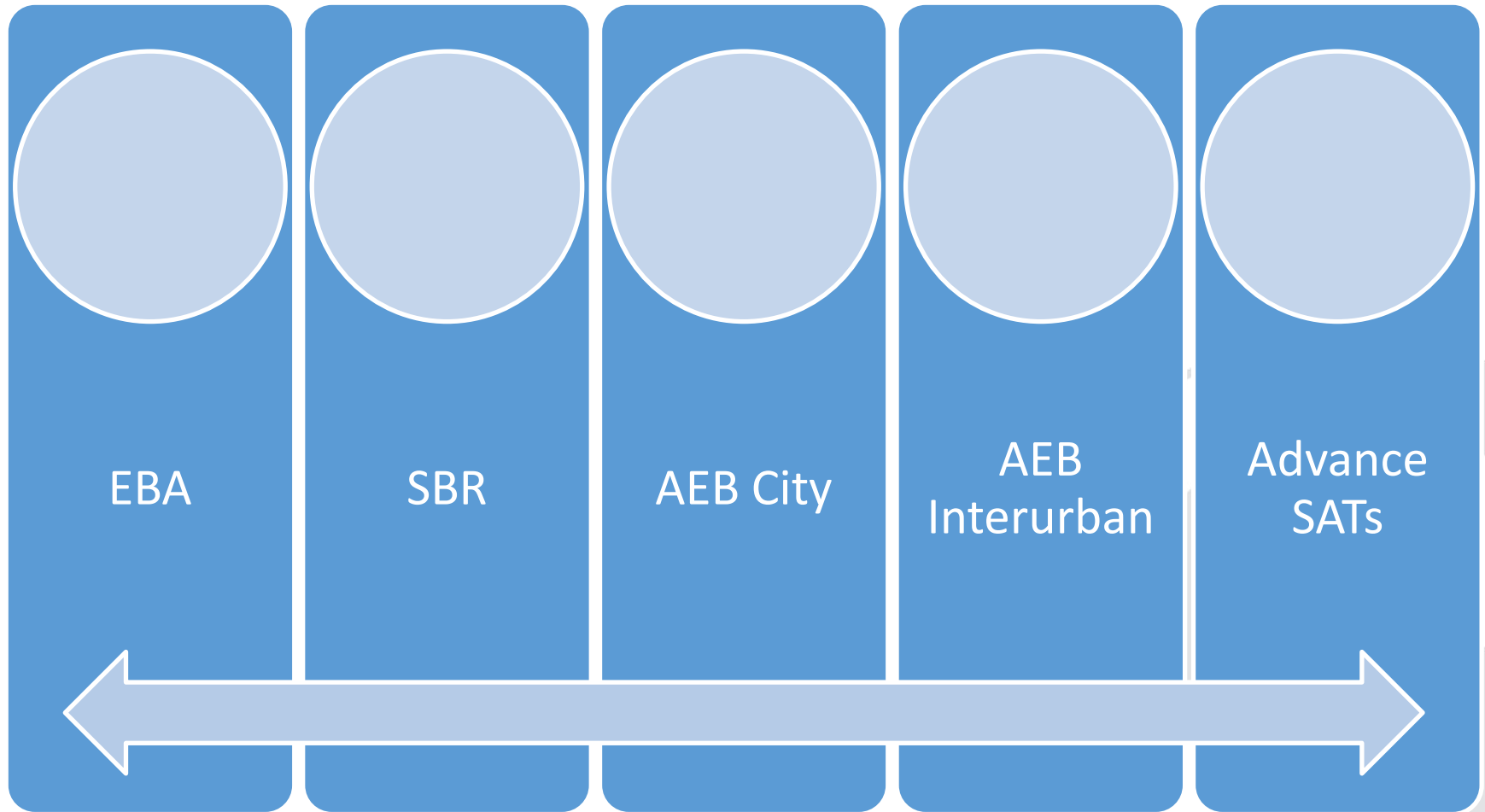
SUMMARY	
Reference List assessment (Max 10 points)	9.111
OEM assessment (Max 2 Points)	2.000

TOTAL INSTALLATION ASSESSMENT	11.111
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Vehicle Based Assessment

- 1. Provision of Three-point Seat Belts**
- 2. Gabarit Installation**
- 3. 2 Simultaneous Use Seating Positions**
- 4. ISOFIX Usability**
- 5. Two or more Largest ISOFIX Positions**
- 6. Passenger Airbag Warning Marking and Disabling**

Safety Assist Assessment



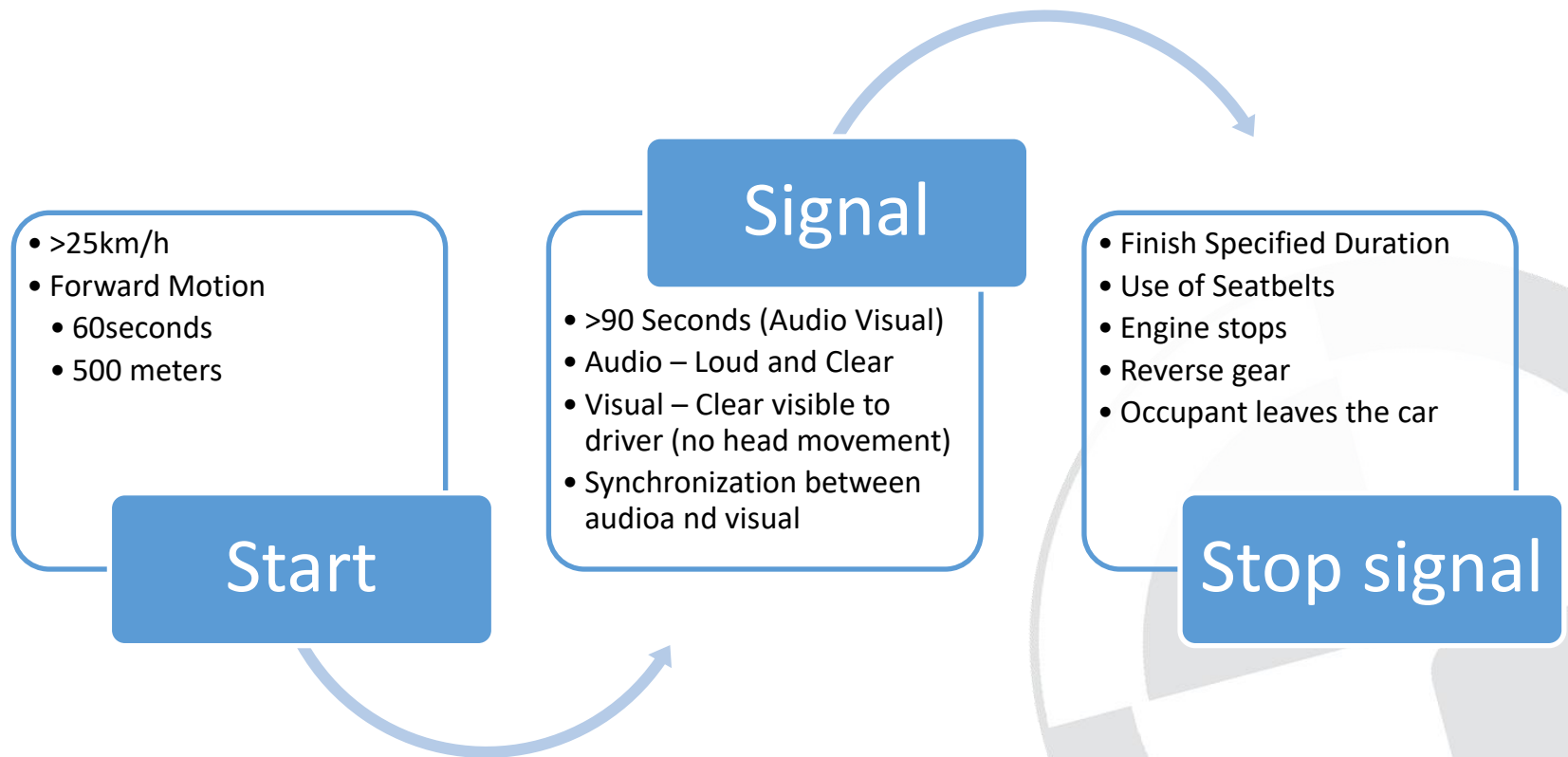
Effective Braking and Avoidance

- ESC and ABS
- Regulation 140



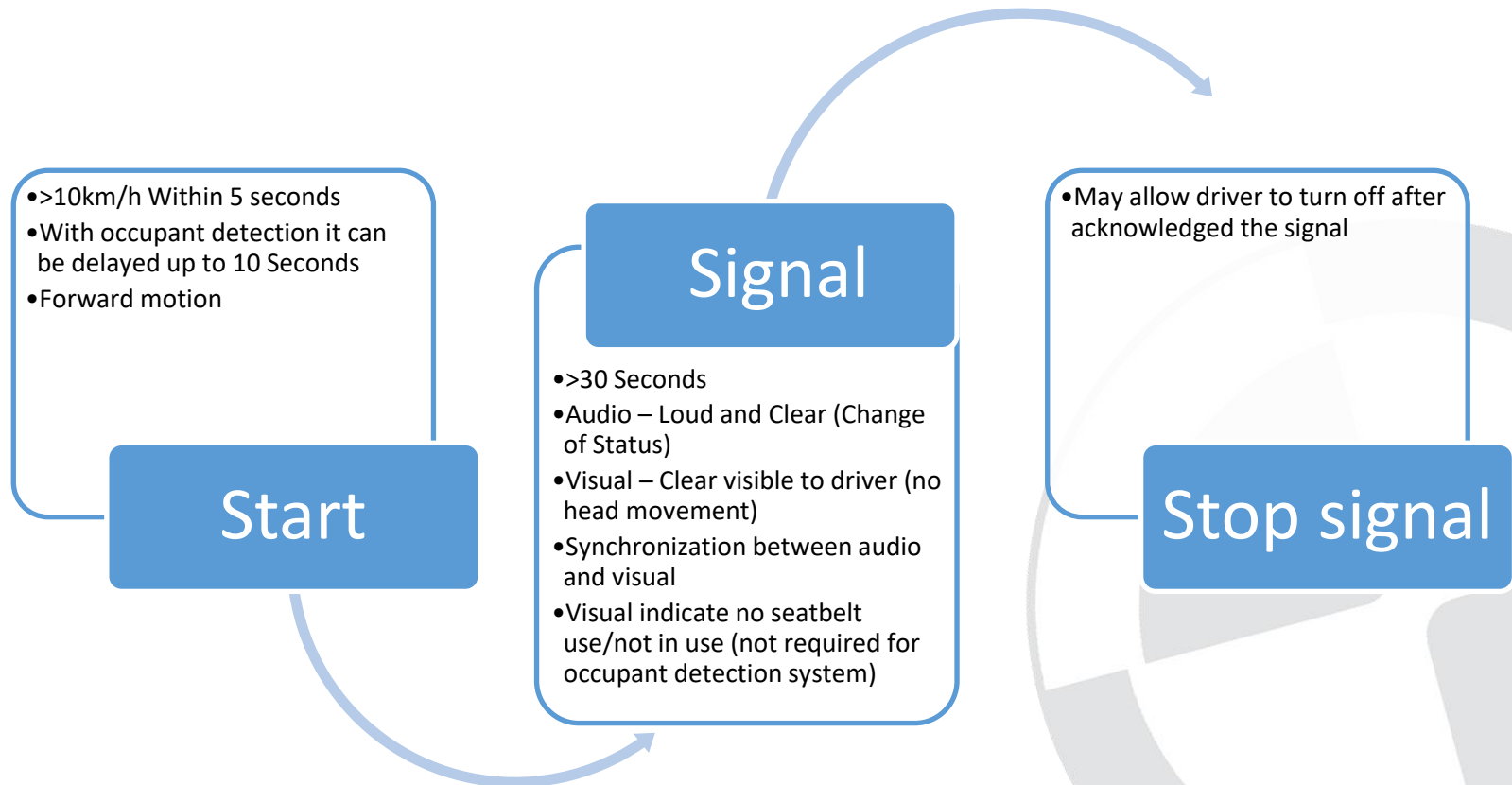
Seat Belt Reminder

Front Seating Position (Final Signal)



Note: For reverse gear. After gear reselect and forward movement more than 10km/h signal must resume again

Rear Seating Position (Final Signal)

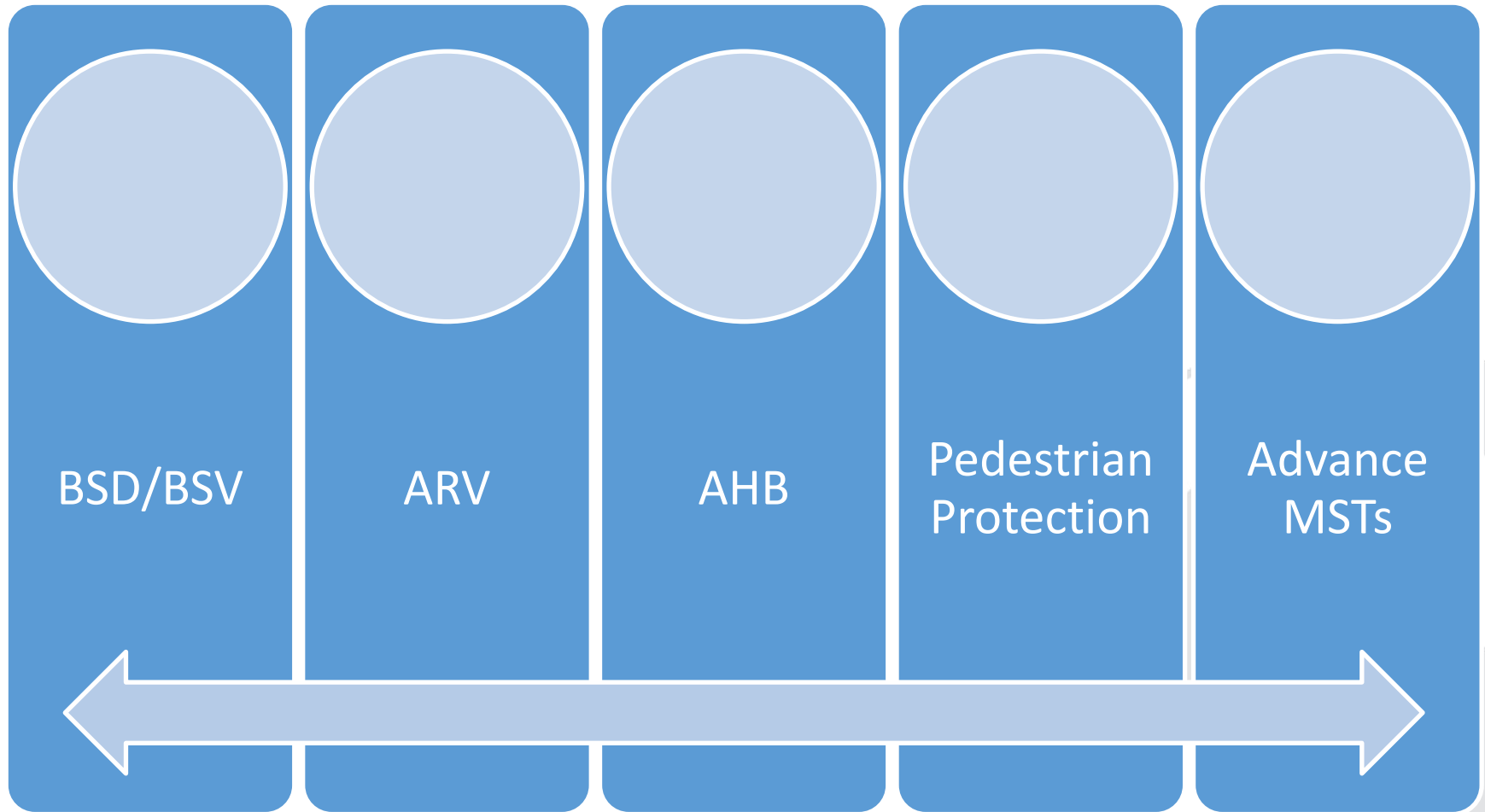




AEB Inter-urban



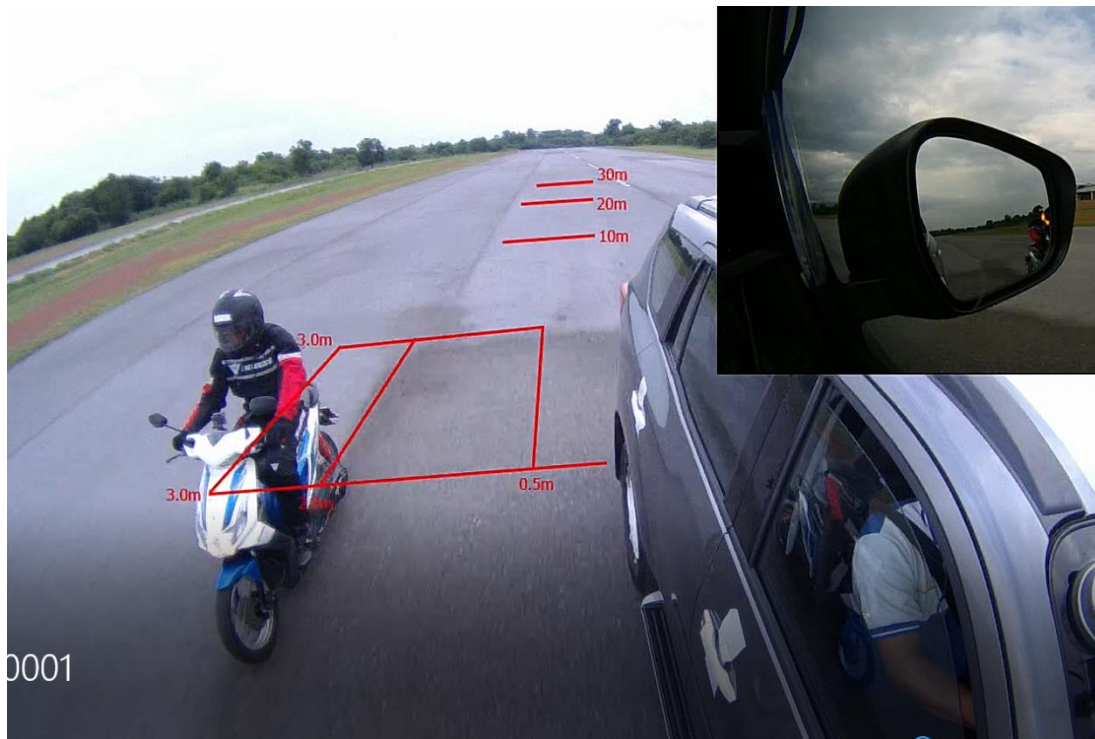
Motorcyclist Safety Assessment



Blind Spot Detection

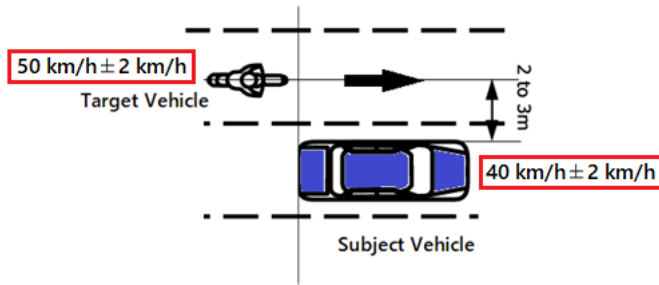
Motorcycle Size

	Dimension (m)
Length	1.8 to 2.0
Width	0.6 to 0.8
Height	1.0 to 1.4

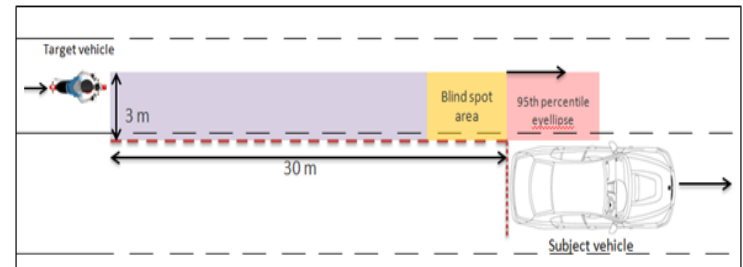


Blind Spot Detection

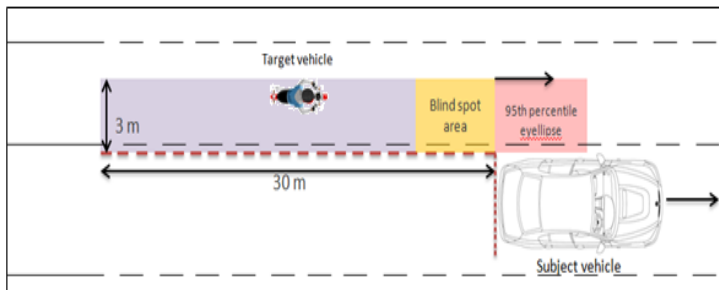
Test Condition



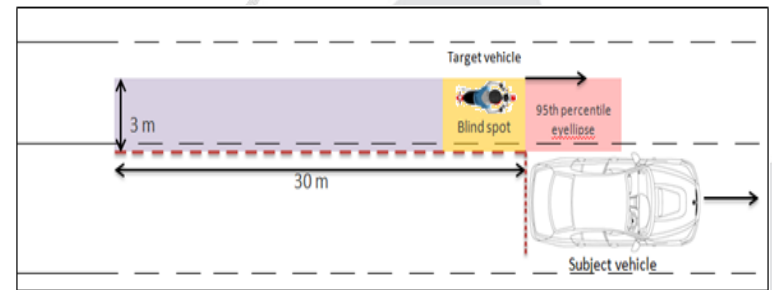
No Warning



May Give Warning

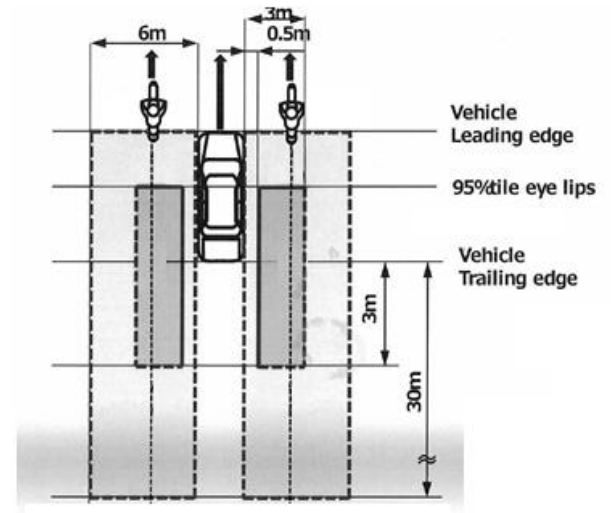
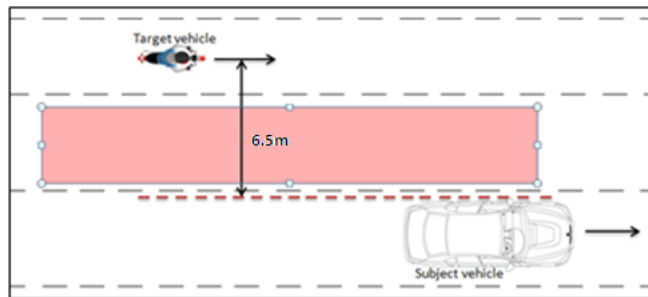


Must Give Warning



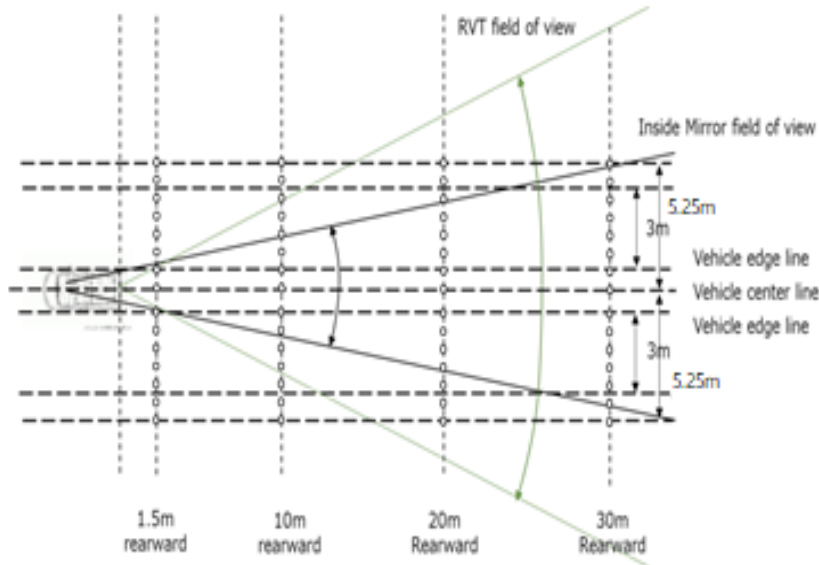
Blind Spot Detection

False Signal – Must Not Give Warning

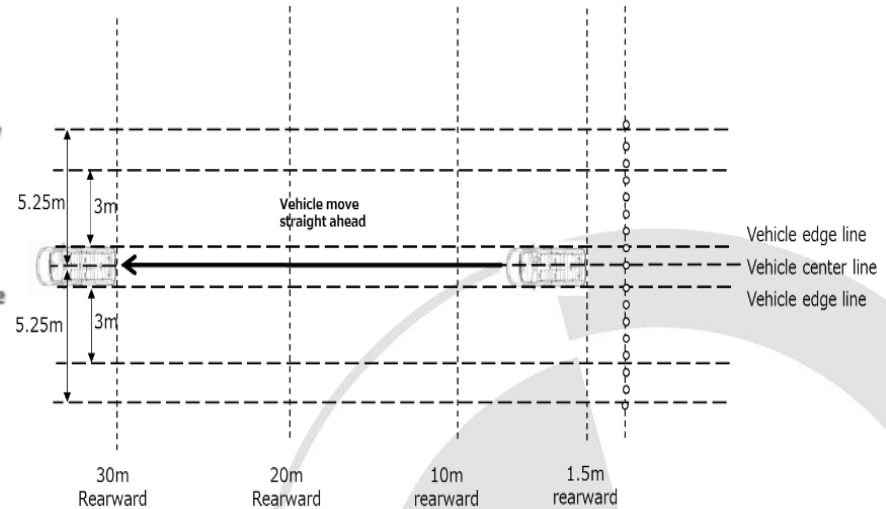


Advance Rear Visualization

Test Object Location



Test Methodology



Auto High Beam

Test	Headlight	Activated Start Speed	Requirement
Operational Speed	Low to High Beam	< 50 km/h	Must automatic switching
	High to Low Beam	< 50 km/h	Detect oncoming vehicle

Test	Headlight	Lux meter	Distance (m)	Height (cm)	Requirements
Illuminance	High Beam	A	100	25 from ground	5 Lux (Min)
				110 from ground	5 Lux (Min)
		B	100	25 from ground	5 Lux (Min)
				110 from ground	5 Lux (Min)

Equivalent Test Procedure

At the request of the manufacturer, the above test set procedure can be replaced by the test procedure described in UNECE Regulation No. 48-06 (or later), section 6.1.9.3.3.2 and UNECE Regulation No. 122-01(or later), section 6.3.3 class B and UNECE Regulation No. 123, section 6.3.2. or or UNECE Regulation No. 149

2026-2030 Assessment Protocol

 ASEAN NCAP www.aseanncap.org 2026-2030	AOP		COP		Safety Assist		Motorcyclist Safety	
	Item	Max	Item	Max	Item	Max	Item	Max
	Frontal	16	Frontal	16	EBA	6	BSD / BSV	8
	Side	8	Side	8	SBR	6	Rear View Technology	3
	HPT Evaluation	8	CRS Installation	12	AEB City	2.5	AHB / ADB	3
			Vehicle Based Assessment	13	AEB Inter Urban	5	Pedestrian Protection	2
			Child Presence Detection	5	Lane Support	2	AEB MC	6
					Advanced SAT	2	Advanced MST	2
Score		32		54		23.5		24
Weighting		40%		20%		20%		20%
Slanting = Fitement Rating System								
	AOP (%)		COP (%)		Safety Assist (%)		Motorcyclist Safety (%)	
5 ★	80		75		75		60	
4 ★	70		60		60		50	
3 ★	60		50		40		40	
2 ★	50		40		30		30	
1 ★	40		30		20		20	

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